HT168.C2 D45 1981

DEL NORTE COUNTY

Local Coastal Program

LAND USE PLAN

CONDITIONALLY CERTIFIED BY THE
CALIFORNIA COASTAL COMMISSION
ON 6/3/81

DEL NORTE COUNTY
LOCAL COASTAL PROGRAM

TABLE OF CONTENTS

PUBLIC ACCESS

MARINE and WATER RESOURCES

RECREATION

MARHOFFER CREEK SPECIAL STUDY

ELK CREEK SPECIAL STUDY

LAND RESOURCES

HAZARDS

VISUAL

PUBLIC WORKS

INDUSTRIAL

HOUSING / NEW DEVELOPMENT

LAND USE CATEGORIES

Del Norte County
Local Coastal Program

PUBLIC ACCESS COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

LCP--PUBLIC ACCESS COMPONENT

Table of Contents

List of Tables i

List of Figures i

I. INTRODUCTION 1

A. Vertical/Lateral Access 1

B. General Coastline Description 1

C. Shoreline Type and Ownership 3

II. GENERAL FINDINGS 5

A. Summary Findings 5

B. Future Demands 8

C. Restrictions to Access 10

D. Prescriptive Rights 10

E. Access in Development 11

F. Access Dedications 11

G. Current Acquisitions 12

H. Affects on Agriculture 13

I. Recreational Carrying Capacity 13

III. GENERAL POLICIES 15

A. Coastal Act Policies 15

B. Present Local Policies 15

C. LCP Policies 16

IV. SPECIFIC ACCESS DESCRIPTIONS, FINDINGS AND POLICIES 18

A. Pelican Beach State Park 19

B. Pelican Beach Palisades 20

C. Clifford Kamph Memorial Park 21

D. Indian Road 22

E. Mouth of Smith River 23

F. Smith River Public Fishing Access 24

G. Kellogg Road 25

H. Pacific Shores Subdivision 26

J. Buzzini Road 27

K. Lakeview Drive 28

L. Point St. George 29

M. North Beach 30

N. Pebble Beach 32

P. Southbeach 33

APPENDIX I. SHORELINE ACCESS SUMMARY 35

BIBLIOGRAPHY 38

LIST OF TABLES

1 Coastal Shoreline Types and Ownerships 4
2 Ownerships of Shoreline Access Points 6
3 Beach Types at Shoreline Access Points 7
4 Estimates for Shoreline Access Levels of Use 9

LIST OF FIGURES

1 Public Access Areas 2

LCP -- PUBLIC ACCESS COMPONENT

I. INTRODUCTION*

The California Coastal Act stresses the identification and protection of shoreline access as a means of insuring full coastal recreation apportunities for the public. It is fully recognized, however, that maximum access is not always in the best interest of: public safety; the rights of private property owners; or the protection of fragile coastal resources. This element of the LCP will identify and describe existing and potential access points (see Figure 1) to coastal and estuarine areas of Del Norte County and define policies regarding provisions for and management of public shoreline access.

A. Vertical/Lateral Access: Shoreline access may be divided into two components: 1) access from the nearest public roadway to the beach; and 2) access along the beach. The first is termed perpendicular or vertical access while the second is referred to as a lateral access.

B. General Coastline Description: The Del Norte County coastline consists of a variety of topographic, geologic and vegetation matrices, each possessing physical characteristics affecting access potentials. The following discussion regards phsycial elements favoring or restricting access in selected areas along the Del Norte County Coastline; later topics will address access site details and ownerships.

1. North of the Smith River, a coastal bluff and terrace dominates the coastline physically restricting public access to designated points. The sandy beach, however, is generally wide and open permitting unobstructed lateral access. Immediately north of the mouth of the Smith River is a rocky beach with limited sandy pocket beaches and numerous tide pool areas.

2. From the Smith River to Point St. George a ten mile stretch of coastal strand (open sandy beach and grass-covered dunes) permits extensive physical shoreline access: both vertical and lateral.

3. South of Point St. George to the Crescent City limits extends a grassy marine terrace with bluffs, sandy/rocky beaches and some coastal dunes. Access is physically limted to areas with trails or low bluffs. At Point St. George the rocky bluffs and rock outcroppings physically impede lateral access.

---

*Note: This component of the LCP is subject to review and cross-referencing to other policy components.

4. From the Crescent City Harbor District's southern limits to the Redwood National Park boundary, a long sandy beach extends along the coast adjacent to Highway 101. There are few physical restrictions to beach access in this area.

5. The portion of Del Norte's coastline within Redwood National Park tends to be physically restrictive to vertical access due to very steep slopes and occasional precipitious cliffs. Several trails exists, however, permitting substantial public access to pocket beaches. Lateral access is generally limited by rugged headlands.

6. Three areas of estuary access are recognized within the County: 1) the Smith River delta; 2) Lakes Earl and Talawa; and 3) the Klamath River delta. Steep, potentially erosive banks, together with dense riparian vegetation tend to physically restrict access along the Smith River. The shorelines of Lake Earl and Lake Talawa are generally open, but physical access in several areas is limited by the dense riparian habitats and marsh. The Klamath River has numerous access points along its flood plain, with some areas of excessively steep banks physically restricting access.

C. Shoreline Type and Ownership: The Del Norte County shoreline is 45.5 miles in total length. Approximately 24 miles of this shoreline is sandy beaches with the remainder rocky bluffs and steep slopes.

Presently 84% of the County's shoreline is publicly owned. Table 1 summarizes the beach type and ownership statistics for Del Norte County's shoreline.

		MILES	PERCENT
OWNERSHIP	PUBLIC	38.3	84%
	PRIVATE	7.2	16%
TYPE	SANDY BEACHES	24.0	53%
	ROCKY SLOPES	21.5	47%

TABLE 1: COASTAL SHORELINE TYPE AND OWNERSHIPS

II. GENERAL FINDINGS

An intensive inventory was conducted to identify, describe and map existing shoreline access points in Del Norte County. Finding summaries together with significant trends, problems and needs will be addressed in this section.

A. Summary Findings: A total of 50 access points to Del Norte County's coastal and estuarine shorelines have been tabulated. The following summarizes the findings concerned with: ownership; beach-types; improvements; recreational uses; and levels of use.

1. Ownership: Four-fifths of the coastal in Del Norte County is in public ownership providing substantial access opportunities. Of the County's 32 coastal access points, 16 are on public lands while the remainder involve encroachment on private property. Eighteen access points to estuaries have been identified. Four in this category are publicly owned. The private access points, however, are open to the public with shoreline access provided as part of the total array of visitor services available. Table 2 summarizes the ownership data for Del Norte County's shoreline access points.

2. Beach-types: The beach-types in Del Norte County vary from opne, sandy expanses to rocky promontories. The majority of beach areas open to the public are sandy or rocky/sandy types. Beach types for the County are summarized in Table 3.

3. Improvements: Improvements, including parking, trails, stairways, restrooms, and picnic tables, are provided at many of the access points. Suggestions will be made concerning improvements at specific access sites in a later section.

4. Recreational Uses: The variety of beach types, shoreline topography and vegetation/wildlife assemblages along Del Norte County's coastal zone suggests numerous recreational uses. Walking and beachcombing are probably the primary coastal recreation activities for both visitors and residents of Del Norte County. Fishing is also very popular, especially on the Smith and Klamath Rivers, but not excluding surf-fishing and clamming on the open beaches. Other popular recreation activities in the coastal zone include: hiking; jogging; ORV driving; surfing; hunting; photography; and nature study.

5. Levels of Use: The establishment of planning guidelines and policies for shoreline access require some measure of the amount and degree of visitor use at these points. Two basic approaches may be utilized to describe levels of use: 1) qualitative; or 2) quantitative.

AREA	OWNERSHIP		
	PUBLIC	PRIVATE	COMBINED
COASTAL	16	16	32
ESTUARY	4	14	18
COMBINED	20	30	50

TABLE 2: OWNERSHIP OF SHORELINE ACCESS POINTS

AREA	BEACH - TYPE		
	SANDY	SANDY/ROCKY	ROCKY
COASTAL	19	9	2
ESTUARY	3	10	6
COMBINED	3	19	8

TABLE 3: BEACH TYPES AT SHORELINE ACCESS POINTS

Qualitative terms (ie. light, moderate, heavy) are tenuous at best. For example, the levels of use for Del Norte County's beaches, when compared to Southern California, are light. Even light traffic, however, may prove hazardous to a fragile ecosystem such as a tidepool.

Quatification does not necessarily improve results, in that recreational carrying capacity varies by habitat and figures are not well established. Visitor use statistics are available for some access points in Redwood National Park, but quantitative assessments are lacking for the remaining points under evaluation. Without significant data concerning levels of use, the best estimates might be inferred from: 1) the extent of vegetation trampling in an area; 2) the distance an area lies from major highways and population centers; and 3) the degree of litter accumulation in an area. The following hierarchy of use is proposed to qualify the relative extent of use for each access point:

Heavy: Continued, extensive damage to vegetation; area readily accessible; large accumulations of litter.

Moderate: Some damage to vegetation. Scattered litter.

Light: Slight damage to vegetation. Area not readily accessible. Small amounts of litter.

Table 4 indicates the estimates for levels of use according to the above criteria for the 53 shoreline access points in Del Norte County. Seasonal extremes would place many areas of moderate use into the heavy use category for summer months, but lighter off-season use tends to moderate impacts.

Levels of use for each of the 53 access points are found in Appendix I (Shoreline Access Summary), together with details regarding ownership, beach-type, parking improvements and general recreation uses.

B. Future Demands: Recreation is generally viewed as one of the fastest growing uses of the Coastal Zone. [redacted]. As with measurements of use, however, only qualitative estimates of future demands may be made because of an inadequate data base.

Assuming a general increase in the demands for: adequate coastal access; parking; and other facilities, long-range planning policies should consider the need for new access not only to serve the public, but to relieve those areas containing fragile

AREA	RELATIVE LEVELS OF USE			
	LIGHT	MODERATE	MODERATE /HEAVY	HEAVY
COASTAL	13	7	9	0
ESTUARY	7	4	10	0
COMBINED	21	12	20	0

TABLE 4: ESTIMATES FOR SHORELINE ACCESS LEVELS OF USE.

coastal recources from excessive pressure. Plans for future access should also address potential impacts on coastal resources at the site of intended facility development.

A goal of the County will be to direct shoreline use to areas of sandy beaches in order to minimize visitor impacts on fragile rocky habitats. Sandy beaches are apparently more attractive to visitors and the ease of lateral movement encourages their use. Rocky beaches and outcroppings, on the other hand, contain more difficult terrain and act as a measure of protection for the fragile tidepool regions.

C. Restrictions to Access: Barriers to coastal access include physical restrictions and private property ownership. Accessibility restriction, however, are not inherently evil: public safety, resource protection and the rights of private property owners require careful consideration.

1. Physical Barriers: Physical restrictions to coastal access include steep cliffs, dense vegetation and beachless shorelines. These barriers have been important in protecting significant habitats in Del Norte County. By directing access and use away from these areas, the County's purpose is to insure the continued maintenance of these fragile ecosystems and coincidentally increase public safety.

2. Private Ownership Barriers: Private property owners in the Coastal Zone tend to restrict access for several reasons. First and foremost is the factor of liability in the event of injury on their property. Second, property owners are often discouraged with noise, litter, and/or vandalism resutling from public trespass. Finally, owners are forced to post no trespassing signs in order to prevent the loss of their right to restrict access through the doctrine of presciptive rights. A major goal of the County is to protect the rights of private property owners by encouraging the use and expansion of existing public access facilities where deemed appropriate.

D. Prescriptive Rights: A legal doctrine that may be applied to guarantee public access by easements through private land ise prescriptive rights. Through continuous, open use the public may have established access corridors at a number of shoreline areas in Del Norte County. The state should investigate the legal and financial practicality of prescriptive access in the following localities.

1. Pacific Shores Subdivision

   a) Stuckey Street
   b) De Mars Drive
   c) Surf Drive
   d) View Avenue
   e) Lake Avenue
   f) Bruegger Street
   g) Wright Street
   h) Middleton Drive
   i) View Drive

2. North Beach Area

   3 acres between Washington Blvd. and Marhoffer Creek on Pebble Beach Drive.

3. South Beach Area

4. Mouth of Smith River

   a) Bluff Trail at mouth crossing Pyramid Point
   b) Access immediately north of Howonquet cemetary

5. Point St. George and three access point west of Radio Road.

E. Access in New Development: The Coastal Act of 1976 with specified exceptions, requires provisions for public access from the nearest public roadway to the shoreline in new development projects. For development projects of the size and nature where coastal access might be substantially blocked (ie., housing tracts, condominiums, private clubs), the County supports this concept. The aerial extent of potentially developable land adjacent to the shoreline in Del Norte County, however, is such that extensive developments along the ocean front are limited. Many development projects involve single family residences for which dedication of access is impractical. Therefore, provisions for access should be required only for development projects with ocean frontage greater than 400 feet and in excess (or any portion of the property in excess) of ½ mile from an existing public access.

F. Access Dedications: Section 30212 of the Coastal Act states in part that dedicated accessways, where required, shall not be required to be opened to public use until a public agency or private association agrees to accept responsiblity for maintenance and liability of the accessway. In view of the fiscal contraints of Proposition 13 and other revenue limiting measures, the County is not in a position to accept and maintain accessways on a large or limited scale. In as much as the people of the State of California are requesting in their behalf and for their benefit the expansion and creation of additional accessways, the State shall accept responsibility for the maintenance

and liabilities of any and all accessways required as a result of the Coastal Act of 1976 and the implementing actions. Any accessways to be considered for acceptance by the County will require initial and continued funding assistance for their maintenance and liability protection.

Any action on the part of a State agency, other than for justified health or public safety purposes, which diminishes or eliminates in whole or in part the value of private real property shall be subject to just compensation based on the current market value appraisal at the time of acquisition. The fact that an agency indicates an interest in acquiring certain property shall not be restrictive of the market condition affecting that property but it should be incumbent on that agency to be responsible for its actions within a reasonable time and in an equitable manner. Therefore the State agency responsible for any restriction imposed to commonly understood reasonable use and subsequent development approved by the County, shall also bear the burden of proof in establishing state wide interest and financial responsibility.

G. Current Acquisitions: Two major acquisitions in the Coastal Zone on Del Norte County under consideration are:

1) land in the Lake Earl, Lake Talawa and Smith River delta area; and

2) development rights in the Point St. George area.

The Smith River delta and Lakes Earl and Talawa have been identified by the California Department of Fish and Game as important habitat for migratory and resident wildlife and fishes. In order to secure this major wetland and dune habitat for resource preservation, general recreation use and open space, the State of California is presently negotiating the acquisition of some 4,500 acres in the area.

The Aleutian Canada Goose, a rare and endangered species, utilizes the Point St. George area as feeding habitat in its winter migratory visit to Del Norte County. The U.S. Fish and Wildlife Service is presently considering the purchase of development rights for 760 acres in the Point St. George area to insure the continued maintenance of this important habitat.

Prior to costly facility improvements in these areas, the County should await the final outcome of acquisitions in the Point St. George to Smith River area. No acquisition can be supported in the coastal program which will inhibit existing county facilities or place an undue burden upon the private property owner.

H. Affects on Agriculture: The protection of agricultural lands in the Coastal Zone is given prime consideration in the Coastal Act:

30212. Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where...agriculture would be adversely affected...

30241. The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following....by assuring that public service and facility expansions and non-agricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

30242. All other lands suitable for agricultural use shall not be converted to non-agricultural uses unless: 1) continued or renewed agricultural use is not feasible, or 2) such conversion would preserve prime agricultural and or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.

In an agricultural County such as Del Norte, efforts to maximize public access to coastal and estuarine shorelines will undoubtedly lead to conflicts with agricultural land uses. These conflicts can include irregular fencing of agricultural and for accessways, breaking up of continuity of fields, harassment of cattle, sheep and other grazing animals, vandalism of crops and equipment, interference by visitors of crop gathering or harvesting, etc. Protection of agricultural productivity will receive priority consideration in questions regarding public access.

I. Recreational Carrying Capacity: The optimum amount of recreational activity a particular site can support without impairing visitor experience or sustaining permanent environmental damage is termed the recreational carrying capacity. The interrelationships of three factors determine the recreational carrying capacity for a given area: 1) the character of the natural environment; 2) the degree of man-made improvements (e.g., parking lots, restrooms, trails) and 3) the perceptions of the recreationists.

Because carrying capacities are founded on both resource capabilities and human expectations, their analysis is most difficult. Each coastal zone recreationa area must be studied individually to determine its optimum recreational use level. Some generalizations may be made, however. First, the recreational

carrying capacities of tide pools, offshore rocks and coastal wetlands are determined by their fragile, easily disrupted nature. Second, less fragile and more conducive to recreational pressures are open, sandy beaches. The carrying capacities of sandy beach areas are determined more by the degree of facility improvements in the area.

In order to direct recreational activities to the more abundant, expansive beach areas of Del Norte County and away from the fragile habitat areas, it is suggested that improvements to existing sandy beach access points such as Kellogg Road and Southbeach be given priority consideration.

III. GENERAL POLICIES - PUBLIC ACCESS COMPONENT

A. Coastal Act Policies: The California constitution guarantees the public's right of access to navigable waters in the State.[1] The Coastal Act of 1976 establishes a set of policies designed to reflect this constitutional manmade along California's coastal waters:

1. Maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse. (30210)

2. Development shall not enterfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation. (30211)

3. Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources; (2) adequate access exists nearby; or (3) agriculture would be adversely affected. Dedicated accessway would not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway. (30212)

B. Present Local Policies: Public access is addressed in the Del Norte County General Plan under the recreation element. Although specific policies concerning public access to the shoreline are absent, the goals of the County indicate this interest:

1. To provide and maintain recreation areas for a wide variety of activities for all people in the County and visitors to the County.

---

1 Article XV, Section 2: No individual, partnership, or corporation, claiming or possessing the frontage or tidal lands of a harbor, by inlet, estuary, or other navigable water in this State, shall be permitted to exclude the right-of-way to such water whenever it is required for any public purpose, not to destroy or obstruct the free navigation of such water; and the Legislature shall enact such law as will give the most liberal construction to this provision, so that access to the navigable waters of this State shall be always attainable for the people.

2. To provide public access at selected points to areas of enjoyment and interest.

General Plan policies of the County make no definitive statements concerning the right of public access to beaches nor provisions requiring access in new development along the shoreline.

C. LCP Policies: Shoreline access is emphasized in the California Coastal Act to provide for all people the full benefits of coastal recreation resources. This section will state the general provisions regarding public shoreline access for the County of Del Norte:

1. The County shall work actively towards the attainment of maximum coastal access for the public, where it is consistent with public safety, property owner rights and the protection of fragile coastal resources.

2. The rights of private property owners shall be protected in all considerations of public access.

3. The County shall require funding assistance to improve and maintain existing access and to acquire and develop any new access and facilities.

4. The design and construction by any public entity of shoreline access facilities (e.g., parking, trails, stairways, etc.) shall consider public safety potentials for vandalism and the protection of fragile coastal resources.

5. Agricultural lands shall be protected from adverse affects resulting from public access. Priority consideration shall be given to the maintenance of agricultural productivity.

6. Shoreline access should be clearly signed on adjacent major highways and streets. A uniform shoreline access signing system should be developed.

7. The County will encourage through implementing zoning ordinance the private sector to develop and maintain existing shoreline access facilities.

8. Development along the immediate shoreline shall provide public access to the shoreline except where:

i. Findings are made consistent with Section 30212 of the Coastal Act that access is inconsistent with public safety or that agriculture would be adversely affected; OR

ii. Access would have unavoidable adverse impacts on environmentally sensitive habitat areas as designated in the LUP; OR

iii. An existing vertical accessway, adequate to meet anticipated access needs, is located one-half mile or less from the development;
OR

iv. The parcel is too small to allow for an adequate vertical access corridor without passing within 25 feet of a proposed dwelling;
OR

v. Project site is too small for the proposed development and the access with improvement related to its use (i.e. parking).

9. Priority for vertical access, when recommended by other policies, shall be restricted to sandy beach areas. Accessways for rocky beaches will not be required for areas where public safety is of concern or where increased visitor pressure on biological areas or areas of unique character, sensitive to visitor pressure, will be degraded.

10. The existing quality of the County's lateral access shall be maintained by seeking lateral access easements, inland of the mean high tide line to the first line of vegetation or to the crest of the paralleling bluff in areas of coastal bluffs, for the immediate shoreline.

* 11. "No permit shall be issued for a project which obstructs lateral access on the immediate shoreline, inland of the mean high tide line to the first line of vegetation, or the crest of the paralleling bluff. The exception would be for the placement of navigational aids or shoreline protective devices to protect existing structures, i.e. houses, roadways and parking areas.

* 12. "The county shall not allow any development between the mouth of the Smith River and Prince Island Court and from Marhoffer Creek north to the east line of Section 14 at Point St. George, that would preempt any prescriptive rights that may exist on a parcel.

"Upon a determination by the county that prescriptive rights may exist, the county shall pursue a legal determination of the existence of the access easements, consistent with the availability of staff and funds.

"Any new development shall, when feasible, be sited in such a way that it will not infringe on any existing prescriptive rights accessways; if it is not feasible."

13. Funding will be required to improve suitable access points for use by the physically limited.

14. Any required accessway shall not be opened to public use until a public agency, including the State, or a private association agrees to accept responsibility for maintenance and liability of the accessway.

15. Developments that provide access for the general public over a wide range of income levels, ages, and social groups shall have priority over other private development.

16. "As there are four existing access areas on the lower Smith River (below Dr. Fine Bridge) and the specific area recommendations of the land use plan designate three additional access areas, there will be no additional areas required to provide access to the river to reduce impacts on agriculture and to reduce additional fishing pressure on the lower Smith. The county shall show the three proposed accessways, on the lower Smith River, on the final access component map or on the County's final land use plan map."

17. "A number of offers to dedicate access easements, a result of past coastal commission permits, are outstanding. This potential access is considered to be an important part of the county's public access program. The county shall have the right of first refusal of these offers for a period of two years. After two years, these offers should be made available for acceptance by any public or private organization acceptable to the county after consultation with the coastal commission."

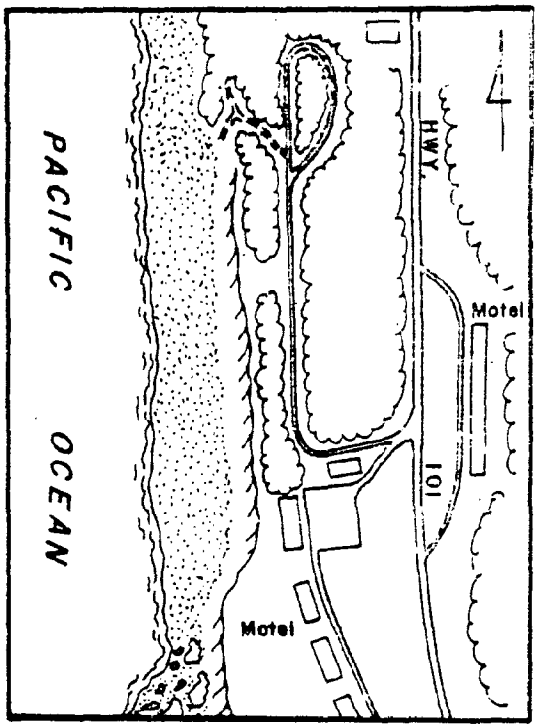
IV. SPECIFIC ACCESS DESCRIPTIONS, FINDINGS AND POLICIES: Fifty-three access points to coastal and estuarian areas have been identified by this study.[2] Several of these access points are under the juristiction of Redwood National Park or are owned and maintained by private commercial operators. No specific policy recommendations are made for these private concerns, nor for the Redwood National Park areas. The County, however, encourages the National Park to follow the general coastal access policies contained herein, and will be cooperative and supportive of their efforts towards comprehensive planning and management. The development projects of private commercial operators will be reviewed by the County for consistency with these policies.

The access points within Redwood National Park and those managed by private operators are listed at the end of the following discussion as an integral part of the shoreline access inventory. The remainder are described in detail with the identification of planning issues for each are and specific policy recommendations.

---

2 The discussion of these 50 access points is not meant to preclude the consideration of other areas as potential access. The city of Crescent City also provides numerous points for beach access not included in this total.

A. Pelican Beach State Park



LOCATION: Section 32, T19N, R1W; ½ mile south of the California/ Oregon border.

OWNERSHIP: Public (State)

PHYSICAL ENVIRONMENT: Sandy beach; coastal scrub; 15-20 foot bluff and terrace.

LAND USE: Rural residential; commercial (Motels & Restaurant).

RECREATIONAL USE: Walking; beach-combing; surf-fishing.

PLANNING ISSUES: Unsigned access; no improved parking or other facilities; lateral access not guaranteed beyond the Park boundaries. Redwood National Park is considering this park as a gateway information center.

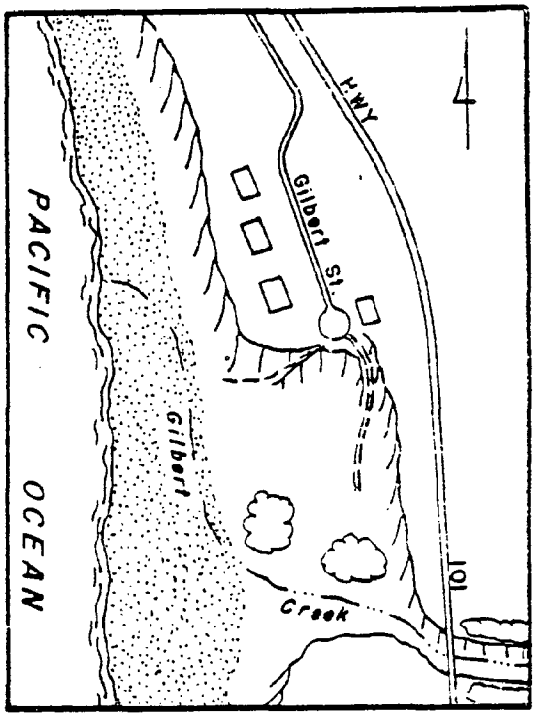
RECOMMENDATIONS:

1. The State or other public agency is encouraged to develop and maintain parking and day-use facilities.

2. Signs indicating shoreline access should be placed on Highway 101.

3. Lateral access from the shoreline to the first line of terrestrial vegetation or the bluff top should be dedicated a minimum of ½ mile north and south of the State Park.

B. Pelican Beach Palisades



LOCATION: Section 5, T18N, R1W; 1 mile south of California/ Oregon stateline at end of Gilbert Street.

OWNERSHIP: Private

PHYSICAL ENVIRONMENT: 50 foot coastal bluff and terrace, sandy beach, grass and coastal scrub.

LAND USE: Agriculture east of Highway 101; residential.

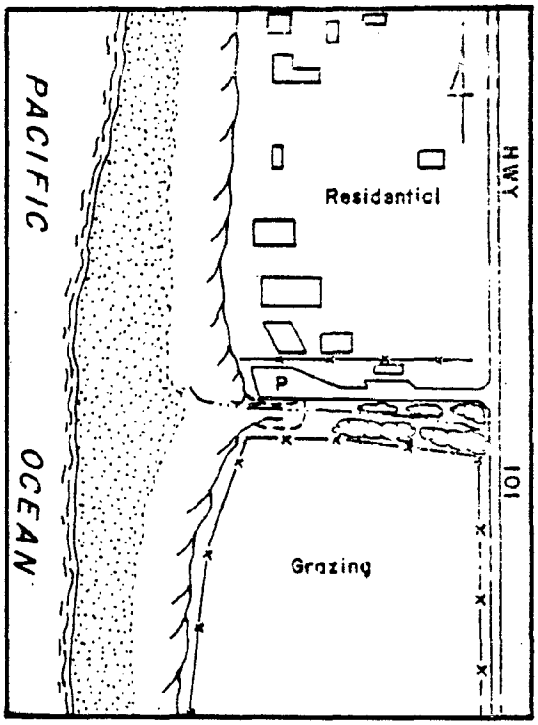
RECREATIONAL USE: Walking; beachcombing; surf-fishing.

PLANNING ISSUES: Existing access signed "No Trespassing" and reserved primarily for parcel owners. Limited parking on street. No access sign. Liability and maintenance if opened to public.

RECOMMENDATIONS:

1. In that adequate public access exists nearby (Kamph Park and Pelican Beach) this area should remain in its present status with reservations for acquisition and opening to public if and when the adjacent facilities appear inadequate and the liability potential is resolved.

C. Clifford Kamph Memorial Park



LOCATION: Section 5, T18N, R1W; 2 miles south of California/ Oregon stateline.

OWNERSHIP: Public (County)

PHYSICAL ENVIRONMENT: Sandy beach and 20 foot coastal bluff. Riparian vegetation along stream-side.

LAND USE: Rural residential; Agriculture and grazing; commercial (Motel, Craft Shop).

RECREATIONAL USE: Day-use facilities (restrooms, picnic tables); walking; beachcombing; surf-fishing.

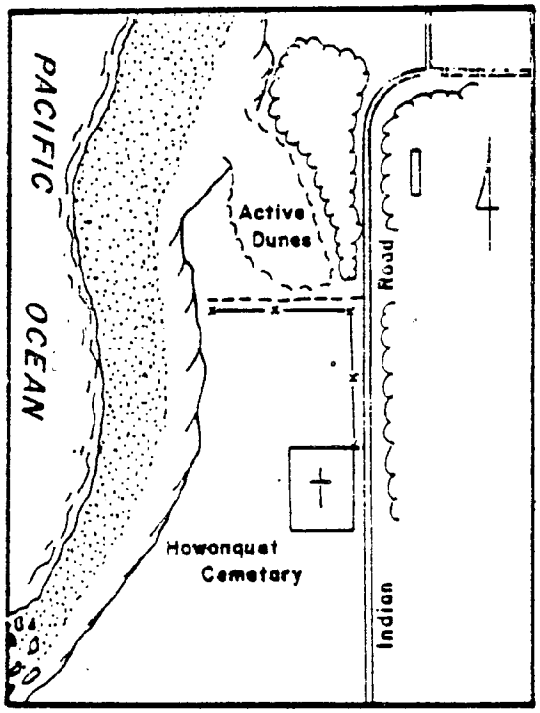
PLANNING ISSUES: Excessive vandalism to facilities; bluff erosion resulting from non-restricted access.

RECOMMENDATIONS:

1. Seek funds for the restoration of damaged facilities:

    a) Clifford Kamph Memorial Plaque
    b) Restroom facilities
    c) Construct fence to discourage improper access and halt bluff erosion.

D. Indian Road



LOCATION: Section 17, T18N, R1W; on Indian Road west of intersection with Highway 101.

OWNERSHIP: Private

PHYSICAL ENVIRONMENT: Sandy beach; 25 foot unconsolidated sandy bluff; coastal scrub; unstable sand dunes.

LAND USE: Rural residential; Indian cemetary.

RECREATIONAL USE: Walking; beachcombing; surf fishing.

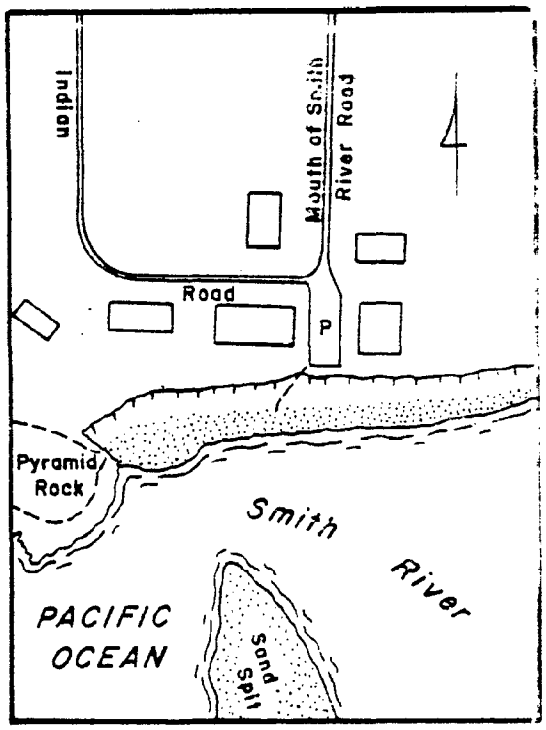
PLANNING ISSUES: Area involves trespass on private land and possible prescriptive rights; no parking area or signing; excessive bluff erosion and vegetation disturbance; may be area of archeological significance; active dune area.

RECOMMENDATIONS:

1. Access should not be developed in this area because of: the fragile nature of the sandy, unconsolidated bluff; parking problems; prescriptive rights issues; and the potential archeological significance of the area.

2. Seek funding by the coastal conservancy to restore vegetation to the bluff and stabilize the dune area.

E. Mouth of Smith River



LOCATION: Section 17, T18N, R1W; end of Smith River Road.

OWNERSHIP: Public (County)

PHYSICAL ENVIRONMENT: Sandy/ cobble shoreline; grass and coastal scrub; rock outcrops.

LAND USE: Rural residential.

RECREATIONAL USES: Fishing; walking; beachcombing.

PLANNING ISSUES: Excessive bluff erosion along trail access; access to Pyramid Rock and northerly beaches crosses private property and is resulting in significant damage to vegetation; area north of Pyramid Rock is an environmentally sensitive habitat area.

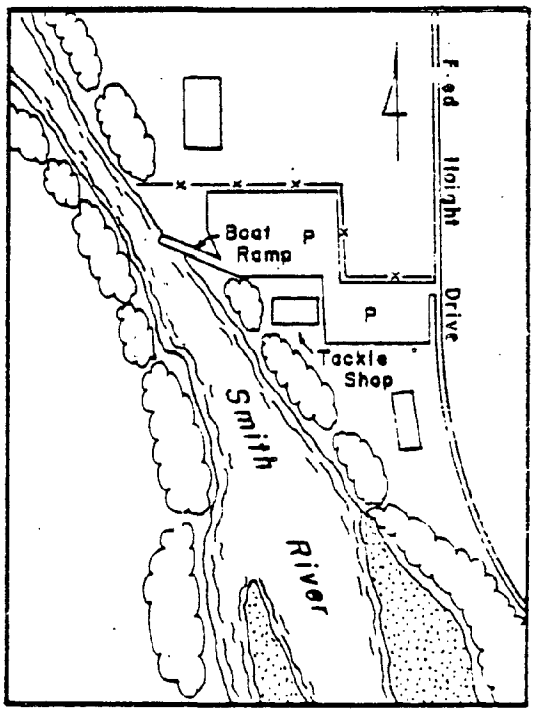
RECOMMENDATIONS:

1. Improve trail access from parking area to Smith River to halt erosion and insure public safety.

2. Discourage access to and beyond Pyramid Rock.

3. Seek funds for the restoration of vegetation on Pyramid Rock damaged by trampling.

F. Smith River Public Fishing Access



LOCATION: Section 2, T17N, R1W; 3/4 mile west of Highway 101 on Fred Haight Drive.

OWNERSHIP: Public (State)

PHYSICAL ENVIRONMENT: Sandy/gravel river banks; terrace; and riparian vegetation.

LAND USE: Agriculture; small number of residences.

RECREATIONAL USE: Fishing; boating

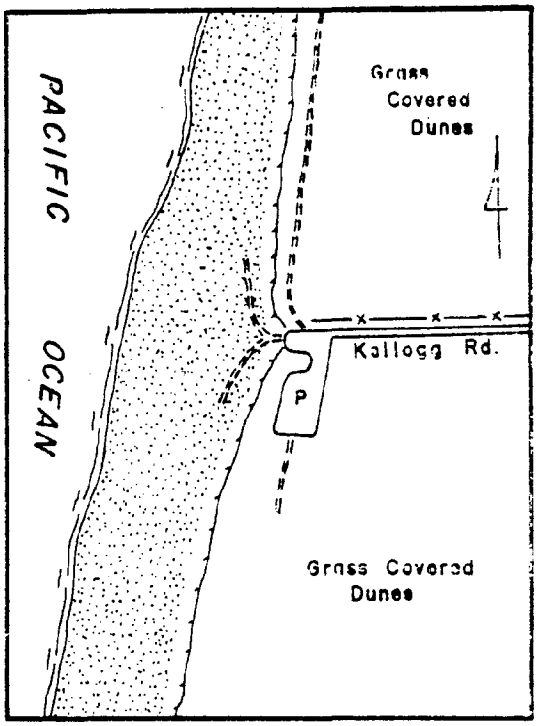
PLANNING ISSUES: Access not adequately signed on adjacent major highway; restroom facilities needed in this moderate-heavy use area.

RECOMMENDATIONS:

1. Seek funding for the construction and maintenance of restroom facilities.

2. Place signs indicating access on Highway 101.

G. Kellogg Road



LOCATION: Section 17, T17N, R1W; 5½ miles south of mouth of Smith River, west end Kellogg Road.

OWNERSHIP: Public (County)

PHYSICAL ENVIRONMENT: Sand/gravel beach; steep dune faces; dunes covered with grass.

LAND USE: Agriculture (Grazing)

RECREATIONAL USE: Walking beach-combing; off-road vehicle; surf fishing.

PLANNING ISSUES: No access signs. Disturbance of stable dunes by off-road vehicle use.

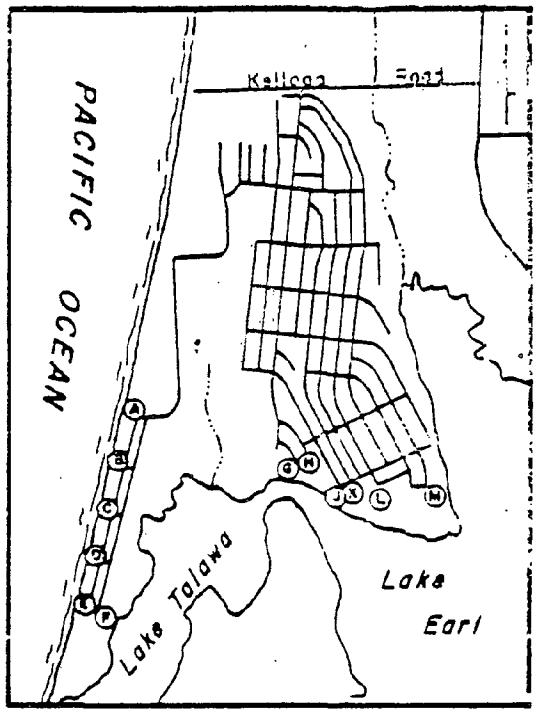
RECOMMENDATIONS:

1. Place signs indicating access on Lake Earl Drive and Lower Lake Drive.

2. Restriction of off-road vehicles to beach to protect dunes.

H. Pacific Shores Subdivision

(A) Stuckey Street
(B) De Mars Drive
(C) Surf Drive
(D) View Avenue
(E) Lake Avenue (west)
(F) Lake Avenue (east)
(G) Bruegger Street
(H) Wright Street
(J) Middleton Drive
(K) Middleton Drive (southeast)
(L) View Drive (southeast)
(M) Lake Avenue (southeast)



OWNERSHIP: Private

PHYSICAL ENVIRONMENT: Sandy beach; grass covered dunes; wetland.

LAND USE: Agriculture (grazing); Proposed residential development.

RECREATIONAL USE: Walking; beachcombing; fishing; hunting; ORV driving.

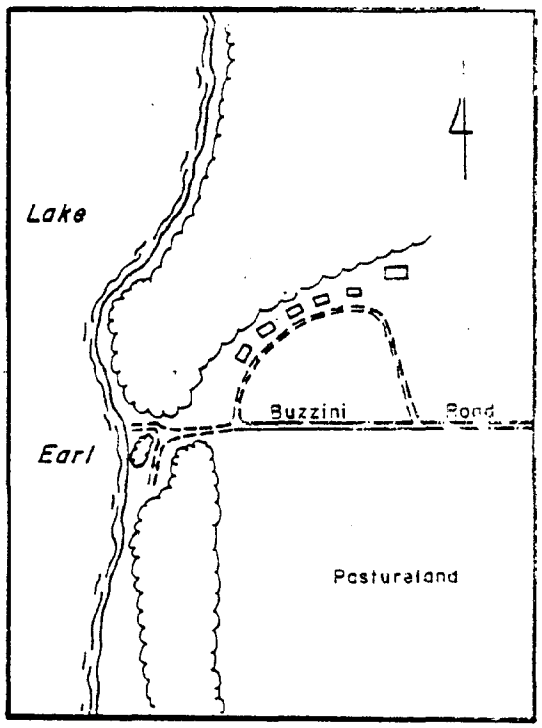
PLANNING ISSUES: Area involved numerous prescriptive access issues; off-road vehicle use creating disturbance in dune area.

RECOMMENDATIONS:

1. The State should investigate the prescriptive rights issue and, if feasible, acquire and maintain the access points for public use.

2. Off-road vehicles should be restricted to the ocean beach in order to protect the vegetated dunes.

J. Buzzini Road



LOCATION: Section 34, T17N, R1W; westerly end of Buzzini Road.

OWNERSHIP: Public (County)

PHYSICAL ENVIRONMENT: Wetland; riparian vegetation.

LAND USE: Agriculture (grazing); rural residential.

RECREATIONAL USE: Fishing; hunting; boating; birding.

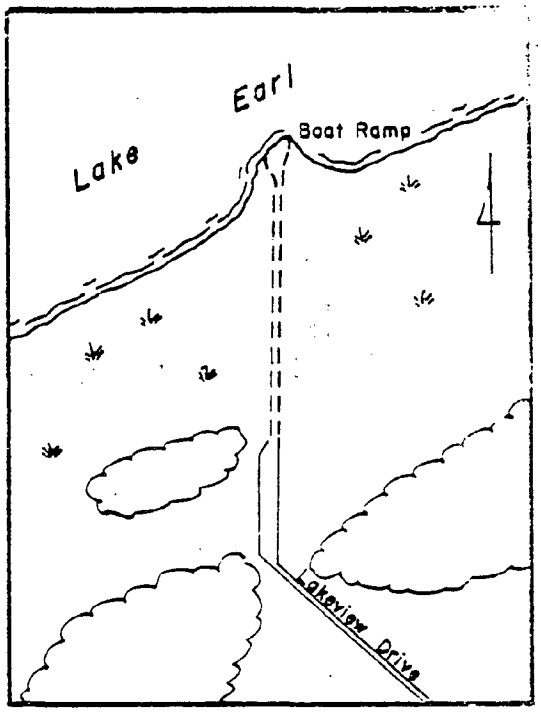
PLANNING ISSUES: Studies are currently considering this area for acquisition by California Department of Parks and Recreation. No lateral access; no signs indicating access; limited parking.

RECOMMENDATIONS:

1. Before undergoing any costly facility improvements in this area the County should await the outcome of the Lake Earl/Talawa acquisition problem.

2. If State acquisition is deemed not feasible, the County should seek funds and plan area improvements including: 1) day-use facilities; 2) expanded parking; 3) signs indicating access; and 4) dedicated lateral access.

K. Lakeview Drive



LOCATION: Section 4, T16N, R1W; westerly end of Lakeview Drive.

OWNERSHIP: Public (County)

PHYSICAL ENVIRONMENT: Wetlands; marsh and riparian vegetation.

LAND USE: Agriculture (grazing); rural residential.

RECREATIONAL USE: Fishing; hunting; boating; birding.

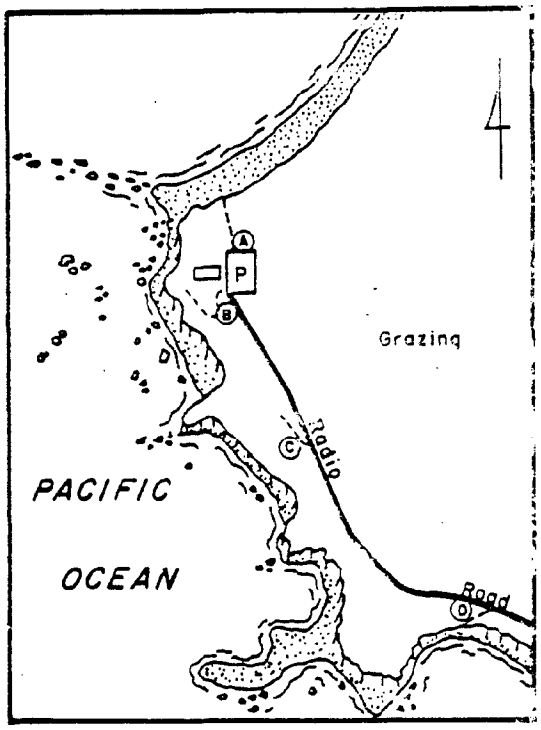
PLANNING ISSUES: Studies are currently considering this area for acquisitions by California Department of Parks and Recreation. No signs indicating access; no lateral access.

RECOMMENDATIONS:

1. Before undergoing any costly facility improvements in this area the County should await the outcome of the acquisition problem.

2. If State acquisition is deemed not feasible the County should seek funds and plan area improvements including; 1) day-use facilities; 2) signs indicating access and 3) dedicated lateral access.

L. Point St. George



LOCATION: Section 14, T16N, R1W; 1.2 mile north of Washington Blvd./ Pebble Beach Drive intersection.

OWNERSHIP: (A) Public
(B-D) Private

PHYSICAL ENVIRONMENT: Sand/gravel beach; offshore rocks; coastal dunes and grasses; marine terrace and 30 foot bluff.

LAND USE: Agriculture (grazing); medical clinic/residence.

RECREATIONAL USE: Walking; beachcombing; surf and rock fishing.

PLANNING ISSUES: Purchase of development rights is being considered for 760 acres in this area by U.S. Fish and Wildlife Service. Point A is a State owned, County maintained public access. Other access points along Radio Road cross private land.

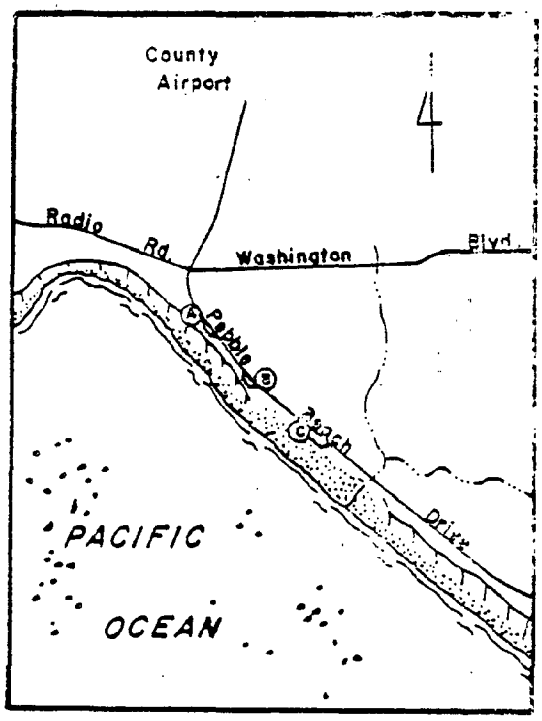
RECOMMENDATIONS:

1. Before costly improvements the County should await the outcome of acquisition in this area.

2. Due to the fragile nature of rocky habitats and bluff faces in this area access should be directed north towards the sandy beaches.

3. The State should investigate the prescriptive rights issue for access points off Radio Road and, if feasible, acquire and maintain these for public use.

M. North Beach



LOCATION: Section 24, T16N, R1W; northerly end of Pebble Beach Drive.

OWNERSHIP: Private

PHYSICAL ENVIRONMENT: Offshore rocks; sandy beach; marine terrace and 10-20 foot bluff; coastal dunes.

LAND USE: Agriculture (grazing)

RECREATIONAL USE: Walking, jogging; oceanviewing; surf-fishing; off-road vehicle driving.

PLANNING ISSUES: Private land (access not guaranteed).

(A) No trail access; bluff failure occurring;

(B) Disturbance to bluff face at trail access;

(C) Unimproved parking; off-road vehicle disturbance to vegetated dunes.

RECOMMENDATIONS:

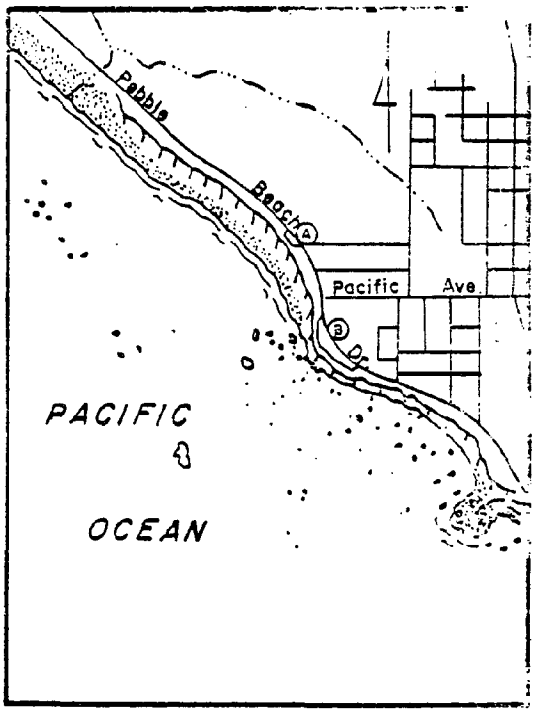
1. The dedication of vertical and lateral access easements to guarantee public access should be investigated by the State. Upon acquisition of easements in this area, the State shall provide funding assistance for continued maintenance and liability.

2. At Point A, no access should be developed due to the high, unstable bluff.

3. At Point B, improvements should be made to insure safe access around the southerly end of the bluff-face and repair damage created by present access trails. Sign indicating access.

4. At Point C, off-road vehicle use should be prohibited from encroaching upon the small dunes nearby. Sign indicating access.

N. Pebble Beach



LOCATION: Section 30, T16N, R1W; Pebble Beach Drive in vicinity of Pacific Avenue.

OWNERSHIP: Public (County)

PHYSICAL ENVIRONMENT: Offshore rocks; sandy/rocky beaches; 40 foot bluff and coastal scrub.

LAND USE: Residential

RECREATION USE: Walking; jogging; surfing; rock and surf fishing.

PLANNING ISSUES:

(A) Bluff failure accelerated along existing trail. No access sign.

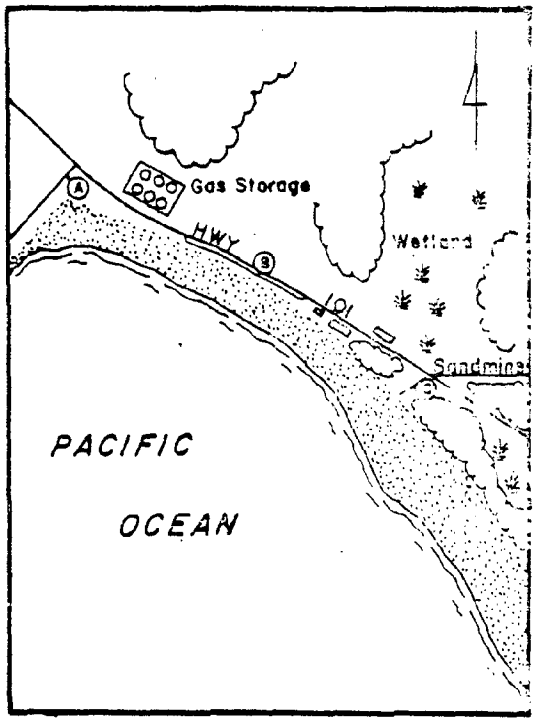
(B) Excessive damage by trampling to promontory; vandalism of existing facilities.

RECOMMENDATIONS:

1. Funds should be sought to repair stairway and halt bluff erosion. Placement of sign indicating access.

2. Funds should be sought to repair vandalized facilities and revegetate damaged promontories and sea stacks.

P. Southbeach Access



LOCATION: Section 34, T16N, R1W; 2 miles south of Crescent City.

OWNERSHIP: Private, public (Cal-Trans, Harbor District).

PHYSICAL ENVIRONMENT: Sandy beach; wetland.

LAND USE: Commercial-Recreational; industrial; agriculture (grazing).

RECREATIONAL USE: Walking; beach-combing; surfing; surf-fishing; off-road vehicle driving.

PLANNING ISSUES: Private lands (access not guaranteed); area of heavy recreational use; effect of compaction on invertebrates from off-road vehicle use; off-road vehicle use of beach essential to commercial surf-fishing and salvage operations.

RECOMMENDATIONS:

1. Appropriation of funds for maintenance and liability shall be provided by the State for areas recently acquired.

2. The County, State and Redwood National Park should cooperate in a comprehensive plan to enhance the recreation and visual qualities of this area.

3. Recreational off-road vehicle driving should be prohibited on this beach as it is biologically one of the most productive areas for invertebrates on the Northcoast. (Refer to [illegible])

4. Provisions should be developed to permit off-road vehicles on the beach for the purpose of commercial surf-fishing, claming, and salvage operations (including fire-wood salvage).

The following points are listed to complete the inventory of shoreline access for Del Norte County: (No specific policy recommendations are made):

A. Redwood National Park Access points:

1. Crescent Beach
2. Crescent Overlook
3. Damnation Creek
4. Wilson Creek Rest Area
5. False Klamath Cover Overlook
6. Lagoon Creek
7. Requa Overlook
8. Caruther's Cove

B. Private Recreational facilities and access points:

1. Ship-A-Shore Resort
2. Sarina Road
3. Dad's Camp
4. Chub's Camp
5. Sportsman RV Park
6. Klamath Kamper Korral
7. King Salmon Resort
8. Kamp Klamath
9. Chinook Trailer Resort
10. Golden Beach Trailer Park
11. Panther Creek Resort
12. Requa Resort

Summaries concerning ownership, beach-type, improvements and recreational uses for these points may be found in Appendix I.

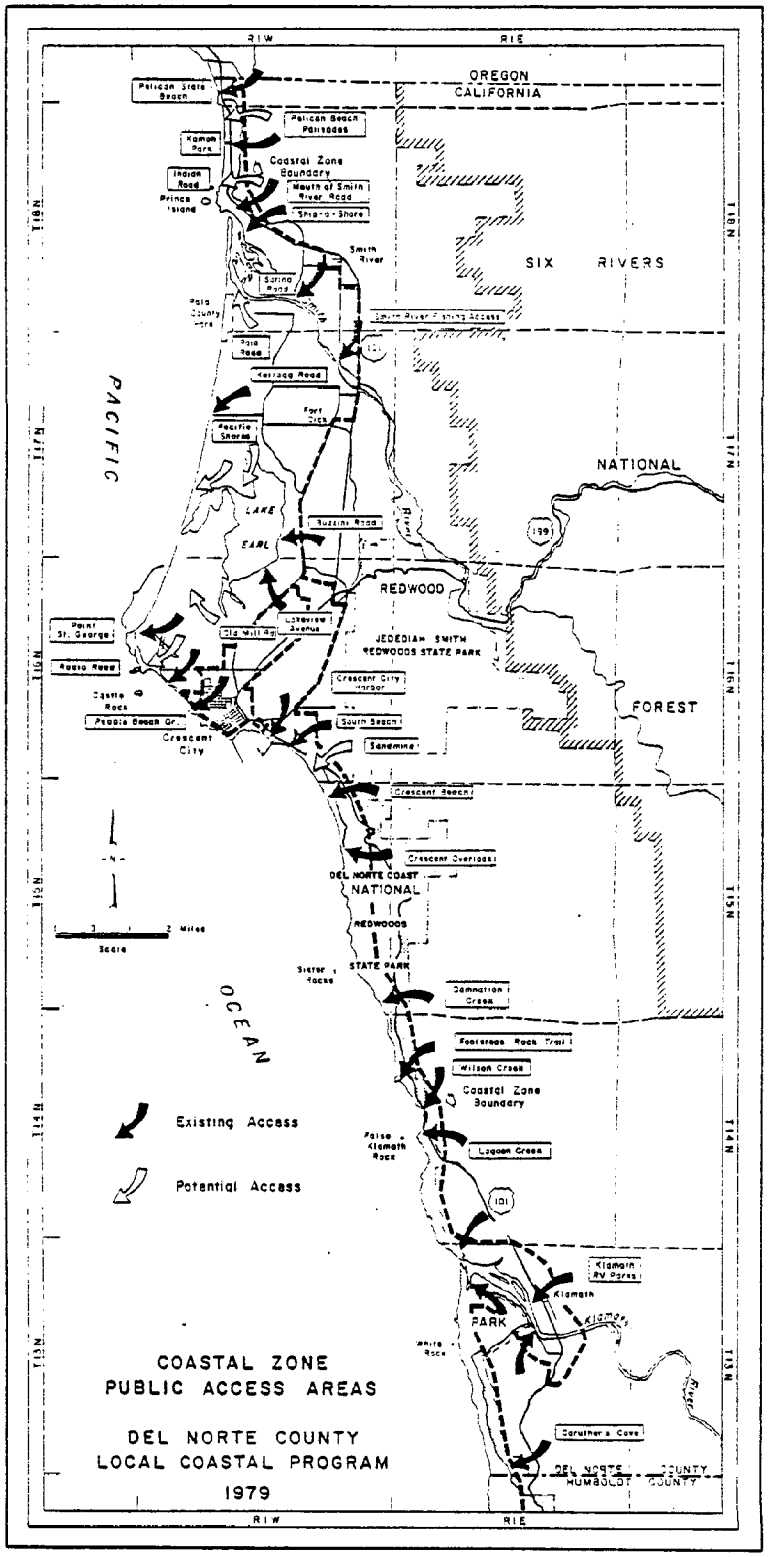


FIGURE 1: PUBLIC ACCESS AREAS

APPENDIX

APPENDIX I: SHORELINE ACCESS SUMMARY

ACCESS POINT	OWNERSHIP	BEACH TYPE	PARKING	IMPROVEMENTS	RECREATIONAL USES	LEVELS OF USE
Pelican Beach State Park	State	Sandy	10	Paved road	Walking; beachcombing; fishing; surfing; etc.	Light
Pelican Beach Palisades	Private	Sandy	4-5	Trail	Walking; beachcombing; fishing; etc.	Light
Clifford Kamph Memorial Park	County	Sandy	15	Day-use facilities	Walking; beachcombing; fishing; picnicking	Moderate - Heavy
Indian Road	Private	Sandy/ Rocky	1	None	Walking; beachcombing; fishing; etc.	Light
Mouth of Smith River Road	County	Rocky	16	Parking area	Fishing; walking; beachcombing; etc.	Moderate
Ship-a-Shore	Private	Rocky	50	RV campground; boat ramp	Fishing; camping; boating	Moderate
Smith River Fishing Access	County	Rocky	50	Boat ramp	Fishing; boating	Moderate - Heavy
Sarina Road	Private	Rocky	20	RV campground	Fishing; camping	Light
Kellogg Road	County	Sandy	15	None	Walking; beachcombing; fishing; ORVing; etc.	Moderate
Pacific Shores (12 access pts)	Private	Sandy	3-5/ access	None	Walking; beachcombing; fishing; hunting; ORV	Light
Buzzini Road	County	Rocky	5	None	Fishing; hunting	Moderate

APPENDIX I: SHORELINE ACCESS SUMMARY

ACCESS POINT	OWNERSHIP	BEACH TYPE	PARKING	IMPROVEMENTS	RECREATIONAL USES	LEVELS OF USE
Lakeview Avenue	County	Rocky	20	Boat ramp	Fishing; hunting	Moderate
Point St. George	State	Sandy/ Rocky	100	Trail	Walking; beachcombing; fishing; etc.	Moderate
Radio Road (3 access pts)	Private	Sandy/ Rocky	2-5	None	Walking; beachcombing; fishing; etc.	Light
North Beach (3 access pts)	Private	Sandy	7-15	Paved parking	Walking; beachcombing; fishing; etc.	Moderate
Pebble Beach (2 access pts)	County	Sandy/ Rocky	30	Stairway; picnic tables	Walking; beachcombing; fishing; surfing; etc.	Moderate -- Heavy
South Beach (3 access pts)	Private	Sandy	50	None	Walking; beachcombing; fishing; surfing; ORV	Moderate -- Heavy
Crescent Beach	RNP	Sandy	20	Day-use facilities	Walking; beachcombing; fishing; etc.	Moderate -- Heavy
Crescent Overlook	RNP	Sandy/ Rocky	17	Picnic tables; trail	Hiking; oceanviewing; picnicking	Moderate
Damnation Creek	State	Rocky	6	Trail	Hiking	Light
Wilson Creek	State	Sandy/ Rocky	8	Picnic tables	Walking; beachcombing; fishing; picnicking	Moderate
False Klamath Cove Overlook	State	Sandy	8	Paved parking	Walking; beachcombing; fishing; oceanviewing	Moderate

APPENDIX I: SHORELINE ACCESS SUMMARY

ACCESS POINT	OWNERSHIP	BEACH TYPE	PARKING	IMPROVEMENTS	RECREATIONAL USES	LEVELS OF USE
Lagoon Creek Fishing Access	RNP	Sandy/ Rocky	37	Day-use facilities; trail	Picnicking; fishing; hiking	Moderate -- Heavy
Requa Overlook	RNP	Rocky	15	Day-use facilities; trail	Hiking; oceanviewing	Moderate
Caruther's Cove	RNP	Sandy/ Rocky	3	Trail	Hiking	Light
Klamath Area (10 access pts)	Private	Sandy/ Rocky	10-25	RV Campgrounds Boat Ramps	Fishing; camping; boating	Moderate -- Heavy

BIBLIOGRAPHY

California, State of, Coastal Zone Conservation Commission, (December 1975), California Coastal Plan, San Francisco.

California, State of, Dept. of Parks & Recreation, (August 1971), California Coastline Preservation and Recreation Plan, Sacramento.

Del Norte, County of, Planning Dept., (November 1976), Del Norte County General Plan, Crescent City, Calif.

Del Norte, County of, Planning Dept., (December 1977), LCP Issue Identification, Crescent City, Calif.

Ironside and Associates, (September 1978), Draft Coastal Land Use Plan: City of Pacifica, Oakland.

Santa Barbara, County of, (November 1978), Santa Barbara County Coastal Plan: Pre-hearing Draft, Santa Barbara, Calif.

U.S. Dept. of Commerce, NOAA, Office of Coastal Zone Management, (January 1976), Coastal Recreation: A Handbook for Planners and Managers, Washington D.C.

U.S. Dept. of Commerce, NOAA, Office of Coastal Zone Management, (August 1977), State of California Coastal Management Program and Final Environmental Impact Statement, Washington D.C.

Del Norte County
Local Coastal Program

MARINE & WATER RESOURCES COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

LCP -- MARINE & WATER RESOURCES COMPONENT

Table of Contents

I. INTRODUCTION 1

A. Marine Resources 1

B. Water Resources 1

C. Sensitive Coastal Habitats 1

D. Purpose 1

E. Definitions 1

II. MARINE RESOURCES 2

A. Marine Fisheries 2

B. Intertidal Areas 2

C. Offshore Rocks & Islands 2

III. WATER RESOURCES 4

A. Surface Waters 4

B. Subsurface Waters 5

C. Water Quality 5

IV. SENSITIVE COASTAL HABITATS 7

A. Planning Issues 7

B. Designation Criteria 8

C. Sensitive Habitat Types 8

D. Sensitive Habitats and Land Uses 9

V. EXTRACTIVE RESOURCES 13

A. Types and Sources 13

B. Findings 13

VI. GENERAL POLICIES 15

A. Coastal Act Policies 15

B. Present Local Policies 15

C. LCP Policies 18

VII. SPECIFIC AREA POLICIES AND RECOMMENDATIONS 21

A. Offshore Rocks & Island 21

B. Intertidal Zone 22

C. Estuaries 23

D. Wetlands 25

E. Riparian Vegetation 27

F. Sea Cliffs 28

G. Coastal Sand Dunes 29

APPENDIXES:

Glossary of Terms 31

Map of Sensitive Habitats 33

BIBLIOGRAPHY 34

LCP--MARINE AND WATER RESOURCES

I. INTRODUCTION*

The marine environment and the coastal waters linking land and ocean are essential to society. We utilize these highly productive water and marine resources in a variety of commercial, food and recreation industries. A significant goal of the Coastal Act of 1976 is to maintain and enhance the quality and productivity of California's coastal waters and marine resources.

A. Marine Resources: The ocean waters off the coast of Del Norte County is abundantly rich in plant and animal resources. Within these living resources is a wealth of economic, scientific and recreation opportunities. Prudent management of our marine resources will insure the conveyance of their diverse and indispensible benefits to future generations.

B. Water Resources: Though ecologically linked to the marine environment, inland coastal water resources (e.g., estuaries, wetlands, streams, etc.) will be examined separately. Del Norte County is noted for its abundant annual precipitation and ample water resources. The quality of the coastal environment is dependent upon the maintenance of this vital resource.

C. Sensitive Coastal Habitats: Because of the unique environmental conditions found in the coastal regime, there exists numerous communities of specialized life having evolved and adapted within relatively narrow environmental tolerance limits. Such sensitive habitat areas require particular attention in the planning process to insure their viability and continuance as important segments of the coastal environment.

D. Purpose: This component of the LCP will address coastal water and marine resources in Del Norte County. Of particular concern will be the designation of biologically sensitive habitats and the determination of appropriate land uses within and adjacent to these areas.

E. Definitions: Definitions describing commonly used terms of marine and water resources may be found in the Appendix.

*NOTE: This component of the LCP is subject to review and cross-referencing to other policy components.

II. MARINE RESOURCES

Any portion of the oceanic environment of monetary, aesthetic or other value (e.g., fisheries; offshore rocks; intertidal areas; wildlife) may be identified as a marine resource. The marine resources off the coast of Del Norte County are diverse and valuable. This section will summarize the importance of some of these marine resources and the planning issues involved in their maintenance. (Additional statistical or species listing can be located in the Harbor Port Land Use Plan, City of Crescent City Land Use Plan, and various reports of the Department of Fish and Game.)

A. Marine Fisheries: The upwelling created by currents off the California coast bring nutrient rich waters to the surface supporting vast quantities of plankton and thus attracting heavy concentrations of fish. These special marine conditions result in an excellent fishery resource for Del Norte County. Commercial and sport fisheries are important to the economy of Del Norte County. California Department of Fish and Game figures from 1975 estimate the annual commercial fish landing in Crescent City at 16,000,000 pounds of fish, crab and shrimp. The value of this catch averages over $2,000,000 (1975 dollars) annually.[1] Sport fisheries form a major portion of tourist attraction to the county contributing significantly to the area's economy. Furthermore, related enterprises such as marine supply and repair industries gain from the added economic stimulus of the sport fishery.

B. Intertidal Areas: The shoreline region lying between high and low tide is termed the intertidal zone. The area contains a variety of ecologically significant marine organisms. Tidal flat regions of mud and sand are often highly productive, containing numerous invertebrate animals. These organisms are recognized as significant links in the marine fishery food chain. Rocky portions of the shoreline within the intertidal zone are also productive components of the marine environment and by their nature are acutely sensitive to disruptions. Tidepools, in particular. provide important habitat for a rich assortment of small marine animals.

C. Offshore Rocks and Islands: The geology of the coastline and the erosive action of ocean waves have led to the development of numerous sea stacks, islands, and rocks immediately off the Del Norte County Coast. These remnant land surfaces function as vitally important rookeries and roosting sites for both

---

1. Winzler and Kelly, et. al., (December 1975), Project Independence Economic Development Action Plan and Strategy, For Del Norte County, pp. 70-71.

resident and migratory birds. The significance of Del Norte County's offshore rocks is reflected by the fact that 46% of all nesting sites on coastal rocks in California occur on Hunter Rock, Prince Island, Castle Rock, and False Klamath Rock.[2] Numerous offshore rocks are used as resting or haul-out sites by migratory marine mammals such as the California and Steller sea lion.

---

2. California, State of, Department of Fish and Game, (1973), Coastal County Fish and Wildlife Resources and Their Utilization.

III. WATER RESOURCES

Owing primarily to its heavy annual precipitation of 80-120 inches, Del Norte County has an abundance of surface and subsurface water resources. In general, the ground and surface waters in the County's coastal zone are in sufficient quantity to satisfy present and projected water demands.[3] Water quality; the suitability of water for specified uses, is of primary concern in maintaining the excellent characteristics of the coastal resources in Del Norte County. This section will describe the water resources of the County's coastal zone and investigate problems associated with their maintenance.

A. Surface Waters: The annual surface water runoff for Del Norte County amounts to almost 16 million acre-feet. Less than 1% of the mean annual surface water runoff is utilized.[4] The major surface waters in the coastal zone are: 1) the Smith River; 2) the Klamath River; and 3) Lakes Earl and Talawa.

The Smith River watershed, an area of 720 square miles, lies almost entirely within Del Norte County. The river has a mean annual runoff of 2,720,000 acre-feet. The major public use of this water supply is the Crescent City Water System which annually diverts over 37 million cubic feet from a Ranney Collector situated on the Smith River. As of 1976, the water system served over 1700 connections; 52% within the city limits and the remainder allocated to county users.

The Klamath River, draining some 15,500 square miles in Northern California and Southern Oregon has a mean annual discharge of approximately 12,000,000 acres-feet. The Klamath Community Services District operates a well adjacent to the river providing water for the new Klamath Townsite. The system is designed for approximately 200 connections.

Lakes Earl and Talawa were at some point in geologic history part of the Smith River drainage. Aeolian sand accumulation and perhaps other geo-physical changes shifted the river mouth several miles north isolating the lakes. Occasionally flood waters from the Smith River flow into Lake Earl via the Talawa slough. The Lake Earl drainage basin covers approximately 32 square miles. Jordan Creek, entering from the east is the only major tributary. The waters of Lakes Earl and Talawa are not drafted directly for domestic or other uses.

---

3. Winzler and Kelly, (Oct. 1972), Del Norte County Water Supply and Wastewater Disposal Comprehensive Plan, 1972-1992.

4. Ibid

B. Subsurface Waters: Groundwater in Del Norte County occurs primarily within the Smith River plain and lower Klamath River areas. The U.S. Geological Survey has estimated the subsurface storage capacity of the Smith River plain at 99,000 acres-feet between the depths of 10 to 35 feet. Abundant rainfull togehter with the high permeability of surface formations normally assures the annual recharge of these groundwater basins.

Approximately 40 percent of the consumptive use of water in Del Norte County is met by pumping groundwater. Most groundwater development consists of individual wells for domestic or small irrigation purposes.

Though the County in general enjoys an abundant subsurface groundwater basin there does exist areas of varying annual subsurface supply. Within the coastal zone areas which have experienced water deficiencies in low rainfall periods are north of the mouth of the Smith River and Morehead Road, just west of Fort Dick.

C. Water Quality: The characteristics of water, principally the impurities which affect its suitability for use, is the subject of water quality. There exists no single measure of water quality, however, in that the adequacy of water varies with its intended uses. For example, water suited for irrigation may be unfit for human consumption.

1. Local Conditions: Within the major groundwater basins of coastal Del Norte County the general quality of undisturbed native groundwater is considered excellent. This excellent quality results primarily from the combination of abundant annual precipitation and favorable hydrologic conditions providing a flushing action within the area's aquifers.

The surface waters in the County are also of excellent quality. During periods of increased flow, however, high turbidity occassionally results in a minor decrease in quality of some water systems with the appearance of finely suspended materials.

2. Water Quality Impairment: Water quality is reduced by permitting wastes or degraded water to enter a source area. Impairment of water quality may result from any of the following: sewage discharge; industrial wastes; agricultural wastes; and seawater intrusion.

a. Sewage Discharge: A large portion of the households in Del Norte County depend on individual water and sewage systems. The close proximity of sewage disposal sites and shallow wells in some areas pose a potential danger of localized groundwater contamination. The current problem areas in the County occur

where small residential lots (usually less than 20,000 sq. ft.) have a combination of individual sewage systems, shallow wells and poorly drained soils. (For additional information refer to the public works component).

b. Industrial Wastes: The major wasteproducing industries operating in or near the Del Norte County Coastal Zone are: lumber; commercial fishing; and mining. All industrial waste discharges in the County are monitored by the Northcoast Regional Water Quality Control Board to prevent significant levels of water pollution.

c. Agricultural Wastes: Agricultural and silvicultural industries occassionally utilize various amounts of pesticide, herbicide or fertilizer compounds. Impairment of water quality, especially through cumulative effects, may result as surface runoff and irrigation return waters carry dissolved residuals from application areas to producing aquifers. To date, however, no serious problem has been determined in the County.

d. Seawater Intrusion: Overdrafting in coastal wells can create a reversal of the natural seward movement of freshwater with a resultant saltwater impairment of water quality. A few incidences of seawater intrusion in the Klamath area were experienced during the 1976-1977 drought, but this is normally not a problem in Del Norte County.

IV. SENSITIVE COASTAL HABITATS

The marine and coastal water resources of Del Norte County are numerous, diverse and valuable. Included among these are: ocean waters; streams, estuaries; lakes, and wetlands. Some or portions of these resource areas are particularly sensitive to direct or indirect disturbances by human activity. Proper management of these sensitive resources is basic to the economic and social welfare of present and future generations.

A. Planning Issues: In designating fragile marine and coastal water habitats for protective measures, several issues arise concerning what constitutes a biologically sensitive habitat. These considerations are evaluated here:

1. Productivity: Maintenance of the overall productivity of coastal waters is essential to fishing and its allied industries. Communities possessing highly productive attributes, (e.g., feeding or nursery grounds) require particular attention.

2. Rare and Endangered Species: Accelerated development and utilization of land resources in this century has led to a diminishment of available habitat for many species of plants and animals on a statewide basis. Species incapable of adapting to new environments and circumstances decline in number or many even become extinct. Concern over this continuing threat to nature's biological diversity has led to a number of State, National and International laws designed to protect rare and endangered species. The legal protection of a species has little impact, however, if the species has no place to live and reproduce. The Coastal Act, therefore, recognizes the needs of rare and endangered species and the protection of habitats necessary to their survival.

The following is a list of current rare and endangered species of coastal Del Norte County:

Aluetian Canada Goose (*Branta Canadensis Leucopareia*)
American Perigrine Falcon (*Falco Peregrinus*)
Southern Bald Eagle (*Haliaeetus Leucocephalus*)
California Brown Pelican (*Pelecanus Occidentaus*)

(The above list will require updating annually to reflect any addition or deletions).

3. Fragile Communities: Certain biological communities in the Coastal Zone, such as tidepools, are very sensitive to human activities. Even recreational pursuits can have significant

adverse impacts on these communities. Protective management policies are required to insure the survival of these fragile habitats.

4. Science and Education: The special character of some coastal communities may be of outstanding value for scientific research and educational uses. Areas of this nature require protection to guarantee their viability for future inquiry and study. For example, the value of a plant or animal species for medical purposes may not be presently known or understood. Such potential knowledge is lost if a habitat is destroyed and potentially vital species are no longer available.

B. Designation Criteria: The following criteria are proposed for designating biologically sensitive habitats in the marine and coastal water environments and related terrestrial habitats of Del Norte County:

1. Biologically productive areas important to the maintenance of sport and commercial fisheries.

2. Habitat areas vital to the maintenance and enhancement of rare and/or endangered species.

3. Fragile communities requiring protective management to insure their biological productivity, species diversity and/or continued maintenance.

4. Areas of outstanding scientific or educational value that require protection to insure their viability for future inquiry and study.

Coastal habitat areas meeting one or more of these criteria may be considered biologically sensitive and therefore given particular attention in the planning process.

C. Sensitive Habitat Types: Several biologically sensitive habitat types, designated through the application of the above criteria, are found in the Coastal Zone of Del Norte County. These include: offshore rocks; intertidal areas; estuaries; wetlands; riparian vegetation systems; sea cliffs; and coastal sand dunes. A brief description of these sensitive habitat types is given below:

1. Offshore Rocks: Offshore rocks and islands serve as important rookery and roosting areas for many species of both resident and migratory birds. Offshore rocks are also utilized as haul-out sites by marine mammals.

2. Intertidal Zone: The shoreline area lying generally between high and low tide is the intertidal zone. Within this region the diurnal cycle of tidal exposure produces a zone of unique marine life rich in both diversity and production.

3. Estuaries: Estuaries are semi-enclosed bodies of coastal waters with a free connection to the open sea. River mouth and coastal lagoons are examples. Estuaries are among the most productive biological areas and are extemely valuable to coastal fisheries. The qualities that make estuaries biologically rich (i.e., confinement, shallow depth, fresh water inflow), also increase their vulnerability to environmental disturbance.

4. Wetlands: Also termed marshes, swamps and bogs, wetlands in the coastal zone vary from brackish to freshwater and range from seasonally flooded swales to year-round shallow lakes. Like estuaries, wetlands tends to be highly productive regions and are important habitats and feeding grounds for numerous wildlife species.

5. Riparian Vegetation Systems: The habitat type located along stream and river banks usually characterized by dense growths of trees and shrubs is termed riparian. Riparian systems are necessary to both the aquatic life and the quality of water courses and are important to a host of wildlife and birds.

6. Sea Cliffs: High, steeps bluffs fronting the ocean are valuable and sensitive assets within the coastal zone. Bluff face vegetation is often sparse and usually quite sensitive to disruptions such as trampling. Many wildlife species benefit from bluff habitats for nesting or feeding. Bluffs are generally composed of easily erodable, unconsolidated materials making them potentially hazardous for coastal access and as building sites.

7. Coastal Sand Dunes: Sand dunes cover a large portion of the coastal zone between Point St. George and the Smith River. These dunes are generally stabilized by plant cover and provide important habitat for numerous small mammals and birds. The fragile nature of the vegetative cover, however, makes the coastal dune area particularly sensitive to disturbance. Because of its high infiltration rate, the dunes are also recognized for their importance as a groundwater recharge region for the coastal plain.

Table 1 identifies the principal locations of these seven sensitive habitat types in Del Norte County. Detailed definitions and descriptions of each sensitive habitat type will be discussed later.

D. Sensitive Habitats and Land Use: The designation of an area as a biologically sensitive habitat does not necessarily preclude its utilization. Planning issues concerning appropriate land

SENSITIVE HABITAT TYPE	PRINCIPAL LOCATIONS*
Offshore Rocks & Islands	1. Immediately north of the Smith R. 2. Point St. George to Crescent City 3. Redwood National Park coastline
Intertidal Zone	1. Tidepools throughout the rocky coastline 2. Tidal flats in delta areas of Smith & Klamath Rivers, Lake Talawa and South Beach
Estuaries	1. Mouth of Smith & Klamath Rivers 2. Lake Talawa and Lake Earl
Wetlands	1. Ponds and sloughs in Lake Earl and coastal dune region 2. Elk Creek Marsh 3. Marhoffer Creek 4. Sandmine Road
Riparian Vegetation Systems	1. Numerous coastal streams & creeks 2. Ponds and sloughs in the Lake Earl and coastal dune region
Sea Cliffs & Bluffs	1. North of the Smith River 2. Point St. George to Crescent City 3. Redwood National Park coastline
Coastal Sand Dunes	1. Point St. George to the Smith R. 2. Lopez Creek area 3. Dead Lake area

TABLE 1. SENSITIVE HABITAT TYPES AND THEIR PRINCIPAL LOCATIONS

NOTE: The general locations of these sensitive habitats are shown by the map on P. 33 of this document. Detailed maps are available for inspection at the County Planning Office.

uses within and adjacent to sensitive coastal habitats and criteria for designating compatible land uses will be developed in this section.

1. Planning Issues: Sensitive habitats are vulnerable to disturbance from human activities. Recreation, agriculture and development can threaten the integrity of sensitive habitats unless adequate protective measures are instituted. These issues are summarized as follows:

a. Recreational Uses: Potential impacts from recreational uses include trampling vegetation, disturbing wildlife and littering. The severity of these problems is closely related to recreational carrying capacity as discussed under the recreation component. The need to establish permissable levels of recreational use for sensitive habitats is especially acute. Until such guidelines are available, recreation activities in sensitive habitat areas should be limited. Recreational land uses adjacent to sensitive habitats are generally compatible, however, and should be encouraged where found appropriate.

b. Agricultural Uses: In general, agricultural activities are consistent with and often complementary to wildlife habitat. Grazing lands, for example, are utilized by water-fowl as auxiliary feeding areas. Certain agricultural practices, however, have the potential for adversely impacting sensitive habitats. As an example, intensive agricultural activities on small parcels adjacent to riparian corridors can require the removal of vegetative cover and may alter or severly damage the habitat. The establishment of buffer zones may be necessary to seperate such incompatible agricultural uses from sensitive habitats.

c. Development: Urban or industrial development near or adjacent to sensitive habitats can have a significant potential for disrupting the continued existence of threatened species. Removal of habitat lands through clearing, grading and paving, or disturbances through noise and pollution are impacts associated with development. The potential for harm through development can be minimized by locating development sufficiently away from sensitive habitats, or requiring provisions for habitat maintenance.

d. Incompatable Uses: Certain activities in or near sensitive habitats may be entirely non-conforming with the required protection and maintenance of the area's natural resources. Uses which significantly alter the productivity, water quality, or general hydrologic conditions (i.e., groundwater levels or surface drainage) of a designated habitat should be carefully examined and appropriately mitigated where necessary. Further consideration must be afforded to the maintenance of flora and fauna inhabiting or utilizing a sensitive habitat.

e. Priorities: In order to maintain the overall productivity and quality of biologically sensitive habitats, priority should be given to uses that are complementary to wildlife, such as grazing land that serves as auxiliary feeding habitat or density requirements which provide some measure of habitat maintenance. Uses which compliment the visual quality of the area surrounding sensitive habitats should also be given prime consideration.

f. Buffer Zones: Natural vegetation buffer strips may be incorporated to protect habitat areas from the possible impacts of adjacent land uses. These protective zones should be sufficient along water courses and around sensitive habitat areas to adequately minimize the potential impacts of adjacent land uses.

2. Land Use Criteria: Standards for designating land uses in and adjacent to sensitive habitats and criteria for acceptable levels of use of these areas are proposed below:*

a. Land uses and levels of use in and adjacent to biologically sensitive habitats shall not adversely alter or contribute significantly to a cumulative alteration of the overall biological productivity of the area.

b. Land uses and levels of use in and adjacent to biologically sensitive habitats shall not adversely impact or contribute significantly to a cumulative impact on the viability of flora and fauna inhabiting or utilizing the area.

---

*NOTE: These criteria are to be incorporated into the Land Use Designation Program and are to be utilized as general guides in future development in sensitive habitat areas.

V. EXTRACTIVE RESOURCES

A. Types and Sources: The coastal area of Del Norte County possesses four sources of commercially utilized mineral resources. These are clay, sand and gravel, stone quarries and beach sand.

1. Clay: The subsurface clay minerals are presently not utilized, but studies have indicated various sites to be an acceptable source for kiln fired bricks.

2. Sand and Gravel: The excavation of sand and gravel deposits is currently the predominant mineral extraction activity within the coastal zone. The primary location has been on the Smith River with limited activity on the Klamath.

3. Stone Quarries: Presently there are no active stone quarries in the coastal zone. Future development of this mineral source will primarily be surface mining and therefore subject to provisions of the County's Surface Mining And Quarries Ordinance as well as having to conform to Coastal Act policies.

4. Beach Sand: The removal of beach sand has occurred principally within the harbor area and Crescent City's beachfront.

B. Findings: An investigation by the Department Of Water Resources (DWR) concerning sand and gravel deposits along the lower Smith River, from the Hiouchi Bridge to the mouth, was completed in 1974. The study was based on field surveys, contacts with state and local agencies and other parties and specific area studies. The DWR concluded that the sand and gravel deposits of the lower Smith River are a replenishable resource which, if properly managed, can be utilized without adverse effects on fishing or other recreational uses of the river. The study also concluded that "gravel extractions have been beneficial to the lower Smith River..."

Other findings of the DWR Gravel Study are summarized below:

The source of most of the sand and gravel is the hard, erosion-resistant rocks of the Klamath Mountains Geomorphic Province which constitutes 80 percent of the watershed.

Ten major gravel bars along the lower Smith River in the 13.8 mile reach from the Hiouchi Bridge to the ocean produce good quality materials which have been used for years for state, county, local and private construction.

The mean bed material size distribution was found to be 17 percent sand (2mm), 61 percent gravel (2-64mm), and 22 percent cobbles (64-260mm). This material is deficient in fines, but is otherwise an excellent aggregate source.

The average replenishment rate of the gravel is estimated at about 330,000 cubic yards per year, determined as the average of three different bedload estimating techniques.

Extraction records indicate that an average of about 180,000 cubic yards are annually withdrawn commercially from the river and about 15,000 cubic yards annually have been privately removed since 1960.

Nearly all the gravel and sand is removed with rubber-tired front end loaders and transported by trucks to the two commercial plants in operation. The operation appears to conform to all existing regulations.

Gravel extractions have been beneficial to the lower Smith River by removing excess gravel which would have extensively filled some of the large holes downstream from Dr. Fine Bridge. Resurveying of five cross sections between Dr. Fine Bridge and Trails End suggests only minor changes in average "bankfull" area and riverbed elevations from 1966 to 1973. Comparing 1939 survey data at the Dr. Fine Bridge with 1966 data suggests that the cross sectional area here decreased since 1939.

The gross value of sand and gravel taken from the Smith River currently averages about $200,000 annually. The industry currently employs from about 12 people in the winter to 50 people in the summer, including asphalt mixing and paving activities, and has an average annual payroll of about $380,000.

Gravel extractions can continue if the replenishment rate is not exceeded. Removal of gravel from point bar deposits does not appear to affect the stream course. Removal of gravel from straight reaches on the floodplain may affect the stream course.

While this study was conducted on the Smith River, many of the conclusions may be extended to other smaller streams and to the Klamath River. This study and information from existing operations were used in formulating the County's existing policies for extractive resources and in the development and adoption of the County's ordinances regulating extractive activities.

Gravel extraction within the present stream channel has generally been found to have less adverse impacts than gravel extraction from former channel locations. To this end, gravel extractions which conform to existing county policies and standards are preferred to open pit mining of former stream channels.

VI. GENERAL POLICIES

A. Coastal Act Policies: A major objective of the Coastal Act is to maintain and enhance the quality of coastal waters and marine resources and to mitigate potential adverse impacts of land uses adjacent to sensitive coastal habitats. To this end the following policies were enacted by the legislature:

30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

30236. Channelizations, dams, or other substantial alteractions of rivers and streams shall incorporate the best mitigation measures feasible, and limited to (1) necessary water supply projects; (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or; (3) developments where the primary function is the improvement of fish and wildlife habitat.

30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

B. Present Local Policies: The Del Norte County General Plan recognizes the importance of biologically sensitive habitats and seeks to conserve and manage these resources for the educational, recreational and economic needs of present and future

generations. The significant coastal habitat areas presently acknowledged by the County are:

Prince Island and Hunter Rocks
Tidal area of the Smith River
Lakes Earl and Talawa and their immediate marshland
Castle Rock
Marsh area of Elk Creek
False Klamath Rock
Tidal area of the Klamath River
White Rock
Sand dunes of Dead Lake
Crescent City Sitka Spruce Stand
Wetland of Sandmine Road and Highway 101

Standards for the management of wildlife, habitat and vegetation in the County have also been developed. Important policies concerning the maintenance of sensitive coastal habitats include:

1. The County should require Environmental Impact Reports to insure the protection of fish, wildlife and plant species in the area considered for development.

2. Development to "improve" the Klamath and Smith Rivers with flood control facilities should be carefully reviewed and evaluated. Efforts should be made to maintain the natural function of the rivers.

3. The County should maintain all existing species of fish, wildlife, and vegetation for their economic, intrinsic and ecological values as well as providing adequate protection of rare and endangered species.

4. The following areas are recognized as major locations of excellent wildlife habitat, native or natural vegetation and of aesthetic value. These areas should be maintained as wildlife habitats and protected from adverse activity. No futher commitment to development should be allowed except that which is in the best interest of the public health, safety and welfare, or as noted.

a. All offshore rocks and island (seaward of the mean high tide line) excluding Whaler and Battery Islands.

b. Inland of the mean high tide line to the first line of vegetation (except in the areas of coastal bluffs when the area will be to the crest of the bluff), excluding the harbor area.

c. Lakes Earl and Talawa and their immediate marshland, allowing continued agricultural uses.

d. Sand dunes and wet sand areas, excluding limited development in appropriate areas.

e. The tidal influenced areas of the Smith and Klamath Rivers. Commercial-Recreational and Public-Recreational development should be allowed but be carefully controlled to prevent significant alteration of the habitat areas. Gravel extraction should be allowed on a small scale consistent with local policy and state regulations.

5. The County should establish riparian corridors along local streams, creeks and sloughs to maintain their aesthetic appeal, wildlife habitat, control of erosion, and to provide natural vegetation separations between developed uses.

The conservation and protection of water resources are recognized by the County. General Plan policies designed to insure sufficient, quality water supplies for all beneficial uses are as follows:

1. The County should seek to establish joint policies and agreements with local water distribution districts for the purpose of assuring proper water management operations which will consider long-term municipal, industrial and agricultural requirements.

2. The County should develop programs to reduce excessive consumption of water, thereby reducing the quantity of sewage effluent into the County's groundwater reservoirs.

3. Conversion of the coastal dunes to residential use should be discouraged. Residential development should be guided from these areas, recognizing their importance as ground water recharge areas, barriers to sea-water intrusion and their severe limitation to individual sewage effluent.

4. All existing and future water quality standards should be followed and further investigation of the effects of water contaminants be supported.

5. A coordinated and integrated approach should be taken towards solving water supply and demand problems.

6. The County should seek to identify and map the drainage system of the coastal plain and take adequate measures to insure the continued existence of these drainage systems. Consideration of manmade drainage courses should be examined in an overall drainage plan.

The utilization of extractive resources and their potential impacts have been formally state in the County's General Plan. These policies have been implemented at the local level and continue to be carried out in the permit process.

1. The County should support studies to locate deposits of extractive resources and the establishing of extraction quotas if deemed necessary.

2. Operators of extraction operations should take all precautions necessary to avoid contamination from waste disposal or general operation activity of the site, nearby streams or rivers, air and the environment in general. Existing and future local, state and federal regulations will be met or exceeded.

3. No extraction should be permitted in areas where it would significantly harm, alter or destroy wildlife habitat, fisheries or archeological or historic sites and no adequate mitigation measures are deemed adequate.

4. Areas of known extractive resources should be protected from incompatible development which would seriously interfere with extractive operations.

5. Sand and gravel extractions along local streams and rivers should continue as long as the replenishment rate is not exceeded. To reduce impact on stream course, removal of sand and gravel from point bar deposits is recommended and should be critically examined along straight reaches.

6. The County should prepare and adopt a Resource Extraction ordinance and conditions of approval of extraction permits should include performance standards (dust emission, noise generation, blasting, etc.) and a rehabilitation plan and schedule if deemed necessary.

7. The County should consider the requirement of performance and site rehabilitation bonds for extraction activities of a large scale or in sensitive areas.

C. LCP Policies: Del Norte County recognizes the economic and biologic significance of maintaining and where possible enchancing marine resources, coastal waters and sensitive coastal habitats. General policies designed towards achieving these important goals are stated in this section.

1. The County seeks to maintain and where feasible enchance the existing quality of all marine and water resources.

2. The County encourages programs (e.g., fish hatcheries, habitat rehabilitation) designed to improve the quality of coastal fisheries and other marine resources.

3. All surface and subsurface waters shall be maintained at the highest level of quality to insure the safety of public health and the biological productivity of coastal waters.

4. Wastes from industrial, agricultural, domestic or other uses shall not impair or contribute significantly to a cumulative impairment of water quality to the extent of causing a public health hazard or adversely impacting the biological productivity of coastal waters.

5. Water conservation measures (e.g., flow restrictors, industrial recycling of usable waste waters) should be considered by present users and required in new development to lessen cumulative impacts on existing water systems and supplies.

6. "Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas. Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas."

7. The County should encourage and support educations programs in schools, park programs, and community organizations which seek to increase public awareness and understanding of sensitive habitat areas and the need for their protection.

8. The County should seek funds and the cooperation of other agencies to undertake studies of significant coastal resource (i.e., salmonoid fisheries; Lakes Earl and Talawa ecology; coastal dune system) for the purposes of systematic inventory, analysis and the development of programs for their maintenance and enhancement.

9. Operators of extraction operations shall take all precautions necessary to avoid contamination from waste disposal or general operation activity of the site, nearby streams or rivers, air and the environment in general. Existing and future local, state and federal regulations will be met or exceeded.

10. No extraction shall be permitted in areas where it would significantly bar, alter or destroy wildlife habitat, fisheries or archeological or historic sites without mitigation.

~~measures are deemed adequate.~~

11. Extractive resource areas shall be protected from incompatible development, which would seriously interfere with extractive operations, now or in the future.

12. Sand and gravel extractions along local streams and rivers shall continue as long as the replenishment rate is not exceeded. To reduce impact on stream course, removal of sand and gravel from point bar deposits is recommended and will critically examined along straight reaches.

VII. SPECIFIC AREA POLICIES AND RECOMMENDATIONS

Several areas of biological significance require particular attention in formulating a Coastal Plan designed to maintain the unique qualities and generally high productivity of both marine and inland water resources. This section will selectively identify and define these areas of concern and discuss specific policies and recommendations regarding their maintenance.

In general locations of the sensitive habitats in coastal Del Norte County have been mapped at the scale of 1" - 2 miles and appended to this document. The reader is referred to this map, found on page 33, for the following discussion.

A. Offshore Rocks and Island:

1. Definition: Offshore rocks and islands include all of the generally exposed, solid land surfaces and rocks, of any size, seaward of the mean high tide line.

2. Principal Distributions: With major concentrations: 1) in the Point St. George area; 2) just north of the Smith River; and 3) along the coast of Redwood National Park, offshore rocks and islands are distributed throughout the marine portion of the Del Norte County Coastal Zone. Rocks and islands particularly important as roosting and rookery sites are:

a) Cone Rock
b) Hunter Rock
c) Prince Island
d) Castle Rock
e) White Rock
f) False Klamath Rock

3. Planning Issues: The Del Norte County General Plan presently states that all offshore rocks and islands (excluding Whaler and Battery Islands) "should be maintained as wildlife habitat and protected from adverse activity." Minor clarification of this policy is needed for consistency with the Coastal Act.

4. Policies and Recommendations:

a. All offshore rocks and islands, except for permitted navigational aides, shall be maintained in their existing state to insure the viability of the wildlife inhabiting or utilizing these sites.

B. Intertidal Zone:

1. Definition: The intertidal zone is that region of the coastline lying below the high tide mark and above the low tide mark. Specialized biotic communities occupying this zone include tidepools and tidal flats.

a. Tidepool: A tidepool is a depression in the substrate of the intertidal zone where an accumulation of seawater occurs after the tide recedes. Typically a tidepool contains a wide variety of specially adapted plant and animal species.

b. Tidal Flat: A tidal flat is a sandy or muddy flatland within the intertidal zone subject to an alternating exposure to the tide's ebb and flow.

2. Principal Distributions:

a. Tidepools: Tidepools along the Del Norte County coastline occur primarily:

1) in the Point St. George area; 2) immediately north of the Smith River; 3) south of Pelican Beach State Park; and 4) at various headland points along the coast in Redwood National Park.

b. Tidal Flats: Tidal flats exist principally in the delta regions of the Smith and Klamath Rivers, along the open coast of South Beach and North Beach.

3. Planning Issues:

a. Tidepools: Tidepools are unique intertidal habitats for a diversity of marine organisms specifically adapted to the harsh and constantly fluctuating environmental conditions found at the sea's edge. Trampling, collecting and even handling these sensitive tidepool organisms can be very destructive. Recreational pressures are the major threat to tidepool habitats.

b. Tidal Flats: Tidal flats are extremely productive and generally sensitive regions of the intertidal zone. Compaction from off-road vehicle driving is a major problem on tidal flats. A study by Boyd (1977) found the impacts of

vehicular traffic at Crescent Beach to "result in significant mortality among sand beach organisms." In that these invertebrate organisms are important links in the marine fishery food chain Boyd further recommends that "it may be wise to minimize such impact by prohibiting all the vehicles in the beach."

4. Policies and Recommendations:

a. Tidepools and tidal flats shall be managed to maintain their present characteristics with all feasible measures taken to mitigate uses which might prove harmful to the biota inhabiting these areas.

b. Recreational activities at or near tidepools and tidal flats shall be carefully monitored by Fish and Game to insure the continued viability of these habitats.

c. In order to discourage all but light recreational use of tide pool regions, shoreline access and recreational facilities shall be located to direct use towards the open, sandy beaches of the County.

d. Enforceable regulations should be developed for State enforcement to prohibit the collecting of all tidepool organisms with exceptions for scientified purposes on a permit basis.

e. In order to insure the continued maintenance and productivity of intertidal flat areas, enforceable regulations should be developed to regulate vehicles in the intertidal zone.

f. A permit system should be established to allow motorized vehicles on tidal flat for commercial purposes such as fishing and salvage operations.

C. Estuaries:

1. Definition: "An estuary is a coastal water body usually semi-enclosed by land, but which has open, partially obstructed, or intermittent exchange with the ocean and in which ocean water is at least occasionally diluted by fresh water runoff from the land."

2. Principal Distributions: The primary estuarian habitats in Del Norte County are the mouths of the Smith and Klamath Rivers. The tidal influence on the Smith River extends approximately 4 miles upstream to Rowdy Bar. On the Klamath River the tide reaches some 3½ miles upstream. Lakes Earl and Talawa become estuarine in nature upon the breaching of the sandbar blocking their opening to the sea.

3. Planning Issues: The Klamath and Smith River estuaries are vital to anadromous fisheries. Anadromous fish (e.g., king salmon, silver salmon, steelhead trout, cutthroat trout, etc.) spend part of their life cycle in the ocean and return to freshwater to reproduce. An extremely critical phas in the migration of anadromous fish occurs during their transition from salt to freshwater. The brackish waters of estuaries provide an area where physiological adjustments may be made before entering a new water environment.

Alterations of natural channels through straightening, widening or deepening can have adverse impacts on the habitat qualities of estuarine systems. The disturbance and loss of nutrient rich sediments, nursery grounds and important bottom dwelling organisms may result from these activities.

The maintenance of water quality is also important to the continued productivity of eastuary ecosystems. Water quality impairment may result when sediment or wastes are introduced at a rate faster than can be assimilated by the system.

4. Policies and Recommendations:

a. Estuarine systems should be maintained at their highest feasible level of productivity in order to protect and enhance coastal fisheries and other marine resources.

-b. The alteration of existing estuarine water channels through dredging, diking, or filling shall be allowed only when consistent with Coastal Act Policy 30233 A & B and when such activity would enhance the biological productivity of the estuary.

-c. All permitted activities in estuaries as identified in 4-b (above) shall be carried out in a manner that will minimize impacts on the biota and productivity of the area.

d. Extraction of sand and gravel shall conform with the policies cited under general LCP policies in the previous section (Section VI-C).

e. Channel navigational modifications of the Smith and Klamath Rivers which are seasonal and do not require construction of permanent facilities which will adversely affect the flow of the stream shall be allowed if the following is determined:

1. The modification are not permanent and will be removed before or during the following high water period; and

2. The modiciations are necessary to provide free movement of recreational and/or commercial boating.

3. The project is consistent with all applicable laws and regulations local, state and federal.

D. Wetlands:

1. Definition:

"Wetland means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, bogs, and fens. The land use category will be Resource Conservation Area."

Farmed wetlands shall be defined as wetland areas which are grazed, planted or cut for forage during parts of the year. The land use category will be ~~Agricultural~~/ Resources Conservation Area with existing agricultural uses being deemed a principal use."

2. Principal Distributions: Wetland habitats are found throughout the generally flat-lying coastal plain of Del Norte County. The following identifies the major wetland areas of the Coastal Zone:

a) Tilas Slough
b) Goodwin Pond
c) Yontocket Slough
d) Silva Slough
e) Talawa Slough
f) Lake Talawa
g) Lake Earl
h) McLoughlin Pond
i) Standard Plywood
j) Cadra Slough
k) Dead Lake and adjacent ponds
l) Marhoffer Creek
m) Elk Creek Wetland
n) Sandmine Road wetland
o) Jordan Creek

3. Planning Issues: Wetlands serve as nursery grounds for many aquatic species and as feeding and nesting areas for numerous waterfowl. Additionally, wetlands act as storage and control systems that absorb heavy seasonal rains, physically and chemically filtering water and slowly releasing accumulations in surface and subsurface flow. Thus in their unaltered states, wetlands provide a clean, balanced, nutrient-rich regime highly productive for fish and wildlife.

Draining, filling, channeling or otherwise altering the flow patterns in wetlands is the primary threat to these unique habitats. Changing natural channels configurations can result in disruptions of the important filtering actions wetlands provide together with loss of habitat for fish, waterfowl and other wildlife.

Impairment of water quality may also pose a major danger to the proper functioning of wetland ecosystems. Increases in sediments and wastes from upstream land uses, especially through cumulative effects, is the principal threat to the water quality of wetland habitats.

4. Policies and Recommendations:

a The diking, filling, or dredging of wetlands shall be permitted in accordance with other applicable provisions of this program, where there is no feasible less environmentally damaging alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects. Such projects shall be limited to those identified in Section 30233 of the Coastal Act.

b Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replinishment when feasible should be transported for such purposes to appropriate beaches or into suitable longshore current systems.

c. "In order to provide that the maximum amount of agricultural land be maintained in agricultural production in existing "~~wetland" pasture lands~~ farmed wetlands and cultivated lands (cultivated within the last ten (10) years), maintenance and repairs shall be permitted for existing dikes, levees, drainage ditches and other similar agricultural drainage systems and will be subject to any and all applicable policies within the certified land use plan."

d Performance standards shall be developed and implemented which will guide development in and adjacent to wetlands, both natural and man-made, so as to allow utilization of land areas compatible with other policies while providing adequate protection of the subject wetland.

e The maintenance opening of the sandbar at Lake Talawa shall be permitted consistent with agreements negotiated between the County and the California Department of Fish and Game.

f. "Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which could significantly degrade such areas, and shall be compatible with the continuance of such habitat areas. The primary tool to reduce the above impacts around wetlands between the development and the edge of the wetland shall be a buffer of 100' in width. A buffer of less than 100' may be utilized where it can be determined that there is no adverse impact on the wetland. A determination to utilize a buffer area of less than 100' shall be done in cooperation with the California Department of Fish & Game and the county's determination shall be based upon specific findings as to the adequacy of the proposed buffer to protect the identified resource. Firewood removal by owner for on site use and commercial timber harvest pursuant to CDF timber harvest requirements are to be considered as allowable uses within 100' buffer areas."

E. Riparian Vegetation:

1. Definition: Riparian vegetation is the plant cover normally found along water courses including rivers, streams, creeks and sloughs. Riparian vegetation is usually characterized by dense growths of trees and shrubs.

2. Principal Distributions: Riparian vegetation systems are mapped in the Del Norte County General Plan. Principal riparian habitats include:*

a) Gilbert Creek
b) Lopez Creek
c) Rowdy Creek
d) Ponds in the coastal dune area north of Point St. George
e) Talawa Slough
f) Jordan Creek
g) Marhoffer Creek
h) Elk Creek

3. Planning Issues: Riparian vegetation systems are extremely important and productive wildlife habitats. Numerous birds and mammals utilize riparian corridors as nesting sites, feeding grounds or escape cover. The trees and shrubs of riparian systems provide shelter and enrichment for streams. Moreover the vegetation serves as a filter to intercept and slow excessive silt and debris and acts to stabilize streamside banks.

The major threat to riparian ecosystems is the removal of vegetation for stream channelization or other water projects.

4. Policies and Recommendations:

a. Riparian vegetation shall be maintained along streams, creeks, and sloughs and other water courses within the Coastal Zone for their qualities as wildlife habitat, stream buffer zones, and bank stabilization.

b. The County should seek funds from the coastal conservancy to reestablish riparian vegetation in selected stream corridors.

*NOTE: This is not an all inclusive list, excludes streams within the Redwood National Park boundaries, and does not include all streams which may meet Coastal Zone criteria.

F. Sea Cliffs:

1. Definition: A sea cliff or bluff is a more or less vertical escarpment fronting the ocean.

2. Principal Distributions: A large portion of the coastline in Del Norte County consists of sea cliffs ranging from a few to hundreds of feet in height. The primary areas of the sea cliffs are:

a. North of the Smith River
b. Point St. George to Crescent City
c. South of Crescent City along most of the Redwood National Park coastline.

3. Planning Issues: The principal issues associated with the management of sea cliffs includes their fragile nature and their potential for geologic hazards.

The vegetation of sea cliffs serves to stabilize the generally unconsolidated material of bluff faces. The plant life of sea cliffs, although adapted to the harsh environmental conditions of wind and salt spray, is typically fragile and highly subject to disturbance. The faces of sea cliffs provide a special habitat for nesting marine birds and various burrowing species.

Sea cliffs are inherently unstable and therefore potentially hazardous sites when associated with development or coastal access.

4. Policies and Recommendations:

a. Geologic studies shall be required for new construction within the *area of demonstration on bluff-tops to determine: 1) their suitability for development; and 2) the necessary set-backs required to avoid hazards associated with bluff failure.

b. The following bluff areas have undergone excessive vegetation damage from trampling and should be investigated as Coastal Conservancy restoration and enhancement projects:

1. Pyramid Point to Lopez Creek
2. Pebble Beach Public Fishing Access
3. Pebble Beach at Murphy Street

*Area of demonstration is defined as follows:

The area of demonstration of stability includes the base, face and top of all bluffs and cliffs. The extent of the bluff top considered should include the area between the face of the bluff and a line

described on the bluff top by the intersection of a plane inclined at a 20° angle from horizontal passing through the toe of the bluff or cliff, or 50 feet inland from the edge of the cliff or bluff, whichever is greater. However, the County may designate a lesser area of demonstration in specific areas of known geologic stability (as determined by adequate geologic evaluation and historic evidence) or where adequate protective works already exist. The County may designate a greater area of demonstration or exclude development entirely in areas of known high instability.

G. Coastal Sand Dunes:

1. Definition: Coastal dunes are ridges of sand created by wind deposited materials carried from ocean beaches. An active dune is one in the process of gaining or loosing sand; such a mobile dune is commonly unvegetated or covered with sparse grasses and low-growing succulents. Stabilized dunes are usually covered by woody vegetation such as the beach pine.

2. Principal Distributions: Large areas of coastal dunes exist between Point St. George and the mouth of the Smith River. Other scattered localities of dunes in the coastal zone include: the vicinity of Lopez Creek; the Dead Lake area; and adjacent to Pebble Beach Drive near Marhoffer Creek.

3. Planning Issues: Because of their generally light vegetative cover, coastal dunes are particularly susceptible to activities of intensive uses such as development and recreational vehicle driving. Damage to grasses and light plant cover which provide shelter and soil stability in dune areas may result in the reactivation of stabilized dunes.

The coastal dune area north of Point St. George to the Smith River is recognized as an important area for groundwater recharge in the coastal plain because of its large aerial extent and its high infiltration rate.

Plans to develop the coastal dune system in the vicinity of Lakes Earl and Talawa have been formulated in the past. Two major proposals have been: 1) Pacific Shores Subdivision; and 2) Del Norte Dunes Subdivision.

Pacific Shores Subdivision was recorded in 1963 with 1535 lots on 1486 acres. A road system consisting of 26 miles of chip seal type asphalt with no shoulder improvements or curbs was constructed. To date no permanent housing has been built as Pacific Shores, although two mobile homes exist in the subdivision. The overriding problem is the development of an adequate sewage disposal system for the subdivision. A high water table in the dune system makes the use of individual septic tanks infeasible.

The Del Norte Dunes Subdivision was proposed in 1970 to include some 8000 acres of land between Dead Lake and the mouth of the Smith River. The proposal included preliminary outlines for roads, residential lots, recreation facilities, mobile home parks and other developments. Plans for community water and sewer systems, as required by the County, were not submitted. Development of the Del Norte Dunes subdivision has not occurred to date. This development site has been acquired by the State.

4. Policies and Recommendations:

a. "Coastal sand dunes, as mapped on the county constraint maps ~~shall~~ should be maintained in their existing states or returned to their natural states where feasible to ensure their values as groundwater recharge regions and wildlife habitat.

b. Enforceable regulations should be developed to limit the use of motorized vehicles to non vegetated dunes.

c. The removal or unnecessary disturbance of dune vegetation should be avoided.

d. The County's existing land-fill shall be allowed to continue to operate at its present location consistent with the State and Federal regulations.

APPENDIX

GLOSSARY OF TERMS*

AEOLIAN: Deposits which are due to the transporting action of the wind, i.e., sand.

ANADROMOUS FISH: A fish which migrates to the sea for part of its life and returns to freshwater to breed.

BIOTA: Plant and animal life.

COASTAL STRAND: A coastal plant community found in sandy beach and dune areas.

DIURNAL CYCLE: Daily change.

ECOSYSTEM: A group of plants and animals occurring together plus that part of the physical environment with which they interact.

ESTUARY: A drainage channel adjacent to the sea in which the tide ebbs and flows.

FAUNA: Animal life.

FEN: An area of low land that is partly or wholly covered with water unless artificially drained.

FLORA: Plant life.

FOOD CHAIN: A pattern of energy (food) flow in an ecosystem. Typically from plants (which manufacture food from the sun's energy) to plant eaters (herbivores) to animals which eat herbivores (carnivores) and so forth.

HABITAT: The place where an organism lives.

HAUL-OUT SITE: A place where marine mammals leave the water to rest, generally off-shore rocks.

INTERTIDAL: Area between high and low tide.

INVERTEBRATE: An animal which lacks a spinal column.

ROOKERY: A place where birds nest and/or breed.

*NOTE: Definitions quoted from the Coastal Act of 1976 are followed by section number in parentheses. Other definitions are from various sources.

SEA STACK: A steep-sided rock above sea level, near the coast.

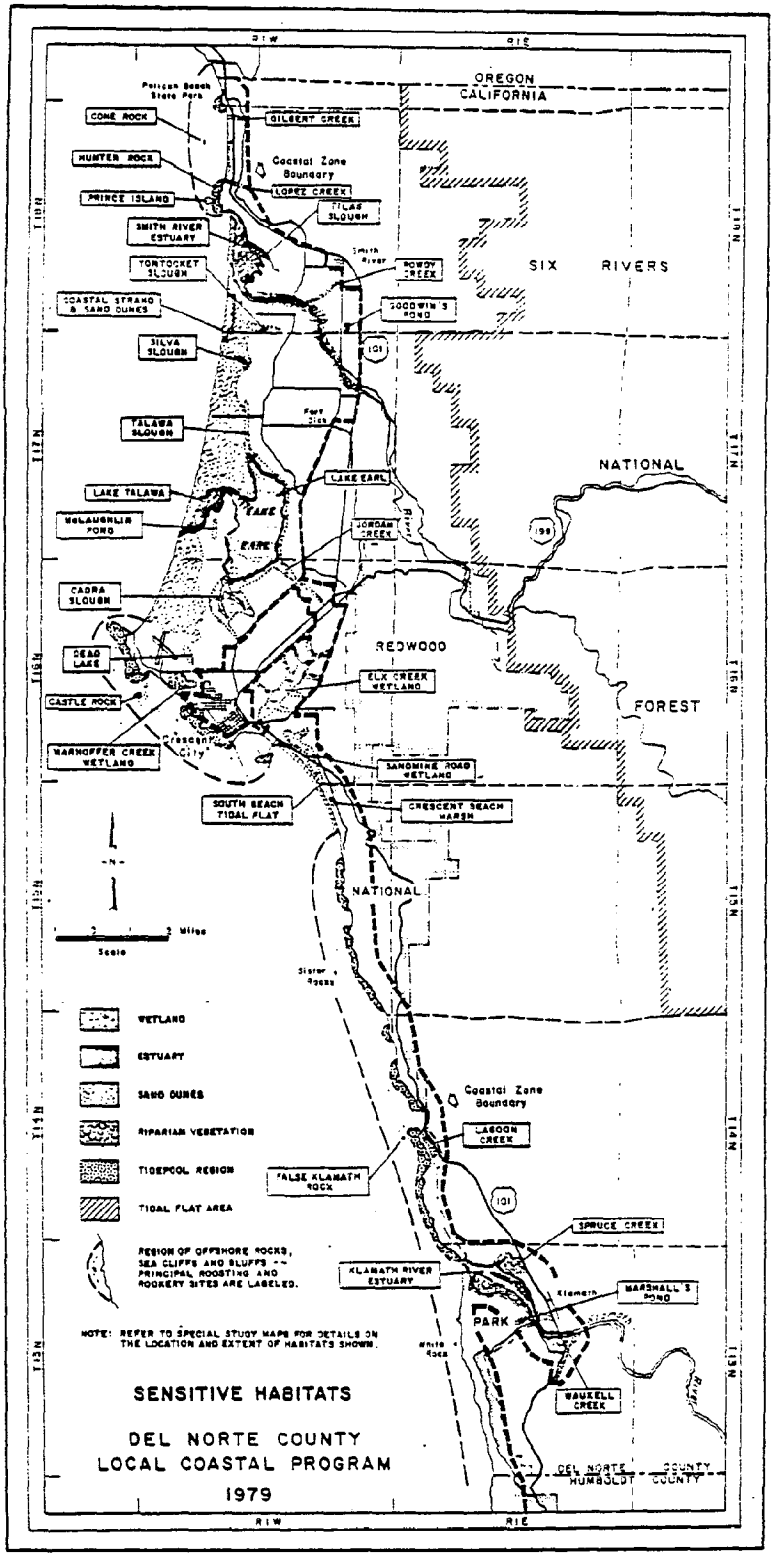
TERESTRIAL ORGANISM: A plant or animal found on land.

TIDE FLAT: A marshy, sandy or muddy land area which is periodically covered by the rise of the tide.

TIDE POOL: An accumulation of seawater remaining in a depression on a beach or reef after recession of the tide.

VIABILITY: The ability of an organism to exist, develop and reproduce itself.

WETLAND: Lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water, marshes, swamps, mudflats, and fens (30121).


OREGON
CALIFORNIA
Pelican Beach State Park
CONE ROCK
GILBERT CREEK
HUNTER ROCK
Coastal Zone Boundary
LOPEZ CREEK
PRINCE ISLAND
TILAS SLOUGH
SMITH RIVER ESTUARY
Smith River
POWDY CREEK
SIX RIVERS
TONTOCKET SLOUGH
COASTAL STRAND & SAND DUNES
GOODWIN'S POND
SILVA SLOUGH
101
Fort Dick
TALAWA SLOUGH
NATIONAL
LAKE EARL
LAKE TALAWA
LAKE
EARL
WELAUGHLIN POND
JORDAN CREEK
199
CADRA SLOUGH
REDWOOD
DEAD LAKE
ELK CREEK WETLAND
CASTLE ROCK
FOREST
Crescent City
WARHOFFER CREEK WETLAND
SANDMINE ROAD WETLAND
SOUTH BEACH TIDAL FLAT
CRESCENT BEACH MARSH
N
NATIONAL
Scale
Miles
Sister Rocks
WETLAND
ESTUARY
SAND DUNES
RIPARIAN VEGETATION
TIDEPOOL REGION
TIDAL FLAT AREA
REGION OF OFFSHORE ROCKS, SEA CLIFFS AND BLUFFS -- PRINCIPAL ROOSTING AND ROOKERY SITES ARE LABELED.
Coastal Zone Boundary
LAGOON CREEK
FALSE KLAMATH ROCK
101
SPRUCE CREEK
KLAMATH RIVER ESTUARY
Klamath
MARSHALL'S POND
PARK
NOTE: REFER TO SPECIAL STUDY MAPS FOR DETAILS ON THE LOCATION AND EXTENT OF HABITATS SHOWN.
White Rock
WAUKELL CREEK
SENSITIVE HABITATS
DEL NORTE COUNTY
LOCAL COASTAL PROGRAM
1979
DEL NORTE COUNTY
HUMBOLDT COUNTY
R1W
R1E
T12N
T11N
T10N
T9N

BIBLIOGRAPHY

California, State of, Coastal Zone Conservation Commission, (December 1975), California Coastal Plan.

California, State of, Coastal Zone Conservation Commission, Northcoast Region, (July 1975), Preliminary Coastal Plan: Humboldt-Del Norte Subregional Supplement (Hearing Draft).

California, State of, Department of Fish & Game, (1973), Coastal County Fish and Wildlife Resources and Their Utilization.

_____, (March 1975), Natural Resources of Lake Earl and the Smith River Delta.

California, State of, Department of Water Resources, (January 1974), Smith River Gravel Study.

_____, (August 1966), Water Well Standards: Del Norte County.

_____, (October 1978), Land Use Within the California Coastal Zone.

Clark, J., (1974), Coastal Ecosystems: Ecological Considerations for Management of the Coastal Zone.

Conservation Foundation, (December 1977), Physical Management of Coastal Floodplains: Guidelines for Hazards and Ecosystem Management.

Del Norte, County of, Planning Department, (November 1976), Del Norte County General Plan.

_____, (December 1977), LCP Issue Identification.

Funderburk, S.L., (June 1979), Assessment of the Use of the Lake Earl Area, Del Norte County, California by Water Birds and Raptors.

U.S. Department of Interior, Fish and Wildlife Service, (February 1979), Concept Plan for Waterfowl Wintering Habitat Preservation: California Coast.

U.S. Department of Interior, Geological Survey, Water Resource Division, (1971), A Preurbanization Reconnaissance Study of Lake Earl.

Winzler and Kelly, (October 1972), Del Norte County Water Supply and Wastewater Disposal Comprehensive Plan, 1972-1992.

Winzler and Kelly, et. al., (December 1975), Project Independence Economic Development Action Plan and Strategy for Del Norte County.

Del Norte County
Local Coastal Program

RECREATION COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

LCP -- RECREATION COMPONENT

Table of Contents

I. INTRODUCTION 1

A. Coastal Recreation 1

B. Purpose 1

II. GENERAL FINDINGS 2

A. Summary Findings 2

B. Levels of Use 3

C. Recreational Uses 3

D. Future Demands 3

E. Recreation vs. Resource Preservation 3

F. Recreational Use Conflicts 5

G. Restoration of Coastal Recreation Areas 5

H. Maintenance Costs 5

I. Recreational Carrying Capacity 5

J. Recreational Boating 7

III. GENERAL POLICIES 7

A. Coastal Act Policies 7

B. Present Local Policies 8

C. LCP Policies 9

IV. SPECIFIC RECREATION PROPOSALS 11

A. South Beach 11

B. Pelican Beach State Park 14

C. Clifford Kamph Memorial Park 16

D. Pala County Park 17

E. Pebble Beach Public Fishing Access 18

F. Pacific Shores 19

G. Lakes Earl & Talawa 21

H. Old Klamath Townsite 22

APPENDIX

Public Recreation Areas 23

Del Norte County Public Park Summary 24

BIBLIOGRAPHY 26

LCP -- RECREATION COMPONENT

I. INTRODUCTION*

The varied nature and scenic beauty of the Del Norte County coastline and estuarine systems offers numerous recreational opportunities. Sound management of these recreation resources is an integral part of the economic well-being of both present and future generations.

A. Coastal Recreation: Coastal recreation may be defined as any outdoor leisure-time experience in the Coastal Zone from which an individual derives enjoyment. Del Norte County visitors and residents alike may benefit from the wide variety of recreational opportunities available. Simply enjoying the outstanding aesthetic qualities of the ocean and shoreline is undoubtedly the primary pursuit of most Coastal Zone recreationists. Their activities may range from walking and beachcombing on open, sandy beaches to more rigorous experiences like surfing and scuba diving in the cool offshore waters.

B. Purpose: The Coastal Act of 1976 places specific emphasis on the need for diverse and well distributed public and private recreational facilities in the California Coastal Zone. This element of the LCP will identify and examine the adequacy of existing recreational facilities of coastal Del Norte County and discuss provisions for future recreational needs.

---

*NOTE: This component of the LCP is subject to review and cross-referencing to other policy components.

II. GENERAL FINDINGS

The outstanding scenic qualities of the Del Norte County coastline attracts thousands of visitors annually. Numerous public and private recreational and visitor-serving facilities cater to their needs. This section will summarize the findings concerned with existing facilities and discuss future problems and prospects in meeting the coastal recreation demands of Del Norte County.

A. Summary Findings

1. Public Facilities: Several public recreation areas are located in the Coastal Zone of Del Norte County (see Appendix I). The public parks vary greatly in size, facility improvements and recreational uses. A summary indicating their locations, improvements and uses may be found in Appendix II.

   a. State and Federal Parks: In size and ocean frontage, State and Federal Parks dominate the coastal recreational opportunities in Del Norte County. Redwood National Park, Del Norte Coast Redwoods State Park, the undeveloped Pelican Beach State Park and a portion of Prairie Creek Redwood State Park comprise 21.6 miles or 47% of the coastline. These Parks offer visitors a variety of facilities including; campgrounds; day-use areas; and hiking trails.

   b. County Parks: The County maintains ten parks in the Coastal Zone. These provide residents and visitors with shoreline access and day-use. The Parks are all day-use facilities with no fee charged.

2. Private Facilities: Private enterprise accomplishes a major service to the public by accommodating visitors in Del Norte County. Both visitor-serving and recreational needs are fulfilled.

   a. Visitor-serving facilities: Developments providing visitor accommodations, food and services are included in the term visitor-serving facilities. Numerous motels, recreational-vehicle parks, and restaurants serve the public in the coastal area of Del Norte County. There exists:* some 33 motels with 673 rooms; more than 50 RV Parks and private campgrounds; and approximately 40 restaurants.

   b. Commercial-Recreational Facilities: Commercial-recreational facilities are operated for private profit and serve public recreational needs. Major tourist attractions in the coastal region of Del Norte County include: Ship-A-Shore resort; Trees of Mystery; Klamath River Jet Boat Trips; Undersea Gardens; and several charter fishing boat operations.

*March 1979

B. Levels of Use: As discussed under the public access component, levels of use without significant data are difficult to assess. One observation is readily confirmed, however: visitor use at all recreational facilities is greatest during the summer season. As illustrated in Figure 1, motels tend to fill to capacity and highways become crowded during the months of July and August. The light tourist use in the winter months is reflected by the seasonal closure of many private facilities.

C. Recreational Uses: Recreational uses in the Coastal Zone may be conveniently divided into coastal, lake and river categories.

1. Coastal Uses: Ocean shoreline recreational uses in the County are both numerous and varied. Walking, picnicking and beachcombing are probably the most popular coastal recreational activities on open, sandy beaches. Surf-fishing, clamming, wood gathering and off-road vehicle driving are also popular uses of the open beaches. In the rugged, rocky portions of the coastline nature study and photography are major uses. Although the waters are quite cold, surfing and swimming are activities enjoyed by many.

2. Lake Uses: Several lakes and lagoons in Del Norte County provide recreational opportunities. Boating, fishing, nature study, photography and hunting are important uses in these areas.

3. River Uses: Noted nation-wide for their runs of anadromous salmon and steelhead, the Smith and Klamath Rivers are extremly popular for sport-fishing. Recreational boating and swimming are important recreational activities on these rivers.

D. Future Demands: Recreation is regarded as a relatively large and fast growing use of the coastal zone. The demands for recreation facilities in Del Norte County can be expected to increase in that population and tourism are both growing.

Long range planning efforts must be designed towards this reality in order to accommodate future recreational needs. Important recreational development goals for the County to attain include: 1) well distributed facilities; 2) provisions to maintain oceanfront areas for future recreation needs; 3) provisions to sustain the existing percentage of low cost recreational facilities; and 4) insurance that all new recreational developments and expansion of existing facilities are consistent with the protection of the private property rights and fragile coastal resources.

E. Recreation vs. Resource Preservation: Although recreation and open space preservation are often considered synonomous,

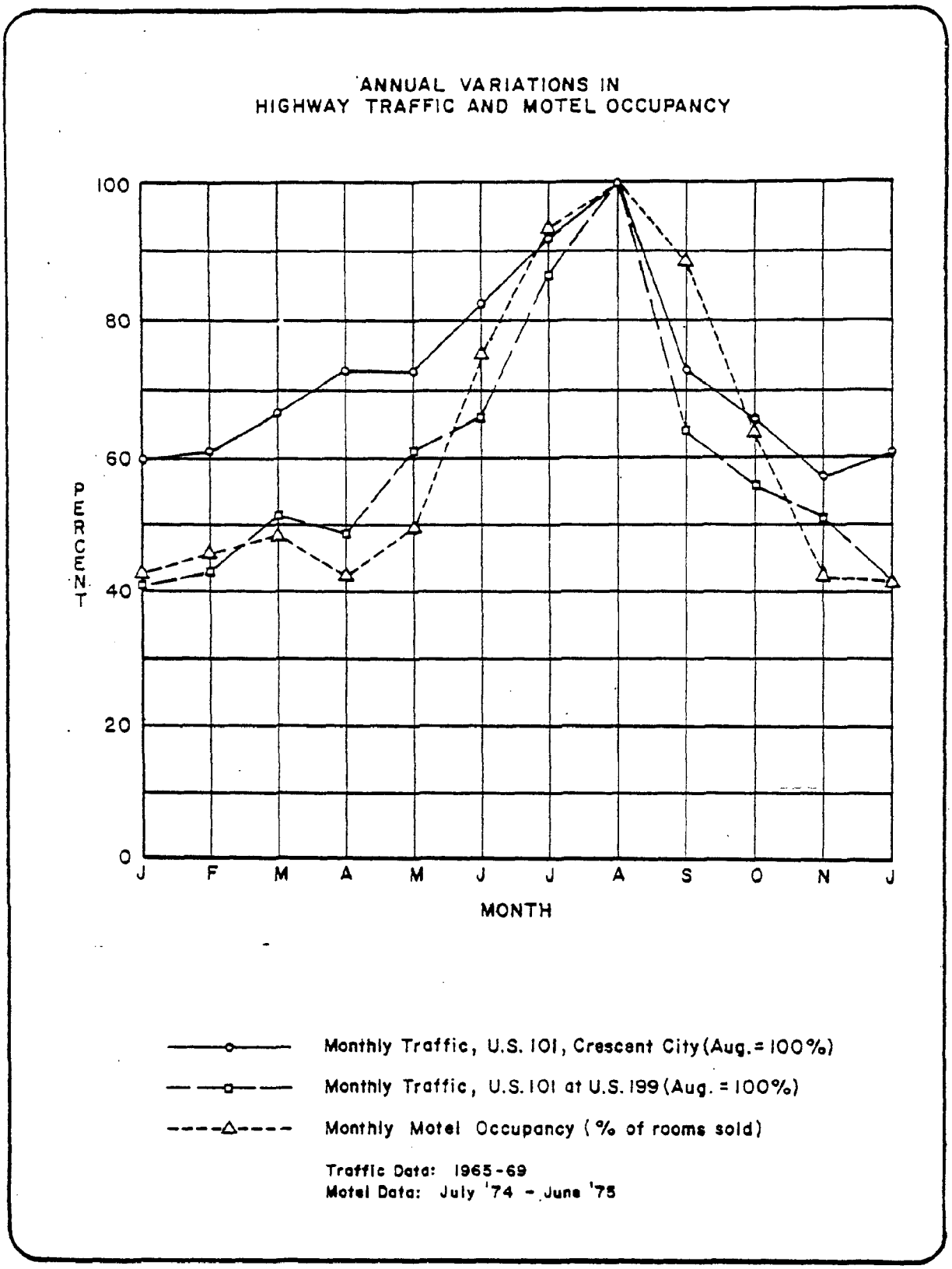


FIGURE 1: Annual Variations in Highway Traffic and Motel Occupancy.
Source: Revised OEDP Progress Report for Del Norte County, March 1976

recreational development and intensive use may degrade coastal resources. For example, the development of a recreation area in a wetland may adversely affect wildlife habitat. Conversely, the establishment of many recreation areas have artificially improved habitat for wildlife. A careful analysis of the factors involved should be conducted prior to the development of any area for recreational uses.

F. Recreational Use Conflicts: Competition among conflicting recreational uses exists in some areas of the County coastline. Notably, are off-road vehicle and pedestrian use incompatibilities along the more intensively used South and North Beach areas. A closure of vehicles is in effect under County Ordinance 72-12 from June 1 through September 15 as a remedy to this situation in the South Beach area. The North Beach area remains open to ORV use year-round, however, north of Marhoffer Creek.

G. Restoration of Coastal Recreation Areas: Some areas of recreational use in the Coastal Zone have undergone extensive physical and visual degradation from either overuse, vandalism or a lack of maintenance. Most important to consider are those areas enduring the heaviest use and the greatest amount of damage, for without corrective measures the recreational qualities of these areas will further decline. The areas requiring restoration will be addressed under specific recreational proposals to be discussed later under this element.

H. Maintenance Costs: The Del Norte County taxpayers are inadvertently penalized by the maintenance costs of County parks and beaches used heavily by out-of-county visitors. The State of California and the Federal government shall assume a greater financial responsiblity in the maintenance cost of County parks and beaches to help offset this inequity.

I. Recreational Carrying Capacity: Recreational carrying capacity is the optimum amount of recreational activity an area can support without enduring significant environmental damage or imparing the recreational experience. Basically, three interrelated factors determine the recreational carrying capacity of a given area: 1) the natural environment; 2) man-made improvements; and 3) the visitor's perceptions.

Study of carrying capacities for Coastal Zone recreation areas is minimal. Two important generalizations may be made, however. First of all, the areas in the Coastal Zone most sensitive to recreation pressures include tidepools, tidal flats, wetlands and grass-covered dunes. Second, the least fragile of coastal habitats, and therefore possessing a greater capacity to endure recreational activities, are open, sandy beaches. A major objective in coastal planning for the County will be to direct recreational uses to Del Norte's numerous sandy beach areas.

J. Recreational Boating: Boating is a popular recreation activity on the Smith and Klamath Rivers and to a limited extent on Lake Earl.

1. Smith River: Three boat launching ramps are located along the North Bank of the Smith River in the Coastal Zone. Two are owned and operated by commercial enterprises and open to the general public on a fee basis. The third boat ramp is maintained by the County without charge.

2. Klamath River: Boat launching facilities are available on the Klamath River at many of the privately owned recreational campgrounds. A fee is generally charged. A County maintained launching facility is located just upstream from the coastal boundary limits.

3. Lake Earl: Boat launching is provided on Lake Earl by County maintained ramps at the end of both Lakeview Drive and Buzzini Road. Because of its shallow depth (approx. 4 feet) and the seasonal profusion of submerged vegetation, boating on Lake Earl tends to be limited to smaller craft.

III. GENERAL POLICIES

A. Coastal Act Policies: A basic goal of the California legislature in establishing the Coastal Act of 1976 was to "maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners" (30001.5 C). The following Coastal Act policies address issues of public recreation in the Coastal Zone:

30212.5. Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

30213. Lower cost visitor and recreational facilities and housing opportunities for persons of low and moderate income shall be protected, encouraged, and where feasible, provided. Developments providing public recreational opportunities are preferred...

30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and forseeable future demand for public or commercial recreational activities that could be accomodated on the property is already adequately provided for in the area.

30222. The use of private lands suitable for visitor-serving commercial recreation facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.

30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.

30224. Increase recreational boating use of coastal waters shall be encouraged, in accordance with this division, but developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from day land.

30250. (c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors.

B. Present Local Policies: A well formulated recreational element of the County's General Plan recognizes the importance of the generous amount of open space and scenic beauty in Del Norte County. It further observes that tourism is, and will remain, an important economic stimulus to the County. General Plan policies presently insuring the maintenance of a wide variety of recreational opportunities for residents and visitors alike are:

1. The County should continue to insure its quantity in open land and outstanding natural beauty through the maintenance of open space.

2. Improved and increased access to Six Rivers National Forest and the Redwood National Park should be encouraged by the County.

3. The County should protect agricultural land from excessive urban intrusion.

4. The following are recognized for their habitat and wildlife values and their existing and potential recreational uses should be maintained.

A. Lakes Earl and Talawa
B. Elk Creek Drainage Basin
C. The Coastline
D. The Harbor
E. The many rivers, creeks and streams of the County
F. The sand dunes and wet sand areas along the coast
G. Coastal and interior mountain ranges
H. Much of the alluvial plain

5. Outdoor recreation projects should preserve and enhance scenic and environmental values.

6. Priority for acquisition and development of parks and recreation areas should be given to those areas possessing special physical features and/or under pressure of being developed for non-recreational uses. Prioritizing should include standards for the acquisition development, maintenance, and renovation of park areas.

7. Development of areas for recreational use, on a fee basis, by private landowners should be encouraged.

8. The establishment of public access sites should thoroughly consider the environmental and economic impact of adjacent property owners and provisions should be made for adequate manpower to regulate such recreational development.

9. The development of a regional trail and path system linking residential areas to local recreational areas, Crescent City to the Redwood National Park and recreational areas to each other should be explored giving strong consideration to existing public and quasi-public rights-of-way including railroad rights-of-way.

10. The County should continue to provide indoor and outdoor program activities directed towards the needs and interest of all County residents and visitors to the County.

11. The County should strive to provide diverse programs with emphasis on coordinated planning between the City, the Unified School District, the State, Federal and private agencies.

C. LCP Policies: The County of Del Norte recognizes the need for provisions granting full coastal recreation opportunities for the public while assuring the protection of important coastal resources and the rights of private property owners. This section will state the LCP provisions for recreation in the Coastal Zone of Del Norte County.

1. The County encourages the continued maintenance of coastal recreation areas by both the private sector and public agencies.

2. New recreational development shall be located and distributed throughout the Coastal Zone on the land use map in a manner to prevent undue social impacts, overuse or overcrowding.

3. Visitor-serving facilities that provide recreational opportunities to persons of low and moderate income shall have priority over higher cost visitor facilities.

4. The rights of private property owners shall be protected in all provisions for public and private recreation facilities.

5. Visitor-serving and commercial-recreational facilities should be located on ocean-front parcels only when such development provides an increased opportunity for shoreline access and coastal recreation and enhances scenic and environmental values of the area.

6. Fragile coastal resources shall be considered and protected to the greatest possible extent in all new coastal recreational development.

7. Recreational use conflicts should be minimized on coastal beaches through provisions separating incompatible activities by time and/or space.

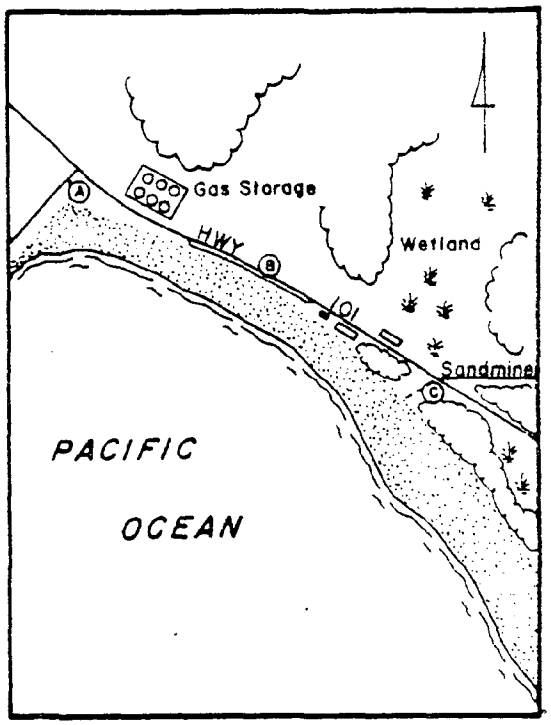
8. The County encourages the continued maintenance of existing recreational boating facilities by private operators and public agencies.

9. The County shall protect designated agricultural lands from inappropriate development including but not limited to recreational development.

IV. SPECIFIC RECREATION PROPOSALS

Several existing recreation areas of coastal Del Norte County have been identified as requiring specific policies in order to enhance their recreational qualities while protecting important coastal resources. The discussion of recreational improvements for these specific areas is not meant to preclude the consideration of other areas found in need of further recreational development. Each area will be examined in detail focusing on the identification of planning issues and the establishment of specific recommendations for recreational enhancement.

A. South Beach: Located adjacent to Highway 101 and 2 miles south of Crescent City, South Beach lies between Anchor Way and the northerly coastal boundary of Redwood National Park. Approximately 1.5 miles long, the 300-500 foot wide beach is noted as one of the most biologically productive areas for invertabrate animals (e.g., worms, mole "crabs", razor clams) on the northcoast.[1]



1. Land Use: Land uses adjacent to South Beach include: commercial-recreational; industrial; and agriculture. Several motels and restaurants are found in the area, together with tourist attractions and gift shops. The industrial uses are primarily fishery oriented and situated within the Harbor area. An oil storage facility is located across Highway 101 at the northerly end of South Beach. The agricultural use is exclusively cattle grazing and bulb production in the vicinity of Sandmine and Bluff Roads.

2. Ownership: Land ownership in the South Beach area is frought is complications. Most of the area is under a single private ownership, but small inholdings exist with visitor-serving developments. In addition, land ownership surrounding the oil storage tanks includes portions of South Beach. Another ownership complication is that the westerly portion of a 120 foot wide right-of-way

---

1 California, State of, Coastal Commission, Preliminary Coastal Plan: Humboldt-Del Norte Subregional Supplement, p. 213.

for Highway 101 extends onto South Beach, Finally, a land grant establishing the Crescent City Harbor District includes all land on South Beach up to the mean high tide line of 1963. Thus a veneer of ownerships hamper access guarantees and public recreational development in the South Beach area.

3. Recreational Use: Good visibility, wide pull-outs and ease of beach access makes South Beach a very popular recreation area. Heaviest use tends to be concentrated in the summer months, but this area receives substantial recreational use throughout the year. Recreational activities include a wide variety of pursuits: 1) walking and beachcombing; 2) surf-fishing and clamming; 3) surfing; and 4) ORV driving. Overnight camping is predominant in the summer season with numerous recreational vehicles occupying the highway pull-outs.

4. Planning Issues: Situated as both a southerly gateway to Crescent City and a northerly entrance to Redwood National Park, the South Beach area occupies a dominant role in coastal recreation for Del Norte County. Though presently open to a wide variety of shoreline recreation activities, the existing mixture of land ownerships tends to undermine opportunities for comprehensive recreation planning and management. Visually, the area suffers from somewhat obtrusive signing and extensive litter. Recreational use conflicts between pedestrian and off-road vehicles has effectively been eliminated by a County Ordinance[2], but the issue of compaction on invertebrates from ORV use remains a serious problem.[3]

5. Recommendations:

a. Access Easements: Dedication of vertical and lateral access easements should be sought by the State.

b. Funding: In the event of easement acquisitions, funds for maintenance and liability shall be provided by the State.

c. Recreational ORV Use: The recreational use of motorized vehicles should be prohibited from this beach as it is biologically one of the most productive areas for invertebrates on the northcoast.

---

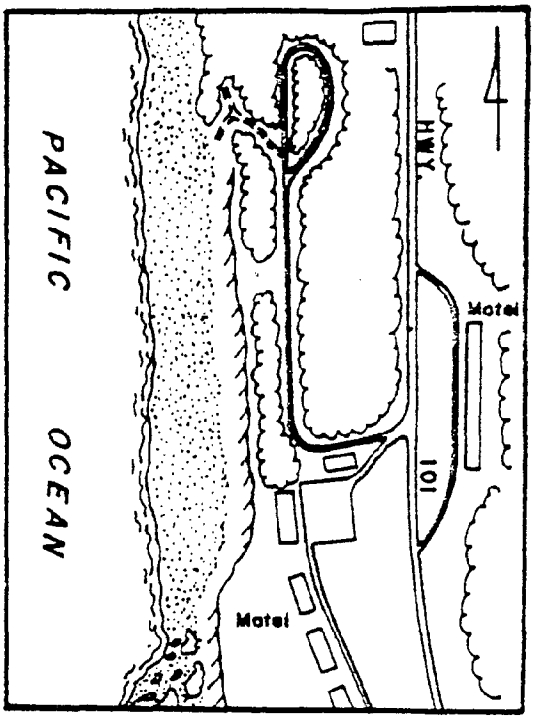
2 It is unlawful for any person to drive or operate any vehicle propelled by an internal combustion engine upon, along or across the South Beach of the Pacific Ocean south of the Southerly boundary of Crescent City between June 1 and September 15 of each year. (Ord. 72012)

3 Boyd, M. J., Intertidal and Subtidal Biota: Redwood National Park, p. 143.

d. Commercial ORV Use: An enforceable permit process should be developed that allows the commercial ORV use of the beach for fishing and salvage operations, thus minimizing impacts upon the tidal flat and mitigating user conflicts.

e. Cooperative Planning: The County, Harbor District, State and Redwood National Park should cooperate in a comprehensive plan to enhance the visual and recreational qualities of this area.

B. Pelican Beach State Park: Pelican Beach State Park is a 7.12 acre, undeveloped day-use area 1/4 mile south of the California/ Oregon border. A paved loop road provides convenient access from Highway 101. Wind-pruned coastal scrub and spruce covers the bluff and terrace portion of the park and a steep dirt road provides access to the open, sandy beach.



1. Land Use: Surrounding land uses are rural-residential and commercial. Several residential dwellings lie to the north of Pelican Beach State Park. Immediately to the south is a motel and restaurant complex and opposite Highway 101 is another motel and a gift shop.

2. Ownership: Pelican Beach State Park is owned by the State of California, Department of Parks and Recreation. Presently no maintenance of the area is conducted.

3. Recreational Use: The unimproved park currently provides only ocean access. Walking, beachcombing and surf-fishing are the primary recreational pursuits.

4. Planning Issues: The major planning issue for this area is the development of the park. No improved parking or other facilities exist at present. The California Department of Parks and Recreation has no development plans formulated, but Redwood National Park is considering development of the park as a gateway information center.

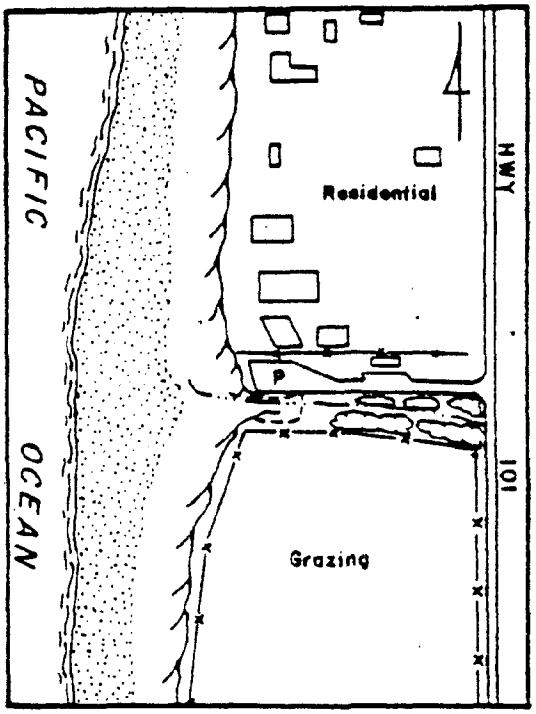
5. Recommendations:

a. Park Development: In order to expand the recreational opportunities of this portion of the Del Norte coast, the State or other public agency is encouraged to develop and maintain parking and day-use facilities.

b. Potential Conflicts: Future development must consider existing uses in the area (residential, visitor-serving and public) so that potential conflicts are minimized and existing qualities maintained.

c. Immediate Action: Prior to future development the State shall immediately sign the entrance and beach access of Pelican Beach State Park.

C. Clifford Kamph Memorial Park:



Located 2 miles south of the California/Oregon border, Kamph Memorial Park is an improved day-use area with beach access.

1. Land Use: Rural residential, agriculture and commercial land uses exist in the vicinity of Kamph Memorial Park. Residential housing is located to the north and agriculture (grazing) to the south. Also in the area is a motel and a gift shop.

2. Ownership: Kamph Memorial Park was dedicated to the County in 1976. The County provides maintenance for the facilities.

3. Recreational Use: Kamph Memorial Park offers day-use facilities and beach access. Picnicking, walking, beachcombing and surf-fishing are dominant recreational uses.

4. Planning Issues: General disrepair, resulting primarily from vandalism, is the major issue to be resolved at Kamph Park. Additionally, bluff erosion created by non-restrictive access is degrading the Park's ocean frontage.

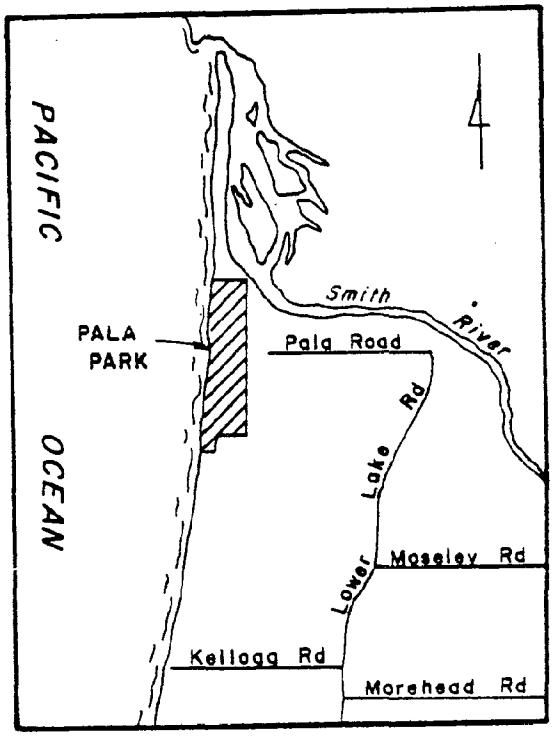
5. Recommendations:

a. Restoration: The County should seek funds from the Coastal Conservancy to restore damaged facilities.

b. Bluff Erosion: A fence should be constructed along the bluff-top to discourage improper access and halt bluff erosion.

c. Adjacent Land Uses: Adjacent future land uses to the south shall mitigate any potential impacts upon Kamph Park. Provisions to be considered shall include but not be limited to: clustering; on-site recreational improvements; density exchange and open space dedication with the confines of the parcel.

D. Pala County Park: Fronting the ocean approximately 2 miles south of the mouth of Smith River, Pala County Park is a 210 acre parcel isolated from immediate road access. Active and stabilized sand dunes cover the area. Pala Park is situated within the Yontocket Archeological District.



1. Land Use: Agriculture, predominantly cattle grazing, is the major land use in the area.

2. Ownership: Pala Park is owned by the County of Del Norte.

3. Recreational Use: Because of its remoteness, Pala Park receives very limited use. Hikers may reach the park from Kellogg Road 2½ miles to the south.

4. Planning Issues: The central issue with Pala Park is whether to provide for access and increased use or let the park remain relatively isolated and primitive. Improved access would require facility improvements, maintenance, and of course, additional funding. Also of concern are the sensitive archeological remains in the area and proposals by the State to obtain the surrounding lands as part of the Lake Earl/Smith River Delta acquisition.

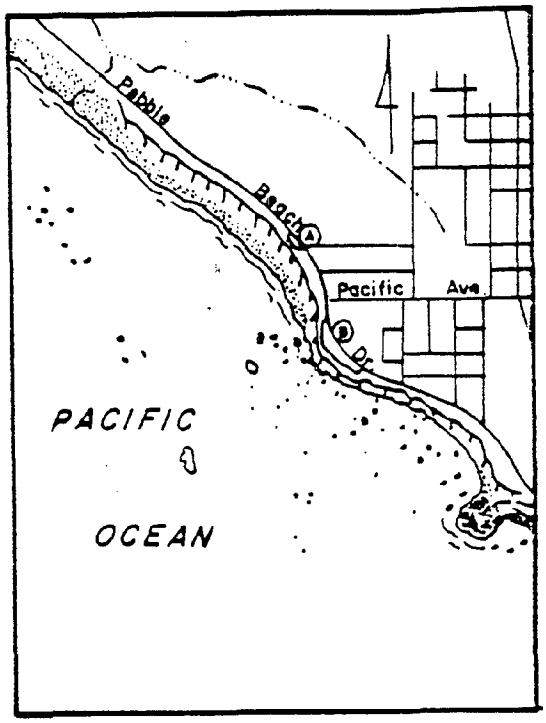
5. Recommendations:

a. Acquisition Problem: Prior to undergoing any costly facility improvements, the County should await the outcome of State acquisition questions in this area.

b. Development: In order to maintain the quality of the natural environment and assure the continued security of the Yontocket archeological site, the County should let Pala Park remain a relatively remote and isolated Park.

c. Access: The state shall provide immediate access to Pala Park via Pala Road.

E. Pebble Beach Public Fishing Access: The Pebble Beach access is located on Pebble Beach Drive just nort of Crescent City. A stairway provides beach access from the bluff-top parking lot and picnic area.



1. Land Use: Single family dwellings occupy most of the land in this vicinity.

2. Ownership: The County owns and maintains the 3.75 acres of bluff-top and beach comprising the Pebble Beach public fishing access.

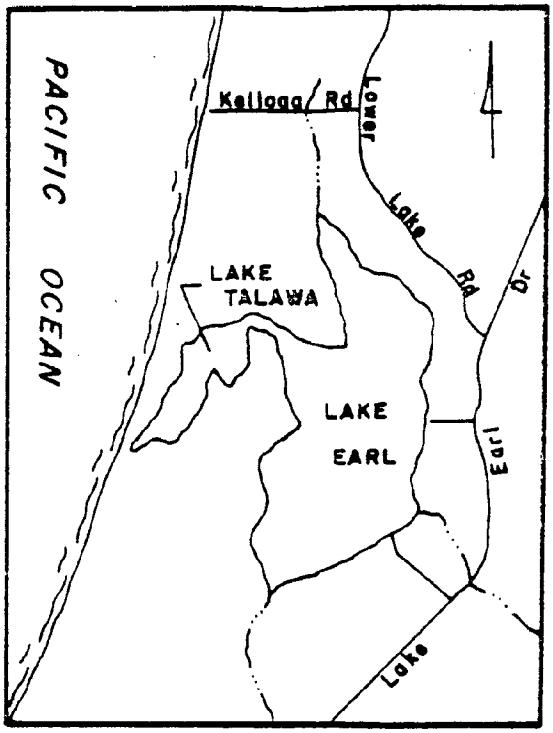
3. Recreational Use: Located adjacent to a populated area, the Pebble Beach access receives moderate to heavy use year-round. Picnicking, ocean-viewing, walking and jogging are popular recreational activities.

4. Planning Issues: The major problem at this facility is vandalism. Excessive damage by trampling has also occurred on a major promontory at the base of the beach access stairway.

5. Recommendations:

a. Restoration: Funds should be sought to restore facilities in dispair and revegetate the damaged promontory.

F. Pacific Shores: Recorded in 1963 with 1535 lots on 1486 acres, Pacific Shores Subdivision to date has not been developed to any major extent. Situated on a coastal dune system, sewage disposal is the overriding problem of the development.



1. Land Use: Land use surrounding the Pacific Shores Subdivision is predominantly cattle grazing.

2. Ownership: The lots of Pacific Shores Subdivision were sold on a nationwide basis. Thus greater than one thousand ownerships are recognized in the area. Some large tracts of land, originally intended as greenbelts, are owned by the Pacific Shores Homeowners Association.

3. Recreational Use: Roads in the Pacific Shores Subdivision provide access to the ocean and Lakes Earl and Talawa. Recreational activities along the ocean include: walking; beachcombing; surf-fishing; and ORV driving. The access to Lakes Earl and Talawa provide opportunities for fishing, hunting and nature study.

4. Planning Issues: Development at Pacific Shores Subdivision is plagued by numerous problems. First, the subdivision is located on a sensitive coastal dune area. Development in this generally stabilized dune region may result in renewed activity creating unknown consequences. Secondly, a high water table exists just below the sandy surface of the area. These conditions render the use of septic tanks entirely infeasible, thereby limiting home construction in the subdivision. The development of a major sewage system and treatment facility does not appear economically feasible. Finally, the subdivision is adjacent to a sensitive wetland recognized by the California Department of Fish and Game as an extremely valuable fish and wildlife habitat.

The State of California is presently studying the possibility of acquiring the entire subdivision together with other lands in the Lake Earl/Talawa area.

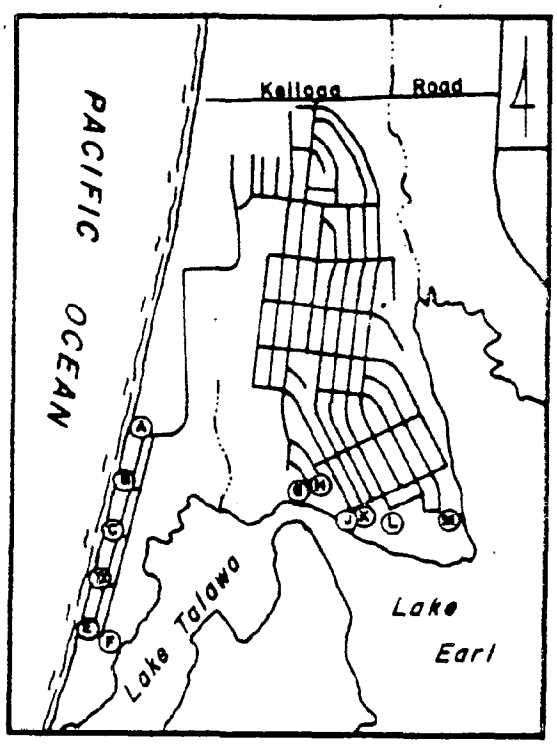
5. Recommendations:

a. If the State acquires the subidivion, the California Department of Parks and Recreation would maintain ocean and lake access for a variety of recreational uses.

b. If State acquisition of this subdivision is found not feasible, the State should investigate the prescriptive rights issue to accessways in the area and, if easements are acquired, maintain these accessways for a variety of recreational purposes.

c. Enfoceable regulations should limit ORV use to the sandy beach throughout this area in order to prevent disruption to the fragile dune systems.

G. Lakes Earl & Talawa: Lake Earl is a shallow, coastal lagoon covering about 2,300 acres. Lake Talawa is a narrow extention of Lake Earl opening to the Pacific Ocean. The area is noted as a prime wetland habitat for fish and wildlife.



1. Land Use: A mixture of agriculture and residential land uses exist east of Lake Earl. The remaining land around the two lakes is utilized for cattle grazing.

2. Ownership: The ownership of Lake Earl/Talawa is presently being considered by the courts. The State of California and a private landholder both claim ownership of the lakes.

3. Recreational Uses: Sportfishing, hunting, boating, and nature study are important recreational pursuits at Lake Earl and Talawa.

4. Planning Issues: Currently, the feasibility of acquiring additional lands adjacent to Lakes Earl and Talawa and their surrounding environs is being studied by the State.

5. Recommendations:

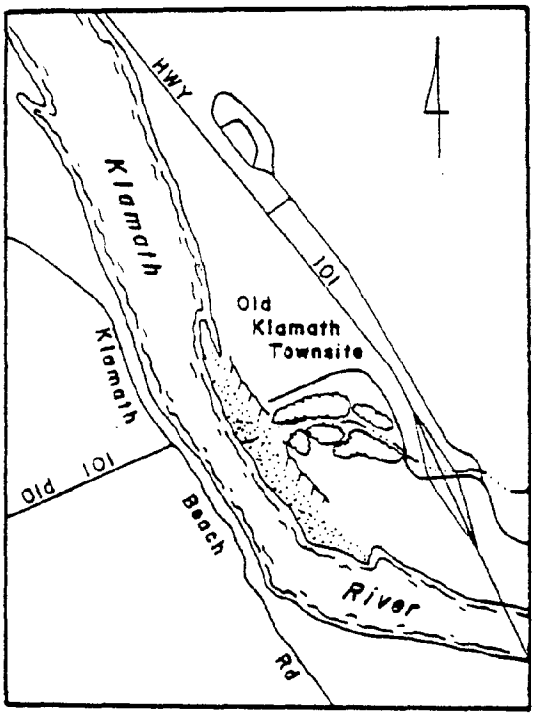
a. The State shall provide access to the west side of Lake Earl on each side of the connecting channel, but not necessarily at the channel, for visitor uses. In addition the State shall provide at least one improved boat launching facility on the west side of Lake Earl.

b. The historic uses of Lakes Earl and Talawa for hunting and fishing shall be maintained.

c. The State shall provide the following types of recreational facilities at and near Lakes Earl and Talawa:

1) Day-use facilities, at more than one location.
2) Expanded access with adequate parking areas.
3) Signs indicating appropriate access points.
4) Lateral access along the ocean shoreline and the Lakes within State owned lands.
4) Overnight facilities adjacent to the Lakes and the ocean shoreline in at least one location.

H. Old Klamath Townsite: Destroyed in the 1964 flood, the old Klamath Townsite is situated on the Klamath River floodplain. An improved access road from the new Highway 101 makes the abandoned townsite potentially useful an a seasonal recreation area.



1. Land Use: Surrounding land uses include R.V. campgrounds and other visitor-serving developments and agriculture (cattle grazing). The old townsite is within a floodplain zone in which uses are limited to a seasonal basis.

2. Ownership: Parcels in the old Klamath townsite are owned by numerous private individuals. The State of California owns a parcel of approximately 3.5 acres adjacent to the river and old highway.

3. Recreational Uses: Camping, fishing and boating are the major recreational uses in the area.

4. Planning Issues: Recreational development on the Klamath floodplain is limited by seasonal restrictions. The area potentially available for a public recreational facility is limited to the old highway in that the State owned parcel is poorly drained and presently valuable as a riparian habitat.

5. Recommendations:

a. The westerly end of old Highway 101 at the old Klamath Townside should be considered by the State for its value as a seasonal day-use recreation area and river access point.

APPENDIX

PUBLIC PARKS

DEL NORTE COUNTY
COASTAL ZONE
SUMMARY INFORMATION

FACILITY	LOCATION	OWNER-SHIP	TYPE	ACREAGE	FRONTAGE	ACCESS	CAPACITY	COST	RECREATIONAL USES	IMPROVEMENTS	LEVELS OF USE
Pelican Beach	Oregon Border	State	Day-use	7.1	0.2 mi	Paved Road	Parking for 10 vehicles	No fee	Walking; beachcombing; surf-fishing; surfing	Unimproved	Light
Redwood Nat'l Park	South of Crescent City	U.S.	Day-use	6757	13.6 mi	Several Trails	6 camping/ 20 picnic	No fee	Sightseeing; hiking; picnicking; walk-in camping	Day-use facilities; walk-in campground; trails	Moderate
Kamph Park	4 miles north of Smith R.	County	Day-use	2.7	0.4 mi	Trail/ Stairway	Parking for 15 vehicles	No fee	Picnicking; walking; beachcombing; surf-fishing	Parking; restrooms; picnic tables; trail	Moderate - Heavy
Mouth of Smith R.	End of Mouth of Smith R. Road	County	Day-use	2.7	150 ft	Trail	Parking for 16 vehicles	No fee	Fishing; walking; sightseeing	Parking; trail	Moderate
Smith R. Public Access	Fred Haight Drive	State	Day-use	3.1	400 ft	Boat Launch	Parking for 50 vehicles	No fee	Fishing; boating	Boat launching ramp	Moderate

PUBLIC PARKS

DEL NORTE COUNTY
COASTAL ZONE
SUMMARY INFORMATION

FACILITY	LOCATION	OWNER-SHIP	TYPE	ACREAGE	FRONTAGE	ACCESS	CAPACITY	COST	RECREATIONAL USES	IMPROVEMENTS	LEVELS OF USE
Pala Park	2½ miles north of Kellogg Road	County	Day-use	210	1.2 mi	Trail	unknown	No fee	Hiking; ORV driving	Unimproved	Light
Kellogg Beach	W'ly end of Kellogg Rd.	County	Day-use	4.2	250 ft	Trails	Parking for 15 vehicles	No fee	Walking; beachcombing; surf-fishing; ORV driving	Parking	Moderate
Lake Earl Access	Buzzini/ Lakeview Roads	County	Day-use	Right-of-ways only	50 ft	Open	Parking for 10 vehicles	No fee	Fishing; hunting; birdwatching; boating	Unimproved	Moderate
Point St. George	3 Miles north of Crescent City	State	Day-Use	2.5	none	Trail	Parking for 100 vehicles	No fee	Walking; beachcombing; fishing	Parking	Moderate

BIBLIOGRAPHY

Boyd, M. J., (1977) Intertidal and Subtidal Biota: Redwood National Park, Humboldt State University, Arcata, Ca.

California, State of, Coastal Zone Conservation Commission, (December 1975), California Coastal Plan, San Francisco.

_____, (July 1975), Preliminary Coastal Plan: Humboldt-Del Norte Subregional Supplement, Eureka, Ca.

California, State of, Department of Parks and Recreation, (August 1971), California Coastline Preservation and Recreation Plan, Sacramento, Ca.

Del Norte, County of, Planning Department, (November 1976), Del Norte County General Plan, Crescent City, Ca.

_____, (December 1977), LCP Issue Identification.

O.E.P.D. Committee, (1976), Overall Economic Development Program: Planning and Action for Del Norte County, Crescent City, Ca.

U.S. Department of Commerce, NOAA, Office of Coastal Zone Management, (January 1976), Coastal Recreation: A Handbook for Planners and Managers, Washington, D.C.

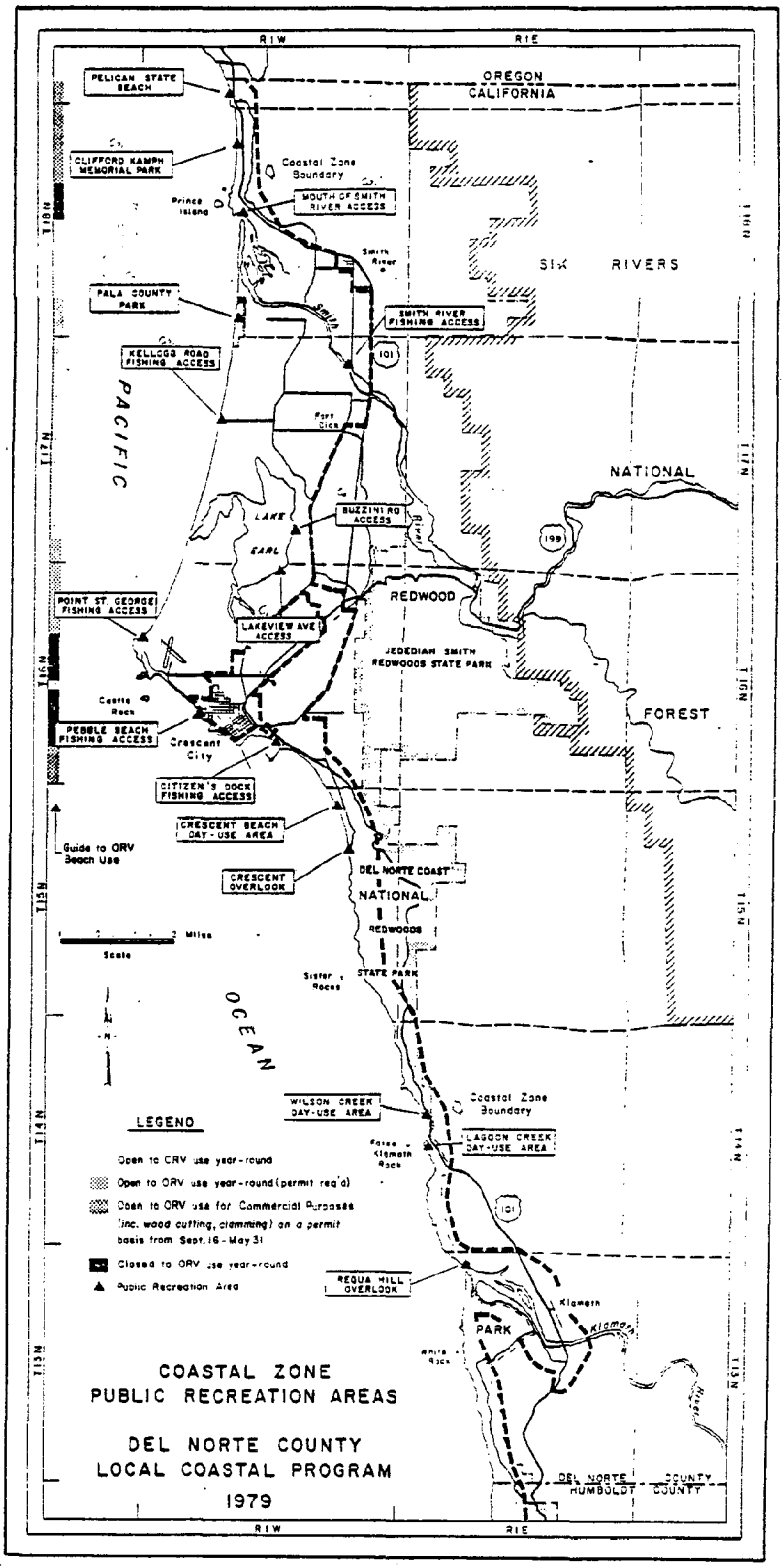


FIGURE 1: PUBLIC RECREATION AREAS

Del Norte County
Local Coastal Program

MARHOFFER CREEK WETLAND SPECIAL STUDY

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, CA 95531
(707) 464-2119

MARHOFFER CREEK WETLAND
SPECIAL STUDY

Table of Contents

List of Tables i
List of Figures i

I. INTRODUCTION 1

II. STUDY AREA DESCRIPTION 3

A. Location 3

B. Climate 3

C. Topography 3

D. Geology 3

E. Soils 3

F. Vegetation 5

G. Wildlife 5

H. Land Use 5

III. METHODOLOGY 7

A. Mapping 7

B. Resource Inventory 7

IV. FINDINGS 9

A. Drainage Patterns 9

B. Wetland Extent 9

C. Wetland Vegetation Types and Hydrologic Conditions 9

D. Principal Wildlife Habitats 10

E. Resource Value 12

F. Habitat Sensitivity 14

V. POLICIES AND RECOMMENDATIONS 16

A. Coastal Act Policies 16

B. Present Local Policies 18

C. LCP Policies 20

APPENDIXES

I Plants in the Marhoffer Creek Study Area 22

II Birds in the Marhoffer Creek Study Area 25

III Mammals in the Marhoffer Creek Study Area 28

IV Amphibians and Reptiles in the Marhoffer Creek Study Area 30

MAPS

1 Drainage 31

2 Wetland Areas 32

3 Habitats 33

4 Topography 34

5 Major Land Divisions 35

6 Zoning 36

BIBLIOGRAPHY 37

LIST OF TABLES

1 Wetland Plant Communities 11

2 Principal Wildlife Habitats 13

LIST OF FIGURES

1 Location Map 4

MARHOFFER CREEK WETLAND
SPECIAL STUDY

I. INTRODUCTION

Marhoffer Creek drains a marine terrace located immediately northwest of the City of Crescent City. This stream together with its associated wetland and wildlife are the subject of this special study. The purpose of this study is to: 1) determine the limits of the Marhoffer Creek Wetland; and 2) identify its sensitive resources in order to permit logical and compatible development within the area.

A universally acceptable definition of wetland is difficult to establish. Wetlands are generally viewed as areas of low topography, poor drainage and seasonally standing water. The California Coastal Act of 1976 defines a wetland as follows:

> 30121. "Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

This study adopts the Coastal Act definition of wetland and further extends the term to include certain areas in which wetland indicator plant species are present. The definition and utilization of indicator species will be discussed in the methodology section. Wetland in this report refers to all marshlands, riparian corridors, seasonally flooded areas, and certain poorly drained pasturelands.

A land use plan conforming to the policies and guidelines of the Coastal Act is required for the Marhoffer Creek area. A primary difficulty in developing the plan is, however, that the actual drainage patterns and wetland limits of Marhoffer Creek are unknown. Additionally, the resource value and sensitivity of the wetland are not fully understood and the measures necessary to maintain the habitat are in question.

This report summarizes the accomplishments of the Marhoffer Creek Wetland Special Study. First, a general description of the study area's location, physical features and land uses is presented. Second, the methods utilized to conduct the mapping and resource inventory of Marhoffer Creek are discussed followed by a presentation of the findings. Finally, specific policies and recommendations designed to maintain and enhance the resources of Marhoffer Creek are presented.

The maps accompanying this report (see Appendix) illustrate the drainage courses, wetland areas and principal wildlife habitats of Marhoffer Creek as found by this study. Additional maps depict the topography, major land divisions and existing zoning designations as compiled from various sources.

II. STUDY AREA DESCRIPTION

A. Location: Marhoffer Creek is located immediately northwest of the City of Crescent City. The Creek drains an extensive marine terrace.

The portion of the Marhoffer Creek drainage examined by this study is bounded by Washington Boulevard, Inyo Street, Pacific Avenue and Pebble Beach Drive (see Figure 1). The study area encompasses approximately 500 acres.

B. Climate: The climate of coastal Del Norte County is greatly influenced by the Pacific Ocean. It is characterized by moderate temperatures throughout the year, considerable winter rainfall and cool foggy summers. the microclimatic conditions of the Marhoffer Creek drainage are not well documented, but differences in moisture, temperature and wind are known to exist. These relate closely to topography, aspect, vegetative cover and distance from the ocean.

C. Topography: Elevations in the study area range from sea level to approximately 45 feet. The overall study area is quite flat, but slopes within drainages may be greater than 30%. The topography of the Marhoffer Creek area is shown on Map 3 in the Appendix.

D. Geology: The Marhoffer Creek area was once a part of the Coast Range Mountains that slowly separated and sank into the sea. For the last 200,000 years the plateau has been rising to its present level. The St. George and Battery formations are deposited over the original Franciscan formation.

1. St. George Formation: The St. George Formation was deposited during the Pliocene Epoch and is some 350-400 feet thick. Because it is composed of fine grained sediments it is fairly impervious to water.

2. Battery Formation: The Battery Formation is approximately 66 feet thick. It is composed of weakly consolidated silt, clay and fine-to-medium grained quartz sands rendering it subject to liquefaction during strong earthquakes. The water table in the Battery Formation is shallow and standing water typically accumulates in low-lying areas during periods of heavy precipitation.

E. Soils: A Soil Survey was conducted for coastal Del Norte County in 1966 by U.C. Davis. Although this survey excluded the Marhoffer Creek area, it may be assumed that Marhoffer soil types are similar to those found in surrounding areas. Interspersed pockets of Talawa fine sandy loam (Ta 2 & Ta 3) are the most probable soils to be found in the Marhoffer Creek drainage.

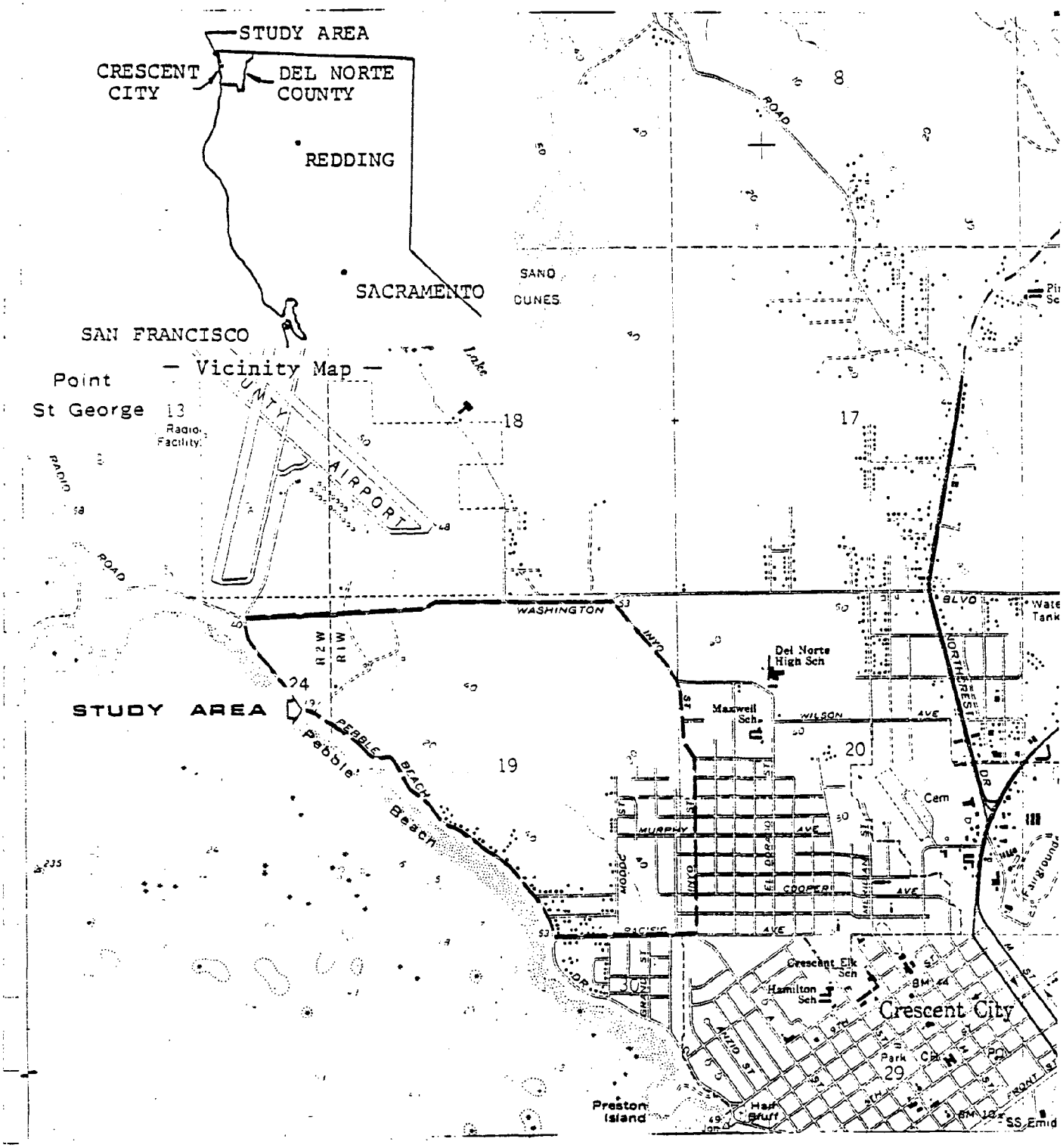


Figure 1: Location Map

1. Talawa Fine Sandy Loam (Ta2): Talawa fine sandy loam is known to occur on marine terraces that are dissected by small streams. Internal drainage in these areas is good due to the 0-3% slope, but runoff is rather slow. Permeability is moderately rapid. Available moisture in the profile is low.

2. Talawa Fine Sandy Loam, poorly drained (Ta3): The poorly drained variety of Talawa fine sandy loam occurs in the bottom of dissected marine terraces as well as the depressed areas on top of terrace surfaces. Water tends to occur on these areas for prolonged periods and drainage is rather poor.

F. Vegetation: Vegetation may be defined at the aggregation of plant life in a landscape. Vegetation is particularly useful as an indicator of environmental conditions such as prevailing climate, soil type and other physical and biological factors.

Vegetation types in the Marhoffer Creek area progress from willow dominated marshland in the lower portions of the drainage to pasture, brush and forest lands on higher ground. Riparian corridors extend along lateral and upper stream courses. The pasturelands consist primarily of grasses, clovers and sedges. Brushland species include coyote brush, salal, scotch broom, and blackberry. The forests of Marhoffer Creek are principally Sitka spruce and shore pine.

A list of plant species found in the Marhoffer Creek area is given in Appendix II.

G. Wildlife: The wetlands and forests of the Marhoffer Creek study area support a variety of wildlife. Lists of bird, mammal and reptile/amphibian species sited in the course of this study as well as some which are generally known to utilize the area during all or part of their life cycle may be found in Appendix III, IV, and V respectively. An intensive year-round field study is recommended to complete the species lists.

H. Land Use: Present-day land uses in the Marhoffer Creek area include: agriculture; recreation; residential; and transportation facilities.

1. Agriculture: Grazing is the major agricultural activity in the Marhoffer Creek area. This land use is limited to the pasturelands situated in the northwest corner of the study area. The McNamara Ranch maintains pastureland for horses and cows.

2. Recreation: Pebble Beach Drive along the western border of the study area provides a scenic drive along the ocean-

view frontage as well as an eastern view of the distant forests and mountains. Three turnout areas provide parking for those seeking access to the beach.

3. Residential: Residential development has occurred on the south and southeast side of the study area. Structures are primarily single-family homes.

4. Transportation Facilities: A major transportation facility, located approximately ¼ mile north of the Pebble Beach Drive and Washington Boulevard intersection, is the County Airport. WestAir and private planes utilize the facility.

III. METHODOLOGY

The research methods employed for the Marhoffer Creek Special Study will be presented in this section. The resource inventory and mapping project was conducted in August of 1979. The objective of the study was to establish a more precise location of the Marhoffer Creek drainage and associated wetlands and to better identify the resource values and sensitivity of the area.

A. Mapping: The Marhoffer Creek wetland was mapped using a combination of air photo interpretation techniques, indicator species identifications and field measurements.

1. Photo Interpretation: Black and white panchromatic and U-2 color infrared aerial photography were utilized to determine wetland boundaries in general terms. Color Infrared Film (CIF), originally developed for camouflage detection, was especially useful in distinguishing vegetation types and differentiating water surfaces and wet soils.

Drainage patterns and wetland limits were recorded on the aerial photographs and after field checking were transferred to a base map at the scale of 1:12000.

2. Indicator Species: An indicator species is a plant that because of its specific ecological requirements for growth and reproduction lives only in certain habitats. Such a plant may indicate that a certain habitat exists if the particular species is present. Indicator species used to identify the limits of the Marhoffer Creek wetlands included: sedges; rushes; horsetail; bur-reed; skunk cabbage; and willows.

3. Field Measurements: In areas where the wetland limits were not readily identified on aerial photography a field check was conducted. The field checking procedure was to first identify the wetland limits on the ground using indicator species. The wetland boundary locations were then measured with compass and tape from identifiable points such as survey monuments or road intersections and transferred to the base map.

A series of maps at the scale of 1:12000 was prepared to delineate the drainage patterns, wetland areas and wildlife habitats as determined by this study. Various other maps including topography, land divisions and existing zoning are also presented and may be found in the Appendix.

B. Resource Inventory: The resource inventory aspect of the Marhoffer Creek Special Study involved delimiting the significant wildlife habitats of the area and identifying species utilizing these habitats.

1. Wildlife Habitats: A habitat is a place where an animal lives. For example, the long-billed marsh wren lives in marsh habitats. Other birds and animals are known to range through more than one habitat type.

The identification of wildlife habitats has been emphasized in this study over other methods of wildlife research such as population counts or detailed species inventories. Establishing the locations and relative value of various wildlife habitats will better serve the purpose of this study: that is to determine those areas most suitable for development while maintaining the integrity and productivity of surrounding sensitive lands and waters.

The principal wildlife habitats identified by this study have been differentiated on the basis of vegetation types and water conditions.

2. Wildlife Inventory: A systematic inventory of wildlife was not conducted by this study. Casual observations were made, however, during the progress of field mapping. The observation periods amounted to approximately 6 hours during one summer month. Thus, by no means have the full diurnal and seasonal uses of Marhoffer Creek's principal wildlife habitats been examined. Additional work is needed to further understand the organization and interactions of the wildlife communities recognized by this study. It is therefore reccommended that a thorough wildlife inventory and analysis be conducted (including night observations) for at least a one year period.

IV. FINDINGS

The principal findings of this special study include a more complete delineation of the Marhoffer Creek drainage patterns and its associated wetland. In addition, the major wildlife habitats of the area have been identified. These and other significant findings of this study will be reviewed in this section.

A. Drainage Patterns: Earlier mapping efforts have been incomplete as regards the delineation of the Marhoffer Creek drainage system. An important result of this study is a more precise and complete mapping of the Marhoffer Creek drainage patterns. Map 1 illustrates the Marhoffer Creek drainage patterns as mapped by this study.

B. Wetland Extent: The extent of the Marhoffer Creek wetland as found by this study is shown on Map 2. The entire wetland is defined as several marshland subtypes (e.g., upland marsh, shrub marsh) together with riparian vegetation and certain pasturelands.

The boundaries of the Marhoffer Creek wetlands are shown as dashed lines to indicate the approximate limits of the wetlands. In nature, such lines are seldom distinct. They tend rather to be transitional zones grading from one plant community type to another. Therefore, the boundaries shown are not precise delimiters of the wetland, but indicate zones of transition. Specific findings on a parcel by parcel basis will be required for the determination of building sites or septic tank leach fields in or near the wetland boundary zone.

C. Wetland Vegetation Types and Hydrologic Conditions: Four major wetland vegetation types have been differentiated in the Marhoffer Creek study area. A brief description of the plant composition and general hydrologic conditions of each will be presented.

1. Pastureland: This portion of the Marhoffer Creek marsh is located adjacent to Pebble Beach Drive immediately south of Washington Blvd. Although utilized as pastureland and containing numerous pastureland grasses the area is poorly drained. Marsh associated plants such as sedge and bur-reed are found throughout.

2. Shrub Marsh: The shrub marsh consists of very dense populations of willows and shrubs. Typical shrub species are: Douglas spirea; twinberry; and blackberry. Numerous spruce snags are located in the shrub marsh. Horsetail ferns, sedges and grasses are also present. The shrub marsh is a seasonally flooded area.

3. Upland Marsh: Two upland marsh areas are located above the Marhoffer Creek drainage. Typical plant species found in these seasonally flooded areas are: Sitka spruce; red alder; labrador tea; twinberry; and skunk cabbage.

4. Riparian Corridors: Riparian vegetation is the plant cover growing in association with stream courses. It is generally characterized by dense growths of trees and shrubs.

The riparian vegetation of Marhoffer Creek is located along upper and side drainage courses. Except for riparian corridors adjacent to pasturelands and development, it is difficult to identify this vegetation in that the riparian community grades into forestland without distinctive boundaries.

Riparian vegetation in Marhoffer Creek includes: willows; red alder; spirea; and blackberry.

Table 1 sumarizes the typical vegetation and general hydrologic conditions of the four wetland communities identified within the Marhoffer Creek Special Study area.

D. Principal Wildlife Habitats: Five principal wildlife habitats within the Marhoffer Creek study area have been identified on the basis of vegetation types and hydrologic conditions. These are pastureland; marshland; brushland; forestland; and riparian.

1. Pastureland: Pasturelands are located immediately south of the westerly end of Washington Blvd. These are used by waterfowl and wading birds as auxiliary feeding grounds.

2. Marshland: The marshland of Marhoffer Creek is covered almost wholly by dense growths of willows and various shrubs. This provides excellent cover for a variety of birds including; wrens, juncos, warblers, and sparrows. Raptor and some wading birds utilize the numerous snags found in the marshland for roosting sites. Flickers and blackbirds use cavities in the snags for nesting. Beaver are very active in the marshland, occasionally creating flood hazard problems.

3. Brushland: Most of the brushland habitats of Marhoffer Creek are located south of the drainage near Lauff Avenue. Coyote brush, scotch broom, blackberry and salal are common brushland species. These sites are relatively dry, but nonetheless serve as habitat for quail, rabbits and deer.

4. Forestland: The forestlands of Elk Creek are dominated by Sitka spruce and shore pine. They occur primarily on the north side of the Marhoffer Creek drainage. The forests

COMMUNITY	TYPICAL VEGETATION	HYDROLOGIC CONDITIONS
Pastureland	Grasses, Sedges, Clover, Sorrel, Iris	Moderately to poorly drained
Shrub Marsh	Willows, Spirea, Twinberry, Horsetail, Sedges, Grasses.	Moist conditions, seasonally flooded
Upland Marsh	Red Alder, Sitka Spruce, Sedges	Areas of standing water or boggy conditions -- occasionally drying
Riparian	Willows, Alder, Spirea, Blackberry	Associated with water courses

TABLE 1: Wetland Plant Communities of Marhoffer Creek

are very dense with understory species including: Cascara buckthorn; red alder; thimbleberry; and salal. The forest areas of Marhoffer Creek provide dense cover for such species as: owls; woodpeckers; sapsuckers; thrushes; and deer.

5. Riparian: Riparian habitat is the dense vegetative cover associated with water courses. Sitka spruce, willows, alders and various shrubs are common along the riparian corridors of Marhoffer Creek. Sparrows, thrushes, warblers, juncos and racoons are among the species utilizing this habitat.

In addition to the wildlife habitats located within the Marhoffer Creek Drainage there exist nearby marine habitats including offshore rocks and islands. The significance of the Marhoffer Creek wetlands to important rookery and resting sites such as Castle Rock is not well established, but the probability exists that the wetlands of Marhoffer Creek provide feeding and resting areas for some of the birdlife utilizing Castle Rock. In that Castle Rock is considered one of the most significant coastal rookeries in California, studies should be undertaken to establish the importance of the Marhoffer Creek Drainage to the birdlife of Castle Rock and other nearby rookeries.

The principal wildlife habitats of Marhoffer Creek are illustrated by Map 3. Table 2 presents a summary of each habitat type identified for Marhoffer Creek, indicating both typical vegetation species and representative wildlife.

E. Resource Value: The overall resource value of the Marhoffer Creek wetland may be summarized as follows:

1. Through the natural filtering action of aquatic plants and organic matter, the quality of water flowing from the Marhoffer Creek wetland is improved. Sediment and other impurities are trapped and offshore water and marine resources are thus protected and maintained by the wetland.

2. The Marhoffer Creek wetland acts to some measure as a regulator of surface and subsurface water flow. The wetland helps to retain water during dry seasons and absorb storm impact during periods of heavy rainfall. Thus the wetland protects against both flooding and drought.

3. The Marhoffer Creek wetland functions as important breeding, nesting, resting and feeding grounds for a wide variety of wildlife. The numerous vegetation types found throughout and immediately adjacent to the wetland provides for diversity of habitat and wildlife species.

4. Finally, the wetlands of Marhoffer Creek provide a distinctive viewshed for recreationists in the Pebble Beach

HABITAT	TYPICAL VEGETATION	REPRESENTATIVE WILDLIFE
Pastureland	Grasses, Sedges, Clover, Sorrel, Iris	Egret, Goldfinch, Swallows, Rodents, Moles
Marshland	Grasses, Sedges, Rushes, Silverweed, Willows	Hawks, Kites, Wrens, Warblers, Blackbirds, Muskrat, Beaver
Brushland	Huckleberry, Salal, Scotch Broom, Coyote Brush, Blackberry	Quail, Stellar's Jay, Rabbits, Deer, Feral Pig
Forestland	Sitka Spruce, Beach Pine, Shrubs, Ferns, Herbs	Owls, Woodpeckers, Sapsucker, Thrush, Skunks, rodents,
Riparian	Willows, Alders, Spirea, Salmonberry, Blackberry	Sparrows, Thrushes, Warblers, Junco, Racoon

TABLE 2: Principal Wildlife Habitats of Marhoffer Creek

area. The open pasturelands, scrub marshlands and spruce forests add to the aesthetics of the area.

F. Habitat Sensitivity: The ability of a habitat to absorb environmental changes is directly related to the diversity of that community. Habitat sensitivity is the relative degree to which a habitat can accommodate stressful impacts without change in species composition or damage to dependent organisms. The habitats identified as most sensitive in this study are the marshland and riparian areas. The forests and pastureland, because of their varied nature, are somewhat less sensitive. The brushland areas are somewhat more tolerant to change than the other habitat types.

1. Marshland:

   a) Marshlands act as a natural sponge to slow and filter water.

   b) These areas absorb water during floods and retain it during dry periods; thus keeping the water table relatively stable.

   c) Vegetation removal may result in: 1) a loss in ability to absorb water during floods; or 2) a drop in the water table, leading to salt water intrusion in dry periods.

   d) These areas also provide a unique habitat for wildlife. Birds occupying Castle Rock as well as Pacific Flyway migrants utilize these protective inland areas.

2. Riparian:

   a) Upstream land use practices may increase rates of siltation which will decrease water quality.

   b) Excessive siltation and debris deprived from riparian areas may clog the outlet culvert, resulting in flooding and/or disease problems.

   c) Riparian areas serve as cool protective sites for wildlife feeding, resting and drinking.

3. Forestlands:

   a) Forests provide man with valuable timber and revenue.

   b) Forests provide wildlife habitats and act as a corridor for their passage from upland areas to water and feeding sources.

c) Forests can moderate wind and storms.

d) These areas act to slow runoff.

4. Pasturelands:

a) Pasturelands are used for resting, nesting, hiding and feeding areas by many birds and small mammals.

b) They are productive and useful agricultural areas.

c) The improper use of chemicals in these areas may result in contamination to humans and wildlife via watercourses, the food chain or the air.

5. Brushlands:

a) Brushlands act to buffer noise and wind.

b) They reduce pedestrian entrances into areas.

c) They also provide protective cover necessary for wildlife to rest, nest, feed and hide in.

V. POLICIES AND RECOMMENDATIONS

A. Coastal Act Policies: The 1976 Coastal Act developed several policies for sensitive habitats and marine resources. A sensitive habitat is defined as:

"...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." (Coastal Act, Section 30107.5).

Coastal Act policies concerned with the maintenance of sensitive coastal habitats and resources are:

30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplied and encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible, mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessels berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, and substantial portions of the degraded wetland is restored and maintained as a biologically productive wetland; provided, however, that in no event shall the size of the wetland area used for such boating facility, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, be greater than 25 percent of the total wetland area to be restored.

(4) In open coastal water, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities.

(5) Incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource-dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California" shall be limited to very minor incidental public facilities, restorative measure, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of South San Diego Bay, if otherwise in accordance with this division.

30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible and be limited to (1) necessary water supply projects; (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or; (3) developments where the primary function is the improvement of fish and wildlife habitat.

30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

30607.1. Where any dike and fill development is permitted in wetlands in conformity with this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or such replacement site shall be purchased before the dike or fill development may proceed. Such mitigation measures shall not be required for temporary or short-term fill or diking: provided, that a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.

B. Present Local Policies: The Del Norte County General Plan adopted policies concerning marshlands and sensitive habitats in 1976. Policies from the conservation element designed towards the continued use and maintenance of wildlife habitat and vegetation are:

1. The County should require Environmental Impact Reports to insure the protection of fish, wildlife and plant species in the area considered for development.

2. Development to "improve" the Klamath and Smith Rivers with flood control facilities should be carefully reviewed and evaluated. Efforts should be made to maintain the natural function of the rivers.

3. The County should maintain all existing species of fish, wildlife, and vegetaion for their economic, intrinsic and ecological values as well as providing adequate protection of rare and endangered species.

4. Del Norte County should provide for diversified recreational use of fish and wildlife while providing preservation for their habitat.

5. The County should maintain forest lands in production under the multiple use concept which includes recreation and wildlife habitat.

6. Del Norte County should recognize and encourage the various uses of wildlife and their habitat, including such activities as passive watching, scientific studies, educational purposes and hunting and fishing.

7. The following areas are recognized as major locations of excellent wildlife habitat, native or natural vegetation and of aesthetic value. These areas should be maintained as wildlife habitat and protected from adverse activity. No further commitment to development should be allowed except that which is in the best interest of the public health, safety and welfare, or as noted.

   A. All offshore rocks and islands (seward of the mean high tide line) excluding Whaler and Battery Islands.

   B. Inland of the mean high tide line to the first line of vegetation (except in the areas of coastal bluffs when the area will be to the crest of the bluff), excluding the harbor area.

   C. Lakes Earl and Talawa and their immediate marshland, allowing continued agricultural uses.

   D. Sand dunes and wet sand areas, excluding limited development in appropriate areas.

   E. The tidal influenced areas of the Smith and Klamath Rivers. Commercial-Recreational and Public-Recreational development should be allowed but be carefully controlled to prevent significant alteration of the habitat areas. Gravel extraction should be allowed on a small scale consistent with local policy and state regulations.

8. The County should establish riparian corridors along local streams, creeks and sloughs to maintain their aesthetic appeal, wildlife habitat, control of erosion, and to provide natural vegetation separations between developed uses.

9. The County should establish selected woodland and forest areas to provide aesthetic appeal, wildlife habitat and natural separation between residential, commercial, industrial and other uses as warranted.

10. The County should pursue a cooperative role with the Forest Service in the protection and continued maintenance of all plants and animal species and their habitat.

Also of interest to the Marhoffer Creek Study are existing County policies regarding extractive resources.

1. No extraction should be permitted in areas where it would significantly harm, alter or destroy wildlife habitat, fisheries or archeological or historic sites and no adequate mitigation measures are deemed adequate.

2. Operators of extraction operations should take all precautions necessary to avoid contamination from waste disposal or general operation activity of the site, nearly streams or rivers, air and the environment in general. Existing and future local, state and federal regulations will be met or exceeded.

LCP Policies: Policies concerning sensitive habitats as well as marine, water and extractive resources have been developed in other components of Del Norte County's Local Coastal Plan. This section will present specific policies and recommendations for the Marhoffer Creek study area. The policies of the Marine & Water Resources Component apply to this area as well as those listed below.

1. Performance standards shall be developed and implemented which will guide development adjacent to upland marsh areas identified in the Marhoffer Creek study so as to permit utilization of land areas compatible with other policies while providing adequate maintenance of the subject marsh area.

2. A buffer strip shall be maintained in natural conditions around the Marhoffer Creek wetlands where adjacent land uses are found incompatible with the productivity or maintenance of the wetlands.

3. New development adjacent to the Marhoffer Creek wetlands shall not result in adverse levels of additional sediment, runoff, noise, wastewater or other disturbances.

4. Snags shall be maintained with the Marhoffer Creek wetland for their value to wildlife.

5 No motorized vehicle traffic shall be permitted within the Marhoffer Creek wetlands except for agriculture and forestry.

6 Riparian vegetation along the course of Marhoffer Creek and its branch streams shall be maintained for their qualities of wildlife habitat and stream buffer zones.

7. In areas where the boundary of the Marhoffer Creek wetland is in doubt a detailed survey of a parcel and the location of the wetland shall be required to determine the suitability of said parcel for dwelling or other building site and sewage disposal system before a permit is issued.

8. The pasturelands in the Marhoffer Creek area provide valuable habitat for wildlife and therefore should be maintained in their existing use as agricultural grazing.

9. Vegetation removal in the Marhoffer Creek wetland shall be limited to that necessary to maintain the free flow of the drainage courses and only when excessive impediment creates flooding hazards on adjacent lands.

10. The County should encourage and support educational programs in schools, park programs and community organizations which seek to increase public awareness and understanding of sensitive habitats and the need for their portection.

Del Norte County
Local Coastal Program

ELK CREEK WETLAND SPECIAL STUDY

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

ELK CREEK WETLAND
SPECIAL STUDY

Table of Contents

List of Tables i

List of Figures i

I. INTRODUCTION 1

II. STUDY AREA DESCRIPTION 3

A. Location 3

B. Climate 3

C. Topography 3

D. Geology 3

E. Soils 5

F. Vegetation 5

G. Wildlife 7

H. Historical Land Uses 7

J. Present-Day Land Use 7

III. PREVIOUS STUDIES 10

A. Haley Land Classification 10

B. Flood Control Studies 10

C. Soils Survey 10

D. Natural Vegetation Map 10

E. Flood Drainage Study 10

IV. METHODOLOGY 13

A. Mapping 13

B. Resource Inventory 13

V. FINDINGS 15

A. Drainage Patterns 15

B. Wetland Extent 15

C. Wetland Vegetation Types and Hydrologic Conditions 17

D. Principal Wildlife Habitats 18

E. Resource Value 20

F. Habitat Sensitivity 22

VI. POLICIES AND RECOMMENDATIONS 25

A. Coastal Act Policies 25

B. Present Local Policies 27

C. LCP Policies 29

APPENDIXES

I Plants in the Elk Creek Study Area 32

II Birds in the Elk Creek Study Area 35

III Mammals in the Elk Creek Study Area 38

IV Amphibians and Reptiles in the Elk Creek Study Area 39

GLOSSARY 40

BIBLIOGRAPHY 42

LIST OF TABLES

1 Soils of Elk Creek 6

2 Marshland Plant Communities 19

3 Principal Wildlife Habitats 21

LIST OF FIGURES

1 Location Map 4

2 Early Map of Elk Creek 11

3 Topographic Cross-Sections 16

ELK CREEK WETLAND
SPECIAL STUDY

I. INTRODUCTION

Elk Creek, with headwaters originating in the forested uplands of Jedediah Smith Redwoods State Park, flows in a general southwesterly direction to the Crescent City Harbor. A portion of this stream, together with its wetlands and wildlife are the subject of this special study.

The Del Norte County General Plan (1976) and the California Coastal Commission (1977) have both recognized the lower reaches of Elk Creek and its associated wetland as a sensitive habitat requiring particular attention in the process of coastal planning. The primary difficulty in attempting to develop a plan for this area is that the actual drainage patterns and wetland limits of Elk Creek are unknown. In addition, the overall resource value of the Elk Creek wetland is not fully understood and the measures necessary to maintain the habitat are in question. The purpose of this study is to define the limits of the Elk Creek wetland and identify its sensitive resources in order to permit logical and compatible development within the area.

A universally acceptable definition of wetland is difficult to establish. Wetlands are generally viewed as areas of low topography, poor drainage and seasonally standing water. The California Coastal Act of 1976 defines a wetland as follows:

> 30121. "Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

This study adopts the Coastal Act definition of wetland and further extends the term to include certain areas in which wetland indicator plant species are present. The definition and utilization of indicator species will be discussed in the methodology section. Wetland in this report refers to all marshlands, riparian corridors, seasonally flooded areas, and certain poorly drained pasturelands.

This report summarizes the accomplishments of the Elk Creek Wetland Special Study. First, a general description of the study area's location, physical features, history and present-day uses is presented and previous studies concerning the Elk Creek drainage are reviewed. Second, the methods used to conduct the mapping and resource inventory of Elk Creek are discussed followed by a presentation of the findings. Finally, specific policies and

recommendations designed to maintain and enhance the resource values of Elk Creek are presented.

An atlas of the Elk Creek Special Study area with maps at the scale of 1:12000 has been compiled to accompany this presentation. This map series illustrates the drainage courses, wetland areas and principal wildlife habitats as found by the study and includes also maps of the area's topography, soils, flood hazards, parcels and zoning as compiled from various sources.

II. STUDY AREA DESCRIPTION

A. Location: Elk Creek, with a drainage basin covering approximately 4120 acres, is located immediately northeast of the City of Crescent City. Elk Creek originates in the upland forests of Jedediah Smith Redwoods State Park and flows southwesterly to the Crescent City Harbor.

The portion of the Elk Creek drainage system examined by this study is bounded by Elk Valley Road, Parkway Drive, the City limits of Crescent City and the watershed divide separating Elk Creek from Jordan Creek (see Figure 1). The study area encompasses nearly 2000 acres.

B. Climate: The climate of coastal Del Norte County is influenced greatly by the Pacific Ocean. It is characterized by moderate temperatures throughout the year, considerable winter rainfall and cool foggy summers. The microclimatic conditions of the Elk Creek drainage are not well documented, but differences in moisture, temperature and wind are known to exist. These relate closely to topography, vegetative cover and distance from the ocean.

C. Topography: Elevations in the study area range from sea level to approximately 70 feet. Overall the study area is quite flat, but slopes between 20 to 50% occur in branch drainage systems.

D. Geology: Elk Creek lies within a coastal lowland area underlain by the Franciscan Complex. This area, known as the Crescent City Platform, was once a part of the Coast Range Mountains until some 25 million years ago when this block of mountains separated and slowly sank into the sea. Two formations have since been deposited over the original Franciscan formation and for the last 200,000 years the plateau has been rising to its present elevation.

1. St. George Formation: The lower formation, deposited during the Pliocene Epoch, is the 350-400 foot thick St. George Formation. This geologic layer is composed of fine grained sediments and is fairly impervious to water.

2. Battery Formation: The topmost deposit, known as the Battery Formation, is approximately 66 feet thick and consists of weakly consolidated material; alternating silt, clay and fine-to-medium grained quartz sands.[1] This formation may be subject to liquefaction: a sudden collapse of soil structure

---

1. Terra Scan Inc., 1976 Seismic Safety and Safety Element: An Element of the Del Norte County General Plan p. 11.

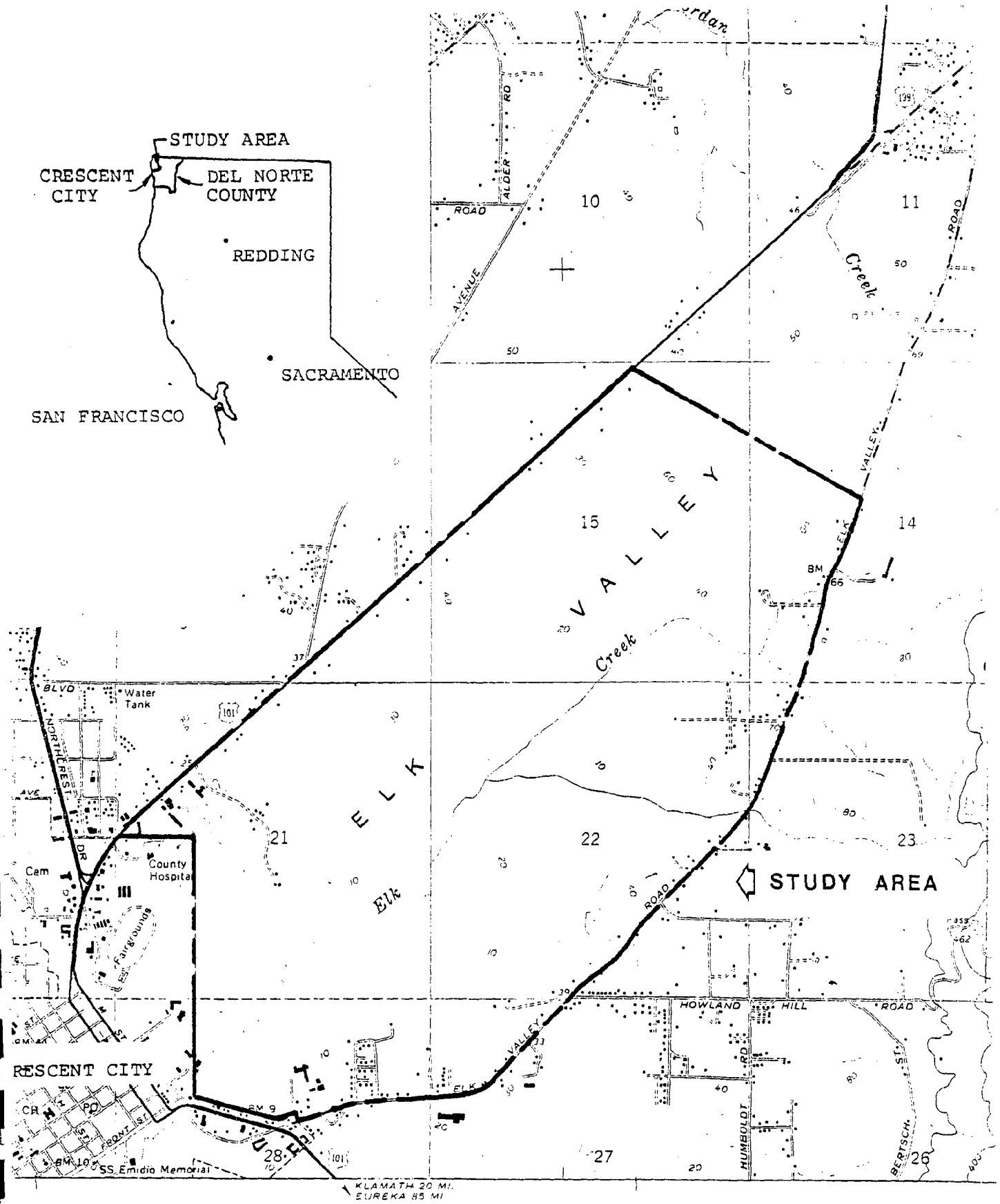


Figure 1: Location Map

and a temporary increase of the material into a fluid mass associated with earthquake activity. The area has a shallow water table; during periods of heavy precipitation standing water often occurs in low-lying areas.

E. Soils: Approximately 75 percent of the soils within the Elk Creek study area have been identified in a survey of the agricultural soils of coastal Del Norte County by U.C. Davis. Soil types recognized are as follows:

Talawa Fine Sandy Loam	(Ta 2)
Talawa Poorly Drained	(Ta 3)
Hutsinpillar Silty Clay Loam	(Hp 2)
Peat Bog	(PB)
Arcata Loam	(Ar 2)

1. Talawa Soils: The Talawa soils occur on low marine terraces that have been slightly uplifted. Generally they are well drained unless situated in depressed areas. Elk Creek soils of this type are in some instances poorly drained as is evidenced by standing water.

2. Hutsinpillar Soils: The Hutsinpillar soil-type typically occurs in basins of small streams draining the nearby Franciscan formation. This soil is poorly drained, fine textured, and has a well developed profile.

3. Peat Bog: Peat bog occurs in areas where organic matter has accumulated in excess of mineral matter. It is poorly to very poorly drained. The depth of these peat layers usually does not exceed three feet.

4. Arcata Soils: The Arcata loam occurs on old marine terraces. Slopes are usually less than 4 percent. This soil is well drained; its permeability is moderately rapid.

The principal soil types of Elk Creek and their physical characteristics are summarized in Table 1.

F. Vegetation: Vegetation may be defined as the aggregation of plant life and a landscape. Vegetation is particularly useful as an indicator of environmental conditions in that the growth forms and species composition of a given vegetation type represent integrated expressions of prevailing climatic, soil and other physical/biological factors.

Vegetation types within the Elk Creek Study Area progress from

TABLE 1: Soils of Elk Creek

SOIL TYPE	SYMBOL	% SLOPE	INTERNAL DRAINAGE	% MAPPED IN STUDY AREA	DOMINANT VEGETATION
Arcata Loam	Ar 2	0-3	Good	2	Grasses; bracken fern
Talawa Fine Sandy Loam	Ta 2	0-3	Good	66	Redwood; Spruce; Hemlock; Cascara; Huckleberry; Salal
Talawa Fine Sandy Loam (poorly drained)	Ta 3	0-3	Poor	5	Spruce; Skunk Cabbage; Horsetail; Various water-loving plants
Hutsinpillar Silty Clay Loam	Hp 2	0-3	Poor	23	Grasses; Bulrush; Silver-weed; water-loving plants
Peat Bog	PB	---	Poor	4	Grasses; Sedges; Rushes

saturated wetlands in the lower reaches to the somewhat drier upland forests. The lower end of the Elk Creek Wetland consists of a variety of herbaceous plants. Chief among these are numerous pastureland grasses and clovers. Further upstream are dense growths of rushes and sedges: these are located primarily in the boggy, poorly drained areas. On the periphery of the bogs are dense shrubby thickets of spirea and several willow species. From the shrub thickets to the upper reaches of the study area are numerous riparian corridors associated with Elk Creek and its tributaries. Dense overgrowths of alders and berries line the banks of the streams. Skunk cabbage and horsetail fern are also present. Second growth Sitka spruce, Douglas fir, and isolated redwoods are situated on the cutover upland areas. Understory primarily consists of huckleberry and salal.

G. Wildlife: The diverse habitats of the Elk Creek Special Study area support a wide variety of wildlife. Many species of birds, mammals, and reptiles have been observed and are known to frequent the area.

Large mammals utilizing the area include the black bear and more commonly, the blacktail deer. Also thought to utilize the area are the coyote, gray fox, bobcat, raccoon, spotted skunk, and stripped skunk. Small mammals include hares, rabbits, gophers, squirrels, moles, shrews and bats. Associated rodents include mice and voles.

The Elk Creek area supports local bird populations as well as Pacific Flyway migrants. Song birds frequenting the area include juncos, finches, larks, sparrows, thrushes, warblers and wrens. Quail and doves utilize the brushy areas. Raptor species in the Elk Creek area include hawks, kites, and owls. Great blue herons, ducks and geese are known to use the habitat.

Historically, Elk Creek supported a large anadromous and adfluvial fishery. The present extent of the fishery is unknown. Debris appears to block several areas.

Various reptiles and amphibians including: salamanders, the western toad, the Pacific tree frog, the common western fence lizard, garter snake, gopher snake and others exist in the Elk Creek drainage.

A partial listing of species sited in the course of this study as well as some which are generally known to utilize the wetland and the associated riparian habitat during all or part of their life-cycle may be found in Appendix II. An intensive, year-round field study is recommended to complete the species list.

H. Historical Land Uses: The first known man-related land use

of the Elk Creek area was by the local Talawa Indians. The Talawa are known to have fished for salmon offshore from Crescent Bay near the mouth of Elk Creek. Elk and deer were abundant; for this reason early explorers christened the valley "Elk Valley". Early records describe the valley as being covered with willow, alder, salmonberry, blackberry, raspberry bushes and ferns. The associated foothills were covered by redwoods, spruce and fir with an estimated 24,300 acres of timber available.[2]

Early settlers successfully cleared the land for farming and dairying; the various products were used locally as well as for export. A brickyard which enabled Crescent City to erect its first brick building was located in the Valley as well as a barrel factory.

Historically Elk Creek, or Elk River as it was once known, drained a low, marshy prairie for several miles. Fish were abundant and the slough served as a local swimming hole. Berry picking was another commonplace activity.

In 1871 Hobbs, Pomeroy and Company built the Elk River Mill which utilized logs transported from harvest sites, first by skid trails and then by flotation down the slough.[3] In the 1880's a railroad was built to transport logs; the railroad bed is still evident to this day.

The once expansive farms and ranches of Elk Valley have since been subdivided. Places such as Howland Hill, McNamara Mound and numerous streets, buildings and other areas remain as testimony to the early pioneers. Farming, logging, recreation and industry have remained important activities through the years.

J. Present-Day Land Use: Present-day land uses in the Elk Creek area include: agriculture; forestry; recreation; industrial; residential and open space. Each will be examined briefly.

1. Agriculture: Grazing is the predominant agricultural activity in the Elk Creek area. This land use is generally limited to the lower portion of Elk Creek where extensive pasturelands for horses and cows are maintained.

2. Forestry: Logging in the Elk Creek drainage has occurred on a regular basis since the 19th century. The exact history of cutting is unknown, but it is safe to say that most

---

2. Bledsoe, A.J., (1881), History of Del Norte County, p. 122

3. McBeth, Frances Turner, (1960), Pioneers of Elk Valley, p. 57

forested areas today are at least 2nd or 3rd growth timber. The most recent timber harvest activities have taken place in the area between Parkway Drive and Elk Creek.

3. Recreation: A 46 acre recreational vehicle park and campground exists off Parkway Drive near Washington Blvd. This is the only commercial recreation land use within the study area.

4. Industrial: Most of the existing industrial land uses within and adjacent to the Elk Creek study area are located on Elk Valley Road between Highway 101 and Howland Hill Road. Industrial land uses throughout the Elk Creek area include: timber processing; fishpacking; and various vehicle repair facilities. A timber mill is located adjacent to the lower drainage area and a particle board mill is situated just south of Elk Valley Road. The fish packaging facility is located north of Elk Valley Road between Iowa and National Streets. Vehicle repair shops exist on Parkway Drive and Elk Valley Road.

5. Residential: Residential development has taken place on the periphery of Elk Creek. In general residential lots range from one to ten acres in size and the structures on these lots vary from mobilehomes to ranch-style homes.

6. Open Space: Recognizing the sensitivity of the Elk Creek wetlands, the County's General Plan designated the interior portions as open space. These areas remain undeveloped today.

III. PREVIOUS STUDIES

Investigations concerning the extent and resource value of the Elk Creek wetland and associated drainage are few. Maps and other information from previous studies are often in disagreement as to the limits of the wetland and the drainage patterns of Elk Creek. This section will briefly review the accomplishments of past studies.

A. Haley Land Classification: An early study in which the Elk Creek marshland was delineated occurs in the 1925 Land Classification maps of H.D. Haley and Company of Portland, Oregon. A portion of one of these maps is shown in Figure 2. The accuracy of these early maps is quite good: unfortunately the coverage for Elk Creek is limited. For the portions mapped there appears to have been little change in the extent of the marsh in the fifty-four years since this mapping effort.

B. Flood Control Studies: Studies of the drainage problems in the lower portion of Elk Creek were conducted by the Del Norte County Flood Control District with assistance from the California Division of Highways between 1957 and 1966. Bridge and culvert reconstructions together with interior channel and pond improvements were made in this time period to help relieve drainage and flooding problems. Hydrologic data and general descriptions of the lower portions of Elk Creek are available from these studies.

C. Soils Survey: The soils of coastal Del Norte County were mapped by soil scientists of the University of California, Davis in 1966. This survey included a portion of the Elk Creek special study area. The soil types of Elk Creek as mapped by the U.C. Davis study are presented in the accompanying atlas.

D. Natural Vegetation Map: Küchler mapped and described the natural vegetation of California in 1977. Although the scale of the map (1:1000000) makes its direct application to the Elk Creek study impractical, the major vegetation types described for coastal Del Norte County are useful. The vegetation units of Küchler are those that may be expected to exist if "not appreciably disturbed by man" or those which would return in time (i.e., potential or climax vegetation). The vegetation of Elk Creek has been significantly disturbed, but remnants and descendants of the original vegetation do exist. Using Küchler's designations, the natural vegetations types of Elk Creek are: Coastal Prairie/ Scrub Mosaic; Sitka Spruce Forest; Redwood Forest; and Coastal Saltmarsh.

E. Flood Drainage Study: A flood drainage study north of Crescent City, including portions of Elk Creek, was completed by CH_2M Hill in 1978. The study was conducted for the Del Norte County Department of Public Works to determine storm drainage deficiencies

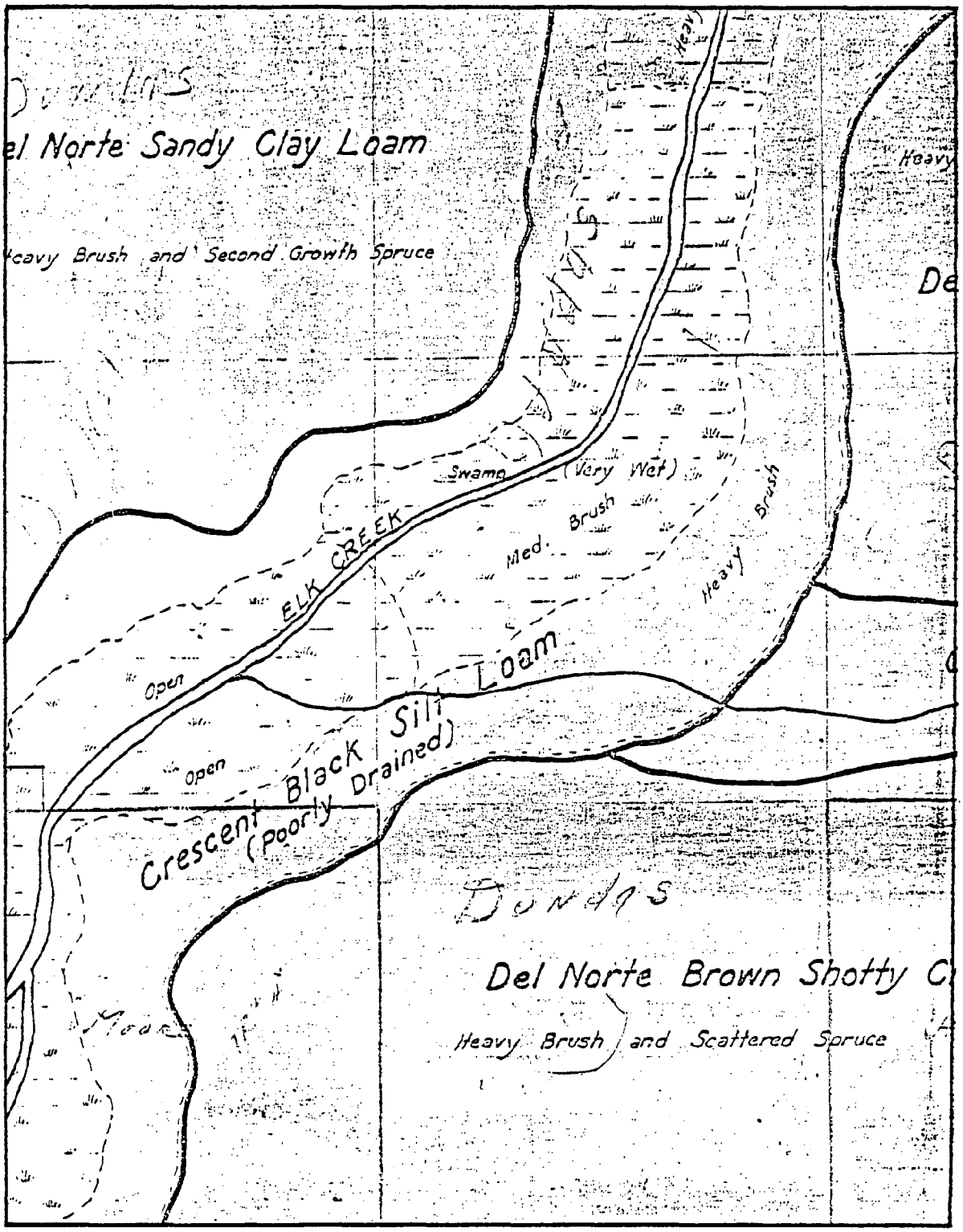


FIGURE 2: Early Map of the Elk Creek Marsh showing portions of Section 22.

FROM: H. D. Hadley and Company (1925) "Official Land Classification for Del Norte County".

and recommend solutions to these problems. A further objective of the study was to identify flood hazards along major drainage channels. The flood hazard areas were delineated on topographic maps at the scale 1" = 100' with 2 foot contour intervals.

IV. METHODOLOGY

This section will present the research methods of the Elk Creek Wetland Special Study. The resource inventory and mapping project for the Elk Creek Wetland was conducted in June and July of 1979. The purpose of this effort was to establish a more precise location of the Elk Creek Drainage system and its associated wetland and to better identify the resource values and sensitivity of the area.

A. Mapping: The Elk Creek Wetland was mapped using a combination of air photo interpretation techniques, indicator species identifications and field measurements.

1. Photo Interpretation: Black and white panchromatic and U-2 color infrared aerial photography were utilized to determine wetland boundaries in general terms. Color Infrared Film (CIR), originally developed for camouflage detection, was especially useful in distinguishing vegetation types and differentating water surfaces and wet soils.

Drainage patterns and wetland limits were recorded on the aerial photographs and after field checking were transferred to a base map of the scale of 1:12000.

2. Indicator Species: An indicator species is a plant that because of its specific ecological requirements for growth and reproduction lives only in certain habitats. Such a plant may indicate that a certain habitat exists if the particular species is present. Indicator species used to identify the limits of the Elk Creek Wetland included: sedges; rushes; horsetail; skunk cabbage; and willows.

3. Field Measurements: In areas where the wetland limits were not readily identified on aerial photography a field check was conducted. The field checking procedure was to first identify the wetland limits on the ground using indicator species. The wetland boundary locations were then measured with compass and tape from identifiable points such as survey monuments or road intersections and transferred to the base map.

An atlas with maps at the scale of 1:12000 was prepared to delineate the drainage patterns and wetland areas as determined by this study. Various other maps including topography, flood hazards, soils, land divisions and existing zoning are also presented. Note that these maps are intended for planning purposes only and are not to be used for detailed engineering or surveys.

B. Resource Inventory: The resource inventory aspects for the Elk Creek Special Study involved delimiting the significant wildlife habitats of the area and identifying species utilizing these habitats.

1. Wildlife Habitats: A habitat is a place where an animal lives. For example, the long-billed marsh wren lives in marsh habitats. Other birds and animals are known to range through more than one habitat type.

The identification of wildlife habitats has been emphasized in this study over other methods of wildlife research such as population counts or detailed species inventories. Establishing the locations and relative value of various wildlife habitats will better serve the purpose of this study: that is to determine those areas most suitable for development while maintaining the integrity and productivity of surrounding sensitive lands and waters.

The principal wildlife habitats identified by this study have been differentiated on the basis of vegetation types and water conditions.

2. Wildlife Inventory: A systematic inventory of wildlife was not conducted by this study. Casual observations were made, however, during the progress of field mapping.

The observation periods amounted to approximately 20 hours over the course of 1½ summer months. Thus, by no means have the full diurnal and seasonal uses of Elk Creek's principal wildlife habitats been examined. Additional work is needed to further understand the organization and interactions of the wildlife communities recognized by this study. It is therefore recommended that a thorough wildlife inventory and analysis be conducted (including night observations) for at least a one year period.

V. FINDINGS

The major findings of this study involve the delineation of the drainage patterns of Elk Creek and the determination of the wetland's extent. Further results include the identification of principal wildlife habitats within the study area and a better understanding of the habitat sensitivity of Elk Creek. The significant findings of this study will be summarized in this section.

A. Drainage Patterns: Previous mapping efforts of Elk Creek have resulted in confusion concerning the location of the main channel and its branch streams: no two maps depict these in the same locations.

An important result of this study is a more precise delineation of the Elk Creek drainage patterns. This was required to fully understand the extent of the marshlands in Elk Creek. The drainage patterns mapped by this study are shown in the accompanying atlas.

A second finding concerning the drainage patterns of Elk Creek is that considerable topographic differences exist between the northwesterly and the southeasterly portions of the basin. The topography in the four branch streams entering Elk Creek from the northwest is quite steep with slopes up to 50%. The branch streams entering from the southeast on the other hand, lie in channels with relatively flat relief.

Figures 3A and 3B illustrate the topographic differences between the northwesterly and southeasterly sides of Elk Creek. These topographic patterns greatly influence the extent of the Elk Creek wetlands. The channels in the northwest section tend to be quite narrow, restricted by the steep topography. The stream channels entering from the southeast, conversely, tend to be wider and the surrounding area subject to more extensive flooding because of its flat relief. We thus find the wetland extending a greater distance from the streams in the southeasterly portion of Elk Creek than the northwest.

B. Wetland Extent: A wetland, in general, may be identified as a tract of relatively low, periodically inundated ground. Typical plant species of wetlands are grasses, sedges and rushes.

The delineation of the Elk Creek Wetland is complicated by several factors. First of all, the complex history of land use in the area has greatly altered natural patterns. For example, road building has created new marshland in upland areas. Second, the wetland extends well into densely forested areas in numerous locations. This makes interpretation of the wetland's precise limits from aerial photography impossible in many instances. Field checking in these areas is also difficult due to the lack of available reference points. Finally, the plant species characterizing

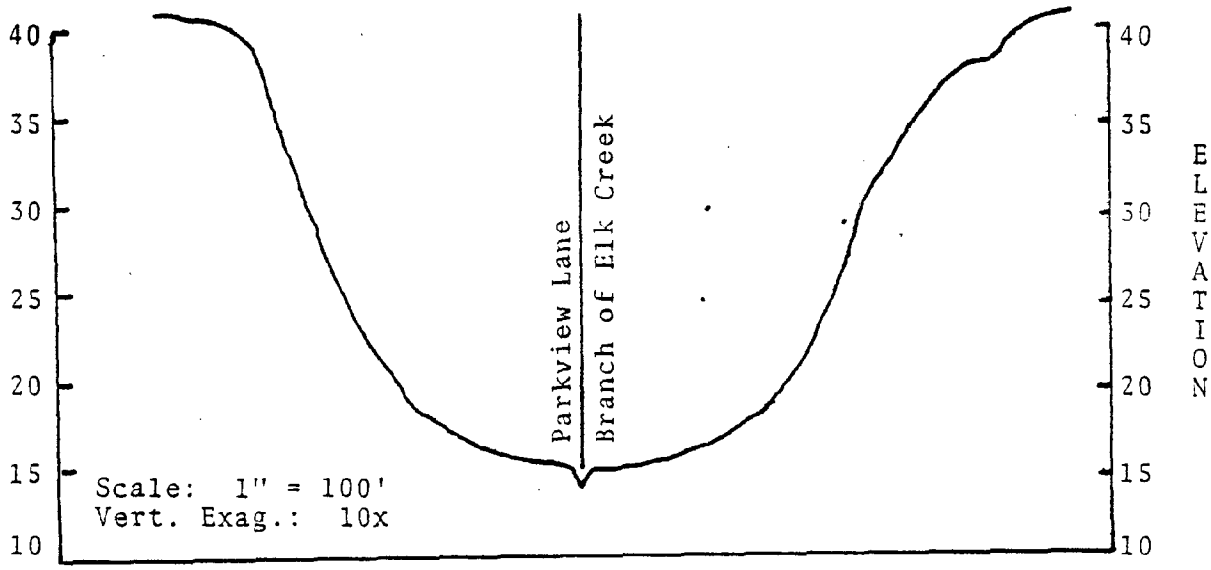


Figure 3A: Topographic X-Section of tributary in northwesterly portion of Elk Creek near Parkview Lane and Cessna Drive.

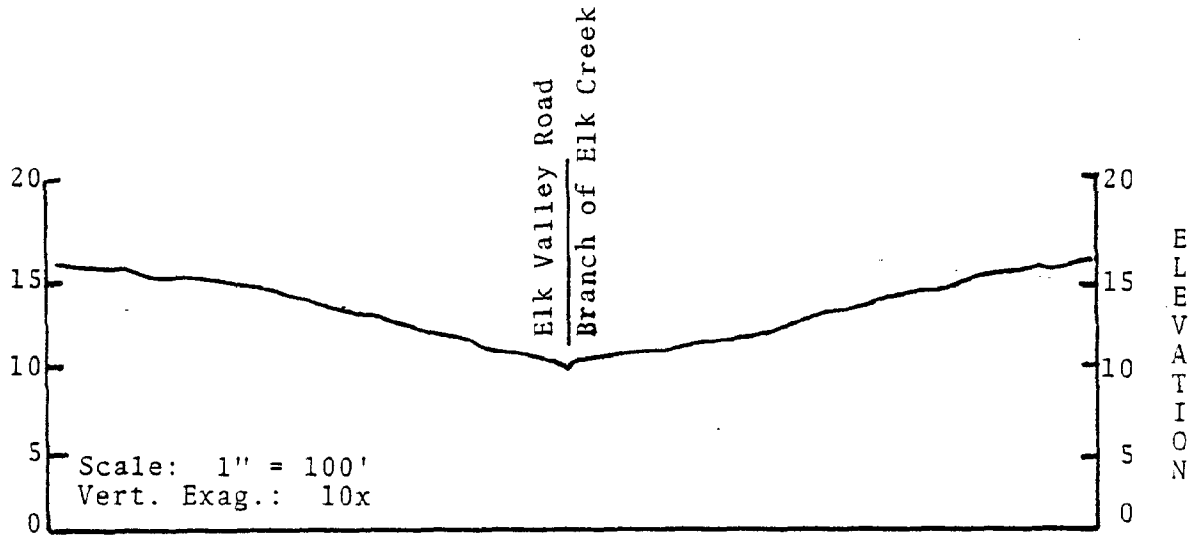


Figure 3B: Topographic X-Section of tributary in southeasterly portion of Elk Creek near Elk Valley and Howland Hill Roads.

the Elk Creek Wetland are much more complex than the typical grasses, sedges and rushes of many wetland areas. Shrubs and trees often dominate within the Elk Creek Wetland.

The extent of the Elk Creek Wetland as found by this study is shown in the atlas. This includes several wetland subtypes and riparian vegetation as well. The boundary of the wetland is shown as a dashed line to indicate the approximate limits of the wetland. In nature such boundaries are rarely ever distinct lines. They tend rather to transitional zones gradually changing from one type to another (e.g. marshland—marsh and scattered trees—forestland marsh—forestland). The wetland boundaries thus shown are not intended to be precise delimiters of the wetland, but indicate regions of transition. Specific findings will be required on a parcel by parcel basis concerning building sites and septic tank leach fields at or near the wetland boundary zone.

C. Wetland Vegetation Types and Hydrologic Conditions: Eight major wetland vegetation types have been differentiated in the Elk Creek study area. A brief description of the plant composition and hydrologic conditions of each will be presented.

1. Pastureland: This portion of the Elk Creek wetland is located in the lower reaches of the drainage and is presently being grazed by cattle. Principal plant species are: bentgrass; redtop; cow's clover; sheep sorrel; sedge; daisy; and tansey ragwort. The pastureland portions of Elk Creek are moderately to poorly drained and generally flood on a seasonal basis.

2. Saltgrass Marsh: The saltgrass marsh areas are located immediately upstream from the pasturelands. Major species in the saltgrass marsh include: saltgrass; arrow-grass; cinquefoil; and curly dock. This portion of the Elk Creek wetland contains numerous small interlacing rivulets: evidence of regular seasonal inundation.

3. Sedge Marsh: The sedge marsh, consisting of dense growths of slough sedge, is situated upstream from the grasslands. Other plant species occurring in the sedge marsh include: cinquefoil, Queen Anne's lace and isolated patches of willows and shrubs. The sedge marsh is inundated seasonally.

4. Rush Marsh: Rushes are located in year-round flooded portions of the Elk Creek wetland such as along stream channels and in various shallow ponds. Typical plant species of the rush marsh community are: bulrush; salt rush; spikerush; soft rush; and bur-reed.

5. Shrub Marsh: The shrub marsh may be considered a transitional area or ecotone between the sedge marsh and

forested areas of the Elk Creek drainage. The shrub marsh consists of very dense populations of willows and shrubs such as Douglas spirea and twinberry. Horsetail ferns, sedges and grasses are also present. The shrub marsh is a seasonally flooded area.

6. Forestland Marsh: In various locations the Elk Creek marsh extends into forested regions. The major tree species in the forestland marsh are Sitka spruce, redwood and western hemlock. The understory includes: huckleberry; thimbleberry; sword fern; horsetail fern; and skunk cabbage. Moist conditions prevail in the forestland marsh and it tends to be flooded occassionally.

7. Upland Marsh: Several small marshland areas are located above and away from the Elk Creek drainage and wetland. These non-contiguous, seasonally flooded areas appear to have been created by road building activities and occur principally on the northwesterly side of Elk Creek. Their plant composition is quite variable depending upon the size of the inundated area. Snags are common together with various shrubs, sedges and grasses.

8. Riparian Community: Riparian vegetation is the plant cover growing in association with streams and other water courses. It is usually characterized by dense growths of trees and shrubs.

The riparian vegetation of Elk Creek is distinguished in the study as a relatively narrow strip of vegetation growing in close association with upper drainage courses. It is difficult to identify this vegetation type in Elk Creek, except for its proximity to water courses, in that the riparian community grades into the forestland without distinctive boundaries. Riparian vegetation is also found around the perimeters of various ponds in Elk Creek.

Plant species typically found in the riparian communities of Elk Creek are: willows; red alder; wax-myrtle; spirea and blackberry.

Table 2 summarizes the typical vegetation and general hydrologic conditions found in the eight marsh communities identified within the Elk Creek Special Study area.

D. Principal Wildlife Habitats: Six principal wildlife habitats within the Elk Creek study area have been identified on the basis of vegetation types and hydrologic conditions. These are: ponds; pastureland; marshland; brushland; forestland; and riparian.

1. Ponds: Numerous ponds are located within the Elk Creek study area. These range from shallow depressions in poorly

COMMUNITY	TYPICAL VEGETATION	HYDROLOGIC CONDITIONS
Pastureland	Grasses, Sedges, Clover, Sorrel, Tansey Ragwort	Moderately to poorly drained. Seasonally flooded.
Saltgrass Marsh	Saltgrass, Arrowgrass, Curly Dock, Cinquefoil	Moist to wet conditions. Seasonally flooded.
Sedge Marsh	Slough Sedge, Cinquefoil, Queen Anne's lace	Moist to wet conditions. Seasonally flooded.
Rush Marsh	Bulrush, Spikerush, Salt Rush, Bur-reed	Shallow flooded areas. Often along drainage channels.
Shrub Marsh	Willows, Spirea, Twinberry, Horsetail, Sedges, Grasses	Moist conditions. Seasonally flooded.
Forestland Marsh	Sitka Spruce, Redwood, Alder, Salmonberry, Skunk Cabbage	Moist conditions. Occasionally flooded.
Upland Marsh	Snags, Bay, Azalea, Sedges, Grasses	Areas of standing water or wet conditions--occasionally drying-out.
Riparian	Willows, Alder, Wax-Myrtle, Spirea, Blackberry	Associated with water courses.

TABLE 2: Marshland Plant Communities of Elk Creek

drained areas to large open water detention ponds in the lower marsh. Ducks, geese, kingfishers and heron are representative birds which use this habitat.

2. Pastureland: Pasturelands are found in the lower portions of the Elk Creek Wetland. Waterfowl and wading birds utilize this habitat as auxiliary feeding grounds.

3. Marshland: The saltgrass, sedge, and shrub marshes are combined to describe this habitat type. It consists of moist conditions and generally dense cover for a variety of wildlife. Hawks, kites, wrens and warblers are known to live in or frequent the marshland habitat.

4. Brushland: Brushland habitats are located above the marshlands on drier sites. These are generally cut-over areas that have not yet returned to forest vegetation. They often contain an abundance of new tree growth including Douglas fir, spruce, pine and cedar seedlings and redwood sprouts. In this early successional stage they provide forage for a wide variety of wildlife. Representative species of the brushland habitat are: quail, deer and rabbits. Bear and feral pigs are also known to exist in the brushlands of Elk Creek.

5. Forestland: Forests with dominants of Sitka spruce, redwood and Douglas fir occur in the Elk Creek area. Other tree species include: western hemlock; western red cedar; cascara buckthorn; madrone; and red alder. The forest areas provide dense cover for such species as: owls; woodpeckers; sapsuckers; thrushes; and a variety of rodents.

6. Riparian: Riparian habitat is dense vegetative cover associated with water courses. Willows, alders and various shrubs are common. Sparrows, thrushes, warblers, and juncos utilize this habitat.

The principal wildlife habitats of Elk Creek are illustrated in the accompanying atlas. A summary of each habitat type indicating typical vegetation species and representative wildlife is presented in Table 3.

E. Resource Value: The overall resource value of the Elk Creek wetland may be summarized as follows:

1. Through the natural filtering action of aquatic plants and organic matter, the quality of water flowing from the Elk Creek wetland is improved. Sediment and other impurities are trapped and harbor waters and marine resources are thus protected and maintained by the wetland.

HABITAT	TYPICAL VEGETATION	REPRESENTATIVE WILDLIFE
Ponds	Pondweed, Pond Lily, Rushes, Willows, Snags	Ducks, Geese, Kingfisher Heron, Muskrat, Frogs
Pastureland	Grasses, Sedges, Clover, Sorrel, Tansey Ragwort	Egret, Goldfinch, Swallows, Rodents, Moles
Marshland	Saltgrass, Sedges, Arrow-grass, Rushes, Silverweed, Willows	Hawks, Kites, Wrens, Warblers, Blackbirds
Brushland	Huckleberry, Salal, Scotch Broom, Coyote Brush, Ninebark	Quail, Stellar's Jay, Deer, Bear, Feral Pig, Rabbits
Forest	Sitka Spruce, Redwood, Douglas Fir, Shrubs, Ferns, Herbs	Owls, Woodpeckers, Sapsucker, Thrushes, Skunks, Rodents
Riparian	Willows, Alders, Wax-Myrtle, Spirea, Salmonberry, Blackberry	Sparrows, Thrushes, Warblers, Junco, Racoon

TABLE 3: Principal Wildlife Habitats of Elk Creek

2. The Elk Creek wetland acts to some measure as a regulator of surface and subsurface water flow. The wetland helps to retain water during dry seasons and absorb storm impact during periods of heavy rainfall. Thus the wetland protects against both flooding and drought.

3. The Elk Creek wetland functions as important breeding, nesting, resting and feeding grounds for a wide variety of wildlife. The numerous vegetation types found throughout and immediately adjacent to the wetland provides for diversity of habitat and wildlife species.

F. Habitat Sensitivity: Each habitat type in this study varies in its ability to assimilate impacts as well as its sensitivity to change. This variability helps to diversify the entire community, thereby increasing an area's ability to absorb stressful impacts. This section will identify the sensitivity of each habitat by recognizing human needs and impacts: i.e., planning issues. Probably most sensitive and least tolerant to impacts are the pond, marshland and riparian habitats. The pastureland and forest can adjust to impacts somewhat more readily, while the brushland are relatively tolerant.

1. Ponds:

a) Ponds serve as resting areas for game as well as non-game waterfowl and other birds.

b) The water in Elk Creek ponds is that which feeds into the bay and eventually the ocean. Chemicals directly discharged or allowed to seep through groundwater supplies will eventually enter the bay and ocean via these ponds.

c) Vegetation growing in and along the banks of these ponds acts to slow the rate of discharge into the bay as well as the related quantity of sediment.

2. Marshland:

a) Marshlands act as a natural sponge to slow and filter water.

b) This area absorbs water during floods and retains water during dry periods, thus keeping the water table relatively stable.

c) Vegetation removal may result in: 1) flooding during periods of excessive rainfall; or 2) a drop in the water table leading to saltwater intrusion in dry periods.

d) Marshlands provide a unique and valuable wildlife habitat.

3. Riparian:

a) Upstream land use practices may increase rates of siltation which will decrease water quality.

b) Excessive siltation and debris may clog marshland and pond areas which could lead to flooding and/or disease problems.

c) Maintenance of riparian vegetation and/or mitigation of stream vegetation removal will keep rates of siltation in the marsh and the bay stable.

d) Riparian areas serve as cool protective sites for wildlife feeding, resting and drinking.

4. Pastureland:

a) Pasturelands are quite frequently used as resting and feeding areas for many birds.

b) They are also productive and useful agricultural areas.

c) At the same time they serve as buffers from urban impacts on rural areas.

d) The improper use of chemicals in these areas may result in contamination to humans and wildlife via water courses and the food chain.

5. Forestlands:

a) Forests provide man with valuable timber and revenue.

b) They provide wildlife habitat and act as a corridor for their passage from upland areas to water and feeding sources.

c) Forests can moderate wind and storms and are able to absorb noise from traffic and industrial areas.

d) These areas also act to slow runoff.

e) Forests can be particularly attractive sites for recreation and with wise planning, real estate values can be maintained.

6. Brushlands:

a) Because of its relatively quick ability to replace itself, brushland areas are seen as relatively tolerant of various impacts.

b) Brushlands tend to reduce pedestrian entrances into areas.

c) They also act to buffer noise and wind.

d) They provide protective cover necessary for wildlife to rest, nest, feed and hide in.

VI. POLICIES AND RECOMMENDATIONS

A. Coastal Act Policies: The Coastal Act of 1976 set forth several policies as regards sensitive habitats and marine resources. An environmentally sensitive habitat is defined as:

"...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments." (Coastal Act, Section 30107.5)

Section 30121 of the Coastal Act defines wetland as follows:

"Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

Specifically, Coastal Act policies concerned with the maintenance of sensitive coastal habitats and resources are:

30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing alteration of natural streams.

30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible, mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a bioligically productive wetland; provided, however, that in no event shall the size of the wetland area used for such boating facility, including berthing space, turning basin, necessary navigation channels, and any necessary support service facilities, be greater than 25 percent of the total wetland area to be restored.

(4) In open coastal water, other than wetlands, including streams, estuaries and lakes, new or expanded boating facilities.

(5) Incidental public service purposed, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource-dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, of otherwise in accordance with this division.

30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible and be limited to (1) necessary water supply projects; (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

30607.1 Where any dike and fill development is permitted in wetlands in conformity with this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas if equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or such replacement site shall be purchased before the dike or fill development may proceed. Such mitigation measures shall not be required for temporary or short term fill or diking; provided, that a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.

B. Present Local Policies: County Policies concerning marshlands and riparian habitats were adopted in the Del Norte County General Plan of 1976. Policies from the conservation element designed towards the continued use and maintenance of wildlife, habitat and vegetation are:

1. The County should require Environmental Impact Reports to insure the protection of fish, wildlife and plant species in the area considered for development.

2. Development to "improve" the Klamath and Smith Rivers with flood control facilities should be carefully reviewed and evaluated. Efforts should be made to maintain the natural function of the rivers.

3. The County should maintain all existing species of fish, wildlife, and vegetation for their economic, intrinsic and ecological values as well as providing adequate protection of rare and endangered species.

4. Del Norte County should provide for diversified recreational use of fish and wildlife while providing preservation of their habitat.

5. The County should maintain forest lands in production under the multiple use concept which includes recreation and wildlife habitat.

6. Del Norte County should recognize and encourage the various uses of wildlife and their habitat, including such activities as passive watching, scientific studies, educational purposes and hunting and fishing.

7. The following areas are recognized as major locations of excellent wildlife habitat, native or natural vegetation and of aesthetic value. These areas should be maintained as wildlife habitat and protected from adverse activity. No further commitment to development should be allowed except that which is in the best interest of the public health, safety and welfare, or as noted.

   a) All offshore rocks and islands (seaward of the mean high tide line) excluding Whaler and Battery Islands.

   b) Inland of the mean high tide line to the first line of vegetation (except in the areas of coastal bluffs when the area will be to the crest of the bluff), excluding the harbor area.

   c) Lakes Earl and Talawa and their immediate marshland, allowing continued agricultural uses.

   d) Sand dunes and wet sand areas, excluding limited development in appropriate areas.

   e) The tidal influenced areas of the Smith and Klamath Rivers. Commercial-Recreational and Public-Recreational development should be allowed but be carefully controlled to prevent significant alteration of the habitat areas. Gravel extraction should be allowed on a small scale consistent with local policy and state regulations.

8. The County should establish riparian corridors along local streams, creeks and sloughs to maintain their aesthetic appeal, wildlife habitat, control of erosion, and to provide natural vegetation separations between developed uses.

9. The County should establish selected woodland and forest areas to provide aesthetic appeal, wildlife habitat and natural separation between residential, commercial, industrial and other uses as warranted.

10. The County should pursue a cooperative role with the Forest Service in the protection and continued maintenance of all plants and animal species and their habitat.

Also of interest to this Elk Creek study are existing County policies regarding extractive resources.

1. No extraction should be permitted in areas where it would significantly harm, alter or destroy wildlife habitat, fisheries or archeological or historic sites and no adequate mitigation measures are deemed adequate.

2. Operators of extraction operations should take all precautions necessary to avoid contamination from waste disposal or general operation activity of the site, nearby streams of rivers, air and the environment in general. Existing and future local, state and federal regulations will be met or exceeded.

C. C. LCP Policies: Policies concerning sensitive habitats as well as marine, water and extractive resources have been developed in other components of Del Norte County's Local Coastal Plan. This section will present specific policies and recommendations for the Elk Creek Special Study area. The policies of the Marine & Water Resources Component apply to this area as well as those listed below:

1. Performance standards shall be developed and implemented which will guide development adjacent to upland marsh areas identified in the Elk Creek Special Study so as to permit utilization of land areas compatible with other policies while providing adequate maintenance of the subject marsh area.

2. A buffer strip, shall be maintained in natural conditions around the Elk Creek wetlands where adjacent land uses are found incompatible with the productivity or maintenance of the wetlands.

3. New development adjacent to the Elk Creek wetlands shall not result in adverse levels or additional sediment, runoff, noise, wastewater or other disturbances.

4. Snags shall be maintained within the Elk Creek wetland for their value to wildlife.

No motorized vehicle traffic shall be permitted within the Elk Creek wetlands except for agriculture and forestry.

6. Riparian vegetation along the course of Elk Creek and its branch streams shall be maintained for their qualities of wildlife habitat and stream buffer zones.

7. In areas where the boundary of the Elk Creek Wetland is in doubt, a detailed survey of a parcel and the location of the marsh shall be required to determine the suitability of said parcel for dwelling or other building site and sewage disposal system before a permit is issued.

8. In that the pasturelands in the lower portion of Elk Creek are subject to extensive flooding and provide valuable habitat for wildlife, they should be maintained in their existing use as agricultural grazing.

9. Vegetation and debris removal in the Elk Creek wetland shall be limited to that necessary to maintain the free flow of the drainage courses and only when excessive impediment creates flooding hazards on adjacent lands.

10. The County should encourage and support educational programs in schools, park programs and community organizations which seek to increase public awareness and understanding of sensitive habitats and the need for their protection.

11. The County should investigate the feasibility and seek funds to establish a bicycle/hiking trail along the old Hobbs-Wall railroad right-of-way in the lower portions of Elk Creek.

Del Norte County
Local Coastal Program

LAND RESOURCES COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

LCP -- LAND RESOURCES COMPONENT

List of Tables i

List of Figures i

I. INTRODUCTION 1

II. AGRICULTURE 2

A. General Distribution 2

B. Agricultural Soils 2

C. Agricultural Land Uses 4

D. Agricultural Production Values 4

E. Adjacent Land Uses 7

F. Defining Prime Agricultural Land 8

G. Designating Agricultural Land 12

III. GENERAL POLICIES FOR AGRICULTURAL LANDS 14

A. Coastal Act Policies 14

B. Present Local Policies 15

C. LCP Policies 15

IV. FORESTRY 18

A. General Distribution 18

B. Timber Preserve Zone 18

C. Special Treatment Areas 18

D. Adjacent Land Uses 20

V. GENERAL POLICIES FOR FORESTLANDS 22

A. Coastal Act Policies 22

B. Present Local Policies 22

C. LCP Policies 23

APPENDIX I: Soils of Coastal Del Norte County 26

BIBLIOGRAPHY 29

LIST OF TABLES

1 Acreages for Selected Agricultural Land Uses in the Coastal Zone 5

2 Annual Crop and Livestock Production, 1979 6

3 Forestland Acreages in Coastal Del Norte County ... 19

LIST OF FIGURES

1 Agricultural and Forestry Resources 28

LCP -- LAND RESOURCES COMPONENT

I. INTRODUCTION*

Any portion of the land environment that society can utilize to promote its well-being may be identified as a land resource. Forestry and agriculture are significant land based resources in the economy of Del Norte County. The County's economic vitality emphasizes the need for prudent conservation of soil and other land resources upon which forestry and agriculture ultimately depend.

The California Coastal Act of 1976 identifies the need to protect agriculture and forestry from activities and intrusions which tend to erode the economic viability of these land bases industries. This component of the LCP will focus on developing methods and policies to protect agriculture and forest resources in the coastal zone from conflicting land uses and to assure the maintenance of their land-term productivities.

---

*NOTE: This component of the LCP is subject to review and cross-referencing to other policy components.

II. AGRICULTURE

Agricultural land may be defined as land utilized for the purpose of producing a commercial agricultural commodity. The Coastal Act of 1976 expresses a concern over the loss of agricultural lands in the Coastal Zone from nonagricultural encroachments and degradation of the resource from incompatible adjacent land uses.

This section will discuss present agricultural land uses in coastal Del Norte County and examine particular problems and solutions in designating agricultural lands.

A. General Distribution: The principal agricultural lands in Del Norte County lie on the Smith River floodplain and adjacent terrace areas. Within this region are located the County's major dairy operations and ornamental flower farms.

Other existing agricultural districts within the Coastal Zone include portions of:

1) the coastal terrace north of the Smith River
2) the east side of Lake Earl
3) the coastal strand between Point St. George and the mouth of the Smith River
4) south of Washington Blvd. at Pebble Beach Drive
5) adjacent to Elk Valley Road
6) along the course of Jordon Creek west of Elk Valley Road
7) west and south of the Bertsch-Oceanview tract
8) Klamath River floodplain at Hunter Creek

These eight agricultural areas generally support cattle grazing and/or small-scale crop production.

The general distribution of the agricultural lands in coastal Del Norte County is illustrated in Figure 1.

B. Agricultural Soils: The soils of Coastal Del Norte County were mapped by the University of California, Davis in 1966. Specifically, the area surveyed contains some 32,000 acres along the coast from the Oregon border to south of Crescent City and includes also the lower Klamath River Basin. A complete description of eleven soil units and their subtypes were made together with an agricultural rating of each. A summary of these soil types with information concerning: slope and drainage characteristics; Storie Index Rating; and agricultural use and rating are presented in Appendix I.

Five prime soils* are identified in coastal Del Norte County: Arcata; Carlotta; Ferndale; Rowdy; and Russ. Each will be examined briefly indicating their general capabilities, limitations and distributions.

1. Arcata Soils: The Arcata series in Del Norte County consists of well drained alluvial soils situated on old marine terraces. With a medium textured profile and good internal drainage, this soil type is considered good to excellent for agriculture. Fertilizer applications and irrigation are necessary for the production of pasture or bulbs. Arcata soils are found southeast of Crescent City, east of Lake Earl near Buzzini Road and north of the mouth of the Smith River.

2. Carlotta Soils: The Carlotta series consists of moderately well drained, medium textured soils developed on alluvial material. Only the Carlotta loam (Ca 2) is considered very good to excellent for agriculture. The major limiting factor with other Carlotta soils is their generally low nutrient levels. Fertilized and irrigated pastures, however, can be productive.

3. Ferndale Soils: The Ferndale soil type is one of the better and more extensively distributed agricultural soils of the County. It is a medium textured soil of recent alluvial origin and little profile development. The Ferndale silt loam (Fe 2) and Ferndale fine sandy loam (Fe 3) are rated high for agricultural production. Irrigation and annual applications of nitrogen and phospate fertilizers are known to increase yields. Permanent pasture and some field crops are the major uses. The Ferndale soils are located primarily in the bottomlands of the lower Smith and Klamath River basins.

4. Rowdy Soils: The Rowdy soils series are young soils developed on alluvial fans. Rowdy loam (Ry 2; Ry 3) and Rowdy gravelly clay loam (Ry 4) are designated as very good to excellent agricultural soils. Generally low nutrient levels, in these soils, however, require annual fertilizer applications to maintain productivity. The principal uses of Rowdy soils are for permanent pasture and lily bulb production. Rowdy soils are located on gently sloping lands near Rowdy Creek above the Smith River plain and in a narrow band along the coast southeast of Crescent City.

* NOTE: Prime soils as identified by the U.C. Davis study are rated according to the Storie Index Rating System to be discussed in a later section. In general, prime soils are "excellent soils well suited to general intensive agriculture and range in index rating (Storie) from 80 to 100".

5. Russ Soils: Russ soils occur primarily along small streams and are developed from sedimentary alluvium. The overriding factor in the utilization of Russ soils is drainage. Russ silt loam (Ru 2) and Russ fine sandy loam (Ru 3) are, however, moderately well to well-drained and therefore rated as productive soils. Pasture and supplementary feed crops are the major uses. Russ soils are located adjacent to Rowdy and Wilson Creeks.

C. Agricultural Land Uses: The principal agricultural land uses in Del Norte County are: 1) nursery crops, and 2) pasture for raising of dairy and beef cattle. According to a 1968 California Department of Water Resources Survey there exists about 3718 acres of irrigated pasture and 3566 acres of dry farm pasture. Table 1 summarizes the acreages for the major agricultural land uses of the coastal zone.

D. Agricultural Production Values: Agriculture is a major industry in Del Norte County with a gross annual income for 1979 of about $13.9 million.[1] Nursery crops, livestock, dairy products and field crops are the principal agricultural products rating in that order of economic importance. Table 2 summaries the 1979 production figures.

1. Nursery Crops: The 6.6 million dollar value of nursery crops is comprised of: 1) Easter lily bulbs; 2) ornamentals and bedding plants; and 3) Christmas trees and ferns.

The production of Easter lily bulbs has been an important industry in Del Norte County for some thirty years. The coastal climate together with the generally excellent Arcata and Rowdy soils provide a unique environment for their production. Approximately 300 acres are presently utilized for lily bulb productions with a 1979 yield of 2.7 million dollars.

Ornamentals and bedding plant production in the County totaled 3.7 million in 1979. These are principally green house products under intensive cultivation.

Christmas trees are severly limited due to market factors and distribution.

2. Livestock Production: A relatively limited number of beef cattle and other livestock are raised commercially in the County. Most cattle are shipped as feeders to areas outside of Del Norte. Nevertheless, the livestock production amounted to 2.2 million dollars in 1979. A potential exists for small flock (not large scale) sheep production on parcels or varying size.

1 Del Norte County, Department of Agriculture, (1979), "Annual Crop and Livestrock Report".

CROP	IRRIGATED	NON-IRRIGATED	TOTAL
Pasture	3718	3566	7284
Nursery Crops	342	--	342
Other Crops	345	41	386
Idle	219	--	219 / 8231

TABLE 1: Acreages for Selected Agricultural Land Uses in the Coastal Zone

DATA: California Department of Water Resources Land Use Survey (1968).

AGRICULTURAL PRODUCT	MILLION $	% OF TOTAL
Nursery Crops	6.6	55
Livestock Production	2.2	19
Dairy Products	2.0	17
Field Crops	0.9	8
Vegetables & Fruit	0.1	1
TOTAL	11.8	100

TABLE 2: Annual Crop and Livestock Production, 1979

DATA: Del Norte County, Department of Agriculture, (1979), "Annual Crop and Livestock Report".

3. Dairy Products: The dairy products industry in Del Norte County has been a significant producer with a gross income of $2.0 million in 1979. The dairy products are made up of nearly equal values of market and manufacturing milk. The market or Grade A milk is sold throughout this and neighboring Curry County in Oregon. Grade B milk is processed into cheese at a Crescent City Plant.

E. Adjacent Land Uses: Land uses adjacent to agricultural areas may have significant impacts on the productivity of these ranches and farmlands. Conversely, certain agricultural uses may be adverse to adjacent land uses. For example, a rock quarry with occassional blasting adjacent to a poultry farm would not be a compatible use. On a similar note, a stockyard or slaughter house next to a restaurant would not be desirable. The objective of this section will be to develop standards for designating land uses adjacent to agricultural lands with the overall goals of: 1) mitigating conflicting uses; and 2) assuring the continued maintenance of the County's agricultural productivity.

1. Planning Issues: Recreation, residential and industrial land uses adjoining agricultural areas may all have significant impacts on the effective management of productivity of farmlands. Potentially incompatible uses from each are reviewed below.

a. Recreation: In general, recreational uses are compatible with agriculture. However, possible impacts from recreation include: trampling crops; disturbing livestock; and vandalism. Recreational access across farmland is a particular issue. Farmers are reluctant to permit uncontrolled access in fear of damage to crops or livestock in addition to liability problems. Fences to control access often impede the ability of farmers to move livestock and equipment thereby creating an unnecessary hinderance to agricultural productivity.

b. Development: Residential development adjacent to agricultural land may, in several ways, adversely impact the productivity of farming or ranching operations. First of all, as with the recreation conflicts listed above, trespass on farmland from adjacent neighborhoods may lead to the disturbance of crops and livestock. Secondly, domestic animals (especially dogs) from residential areas can pose threats to livestock on adjacent agriculture lands.

Finally, concerns from residential areas over the utilization of pesticides and herbicides by agricultural operations is a problem. Whether realistic or not, these perceived fears may result in a diminution of the agricultural productivity by, for instance, forcing special controls on chemicals applications.

c. Industry: Primarily through the impacts of excessive air, water and/or noise pollution, industrial uses adjacent to agriculture may have adverse impacts. Careful attention in the planning process should be made to insure that compatible uses between industry and agriculture are established. In general, agriculture dependent industries such as the processing and packing of agricultural goods are best situated adjacent to farmland.

d. Priorities: In order to maintain the productivity of agricultural lands, priority should be given to adjacent land uses which compliment or at least do not greatly interfere with farm and ranchland operation.

e. Buffer Zones: Buffer zones, reasonable trensition of zones, may be utilized to shield agricultural lands from adjoining incompatible land uses. Likewise, the area of separation may serve to protect adjacent uses from agricultural impacts. In any event, these protection zones should be of sufficient width to adequately separate all incompatible uses and minimize potential impacts.

The buffer strip may consist of open space easements or a more compatible agricultural use (e.g., pastureland separating sensitive crops from an industry emitting particulate matter or lot sizes of sufficient width to provide a reasonable transition from an adjacent land use to the existing agricultural activity).

2. Land Use Criteria: Standards for designating acceptable land uses adjacent to agricultural lands are presented below:

a. Land uses adjacent to lands utilized for the production of crops or livestock shall not adversely impact the economic productivity of these agricultural lands.

b. In locating new development adjacent to agricultural areas, priority shall be given to uses which will have a minimal impact upon agricultural productivity and to uses which are least likely to be affected by agricultural operations.

F. Defining Prime Agricultural Land: A single fixed definition of "prime" agricultural land does not exist. In general, the productivity of a given parcel of land is determined by the interrelationships of numerous environmental factors, cultural practices and economic conditions. This section will examine several agricultural rating systems and analyze their suitability as criteria for defining prime agricultural land in Del Norte County.

1. USDA Land Capability Classification System: This classification scheme uses soil and climatic data to group soil areas into one of eight classes. Soils are placed in Classes I through VIII depending primarily upon their limitations for cultivation.

Soils rated as Class I and II are generally well suited for the cultivation of field crops. Classes III and IV have various limitations. Classes V, VI and VII are usually designated for range, wildlife, forestry or recreation. Finally, Class VIII lands are the generally barren regions such as rocky outcrops or sandy beaches. Classes I and II in this classification scheme are often designated as "prime" agricultural land.

2. Storie Index Rating System: The Storie Index Rating (SIR) is a quantitative system for classifying the agricultural potential of land. The scheme is based on the evaluation of four soils and terrain factors: 1) profile; 2) texture; 3) slope; and 4) soil and topographic limitations. Each factor for a given soil is rated on the basis 0-100 percentage points. The SIR is then obtained by multiplying all factors together. As an example, a tract of land may be rated as follows:

Factor A (Profile)	=	95%
Factor B (Texture)	=	100%
Factor C (Slope)	=	85%
Factor X_1 (Drainage)	=	90%
Factor X_2 (Acidity)	=	90%

The Storie Index Rating is then given by the equation:

$$SIR = (.95 \times 1 \times .85 \times .90 \times .90) \times 100 = 65$$

The designation of prime agricultural land was not an original intention of the Storie System. As a consequence, various interpretations have resulted. Generally, excellent or prime land is considered to rate between 80 and 100 on the IDR, although some soil scientists prefer a minimum rating for prime land as low as 60.

3. Williamson Act of 1965: The Williamson Act of 1965 defines prime agricultural land as a combination of soil properties and/or ecomomic considerations.

The designation of prime agricultural land under the Williamson Act includes the following parameters:

1. USDA Class I or II lands;

2. Storie Index of 80 to 100;

3. Land which returned an annual gross value of not less than $200 per acre for three of the past five years;

4. Livestock supporting land with a carrying capacity of at least one animal unit per acre;

5. Land planted with fruit or nut trees, vines, bushes or crops that have a non-bearing period of less than five years and that will normally return $200 per acre per year during the commercial bearing period.

Agricultural land meeting any of these five criteria is considered prime under the Williamson Act.

This broad definition of prime agricultural land is based on the fact that many speciality crops in California are grown on other than Class I and II lands.

The Coastal Act of 1976 adopted this same definition for designating prime agricultural land. Non-prime agricultural land under the Coastal Act includes all other coastal agricultural lands now in use for crops or grazing or that are suitable for agriculture.

4. Del Norte County General Plan: Recognizing prime agricultural soils as a finite and fragile resource, the Del Norte County General Plan designates prime land according to soil capabilities and economic land units. The criteria used are:

1. 80 and above on the Storie Index:

2. 20 acres or more of contiguous ownership.

To qualify as prime agricultural land both parameters must be met.

The proposed land use maps of the County's General Plan delineate approximately 4,200 acres as prime agricultural land in the Coastal Zone. Over 90% of this acreage lies in the lower Smith River bottomlands and on adjacent terraces and alluvial fans.

5. Del Norte County Code: To protect the character and economic stability of agricultural areas within the County a zoning plan which includes "Agricultrual" (A) and "Agricultural Exclusive" (AE) districts was adopted by the County of Del Norte in 1974.

Lands in agricultural production of greater than forty acres may be classified as "agricultural exclusive" under this county ordinance. Presently about 16,000 acres of land are in the AE zoning classification. This includes agricultural land ranging from bulb acreage on prime soils to cattle grazing on wet sand areas.

6. Problems in Defining Prime Agricultural Land: The classification of prime agricultural land, whether on a physical or economic basis, is rife with problems. The classification schemes outlined above include, to varying degrees, definitions of prime agricultural land based on physical or economic parameters. This discussion will examine problems enherent in each approach.

a. Physical Basis: The classification of soils on a physical basis forms fixed and scientifically testable results. Defining prime agricultural land solely on the basis of physical parameters, however, has limitations. First, the value of an agricultural parcel may more appropriately be determined by the crop produced. For example, speciality crops grown on relatively poor soils may have a significant economic yield per acre. Furthermore, the delineation of prime agricultural land on the basis of soil and other physical elements alone fails to consider the amount of land available for production. The size and extent of parcel holdings must be considered.

b. Economic Basis: The establishment of economic criteria would seemingly avoid problems inherent in strict soil classifications by acknowledging the true value of agricultural lands based on returns. Again however, problems tend to crop up.

First of all, the placement of fixed values on agricultural production to determine prime land fails to recongize the possiblity of changing market values. To illustrate, an area designated as "prime" at today's value for a given crop may be entirely unrealistic in the future if the market for the crop fails. Conversely, land categorized as non-prime at present may be valued as prime under future market prices. Moreover, a fixed value on agricultural production omits a consideration of inflation. Under the Williamson Act, for example, the fixed $200 per acre gross return values include more agricultural land today than in 1965 due principally to the inflated dollar value.

Second, an economic basis for defining prime agricultural land may fail to distinguish between a few acres of land presently producing well and a truly viable farming unit. Again consideration must be given to parcel size.

Third, defining prime agricultural land on an economic basis requires current, accurate data on a parcel by parcel basis. In the case with Del Norte County, this information is not available nor easily derived.

Other factors that economic yield may not reflect in classifying agricultural productivity are new technologies and intensive management. Present non-prime lands may qualify as prime at some future date with improved technologies and/or management techniques.

In summary, because of the complex relationships between environmental, cultural and economic factors the classification of "prime" versus "non-prime" agricultural land is difficult indeed. Nonetheless, the maintenance of valuable crop and pasture land is important to the County's economy both in the present and to provide future sources of food and fiber. A goal of Del Norte County is to maintain the productivity of specific agricultural land units of proven economic value.

G. Designating Agricultural Land: The Coastal Act requires that "the maximum amount of prime agricultrual land shall be maintained in agricultrual production to assure the protection of the areas' agricultural economy...". Criteria for designating prime agricultural lands in Del Norte County will be developed in this section.

1. Coastal Act Standards: As discussed previously the Coastal Act adopted the Williamson Act criteria for designating prime agricultural land. That is:

1. All land which qualifies for rating as Class I or Class II in the Soil Conservation Service land use capability classifications.

2. Land which qualifies for rating 80 through 100 in the Storie Index Rating.

3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the U.S.D.A.

4. Land planted with fruit or nut bearing trees, vines, bushes or crops which have a non-bearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than $200 per acre for three of the five previous years.

5. Land which has returned from the production of unprocessed agricultural plant products on an annual gross value of not less than $200 per acre for three of the five previous years.

Arguments were set forth in the previous section as to why such a definition falls short of defining the prime agricultural areas of Del Norte County. Basically, it fails to consider the size and extent of contiguous land ownership which would allow long term economic agricultural productivity.

2. LCP Standards: After a thorough examination of agricultural lands uses and productivity in Del Norte County it has been determined that prime agricultural lands may best be defined by agricultural units within the most productive areas of the County.

a. Productive Lands: The most valuable agricultural lands in Del Norte County are those utilized for nursery crop, livestock and dairy production. As a percentage of the 1979 gross annual agricultural production these three uses amounted to 55%, 19% and 17% respectively.

A large portion of these productive lands lie between Morehead Road and the Oregon border. Approximately 7000 acres or 37% of all agricultural lands in the County are located in this region. This area may be used to typify prime agricultural land in the County.

b. Agricultural Units: A survey of the principal agricultural lands in the Smith River area indicated that viable farming units here range from 15 to nearly 1000 acres of contiguous ownership. The smaller units are capable or producing bulbs economically if other lands are available for necessary ration cycles. The larger units are used primarily as irrigated pasture for dairy production.

* 6. Prime Agricultural Land is defined as follows:

Prime agricultural land in Del Norte County is defined as lands as designated upon the final land use plan map and that meet both of the following criteria:

(a) Land of high agricultural value.

(1) Lands "actively used" ⊛ for the production of muresery crops, pasture crops, dairy products and/or livestock, OR

(2) Lands which qualify for rating 80 through 100 in the Storie Index.

(b) A minimum of 20 acres in contiguous ownership.

⊛ Lands may be considered "actively used" even though they lie idle or in another crop for up to ten years.

III. GENERAL POLICIES FOR AGRICULTURAL LANDS

A. Coastal Act Policies: The maintenance of the long-term productivity of agricultural land is a major concern of the Coastal Act. The following policies were adopted within the Act to prevent undue degradation of this valuable coastal resource:

30241. The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:

(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.

(b) By limiting conversions of agricultural lands around the periphery of urban areas to the land where the viability of existing agricultural use is already severely limited by conflicts with urban uses and where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.

(c) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.

(d) By assuring that public service and facility expansions and non-agricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

(e) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b) of this section, and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

30242. All other lands suitable for agricultural use shall not be converted to non-agricultural uses unless: (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use or surrounding lands.

B. Present Local Policies: The conservation element of the Del Norte County General Plan established the following as important goals in the maintenance of agricultural land:

1. Conserve soil resources to provide a continuing base for agricultural productivity and the County's economy.

2. Reserve in agriculture those soils capable of producing a wide variety of valuable crops.

3. Minimize disruption of viable agricultural areas.

These objectives are basically consistent with the Coastal Act. General Plan Policies adopted to attain these goals are:

1. Agriculture and agriculturally-oriented activities should be protected from development practices that erode their economic viability.

2. Protective zoning for agricultural land should be enforced by restricting residential, commercial, industrial or other uses unless they are directly related to the needs of agricultural production.

3. The County should maintain in agriculture those lands most suited to the production of agricultural crops by restricting inappropriate development on prime soils and directing future development to non-prime soils.

4. The County should maintain in agriculture those lands identified as prime agricultural soils in units of 20 acres or more, or contiguous ownership by prohibiting the divisions of these lands into acreages of less than 20 acres.

In addition to the General Plan, the agriculture exclusive (AE) and agricultural (A) zoning ordinance aid in the maintenance of agricultural productivity in Del Norte County.

C. LCP Policies: Del Norte County fully acknowledges the need to conserve its valuable agricultural resources. The following policies are established in order to maintain agricultural productivity in the Coastal Zone:

* ~~1. Prime agricultural land shall be designated to parcels of land which in general meet the following criteria:~~

~~a. Are approximately 20-40 acres in size or of contiguous ownership between Morehead Road and the Oregon border, and actively used for the production of nursery crops, pasture crops, dairy products, livestock and food and fiber.~~

~~b. Assessors parcel 105-230-21 and 105-30-20 and 21 comprising 200 acres of agricultural land composed of Carlotta soils (both Ca 2 and Ca 3). These parcels are the largest acreage of the better agricultural lands, immediately south of Morehead Road and offset the small (5-20 acres) parcels of marginal quality agricultural lands immediately north of and adjacent to Morehead Road.~~

~~c. Assessors parcel 106-020-04 and approximately 186 acre parcel of good quality soil of medium texture and due to its location prossessing a good interval drainage. This site is the largest remaining agricultural parcel containing sufficient soil quality and interval drainage immediately adjacent to Lake Earl.~~

-2 If a parcel is designated for prime agricultural use, conversion to non-agricultural use shall not be permitted except where allowed in Section 30241 of the Coastal Act.

3. An agricultural land use designation shall be given to parcels that meets both of the following:

a. A minimum of 5 acres of contiguous ownership;

b. Lands in agricultural use not designated prime agricultural land as above.

4. Conversion of land designated for agricultural use shall be made only when agricultural use is no longer feasible and shall be subject to Coastal Act priorities for coastal land uses (e.g., recreation, coastal dependent industries).

5. A review of prime agricultural and agricultural land use designations should be conducted every five years in order to reflect future land and agricultural values. A committee on agricultural land use consisting of representatives of the dairy industry, lily bulb growers and other local farm interests should be established to implement this policy.

~~6. In order to provide that the maximum amount of continued agricultural land be maintained in agricultural production, in existing "wetland" pasture lands, maintenance, and repair shall be permitted for dikes, levees, drainage ditches and other similar agricultural drainage systems. New or increased capacity drainage systems for agricultural lands may be approved by the County if the following findings are made:~~

~~a. The improvement is necessary for the economic viability of the agricultural use of the land; and~~

~~b. The improvement will not significantly alter existing drainage patterns.~~

7. Land uses adjacent to agricultural lands shall not adversely impact the economic productivity of the agricultural land. Priority should be given to land uses which are least likely to conflict with agricultural productivity.

8. The County should support education programs in agricultural sciences to insure a future of well trained agronomists and informed citizens.

9. "For prime agricultural land and other lands which qualify, the county shall afford the opportunity for these lands to participate in Williamson Act contracts. If an equivalent method of taxation is proposed, this alternative method shall be subject to review by the Coastal Commission to determine its ability to protect the resource."

10. "Agricultural uses such as grazing and pastoral activities and the raising and harvesting of crops are deemed to be a principle use within Farmed Wetlands. Maintenance activities auxiliary to the above agricultural uses are therefore allowable uses including drainage related to crop rotation. Such areas are subject to the other policies of the county's Certified Land Use Plan."

11. "New or expanded agricultural operations that involve the removal of major vegetation, excluding agricultural crops, in the coastal zone are defined as development and are thus subject to the permit requirements and all other applicable policies of the land use plan of the county's LCP."

IV. FORESTRY

Maintaining the long-term productivity of commercial forestlands within the Coastal Zone is emphasized by the Coastal Act. This section will review the status of commercial timberlands in Coastal Del Norte County and develop policies for their continued maintenance.

A. General Distribution: Most of the commercial forestlands in Del Norte County lie east of the Coastal Zone boundary. Significant forest areas are, however, distributed throughout the coastal region. Approximately 2600 acres of Coastal Zone forestlands are mapped in the County's General Plan. This excludes some 4000 acres of coastal forest in Del Norte Coast Redwoods State Park and Redwood National Park.

The forestland acreages according to categories of commercial and public forest and by the special designations of Timber Preserve Zone (TPZ) and Special Treatment Area (STA) are presented in Table 3. (Note that some overlap of TPZ and STA regulations exist.)

B. Timber Preserve Zone (TPZ): The Timber Preserve Zone, or TPZ, is a zoning ordinance permitting land to be valued on its use for growing and harvesting timber. Since fiscal year 1977-78, forestlands placed under TPZ have been exempt from ad valorem taxation with a yield tax imposed at the time the timber is harvested. Conversion of lands designated TPZ to other than forestry use is subject to review by the California Department of Forestry.

At present, approximately 1800 acres of lands within the Coastal Zone are designated TPZ. Most of these parcels are located in the Klamath area and are contiguous with larger size forestry units (see Figure 1).

The Coastal Act was passed prior to the Timber and Timberland Taxation Act. Therefore the concerns of the Coastal Act, i.e., Section 30243, have been duplicated in the Timber Taxation Act, (TPZ). The Coastal Act set no criteria for "commercial timberlands but set the general policy of long-term protection and conservation of timberlands. However the TPZ act did set specific criteria for the establishment of Timberland Preserves and a method of implementation. Therefore consistency between the two acts shall be strived for, as well as providing a method of conservation of coastal timberlands.

C. Special Treatment Area (STA): In order to assure the adequate protection of natural and scenic resources, the Coastal Act of 1976 calls for the designation of special treatment of

FORESTLAND TYPE	TPZ*	STA**	TOTAL
Commercial Forestland	1800	1063	2600
National & State Parks	----	----	4000 / 6600

* Timber Preserve Zone

** Special Treatment Area (Coastal Act)

TABLE 3: Forestland Acreages in Coastal Del Norte County

certain forested areas within the Coastal Zone. The Coastal Commission met this legislative mandate in July 1977 by identifying special treatment areas (STA) according to the following criteria:

1. Scenic view corridors;

2. Sites of significant scenic values;

3. Wetlands, lagoons, streams, estuaries, and marine environments;

4. Significant animal and plant habitat areas;

5. Recreation areas.

In addition to other regulations enforced by the California Department of Forestry, specific forest practices are required to protect the natural and scenic qualities of STAs when planning and conducting timber operations.

The Coastal Commission established five special treatment areas in Del Norte County: 1) Elk Creek; 2) Sitka Spruce Grove; 3) False Klamath Cove; and 4) the lower Klamath River. The designated Special Treatment Areas are shown in Figure 1.

D. Adjacent Land Uses: Certain land uses adjacent to commercial timberlands may not be compatible with forestry operations. This section will develop criteria for designating land uses adjacent to commercial forest lands.

1. Planning Issues: The nature of timber operations often dictates its separation from other land uses. These potential conflicts are reviewed below.

a. Recreation and Residential Development: Though forested areas are often desirable for recreation and residential development their logical separation from forestry operations is usually necessary because of safety, noise and other factors.

Residential and recreational development may also interfere with forest production. Trespass, trampling and vandalism from adjacent neighborhoods or recreation areas are potential threats to the productivity of commercial forest lands.

b. Industry: Principally through impacts of excessive air pollution, industrial uses adjacent to forestlands may have negative effects. In general, wood products industries may best be sited adjacent to timber producing lands.

c. Priorities: The productivity of forest lands and related operations such as seedling nurseries should be given prime consideration in land use designations. Priority should be given to adjacent land uses which are most compatible with these forest industries.

d. Buffer Zones: Buffer zones may be used to separate commercial timberlands from incompatible uses. These separation zones should be sufficiently wide to minimize potential impacts.

e. Federal and State Parks: Those forest contained within the boundaries of state and federal ownership of parks and other non-developed lands, are not readily available for resource utilization; these areas do provide significant tracts of land which meet the criteria of Section 30243. Since the objective of these parks is to "preserve and protect" they do provide the protection and conservation of coastal timberlands and the long-term productivity of the area's soils.

2. Land Use Criteria: Criteria for establishing appropriate land uses adjacent to commercial forestlands are listed below:

a. Land use adjacent to commercial forestlands and related operations shall not adversely impact their economic productivity.

b. In locating new development adjacent to commercial forestlands and related operations, priority shall be given to uses which are most compatible, (i.e., do not adversely impact timber operations and are in turn least impacted by such activities).

V. GENERAL POLICIES FOR FORESTLANDS

A. Coastal Act Policies: The Coastal Act of 1976 recognizes commercial timberland as a valuable coastal resource. Together with requesting the establishment of Special Treatment Areas designed to protect natural and scenic resources, the following Coastal Act policy was enacted by the Legislature:

30243. The long-term productivity of soils and timberlands shall be protected, and conversions of coastal commercial timberlands in units of commercial size to other uses or their division into units of non-commercial size shall be limited to providing for necessary timber processing related facilities.

B. Present Local Policies: Present policies concerning the maintenance of forest resources in Del Norte County are clear cut. The Del Norte County General Plan emphasizes the economic importance of the forest products industry to the County. The following policies are adopted to maintain timberland soils and minimize disruptions to viable timber producing areas:

1. Commercial forest land and timber product activities should be protected from development practices which erode their economic viability.

2. Commercial forest land should be protected from incompatible uses and only those uses related to and compatible with sound forestry practices should be allowed.

3. Commercial forest land should be recognized as a resource in its own right as well as a protector of many other resouces and be maintained as such.

4. The County should maintain in a commercial forest land use those lands possessing climate and soils suitable for growing commercial conifer timber crops, (including spruce). Those upland soils with timber sites I through III which are in parcels of 20 acres or more should not be allowed to reduce in parcel size below 20 acres. Coastal soils of 20 acres or more of which the parcels are intended for commercial production should be included.

5. The County should continue to co-operate with the Six Rivers and Siskiyou National Forests in the management of all National Forest Lands within the County. The County should strongly support the concept of multiple use of all forest lands, emphasizing commercial timber production, recreational and resource values.

C. LCP Policies

1. The long-term productivity of soils and timberlands shall be protected, and conversions of coastal commercial timberlands in units of commercial size to other uses or their division into units of non-commercial size shall be limited to providing for necessary timber processing related facilities. Coastal commercial timberlands are those lands which as of the lien date of in 1976, were assessed for growing and harvesting timber as the highest and best use of the land and subsequently zoned TPZ on list A.

2. The division of coastal commercial timberlands (to not constitute a conversion) shall be a minimum of 20 acres in size. Any division of coastal commercial timberland into parcel containing 20 acres or more in size shall require the following actions:

a. The owners of the resulting parcels submit or the present owner makes sufficient provisions for a joint timber management plan prepared or approved as to content by a registered professional forester;

b. Such owners enter into a binding contract within the board of supervisors, representing the county, to manage and harvest timber on the timberland jointly and are bound by the provisions of the management plan for a minimum period of ten years; and,

c. Any divisions shall be approved by a four-fifths vote of the full board of supervisors provided the project has been reviewed by the planning commission.

3. Other lands zoned Timberland Preserve, not identified in policy number one and not specifically designated for another use in the land use component, shall be included as commercial timberland and subject to the restrictions of policy number two.

4. The Timberland Preserve Zone Ordinance shall contain the compatible and permitted used for the above identified commercial timberland.

5. Soils and timberland may also include lands not presently zoned Timberland Preserve. These lands include the following:

a. Those forested areas within the boundaries of a California State Park.

b. Forested areas of Class III or better which comprise a parcel of 20 acres or larger or portion of a parcel of which the forested portion is 20 acres or larger and so designated for another land use on the land use map.

~~c. Forested areas of Class III or better which comprise a parcel of 40 acres or larger or portion of a parcel of which the forested portion is 40 acres or larger.~~

Those parcels or portions of parcels considered for the above shall be given the opportunity to receive Timberland Preserve Zoning. ~~(Any necessary legislation shall be sponsored by the Coastal Commission).~~

6. The Timberland Preserve Zone Ordinance shall contain the compatible and permitted used for the undeveloped lands designated as a result of policy five.

7 Parcels designated as timberland and not zoned TPZ may be considered for division into parcel of 20 acres or larger in size, provided other development standards of the County regulating subdivisions are complied with. ~~To be considered for parcels of less than 20 acres, the project must cluster development using varied lot sizes and where appropriate provide a timber~~

"Parcels less than 20 acres in size may be created when the one unit/twenty acres density is not exceeded but where the parcels shall not be smaller than that allowed utilizing the rural land division criteria as set forth in the land use categories section. Such a project shall be subject to the D district combining zone (C.H. 20.45 D.N.C.C.) to ensure that there is no further division than that permitted by the LCP density."

In no case shall the overall density exceed a ratio of one unit per 20 acres not including one remainder parcel.

~~8. Parcels designated as timberland and not zoned TPZ may be considered for division into parcels continuing three acres or more provided the following conditions are complied with:~~

~~1. The owner/developer submits a joint timber mangement plan prepared or approved as to content by a registered professional forestor; and~~

~~2. A mechanism is provided in the division process which insures as a part of each parcel that the owners of each parcels are bound to the management plan for a minimum period of ten years and the purpose of the plan is to manage and harvest timber on the timberland jointly; and~~

~~3. Any division shall be approved by a four-fifths vote of the Planning Commission.~~

9. Lands presently designated as Special Treatment Areas shall continue to receive specific consideration under current forest

APPENDIX

practice regulations of the California Department of Forestry in order to maintain their natural and scenic qualities. The exact boundary of each STA, however, is subject to special study which may delineate a more exact boundary.

10. Land uses, adjacent to commercial timberlands shall be phased so that in general lower intensity uses are adjacent to their commercial timberlands with higher intensity uses phased in a logical transition away from these timberlands.

Appendix I: Soils of Coastal Del Norte County

SOIL	ACREAGE	% OF TOTAL	SOIL TYPE	DRAINAGE	AGRICULTURAL USE	SLOPE	SIR	GRADE
ARCATA	980	3%	Ar 2 *	Good	Bulb/Pasture	0-3%	80	1
			Ar 3 *	Good	Bulb/Pasture	0-3%	80	1
BAYSIDE	172	0.5%	Ba 2	Poor	Pasture	0-3%	36	4
			Ba 3	Poor	Pasture	0-3%	36	4
			Ba 4	Poor	Pasture	0-3%	36	4
CARLOTTA	2917	9%	Ca 2 *	Moderate	Pasture/Forestry	0-3%	90	1
			Ca 3	Moderate	Pasture/Forestry	0-3%	57	3
FERNDALE	4855	15%	Fe 2 *	Good	Pasture/Crops	0-3%	100	1
			Fe 3 *	Good	Pasture/Crops	0-3%	100	1
			Fe 4	annual flooding	Pasture/Crops	0-3%	70	2
			Fe 5	deep percolation	Pasture/Crops	0-3%	70	2
			Fe 6	frequent flooding	Pasture	0-3%	Variable	Variable
HOOKTON	334	1%	Hk 2	imperfect	Clover/Grasses	0-3%	42	3
			Hk 3	eroded	Clover/Grasses	3-8%	28	4
			Hk 4	Eroded	Fescue/Clover	3-16%	39	4
HUTSINPILLAR	1626	5%	Hp 2	Poor	Pasture	0-3%	27	4
			Hp 3	Imperfect	Pasture/Cultivation	0-3%	36	4
LOLETA	1465	4.5%	Lo 2	Imperfect	Pasture/Crops	0-3%	68	2
			Lo 3	Poor	Pasture/Crops	0-3%	47	3
			Lo 4	Poor	Pasture/Crops	0-3%	52	3
ROWDY	4209	13%	Ry 2 *	Good	Bulb/Pasture	0-3%	95	1
			Ry 3 *	Good	Bulb/Pasture	3-8%	90	1
			Ry 4 *	Good	Bulb/Pasture	0-3%	81	1
			Ry 5	Good	Bulb/Pasture	3-8%	77	2
			Ry 6	Good	Bulb/Pasture	0-8%	61	2

* Prime Soils

SOIL	ACREAGE	% OF TOTAL	SOIL TYPE	DRAINAGE	AGRICULTURAL USE	SLOPE	SIR	GRADE
RUSS	657	2%	Ru 2 *	Well	Cultivation/Pasture	0-3%	95	1
			Ru 3 *	Moderately well	Cultivation/Pasture	0-3%	95	1
			Ru 4	Moderately well	Cultivation/Pasure	0-3%	71	2
TALAWA	2917	9%	Ta 2	?able	Forestry	0-3%	58	3
			Ta 3	Poor	Water Plants	0-3%	38	4
TIMMONS	5505	17%	Ti 2	Well	Forestry/grass	0-15%	58	3

* Prime Soils

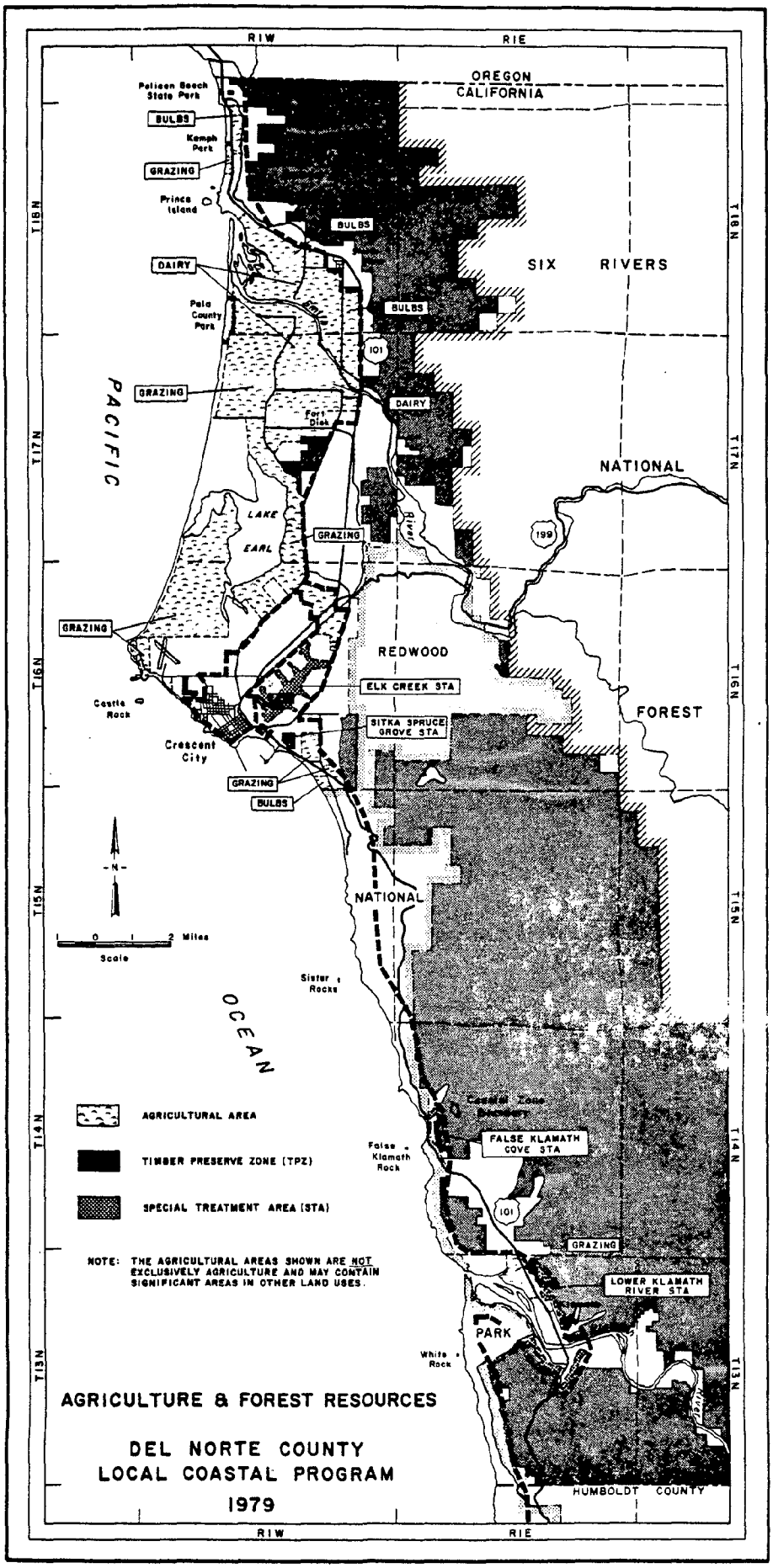


FIGURE 1: AGRICULTURE & FOREST RESOURCES

BIBLIOGRAPHY

California, State of, Board of Forestry, (May 1978), Forest Practice Rules, Sacramento, Ca.

California, State of, Coastal Zone Conservation Commission, (December 1975), California Coastal Plan.

Del Norte, County of, Planning Department, (November 1976), Del Norte County General Plan.

_____, (December 1977), LCP Issue Identification.

O.E.D.P. Committee, (1976), Overall Economic Development Program: Planning and Action for Del Norte County.

Reganold, J.P. & M.J. Singer, (October 1978), Defining Prime Agricultural Land in California, Environmental Quality Series No. 29, Institute of Ecology, University of California, Davis.

Toner, W., (1978), Saving Farms and Farmlands: A Community Guide, American Society of Planning Officials Report No. 333, Chicago, Ill.

Westing, Murph, (May 1979), Personal Communications, Farm Advisor University of California Extension Services.

Del Norte County
Local Coastal Program

HAZARD AREAS COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

LCP--HAZARD AREAS COMPONENT

Table of Contents

List of Tables i

List of Figures i

I. INTRODUCTION 1

A. Overview 1

B. Purpose and Goal 1

C. Defining Natural Hazards 2

II. IDENTIFICATION OF ENVIRONMENTAL HAZARDS 5

A. Overview 5

B. Geologic Hazards 5

C. Tsunami Hazards 12

D. Coastline Erosion 13

E. Hydrologic Hazard 15

III. ENVIRONMENTAL HAZARD IMPACTS 18

A. Potential Environmental Impacts (Crescent City Area)..... 18

B. Potential Environmental Impacts Adjacent to the Community of Fort Dick 19

C. Potential Environmental Impacts Adjacent to the Community of Smith River 20

D. Potential Environmental Impacts within the Turwer Valley (Klamath and Requa) 20

E. Potential Urban Expansion Areas 21

IV. POLICIES AND IMPLEMENTATION 23

A. Coastal Act Policies 23

B. Present Local Policies 23

C. Acceptable Risk 24

D. LCP Policies and Implementation 25

BIBLIOGRAPHY 30

LIST OF TABLES

1 Tsunamis in California 14

LIST OF FIGURES

1 Coastal Geologic Formations 29

LCP--HAZARD AREAS COMPONENT

I. INTRODUCTION*

The County of Del Norte adopted a Seismic Safety and Safety Element in November of 1976 as part of its county-wide General Plan. This element was prepared by a consultant with a wide spectrum of special skills and expertise. The document identifies geologic, seismic, flooding and other natural hazards. Within the document the consultant prepared recommendations for disaster planning and development controls. Portions of the following text are excerpted from the document as it applies to the Coastal Act. Some statements within the text do not apply within the Coastal Zone specifically, but apply rather to the County as a whole or only to specific areas adjacent to the Coastal Zone. Additional detailed support data is contained within the county-wide document and is not repeated here for conciseness.

A. Overview: Seismic Safety and Safety Planning is a vital element in the planning process. Safety Planning relates primarily to the avoidance or reduction in loss of life, injury and property damage resulting from natural hazards. Since hazards are measured in terms of potential losses, based on human activity, the degree of hazards can be evaluated and partially controlled by the extent and itensity of human activity in the hazard-prone area.

B. Purpose and Goal: The Seismic Safety and Safety Element is entended to help make Del Norte County SAFE: SAFE from natural hazards; SAFE for people. Whereas such a goal is unattainable in its perfect state, action can be taken to strive for safety, thereby reducing the risk of a natural hazard affecting the lives of people in the County. The accomplishment of such a reduction in risk is a two-step process:

a) Identify the problems (hazards) and
b) Suggest policies and programs to mitigate the problem.

Identifying the problem is a two-step process:

a) Identify where the people are, and
b) Identify the hazards that threaten them.

*NOTE: This component of the LCP is subject to review and cross-referencing to other policy components.

Suggesting policies and programs is a two-step process:

a) Formulated policies to help make safe both residents of and visitors to Del Norte County, and

b) Implement those policies.

The purpose of this element, then, is to ensure that the proper steps are taken to reduce the risk from natural hazards. The goal is the attainment of such a reduction.

C. Defining Natural Hazards: Before proceeding with the major parts of this Element, it is appropriate to discuss the natural hazards that can affect Del Norte County. Such a discussion will serve as a common basis for understanding the natural processes involved in seismic safety planning.

1. Seismic Activity: Earthquakes are sudden releases of strain energy stored in the earth's crust. Existing geologic theory holds that the movement of the plates which compose the earth's crust continually causes strains to build at the plate boundaries. These strains accumulate until the plates can no longer sustain the strain. Then there is an energy release. This geologic evolutionary process creates the features of the local landscape, including mountain, ridges and valleys.

California is located on one of the seismically active areas of the earth. The explanation for this is that State is located on the Boundary between the earth's crustal plate underlying the Pacific Ocean and the one forming the American continent. The main line contact between the two places is the San Andreas Fault System. Simply stated, as these plates shove and grind against one another, movement occurs on the San Andreas Fault, or a fault parallel to it, and California has earthquakes.

2. Earthquake Effects: Beginning the instant an earthquake is triggered, a series of events which can have serious consequences for property and people is set into motion. These involve interaction between seismic forces on one hand, and natural features and man-made structures on the other.

From the location along the earthquake fault where energy is released (the "focus"), force is radiated outward in the form of waves which are only gradually dissipated. Near the "focus", the forces may be strong enough to physically stress landforms and buildings, while at greater distances the waves can be detected only with instruments. The earthquake generates several types of waves. These waves travel at different speeds and arrive at places on the earth's surface at different times. These intervals, recorded by instruments, allow earthquakes to be located.

As previously noted, the shear movement within the earth's crust that always occurs during an earthquake may cause displacement along an existing fault, or the creation of new fault breaks. This displacement may rupture the earth's surface, where it would stress or shear objects or buildings on it. Even if the displacement is confined to the bedrock and lower ground layers, however, it could disrupt drainage and damage building foundations and other objects straddling it.

Faults are seldom single cracks, but typically are braids of breaks that comprise shatter zones. These link to form networks composed of major and minor faults. Movement typically occurs along the major faults, but a new path may be taken through a network, or a series of adjustments may occur on minor faults. A fault having recorded movement, or one which has visibly disturbed the ground over it, is regarded as "active", and is more likely to generate a future earthquake than a fault which shows no signs of recent movement.

Although rock or ground rupture along a fault is dramatic, physical displacements tend to be highly localized. Not so are the effects of ground shaking, which are widespread and cause most earthquake damage. In a strong earthquake, major damage from ground shaking can occur over 100 miles from the source of the earthquake.

The force which radiates outward from an earthquake is transmitted through the hard rock crust in short, rapid vibrations; these are transformed into long, deep motions when the waves enter soft ground materials. Sometimes the undulations are long and deep enough to be visible as they move across the surface. Buildings can be designed and built to resist the short-movement shaking that is characteristic of solid ground, but it is difficult or impossible for a building to withstand the "lofting" motion of shaking in soft ground.

Ground put into motion by an earthquake can fail if its limits of cohesion are reached: landslides and ground slippages are induced in susceptible areas. Areas with steep slopes typically experience slides and slumps. Damaging slips have occurred in areas of almost imperceptible slope.

Liquefaction is a form of failure which can happen when water-saturated sandy ground is put under pressure by earthquakes. Liquid under pressure forces soil particles apart to create quick-sand-like conditions that destroy soil strength, and thereby undermine the support of the structures. Earthquakes can cause flooding, and for a variety of reasons. Dams and levees may fail under earthquakes stress. Seiches (large waves that occur within confined bodies of water) may occur, due to either lake bottom displacement or landsliding into water, driving flood

water onto adjacent areas. Tsunami ("tidal waves") may be generated in oceans and large water bodies. Faulting, ground shaking, ground failure, and flooding are the natural effects of earthquakes, but these are most meaningful to human beings in terms of lives lost, persons injured, buildings destroyed, and property damaged.

The great majority of earthquakes are not dangerous to life or property either because they occur in sparsely populated areas, or because they are small earthquakes, which release relatively small amounts of energy. However, where urban areas are located in regions of high seismicity, damaging earthquakes are expectable, and to some extent predictable events.

3. Earthquake Prediction: There are basically three aspects of potential earthquakes which must be known to make any prediction significant: 1) location, 2) magnitude, and 3) time. Earthquakes tend to occur in locations where they have previously occurred. However, the exact locations of future earthquakes cannot now be pinpointed.

The magnitude of earthquakes along active faults more than likely will be the same magnitude as experienced in the past. The ability to accurately predict the magnitude of future shocks is not possible at this time. All that can be said is that large magnitude earthquakes will most likely occur where they have previously occurred.

The third element of prediction - time - is even harder to draw conclusions about. California, according to knowledgeable earth scientists, will continue to periodically experience severe shocks. The year, month, day and hour of an earthquake, however, is not within the realm of scientific predictability at this time.

While the exact location, magnitude and time of an earthquake cannot be predicted at the present, there is continuing research into earthquakes by State and Federal agencies as well as colleges and universities. Only through such research can a thorough understanding of the earth's geologic processes be developed such that earthquake hazards can be significantly minimized.

4. Flooding: Flooding is another natural hazard which continually threatens portions of the County. The Smith and Klamth Rivers, as well as numerous creeks in Del Norte County all pose a yearly major and minor flooding danger to life and property. Flooding will be dealt with in subsequent portions of this document.

II. IDENTIFICATION OF ENVIRONMENTAL HAZARDS

A. Overview: The identification of natural hazards that can affect Del Norte County is the first step in the safety planning process. It represents, possibly, the greatest challenge in planning, because the consequences of inaccurate hazard identification would be the formulation of inadequate safety land use policies. The result might be unnecessary loss of life, injury, and property damage.

The natural hazards that have affected Del Norte County in the past, and those that may affect it in the future, can be identified with a high degree of accuracy. Flooding, earthquakes, and forest fires have all touched the County. Throughout its history, no major significant earthquake damage has been sustained by the County. However, the tsunamis and river flooding of 1964 resulted in extensive property damage, and a limited number of deaths.

The future extent of similar natural hazards in Del Norte County is obviously an unknown factor. We do know, however, that in all probability the future will include the same kinds of hazards as have occurred in the past. Damage and loss of life may or may not be greater. Accurate hazard identification, however, is not simply an accounting of the past and warning for the future. It is an accounting of what the past tells us and, based on that information, an evaluation of the future. And to properly evaluate the future, we must recognize and understand the risks involved with the current proposed land use practices.

B. Geologic Hazards: Geologic hazards involve numerous problems associated with the dynamic character of the earth's surface ranging from soil creep to earthquakes. This section will describe the geology of Del Norte County and review related geologic hazards and problems. A geologic map illustrating major formations within the coastal region of Del Norte County is depicted in Figure 1.

1. Structural Geology and Geologic History: Del Norte County can be divided into two topographic entities: the extensive eastern mountainous belt, comprising the Northern Coast Ranges and the Klamath Mountains (inseperable topographically), and the restricted coastal lowland, extending from south of Crescent City northward to the Oregon border. The wide part of this lowland is called the Smith River Plain, occupying about 75 square miles.

The mountainous portion of the County, which impinges upon the coastline five miles south of Crescent City, comprises approximately 92% of the total County area. The rocks of the western portion of this mountainous terrain consist predominantly of sandstone (graywacke variety) and shale of the Franciscan Complex, an intensely sheared and dismembered assemblage of mainly marine rocks deposited during a time span of approximately 90,000,000

to 145,000,000 years ago. Other rocks present in lesser quantities in this assemblage are metamorphosed igneous rocks (greenstones), cherts, and conglomerates. These rocks were deformed both during and following their deposition. The presence of numerous shear zones within the unit, combined with the abundant shales, often creates serious slope stability problems in the moist climate of northwestern California.

To the east of the Franciscan rocks lie the older and more variable rocks of the Klamath Mountains province. While the geology of the Klamath Mountains and Northern Coast Ranges has been reconnoitered and partially mapped, many of the details remain obscure. The Klamath Mountains share the complicated geology of the adjacent Franciscan belt, but the greater variability and older age of the rocks introduce even more complications. Many of the larger geologic problems of the region will remain unsolved until more detailed work is done. Rock types in the Klamath Mountains consist of large masses of igneous and metamorphic rocks (including many metamorphosed sedimentary rocks), whose contacts with each other are often along faults and shear zones.

The abundance of fault and shear zones in the mountainous portions of the County does not necessarily mean that the area is subject to frequent earthquake activity; all of these faults and shear zones, with our present information, are believed to be inactive, therefore offering no earthquake threat to the County.

The coastal lowland belt, up to 10 miles wide, is underlain by the same rocks as found in the adjoining Northern Coast Range - the Franciscan Complex. However, there is an overlying veneer of much younger rocks and loose sediment beneath the Smith River Plain. Beneath the southern part of the Plain, the lower portion of this younger sequence consists of marine siltstones, sandstones, and pebble conglomerates - the St. George Formation. Seventy five feet of this type of rock is exposed near Point St. George, but the maximum thickness may approach 400 feet to the northeast. Fossils from this formation date is a Pliocene, deposited under a shallow sea approximately three to ten million years ago. The overall shape of this body in the Crescent City area may be that of a shallow northwest-trending syncline (trough).

Isolated remnants of similar rocks are found on mountain ridges in the adjacent Northern Coast Range province to the east, at altitudes of 1,700 to 2,200 feet above sea level. They may represent unfaulted remnants of the Point St. George Formation, and show that shallow seas covered at least the western portions of Del Norte County as recently as several million years ago, with possible later upfaulting along the western edge of the mountains (the Del Norte Fault, discussed later) to lift them above their supposed counterparts to the west.

Overlying the St. George Formation, and immediately underlying the surface in the southern two thirds of the Smith River Plain, is a thin unit of nearly horizontal, weakly consolidated alternating silty clay and fine-to-medium-grained quartz sands up to 66 feet thick. This unit is named the Battery Formation, and represents an interfingering of nearshore marine and possible non-marine conditions (such as lenses of stream gravels). The general setting of the Battery Formation represents a "thin marine terrace capping over the southern portion of Crescent City platform", and, "much of the surface has been reworked by wind". "The Battery Formation is believed to date from the most recent Pleistocene interglacial period (the Sangamon, approximately 75,000 to 120,000 years ago), when sea level may have been somewhat higher than it is now". It is more likely, however, that sea level was not as high as is the present elevation of the terrace (Smith River Plain, and Battery Formation, so that some of the present elevation must be due to uplift of the land in the last ± 70,000 years. The surface also appears to be warped, with a slight north to northeast tilting. The presence of unconsolidated sand in the surficial ± 60 feet beneath the more highly populated parts of Del Norte County is of importance in considering the potential for liquefaction during a strong earthquake.

In summary, then, the geologic history of the Del Norte County area is as follows. The older rocks throughout the entire County record prolonged marine conditions of deposition, interspersed and followed by intrusion, metamorphism, and extreme faulting and shearing. This record extends up to as recently as perhaps seventy to one hundred million years ago. The long interval of time following this, up to a few million years ago, is without record; probably the area was above sea level and undergoing erosion during much of this time. Western portions of the County were beneath shallow coastal waters again several million years ago, possible upfaulted along the base of the line of hills east of Crescent City, eroded to the west of this as well, and then what we now call the Smith River Plain was again covered briefly by nearshore marine waters approximately 100.000 years ago, with more recent slight emergence and north to northeast tilting. Winds and migrating stream courses have reworked the coastal plain materials somewhat, while the mountainous mass to the east has continued to undergo erosion and possible slow uplift.

2. Ground Stability: The widely varying topography and rock types underlying Del Norte County make it difficult to develop generalizations concerning stability problems. It is obvious, however, that slope failure problems (landslides and related phenomena) will occur only where there are substantial slopes (i.e., the mountain areas or along steep coasts), whereas the

flatter lowland areas may have instability problems related mainly to the type of underlying materials. Earthquake and non-earthquake related ground failure can occur in either type of area.

3. Hillslopes - Mass Movement: Mass movement is defined as the bulk transfer of masses of soil, rock debris, or rock, downslope under the direct influence of gravity. Mass movement of material on hillsides is a major accompaniment of moderate and strong earthquakes (Richter Scale magnitude of 6.0 or greater), as well as a direct result of heavy rainfull, snow melt, or wave attack on steep coastlines. It can be in the form of landslides, rock avalanches, mud and debris flows, or other types of failure. An example of man-induced slope failure, in combination with these other elements, would be the failure of a steep artificial cut subjected to a moderate or strong earthquake during the wet season.

Slope stability maps (contained in the Del Norte County Seismic Safety and Safety Element Atlas) have been developed for the major populated areas of the County. The information on these maps was derived primarily from interpretation of aerial photographs and topographic maps. Brief field checks were made in each area and existing soil and geologic maps were referred to.

The stability maps are generalized and meant to indicate those areas where further slope stability or foundation investigation should be made if roads, subdivisions, or "critical" structures are proposed for those areas. Boundaries between adjacent sectors are approximate and are only meant to delineate the zones in a general way.

Other areas of the County which are not mapped obviously are not exempt from stability problems. The scope of this report, however, is concentrated on the developed portions and areas of potential development of Coastal Del Norte County. Projects contemplated for intervening areas should be analyzed by a registered geologist, engineering geologist, or geological engineer, provided that a preliminary on-site assessment, plus a study of existing maps and/or aerial photography suggests possible stability problems.

4. Foundation Problems: Maps in the Seismic Safety and Safety Element Atlas also indicate, where possible, a general assessment of foundation problems that might be related to liquefaction, lurching, (and associated cracking and fissuring), and differential subsidence or settlement. These terms are defined as follows:

a. Liquefaction: Liquefaction is the sudden large decrease of shearing resistance of a cohesionless soil, caused by collapse of the soil structure by shock or strain, and

associated with a sudden but temporary increase of the material into a fluid mass. Fine unconsolidated sand or silt, saturated with water, is particularly subject to liquefaction. Horizontal to slightly tilted layers or lenses of this material may underlie river flood plains or lie within marine terrace deposits. Structures located on such ground often tilt, partially sink, or are disrupted by "lurching" which may accompany the lateral transport of the surficial material.

The only quantitative information bearing on the potential for liquefaction in the area was obtained from borings made by Cal-Trans for the overpass construction on Highway 101 northeast of Crescent City (Washington Boulevard and Railroad Avenue overcrossings). This information suggests a potential for liquefaction under the southern portion of the Smith River Plain, which is discussed under the section dealing with stability problems in the Crescent City area.

b. Lurching: (cracking, fissuring) Under moderate to intense shaking, unconsolidated alluvium and soils may undergo various amounts of horizontal displacement toward adjacent unconfined areas (the bluff along a river or stream is a good example). This may or may not be associated with liquefaction. Cracks and fissures, ranging from inches to many feet in length, and of varying widths, generally accompany this "lurching". Intervening ground segments are often tilted. Structures located on such ground can be severely tilted and disrupted.

c. Differential Subsidence or Settlement: Differential subsidence or settlement may occur in unconsolidated (loose and poorly compacted) materials during shaking, associated with the induced tendency toward a more compact arrangement of the grains. As the porosity is decreased, pore water may be forced to the surface to form sand boils or mud spouts. Ground settlement often leads to tilting of buildings or differential settlement of other engineered structures.

There was a lack of definitive information on possible differential subsidence within Del Norte County such that mapping of this potential hazard could not be accomplished. The effects of differential subsidence are most likely to be felt on improperly compacted man-made fill, or where different soil types are in contact.

Rapid withdrawal of groundwater has, in certain areas of California, caused differential subsidence of overlying materials. Information on ground water withdrawal from

the Smith River Plain suggests that differential subsidence is unlikely to occur because areas of heavy withdrawal are also areas of rapid replenishment.

5. Local Stability Problems: In order to present a more localized assessment of possible stability conditions, each of the developed portions of Coastal Del Norte County are discussed separately.

a. Crescent City Stability Problems: Most of the Crescent City area occupies the southern portion of the Smith River Plain. The area is occupied by generally flat to sloping ground everywhere except along the fringing hills to the east, the sea cliff to the west, and very locally along some shallow northwest-trending drainageways. There are restricted areas of steep dune faces north of the airport.

The narrow coastal strip of Battery Point north to Point St. George has been designated a high risk area because of the tendency for sea cliffs to retreat inland with time. Although there exist local "spots" of stability, supported by particularly massive and resistant bedrock, the overriding aspect of this narrow coastal strip is one of progressive failure, and no attempt has been made to distinguish these restricted, less hazardous areas on the map.

The U.S. Army Corps of Engineers is in the early stages of a study to determine coastal changes along the shore adjoining Crescent City on the west. Unfortunately, no information from this study is available at this time.

Logs of bore holes associated with construction of the new highway overcrossings northeast of Crescent City suggest possible thin zones of potentially liquefiable material ±15 to 20 feet below the surface beneath the Washington Boulevard overcrossing area, and within 15 feet of the surface beneath the Railroad Avenue overcrossing. Penetration rates in these depth intervals at several of the boreholes at both sites were rapid enough that, when combined with the type of materials described (slightly compacted fine and medium sand), the regional shallow water table, and predicted bedrock acceleration for the area during a "design earthquake", some possibility of liquefaction is indicated. The potentially liquefiable materials are in the Battery Formation, which may underlie most of the Crescent City area. Therefore, even though the characteristics of this formation likely vary from place to place (detailed information is not at hand), its potential for possible liquefaction must be considered in future construction in the area. Because this formation is generally within 25 to 50 feet of the surface, shallow boreholes under proposed critical or major project sites should be able to assess this potential rapidly and inexpensively.

b. Fort Dick Stability Problems: The topography in the Fort Dick area is mostly flat to very slightly sloping. Therefore, virtually the entire area (with only one exception - directly east of Fort Dick) is designated as a negligible risk area from the standpoint of slope failure related to steepness. The area may, however, be underlain by localized or continuous layers of water saturated under-consolidated sands of the Battery Formation at a shallow depth, thus a possible potential for liquefaction exists. A more or less continuous layer of saturated fine sand and gravel less than 40 feet deep is reported to lie east of Lake Earl, and to extend northward to the Fort Dick area. Without additional detailed information as to the exact quality of the sand, it is best to designate the entire area as one in which potential liquefaction might occur in association with strong seismic shaking. In addition, during such an event, minor lurching might occur along the terrace edge 500 feet north of the Redwood Union School, as well as in the localized steep area just east of Fort Dick.

c. Smith River Stability Problems: The town of Smith River rests on a slightly inclined surface of alluvial fan deposits near the mouth of Rowdy Creek. No slope stability problems are anticipated beneath the developed portions of the town, except for the possibility of undercutting of banks along the drainageways.

The hills to the north and east, composed of the Franciscan rocks, contain moderate to steep slopes and are subject to varying degrees of instability, depending on the combined factors of steepness, rock composition and structure. Modification of these hillsides by man should be undertaken only after a qualified assessment is made of the potential for upsetting the tenuous natural balance.

A very narrow strip of instability, related to the natural tendency of the surf to erode and cause inland retreat of the coastline, is present along the stretch of sea cliffs and low bluffs which extends from Pyramid Point northward to the Oregon border. The rates of retreat in this stretch are not known; however, a realistic approach is to label this as a high risk strip pending qualified measurements of rates of coastal erosion there.

The possibility of liquefaction beneath the town of Smith River, or immediate environs, is considered minimal. Information from water wells in the area suggests that the area is underlain by fan deposits and terrace materials that are not conducive to liquefaction. Franciscan bedrock probably lies at a shallow depth (within, perhaps, 50 feet of the surface)

beneath this. Presumably, this situation exists westward to the Pyramid Point (Ship Ashore) area, where Franciscan rocks outcrop in the sea cliffs. The hills, although liable to landsliding from seismic shaking, are not subject to liquefaction. It is possible that liquefiable materials are present beneath the flood plain of the Smith River, but this remains conjectural.

Minor lurching accompanying a strong earthquake could occur along the steep banks of streams.

d. Klamath Area Stability Problems: Stability problems in the Klamath area are related mainly to the presence of the unstable Franciscan rocks beneath the hillside areas. Alluvial materials underlying the flood plain of the Klamath River and small tributary valleys are not likely to result in significant liquefaction because of their course consistency. As noted earlier, differential compaction could occur if structures are built straddling two different types of foundation materials, or are built on poorly compacted fill. Minor lurching is possible close to the margins of steep banks formed from alluvial materials.

The accompanying stability map of the areas was based on hill steepness, as taken from topographic maps, and a brief field check of hillsides north of Klamath. Variability in stability characteristics of the Franciscan bedrock from place to place were not taken into account in drawing the map. (Copies of these maps are available at the County Planning Department and are hereby incorporated by reference).

C. Tsunami Hazard: Tsunami, more commonly called seismic sea wave or tidal wave, is an earthquake-induced wave (waves) of greater than average height, which inundates slow-lying coastal areas following a severe earthquake at sea (Richter magnitude greater than 7.0 to 7.5). Rather than one high wave, however, a tsunami is a series of waves and troughs, often with the third to fifth wave the highest. Up to half an hour may separate each successive wave crest, with the longer intervals associated with the stronger earthquakes. The Pacific Ocean is surrounded by a belt of intense earthquake activity - the Circum-Pacific seismic belt. The combination of nearshore undersea topography, resonant characteristics of the surrounding nearshore area, and exposed position on the coast makes Crescent City particularly susceptible to tsunamis originating in the Pacific seismic belt.

There are no known historical tsunamis at Crescent City which can be tied to earthquakes occurring off the northern California or Oregon coastlines. The historical tsunamis to hit Crescent City can be related to large subsea earthquakes associated with significant vertical sea floor displacements at such widely

separated localities as off the coastlines of Chile, Japan and Alaska, (see Table 1). This is not to say that a locally generated tsunami is an impossibility; only much less common than those arriving from elsewhere.

A tsunami may arrive as a "bore", a wall of water rushing violently and destructively into the lowlands, or it may, instead, come as a rising horizontal water surface, as it reportedly did in Crescent City in 1964. This latter type of inundation results in a shoreward displacement of the normal line of surf, possibly carrying it into developed areas. Luckily for Crescent City in 1964, the ocean was unusually calm, so that the damage from normal surf was minimal.

D. Coastline Erosion: A vast portion of California's coastal shoreline is constantly being lost by the natural geologic process of erosion. The tidal motions of the sea, the openness of the shore to wave attack and the lack of durability of the rocks on the coast are all factors in the rate of coastline erosion. Wind waves, the familiar waves of the ocean, cause most of the erosion damage.

Del Norte County has a coast shoreline length of 45.5 miles. From the Oregon border to Point St. George, there are about 14 miles of rocky coast, and 11 miles of sandy beach backed by sand dunes. Erosion of this reach is occurring slowly and is non-critical.

The remainder of the County coastline is rocky with pocket beaches and reaches of sand such as at Crescent City and at the mouth of the Klamath River. This latter reach includes the Redwood National Park and the Del Norte Coast Redwood State Park, and is noted for its rugged headlands and scenic shoreline.

The key stretch of coastline identified by the U.S. Army Corps of Engineers as experiencing critical erosion extends from Point St. George to Crescent City. It is within this area that erosion can endanger homes and roadways along the coastal cliffs. The critical area is a 2.3 mile stretch just north of Crescent City. The U.S. Army Crops of Engineers has recommended seawalls for providing protection from continued erosion hazards.

A second critical erosion hazard area identified by the U.S. Army Corps of Engineers is a one mile stretch south of Crescent City, within the Redwood National Park. The stretch is located one mile south of False Klamath Cove. Again, the Corps has recommended a seawall as suitable protection from further erosion. However, coastline erosion does not represent a significant safety hazard in this location, due to the undeveloped nature of the area.

TABLE 1: TSUNAMIS IN CALIFORNIA

DATE	HEIGHT meters	HEIGHT feet	PLACE OF OBSERVATION	GENERATING AREA
12/23/1854	0.2	0.6	San Francisco	Japan
12/24/1854	0.3	1.0	San Francisco	Japan
9/24/1859	4.6	15.0	Half Moon Bay	California
4/2/1868	0.1	0.3	San Diego	Hawaii
8/14/1868	0.3	1.0	San Diego	Chili
5/10/1877	0.3	1.0	San Francisco	Chili
8/26/1883	0.6	2.0	San Francisco	Krakatoa
6/15/1896	0.2	0.6	San Francisco	Japan
8/16/1906	0.1	0.3	San Diego	Chili
11/10/1922	0.2	0.6	San Francisco	Chili
2/3/1923	0.1	0.3	San Francisco	Kamchatka (AK)
4/13/1923	0.2	0.3	San Francisco	Kamchatka (AK)
11/4/1927	0.2	0.6	Crescent City	Pt. Arguello, CA
3/2/1933	0.2	0.6	San Francisco	Japan
12/7/1944	0.9	3.0	Crescent City	Japan
4/1/1946	0.9	3.0	Crescent City	Aleutian Is.
12/21/1946	0.3	1.0	Crescent City	Japan
3/4/1952	0.2	0.6	Crescent City	Japan
11/4/1952	1.1	3.6	Crescent City	Kamchatka (AK)
3/9/1957	0.7	2.3	Crescent City	Aleutian Is.
5/23/1960	3.7	12.2	Crescent City	Chili
10/12/1963	0.5	1.6	Crescent City	Kuril Is.
3/28/1964	6.3	20.9	Crescent City	Alaska
10/17/1966	0.1	0.3	Crescent City	Peru

Source: Iida, et. al., 1967; additional data from Keulegan (1969)

E. Hydrologic Hazard: A flood is defined as any level of a natural body of water that exceeds its normal banks. In and of itself, this is not bad, nor is it a hazard. However, flooding is also defined as any flow of water that threatens life and damages human property. It is in this sense of the word that flooding is addressed.

The severity of a flood is measured in terms of property damage and loss of life. One of the most severe floods to ever occur in Del Norte County was in December, 1964. But even a flood of lesser intensity can create economic disaster; and floods of lesser intensity are more prevalent. It has been noted that the floods that occur in many low lying areas are not the torrents capable of sweeping buildings downstream, but rather the gentle one foot rise into the living room that cost 25 percent of the value of a house and 60 percent of its contents.

Despite the numerous rivers and streams in Del Norte County, significant flooding hazard areas are currently limited to three streams; the Smith River, the Klamath River and Elk Creek. The reason these streams represent a hazard is due to the fact that development has occurred either within, or in close proximity to, their respective flood plains.

1. Smith River: The Smith River drains a basin 609 square miles in size. Throughout its length, the Smith River flows through the Klamath Mountains, except for the final 15 miles, where it slices through the Coastal Range and crosses a broad coastal plain before emptying into the Pacific Ocean. Within the plain is Lake Earl, Lake Talawa, a portion of Highway 101, a portion of Lower Lake Road, agricultural land and scattered residential uses.

The greatest flood on the Smith River during recent record occurred in December, 1964. Flood waters overflowed through Talawa Slough and into Lake Earl. Lake Earl then rose to an elevation of about eight feet above mean sea level and spilled through Lake Talawa into the ocean through a natural breach in the sandbar. Approximately 9,300 acres of pasture and other agricultural land were flooded in the Smith River delta area, and the area surrounding the lakes. The damages to the agricultural lands consisted of scouring and deposits of debris, silt, and gravel. The livestock loss numbered 360, mostly cattle.

In 1955, floodwaters from the Smith River overflowed into Lake Earl and Lake Talawa, inundating approximately 3,200 acres of land. Agricultural damages consisted primarily of scouring of pasturelands and deposits of silt, gravel and debris from timber operations. Cattle loss was held to a minimum as a result of flood warnings issues by the U.S. Weather Bureau office at Eureka.

Other large floods on the Smith River occurred in December, 1861; January 1890; February, 1927; October 1950; January and November, 1953; January, 1966; January, 1970; and January, 1972. The January 1972 flood was the second highest flood stage on record in the Smith River, exceeded only by the 1964 flood.

2. Klamath River: The Klamath River drains an area of approximately 15,000 square miles, of which 234 square miles are within Del Norte County. It is the second largest river in California, exceeded only by the Sacramento River. It lies south and east of the Smith River basin. Major tributaries to the Klamath are the Salmon, Scott, Shasta and Trinity Rivers, none of which are within the bounds of Del Norte County.

Floodflows in the Klamath basin are of two types, rain and snowmelt floods. Of the two, the rain floods are the more damaging, records showing practically all damaging floods have occurred during the period of November to March, inclusive. Usually, these floods result from a rain storm of several days duration.

Snowmelt floods usually begin in March. They do little damage as compared to that caused by rain floods, but they sometimes cause inundation and crop losses.

The portion of the Klamath River that lies within Del Norte County is referred to by the U.S. Army Corps of Engineers as Reach I, that being the stretch from the mouth of the Klamath to the Humboldt County line. Within Reach I and Coastal Zone lies the communities of Requa, Camp Klamath and Klamath. Due to this development, flooding within Reach I creates a hazard to life and property.

As in the case of the Smith River and most Northern California rivers and streams, December, 1964, represents the month of the greatest recorded flood on the Klamath River. The flood of 1964 was generated by heavy precipitation, which followed light amounts of rainfall during the prior few days. In the upper Klamath River immediately below Iron Gate Dam, peak flows were almost twice as high as previous maximums, despite the regulation provided by the series of upstream dams and reservoirs. Adding to the flood conditions was an extremely large landslide that temporarily blocked the Salmon River in the vicinity of Lewis Creek. The impounded water was breached, adding considerable flow to the already swollen river.

Damages to the communities along the Klamath in Del Norte County was high. The flood swept away the entire town of Klamath. The nearby towns of Camp Klamath, Requa, and Klamath Glen also sustained heavy damage. The concrete arch bridge at the town of Klamath, famous of its statues of California bears on either end, was also a casualty.

The principal agricultural damages occurred at the mouth of the Klamath, where there was considerable loss of livestock, crops and pastureland. The lumber industry, the principal industry in the Klamath basin, was also hit hard.

Other large floods on the Klamath River occurred in December 1861, February 1890, February 1927, January 1953, and December 1955.

Since 1964, and of considerable importance in re-examining flood hazard areas on the Klamath, a flood control project has been completed by the U.S. Army Corps of Engineers. The project included construction of a levee at Klamath Glen and construction of a flood-free townsite at Klamath. The project is designed to prevent further destructive flooding in the towns of Klamath and Klamath Glen. Flooding on the Klamath since 1964 has been primarily localized, with no major damage.

3. Elk Creek: Elk Creek originiates in Jedediah Smith Redwood State Park. Several small tributaries flow from the Park and combine just west of Elk Valley Road to form the main channel. The Creek then flows southwest, draining Elk Valley, and empties into Crescent City Harbor.

Elk Creek is a much smaller stream in comparison to the Smith and the Klamath; its watershed is approximately six square miles in size, with its recognized flood plain occupying less than one square mile. However, due to its proximity to Crescent City, it is of considerable importance in safety planning.

Flooding on Elk Creek is caused by a combination of factors; excess runoff and tidal action. Excess runoff is caused by heavy rainfall, and tidal action is influenced by wind, waves and tsunamis. Flooding history on Elk Creek indicates that tidal action has been the principal cause of flooding.

A prime example of the type of flooding Elk Creek is susceptible to occurred in 1964 when a tsunami hit Crescent City. The Elk Creek flood plain acted as a natural inlet for the water generated by the tsunami, and flooding occurred on a considerable amount of the Elk Creek flood plain, including portions of downtown Crescent City.

III. ENVIRONMENTAL HAZARD IMPACTS

A. Potential Environmental Impacts (in Crescent City Area): The following findings are based on the environmental hazard information identified on Maps H and J contained in the Del Norte County Seismic Safety and Safety Element Atlas.

1. Existing Land Use:

   a. The entire Crescent City area is subject to liquefaction.

   b. Residential and commercial areas adjacent to tributaries of Lake Earl and Elk Creek are subject to lurching.

   c. Commercial and residential areas adjacent to Crescent City Harbor have experienced storm damage from tsunami.

   d. The areas fronting on the coast north of Crescent City to Point St. George are subject to coastline erosion.

   e. Boating activity within the Crescent City Harbor is subject to disruption and damage by tsunami waves.

   f. There is sparse development within the Lake Earl flood plain thus minimizing the potential for flood.

   g. Portions of the Elk Creek lower drainage area are susceptible to tsunami runup.

2. Structures:

   a. All schools and church buildings in and adjacent to Crescent City, as well as high intensity and/or public use structures were built since 1944 (the majority built in the 1950's and 1960's) thereby rendering them less susceptible to earthquake damage.

   b. The following high intensity and/or public use structures are subject to tsunami waves: McNamara and Peepe Mill, Crescent Fisheries, Eureka Fisheries, West Coast Crab, the Elks Club, the City sewer facility, and the Seaside Hospital. In addition, the City Cultural Center and swimming pools are subject to inundation from Elk Creek flooding.

   c. All high intensity and/or public use structures are subject to liquefaction.

3. Transportation:

   a. U.S. 101, in the vicinity of downtown Crescent City, crosses the Elk Creek flood plain and is within the 1964 tsunami inundation area.

b. Lake Earl Drive at Jordan Creek is in an area susceptible to flooding.

c. Lake Earl Drive is susceptible to lurching along drainage channels near Washington Boulevard and Pine Grove School.

d. Portions of U.S. 101 just south of Crescent City are within a potential landslide area.

e. Pebble Beach Drive is susceptible to sloughing due to coastline erosion.

f. Portions of Elk Valley Road are within the Jordan Creek and Elk Creek flood plain.

g. Northern portions of the County Airport are subject to lurching and the entire facility is within a potential liquefaction area.

B. Potential Environmental Impacts Adjacent to the Community of Fort Dick: The following findings are based on the environmental hazard information identified on Map II contained in the Del Norte County Seismic Safety and Safety Element Atlas.

1. Existing Land Use:

a. The Fort Dick area is subject to liquefaction.

b. The area just north of Fort Dick, adjacent to Tryon Creek, is subject to lurching.

c. Fort Dick proper is not subject to flooding from the Smith River/Lake Earl flood plain.

d. Developed areas west of Fort Dick, adjacent to Lower Lake Road, are within the Smith River/Lake Earl flood plain.

2. Transportation:

a. Fort Dick's main road, Lake Earl Drive, crosses the Tryon Creek lurching area just north of the community.

b. U.S. 101 east of Fort Dick also crosses the Tryon Creek lurching area. No other physical hazards area to threaten this main road in the Fort Dick area.

c. Most of Lower Lake Road west of Fort Dick is in the Smith River/Lake Earl flood plain. Lake Earl Drive north of Tryon Creek is in the Smith River flood plain. In addition, most of Mosely Road is in the Smith River flood plain.

C. Potential Environmental Impacts Adjacent to the Community of Smith River: The following findings are based on the environmental hazard information identified on Map G contained in the Del Norte County Seismic Safety and Safety Element Atlas.

1. Existing Land Use:

a. Liquefaction potential is within close proximity to the community of Smith River indicating Smith River's susceptibility to this seismic response.

b. Potential lurching areas exist along the entire stretch of the Smith River and Rowdy Creek southwest of the community.

2. Structures:

a. The high intensity use structures in the community of Smith River, as well as the Ship Ashore Recreational Hall, near the mouth of the Smith River, are not subject to land slides, flooding or lurching.

3. Transportation:

a. Highway 101 is not within a known liquefaction nor within a potential landslide area, however, it crosses the Smith River which is subject to flooding and subject to lurching along its banks.

D. Potential Environmental Impacts Within the Turwer Valley (Klamath and Requa): The following findings are based on the environmental hazards information identified on Map M contained in the Del Norte County Seismic Safety and Safety Element Atlas.

1. Existing Land Use:

a. Requa:

1) A considerable portion on the residential land use in Requa is within land subject to landslides.

2) The community of Requa appears to be totally removed from the Klamath River flood plain.

b. Klamath:

1) The new town side of Klamath is totally removed from the Klamath River flood plain.

2) The new town site of Klamath is adjacent to but apparently not threatened by, steep slopes subject to landslides.

3) Both residential (including two recreational vehicle parks) and instrustrial land uses south and southeast of Klamath are within the Klamath River flood plain.

2. Structures:

a. There are no high intensity use structures in Requa.

b. The Courthouse in Klamath is not susceptible to physical hazards other than the County wide potential of ground shaking.

c. The Simpson Timber Company near Klamath employs approximately 200 people. Its facilities are within the Hoppaw Creek flood plain and therefore are subject to periodic flooding.

3. Transportation:

a. Highway 101 near Klamath is within the Klamath River flood plain.

b. The access road to Requa crosses the Klamath River flood plan.

E. Pontential Urban Expansion Areas: Future potential urban expansion areas in the Coastal Zone of Del Norte County include: in-filling in and around the Crescent City area; the area along Northcrest Drive/Lake Earl Drive north of the City; the Klamath Townsite; and Pacific Shores Subdivision.

1. Crescent City Area: In-filling within exisiting neighborhoods and development within areas contiguous to the City limits will be continued now that the sewer collection system is being completed for this area. New development is essentially subject to the same physical hazards as is existing development. Expansion to the south would be susceptible to tsunami inundation, flooding from Elk Creek, and liquefaction. Expansion to the north would be subject to liquefaction and localized lurching. In-fill would primarily be subject to liquefaction, tsunami inundation and coastline erosion.

2. Northcrest Drive/Lake Earl Drive: North of Crescent City urban expansion is a potential along both sides of Northcrest/ Lake Earl Drive. In-filling will result in an urban corridor running northeast from Crescent City. The geologic hazards that affect this area include liquefaction and lurching: lurching along Lake Earl tributaries and liquefaction throughout the area. A portion of the Lake Earl flood plain is within the northern portion of this expansion area.

3. Klamath Townsite: The Klamath Townsite was relocated above the floodplain after the disasterous flood of 1964. No known geologic hazard underlies the new Klamath Townsite. There exists, however, potential slope stability problems on the mountainous slopes immediately to the east. The Klamath River floodplain borders on the westerly side of the new townsite, across Highway 101.

4. Pacific Shores Subdivision: The Pacific Shores Subdivision, recorded in 1963 with 1535 lots on 1486 acres, is situated on a coastal dune system seven miles north of Crescent City. To date the subdivision has not been developed to any major extent. Portions of Pacific Shores lies within the Lake Earl/Talawa floodplain. Additionally flood potential exists in numerous small pocket areas throughout the subdivision owing to poor drainage and a high water table. The potential for renewed activity of the generally stabilized dune system in unknown. Other potential geologic hazards within the area include: liquefaction throughout the area; and lurching along Talawa Slough and other steep faced drainages and dunes.

IV. POLICIES AND IMPLEMENTATION

A. Coastal Act Policies: New development in the Coastal Zone is subject to provisions regarding potential geologic, flood, and fire hazards. The following policies from the 1976 Coastal Act apply:

> 30253. New development shall:
> (1) Minimize risks to life and property in areas of high geologic, flood and fire hazard.
>
> (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

B. Present Local Policies: The County as a number of regulatory techniques which are presently utilized in reviewing and controlling proposed developments. The discussion of these techniques will focus on their relationship to potential environmental hazards. There are four basic controls that the County uses to deal with proposed developments: 1) Zoning ordinances; 2) subdivision ordinances; 3) the Uniform Building Code (UBC); and 4) the environmental review process.

The County's zoning ordinance contains provisions for restricting uses which would be developed in flood prone areas. There are three flood plain zoning districts outlined in the ordinance: Flood Zone Area Properties (FP-1); Flood Overflow Area Properties (FP-2); and Protected Areas Within Flood Zones (FP-3B).

The subdivision ordinance basically administers the State subdivision law at the local level. No special or unique controls have been incorporated in this ordinance to reflect the side variety of environmental conditions found in the County.

The 1973 edition of the Uniform Building Code is used by the County as the bases for reviewing and inspecting construction. In addition to the structural standards set forth in the UBC, the County enforces the grading provisions outlined in Chapter 70. Also, a portion of the UBC deals with the abatement of hazardous structures. The County has adopted a seperate ordinance to deal with such structures, although it is based primarily on the provisions found in the UBC.

The provisions of the California Environmental Quality Act are administered by the County. A seven member Environmental Review Committee makes recommendations to the County Planning Commission

as to the necessity of preparing environmental impact reports for development proposals. The responsiblity for preparing environmental impact reports rests with the applicant.

Although the County presently administers all the above development regulations there is no concerted effort to take into account environmental hazard. The information developed in this Element should be used as a basis for modifying existing ordinances and procedures as outlined below:

1. County Zoning Ordinance: A review of the zoning ordinance should be undertaken to ensure that the zoning districts and permitted uses correlate to the environmental hazards identified in this Element. Flood plain zoning districts should be expanded to include all identified flood prone areas. High intensity and/or public uses should be prohibited in areas of significant hazard potential.

2. County Subdivision Ordinance: Provisions of the subdivision ordinance dealing with site specific soils and geologic investigations should be modified and strenghtened. Health and sanitation of land in low lying area. The premature subdivision of land which as no urban services and which may be subject to environmental hazards should be discouraged.

3. County Building Codes: The primary recommendations dealing with building codes focuses on the grading provisions. Del Norte County has a full range of topographic features, including steep slopes, coastal bluffs and shoreline, low lying areas and rivers and creeks. The County should consider developing a detailed grading ordinance aimed at preserving the uniqueness of these features. Grading standards and provisions for each of these types of areas should be considered separately.

4. Environmental Review Process: The environmental review process allows the County wide flexibility in developing detailed environmental data on proposed developments. The investigation of potential environmental hazard impacts should be a prime consideration in any environmental impact report prepared in the County. The data developed in the EIR preparation process should be utilized to mitigate potential hazard impacts or as the basis for denying the proposal if the hazards are of overriding significance.

C. Acceptable Risk: The purpose of a Seismic Safety and Safety Element is to reduce risk resulting from natural hazards. Dealing with a risk provides a framework for evaluating the significance of a given hazard. If it is determined that a hazard represents a high risk situation, public agencies can adopt measures to reduce risk to acceptable levels.

The determination of acceptable and unacceptable risk requires judgement based on weighing several factors, including the nature of the hazard, the expected frequency of the hazard and the number of persons exposed to the hazard. Hazards with a high life-loss potential are less acceptable than hazards which primarily affect property; and hazards which could affect entire communities are less acceptable than hazards which may have an impact on a relatively few persons.

All land use regulations reflect a certain level of risk. In general, that level of risk is less than would otherwise prevail simply because land use regulations are written to promote and protect the public health and safety, thereby reducing risk. However, when mitigation costs for safety hazards exceed what the public is willing to pay, or when existing land use reflects a consciously accepted high risk situation, acceptable risk may well be higher than if based solely on safety concerns.

As desireable as it would be to completely eliminate natural hazard risk to both people and property, society simply does not have the resources nor the technology to accomplish this. For this reason, the policies of this Element are not intented to remove all risks associated with each specific type of hazard, but when implemented will reduce the risk to life and property resulting from a natural hazard.

D. LCP Policies and Implementation: The following policies are recommended to minimize risks from geologic, seismic and flood hazards within the Coastal Zone of Del Norte County:

1. LCP Policies for Geologic Hazards:

P-1. Any development proposed adjacent to coastline erosion areas shall be preceded by:

- an assessment of the rates of coastal retreat, in the case of bluffs, a detailed examination of underlying geology by a registered geologist or engineering geologist, and

- an analysis of the potential for tsunami run-up

P-2. In lieu of the above the County may establish specific area setbacks of sufficient distance to mitigate potential coastal erosion hazards.

P-3. The County shall petition appropriate federal and state agencies to aid in a study of coastal bluff erosion and its impact on the Crescent City Harbor. The studies shall include:

- the source of harbor deposition material, specifically the impact of beach erosion north of Battery Point;

- the effect harbor deposition has on beach sand replenishment south of Crescent City Harbor;

- the impact of harbor dredging practices on the County hospital;

- the impact of harbor dredging on potential tsunami hazard;

- the direct and indirect costs of harbor dradging to the County, and

- the economic benefit of harbor dredging to the County.

Additionally, the County shall request of the U.S. Army Corps of Engineers a more detailed study of the critical coastline erosion areas in and adjacent to Crescent City, to ascertain the feasibility and practicality of installing seawalls, as recommended by the Corps.

P-4. Residential development involving significant alteration of natural land forms or surface conditions shall be discouraged on slopes greater than 30 percent.

P-5. A geological investigation shall be made by a registered geologist, engineering geologist or RCE for all proposals in landslide potential areas, including road construction. These investigations should assess the stability of the site under both normal and seismic conditions as well as recommend mitigation measures.

P-6. The County, in conjunction with other governmental agencies, when feasible, shall utilize lands subject to severe geologic hazards for low intensity park and recreational activities or open space.

P-7. Any construction contemplated on filled areas shall be preceded by an analysis of the fill and its capabilities or limitations.

2. LCP Policies for Seismic Hazards:

P-1. The County shall utilize the most current seismic design criteria in the construction of new public buildings. Buildings meant to accomodate activities and equipment related to public safety, especially police, fire and communications services, shall be constructed to ensure continued operations and availability of services after an earthquake.

P-2. All public and private schools within the Coastal Zone shall undergo periodic inspections and upgrading, when necessary, to ensure conformity to current Field Act Standards.

P-3. Site-specific investigations shall be required prior to the construction all high intensity and/or public use structures within the Coastal Zone. Site-specific investigations should assess the potential for liquefaction induced ground failures and suggest measures to mitigate the hazards from vertical and/or horizontal displacement. If it is found that engineering techniques cannot mitigate the hazards to within acceptable risk levels appropriate with the intended land use, the location of the proposed development shall be reconsidered.

P-4. To reduce the probability of ruptures utility lines, new major pipes, both for sewer and water, shall be made of the strongest, most flexible materials available and still be economically feasible.

P-5. The County shall encourage State and Federal agencies to further investigate the phenomena of "resonance" in the coastal area off Crescent City to see if remedial measures should be instituted to decrease the effect.

P-6. To the extent practicable, critical facilities (high intensity and/or public use structures) should not be sited in areas susceptible to tsunami inundation. Where it is deemed essential to do so for the public welfare, these structures should be sited, designed and constructed with due consideration for this hazard.

3. LCP Policies for Flood Hazards:

P-1. The County shall maintain and continue to implement its existing flood plain zoning districts, thereby continuing its policies to discourage in-appropriate development in flood prone areas.

P-2. Flood Plain districts shall be revised and/or established to coincide with flood prone areas designated in conjunction with the National Flood Insurance Program, after these detailed surveys are completed by the appropriate federal agency.

P-3. Critical utility facilities shall not be located in flood prone areas, unless appropriate mitigating factors are implemented.

P-4. The County should restrict and control construction of roads in flood prone areas due to their growth inducement potential.

P-5. The Coastal Program's land use policy shall recognize that flood plains have unique and significant public values, including wildlife habitats or recreational, aesthetic and scientific value, open space, and groundwater recharge. The value of the flood plain as an environmental resource and the public benefits to be derived from it should be considered.

APPENDIX

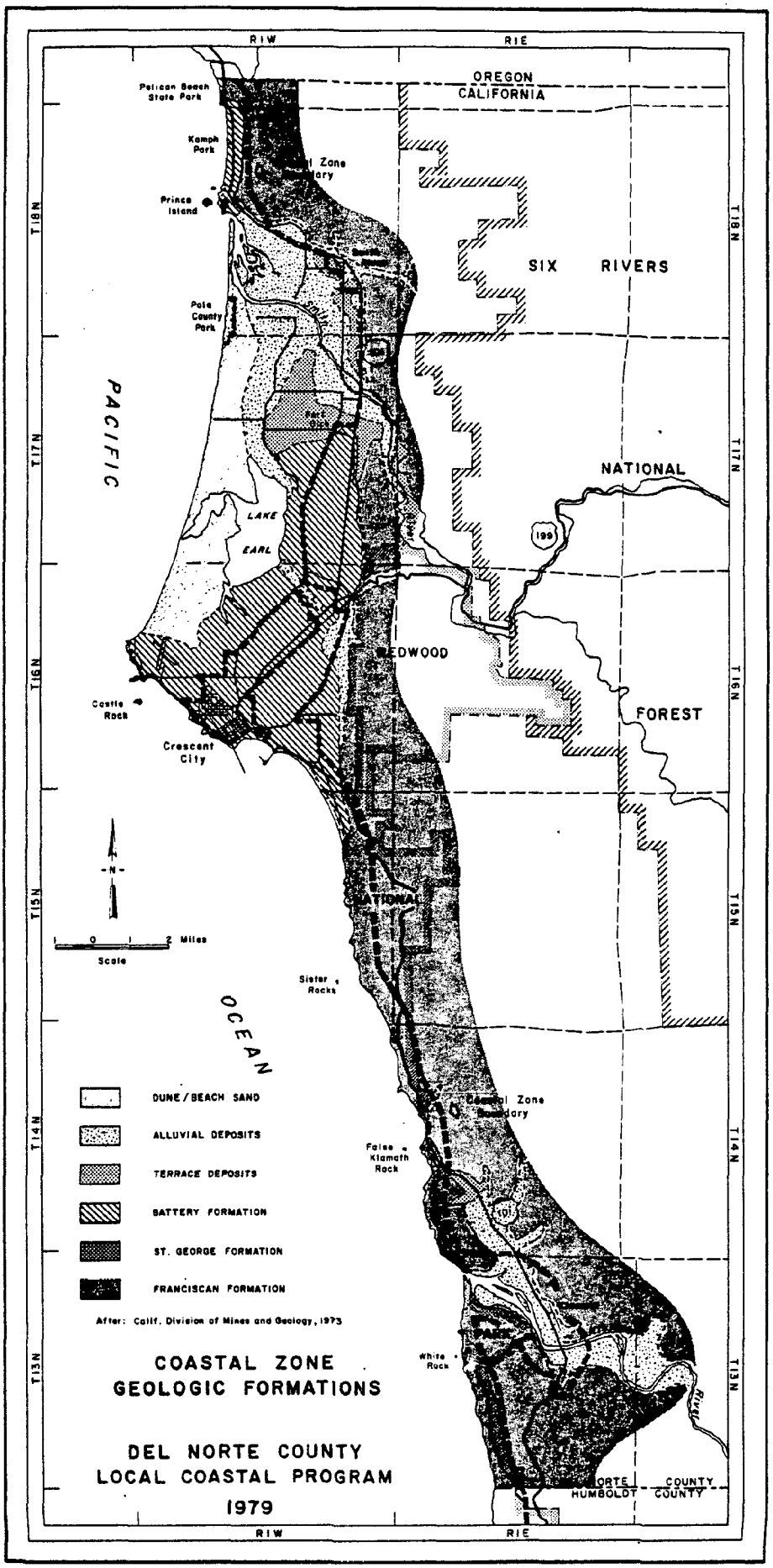


FIGURE 1: COASTAL ZONE GEOLOGIC FORMATIONS

BIBLIOGRAPHY

Atmospheric Research Group, Department of Army Report. Investigation of Marine Processes and Coastal Landforms Near Crescent City, California.

Back, William, (1957), Geology and Ground Water Features of the Smith River Plain, Del Norte County, California, U.S. Geological Survey Water Supply Paper 1254.

California, State of Coastal Zone Conservation Commission, (December 1975), California Coastal Plan, San Francisco.

California, State of, Department of Water Resources, (1965), Land and Water Use in the Smith River Hydrographic Unit, Bulletin Number 94-4.

_____, (1965), Klamath River Hydrographic Unit, Volumes I and II, Bulletin Number 94-6.

California, State of, Division of Mines and Geology, (1964), Geology of Northern California, San Francisco.

_____, (1973), Geologic Map of California: Weed Sheet, San Francisco.

Caltrans, (1968), Log of Test Borings for Washington Boulevard Overcrossing, (Bridge Number 1-64) and Railroad Avenue Overcrossing (Bridge Number 1-63).

CH2M- Hill, (1978), Flood Drainage Study for an Area North of Crescent City, Del Norte County, Volume 1, Redding, Ca.

Conservation Foundation, (December 1977), Physical Management of Coastal Floodplains: Guidelines for Hazards and Ecosystem Management, Washington, D.C.

Creisler, Joseph, (1964), "Tidal Wave Creates Sanitation Problems," Public Works.

Iida, Kumizi, (1963), On the Heights of Tsunamis Associated with Distant and Near Earthquakes, Procedures from Tsunami Meetings Associated with Tenth Pacific Science Congress, IOGG Monograph #24, pp. 105-123.

Iida, Kumizi, Cox, D.C., and Pararas-Carayannic, G., (1967), Preliminary Catalogue of Tsunamis Occurring in the Pacific Ocean, Hawaii Institute of Geophysics Data Report Number 5, 262 pp.

Terra Scan, Inc., (February 1976), Seismic Safety & Safety Element: An Element of the Del Norte County General Plan, Eureka, Ca.

United States Army Corps of Engineers, (1971), National Shoreline Study, California Regional Inventory.

_____, (1971), Flood Plain Information: Lake Earl- Lake Talawa and Lower Smith River, San Francisco District.

_____, (1965), Crescent City Harbor Tsunami High Water Marks.

_____, (1964), Lower Klamath River Basin, California, Flood Plain and High Water Marks.

United States Geological Survey, (1957), Water Supply Paper 1254. Geology and Ground Water Features of the Smith River Plain, Del Norte County, California.

U.S. Davis, Department of Soils and Plant Nutrition, (1966), Soils of Coastal Del Norte County, Davis, Ca

Wiegel, R.L., (1965), Protection of Crescent City, California From Tsunami Waves, For the Redevelopment Agency of Crescent City.

Del Norte County
Local Coastal Program

VISUAL RESOURCES COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 thst Street
Crescent City, Ca 95531
(707) 464-2119

LCP -- VISUAL RESOURCES COMPONENT

Table of Contents

I. INTRODUCTION 1

II. VISUAL RESOURCE EVALUATION 2

A. Evaluation Criteria 2

B. General Visual Resource Areas 2

III. VISUAL RESOURCE INVENTORY 4

A. Oregon Border to the Smouth of the Smith River ... 5

B. Smith River Plain 7

C. Lake Earl Area 9

D. Point St. George to Crescent City 11

E. Crescent City to Redwood National Park 13

F. False Klamath Cove Area 15

G. Lower Klamath River Area 17

IV. PLANNING ISSUES 19

A. Alteration of Natural Landforms 19

B. Building Design and Placement 19

C. Sign Design and Placement 20

D. Litter 20

E. Utility Lines 21

F. Special Treatment Areas 21

V. POLICIES AND RECOMMENDATIONS 22

A. Coastal Act Policies 22

B. Present Local Policies 22

C. LCP Policies 23

APPENDIX I: Viewpoint Scenic Features 26

II: Visual Resource Inventory Areas 28

BIBLIOGRAPHY 29

LCP -- VISUAL RESOURCES COMPONENT

I. INTRODUCTION *

Del Norte County has an abundance of visual resources. The Pacific Ocean, Redwood forests, agricultural lands, historical buildings and the Smith and Klamath Rivers are just a few of numerous scenic features to be found in the vast array of visual wealth and beauty within the County.

The Coastal Act of 1976 requires the identification, protection and enhancement of "highly scenic" areas within the Coastal Zone. The purpose of this component of the LCP will be to present policies designed to maintain and enhance the visual resources of coastal Del Norte County.

This component begins by first establishing criteria for defining and evaluating what constitures a "highly scenic" area. A visual resource inventory of the Coastal Zone is then presented in order to establish basic data and descriptions concerning the characteristics of major viewpoints. Particular planning issues such as building placement, landform alteration and litter are discussed in the section following the inventory. Finally, policies and recommendations are presented conerning the maintenance and enhancement of Del Norte County's invaluable scenic resources.

---

*NOTE: This component of the LCP is subject to review and cross-referencing to other policy components.

II. VISUAL RESOURCE EVALUATION

An initial step in establishing a management plan for visual resources is to develop a set of criteria by which landscapes might be evaluated according to specific aesthtic qualities. Once such standard are defined, areas of particular aesthetic concern may be identified for detailed inventory and analysis. This section will establish evaluation criteria for defining those areas of the Coastal Zone with special or unique visual characteristics.

A. Evaluation Criteria; Implementation of the Coastal Act requires the identification of "highly scenic (coastal) areas" in order that these areas might be protected as important public resources. The establishment of specific guidelines to evaluate coastal aesthetics and define specific scenic areas is, however, a complex task. Value judgements, variable and inherently qualitative in naute, must be made at the outset.* Nonetheless, certain aesthetic paramenters such as visual distinctiveness and harmony are considered by many to constitute specific scenic qualities. These of course, include both natural and man-made or cultural features. In addition to visual features, other resource values such as sounds, odors, and tactile qualities may be considered aesthetically appealing.

Criteria for designating highly scenic coastal areas in Del Norte County are proposed as follows:

1. Views of special interest to the general public (e.g., Pacific Ocean; lighthouses, old growth forests);

2. Visually distinctive scenes resulting from unique contrasts or diversity in landscape patterns (e.g., offshore rocks, forested uplands);

3. Views with special integrity or unimpaired conditions (e.g., open space, nature preserves);

B. General Visual Resource Areas: Utilizing the evaluation criteria outlines above, specific elements of the coastal landscape may be identified as requiring special attention in the planning process. Views within the coastal region of Del Norte County with particular visual distinctiveness, integrity, harmony and/or of special interest to the general public include the following:

1. View of water bodies (e.g., ocean, estuary, streams);

---

*NOTE: Due to the subjective aspect of such decisions, the actual deliniation of these "highly scenic" areas will require considerable public input and review. Only criteria and guidelines will be proposed here.

2. Views of sensitive habitats and open space (e.g., wetland, rocky intertidal);

3. View of expressive topographic features (e.g., offshore rocks, sea cliffs);

4. View of special cultural features (e.g., historical, maritime settings).

Areas identified as having present one or more of the above elements are inventoried and evaluated by this study for their value as significant visual resources.

III. VISUAL RESOURCE INVENTORY - HIGHLY SCENIC AREAS

An inventory of aesthetic* resources is necessary to serve as a data base for subsequent planning and management decisions. By applying the evaluation criteria outlined in the foregoing section, seven visual resource inventory areas have been defined for coastal Del Norte County (See Figure 1).

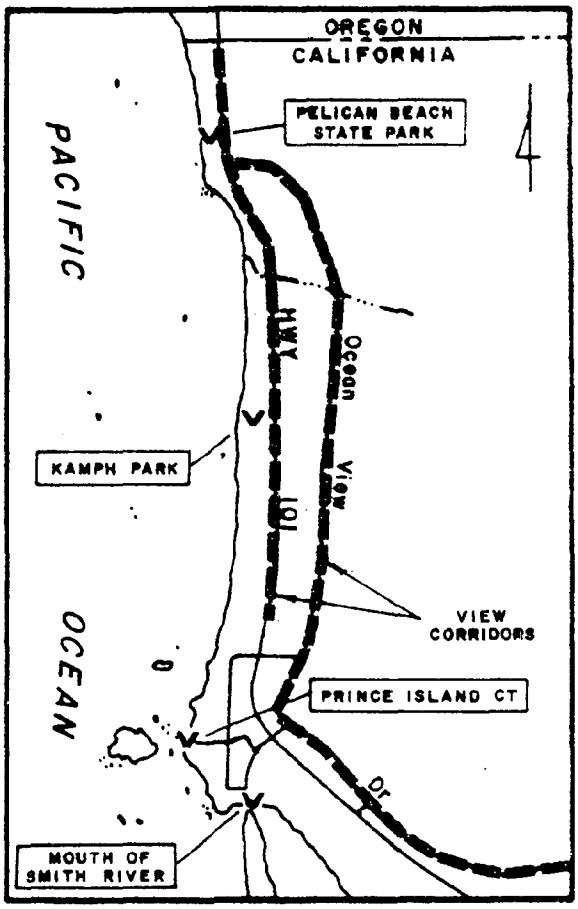
The entire area delineated is not to be interpreted as being "highly scenic" or even "scenic", but each area does contain significant points and/or corridors of aesthetic value. It should also be noted that the size of the individual visual resource areas vary, but each inventory unit was defined on the basis of landform, water, vegetation or other commonalities.

The seven inventory areas will be discussed in detail indicating recognized viewpoints and view corridors together with a general description of the area's physical environment, land uses and viewshed characteristics. A map accompanies each visual resource area description.

---

* aesthetics is defined as a branch of philosophy dealing with the nature of the beautiful and with judgements concerning beauty, therefore it should be emphasized that this component is extremely subjective and totally dependent upon the readers on personal viewpoint.

A. Oregon Border to the Mouth of the Smith River:



VIEWPOINTS: (v)

1. Pelican Beach State Park;
2. Kamph Memorial Park;
3. Prince Island Court;
4. Mouth of Smith River

VIEW CORRIDORS:* (▬▬▬▬▬)

1. Ocean View Drive
2. Highway 101 North of Indian Road to Oregon border

PHYSICAL ENVIRONMENT: The area from the mouth of the Smith River to the Oregon border consists principally of a narrow marine terrace with sea cliffs and low bluffs. East of Ocean View Drive the gently sloping terrace rises abruptly to a high ridgeline paralleling the coast at an elevation about 800 feet. This upland area is covered with a mosaic of mixed deciduous/coniferous forest and grassland vegetation. South of Kamph Park a generally stabilized dune systems lies west of Highway 101.

LAND USE: Land use north of Pyramid Point is a mixture of agriculture and rural residential housing. Agricultural uses include nursery crops and cattle grazing. Residential properties are scattered throughout the area with major concentrations: along Indian and Mouth of the Smith River Roads; immediately north of both Kamph Park and Pelican Beach State Park; Pelican Beach Palisades (a small subdivision north of Gilbert Creek); and along Ocean View Drive. A number of visitor-serving facilities are located on Highway 101. These include motels, restaurants and gift shops.

---

* View corridors are not to be equated with "scenic highway" designations, nor does this designation require the establishment of restrictive ordinances similarly to those suggested by the "scenic highways" legislation.

VIEWSHED CHARACTERISTICS: The visual resources between Pyramid Point and the Oregon border are dominated by ocean vistas and related scenery such as offshore rocks, sea cliffs, coastal vegetation and marine life. Views of upland topography and forestlands, together with agricultural land uses, are also available within the regional viewshed.

Both Highway 101 and Ocean View Drive are important scenic corridors offering open and fairly continuous panoramas of marine and upland resources.

1. Pelican Beach State Park: The undeveloped Pelican Beach State Park offers a coastal view extending from Chetco Point in Oregon to Prince Island near the mouth of the Smith River. Distant views of coastal strand, offshore rocks and upland forest slopes are present. The immediate scenery includes dense coastal scrub consisting of Sitka spruce and a variety of shrubs pruned by maritime winds.

2. Kamph Memorial Park: The view from Kamph Park extends from the Oregon shoreline to Prince Island and includes forested uplands to the east. Housing development immediately to the north partially blocks the panorama. Immediately to the south of Kamph Park are scenes of riparian vegetation and grazing lands.

3. Prince Island Court: At the end of Prince Island Court is a little used coastal viewing point. This is one of the closest public vantage points for observing the birdlife of Prince Island and Hunter Rock.

4. Mouth of the Smith River: The mouth of the Smith River is a County maintained public access and viewpoint situated on a terrace overlooking the Smith River's entrance to the ocean. The view from this area extends from Point St. George to Pyramid Point and includes scenes of the Smith River estuary and its wildlife, a large sandspit, coastal dunes and distant forested uplands.

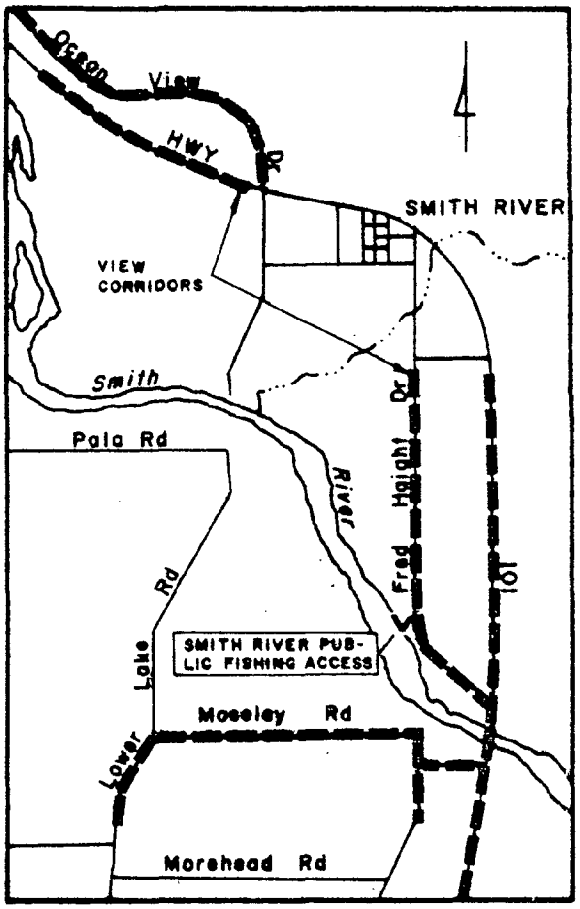
B. Smith River Bottomlands:

VIEWPOINTS: (v)

1. Smith River Public Fishing Access

VIEW CORRIDORS: (▬▬▬▬)

1. Ocean View Drive
2. Highway 101
3. Fred Haight Drive
4. Moseley Road
5. Lower Lake Road
6. Lake Earl Drive



PHYSICAL ENVIRONMENT: The lower reaches of the Smith River, west of Highway 101, are commonly referred to as the Smith River bottomlands. The bottomlands consists primarily of flat-lying intermittently flooded agricultural lands adjacent to the river. Upslope from the bottomlands lie various terrace and alluvial fan areas. A large portion of this gently sloping region is also agricultural use. Further inland forest covered coastal mountains rise to elevations of approximately 1000 feet. Except for the riparian vegetation along the river, streams, sloughs and the forested uplands, much of the natural vegetaion has been altered to establish agricultural land uses.

LAND USE: Agriculture is the major land use in the Smith River area. This includes dairy products, pasture and nursery crops. A lumber mill facility lies just outside of the Coastal Zone boundary. Other land uses are rural residential, mobile home/ RV parks and commercial businesses.

VIEWSHED CHARACTERISTICS: Views of agricultural lands and upland forests dominate the scenery of the Smith River area. Occasional vistas of the Smith River and ocean area also available.

Several scenic view corridors along both major and minor roadways exist in the Smith River area. Ocean View Drive and portions of Highway 101 offer expansive views of the bottomlands and surrounding hilltops. Backroads providing views of agricultural and rural landscapes are Fred Haight Drive, Moseley Road, Lower Lake Road and Lake Earl Drive.

The Smith River public fishing access is a significant viewpoint in the area. A parking facility on a terrace above the Smith River presents river, riparian vegetation and waterfowl scenes as well as views of distant upland forest.

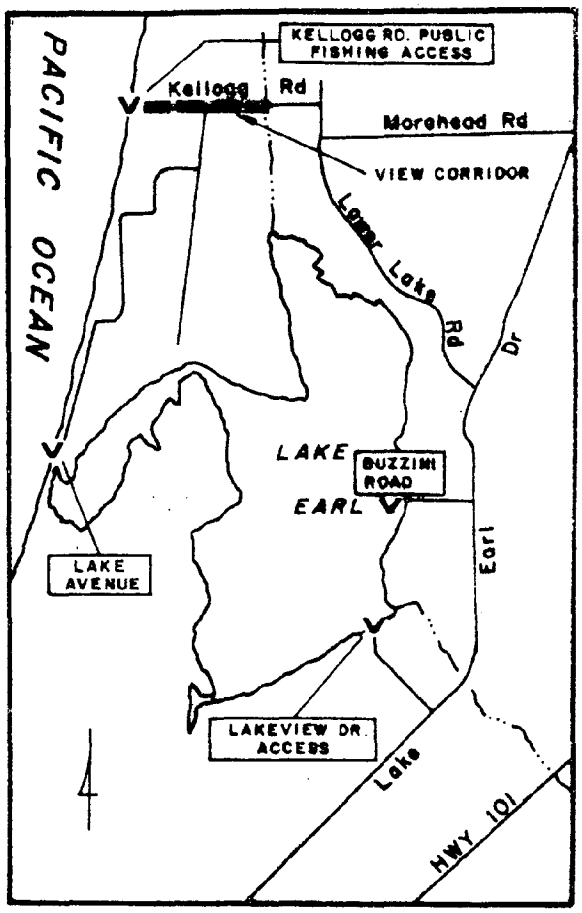
C. Lake Earl Area:

VIEWPOINTS: (v)

1. Kellogg Road
2. Lake Ave.
3. Lakeview Drive
4. Buzzini Road

VIEW CORRIDORS: (▬▬▬▬)

1. Westerly end of Kellogg Road.



PHYSICAL ENVIRONMENT: The Lake Earl visual resource area consists of an expansive coastal dune system, sloughs, marshland and the waters of Lake Earl, Lake Talawa and the Pacific Ocean. The coastal dunes become increasingly vegetated and stabilized inland from the shoreline with a succession of plant forms from grasses and succulents near the shore to Sitka spruce, beach pine and wax-myrtle inland. The sloughs are lined with dense riparian vegetation. Lakes Earl and Talawa are surrounded by marshland vegetation and occasional areas of mixed conifer forest. Situated along the Pacific Flyway, a major bird migratory route on the west coast, Lake Earl and surrounding environs are recognized as important habitats for numerous waterfowl and other birds species.

LAND USE: Cattle grazing is the predominat land use in the Lake Earl area, particularly on the west side and adjacent to the Lake. Rural residential homes, including medium to high densities, are located east of Lake Earl. A 1500 acre undeveloped subdivision, Pacific Shores, lies immediately to the northwest of Lake Earl. Other land uses in the area include a lumber mill on Lake Earl Drive and timberlands to the northeast of Lake Earl.

VIEWSHED CHARACTERISTICS: The scenic resources of the Lake Earl area are numerous. Views of open coastal strand, vast dune systems, agricultural land, distant mountains and the waters of Lakes Earl and Talawa are available from several vantage points. Three public viewpoints in particular are reviewed below.

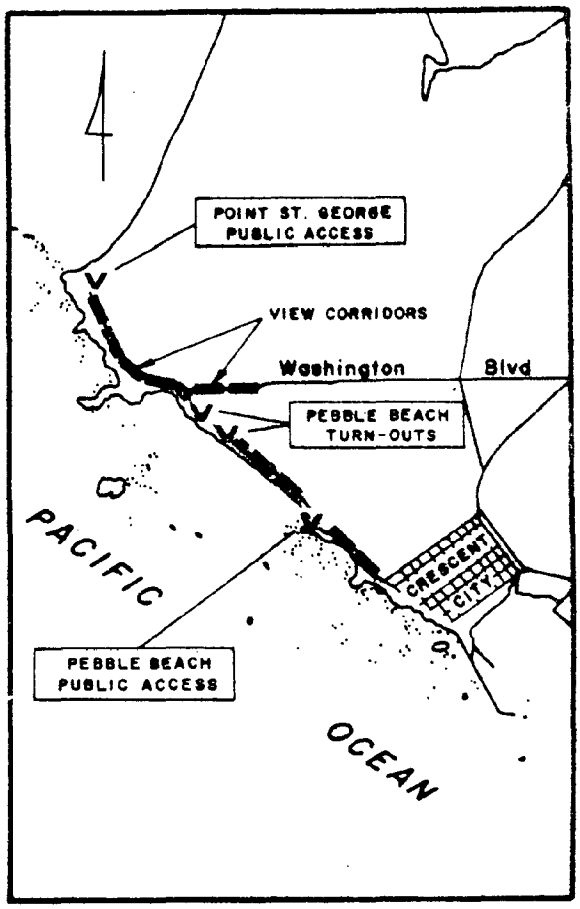
1. Kellogg Road: The end of Kellogg Road offers a full 360° panorama of ocean, coastal dunes and distant mountainous terrain. The coastal view extends from Point St. George to Oregon and includes the Point St. George Lighthouse.

2. Lake Avenue: Lake Avenue is the southerly most street in the undeveloped Pacific Shores Subdivision. The view from here is a full coastal panorama like Kellogg Road, but includes also a view of Lake Talawa, its marshland and water associated birds.

3. Lakeview Drive: Located on the easterly side of Lake Earl and south of Jordan Creek, the end of Lakeview Drive provides views of Lake Earl and its marshland. Also visible form this point are grazing lands and distant forested slopes.

4. Buzzini Road Access: This viewpoint offers a limited view of Lake Earl.

D. Point St. George to Crescent City:



VIEWPOINTS: (v)

1. Point St. George Public Fishing Access
2. Pebble Beach Drive turn outs
3. Pebble Beach Public Fishing Access

VIEW CORRIDORS: (▬▬▬▬)

1. Radio Road
2. Pebble Beach Drive
3. Westerly end of Washington Boulevard

PHYSICAL ENVIRONMENT: The physical landscape between Point St. George and Crescent City consists, for the most part, of a grass-covered marine terrace overlooking rocky/sandy beaches and numerous offshore rocks. The Marhoffer Creek drainage, covered with dense riparian vegetation, bisects the terrace south of Washington Blvd. Forests of Sitka spruce and beach pine occur inland. Coastal dunes and associated vegetation extend east and north of Point St. George.

LAND USE: Marhoffer Creek, in general, separates two major land uses within this area. To the north, the terrace is dominated by open grazing lands. South of Marhoffer Creek, single-family residences are situated east of Pebble Beach Drive. The County airport is located north of Washington Blvd.

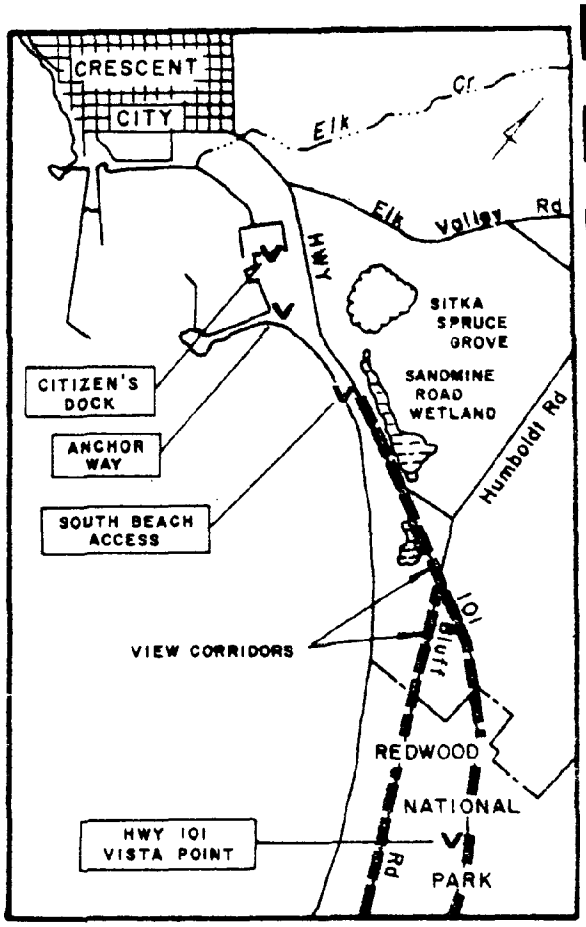
VIEWSHED CHARACTERISTICS: View of the ocean, offshore rocks and marine life dominate the scenery of the area between Point St. George and Crescent City. Radio Road, Pebble Beach Drive and the westerly end of Washington Blvd. provide open scenic vistas of the ocean and surrounding landscape. Owing to the open character of the area, numerous viewing points are available. Three vista points in particular are noteworthy and may be used to summarize the aesthetic appeal of this visual resource area.

1. Point St. George: The Point St. George Public Fishing Access offers a full panoramic view of marine and terrestrial features. Seaward are views of offshore rocks, sea cliffs, and the Point St. George Lighthouse. Landscape views include the vast coastal strand extending northward, distant uplands and mountains as far east as Preston Peak in Siskiyou County, and the surrounding agricultural grazing lands. An older Coast Guard Station dating from 1926 stands on the high terrace and is presently used as a medical facility. Archaeological sites have also been recognized within the Point St. George area.

2. Pebble Beach Drive Pull-Outs: Immediately south of Washington Blvd. on Pebble Beach Drive, two vehicle pull-outs provide ocean vantage points. Situated some 30 feet above the beach on a marine terrace, these vista points offer a wide range of scenic views. Castle rock with its abundant birdlife lies oceanward. Landward are views of grazing lands, spruce forest and distant uplands.

3. Pebble Beach Public Fishing Access: The parking area of the Pebble Beach Public Fishing Access sits approximately 50 feet above the ocean giving a wide overview of offshore rocks, sea cliffs and expansive beaches below. The oceanic view extends from Point St. George in the north to the distant southerly headland of Patrick's Point. This viewpoint is also a recognized historical landmark as the former site of a Talawa Indian Settlement.

E. Crescent City to Redwood National Park:



VIEWPOINTS: (v)

1. Citizen's Dock
2. Anchor Way
3. South Beach
4. Highway 101 Vista Point

VIEW CORRIDORS: (▬▬▬▬▬)

1. Highway 101
2. Bluff Road

PHYSICAL ENVIRONMENT: The coastal area just south of Crescent City consists of a generally flat-lying plain. Along the coast a broad tidal flat extends southward from the harbor area. Landward the area is dominated by marshlands. A relatively undisturbed Sitka spruce grove, approximately 60 acres in size, exists immediately north of the marshlands. At the southerly end of this visual resource area the flatland rises rather abruptly to the upland forested slopes of Redwood National Park and the Miller Timber Company.

LAND USE: Land uses south of Crescent City to the Redwood National Park boundary include: agriculture; commercial-recreational; and industrial. The principal agricultural uses are cattle grazing and bulb production in the vicinity of Sandmine and Bluff Roads. A number of commercial-recreational and visitor-serving facilities are located in the area. These include motels and restaurants, R.V. campgrounds, tourist attractions and gift shops. Industrial land uses involving fish processing plants, boat repair shops, and a gas storage facility are located in the harbor area. A few rural residential homes are found within the area.

VIEWSHED CHARACTERISTICS: The scenic resources between Crescent City and the northerly boundary of Redwood National Park are quite diverse. Both the maritime features of the harbor area and

the open wetland beach areas to the south are of high scenic value. The principal view corridors in the area are Highway 101 south of the harbor and Bluff Road. Both offer generally uninterrupted views of the ocean, beach and wetland areas. A large number of viewpoints exist throughout the area, but four in particular are representative and will be described here.

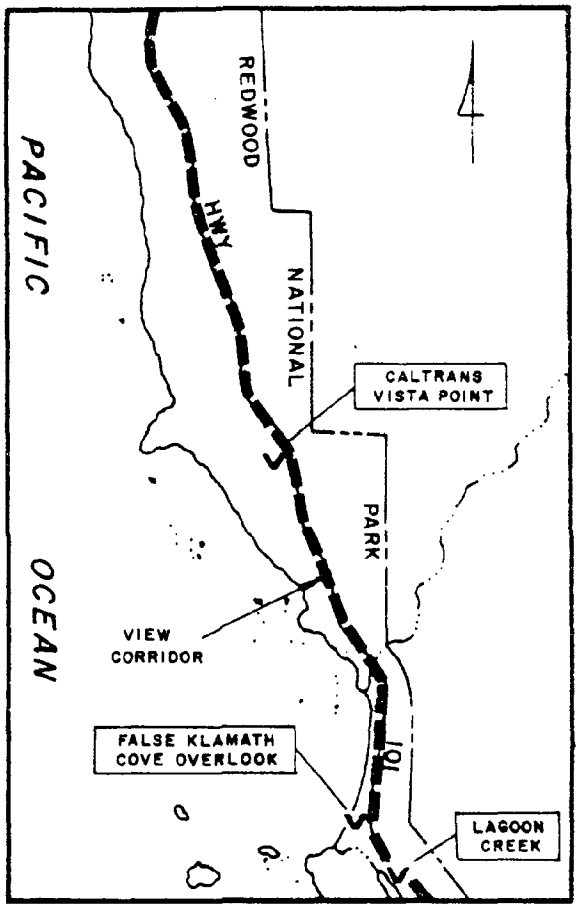
1. Citizen's Dock: Citizen's Dock Road provides access to the Crescent City Harbor. Views of the harbor, commercial fishing boats, maritime activities and birdlife are possible.

2. Anchor Way: Anchor Way also permits Harbor access for views of Crescent City's maritime activities and additionally provides open vistas of the ocean and beach area to the south. Views of distant forested uplands and the rugged coastline far to the south are also available from Anchor Way.

3. South Beach: South Beach is an open stretch of sandy coastal strand providing views of the ocean and offshore rocks as well as the Sitka spruce grove and Sandmine Road wetland area east of the highway. Forested uplands are visible in the distance.

4. Vista Point: Redwood National Park maintains a vista point on Highway 101 approximately 3 miles south of Crescent City. The viewing point, at an elevation of some 400 feet, provides an almost aerial view of the ocean, Crescent City and the Smith River Plain below. Interpretive exhibits and picnic tables are available for visitor use. In addition to the vista point, Redwood National Park also maintains an overlook with day-use facilities at Endert's Bluff on the southerly end of Bluff Road.

F. False Klamath Cove Area:



VIEWPOINTS: (v)

1. Cal Trans Vista Point
2. False Klamath Cove Overlook
3. Lagoon Creek Fishing Access

VIEW CORRIDORS: (▬▬▬▬)

1. Highway 101
   (Redwood Highway)

PHYSICAL ENVIRONMENT: False Klamath Cove is a small sheltered inlet where, geologically, the Klamath River once entered the sea. It is a site with numerous seastacks, rocky intertidal areas and a broad and steep sandy beach. The coastal slopes are generally covered by wind-pruned scrub vegetation and grasses. Forested slopes to elevations of 800 to 1000 feet lie just inward of the coast. A former mill pond and small stream are at southeasterly part of False Klamath Cove while Wilson Creek enters from the northeast. Bird and marine life are abudant in the area.

LAND USE: Most of this area is within Redwood National Park. Some residential homes, on limited leases from the U.S. Government, exist within the National Park boundary. The interior regions of False Klamath Cove are devoted primarily to forestry operations.

VIEWSHED CHARACTERISTICS: The Redwood Highway (U.S. Highway 101) traverses the False Klamath Cove area providing a gnerally elevated view of the marine environment, steep coastal bluffs and forested inland slopes. Three major viewpoints are representative of the area's viewshed charcteristics.

1. Cal Trans Vista Point: Located about one mile north of Wilson Creek Road on the west side of Highway 101, the Cal Trans Vista Point overlooks the entire area at False Klamath

Cove from an elevation of 400 feet. A 360° panorama includes ocean views, offshore rocks, coastal scrub and forested uplands.

2. False Klamath Cove Overlook: The false Klamath Cove Overlook is situated immediately west of the highway at False Klamath Cove. It is maintained by Redwood National Park and provides a relatively close view of the ocean, offshore rocks, sandy beach and marine life.

3. Lagoon Creek Public Fishing Access: Lagoon Creek is maintained by Redwood National Park as a day-use area with picnic and restroom facilities. The scenic qualities of this area are numerous. Views of a pond, riparian vegetation, forested uplands and related wildlife are available. The area also has trails to the ocean for viewing the marine environment.

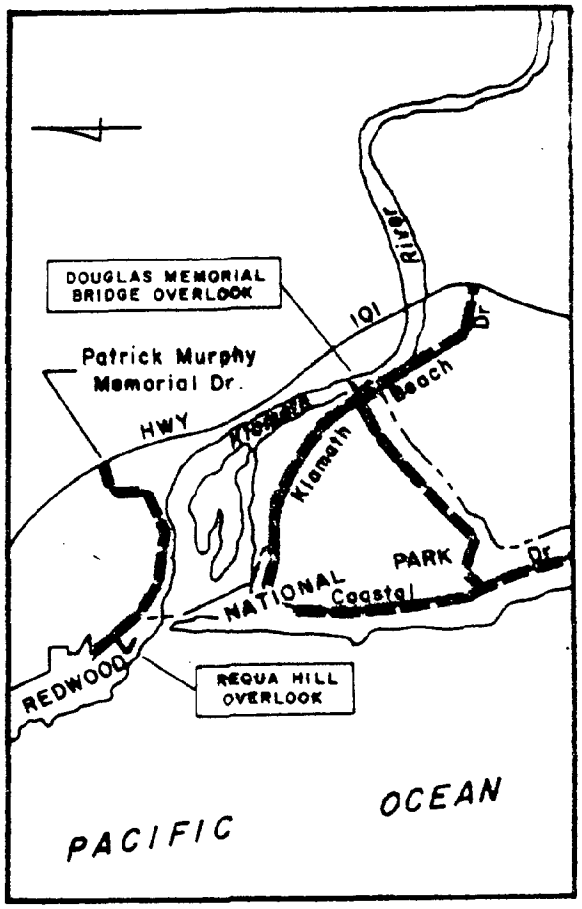
G. Lower Klamath River Area:

VIEWPOINTS: (v)

1. Requa Hill Overlook
2. Douglas Memorial Bridge Overlook

VIEW CORRIDORS: (▬▬▬▬▬)

1. Patrick Murphy Memorial Drive (Requa Hill Road)
2. Klamath Beach Road
3. Coastal Drive (Old Highway 101)



PHYSICAL ENVIRONMENT: The lower Klamath River visual resource area consists of mountainous terrain bisected by the Klamath River. The surrounding hillsides are variously covered with redwood, spruce, alders, grassland or coastal scrub. The lower Klamath River is a wide estuarine system extending several miles upstream.

LAND USE: A varied amount of land use exist in the lower Klamath River area. Commercial-recreational and visitor serving facilities dominate the area adjacent to the river and along Highway 101 near the Klamath Townsite. A U.S. Air Force Radar Base sits on top of Requa Hill and Redwood National Park administers the coastal frontage in this area. Scattered rural residential homes exist on the north side of the river. Forestry operations, including a mill are located in the interior, Minor agricultural grazing activities take place on the floodplain.

VIEWSHED CHARACTERISTICS: The lower reaches of the Klamath River, with views of the ocean, estuary, riparian vegetation and forested upland slopes, is quite scenic. Patrick Murphy Drive, Klamath Beach Road and Coastal Drive of Redwood National Park are notable as view corridors. The principal viewpoints are the Requa Hill Overlook and the remains of the Douglas Memerial Bridge on old Highway 101. Both viewpoints are maintained by Redwood National Park.

1. Requa Hill Overlook: The Requa Hill Overlook is situated northwest and some 600 feet above the mouth of the Klamath River on a grassy coastal slope. A full panoramic view is available featuring the ocean, offshore rocks, the estuarine system of the Klamath River, agricultural lands, forested uplands and distant mountain tops. The National Park provides picnic and restroom facilities, interpretive displays and an access to the coastal trail. Views of bird-life (particularly raptors) and marine mammals are available on Requa Hill.

2. Douglas Memorial Bridge: The southerly end of Douglas Memorial Bridge is a remnant and reminder of the disasterous flood of December 1964 which swept away the bridge and most of the town of Klamath. It now provides a point from which to view the Klamath River, upland forests and the old Klamath Townsite.

IV. PLANNING ISSUES

The appearance of certain structues or activities can have significant impacts on visual resources within the Coastal Zone. In general, there are no established county policies or ordinances that deal directly with the maintenance of aesthetic resources as required by the Coastal Act. Several potential impacts including: alteration of natural landforms; building design, signing, and litter are particular issues that will be addressed in developing a visual resource management plan for the Coastal Zone.

A. Alteration of Natural Landforms: Natural landforms in the Coastal Zone are specific surface configurations such as seastacks, sea cliffs, sand dunes and hillside slopes. Certain of these have been identified as having highly scenic qualities under the visual resource evaluation criteria proposed in Section II.

1. Construction Impacts: Visual impairment or degradation of natural landforms may result from cutting, filling or grading when due regard is not given to potential aesthetic impacts. For example, an excessively large cut in a hillside for a secondary road may degrade the visual resources of an area. On the other hand, a road design considering visual impacts might call for an alignment that blends with natural contour lines thereby eliminating excessive cuts.

2. Other Activities: Some activities result in temporary alteration of natural landforms such as timber harvesting and mineral extraction. After the completion of these operations the topography of the area should be restored to aesthetically pleasing configurations.

B. Building Design and Placement: Structure, placement, orientation, color and other aspects of architectural design may have significant visual impacts on the area. Maintaining and encouraging visual harmony between new development and scenic resources in an important goal. This may best be achieved through local design criteria and building codes.

1. Review Committee: An architectural review committee, consisting of local citizens, should be established to review and evaluate visual aspects of development proposals within established highly scenic areas of the Coastal Zone.

2. General Guidelines: The following are proposed as initial guidelines to be utilized in the review and evaluation of visual aspects of archetectural design for projects located in highly scenic areas.

a. Structural Features: The height and bulk of buildings should be designed for compatiblity with the surrounding area.

b. Placement: The placement of buildings on a lot should be considered to best maintain the aesthetic qualities of nearby viewpoints and view corridors. This includes setbacks and orientation of the building.

c. Materials and Colors: Consideration of construction materials and colors should be given to best provide for visual harmony between development and the surrounding landscape.

d. Landscaping: The maintenance of natural vegetation screens should be encouraged. New landscaping should integrate well with the surrounding environment and at maturity should not obstruct significant coastal views.

C. Sign Design and Placement: Signs and billboards tend to interfere with coastal vistas or, in general, detract from the natural beauty of some coastal areas. As with buildings, it is often the design or placement of signs that is responsible for their contributions to visual degradation in an area.

1. Review Committee: The same local committee responsible for guiding the visual design of new development should also review and evaluate the design and placement of signs within visually sensitive areas of the Coastal Zone.

2. General Guidelines: General guidelines to be used in examining the placement and design of signs are reviewed below.

a. Size: The dimensions of signs should be evaluated in terms of maintaining significant coastal views. The recommended maximum size is 400 square feet.

b. Placement: Evaluations concerning the placement of signs should include the appropriateness of a given site considering viewing characteristics and setbacks. No commercial signs should be placed in highly scenic areas.

D. Litter: Litter is a major problem along the beaches and highways of Del Norte County. A class of 15 persons from the local branch campus of college of the Redwoods collected over 400 pounds of litter from the beaches north and south of Crescent City in just two hours.[1] The magnitude of this can be realized when approximately 40% by volume of this trash was lightweight styrofoam and aluminum cans. Another 40% of the litter was glass with the remainder consisting of plastic, rubber, paper and metal.

---

1 Del Norte Triplicate, October 1978

In addition to other environmental concerns, litter is particularly detrimental to visual resources in an area. Both public education and additional litter receptacles are needed to help minimize litter problems.

E. Utility Lines: Overhead lines and utility poles may detract from scenic views. Alternatives exist in the placement of new or relocated lines by either placing them underground or locating lines away from scenic views. For example power lines may be located along a road opposite a view rather than between the view corridor and the scenic vista.

F. Special Treatment Area (STA): In order to assure the continued maintenance of natural and scenic resources, the Coastal Act of 1976 calls for the designation and special treatment of certain forested areas within the Coastal Zone. The Coastal Commission met this legislative mandate in July 1977 by identifying Special Treatment Areas (STAs) according to the following criteria:

1. Scenic view corridors;
2. Sites of significant scenic values;
3. Wetlands, lagoons, streams, estuaries, and marine environments;
4. Significant animal and plant habitat areas;
5. Recreation areas.

In addition to other regulations enforced by the California Department of Forestry, specific forest practicies are required to protect the natural and scenic qualities of STAs when planning and conducting timber operations.

The Coastal Commission established five special treatment areas in Del Norte County: 1) Elk Creek; 2) Sitka Spruce Grove; 3) False Klamath Cove; 4) the lower Klamath River; and 5) a 200 foot wide buffer zone on the westerly side of Highway 101 from near the Smith River south to Elk Valley Crossroads.

V. POLICIES AND RECOMMENDATIONS

A. Coastal Act Policies: Two policies of the California Coastal Act of 1976 address the maintenance of aesthetic resources within the Coastal Zone:

30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastaline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

30253. New development shall:....(5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational use.

B. Present Local Policies: Under the "scenic highways" element of the County's General Plan a recommendation is made for a scenic corridor study for sections of Highways 101, 197, and 199. Only Highway 101 is within the Coastal Zone Boundary. Upon completion, acceptance and adoption of the scenic corridor study the following policies are recommended for those segments of the route designated as scenic highway:

1. Construction standards along these routes should be as consistent as is feasible, with the topographic and scenic character of the lands through which they pass.

2. Residential development adjacent to or readily visible from these routes should be based on the principle of maintaing and/or enhnacing native growth which is visible from the route and between the route and the development.

3. Outdoor advertising should be restricted on these routes:

   a. The signs should be sufficient in size to describe or indicate the service available.

   b. Off-site signs should be restricted to commercial or industrially zoned areas.

   c. The signs should meet or exceed the requirements of the County sign ordinance.

4. Land use regulations within the scenic areas will be consistent with the policies of the General Plan.

5. New or relocated utility lines should be placed underground whenever feasible. Utility lines which are in an area where underground placement is not feasible, shall be aligned so that the lines do not interfere with natural scenic resources of the visual environment.

6. Timber harvesting will not be eliminated from the scenic area. Selective cutting or thinning should be encouraged, however, patchwork clear cutting to topography may also be considered.

A recommendation is also made in the General Plan for a County Scenic Drive Program. This proposal envisions a scenic drive meandering along various ocean fronting streets and agricultural backroads from Crescent City to the Oregon Border. Interpretive services in the form of displays and a self-guiding brochure and map are recommended.

C. LCP Policies: The visual resources of Del Norte are important to the County"s tourist economy and are a continying source of enjoyment to its residents. Policies designed to maintain the scenic resources in the Coastal Zone of Del Norte County are state here:

1. The County encourages the continuation of existing land uses, where appropriate, to maintain open views in highly scenic areas.*

2. Proposed development within established highly scenic areas shall be visually compatible with their scenic surroundings, by being reflective of the character of the existing land uses while conforming to the land use criteria. As set forth in the land use component and subsequent zoning ordinance.

3. An architectural review committee may be established by the County to evaluate and make recommendations on the design and placement of new development within highly scenic areas of the Coastal Zone. Specific standards for architectural design and placement shall be developed by the review committee utilizing the guidelines stated in Section 1 of this report and the LCP Policies concerning visual and other related resources.

---

*NOTE: A "highly scenic area" is defined by the criteria of Section II, A and B.

4. The architectural review committee may also be delegated the responsibility of evaluating the design and placement of outdoor advertizing signs in the Coastal Zone, consistent with the permitting ordinances.

5. The alteration of natural landforms is highly scenic areas shall be minimized, where feasible, in construction projects by:

a. Designing roadways, driveways and other corridors to blend with the natural contours of the landscape by avoiding excessive cuts and fills.

b. Concentrating development on relatively level areas over steep hillsides. Provisions to be considered include: clustering; density exchange and open space dedication.

6. Activities with significantly and permanently alter natural landforms, such as mining and excavation, shall be required to restore disburbed areas to, as close as possible, a natural appearance.

7. Funds should be sought from the Coastal Conservancy or other sources to establish a Logo Signing system for Highway 101 north and south of Crescent City. After an appropriate ammorization period, existing off-premise signs located within scenic corridors shall be removed and replaced by a well designed Logo system similar to that used by the Oregon State Highway Division.

8. The County should discourage the littering of its beaches, roadways and other public use areas with the following:

a. Seek funds for the placement and maintenance of additional littler receptacles for recreational areas, highway turnouts and other public use areas;

~~b. Support the concept of reducing litter through state or national legislation designated to discourage the sale of non-returnable/non biodegradable containers and packaging~~.

c. Encourage public education and community anti-litter programs.

9. In order to enhance the general public's axcessibility to Del Norte County's numerous scenic areas, funding the "County Scenic Drive Program" as outlined in the County's General Plan should be sought and the program implemented.

10. New or relocated utility lines shall be placed underground, whenever feasible and when warranted in highly scenic costal areas.

Utility lines that cannot feasibly be placed underground in highly scenic areas shall be aligned so as to best maintain scenic natural resources.

11. Lands designated as Special Treatment Areas (STAs) shall continue to receive specific consideration under current forest practice regulations of the California Department for Forestry in order to maintain their natural and scenic qualities.

NOTE: Other LCP Policies such as those concerned with the maintenance of marine and land resources may also result in the protection of various coastal resources.

APPENDIX

APPENDIX I: Visual Features At Selected Viewpoints In Coastal Del Norte County

VIEWPOINT:	WATER BODIES						TOPOGRAPHIC FEATURES						VEGETATION COMMUNITIES				WILDLIFE			CULTURAL FEATURES			
	Ocean	Bay	Estuary	Wetland	Lake/Pond	River/Stream	Offshore Rocks	Beach	Sea Cliffs	Sand Dunes	Plains	Uplands	Grasslands	Scrub	Riparian	Forest	Marine Mammals	Pelagic/ Shorebirds	Land Birds/Mammals	Agriculture	Rural	Historical	Maritime
Pelican Beach State Park	•						•	•	•			•		•		•	•	•	•				
Clifford Kamph Memorial Park	•					•	•	•	•			•	•	•	•	•	•	•	•	•			
Prince Island Court	•						•	•	•			•		•		•	•	•					
Mouth Of The Smith River	•		•			•	•	•	•	•	•	•	•		•	•	•	•	•	•			
Smith River Fishing Access						•				•	•				•	•			•	•			
Kellogg Road	•						•	•		•		•	•		•	•	•	•	•				
Lake Avenue	•				•		•	•		•		•	•		•	•	•	•	•				
Lakeview Drive					•					•		•	•		•	•		•	•	•			
Point St. George	•						•	•	•	•		•	•		•	•	•	•	•	•		•	•
Pebble Beach Drive	•						•	•	•						•		•	•	•	•			

APPENDIX I: Visual Features At Selected Viewpoints In Coastal Del Norte County

VIEWPOINT:	WATER BODIES						TOPOGRAPHIC FEATURES						VEGETATION COMMUNITIES				WILDLIFE			CULTURAL FEATURES			
	Ocean	Bay	Estuary	Wetland	Lake/Pond	River/Stream	Offshore Rocks	Beach	Sea Cliffs	Sand Dunes	Plains	Uplands	Grasslands	Scrub	Riparian	Forest	Marine Mammals	Pelagic/ Shorebirds	Land Birds/Mammals	Agriculture	Rural	Historical	Maritime
Pebble Beach Fishing Access	●						●	●	●			●		●			●	●				●	
Citizen's Dock		●										●				●		●					●
Anchor Way	●	●						●				●				●	●	●					●
South Beach	●			●			●	●				●		●	●	●	●	●					
Vista Point	●			●			●	●			●			●		●			●				
Cal Trans Vista Point	●						●		●			●		●		●	●		●				
False Klamath Cove	●					●	●	●	●			●		●	●	●	●	●					
Lagoon Creek					●	●						●		●	●	●			●				
Requa Hill Overlook	●		●			●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	
Douglas Memorial Bridge			●			●						●			●	●			●			●	

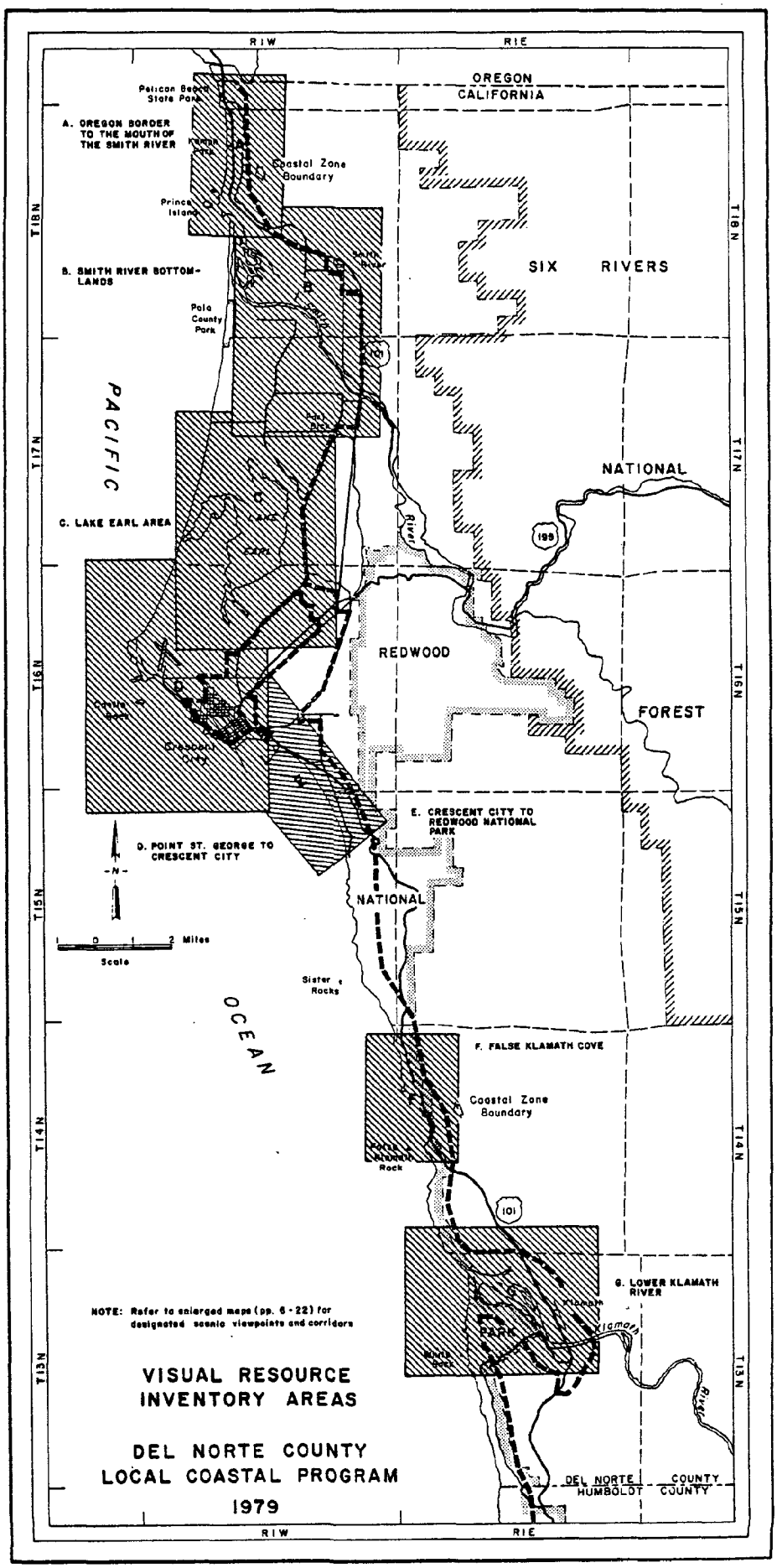


FIGURE 1: VISUAL RESOURCE INVENTORY AREAS

BIBLIOGRAPHY

California, State of, Coastal Zone Conservation Commission, (December 1975), California Coastal Plan, San Francisco.

Del Norte, County of Planning Department, (November 1976), Del Norte County General Plan, Crescent City, Ca.

_____, (December 1977), LCP Issue Identification, Crescent City, Ca

Hendler, B., (1977), Caring for the Land: Environmental Principles for Site Design and Review, American Society of Planning Officials, Report No. 328, Chicago.

Mann, R. and Associates, (July 1975), Aesthetic Resources of the Coastal Zone, Cambridge, Mass.

U.S. Dept of Commerce, NOAA Office of Coastal Zone Management, (January 1976), Coastal Recreation: A Handbook for Planners and Managers, Washington D.C.

Del Norte County
Local Coastal Program

PUBLIC WORKS COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

Prepared for:

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

By:

Michael Young, Consultant
611 9th Street
Crescent City, Ca 95531
(707) 464-6733

LCP--PUBLIC WORKS COMPONENT

Table of Contents

INTRODUCTION 1

ROAD SYSTEMS 2

SOLID WASTE MANAGEMENT 5

AIRPORT 7

ON-SITE SEWAGE DISPOSAL SYSTEMS 8

CRESCENT CITY 10

- Water System 10
- Sewage Treatment Facilities 16

KLAMATH COMMUNITY SERVICES DISTRICT 20

- Sewage Treatment 20
- Road System 21
- Water System 22

SMITH RIVER COMMUNITY SERVICES DISTRICT 24

PACIFIC SHORES SUBDIVISION 26

APPENDIX

MAP OF EXISTING SEWER AND WATER SERVICE AREAS 27

LOCAL COASTAL PROGRAM

PUBLIC WORKS COMPONENT

INTRODUCTION

The Public Works Component of the Local Coastal Plan examines existing and proposed public works systems to determine their capacities and future expansion projects. Where those present or future public works facilities can accommodate only a limited amount of new development, the system's capabilities are more carefully analyzed to provide the technical data on which to make sound land use decisions in the allocation of those capacities.

A difficulty in the analysis of these public works systems is that many serve properties within and outside the Coastal Zone. The Local Coastal Program only concerns itself with those properties within the Coastal Zone, yet allocation decisions made outside of the Coastal Zone can have a significant effect on the Local Coastal Program. As a result, the discussion of some facilities must, of necessity, discuss the system's capacity on a system wide basis, then establish limits within which allocation decisions can be made.

Also, the discussion of a public works system, in some cases, is more appropriate on a county-wide or Coastal Zone wide basis rather than by specific area. Examples of the former include the airport and solid waste management, while examples of the latter include the Smith River Community Services District and the Klamath Community Services District. As a result, this document has been prepared with sub-groupings dealing first with the more regional issues including:

(1) Road Systems

(2) Solid Waste Management

(3) Airport

(4) On-Site Sewage Disposal Systems.

Then sub-groupings by specific areas are discussed including:

(1) Crescent City

(2) Klamath Community Services District

(3) Smith River Community Services District

(4) Pacific Shores Subdivision.

There will, of necessity, be some overlap in the discussion between both the general and specific location discussions. However, it has been attempted to keep each sub-group as a separate and independent discussion. A map indicating existing sewer and water systems in and adjacent to the Coastal Zone may be found appended to this document.

ROAD SYSTEMS

While it is obvious that limited capacity in water and sewage treatment systems will constrain development, it is not as obvious that traffic carrying capacity of roads can also be a constraint. With water and sewer systems, you reach a point in which there is no more capacity. With a road system, there is no such sharp point, instead, the level of service deteriorates and the motorist experiences longer and longer delays. This makes the determination of road system capacities more difficult. Nonetheless, the following discussion is an attempt to determine if the road system will be a limiting factor on development.

In the following table, I have listed a number of roads located within the Coastal Zone which are now or could become major collectors serving developments in their respective areas. The table gives also the present average daily traffic (ADT) and the capacity of that road assuming the highest level of service which is a condition of free flow with low volumes at high speeds. Higher capacities can be obtained with reduced levels of service.

ROAD	PRESENT ADT	CAPACITY
Ocean View Drive	250	10,000
Fred Haight Drive	1,000	12,000
Lake Earl Drive at Blackwell Lane	5,400	18,000
Lake Earl Drive at Elk Valley Cross Road	3,100	18,000
Lake Earl Drive at Lower Lake Road	1,600	16,000
Morehead Road	700	12,000
Kellogg Road	200	12,000
Lower Lake Road	400	10,000
Old Mill Road	1,900	10,000
Washington Boulevard at Pebble Beach Drive	600	15,000
Washington Boulevard at Inyo	1,500	15,000
Washington Boulevard at Northcrest Drive	1,900	15,000
Pebble Beach Drive	800	10,000
Elk Valley Road	3,700	15,000

It is readily evident that none of these roadways are being used anywhere near their capacity. All of the roadways have unused capacity ranging from 8,000 to 16,000 vehicles per day. Also, in no case is more than about 30% of the roadway's capacity being utilized.

If one considers the fact that a single family residence will generate 6 to 10 vehicle trips per day, it becomes readily evident that any one of these roads has capacity to handle the traffic generated by 1,000 or more residential units. That capacity can be easily doubled by reducing the level of service.

Much more sophisticated techniques exist for determining roadway capacities, however, these very conservative figures point to a tremendous underutilization of the existing capacity. Therefore, there is no real need to refine these figures as it will only reveal a larger unused capacity.

Due to the substantial underutilization of roadway capacities, it becomes obvious that the roadway system will not be a constraint on development within the Coastal Zone. Maintenance of the existing road system should be the only concern.

The above discussion concerns County owned and maintained roads and does not include the State highways. The main State highway passing through the Coastal Zone is U.S. Highway 101. The average daily traffic flow ranges from 12,000 to 20,000 vehicles per day dependent upon the location of the traffic count. Likewise, the ability of Highway 101 to accommodate that traffic flow at a reasonable level of service depends upon the precise location in question.

There are definitely areas in which the alignment, grade and width of the roadway are such that the level of service is rather poor. This then, would call for widening or improvement of those areas if not the entire highway itself.

The Del Norte County Regional Transportation Plan has recommended that Highway 101 be upgraded to four lane expressway or freeway standards through the County with the exception of a two lane section from Camp Marigold to Elk Valley Road.

In 1978 and 1979, extensive study was given to that portion of Highway 101 through and near the City of Crescent City. Specifically, the issue of whether a freeway bypass should be constructed in the future as opposed to widening the highway through Crescent City on its present alignment. The result of that study and policy statement adopted by the governing agencies was that improvement of Highway 101 in the vacinity of Crescent City should involve a widening of the existing roadway alignment and not involve a bypass of Crescent City.

FINDINGS

1) The County roadway system will not be a constraint on development within the Coastal Zone.

LCP POLICIES

2) The County shall continue its program of maintenance and minor improvements to the existing roadway system in order to maintain its capacity.

3) Highway 101 should be upgraded to a four lane expressway with the exception of a two lane expressway from Camp Marigold to Elk Valley Road.

4) The improvement of Highway 101 through Crescent City should consist of widening and improving the roadway on its present alignment. A freeway bypass shall not be constructed.

5) The County will pursue, when feasible, to improve the existing gravel residential roads to an adequate all-weather standard necessary for fire, police and other vital services.

SOLID WASTE MANAGEMENT

The Del Norte County Sanitary Land Fill was constructed and placed into operation in 1974. The land fill site is located approximately three miles north of Crescent City towards the westerly end of Old Mill Road. This is the only land fill operation in Del Norte County serving all properties within and outside the Coastal Zone.

The anticipated life of the Del Norte County Land Fill is 15 years. At present, no replacement site has been selected nor identified to accommodate solid waste once the Del Norte County Land Fill is filled to capacity.

The Solid Waste Management Plan prepared by Winzler and Kelly stated the life of the land fill could be extended if a shredder were installed. No information was given as to how long the life of the land fill would be extended due to the installation of a shredder.

While it is a number of years yet until full utilization of the Del Norte County Land Fill, the fact that no alternative sites have been identified can be cause for concern. Even the installation of a shredder will only forestall the inevitable which is the need for a permanent solution to the solid waste disposal problem.

The burying of refuse is really a short term solution to a long term problem. Over the long term, resource recovery offers the best opportunity for a permanent solid waste disposal solution. More technical and operating experience is necessary in resource recovery operations. As that experience becomes available, options may become available which will be feasible to meet Del Norte County needs and provide a more economical disposal system. In fact, while resource recovery operations may not be the most cost effective on a short term analysis, the long term economic analysis may show them to be the most cost effective. A long term cost that is not now being considered is the alternative to using the Del Norte County Land Fill when that site has been fully utilized.

There are alternatives to land filling solid waste although a land fill will always be necessary as certain wastes can be disposed of in no other manner. Some possible alternatives are:

(1) Incinerate the waste with a heat recovery system to capture the heat energy. This would require high temperature incinerators or other types of incinerators that would not be an air pollution problem;

(2) Establish a resource recovery program whereby metal, glass, cardboard and other items are recovered from the solid waste and recycled;

(3) Use the biodegradable components of the solid waste for the purpose of making methane or alcohol for use as an energy source; or,

(4) A combination of the above.

LCP POLICIES

As respects, solid waste disposal and the operation of the Crescent City Land Fill, it is recommended that:

1) The County continue to operate the Del Norte County Land Fill at its present location in conformance with State and Federal law.

2) The County continue planning for the eventual full utilization of the Del Norte County Land Fill. This planning may include identification of alternative sites and investigation of the long term economic feasibility of alternative disposal methods.

3) The County seek funding to instaff a shredder at the Del Norte County Land Fill.

4) The County seek funding to install equipment to accommodate alternative disposal methods such as incineration, methane generation and alcohol fermentation.

AIRPORT

The Crescent City airport at Jack McNamara Field is located approximately two miles northwesterly from downtown Crescent City on Point St. George. The existing facilities consist of two 5,000 foot asphalt runways capable of supporting 43,000 pounds maximum gross weight. The field besides handling general aviation needs, is capable of handling limited commercial air traffic.

On the 590 acre airport site, there is a limited amount of development all of which serves the airfield and its users. These facilities include a fueling station, terminal building and hangers for small aircraft storage. Adequate land is available to support additional airfield dependent development.

The nature of aviation activity in Del Norte County is not expected to change radically during the next twenty years. A steady increase in both local and itinerent based aircraft operations is expected. As a result during the next twenty years, airport development will consist primarily of maintenance of existing facility, minor improvements, safety improvements, and construction of increased storage facilities.

The present plans for improvement of the Jack McNamara Field include a proposed runway 13-31 to be approximately 2,000 feet long. This runway is to serve small aircraft and is being set on an alignment that most nearly matches the prevailing winds at the airport location. Also, it is presently proposed to construct additional hangers for the storage of planes.

LCP POLICIES

In order to serve the general aviation needs of Del Norte County, it is recommended that

1) A new runway 13-31 be constructed with a length of approximately 2,000 feet.

2) Additional hangers be constructed for the storage of aircraft based at Jack McNamara Field.

3) Additional navigational aids be installed at Jack McNamara Field to improve the reliability and safety of service.

4) Areas be reserved for airfield dependent development.

ON-SITE SEWAGE DISPOSAL SYSTEMS

While the Crescent City and Klamath areas have municipal type sewage collection and disposal systems, the rest of the County within the Coastal Zone must rely upon on-site disposal of waste water. The area of primary concern within the Coastal Zone is those properties generally northerly of Washington Boulevard to the Oregon border. Within that area, the only properties that are served by a municipal type plant are a few just immediately north of Washington Boulevard which are served by the Crescent City treatment plant and the Ship Ashore Resort facility which has its own treatment system. All other properties must rely upon on-site sewage disposal typically through the septic tank and leach field type system.

This entire area is situated on a low lying terrace comprised of Quaternary Marine and non-Marine deposits. The area is bordered on the north by the alluvial plain of the Smith River and a narrow belt of the Franciscan formation which also extends along the east and southerly boundaries. The Franciscan formation is the base of the coastal range.

The prominent soils in this area are the Timmons-Tallows Association, the Carlotta Association, the Ferndale-Russ Association and the Rowdy-Hutsinpillar Association. As a general statement, all of these soils are capable of supporting on-site disposal system but this is not to suggest that there are no limitations to the use of on-site systems.

The following discussion will deal in general terms with the issue of a minimum lot size necessary to accommodate on-site disposal systems. This should be viewed from the standpoint of a density to be established for land use planning purposes (to the extent that the on-site system would be a controlling factor). It is still necessary that a specific site evaluation be made for each and every proposed disposal system because, while the area may be able to support a given density, it is not to imply that every parcel within that area is capable of doing so.

One factor setting a minimum lot size is the area necessary to accommodate an on-site disposal system, a replacement area and suitable area for development. Assuming a percolation rate of 60 minutes to the inch (slowest permitted for a standard system), the use of a dual disposal system, a complete replacement area and 6,000 square feet for development, an 18,000 square foot lot size is necessary. This then establishes one limit. The limitation is based purely on percolation and does not address the potential for ground water degradation.

A nitrate concentration/dilution study was made as an additional approach of determining a minimum lot size. Nitrates are placed into the soild due to the septic tank/leach field operation which can pollute the groundwater. The typical septic tank nitrate concentration is approximately 30 milligrams per litre (mg/l). The "safe" nitrate level for drinking water is 10 mg/l. The nitrate concentration is reduced by dilution with deep percolating rainfall and the ground water itself.

Deep percolating rainfall is that portion of the rainfall which does not run off nor is lost by evapotranspiration. For an average year in Del Norte County, it has been estimated that the deep percolating rainfall is approximately 3.6 feet. Also, it is estimated that the deep percolating rainfall for an exceptionally dry year is slightly over one (1) foot.

Using these figures and the fact that a rural lot could reasonably be 30 - 35% covered with impervious surfaces, one finds that the minimum lot size should be approximately 13,000 square feet when using average rainfall data. If, however, the dry year figures are used, the minimum lot size should be approximately 42,000 square feet in order to provide adequate deep percolating rainfall to dilute nitrates to a "safe" level.

One final approach to the minimum lot size issue was to evaluate the typical one acre lot in light of the set back requirements for leach fields, wells, buildings, etc. On this basis, one is just able to locate a well 100 feet from adjacent property leach fields on the "typical" 132' x 330' one acre lot.

Therefore, based on these various approaches, it is recommended that the maximum density in rural areas not served by a public sewer system or engineered on-site disposal system, be one dwelling unit per acre. This is not to recommend that development on any one acre site should be allowed. The recommendation is that the overall density for unsewered areas should not exceed one unit per acre. Individual sites still need to be evaluated using Regional Water Quality guidelines to determine their suitability for an on-site system.

As mentioned briefly, a treatment system exists immediately to the south of and serving the Ship Ashore facility. There is some concentration of development around Ship Ashore and potentially could be more so in the future. A possible alternative to the on-site disposal system in that area would be a public agency's operation of the Ship Ashore facility and its expansion to accommodate surrounding development. However, the feasibility of developing the Ship Ashore oxidation pond treatment facility as a community sewage treatment is unknown and beyond the scope of this examination.

CRESCENT CITY

The City of Crescent City is the major supplier of water and sewer services within Del Norte County. While there are numerous small districts providing one or the other service, the majority of the Del Norte County population is served by the Crescent City system as is the vast majority of Del Norte County's commercial establishments.

A difficulty in attempting to allocate capacity of the Crescent City water and sewage systems to certain land uses within the Coastal Zone is the fact that the majority of the Crescent City systems do not lie within the Coastal Zone. This means that land use decisions outside the Coastal Zone could well influence one's ability to use a public works system to influence land use decisions within the Coastal Zone. For example, a goal to encourage Coastal dependent uses in a given area might be meaningless due to lack of water and/or sewer capacity because of allocation of that capacity to an area outside the Coastal Zone. As a result, this discussion of the City's water and sewer systems must, to some extent, deal with the entire system and then estimate its capabilities and limitations for the Coastal Zone. That is, general boundary limitations can be established but not precise allocations as the boundaries can be further limited by economic and political factors not subject to technical analysis.

Water System

The Crescent City water system was first developed in the 1920's under a private water company. In 1957, the City of Crescent City purchased the system which, at that time, was serving the City of Crescent City and the developed area immediately to the north known as the Filkins Tract. The source of supply was a tributary of Elk Creek near the cemetery and the water quality and quantity was quite poor.

As a part of the purchase of the water system, the City sold general obligation bonds for the improvement of the system. The first improvements included the construction of a Ranney collector on the Smith River and a transmission main into the City. These improvements also included a million gallon storage and a pumping station which, when completed in 1963, provided the basic Crescent City water system. Since that time, some additional improvements have been made.

The production and transmission system, as it exists today, consists of the original Ranney collector located in the Smith River approximately ½ mile upstream from the Dr. Fine Bridge, and a transmission main from the collector along Kings Valley Road, Wonder Stump Road and Railroad Avenue to the Crescent City distribution and storage system. Along the transmission main is a chlorination building (near Kings Valley Road and Highway 101) which provides chlorination and floridation of the water; a 50,000 gallon equalizing storage tank; a booster pumping station at Wonder Stump Road and Elk Valley Cross Road; and a booster pumping station on Railroad Avenue just north of Blackwell Lane. The 50,000 gallon elevated storage tank is primarily for the proper operation of the production and transmission system and does not really

serve a true storage function for the distribution system. The two pumping stations allow for greater quantities of water to be pushed through the transmission main than would be possible under gravity flow along.

The capacity of this system is presently 2.3 million gallons per day (MGD). Improvements planned and under construction will increase the system's delivery capability to 2.75 MGD.

A 1977 study prepared by Camp, Dresser and McKee (CDM) recommended that the existing water system be expanded to 4.3 MGD. The system, however, can be expanded to 4.5 MGD by making improvements to the basic system. Any attempt to develop production and transmission capabilities beyond 4.5 MGD will require facilities that constitute effectively, a whole new production and transmission system. This is technically possible but goes well beyond the scope of this document.

Besides the production and transmission facilities, a water system requires storage. For the Crescent City system, the primary storage facility is a one million gallon reservoir located on Washington Boulevard just to the east of Northcrest Drive. Also, there is a 300,000 gallon storage tank located within the Bertsch Ocean View Community Services District which provides storage essentially for that area. The CDM report referenced above also recommended that an additional three million gallons of storage be provided on the Crescent City system. It was recommended that 1.5 million gallons be provided immediately and the remaining 1.5 million gallons of storage be provided in the future.

At the present time, most of the water system customers are located in and around Crescent City, However, service is also provided all along the transmission main and to three special districts under contract with the City. These three special districts include the Meadowbrook area located near the intersection of Parkway Drive and Elk Valley Road; the Church Tree Community Services District located just to the south and east of Meadowbrook; and the Bertsch Ocean View Community Services District located easterly of Crescent City. While service is provided to these districts and the system is maintained by the City of Crescent City, ownership of the facilities rests with the Districts and not the City.

Presently, the Crescent City water system serves approximately 2,600 customers of which slightly less than half reside within the City of Crescent City. The present demands on the water system are as follows:

1. Average day of the year - 1.0 MGD
2. Average day of maximum month - 1.44 MGD
3. Maximum day of the year - 2.2 MGD
4. Maximum hour of maximum day - 3.17 MGD

Of these demands, approximately 50% is the result of services within Crescent City and approximately 50% outside. The reason for the higher

per service consumption within the City limits than outside, probably relates to the number of larger commercial users within the City and a rate structure favoring the City resident.

In the previously referenced CDM report, projections were made for future water system demands. Using that information, it is projected that the system demands for the year 2000 will be as follows:

1. Average day of the year - 1.8 MGD
2. Average day of maximum month - 2.9 MGD
3. Maximum day of the year - 4.3 MGD

Of these demands, it is anticipated that approximately 42% will result from services within the City of Crescent City and the balance from the unincorporated area.

These projected water system demands are for the entire Crescent City water system and not just for that area located within the Coastal Zone. What the system demands will be within the Coastal Zone will depend upon land use decisions.

As stated, the present capacity of the water system is 2.3 MGD and will soon be 2.75 MGD. Also as noted, the system can be improved so as to provide 4.5 MGD. It should be readily apparent that the present demands on the system nearly equal its production capability but the improvements now under construction will provide for some reserve capacity. Further, it is readily apparent that with system demands of 2.2 MGD and a capability of expansion to 4.5 MGD, there remains 2.3 MGD to serve future development for which allocation decisions need to be made. This 2.3 MGD reserve capacity is approximately equal to the existing demands which means that with the improvement of the system to 4.5 MGD, the system would be able to accommodate twice as many customers. Assuming that future customers have the same ratio of residential, commercial and industrial as presently exist, the expanded system could serve an additional 2,000± single family residential users, four additional fish plants and commercial development equivalent to that presently being served. If instead the allocation of capacity were only for single family residential uses, some 4,500 additional services could be provided. If, however, all of this capacity were allocated to fish processing facilities similar in design and operation to those presently existing, 12 additional fish plants could be served by this reserve capacity. The most realistic distribution is the first case with a mixture of land uses. With future development of a similar mixture to the existing, the water system when improved to 4.5 MGD capacity will be able to accommodate an additional 7,500 persons plus commercial and industrial developments. In comparing the service population of this additional capacity with the estimated population growth set forth in the Del Norte County General Plan, it becomes evident that the 4.5 MGD water system is more than capable of serving the projected population growth for the general Crescent City area through the year 2000. Where precisely that growth will occur depends upon other factors but, if these improvements are made to the water system, the water system should not be a constraint on development.

To this point, there has been discussion of an expanded water system without any specifics. This is because that expansion can occur by several means, some of which will expand the present service area and others which would merely deliver more water to the existing service area. The CDM report referenced previously examined several alternatives for improvement of the Crescent City water system. There are, however, a number of improvements common to all the alternatives. The major difference between the alternatives was the location of a new transmission main. The improvements common to all alternatives are briefly described below.

(1) Replace the two existing pumps and add a third pump to the Ranney collector to bring the total source delivery capacity to 4.6 MGD.

(2) Construct a new booster station near the present elevated storage tank.

(3) Add a second pump to the existing booster station at Wonder Stump Road and Elk Valley Cross Road.

(4) Add a total of three million gallons of additional storage within or near the existing distribution system.

(5) Make improvements to the pumping station at the present Washington Boulevard storage tank facility and construct a new delivery main to the central distribution grid to improve fire flow capabilities.

The basic differences in the alternatives was the alignment of the transmission main to deliver the additional production capability into the Crescent City grid. The alternative alignments considered were:

1. Use the existing transmission right-of-way from Smith River to Blackwell Lane and then westerly to Lake Earl Drive and then southerly to the Crescent City distribution grid.

2. Use the existing transmission right-of-way from Smith River to Elk Valley Cross Road, then westerly to Lake Earl Drive and then southerly to Crescent City.

3. Use the present transmission main right-of-way for its entire length.

4. Use the present transmission right-of-way from the Smith River to Elk Valley Cross Road, then easterly to Elk Valley Road and then southerly to the distribution system.

5. Use the existing transmission right-of-way from the Smith River to Kings Valley Road, then westerly on to Fort Dick and then southerly along Lake Earl Drive to the Crescent City grid.

The first four of these alternatives were studied in detail as to technical, political and financial feasibility. The fifth alternative, however, was not considered as it could not be economically justified

unless there was a substantial amount of development along Lake Earl Drive from Fort Dick to Elk Valley Cross Road.

Each one of these alignments falls at least partially within the Coastal Zone. There are, however, three additional alignments that are technically feasible and at least partially within the Coastal Zone that need to be given consideration.

6. Use the existing transmission main right-of-way from the Smith River to Elk Valley Cross Road, then easterly to Parkway Drive and then southerly to Crescent City (this is a variation of alignment #4).
7. Use the present transmission right-of-way from Smith River to Elk Valley Cross Road, then westerly to Lake Earl Drive, then southerly to Alder Road, then southerly along Alder, Boulder and Hobbs Wall Roads to Blackwell Lane, then westerly to Lake Earl Drive and then southerly to Crescent City (this is a variation of alignments #1 and #2).
8. Construct a transmission main from Highway 101 at Kings Valley Road westerly along Kings Valley Road to Fort Dick and then continuing westerly along Morehead Road and Kellogg Road to Pacific Shores Subdivision. (This alignment can be undertaken independently of any of the others previously described.)

The referenced CDM report recommended the Lake Earl alignment (alternative #2). A primary reason for that recommendation was that the main would pass through an area where there already existed substantial development thereby providing potential customers. The developed areas are the Vipond Subdivision area and the Northcrest Drive area southerly of Blackwell Lane. Also, the Lake Earl alignment provided the greatest technical reliability in providing a second transmission main in the event of interruption of the existing main.

It is estimated that if the Lake Earl Drive alignment were selected, an additional 2,200 persons would be served with City water by the year 2000 within the Coastal Zone and along that alignment. This would result in an average demand of 0.22 MGD.

It should be noted that of these additional 2,200 persons, 1,885 are estimated to already reside within the Coastal Zone area along the alignment. In effect, this means that only 385 additional persons would reside in that area associated but not dependent upon the water main available. It is estimated that most of these 385 additional persons will reside in the Vipond area or the Northcrest area southerly of Blackwell Lane.

With the exception of the alignments towards Fort Dick which will be discussed later, all the alignments will provide water to serve growth in and around the Crescent City area, improve the fire flow delivery capability and be able to accommodate additional commercial and industrial development. So long as the basic improvements are made

to the production and transmission systems, the water system should be able to accommodate a wide variety of land use decisions, both in terms of serving development for a number of years and providing a great deal of flexibility as to the location of the development. In otherwords, the water system will not be a constraint on Coastal Zone development in and around Crescent City so long as the basic improvements are made and one of the transmission alternatives installed. Failure to make these improvements to the water system, however, will result in serious constraints on development in and around Crescent City both in and out of the Coastal Zone.

With respect to Fort Dick and the Pacific Shores Subdivision, it is technically feasible to provide water service from the Crescent City water system. The construction of approximately 18,000 feet of 12 inch diameter water main from the Crescent City system to the Pacific Shores Subdivision and the installation of a 200,000 gallon storage tank would provide the service. This does not, however, include the construction of distribution grid necessary to serve the individual lots. The estimated cost of the transmission storage system is $500,000. It is estimated that it will cost $1,500 per lot (1979 dollars) to install the distribution grid.

Another means of providing water to either Fort Dick or the Pacific Shores Subdivision would be to develop their own well system and water treatment plant as a separate facility from the Crescent City system. It is questionable if this alternative is economically feasible.

At an approximate cost of $2,000 per lot (1979 dollars) to provide Crescent City water to Fort Dick and the Pacific Shores Subdivision, it makes a tie to the City system a viable alternative. Therefore, again assuming the basic improvements are made, the water system need not be a constraint to development at Pacific Shores. The water system is a constraint today as there are no facilities extended to the Pacific Shores area. However, it is financially feasible to do so.

FINDINGS

1) If the basic improvements are made to the Crescent City water system including a transmission main, the water system will not be a constraint on development.

LCP POLICIES

2) The basic improvements to the Crescent City water system should be made to raise its production and transmission capability to 4.5 million gallons per day.

3) The transmission main alignment should be the Lake Earl Drive variation using Alder, Boulder and Hobbs Wall Roads and Blackwell Lane (alternative #7).

* ~~4) A water main should be extended from the Crescent City system towards Pacific Shores Subdivision with adequate storage to serve that development.~~

Sewage Treatment Facilities

In the 1920's and 1930's, the beginnings of the Crescent City sewage collection and treatment facilities began. At that time, collection mains were constructed within the City limits. Disposal of the sewage was by direct outfall to the Pacific Ocean at the far westerly end of Second Street. In the late 1940's, some nominal treatment of that sewage was made at a small plant located at Second and "B" Streets.

Then, in 1957 in conjunction with the City's purchase and improvement of the water system, bonds were sold to construct the first Crescent City Sewage Treatment Plant located at Battery and "B" Streets near Battery Point. This is still the location of the present day plant.

In 1973, construction began on the first phase of enlargement and improvement of that plant under a Clean Water Grant. In 1978, the second phase of that plant improvement began construction and is now nearly complete.

Work undertaken under the Clean Water Grant Program included not only enlargement of the existing plant and improvement of its treatment capability, but also included extensive sewer line rehabilitation work to reduce a severe infiltration/inflow problem that had existed for a number of years. Also, the improvements included a pre-treatment facility located near the existing fish processing plants in order to reduce the load on the plant due to those operations.

The Crescent City Sewage Treatment Plant provides secondary level treatment of the incoming sewage, utilizing a "bio-disc" treatment system followed by chlorination, dechlorination and then discharge into the Pacific Ocean off Battery Point.

Presently, the sewage treatment plant serves the City of Crescent City, the Harbor District and the Bertsch Ocean View Community Services Area. Sometime in 1980, the system will also be serving the Northcrest Sewer District.

The sewage treatment plant was designed to serve a complete build out of Crescent City using their General Plan designated land uses and provide a total of 2,650 single family equivalent connections to County Community Services Area No. 1 which includes Bertsch-Ocean View and Northcrest. This design capacity has been found to be inadequate as there are more requests for sewer connections in the County Services Area than the number of connections allocated.

As a result of this demand for additional sewer connections, a re-evaluation of the plant's capacity was made to determine what were the constraints on the plant and how to make improvements to provide additional capacity for the future. The results of that study indicated that the sewage treatment plant had already been over committed by approximately 350 connections. Also, the study indicated that by the addition of a third secondary clarifier and by providing

recirculation through the "bio-disc" that an additional 2,200 single family equivalent connections could be realized. This would then provide an additional 1,850 connections available for allocation after the existing 350 connection deficit was eliminated. Construction of these additional improvements is now under way and nearly complete.

The demands on the sewage treatment plant in the years past have been the result of flows from Crescent City, the Harbor Area and the winter-time infiltration/inflow. Those demands on the system prior to the sewer rehabilitation work were as follows:

1. Mean dry weather flow - 0.57 MGD
2. Maximum month - 1.41 MGD
3. Maximum week - 1.93 MGD
4. Maximum day - 2.72 MGD
5. Peak wet weather flow - 3.81 MGD

It is anticipated that the sewer rehabilitation work will substantially reduce those flows and, in fact, if are more effective than anticipated, could provide for additional treatment capacity. The extent of the effectiveness of that work will not be known for a year or two when the winter-time flow records will be available to evaluate the effectiveness of the infiltration/inflow corrective work. The design, however, was based on conservative estimates on the level reduction of infiltration/inflow.

While the sewage treatment plant will soon have 1,850 connections available for allocation (and possibly more depending upon the infiltration/inflow corrective work), the plant site itself is capable of accommodating further expansions. It is estimated that the treatment capacity of the plant could be increased an additional 50% on the land remaining at the Battery Point site.

As stated previously, the sewage treatment plant also treats the process waste from the fish processing plants located in the Harbor area. At the present time, that process waste is pretreated prior to introduction into the Crescent City sewage system. Even after pretreatment, fish processing waste water has suspended solid and biological oxygen demand loadings nearly five times that of domestic strength sewage. A means of providing further sewage treatment plant capacity would be the elimination of the fish processing waste and/or higher levels of pretreatment.

At the present time, the sewage collection system is capable of serving Crescent City, the area immediately north of the City to approximately Washington Boulevard (Northcrest), the Crescent City Harbor and the Bertsch Ocean View area. There are potential limitations on the collection facilities' ability to convey sewage to the Crescent City Treatment Plant. These major collection lines and their respective capacity are as follows:

"B" Street (serving Northcrest)	2.74 MGD

Second Street (serving Crescent City and the Harbor)	2.59 MGD
"M" Street (serving northeasterly portions of City)	0.86 MGD
Sunset Circle (serving the Harbor)	0.86 MGD
Bertsch Ocean View pump station and force main (serving Bertsch Ocean View)	0.72 MGD

The capacities of these conveyance lines can be a major constraint upon the development in the areas they serve. The constraints are not absolute as it is possible to build additional lines or pumping stations but they can be extremely expensive.

The "B" Street line is capable of accommodating approximately 4,100 single family equivalent connections. At the present time, approximately 1,900 connections have been allocated to that area leaving a remaining capacity in the "B" Street line of 2,200 connections. If all 1,850 connections soon to be available at the Crescent City plan were allocated to the general Northcrest area, the capacity of the "B" Street line would not be exceeded. This means that the "Area Three" which was deleted from the Northcrest Sewer Project or a similar area in the Coastal Zone could be served, if the allocation of connections was made to that area.

The Second Street trunk sewer main is capable of conveying 2.59 MGD at peak flow. However, 0.86 MGD must be reserved to handle flows from the Crescent City Harbor Area and an additional 0.86 MGD needs to be reserved to accommodate flows in the "M" Street line serving northeasterly Crescent City. This leaves 0.87 MGD available to serve Crescent City between "C" Street and "L" Street. This capacity is adequate to handle the present and anticipated development within that area.

The "M" Street line with a capacity of 0.86 MGD is capable of accommodating approximately 1,200 connections. Approximately 800 equivalent connections need to be reserved to accommodate existing development or future growth within the City that would utilize that line. All of those areas are not within the Coastal Zone. However, of the remaining 400 connections that could be served through the "M" Street line, it is possible that service could be provided to properties within the Coastal Zone along the easterly side of Highway 101 from the north City limits to approximately Washington Boulevard. It would require a sewage pump lift station but the downstream facilities are capable of handling up to 550 single family equivalent connections.

The Sunset Circle line which serves the Harbor has a capacity of approximately 600 gallons per minute. During the fish processing season, the sewage flow from the Harbor area will reach 350 gallons per minute. Over 90% of that flow is due to the process waste of the fish plants.

The Harbor District approximately one year ago made a commitment of approximately 250 gallons per minute to a new fish processing plant located in the northeasterly portion of the Harbor. While that plant has not yet brought its process capability up to that level, a commitment was apparently made. That being the case, there is in effect no remaining capacity for the Harbor sewer line. Therefore, major development within the Harbor requiring a significant amount of sewage treatment capability will require the construction of a new sewer collection system from the Harbor area to the Crescent City Sewage Treatment Plant, a distance of approximately 6,000 feet at a cost of approximately $250,000.

An alternative to this problem would be to develop another means of treating and disposing of the fish process waste. The development of a fish meal plant could be such an alternative, if proven economically feasible.

The Bertsch Ocean View pump station and force main has a capability of serving approximately 1,100 single family equivalent connections. Service to that area includes areas both within and outside the Coastal Zone. At the present time, approximately 600 single family equivalent connections have been commited, leaving 500 connections available for allocation in both Coastal and non-Coastal Zone areas.

FINDINGS

1) The existing Crescent City Sewage Treatment Plant has capacity to serve 1,850 single family equivalent connections after reservations have been made to serve a complete build out of the City and meeting contractual commitments to the County Services Area for Northcrest and Bertsch Ocean View.

2) The capacity of the trunk sewer line serving the Northcrest area is capable of meeting its existing commitment and the entire 1,850 connections, if allocated to that area.

3) While a lift station would be necessary, it is possible to provide service to approximately 400 connections in the area east of Highway 101 between the north City limits and Washington Boulevard (it is also possible to commit those connections to the west side of Highway 101).

4) Commitments have been made utilizing the full capacity of the sewer collection system serving the Harbor. To provide additional sewer capacity to the Harbor will cost approximately $250,000 (1979 dollars).

LCP POLICY

5) It is recommended that alternate sources of pretreatment and/or reuse of process waste water be explored in order to provide for future capacity in the Harbor and to relieve some of the treatment load upon the Crescent City regional plant.

6) It is possible to allocate approximately 500 single family equivalent connections to the Bertsch Ocean View area. This allocation could occur within or outside the Coastal Zone.

KLAMATH COMMUNITY SERVICES DISTRICT

The Klamath Community Services District provides water and sewer services for the new Klamath Townsite which replaced the town of Klamath destroyed in the 1964 floods. There are approximately 60 parcels in the new Klamath Townsite only a few of which have been developed. The following will describe the existing public works systems within the Klamath Community Services District and their ability to serve the District and surrounding property.

Sewage Treatment

The existing sewage facilities for the Klamath Community Services District include six and eight inch diameter gravity collection mains which presently serve the entire Klamath Townsite and a package sewage treatment plant located at the north end of the new Klamath Townsite (see attached map). The collection system is capable of conveying 375 gallons per minute peak flow to the sewage treatment plant which far exceeds the capacity of the package sewage treatment plant. Therefore, the limitations on the sewage system is the treatment plant itself and not the collection lines.

The package sewage treatment plant is an activated sludge process plant with a flow capacity of 100,000 gallons per day and designed to treat 180 pounds of biological oxygen demand per day. A plant of this capacity is capable of serving a permanent population of 1,050 persons provided that the infiltration/inflow does not exceed approximately 16,000 gallons per day. A review of the Klamath Community Services District records indicates that the present infiltration is far below this level.

A final component of the sewage treatment facilities is a percolation pond located on the southerly side of Highway 101 directly across from the sewage treatment plant. The Klamath Community Services District has experienced some problems with this percolation pond, however, it is not considered as a constraint on the system because the parcel on which it is located is 25 acres in size and under ownership of Del Norte County. Construction of additional or larger percolation ponds to accommodate additional disposal needs is not a significant technical or financial problem.

Existing flows through the sewage collection and treatment system range from approximately 20,000 to 30,000 gallons per day (GPD). The maximum recorded flow to date is just under 32,000 GPD for an average day during the maximum month. This implies that there is 68,000 gallons per day remaining capacity to serve the Klamath Community Services District.

If one assumes that all of the remaining capacity will be used by permanent single family residences, the present treatment system is capable of accommodating 275 additional units. Inasmuch as the Klamath area is a popular tourist attraction, it is possible that property

within or near the new Klamath Townsite might be developed in visitor serving facilities. The following table will briefly relate sewage treatment requirements for certain visitor serving facilities to a permanent single family equivalent sewer connection in order to provide a basis for making land use decisions.

Use	Ratio
Single family home	1.0
Mobilehome within a park	0.7
Motel	0.5
Recreational vehicle park	0.3

Inasmuch as Klamath Community Services District sewage facilities have adequate reserve capacity, there are no expansion projects presently being considered. However, two possible extensions of service could be considered especially in light of the fact it is highly doubtful that the entire sewage capacity will be utilized by the development of the properties within the Klamath Townsite.

One such extension would be to service the area of the Old Klamath Townsite which could potentially develop in uses compatible with the flood plain of the Klamath River (RV Parks). The other potential extension would be to serve the area approximately 4,000 feet north of the Klamath Townsite which is partially developed with recreational vehicle sites. To serve either of these two areas, a sewage lift station and force main will be necessary.

As stated previously, the sewage system is capable of accommodating an additional 275 single family residential equivalent connections. Assuming that the sewage treatment capacity will be first reserved for the existing Klamath Townsite, it is recommended that not more than 100 single family equivalent connections be made available for development outside the Townsite until the Townsite is nearly built out. This will leave 175 equivalent connections for the Townsite itself. If the Townsite were to develop predominately in permanent single family residential uses, less than 100 connections will be necessary. However, it seems likely that there will be commercial development within the Townsite and the number of connections required to serve that commercial development is difficult to assess until the precise use is known.

Road System

The road system within the Klamath Community Services District consists of fully improved streets including curb and gutter with a minimum width of 40 feet. Klamath Boulevard itself is nearly 75 feet in width. This existing road network is capable of handling development densities far in excess of anything that could be considered for the area. Therefore, the road network in the Klamath Community Services District is not a limiting factor to development.

Water System

The original Klamath Community Services District water system was constructed with a Davis Grunsky Loan and a Economic Development Administration Grant in 1968. The system was designed to meet an ultimate use of 200 connections.

The source of supply for the original system consists of two wells located southwesterly of the townsite within the Klamath River Flood Plain. Each of these wells is capable of developing 125 gallons per minute (GPM). The water from the wells is then conveyed through a four inch line to a treatment plant located adjacent to Highway 101 just within the Klamath Townsite. The only treatment that the water receives is chlorination. From that point, the treated water enters the distribution system consisting of six and eight inch diameter water mains which are also connected to a 125,000 gallon storage tank located at an elevation of 172 feet.

In 1976 as a result of the drought and reduced flows in the Klamath River, salt water intrusion occurred at the well sites which required those wells to be shut down. At that time, the Klamath Community Services District entered into an agreement with Simpson Lumber Company to utilize water from a well at their mill site southeasterly from the townsite. This situation is intended to be temporary and a new permanent well site is presently being sought. For the purposes of this discussion, it will be assumed that a new well site will be found with the same capacity as the existing well site in the general vicinity of the entrance to the Simpson mill approximately 3,000 feet southerly of the new Klamath Townsite. If this new well site is not developed, then there can be no development in the Klamath area requiring a water hookup as the agreement with Simpson Lumber Company precludes the addition of new services.

Based on the above assumptions and utilizing State of California Health Department Waterworks standards, the Klamath Community Services District water system is capable of serving 350 service connections with its 250 GPM source of supply and 125,000 gallons of storage. These standards, however, provide only for domestic water service and do not provide storage for fire fighting purposes. In order to meet insurance rating service's minimum requirements of 500 gallons per minute for two hours, it will be necessary to commit 60,000 gal. of storage for fire fighting purposes. With this commitment, the system then is capable of serving only approximately 240 connections total.

Inasmuch as the existing system is presently serving the equivalent of approximately 80 service connections, there remains 160 service connections available for allocation. It is obvious from this that the water system is the constraining factor on development in this area.

As stated in the section dealing with sewage treatment, it is prudent to reserve a minimum of 150 service connections for use within the existing new Klamath Townsite. This would mean that water service should not be made available to other areas until improvements are made

to the Klamath Community Services District water system or the fire flow storage is improved or that criteria changed.

Assuming the fire flow criteria is eliminated or that 60,000 gallons of storage is provided, it would then be possible to service an additional 110 service connections. All of those connections can be allocated to areas outside of the new Klamath Townsite.

A review of the physical facilities indicates that with water main extensions to the west into the Old Townsite or to the north where recreational vehicle parks now exist, it will be possible to deliver adequate water service and fire flow with no additional facilities other than the mains to make the extension.

FINDINGS

1) The Public Works facilities constraint on development in the Klamath Townsite area is the water system.

2) There is adequate water and sewer capacity to serve a built out of the new Klamath Townsite.

3) Sewer service can be provided to adjacent areas for approximately 100 service connections, if the necessary collection of the facilities and pump station are installed.

4) Water service can be provided to the outlying areas if the water mains are extended and an additional 60,000 gallons of storage is provided on the system.

LUP Policies

1) The urban/rural boundary on the land use map shall include the area immediately south of the Klamath Townsite which can be readily served by the facilities of the townsite.

2) When available, water may be extended from the Klamath Townsite to serve the commercial area immediately north of the Townsite, Consistent with the expansion of urban services of the land use plan and all applicable policies of the final certified land use plan."

SMITH RIVER COMMUNITY SERVICES DISTRICT

The Smith River Community Services District originally provided water service for the immediate area of the community of Smith River. An expansion of the original system then provided water service for those properties along Ocean View Drive and the area around Ship Ashore Resort and northerly up to Indian Road. The system presently has approximately 275 customers which are predominently single family users. The Simonson Lumber mill and the Ship Ashore facility are the two major users of water on a quantity basis.

The source of supply consists of three wells located near Fred Haight Drive and Rowdy Creek. The total production capacity of the three wells is 800 gallons per minute. To the northeast of Smith River at an elevation of 215± feet is a 250,000 gallon storage tank. A second storage tank is located to the east of the Ship Ashore Resort and northerly of Ocean View Drive. This storage tank also has a capacity of 250,000 gallons.

The distribution grid in Smith River, the production wells and the first storage tank are connected to the second storage tank by means of an eight inch diameter main along Ocean View Drive. That main extends northerly along Ocean View Drive to Indian Road where it then travels westerly and southerly towards the Ship Ashore Resort (see attached map).

Utilizing the State of California Health Department Water Works Standards, the above described system is capable of accommodating approximately 1,000 service connections with adequate water service and normal fire flows. As stated above, the system presently has approximately 275 customers. Those 275 customers, however, represent an estimated 450 single family equivalent connections. Therefore, the existing system has the capacity to serve an additional 550 connections (assuming single family equivalents).

Due to the layout of the existing Smith River Community Services District water system, it is technically feasible to accommodate these 550 potential future connections either entirely within or outside of the Coastal Zone. Also, it is technically feasible for those future connections to be served directly from the existing facilities or from additional extensions of those facilities. For example of extensions, it is possible to (1) accommodate the entire 550 additional connections along Fred Haight Drive from Rowdy Creek to Highway 101. To accomplish this, an eight inch diameter main would need to be constructed in Fred Haight Drive. If this project were undertaken, it would be desirable but not mandatory to have some storage at an approximate elevation of 210 feet near the end of the line. (2) It is also possible to accommodate the entire 550 additional connections at any location along Sarina Road from Highway 101 southerly to the Smith River. To accomplish this, it would be necessary to construct an eight inch water main in Sarina Road. (3) Also, it is possible to service any of the properties in the Coastal Zone from Ship Ashore to the Oregon border. To provide that

service, it would be necessary to construct an eight inch diameter main along Ocean View Drive and/or Highway 101. It would be desirable but not mandatory to provide an eight inch main along one road alignment and a six or eight inch diameter main along the other to "loop" the system for reliability. Likewise, it would be desirable but not mandatory to provide storage at an approximate elevation of 200 feet near the Oregon border. Also, it would be desirable to develop a second source of supply near the northerly end of the system, possibly Gilbert Creek, to provide additional system reliability.

As can be readily seen, the options for the allocation of these 550 future connections are quite numerous. However, in reviewing the County's General Plan, it seems that the most likely area for development would be to the north of Ship Ashore. That being the case, the following recommendations are made with regard to the Smith River Community Services District's water system.

LCP POLICIES

1. a. "As the original water line was extended northward from the Ship-Ashore area to the Freiwald parcel (AP# 101-10-02), the water line then shall be routed westward to State Highway 101 and then northward along State Highway 101 to the Oregon border. This project shall also include a proper sized storage tank at the northern terminus of the water line and a loop commencing at the junction of the water line at the Freiwald parcel and State Highway 101 and then extending southward along State Highway 101 to connect to the existing water line at Indian Road."

2. b. "No assesment shall be made against any lands within the coastal zone, in the service area, other than those to be served by the proposed water line."

~~PACIFIC SHORES SUBDIVISION~~

~~Water System~~

~~See discussion under Crescent City Water System.~~

~~Sewer System~~

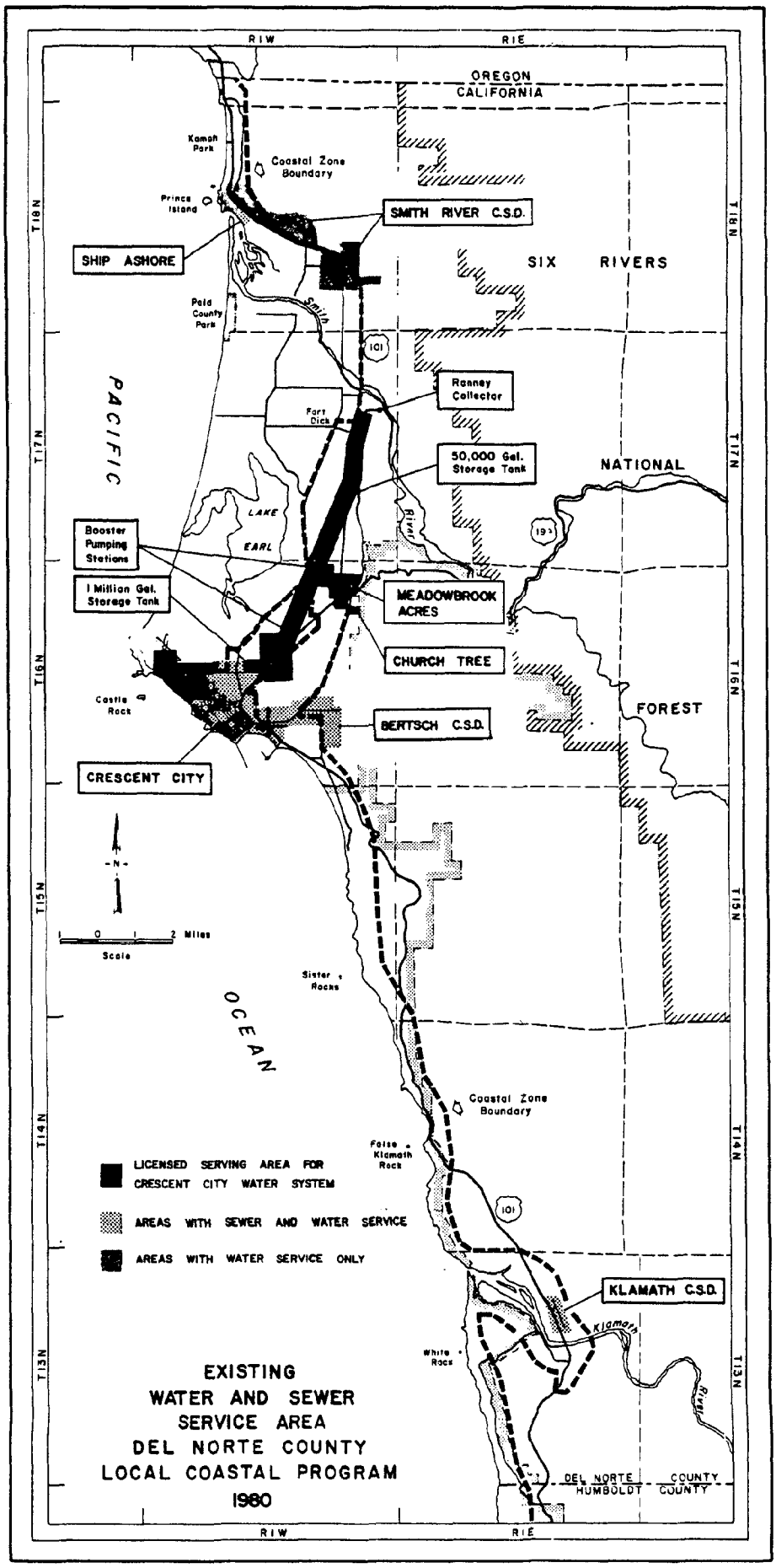
~~While the Pacific Shores Subdivision can be feasibly served by the Crescent City water system, it is entirely impractical to provide sewage treatment for that development through the Crescent City sewage treatment plant. However with a total 1,500 lots, 1,200 of which are reasonably developable if utilities are available, the development of an independent sewage collection and treatment system is not only technically possible but a more cost effective alternative.~~

~~To accommodate development and provide for sewage treatment for the Pacific Shores Subdivision, it is recommended that a collection system with an independent sewage treatment plant be constructed as opposed to using the Crescent City plant.~~

GENERAL PUBLIC WORKS LCP POLICY

1. "There shall be no extension of urban services (water and sewer) beyond the urban-rural boundary as designated in the final certified land use plan. The only exceptions to this general policy shall be the extension of water services beyon the Ship-Ashore area and the Crescent City water line crossing Jordan Creek at Lake Earl Drive, down Boulder and Hobbswell Road to Blackwell Lane, ...westward to Lake Earl Drive/Northcrest Drive and south on Northcrest Drive to the urban boundary around the Crescent City area."

APPENDIX



EXISTING
WATER AND SEWER
SERVICE AREA
DEL NORTE COUNTY
LOCAL COASTAL PROGRAM
1980

Del Norte County
Local Coastal Program

INDUSTRIAL COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
700 5th Street
Crescent City, Ca 95531
(707) 464-2119

INDUSTRIAL COMPONENT

Table of Contents

I. INTRODUCTION 1

II. DESCRIPTION OF INDUSTRIAL-HEAVY COMMERCIAL SITES PROPOSED IN THE LAND USE MAPS 2

A. Standard Veneer, Inc. 3

B. County Airport 3

C. Parkway Drive Industrial-Heavy Commercial Area 4

D. McNamara and Peepe Sawmill 4

E. Elk Valley Road Industrial-Commercial Area .. 4

F. Harbor West of Highway 101 5

G. Petroleum Tank Farm 5

H. Klamath-Simpson Timber Company Area 5

III. GENERAL RECOMMENDATIONS 7

IV. SUMMARY 8

LCP -- INDUSTRIAL COMPONENT

I. INTRODUCTION*

The Industrial Development Component of the Del Norte County Local Coastal Plan (LCP) had the following tasks identified in the work program:

A. Inventory and map existing industrial uses and energy facilities within the coastal area.

B. Examine the types of uses and compare with policies of the act regarding coastal dependency and coastal relatedness.

C. Examine impacts of these uses on any coastal resources.

D. Review potential new or expanded energy siting facilities for the coastal zone.

E. Inventory areas of land in the coastal zone suitable for coastal-dependent industrial and energy facilities.

F. Identify areas suitable for coastal-related industrial and energy facilities.

The specific Coastal Act language reads:

> "30260. Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section and Section 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extend feasible."

The Coastal Zone boundary in Del Norte County because of its extent into inland regions includes most of the usable and available industrial-heavy commercial property in the County. Consequently, the policies and ultimate industrial land use plan cannot be limited merely to a determination of the coastal-dependent or coastal-related uses. Rather, the entire range of potential industrial uses must be considered and accommodated.

---

*NOTE: This component of the LCP is subject to review and cross-referencing to other policy components.

II. DESCRIPTION OF INDUSTRIAL-HEAVY COMMERCIAL SITES PROPOSED IN THE LAND USE MAPS

Since the Industrial Component of the LCP is site specific, it should be reviewed concurrently with the proposed land use maps. Whereas agricultural, forestland, or new development components rely heavily upon prior criteria evaluation to determine plan designations, the industrial areas in Del Norte County already exist and the task is one of inventory, description, and removal of areas obviously not suitable or appropriate for continued industrial retention.

Many areas currently zoned for manufacturing uses have already been made inconsistent with the current general plan for the County. The general plan was adopted more recently and reflects current County policy regarding those inconsistencies. Under state law, the general plan prevails regardless of the zoning. However, before describing or inventorying existing industrial-heavy commercial areas listed for retention in the general plan, a short description of those areas being deleted is in order:

a. Approximately 75 acres in the Dead Lake-Riverside Street Crescent Manor area would be almost totally removed from industrial designation and converted to more appropriate planned land uses. State acquisition and physical constraints are a key factor in this decision. Also, more specific recommendations regarding airport dependent-related uses are necessary in the LCP than under the existing County General Plan.

b. Approximately 150 acres of industrially designated property (Bauer-McNamara) on the south side of Washington Boulevard on the west side of Inyo Street are recommended for a change from industrial to residential and woodlot classifications. The principals in interest on the property also agree that the current designation is not the highest and best use of this area.

c. A large area of land lying east of the McNamara and Peepe sawmill in the Elk Creek drainage is zoned for industrial use. The physical constraints and problems in this area are identified in the current general plan for the County and a proposed change to an agricultural designation is believed to be more appropriate.

d. The 160 acres in the same ownership at the tank farm petroleum storage facility south of Crescent City was at one time entirely zoned for industrial uses. The general plan, however also superceded this zoning and it

was subsequently zoned TPZ. The Land Use Plan would convert all but the southwest corner of this property to forestland and agricultural classifications. Also, the adjacent properties in the Walton Docks subdivision (Crowley and others) is proposed for a reduction in intensity from manufacturing to a general commercial designation. Under the current general plan this must be harbor related and consistent land uses.

With the proposed removal of the above areas from industrial classification the remaining districts recommended for retention of industrial and heavy commercial use can be easily described individually:

A. The Standard Veneer, Inc., property on Lake Earl Drive: Although the current County General Plan and zoning of this property is somewhat vague with community development and PC, Planned Community designations, the intent of the County has always been for renewed commercial-industrial use of the parcel. An existing veneer plant with accessory structures could again be used as a wood processing facility or converted to a different industrial-commercial use. The recommended industrial boundary has been reduced considerably from the existing general plan and zoning boundary on the Standard Veneer acreage. Much of their property is now recommended for low density residential and general agricultural uses. The proposed district would allow future industrial expansion along the paved access road to the existing mill structures.

It should also be noted that since the Coastal Zone Boundary does include the mill pond the east side of Lake Earl Drive, the industrial use by the Northcrest, Inc., mill has been identified on the land use maps.

Both properties would be subject to the physical constraints map and protection of the lagoons and associated wetlands in the area. Neither sites are recommended as coastal related or dependent sites, but for general industrial-commercial zoning.

B. The County Airport: As mentioned earlier, much of the industrially general planned and zoned property near the County owned Jack McNamara airport is proposed for change to agriculture and low density residential uses. There have been state acquisitions of parcels in the area and more are planned around Dead Lake.

The airport is an important link in the County transportation system. Airport related and dependent industrial uses will be allowed to be established on the extensive acreage subject to

the constraints of terrain, sensitive habitat areas, and neighborhood compatibility. This could be ensured through the use permit and environmental review process. An airport zone district in the implementation phase of the LCP process will address the specifics.

Ten acres of private ownership within the airport boundary have been kept in the industrial designation for general industrial use.

C. Parkway Drive Industrial-Heavy Commercial Area: Parkway Drive was formerly a state highway before the freeway was constructed. There are several existing commercial and industrial sites along this county road. The Dixon Concrete and Dell Wrecking Yard properties (approximately 17 acres) is recommended for retention as industrial. The Village Camper Inn R.V. park would be changed from Manufacturing zoning to visitor serving commercial.

Other properties fronting the south side of Parkway Drive would retain their existing General Plan commercial designation. Extensive manufacturing-zoned properties in the Elk Creek drainage would be required to be reclassified in the Implementation phase of the LCP to be consistent with the General Plan. The McNamara road commercial-industrial area would be designated heavy commercial-light industrial with a buffer being changed to low density residential.

This area is not recommended for coastal related or dependent industrial sites, but for general industrial commercial zoning.

D. McNamara and Peepe Sawmill: The industrial designation and zoning for the McNamara and Peepe sawmill would be retained. Although most of the plant is within the City, approximately eleven acres are in the County. This area is subject to the constraints map and the recommendations contained in the Elk Creek study and other components dealing with wetland protection.

E. Elk Valley Road Industrial-Commercial Area: The Del Norte County Board of Supervisors and Planning Commission have on several occasions stated their feelings that this area is the prime industrial-heavy commercial location in the County.

On the south side of Elk Valley Road is the Hambro particleboard plant. On both sides of this mill are vacant lands capable of supporting industrial uses. Power, sewer, water and good access make the Simpco acreage ideal for an industrial park; whether private or publicly funded. A buffer of heavy commercial-light industrial use is proposed on the east and west side to mitigate impacts on adjoining land uses.

At the present time the area on the north side of Elk Valley Road is designated commercial with a general commercial zoning. A portion of this area would be upgraded somewhat to an industrial designation. There is an existing subdivision with many "paper" streets and several ownerships. Unfortunately there are some residential uses in the district. These would become nonconforming uses. The implementation phase of the LCP should mandate that no further residential uses be allowed in this industrially classified area.

To the west of Maiden Lane is an old mill site which would retain an industrial designation. The size of this area would actually be a reduction of the existing industrially classified property in the County General Plan.

The Elk Valley Road industrial area does have some terrain and wetland constraints. These areas are recognized in the land use mapping. The areas having the least constraints should be developed first.

As with the other industrial districts discussed to this point, this particular area should not be limited to coastal dependent or related uses only. It is needed as a general industrial-commercial area.

F. The Harbor Area west of Highway 101: This area was addressed in the Harbor Land Use Plan and is incorporated by reference into this component. The harbor plan addresses coastal dependent uses.

G. The Petroleum Tank Farm: Presently the southwest corner in the tank farm parcel is zoned manufacturing, including beach front property west of Highway 101. The current County General Plan eliminates the acreage on the westside of the road and restricts the industrial area to the southwest corner of the property. The LCP land use maps further reduce this area to the existing tank storage area with some expansion area and a strip for the pipelines to the harbor. Future expansion of this facility will require analysis of any adverse impacts. It is a coastal dependent use of regional significance and is the only energy related use necessary to be discussed in the Industrial Component of the LCP.

H. Klamath-Simpson Timber Company Area: A portion of the Simpson forest products processing plant is within the Coastal Zone. The existing general plan and zoning ordinance identify this area as idustrial and the proposed LCP land use maps recommend retention with only a minor boundary change.

I. Agricultural-Industrial Uses: Many agricultural uses are a cross between agriculture, industrial or commercial uses. The Country Maid Dairy on Sarina Road is an example. The greenhouse operations, bulb processing facilities, farm equipment repair

and storage facilities, and agricultural transport terminals are other examples. Sites for these uses if they are existing should be noted and allowed to expand reasonably through the use permit procedure. New sites should be reviewed carefully to minimize their impact on agricultural lands.

III. GENERAL RECOMMENDATIONS

In addition to the specific locational descriptions of industrial areas, the following policies relevant to industrial-heavy commercial are recommended:

A. Two separate manufacturing and light manufacturing-heavy commercial zone districts shall be created for the Implementation Phase of the LCP. The separate districts would have different regulations for Coastal dependent-related uses as opposed to general industrial or heavy commercial uses.

B. The Public Works Component indicates that 500 additional single family equivalent hookups are possible on the Bertsch-Ocean View sewer line. Since the Elk Valley Road area is identified as the prime industrial area for both the City and County, (i.e. the City has little industrially classified land) then both City and County LCP's should require a minimum reserve capacity of 200 single family equivalent hookups be set aside for future industrial-heavy commercial use on that line.

C. An industrial park should be encouraged either publicly or privately funded, in the Elk Valley Road area.

D. Citizens Dock Road should be allowed to be extended on the east side of Highway 101 to the Simpco properties on the east side of the Hambro Particle-Board Plant.

"The Citizen's Dock road extension will be subject to the conditions placed on North Coast Regional Permit 79-P-96, Citizen Dock Road improvements, applicant City of Crescent City."

E. Existing nonconforming industrial-heavy commercial uses shall be allowed to continue, at their existing locales and any increase in production subject to the securement of a conditional use permit.

F. Support facilities and utilities shall be allowed to and from the Industrial-Heavy Commercial Districts. These include road improvements, power, water, sewer, drainage, and grading-filling-clearing of sites. T~~hese actions are subject to environmental impacts review at the time of project submittal.~~

"These actions are subjec to the constraints maps developed by the county and subject to environmental impacts review at the time of project submittal."

G. Residential or other incompatible uses which could have an adverse impact on the continued viability of industrial-heavy commercial districts shall not be allowed. When possible, nonconforming uses shall be discouraged and not allowed to expand.

IV. SUMMARY

The industrial component of the LCP and the resultant land use maps have recommended a considerable reduction in acreage available for industrial-heavy commercial land uses in the Coastal Zone. Since almost all of the industrially designated lands in Del Norte County are within the Coastal Zone, their usage cannot be limited to coastal dependent or related uses except in the Harbor area. The recommendations for industrial areas are existing sites or adjacent to existing industrial uses. The implementation phase of the LCP will be site specific for the types of land uses allowed within the industrial areas.

Del Norte County
Local Coastal Program

HOUSING/NEW DEVELOPMENT COMPONENT

This document was prepared with financial assistance from the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration under the provisions of the Federal Coastal Zone Management Act of 1972, administered by the California Coastal Commission.

County of Del Norte
Planning Department
Crescent City, Ca 95531
(707) 464-2119

Michael Young, Consultant
(Housing Component)
611 Ninth Street
Crescent City, Ca 95531
(707) 464-6733

LCP -- HOUSING/NEW DEVELOPMENT COMPONENT

Table of Contents

I. HOUSING 1

A. Introduction 1

B. Housing Market 2

C. Housing Needs 6

D. Coastal Zone Housing Need Summary 8

E. Housing Assistance 8

F. Housing Assistance Analysis 9

G. Housing Rehabilitation and Conservation Needs 14

H. Coastal Zone Housing Policies 15

II. NEW DEVELOPMENT 18

A. Introduction 18

B. Urban/Rural Boundary 18

C. Development Within the Urban Boundary 19

D. Division of Rural Lands 20

E. Resolving Development Conflicts 22

F. Coastal Dependent Development 22

G. Acquisitions by State and Federal Agencies ...23

H. Lot Consolidation and Transfer of Development Rights 25

J. Designation of Coastal Land Uses 26

K. Appeals Officer 26

LCP -- HOUSING/NEW DEVELOPMENT COMPONENT

I. HOUSING*

A. Introduction: The Housing Element of the General Plan and the Housing Component of the Local Coastal Program ideally should be the same document. However, the Legislative mandate for each differs enough to change the focus of each of the two documents. While the Housing Element requires the "provision of housing opportunities for all economic segments of the community", the Coastal Act requires the protection of existing housing as well as the provision of new housing and is concerned with housing opportunities for low and moderate income persons in the Coastal Zone rather than all segments of the community.

These differences in the Coastal Act and the Housing Element requirements are unfortunate for Del Norte County as there are active programs addressing housing needs for the low and moderate income families that operate within two blocks of the coastline itself, but yet are not specifically within the Coastal Zone. These programs include the Cronk Subdivision (Farm Home Administration), the Crescent City Housing Authority, the Crescent City Community Development Block Grant Rehabilitation Program, to name but a few.

As a result of the Coastal Act mandate, this document, while leaning heavily upon previous housing need studies and the General Plan Housing Element, must of necessity, address the issues related to housing opportunities for persons of low and moderate income within the Coastal Zone.

1. Planning Areas: In discussing housing needs, conditions, policies and plans, the discussion will at times deal with the entire Del Norte County Coastal Zone but occasionally must focus on smaller planning units due to unique characteristics. These planning units are (1) "Smith River", Oregon border to Smith River; (2) "Lake Earl", Smith River to approximately Pine Grove School; (3) "Crescent City", approximately Pine Grove School to Crescent Beach; and, (4) "Klamath", Crescent Beach to Humboldt County line.

2. Objective: The objective of this housing component to the Del Norte County Local Coastal Program is to (1) evaluate the Coastal Zone Housing market; (2) define the Coastal Zone housing needs both existing and future; (3) analyze existing and potential

*Note: This component of the LCP is subject to review and cross-referencing to other policy components.

future housing assistance programs that could address the needs identified above; and, (4) develop draft policies to protect existing low and moderate income housing and encourage new housing within the Coastal Zone.

B. Housing Market: The housing market has two components that might be considered in order to make realistic estimates of the housing needs. These components are simply supply and demand. The supply side is concerned with the number of units, their type, occupant tenure status, cost, condition, occupancy and activity.

Generally, the housing supply in Del Norte County has limitations. Vacancies in existing housing units is estimated at between 1% and 3%. Pacific Power and Light indicates an inactive meter rate of less than 4%, a good number of which are believed to be unsuitable for occupancy. The Crescent City Housing Assistance Plan (prepared as a part of their Community Development Block Grant application), concluded after an extensive survey in Crescent City, that there existed a vacancy rate of 0.9% for owner occupied units and 3.1% for rental units. It was further estimated that over 60% of the vacant units were substandard (structural, plumbing, electrical, etc.) and that over 80% of those units were suitable for rehabilitation.

Inasmuch as the Crescent City Housing Assistance Plan (HAP) considered over a thousand units in or near the Coastal Zone, much of that data and analysis has been used in this document. If anything, the extrapolation of the Crescent City HAP will tend to understate housing needs in the areas of condition and affordability.

Based on 1970 census data which was updated using Building Department records, one will note that multi-family rental units are predominately located in the "Crescent City" area (availability of water and sewer). The mobilehome is a significant form of housing in the other communities with the free standing mobilehome a very popular alternative. By free standing mobilehome, we mean the mobilehome located on its own lot and not as a part of a mobilehome park.

An analysis of the City and County Building Department permits shows that a major portion of the new housing since 1970 is the mobilehome unit.

	All Housing	Single Family	Multi-Family	Mobile-home In Park	Mobile-home Free Standing
1970 Census	5311	4218	549	442	102
1970-1978 Activity	1587	541	95	303	648
1978 Total	6898	4759	644	745	750

Of particular interest is the substantial increase in the free standing mobilehome unit as a means of providing housing both in absolute and relative terms. This may also be demand related and will be discussed further later. This trend to utilize the mobilehome as a form of housing was first pointed out in a special study on the effect of free standing mobilehomes in Del Norte County (March, 1978). For more detailed information of this trend towards the use of mobilehomes, their location and activity, reference to that document is suggested. This pattern of more free standing mobilehomes seems to be a County-wide phenomenon (except Crescent City where presently prohibited), therefore, it has been assumed that this condition exists within the Coastal Zone. Local knowledge of the permits issued supports this conclusion.

Structural demolitions will reduce housing units as do the conversion of existing housing units to other uses. Over the period 1970 to 1978, a total of 58 permits for demolitions were issued. A concern could be that these are reducing the housing stock and/or are displacing low income housing in favor or more expensive housing. However, the Building Department indicates that the demolitions have been almost, if not entirely, vacant substandard structures. Also, the Building Department indicates that the only conversions of which they are aware, were to create additional housing units and not a conversion to commercial use. A typical example is a conversion of an old large home into a duplex or a triplex.

Tenure status of units in Del Norte County appears to be 55% owner and 45% renter. This was determined by comparing the number of homeowner exemptions claimed against the total housing units. The ratio is closer to 51% owner, 49% renter in the Crescent City area, as would be expected due to the concentration of multiple family units.

According to the 1975 General Plan, the Del Norte County Building Department has estimated that 14% of the housing is substandard due to mechanical, electrical or structural deficiencies. Subjectively, this seems high when considering all housing in Del Norte County but it is unquestionably low for certain neighborhoods. The Crescent City HAP estimated on the basis of a comprehensive survey that 6% of the units in Crescent City were substandard. The truth for housing in the Coastal Zone probably lies somewhere in between. A reasonable estimate is 12% based on local knowledge.

The statistics dealing with the condition of housing within the County relate to the so-called "stick built" house. The 1978 mobilehome survey revealed that 70% of the mobilehome units occupied, at the time, were built in 1971 or later with almost 20% of the units dating from 1976 or later. Therefore, due to the very young age structure, the mobilehome is sound housing with a very small percentage of deteriorating or substandard units.

The cost of housing obviously varies with many factors including size, age, condition, location, type, etc. The following table should however, give typical housing costs for the Coastal Zone. All figures are based on 1979 dollars.

Item	Range	Typical
Existing 2 bedroom home	$20,000 to $50,000	$40,000
Existing 3 bedroom home	$25,000 to $75,000	$60,000
New home	$30 to $40 per square foot	$35 per square foot
One acre lot	$10,000 to $25,000	$15,000
7200 square foot lot	$10,000 to $40,000	$20,000
Double-wide Mobile-home	$17,500 to $38,000	$28,000
Single-wide Mobile-home	$12,000 to $19,000	$14,000

From this, it is obvious that a modest 3 bedroom home will cost $40,000 to $60,000 which will require monthly payments of $450.00 to $650.00 for debt service, taxes and insurance.

Rents are also highly variable due to many of the same factors. However, some typical rents for Coastal Zone housing in Del Norte County are as follows:

Item	Range
1 bedroom apartment	$125 to $175 per month
2 bedroom apartment	$200 to $250 per month
3 bedroom apartment	$250 to $300 per month
2 bedroom home	$225 to $300 per month
3 bedroom home	$275 to $400 per month
4 bedroom home	$325 to $450 per month
Mobilehome space	$50 to $85 per month

Turning to the demand side of the local housing market, one must consider location, income distribution, demographic data and personal preferences. Also, for future demand, one must make projections as to the general growth rate in migration and future family size.

How existing and future demands for housing in the Coastal Zone will relate to the County-wide demands will depend on factors other than the mechanics of the local housing economy. For example, land use policies prohibiting residential development could make Coastal Zone housing demand a moot question as there might be no land available for housing and the housing demand would have to be met elsewhere. Not being able to discuss the housing needs situation on a market area basis (County-wide) makes it extremely difficult in the allocation of future housing to the Coastal Zone.

The income distribution is probably the key factor influencing housing demand as the cost of housing is usually the major family expense. The housing budget can be and is stretched beyond the usual 25% gross income guidelines but more often than not, results in the occupancy of smaller units and/or substandard units in order to keep housing within the family budget.

The 1979 Del Norte County income distribution for all families is as follows:

Percentile	Annual Income
10	4,752
20	7,622
30	10,210
40	12,485
50	14,500
60	16,803
70	19,655
80	22,510
90	29,855
95	36,938

Tradition and regulations define the moderate income family as those with 80% to 120% of the median (50 percentile) income. For Del Norte County, this means a range of $11,600 to $17,400 annually. Low income families are those with incomes from 50% to 80% of the median family income ($7,250 to $11,600) and very low income families are those with an annual family income of less than 50% of the median income. Based on these figures for Del Norte County, we find that 19% of the families are in the very low income group, 17% are above very low income but still within the low income group and 26% of the families are in the moderate income group. In other words, 62% of all families in Del Norte County fall within the low and moderate income status definition.

A general rule of thumb is that affordable housing is that which costs no more than 2.5 times the family income for ownership housing. Affordable rental housing should cost the family no more than 25% to 30% of its gross income. More sophisticated tools are available to reflect interest rates, tax structure,

maintenance, etc., but their use will not substantially deviate from these rules as long as we assume that 25% of gross income should be the limit on housing cost.

Using these figures, one quickly sees that the low income family can afford to buy a home in the $18,000 to $29,000 range. The moderate income family can afford to purchase housing in the $29,000 to 43,500 range. A glance back to the typical housing prices should reveal a problem.

Likewise, the low income family can afford rent in the $150 to $240 a month range while the moderate income family can afford $290 to $435 per month. This seems to better match the present rents until one considers the utility costs which are a part of the annual housing cost for the renter but are not a part of the rents stated above.

Based on the purchase price of a single wide mobile home and the present rental rate of mobilehome spaces, the single wide mobilehome has become a way of providing housing for the low income family. Likewise, the double wide mobilehome can provide adequately sized attractive, comfortable, low cost housing for the moderate income family.

Personal preferences also play a large roll in housing demand although it may be guided by economic necessity. The tremendous growth in the free standing mobilehome as housing is a good case in point. The design and pricing of the modern double wide home located on the individual lot is becoming the way to secure affordable housing for many. Personal preference is also displayed by the fact that many desire property other than the standard 7200 square foot city lot. Excepting the elderly desiring proximity to services, it seems that most families want an acre or more. With the cost of the city lot comparable to an acre, it is easy to see why the acre is preferred if the family can afford a housing unit for the property.

The Del Norte County General Plan has estimated 2,105 additional housing units will be needed between 1980 and 1995 in order to meet future population growth. This demand must, in part, be met within the Coastal Zone and must meet demands of all income groups. This is a future demand but with the low vacancy rate, there is no slack to take up this demand in the existing housing stock.

C. Housing Needs: Housing needs can be founded upon one or more of several conditions. These include affordability, soundness, suitability, growth and replacement. Housing must be affordable. It must not be a substandard unit and it must be suitable for its occupants. The same elements must also be considered for housing to accommodate growth and in the rehabilitation and conservation of the existing housing stock.

While all are important, the affordability issue seems to be predominate. Many families is substandard housing units are there because that is all they can afford. A large family may be overcrowded in a small home or apartment because it is all that they can afford. The need may be shown as substandard or unsuitable but in fact is an "affordability" need.

The Crescent City Housing Assistance Plan made an analysis of housing cost and rents to the income distribution and found that at least 11.5% of the families were living in a housing unit not considered affordable using the 25% gross income rule. Based on our general knowledge of the community, families now located within the Coastal Zone probably do not substantially deviate from this condition. This then would mean an estimated 183 families presently residing in the Coastal Zone are living in "unaffordable" housing.

The Crescent City HAP, using 1970 Census data, also revealed that approximately 5% of the housing units were overcrowded and that 1.5% of the units had some other sort of special need (e.g. elderly, handicapped, etc.). If these figures are applied to the Coastal Zone, then an additional estimated 79 units are needed to eleviate overcrowding and 24 units to satisfy other needs.

The Department of Housing and Urban Development (HUD) maintains an estimate of households with inadequate living conditions for each county. HUD information for Del Norte County modified to reflect 1979 conditions in the Coastal Zone indicates that approximately 265 households are subjected to inadequate living conditions. These inadequate living conditions consist of housing units that are overcrowded, have special needs and/or are substandard. This 265 unit need as identified by HUD compares favorably with the 293 unit need identified under this and other studies.

The need for future housing in the Coastal Zone is difficult to establish. While stated above that 2,105 additional units will be needed by 1995, some of those will be met by new housing outside the Coastal Zone but some should be provided within the Coastal Zone. The balance is a policy decision, however, with 23% of the people in Del Norte County living in the Coastal Zone, it does not seem unreasonable to strive for a 23% (484 units) allocation of future housing to the Coastal Zone.

Finally, there must be some consideration to housing replacement. This should not require the allocation of additional land although redistribution may take place. Housing with care should last 50 to 100 years. This implies a 1 to 2% (16 to 32 units) development of housing to meet replacement needs. There is already a need to rehabilitate or replace 190 units in the Coastal Zone.

D. Coastal Zone Housing Need Summary: The following is to summarize housing needs identified above.

1. 183 housing units are now needed in the Coastal Zone or a program to provide rental assistance to 183 low and moderate income units;

2. 103 housing units are needed to alleviate existing overcrowding and other special housing needs;

3. 526 units (35 per year) are needed to satisfy future growth in the Coastal Zone through 1995;

4. 190 housing units presently need rehabilitation or replacement; and,

5. 20 units per year will be needed for future replacement.

E. Housing Assistance: As indicated above, there are substantial needs for housing to accommodate the low and moderate income presently within the Coastal Zone; to meet future growth; and to rehabilitate existing substandard housing. It should again be pointed out that while the needs have been identified as related to issues of affordability, overcrowding, future growth, rehabilitation, etc., they generally tend to be based directly or indirectly on the affordability issue. As previously stated, some persons are living in less than desirable housing conditions that are affordable but are only doing so because they can not afford suitable housing.

There are presently programs operating within Del Norte County both inside and outside the Coastal Zone which partially address these various needs. Some of these programs address the affordability issue, some are providing additional ownership or rental housing and some related to rehabilitation and housing conservation. Specifically, these programs are:

1. Crescent City Housing Authority - in 1968, the City of Crescent City, as a part of its Redevelopment Agency, activated its Housing Authority to provide housing assistance through a Section 23 Leased Housing Program. Original authorization for this program was for 100 units and the area of authority was a five mile radius around Crescent City. This program was to terminate in 1978 at which time the City began working to convert to the new Section 8 Existing Housing Program. At this time, the conversion is still taking place. The number of authorized units is still 100.

2. The Farm Home Administration has been active in Del Norte County. Some of these programs include:

a. Section 504 which provides assistance for prospective homeowners. Basically, the program allows for a low down-payment and "affordable" monthly payments which are controlled by the loan interest rate. This program has been used for the purchase of both new and used housing.

b. Section 515 Rural Rental Housing. This program has recently been used to construct approximately 90 units within the Crescent City area. All of those units were within the Coastal Zone just prior to the relocation of the Coastal Zone line in 1979.

3. Crescent City, as a part of its Community Development Block Grant Program, instituted a Housing Rehabilitation Loan Program in 1977. Under the Program, loans are made to low to moderate income occupant homeowners for rehabilitation purposes at three percent (3%) interest. These loans, under certain conditions, can be made for rental housing.

As noted previously, the vacancy rate in Del Norte County is extremely low. Therefore, the construction of housing units of any type will tend to increase the supply and, hence, tend to hold down prices and rents. In the recent past, there have been a number of projects that have fully developed or received all local and coastal approvals, which were located within the Coastal Zone which will meet this general need of increasing the housing supply. They are:

1. Cronk Subdivision with 70 single family homes and approximately 150 rental units.

2. Crescent Gardens Subdivision with 105 single family homes proposed;

3. Spruce Haven Mobilehome Park with 82 units;

4. The Redwood Apartments with 48 units; and,

5. Washington Estates Subdivision with 14 units.

F. Housing Assistance Analysis: The Coastal Act mandates that "housing opportunities for persons of low and moderate income, shall be protected, encouraged, and where feasible, provided...". As previously stated, this is significantly different than the requirement of the Housing Element for "...provision of housing opportunities for all economic segments of the community". Yet, it would be foolish to administer active housing assistance programs exclusively for housing within the Coastal Zone. It

obviously would be much more resourceful to expand existing programs and/or develop new programs which would address housing assistance needs both inside and outside of the Coastal Zone. After all, these housing assistance needs are not limited only to the Coastal Zone even if their discussion and solution must be. For example, an expansion of the present Crescent City Housing Authority's jurisdiction to cover the entire Coastal Zone (maybe even the County) would be a much more responsible way of providing assistance to low and moderate income persons within the Coastal Zone than would be creation of a new agency.

As indicated, our housing needs fell into five general categories. They are:

1. An existing need for a low cost housing;

2. Housing units to alleviate overcrowding and other special needs;

3. Housing units to satisfy future growth (for all economic segments);

4. Housing units that presently need rehabilitation or replacement; and,

5. Provision for future replacement.

Each of these will be briefly discussed along with possible means of addressing the specific needs, then finally a proposed group of policies will be presented which will address each of the needs in light of existing housing conditions and existing programs within the community.

1. Low Cost Housing: There are a number of programs that will directly address the need for affordable housing. Basically, every one of these programs provides a direct or indirect subsidy to make up the difference between the cost of providing that housing and the "affordable" rent or price that the occupants will pay. Some of the more common programs that can meet affordability needs include:

a. The Section 8 Existing Housing Program which is presently about to be implemented by the Crescent City Housing Authority and could be expanded subject to funding at the federal level. Under this program, the Housing Authority acts as a broker between qualified tenants and eligible housing units. The tenant then pays his "affordable rent" to the owner and the Housing Authority channels the subsidy from the Federal Government to the owner, paying the difference between the paid rent and the agreed upon "fair market rent" of the rental unit.

b. Section 8 New Rental Housing Program. This program is not yet presently in operation within Del Norte County although there has been proposed a 50 unit Senior Citizen complex in Crescent City. The housing units under this program could be owned by a public or private, profit or non-profit organization. The funding of this program is similar to that under the Section 8 Existing Housing Program except that there is no Housing Authority (unless they are the owner) and the subsidy payment is made by the Department of Housing and Urban Development (HUD) directly to the owner.

It should be noted that Article 34 of the California State Constitution prohibits the development, construction or acquisition of low rent housing projects by a public agency without referendum approval. This referendum approval would have to be secured before this program could be used in Del Norte County. In 1968, referendum approval was placed on the Crescent City ballot for a 100 unit project and was overwhelmingly defeated. What the present attitude would be is unknown.

c. Farm Home Administration Section 504 Ownership Housing Program is a program that provides an interest rate subsidy in order to make the monthly payments on ownership housing "affordable" to qualified purchasers. Qualified purchasers must be in the low and moderate income range. This program can be used for the purchase of an existing housing unit or for purchase of a newly constructed unit. The program has been used fairly extensively in Del Norte County. The program does not require local government agency participation.

d. Farm Home Administration Section 515 Rural Rental Housing is a program where the owner of the new multi-family rental unit is given an interest rate subsidy in exchange for rent limitation and rent subsidies to low and moderate income tenants. The owner has a rent schedule which establishes "affordable rents" and maximum rent that he is allowed to charge for those not low or moderate income persons. In exchange, his interest rate is set at such a level to insure he meets his normal and reasonable expenses plus a reasonable profit.

e. Construction and/or Development of Low Cost Housing - The reason that rent subsidy or interest rate subsidies are necessary is because the cost of housing requires that rents and/or monthly payments to be so high that they are "unaffordable" to many segments of the population. Another way of providing affordable housing would be to reduce the cost of housing itself, thereby negating the

need for a subsidy payment. On today's market, about the only place that this has been possible is in the utilization of mobilehomes as housing. As previously stated, there has been a substantial growth in the use of the mobilehome in Del Norte County as housing both within the mobilehome park and as a free standing structure. The mobilehome will undoubtedly continue to be viewed as a means of providing low and moderate cost housing that will adequately and safely house families. The use of the mobilehome can, in that sense, be viewed as a program in addressing the housing needs of the low and moderate income families.

There are a number of other programs but these are the ones that seem to have the greatest promise for Del Norte County primarily due to local familiarity. This does not mean that other housing assistance programs should be rejected but that its probably better to concentrate on doing well with that which the community is familiar with as opposed to undertaking a number of large complex programs.

Public agencies can participate in these programs subject to funding and local political or electorate approval. As briefly discussed in Article 34, referendum approval for public agency participation in some projects is required.

Private development is not so restrained in its participation in low and moderate income housing programs but neither do they beat a path to HUD's door to participate. Generally, there are those contractors and developers that gear their operations around such programs as Section 8 and Farm Home Administration programs but also there are developers that gear their program for the higher income levels. Therefore, it becomes obviously necessary to either encourage the developer of low and moderate income housing to undertake some of his work within the Coastal Zone and/or to encourage or require other developers to include low and moderate income housing within their Coastal Zone developments. These can be carried out by incentives and/or mandates. Some possible courses of action that could be used are:

A. Inclusionary zoning;

B. Density bonuses;

C. Utility reserve allocations;

D. Site identification and preliminary processing.

The following will discuss each of these and how they work in obtaining low and moderate income housing.

2. Inclusionary Zoning: With inclusionary zoning, the provision of low and moderate income housing is mandated as a part of the zoning ordinance. Recent interpretive guidelines by the California Coastal Commission would have low and moderate income housing inclusionary provisions for projects of 16 or more units. A project of that scope would be required to commit 25% of the units to low and moderate income housing. For projects from 5 to 15 units, the developer could include low and moderate income housing or pay a fee (6% of project cost) which would then be used by a public agency to acquire and develop low and moderate income housing. Finally, for projects of less than 5 units, no inclusionary provisions would be provided.

These inclusionary provisions would only apply to new "for sale" housing units. They would not apply to rental housing as it's been determined that "...bona fide rental housing projects make a significant contribution to affordable housing in the typical coastal rental market...".

Basically, inclusionary zoning is mandating that a certain number of units within projects be set aside and reserved specifically for the low and moderate income segment of the housing market. If such a tool were to be used within the Del Norte County Coastal Zone, further decisions need to be made as to whether the inclusion of those units must be within the proposed project site; if they could be on another site, and whether there could be alternative dedications of land for either housing or other purposes to satisfy this requirement. These are issues probably best left to the implementing ordinances phase of the Coastal Planning process.

3. Density Bonuses: The density bonus concept is an incentive to incorporate low and moderate income housing within a particular development rather than a mandate such as the inclusionary zoning. However, the density bonus can be used as a benefit to help reduce the sting of mandated inclusionary zoning. Besically, the density bonus as the name implies, allows the developer to add additional units to a given project as a "bonus" for having provided low and moderate income housing.

4. Utility Reserve Allocation: The development of high density residential projects virtually requires that the project be served by a domestic water and sewage system. One way of insuring that low and moderate income housing opportunities will be possible is to reserve water and sewage capacity specifically for low and moderate income housing. If the utility allocation is not committed to specific site but only to a specific purpose, it can then be used to not only insure capacity to serve low and moderate income housing projects in the future, but can be used as an incentive for the development of low and moderate income housing projects by virtue of having a guaranteed water and sewer service.

5. Site Identification and Preliminary Processing: Another means of encouraging low and moderate income housing (or any housing for that matter) is to identify those sites and project areas where housing is to be encouraged and begin the preliminary processing for the development of a project on those sites. This would include proper designation in the General Plan, development of specific plans, establishment of the most appropriate zoning district, even including the writing of a specific zoning district for the property; preparation and completion of any environmental studies to address issues of concern and beginning of processing of any permits that may be necessary from other agencies. Many of these things are a part of the normal Planning Department's function and some go a step beyond. The problem in many cases is that the understaffed Planning Department does not have the resources nor the policy direction to actively promote preferred development. However, if certain developments are to be encouraged in certain areas, high priority must be given to this kind of activity in order for it to work as an effective incentive.

Within the Coastal Zone in Del Norte County, there are a limited number of sites for potential major (16 or more units) housing developments for which inclusionary zoning might be appropriate. These include:

a. In-filling development in the greater Crescent City area, which as water and sewer lines available. The total number of potential units are 800;

b. The Klamath Townsite which has water and sewer available. The total number of units possible are 60;

c. The Planned Community designated property on Lake Earl Drive in the general vicinity of Blackwell Lane. The total number of possible units are 150 to 200; and,

d. Pacific Shores Subdivision. The total number of possible units are 1,500.

G. Housing Rehabilitation and Conservation Needs: Any responsible housing policy can not only address itself to future housing needs and the construction of new housing, it must also consider the conservation and rehabilitation of the existing housing stock. The cost of housing being what it is today, responsible management of our housing resources requires that conservation of the existing housing stock be given serious consideration. There are a number of programs under which this can be accomplished that have potential application in Del Norte County. These are:

1. The Community Development Block Grant Program. Through this program, a community sets up a broad community development program to address certain community development needs. In the case of Crescent City, it established among other things, a need for a

housing rehabilitation loan program under which the City, through a local bank, makes low interest loans to homeowners for the purpose of rehabilitating their home. The program has been quite successful in Crescent City and could easily be expanded to a county-wide base provided Block Grant or similar funding can be secured.

2. Farm Home Administration Section 502. Under this program, Farm Home Administration provides financing up to a current amount of $10,100.00 and interest rates as low as 1% in order to finance the rehabilitation of one to four unit residential housing units.

3. Section 8 Moderate Rehabilitation Program. This program provides for the rental subsidy described previously for units which have been recently rehabilitated. The program does not provide any construction financing but only provides a rental program for the unit once rehabilitated. This program really needs to be coupled with one of the others to be effective.

4. Section 312 Substantial Rehabilitation Program. There are two elements of this program; one for the rehabilitation of small residential units (4 units or less) and one for projects in excess of 4 units. The basic lending criteria are very similar; however, the federal funding of the programs is separated so funds may be available under one program but not the other. Fortunately, however, funds have been generally available under the small project program. Under this program, the Department of Housing and Urban Development will currently loan up to $27,000 per unit for rehabilitation purposes at an interest rate of 3%. It will loan up to 97% of the entire project value subject to certain liens and conditions. This particular program however, does require the local governmental agencies active participation in the preparation of the loan package. It is also necessary for the local government agency to be participating in the Community Development Block Grant Program and these loans are limited to "neighborhood rehabilitation areas".

5. Marks-Foran Residential Rehabilitation Act. Under this program, local government may issue revenue bonds to make housing rehabilitation loans. The State Mortgage Corporation, the loan processor, is currently making long term, low interest (8%±) loans available to eligible property owners. This program is available for both owner-occupied and rental property.

H. Coastal Zone Housing Policies: Based on the foregoing analysis of needs and assistance of housing within Del Norte

County and specifically the Coastal Zone, the following policies are recommended:

1. The Board of Supervisors adopt a resolution authorizing and giving jurisdiction to the Crescent City Housing Authority to provide, implement and administer housing programs, throughout the entire Coastal Zone within Del Norte County;

2. That Del Norte County seek, in cooperation with the City of Crescent City, Article 34 referendum approval for the development, construction and acquisition of low rent housing projects for inclusion within the Coastal Zone.

3. Del Norte County make application to the Department of Housing and Urban Development for a Community Development Block Grant or a similar program to provide housing assistance information and housing rehabilitation loans to identified neighborhoods within or adjacent to the Coastal Zone with a substantial amount of deteriorating and/or substandard housing;

4. Del Norte County consider contracting the administration of the Housing Information and Rehabilitation Loan Program with the City of Crescent City Community Development Block Grant Program;

5. Del Norte County, in cooperation with the City of Crescent City, include as part of the grant above (recommendation #3), to maintain the availability of 300 single family equivalent water and sewer connections to be used exclusively for servicing low and moderate income housing opportunities within the Coastal Zone;

6. That the Del Norte County Housing Assistance Program include staffing with the necessary expertise to package Farm Home Administration 502 Rehabilitation loans and HUD Section 312 Rehabilitation loan packages;

7. Del Norte County establish a density bonus ordinance which provides for increased density where low and moderate income housing is provided;

8. Del Norte County establish a low and moderate income housing inclusionary zoning provision along the general lines of the Coastal Zone interpretive guidelines;

9. That Del Norte County specifically encourage housing development including the use of inclusionary zoning to obtain a proportionate share of low and moderate income housing in the following areas:

   a. In-filling in and around the Crescent City area;

b. Klamath Townsite;

c Area identified on Land Use Maps across Lake Earl Drive near Pine Grove School; and,

d. Pacific Shores Subdivision; and,

10. The Del Norte County Planning Department be given the resources and policy direction to actively carry out the above policies.

II. NEW DEVELOPMENT

A. Introduction: Several sections of the Coastal Act address the subject of development. The Act specifies, for example: that new development shall not adversely impact sensitive coastal habitats; that development be sited to mitigate geologic and other natural hazard risks; and that significant visual resources be protected by proper design and placement of new development. These development issues and others have been examined in various components of the County's LCP. This component examines New Development in the context of planning for growth.

B. Urban/Rural Boundary: The County's current Coastal Zone contains approximately 20% of the total population of the County. A review of the land use maps of the Coastal Zone will reveal substantial areas of agricultural use, larger areas of timberlands and a portion of the shoreline relatively undeveloped. The remaining areas are pockets of "urban type" development, fringe urban areas adjacent to the City of Crescent City, commercial visitor serving areas and rural-residential development with homesites from approximately one acre to five acres in size. Additionally there exists previously created subdivisions scattered throughout the Coastal Zone but primarily clustered around Crescent City.

The purpose of an urban/rural boundary is to clearly differentiate between areas within the Coastal Zone appropriate for new urban land uses (i.e., high density residential, high density commercial and industrial) from areas where rural uses or other existing uses should be continued. These latter areas are principally agriculture, but include also: rural residential; coastal dependent industry; existing industrial uses; visitor serving facilities; and existing uses which have no substantial impact on agriculture, coastal resources or other rural uses.

An urban/rural boundary is not necessarily defined on a jurisdictional or use basis. Having only one incorporated area, urban services in Del Norte County extend beyond the city limits of Crescent City. Although the economies of a typical sewage collection system with a centralized plant require urbanized areas to justify their cost, package systems or pressure-line leach field systems are alternatives which do not require urbanized lot patterns to be cost effective. Likewise water lines can supply both rural residential areas and agricultural areas on a cost effective basis. Therefore the urban/rural boundary should focus on parcel sizes as well as urban services.

The urban/rural boundary shall attempt to guide new urban development within or contiguous to or in close proximity to existing developed urban areas. The urban/rural boundary may also include

areas previously committed to urban uses where it can be shown prior to issuance of a permit that the proposed development will not have a significant adverse effect, either individually or cumulatively on coastal resources. ~~In order to protect the~~ In order to protect the present rural character of portions of the Coastal Zone containing limited pocket areas of "higher density development" (rural neighborhoods as shown on the land use map), they may not be included within the urban portion of the urban/rural boundary but may be allowed to infill (any area meeting this criterion will be identified in each land use plan description).

C. Development within the Urban Boundary: The urban boundary only establishes a limit to the extension of urban development from the urban area. Within this boundary is located existing development, pockets of undeveloped or underdeveloped parcels and larger areas totally undeveloped. The inclusion of undeveloped parcels is not a blanket approval for maximum allowable development, rather the urban limit allows for reasonable growth and expansion of urban development consistent with Coastal Act policies and in conformance with County standards for development. The undeveloped and underdeveloped parcels may therefore be considered for development but not approved unless the development is found consistent with other policies and standards of the county and its zoning, planning and health and safety standards.

In general small lots, less than one acre in size, are associated with urban development in this area. Reciprocally, centralized sewage systems and curb and gutter streets are associated with urban development. It can be successfully argued from both view points that one (small lots) creates the other (sewage systems and curbs and gutters) or that sewage systems and curbs and gutters create the small lots. Suffice it to say the results are the same.

The following policies shall guide the development within and the extention of urban areas:

1. Proposed development within the urban boundary shall meet land use criteria described in each area plan.

2. Proposed development within the urban boundary may be approved only after it has been adequately proven that the location of the proposed development will accomodate the development. These factors include but are not limited to sewage disposal, water supply and street system capacity.

3. Extensions of the urban boundary may not be approved without the amendment process involving CEQA review and the public hearing process. Exceptions to this rule are minor adjustments of the line of less than or equal to 100', where the existing line bisects parcels.

4. Extension of the urban boundary into adjacent rural lands may not be approved by the County unless the following findings are made:

   a. Necessary urban services and capacity are available."

   b. The extension of services will not jeopardize the provision of services to areas within the existing urban boundary.

   c. The extension will not adversely impact agricultural or timberlands adjacent to the extension.

   d. The proposed extension as approved does not pose any adverse effects on any identified resources values as reflected in the area land use plan.

5. Deletions of areas from the urban limit must involve a commitment of the area involved to a rural or lesser density use and does not require an amendment process if the following findings are made:

   a. The land involved is not capable of urban development at the time of removal and in the foreseeable future.

   b. The required urban services are not available at the time of removal nor in the foreseeable future.

D. Division of Rural Lands: This section will develop criteria to apply to the division of all lands outside an established urban limit line (urban/rural boundary) as shown in each area plan.

1. Coastal Act Policies: Leases for agricultural uses are specifically exempt from the land division criteria by the Coastal Act. This indicates a priority in the Coastal Act to protect agricultural viability of existing agricultural lands.

> 30250(a)...land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50% of the usable parcels in the area have been developed and the created parcels would not be smaller than the average size of surrounding parcels.

Another policy of the Coastal Act including the above stated portion, guides development other than agricultural uses from agricultural lands and encourages development consistent with existing development in areas able to accomodate such development.

> 30250(a) New development, exempt as otherwise provided in this division, shall be located within, contiguous with, or

in close proximity to, existing developed areas able to accomodate it or, where such areas are not able to accomodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively on coastal resources.

2. Rural Land Division Criteria: In rural areas new development shall be required to prove the subject area's ability to accommodate such development prior to approval. Land divisions, both major and minor subdivisions (not including boundary adjustments and outside the urban/rural boundary), shall be permitted when 50% of the useable parcels in the area have been developed and the created parcels would not be smaller than the average size of the surrounding parcels. To determine if this criteria is met, the following shall apply:

1) Useable parcels does not include parcels committed to agricultural and designated as such in the land use plan, parcels committed to timberland and designated as such on the land use plan, nor shall parcels committed to open space or portions of parcels committed to open space be considered as useable parcels.

2) To determine if the 50% rule has been met, a survey of the existing parcels in each planning area (delineated on the land use maps) will need to be conducted. If 50% or more of the existing lots are developed, then the land division may be processed.

3) The land use plan designates the minimum lot size for parcels in each planning area. As these minimum lot sizes are reflective of the average size of lots in each area, the minimum lot size designated for the land use classification that the land division is proposed establishes the average size.

3. Land Division Criteria for Timberland and Agricultural Land: Criteria for divisions of land for timberland and agricultural land shall be as set forth on the land resources component and in the land use plan. In that these land uses do not necessarily require a residence for their primary use, the 50% build out rule does not apply. However, the specific criteria of the land resources component and land use designation must be met.

E. Resolving Development Conflicts: The Coastal Act declare that the basic goals of the state for the Coastal Zone include assuring the orderly, balanced utilization of Coastal Zone resources taking into account the social and economic needs of the people of the State. Another goal of the Act is to maximize public access to and along the coast and maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners.

Policies of the Act, originated to implement the goals of the Act, tend to be partially in conflict if viewed from the broad-base approach. The function of the Local Coastal Program is to examine these policies on a local basis and formulate a method of application. During this program the various components have been drafted as a whole have inherent conflicts with each other. The area plans in the land use element delegate the general distribution, location and extent of the various uses allowed with the Act. These general patterns of land uses outlined on the area maps are a result of examining the various policies of each component and applying them to the land.

The area land use maps are, therefore, reflective of each component and therefore represent an area application of each component. The area land use maps provide a reasonable transition from one land use to another. Land uses designated adjacent to sensitive areas are designed to provide reasonable assurances that these adjacent uses will not cumulatively nor significantly impair the quality of the sensitive area. The developed zoning ordinance will further clarify development issues within each land use category.

F. Coastal-Dependent Development: A stated goal of the Coastal Act calls for the assurance of a priority for coastal-dependent development over other development on the coast. This policy is reflected in the following section of the Act:

> 30255. Coastal-dependent developments shall have priority over the developments on or near the shoreline.

In the Coastal Zone of Del Norte County coastal-dependent uses are: 1) industrial or heavy-commercial located within or nearby the harbor; and 2) visitor-serving facilities located along the rivers, shoreline and the sea and its extensions. The coastal-dependent industrial and heavy-commercial uses are described and identified in the Harbor Port Land Use Plan; further discussion is included in the Industrial Development Component.

Visitor-serving uses have historically developed in Del Norte County along visitor accessways adjacent to recreationally attractive areas. Many examples are found in the Coastal Zone in Klamath, at the harbor and at the mouth of the Smith River. The Recreational Component encourages the continued use of these facilities and addresses their development in the policy section.

Each land use component shall designate any areas of coastal-dependent development. The zoning ordinance shall regulate the actual development of any identified site. Areas not designated but proposed in the future will be subject to a review for consistency of not only the above policy but of the entire coastal program document.

G. Acquisition by State and Federal Agencies: Local policies and recommendations developed in the Local Program are intended to provide the framework for implementation of the Coastal Act goals of insuring continuing opportunities for access to the shoreline and related coastal recreation. The policies are intended to provide guidelines regarding: 1) dedication of appropriate access easements in private development; and 2) appropriate kinds, locations, and siting of recreational development by not only private developers but public agencies as well.

The erosion of the general tax base of this county has been accelerated by the continuing acquisition of private lands by State and Federal agencies. The date (1980) over 3/4 of the total County is publicly owned and recent acquisition by the State of the Bliss Ranch and portions of the Bauer Ranch have increased public holdings. The impacts of these State acquisitions is to:

1. Convert productive agricultural lands to non-productive non-agricultural uses in contravention of the policy stated in Section 30242 of the Coastal Act.

2. Have a substantial economic impact in the County by reason of the termination of agricultural production.

3. Reduce or eliminate taxes generated by the private ownership of land.

4. Require substantial expenditure of public funds to acquire, maintain and develop the land.

The County finds that the objective of maintaining wildlife habitat though acquisition can not only conflict with local economic requirements but can also conflict directly with other State goals and can also be shown in some instances to be unnecessary. If it is the need of the State to insure that alteration of an area shall not take place and the vehicle to accomplish this goal is acquisition then the purchase of acquisition of the developers right for this development is the only step necessary. The County prefers development right purchase for the following reasons:

1. In many cases the continued (if any) use of the subject area for agricultural purposes can be permitted.

2. In many cases the watershed (if any) use of the subject area for timber production purposes can be permitted.

3. The parcels are continued on the Del Norte County tax rolls at near existing assessed values.

The following policies shall apply to all acquisitions by the State or any Federal agency acting in conjunction with the State:

1. In implementing any and all proposals contained in this plan or developed from this plan for expanding opportunities for coastal access and recreation or wildlife habitat preservation, purchase in fee simple shall be used only after all other less costly alternatives have been studied and rejected as inappropriate by the County. Preferred alternatives to fee simple purchase are:

a. purchase of development rights

b. purchase of easement

c. preserve contracts

d. transfer of development rights.

2. All acquisitions by a State of any Federal agency acting in conjunction with the State shall pay an equivalent in-lieu tax to the County equal to the tax revenue yielded by the subject parcel at the time of acquisition and increased each year equal to the applicable county tax rate.

3. An alternative to the above methods of acquisition is land exchange. In that the state has recently acquired considerable productive agricultural land in Del Norte, these lands would

be exchanged for lesser productive agricultural land adjacent to or part of a wetland habitat. Futhermore when wetlands in private ownership are considered for acquisition, land exchanges of either existing state owned lands or lands purchased for consolidation or resource protection by the Coastal Conservancy or other state agency, are of maximum benefit to all parties.

H. Lot Consolidation and Transfer of Development Rights: With the implementation of this plan the state may not desire development of smaller parcels located in and immediately adjacent to sensitive areas (i.e. wetlands). This may be particularly true of areas such as Elk Creek and Marhoffer Creek which contain some "city" size lots and some acre or larger parcels of which the acre or larger may contain a "marginal" building site. Such a position can be contradictory to the policies of the Coastal Act insuring protection of private property owners. Therefore acquisition, lot consolidation and transfer of development rights may be utilized to guide development from sensitive areas (where possible) and also insure some assurance of protection of private property rights.

1. Lot Consolidation: Acquisition procedures are discussed in another section of this component. Lot consolidation is a procedure by which substandard and/or unbuildable lots are purchased and then merged and resold into lots of suitable size. The revenue from these buildable or useable lots is then used to purchase other substandard lots. This procedure is rather common in more urban areas and is conducted by both the private and real estate industry and various public agencies. Key questions are need and availability of funds. In our area need can only be ascertained on a case by case basis. Funds will have to be provided from sources other than local government. Because of its cost, lot consolidation should be limited to existing subdivided areas.

2. Transfer of Development Rights: Transfer of Development Rights assigns a ratio of acreage to density and allows the consideration of taking an assigned density value for one area and transferring that development right to another location. This allows for the restriction of development in sensitive areas where development is inconsistent with policies of the Local Coastal Program, yet provides the property owner with an option to sell a right to build to owners of land in areas where such development is either consistent with the Local Coastal Program or would be a more appropriate location of such development. The owner does not have to "sell" this development potential to another owner but may in fact transfer this density within the parcel or to another parcel of his/her ownerships.

Because the Local Coastal Program and the Coastal Act of 1976 are comprehensive and involve goals which are sometimes contradistory the two above methods of land use development may be necessary to resolve these conflicts completely or in part.

J. Designation of Coastal Land Uses: The Coastal Zone of Del Norte County has been divided into sub-areas which contain geographic areas of similar physical characteristics, land uses and planning issues. The Harbor District Port Land Use Plan is a separate document and addresses the harbor area. The remaining planning units are described as follows:

North Coastal (Area 1) - This area lies from Ship-A-Shore at the mouth of the Smith River north of the Oregon border.

Smith River (Area 2) - This area is located south of the mouth of the Smith River north of Morehead Road, west of Highway 101 and east of the ocean.

Lake Earl Drive (Area 3): Generally all of these lands lie west of the Lake Earl Drive and south of Morehead Road. The southerly limit includes Northcrest Incorporated and the area also extends eastward of Lake Earl Drive at Jordon Creek.

Crescent City (Area 4) - Included within this planning area are the developing areas of Northcrest, Pebble Beach, Parkway Drive, Elk Valley Road and Bertsch Tract.

Klamath (Area 5) - This area consists of the Klamath area from the Humboldt County line north through the Redwood National Park and Del Norte Coast Redwoods State Park.

Each of the above (sub-areas) include a generalized written description of existing uses, any areas of special interest and any specific policy recommendations. Each sub-area contains a condensed statement regarding major coastal issues. The land use map indicates the appropriate land use categories designated for each planning area. The land use designations set the scale, pattern and types of development appropriate for each area. A land use map which as been formulated from an analysis of all applicable components is developed for each area.

K. Appeals Officer: The Coastal Act emphasizes the need for opportunities of public input and also includes provisions for an appeal process should their be an "agrieved person", including the applicant, regarding the decision of a local government that is implementing a certified Local Coastal Program. In order to reduce or prevent unnecessary delays in an approved project and to prevent the unnecessary delays in proceedings of valid, significant appleals, the County shall select a local hearing officer who shall review appeals for content and shall render a decision upon the validity of the appeal. The hearing officer may reject the appeal outright, request an appearence before

the decision making body to present any recommendations of adjustment or may forward the appeal for Coastal Commission (or agency) review and consideration.

L. Archeological Resources

In cooperation with the State Historic Preservation Office, where it is determined development would adversely affect archaeological resources reasonable mitigation measures shall be required. The State Historical Preservation Office shall have up to 15 days upon receipt of county notice to provide review and reasonable mitigation measures."

LAND USE CATEGORIES

The following categories describe the principal type of land use for each area of the Coastal Zone. The land use categories indicate the primary use while the constraints identify those limitations which must be considered for development in each land use category. Acreage for density purposes is to be determined on a gross acreage basis.

1. Urban Land Use Categories

   A. Residential

Low Density Residential	.0-2.0 Dwelling Units (du) per acre
Residential	.0-6.0 du/acre
Medium Density Residential	.0-15.0 du/acre
High Density Residential	12.0-30.0 du/acre

   B. Commercial

   General Commercial - Uses in the general commercial category range from convenience activities, central business, district activities, mobilehome parks, service commercial to wholesale facilities which support agricultural activities.

   Heavy Commercial - This category includes lumber yards, warehousing, contractors yards, food processing and light industrial uses without nuisance features.

   C. Industrial

   General Industry - All industrial uses.

   Light Industry - Includes industrial uses without nuisance features and industrial parks.

2. Non-Urban Categories

   A. Agricultural Prime - This category applies to acreages of prime farmland and agricultural uses which are comprised of contiguous ownership of 20 acres or more of lands actively used for the production of agriculture north of Morehead Road. Only structures directly related to agricultural production and single-family residences (one unit per specified minimum parcel) are permitted. Additional dwellings for resident farm labor may be allowed subject to a use permit securement. The intensive raising of animals for commercial purposes (feed lots) and animal husbandry services are also permitted as conditional uses. The minimum lot size for the purposes of divisions of land for sale, lease or financing shall be 40 acres.

B. Agricultural General - 20 acres: This category includes non-prime farmlands and agricultural uses on lands used for agricultural purposes or suitable for agricultural which are in general 20 acres or larger in size. This category applies to agricultural uses which includes, but are not limited to, field crops, dairies, orchards, apiculture, citicultures, horticulture, cattle, horse and animal raising and pasture and forage. Only structures related to these activities and single family residences (one unit per specific minimum parcel) are permitted. Second dwellings may be allowed subject to a conditional use permit or parcels 20 acres or larger in size. Multi-unit greenhouses require a conditional use permit. The minimum lot size for the purposes of division of land for sale, lease, or financing shall be 20 acres.

C. Agricultural General - 5 acres: This category includes non-prime farmlands and agricultural uses on lands used for agricultural purposes or suitable for agricultural which are in general 5 acres or larger in size. This category applies to agricultural uses which include, but are not limited to, field crops, dairies, orchards, apiculture, viticultures, horticulture, cattle, horse and animal raising and pasture and forage. Only structures related to these activities and single family residences (one unit per specific minimum parcel) are permitted. Second dwellings may be allowed subject to a conditional use permit on parcels 10 acres or larger in size. Multi-unit greenhouses require a conditional use permit. The minimum lot size for the purposes of division of land for sale, lease or financing shall be 5 acres.

D. Forestlands - This category includes land zoned Timberland Preserve and those lands which are forested and within the boundaries of public lands within the Coastal Zone. Other criteria is identified in the forestlands component.

E. Woodlot - Lands in this category are not suitable for continued large scale commercial production but may be managed on a parcel basis by their owners or subsequent owners for wood production for on-site domestic use or limited commercial sale. This category allows division of land to the specified minimum size while allowing physical constraints to be incorporated into the design. The primary use is single family homes (one unit per specified minimum parcel) on cleared sites of 1/2 to 1 acre in size while retaining wooded areas around the building site (s). Small accessory buildings are allowed when incidental to the residential use.

F. Rural Residential - This category is intended to maintain the character of rural areas and minimize the services required by smaller lot development. The primary use of these lands is single-family residential (one unit per specified minimum parcel). Uses permitted within residential areas include single-family residences, the keeping of horses for use by the owner, light agricultural activities, and accessory buildings appropriate to the residential use.

G. Rural Neighborhood - These are areas that have developed historically with lots smaller than those found in the surrounding rural lands. The purpose of this category is to keep pockets of small lot residential development from expanding into adjacent forest, agricultural or other rural lands. Within the rural neighborhood category, infilling of parcels at densities specified on the land use maps is permitted subject to any physical limitations.

H. Rural Mobilehome Park - The strategic location of rural mobilehome parks can provide an attractive opportunity for low and moderate income housing, outside of the urban area. The development of rural mobilehome parks must consider the availability of on-site water and sewage disposal as primary development contracts, therefore the maximum density for rural mobilehome parks with on site water and sewage disposal shall be one unit (mobilehome, a double wide is one unit) per half acre. The lots themselves may be smaller than 1/2 acre, however the maximum allowable density shall be determined by the gross acreage multiplied by two.

I. Visitor Serving Commercial - The primary use of this category is to cater to the needs of visitors to the Coastal Zone. As Highway 101 is the primary access along this area's Coastal Zone, uses in this category will include uses which serve the highway traveler, in addition to uses normally related to adjacent recreational resources. Uses shall include but not be limited to, hotels, motels, restaurants, service stations, boat ramps, docks, hunting and fishing resorts. Uses, buildings, and structures customarily accessory to the above are also permitted. Those uses requiring a conditional use permit include but are not limited to recreational vehicle parks, golf courses and country clubs, single family residence of owner or operator of the site, mobilehome park and unique item shops.

* Mobile home parks are allowed in conjunction with recreational vehicle parks; however, the number of recreational vehicle spaces shall always exceed the number of mobile home spaces by a ratio of at least two to one. Therefore, the majority use will be recreational vehicle spaces. This policy applies to new spaces in existing mobilehome parks and development of new parks.

J. Industrial (Light & General) - This category recognizes existing industrial uses and locations in the Coastal Zone which have historically shown to have no effect on surrounding uses. Also included in this designation are areas of industrial potential of limited local use, subject to performance standards.

K. Resource Conservation Areas (R.C.A.):

"Resource Conservation Areas are areas mapped on the accompanying constraint maps as wetlands and farmed wetlands, riparian, estuaries, and coastal sand dunes. Development within these areas is subject to the policies of the certified land use plan. No single family residences or other structures shall be permitted within an R.C.A.

unless that would result in denial of substantially all reasonable use of the land. In this event, the land owner should consider participating in transfer of development credits (T.D.C.) system when such a system exists, as approved by the State Coastal Commission, in order to allow this development to occur at a more suitable location."

Where parcels totally within the RCA category are contiguous with a parcel outside (or partly outside) the RCA category, and where all of these parcels have a single owner, these parcels shall be merged as a condition of approving development on the non-RCA parcel. Development type and intensity on the non-RCA portion of the resulting parcel shall be that specified by other LUP policies."

The allowable uses within designated RCAs shall be limited to:

a. Fish and wildlife management.
b. Nature study.
c. Wetland restoration.
d. Hunting and fishing including development of duck blinds and similar minor facilities.
e. In estuaries, maintenance and improvement of boating facilities consistent ~~with Section 30233 of the California Coastal Act~~. with other land use plan policies.

f "In Farmed Wetlands or agriculturally used parcels, agricultural operations are a principal use but such uses should maintain long-term habitat values and, where feasible, minimize short-term degradation."

g. "Those recreational facilities included in a State Park and Recreation/Department of Fish & Game Master Plan submitted and approved as an amendment to the Local Coastal Program."

H. In riparian habitat areas the following uses are allowed:

(i) Recreational trails.
(ii) Hunting and fishing.
(iii) Timber harvesting of conifers where heavy equipment is not used and where at least 50% of the coniferous tree canopy and where all of the hardwood tree canopy is retained and removal is otherwise consistent with forest practices rules for special treatment areas and stream protection zones."
(iv) Maintenance of existing flood control and drainage channels.
(v) Wells within rural areas.
(vi) Firewood removal by owner, for use in residence on site.
(vii) Road maintenance and repair of existing roads. New stream crossings shall be limited when feasible to right angle crossings of streams and stream corridors.

L. Public Facilities:

All undesignated areas on the land use plan map owned by the county, state or federal governments shall be shown as public facilities" and will be subject to and consistent with all applicable policies of the county's final certified land use plan.

3. Other Provisions

Constraint Maps:

"Environmental constraint maps shall have precedent over actual land use designations. Parcels partly in and partly out of these constraint areas shall have development located outside of constraints boundary unless consistent with other policies of the county's land use plan. No development parcles shall be created totally within an environmental constraint area except for agricultural parcels (not including residential development) subject to the minimum parcel size and all applicable policies of the certified land use plan."

Urban/Rural Boundary

This is a boundary line shown on the various land use maps which seperates those areas designated for urban land use and subsequent

future urban development from those areas designated for Rural land uses. Included within the urban area are lands which are at the present time underdeveloped which may either develop to a maximum density in one development project or which may reach their maximum density allowed in stages. Rural designations set maximum densities when in fact these densities may only be achieved over a substantial period of time.

Implied Land Use

Land use categories not specifically identified on the land use maps but may be permitted to exist are:

Neighborhood Commercial - This classification recognizes those types of light commercial uses which are compatible with residential land uses and where those commercial uses are found to be small, non-intensive, quiet, non-nuisance uses. This classification will not be reflected on the land use maps but will be incorporated in the zoning ordinance.

Non-Conforming Uses - ~~May continue as an existing lawful use and~~ "Existing non-conforming uses may be continued, but may not be expanded except upon securement of a conditional use permit, and then only once if the expansion increases use density or intensity by less than 20%." one

Constraints

These designations indicate locations where the presence of hazards or special resources places constraints on development. These designations are derived from the policies contained in each of the 'constraint' oriented components. Special policies may be contained in each land use description.

1. Resource Habitat

   A. Wetlands - refer to marine resources component, page 36.

   B. Estuary - refer to marine resources component, page 34.

   C. Riparian Corridors - refer to marine resources component, page 40.

   D. Sand Dunes - refer to marine resources component, page 43.

   E. Offshore Rocks - refer to marine resources component, page 30.

   F. Sandy Beach Areas - these areas includes the broader, more easily traversed beaches.

2. Site Design

A. Special Treatment Areas - areas of additional forest regulation of the Department of Forestry. See Land Resources Component, page 28.

B. Flood Hazard - areas of variable inundation including estimated 100 year flood occurrence and areas of flood diversion (those areas which hold water during high runoff).

C. Tsunami Runups - areas impacted by the estimated 100 year tsunami occurrence.

D. Ocean Bluff - areas to be examined for stability or erosion prior to development.

E. Slope Hazard - areas of slopes in excess of 30% on a generalized basis. This category only indicates generalized slope and may contain areas with sites less than 30% slope.

3. Constraint Mapping

Due to the scale of the constraints maps, questions may arise as to the specific boundary limits of an identified ~~constraint~~ environmentally sensitve habitat area. Where there is a dispute over the boundary or location of an environmentally sensitive habitats area, the following may be requested of the applicant:

a. A base map delineating topographic lines, adjacent roads, location of dikes, levees, flood control channels and tide gates.
b. Vegetation map.
c. Soils map.

Review of this information shall be in cooperation with the Department of Fish & Game and the county's determination shall be based upon specific findings as to whether an area is or is not an environmentally sensitive habitat area based on land use plan criteria, definition, and criteria included in commission guidelines for wetland and other wet environmentally sensitive habitat areas as adopted February 4, 1981. The Department of Fish & Game shall have up to 15 days upon receipt of county notice to provide review and cooperation.

OCEAN VIEW DRIVE

This area extends from the Oregon state line southward to and including the resort area commonly referred to as the Ship-Ashore area. Highway 101 bisects this subarea, and provides the primary through traffic route. Existing public access is provided by Pelican State Beach, Kamph Park (County) and Mouth of Smith River Park (County). These parks are located strategically along this coastline providing access to the entire coastline beach. Interruption of lateral access is generated by two rocky outcroppings, otherwise the beaches are free of physical or man-made barriers. Significant streams are Gilbert Creek to the north and Lopez Creek, located about midpoint of this sub-area.

Residential development is rural in characteristics and concentrated in the southern portion, eastern midpoint, at Gilbert Creek and at the state line. Intensive agriculture is concentrated between Highway 101 and Ocean View Drive in the northern area with limited small parcel hobby farming on larger rural residential lots. Forest values are limited as the hillsides in this area are low Class IV and Class V sites.

Sewage systems are individual with the exception of the Ship-Ashore complex. Water supply is individual wells with some areas provided water by the Smith River Community Services District.

Specific Area Recommendations

1. An appropriate access shall be sought on new development proposed where this access can be incorporated into the overall design. This access shall be limited to parcels with 400' or more beach frontage located between the Oregon state line and the Mouth of Smith River. In addition any such requested public access route shall be subject to the provisions of section 66478.12, section 66478.13 and section 66478.14 of the Subdivision Map Act.

2. ~~Due to the low productivity of the area lying west of highway 101 (assessors parcels 101-20-25 and part of AP #101-20-32) because of salt spray, the sand dune areas and its irregular useable area, this area shall be considered for a potential receiving point for transferred development right. Any future development shall, however, incorporate open areas into the design (for example a golf course) to maintain the existing "visual quality" of the area~~.

3. The west facing slopes above Ocean View Drive shall restrict development to those areas less then 30% in slope.

4. Extensions of the Smith River Community Services District water line shall be prioritized as follows:

   a. Along Ocean View Drive to the north line of AP #101-100-02 (presently known as the Friewald parcel); then

   b. West along that property line to Highway 101 and north to Pelican Beach Palisades subdivision (existing); then

   c. North along Highway 101 to the state line; then

   d. Southerly along Highway 101 to North Indian Road at Highway 101; then

   e. A closure of the loop may be considered from the intersection of Ocean View Drive and Highway 101 back to the line at AP #101-100-02 (Friewald).

5. Ship-Ashore shall continue to incorporate access to the River in its development.

6. The emphasis for the two commercial areas within this subarea shall be on visitor serving uses; however mobilehome parks for low and moderate housing shall be allowed in conjunction or as part of the overall development as well as other forms of housing if the Planning Commission determines that the residential development is part of an overall committed visitor serving development or that the residential development does not conflict with the existing, or proposed visitor serving use of the area.

7. The State shall improve Pelican State Beach to include proper signing along the highway, parking and improved beach access.

8. The presently undeveloped parcel (currently AP #101-20-47) shall be required to locate any proposed development in a clustering design so as to balance development constraints and aesthetics with the overall density proposed by the developer.

9. Parcels of 20 acres or larger committed to agricultural use shall be afforded the opportunity to participate in Williamson Act contracts or an equivalent method of taxation.

10. Ocean View Estates

There shall be a planned community (PC) restrictive overlay on the Ocean View Estates site (Exhibit I) which will be superior to any land use authorizations. If there is any conflict the PC overlay would be dominant. The conditions for any PC implementation ordinance include:

(i) A maximum of 16 units on the site;

(ii) A minimum of 62 acres of open space shall be provided;

(iii) Water diversion from Gilbert Creek for use on the site shall be limited to 22 gallons per minute, however at all times the site owner shall bypass 150 gallons per minute or natural flow, whichever is lower, to protect fish resources;

(iv) Proof of adequate alternative water sources shall be demonstrated;
(v)
(v) All units shall be clustered and subordinate to the natural environment and viewshed, and all units shall be located on the hillside rather than the flat portion of the site; and

(vi) An adequate agricultural buffer strip, not to be counted in the open space acreage, shall be required.

SMITH RIVER AREA

The Coastal Zone in this subarea extends some 3½ miles inland from the shoreline. The predominate land use is agriculture, both extensive and intensive. Agricultural uses range from pastureland to bulb productions to ornamental plant production in large greenhouses (agricultural industrial area). The delineated residential areas are existing, developed residential pockets of land usually surrounded by larger lots. Commercial uses are existing with the exception of a portion of land within the Coastal Zone near the town of Smith River. The parcel was historically an old mill site and is unsuitable for agriculture. A mobilehome park designation has been placed on this parcel. Another commercial area is at the north side of Dr. Fine Bridge at Highway 101 and Fred Haight Drive. The existing County General Plan proposes a commercial recreational use of this parcel and this designation has been carried over to provide an upland visitor-serving area.

Hobby farming is limited to Morehead Road. This area is already developed to a large extent with 3-5 acres parcels. As this type of agriculture is a viable use and provides enjoyment, food and fiber and some income to the property, this use is compatible with the Coastal Act. As an existing County maintained road (Morehead Road) serves this area, hobby farming shall be focused along this corridor.

Specific Area Recommendations

1. ~~Any expansion of the Ship-Ashore complex beyond its visitor serving designation boundary resulting from transferred development rights shall be in the following order of area expansion~~:

   a. ~~between Ocean View Drive and Highway 101~~.

   b. ~~Rounding out of existing boundaries~~.

   c. ~~Southwesterly~~.

2. The existing access to the River through Ship-Ashore shall be encouraged to continue. New development with River frontage shall include provisions for access where appropriate.

3. An expansion or major redevelopment of the Trails End Facility shall include river access. The owner/developer shall be encouraged to provide boat launching facilities if physically feasible.

4. The agricultural-industrial complex on Sarina Road shall be encouraged to maximize the effeciency of its existing area facilities. This may include but not be limited to energy facilities utilizing recycling systems and appropriate greenhouse technology.

5. The fishing equipment and sports store (Saxtons) is surrounded by County ownership. Its location at the boat ramp and parking facility shall be maximized. Any expansion beyond its 6000 sq. ft. area shall be only after securement of a conditional use permit.

6. The 32 acre parcel at the north end of Dr. Fine Bridge, on Highway 101, shall, in its development plans, make provisions for visitor access to the river. As the main river channel is on the opposite side of the river, at this location, the above access may be limited to a point vertical access (walking as an example) with a lateral access (along the river bar) for the parcel's length.

7. As hobby farming areas generate traffic beyond the amount associated with larger scale agricultural production, hobby farming parcels shall be focused into areas presently having this existing use and on improved County maintained roads.

8. Hobby farming (other agriculture) shall be located on both sides of Morehead Road. However the potential higher producing, deeper Carlotta soils (Ca 2) shall, where feasible, be maintained in larger parcel sizes.

9. The State shall provide an improved access to Pala Park via Pala Road.

10. The State shall provide improved recreational access to the Smith River via Pala Road. This access shall be on the south side of the river and along the sand spit. The State shall also provide limited access points for recreational use of Yontocket Slough. Should the state lease these lands for agricultural purposes the above access points may be reduced in scale depending upon the agricultural use.

11. The State shall provide improved day use recreational facilities in the general area at the ocean end of Kellogg Road.

12. The State shall provide an access northward from Kellogg Road paralleling the beach, but set back from the beach. This access may follow the existing "jeep trail" northward to the spit but may be limited as to the amount of traffic carried. Agricultural leasing of the area north of Kellogg Road may relocate or interrupt these access routes, on a seasonal basis.

13. The division of agricultural lands in order to separate the existing farmhouse from the ranch or farm lands for the purposes of sale, lease, financing or inclusion in the Williamson Act of the lands or the farmhouse may be approved by the Planning Commission for parcels less than the minimum parcel size. This action is subject to the following:

    a. the minimum lot for the farmhouse shall be one acre; and

    b. the subject residence must have existed prior to the County's zoning of the lands to AE; and

    c. the subject lands are designated agricultural prime in the Coastal Land Use Plan, or are larger than 20 acres in a 20 acre minimum area.

14. Parcels of 20 acres or larger committed to agricultural use shall be afforded the opportunity to participate in Williamson Act contracts or an equivalent method of taxation.

LAKE EARL AREA

The predominate land uses of this area are the shallow Lakes Earl and Talawa and the agricultural lands surrounding them. Grazing predominates as the primary agricultural use, in part because of the Lake Earl. A reciprocal action has evolved that has benefited the wildlife habitat values of the Lakes and their shoreline and the summer pasture utilized by the farmers and ranchers of the area. One has become dependent upon the other; the grazing cattle keep the grasses down and the pastures themselves provided feed for wildlife and the shoreline provides summer pasture at little or no improvement or capital costs to the rancher. This reciprocal situation has been the historical reason for the continued wildlife value of the lake and the continued low intensity agricultural uses of the surrounding lands.

An exception to the above is Pacific Shores subdivision lying north and west of Lake Earl. The road system of the subdivision provides access to the lot owners but is extensively used by non-lotowners for access to Lakes Earl and Talawa, their connecting channel and the beach and shoreline.

The rural residential areas are essentially developed into or approximate the lot sizes proposed on the land use maps. Two rural mobilehome parks are proposed to provide low cost housing in a rural setting.

Hobby farming exists on the south side of Morehead Road and adjacent to Mud Hen Road. Other limited hobby farming lies on or adjacent to Lakeview Road and Malone Road.

The industrial designation defines an existing industrial area; a sawmill. Portions of this area are not presently used but still have the facilities for industrial expansion of existing uses or accomodating new limited industrial activities. Also within the urban-rural boundary is approximately 120 acres of very marginal undeveloped land designated for a low density residential use. This site was targeted for inclusionary zoning of the Housing Component. This parcel constitutes the best opportunity for such use due to its location, it is one parcel, and has marginal value for resource use.

The acquisitions by the state of approximately 7 miles of ocean shoreline increase the public's opportunity for access to the beach and also provides increased access potential to Lakes Earl and Talawa.

Specific Area Recommendations

1. As hobby farming areas generate traffic beyond the amount associated with larger scale agricultural production, hobby farming parcels shall be focused into areas presently having this existing use and on improved County maintained roads.

2. Hobby farming (other agriculture) shall be located on both sides of Morehead Road. However the potential higher producing, deeper Carlotta soils (Ca 2) shall, where feasible, be maintained in larger parcel sizes.

3. The division of agricultural lands in order to separate the existing farmhouses from the ranch or farm lands for the purposes of sale, lease, financing or inclusion in the Williamson Act of the lands or the farmhouse may be approved by the Planning Commission for parcels less than the minimum parcel size. This action is subject to the following:

   a. the minimum lot for the farmhouse shall be one acre; and

   b. the subject residence must have existed prior to the County's zoning of the lands to AE; and

   c. the subject lands are designated agricultural prime in the Coastal Land Use Plan, or are larger than 20 acres in the 20 acre minimum area.

4. The continued use of the overflow lands for pasture shall be allowed to continue. Should the State acquire any of these lands the adjoining property owner (in many cases the previous owner) shall be offered a lease of the lands for grazing and pastoral uses.

5. Parcels of 20 acres or larger committed to agricultural use shall be afforded the opportunity to participate in Williamson Act contracts or an equivalent method of taxation.

6. The five rentals at the end of Buzzini Road shall continue as rentals, however no additional units over the existing number shall be constructed. Enlargement of the existing units is allowed subject to Planning Commission review and setback requirements.

7. The proposed rural mobilehome park on Lake Earl Drive south of Elk Valley Cross Road shall conform to the project approved by the County and previously approved by the Coastal Commission.

8. The proposed rural mobilehome park on Lake Earl Drive north of Lower Lake Road shall be limited to a first phase of 60 units to be monitored for a one year period from the first occupancy of at least one half of the above units. If the one year

monitoring show no unsafe level of nitrate or other indication of sewage limitations a second phase of up to 60 units may be considered due to on site sewage and water.

9. The Hunter Ranch, south of Buzzini Road, is recommended as prime agricultural land due to its potentially higher productive soils and larger parcel size.

10. The State shall provide at least two visitor serving sites (shown on map) off the extension of Old Mill Road and provide public access from the extension of Old Mill Road to the west side of Lake Earl (at least two locations) and to the east side of Lake Talawa (at least two locations).

11. On assessors parcels 105-030-32, 67 and 37 the State shall provide an improved recreational access to Lake Earl from Lower Lake Road and construct a walking pathway and bicycle path from this location south paralleling the lake to the existing county access points of Buzzini Road and Lakeview Road. No motorized vehicles shall be permitted.

12. The state shall provide a minimum of two improved accessways from Old Mill Road westerly to the ocean shoreline.

13. The State shall specifically provide for agricultural leases of lands it has acquired and any lands acquired in the future. Agricultural lease need not be granted where it can be shown to the Planning Commission that direct conflicts between the agricultural use and the visitors utilizing an improved access would occur.

14. The operation of the County landfill shall retain a physical buffer between the landfill site and existing residential areas which adjoin the parcel to the north and east.

15. New parcels created within the urban/rural boundary shall be a minimum of 1 acre in size if no public sewer and/or water is provided. If public water or sewer is provided the parcels may be 1/2 acre minimum in size. Should both public water and sewer be provided the land use designation shall determine the maximum density for each area.

* 16. Clustering of development on the McNamara parcel, excluding the adjacent Vipond rural neighborhood, shall be encouraged.

CRESCENT CITY SURROUNDING AREA

This area constitutes the primary urban area of Del Norte County. Three former highway routes, Northcrest Drive, Parkway Drive and Elk Valley Road have historically provided the corridors on which development has centered. Existing land uses and therefore the proposed land use reflect these development patterns. Acting a historical seperators to these three developed and developing areas have been the wetlands of Marhoffer Creek, Elk Creek and the Sandmine wetland area. These three areas not only serve as physical separators but have also provided low intensive agricultural production. Public services are concentrated in the Northcrest Drive area and Elk Valley Road area. Limited services can be extended out Parkway which in part explains the lower density for this area as compared to the other two.

The urban/rural boundary encompasses the areas served or planned to be served with public sewer and water. Additional areas are contained which are anticipated expansion areas of either underdeveloped or developing urban uses. For those areas contained with the urban/rural boundary but not served by public sewer or water a phased density is proposed.

Two areas of land which meet the criteria for forest land designation are not so designated due to several factors. The primary reasons are due to low site class and proximity to and within developed areas.

The use of transfer of development rights, and density control by clustering or varying lot sizes shall be a primary implementation tool in maintaining the resource value of the adjoining large lot lands. The State shall financially assist the County in any lot consolidation procedures. And, cooperative ventures between the State and County may be used when a common goal can be achieved through financial and physical planning.

Specific Area Recommendations

1. The County Airport (McNamara Field) shall continue to provide aircraft facilities (commercial and private), at this location as its primary use. Auxiliary uses may include storage of aircraft, light industrial and commercial activities directly related to aircraft activities. Other light industrial uses may be allowed subject to the issuance of a conditional use permit. A looped water system shall be extended to the airport via Pebble Beach Drive and Washington Boulevard. This water line shall have a primary use of fire protection. Extension into areas along the route designated for appropriate land use may be allowed if the primary use is protected.

2. Agricultural leases may be offered for lands on the airport property.

3. Public or group recreational events may be allowed where appropriate on airport property subject to the securement of a conditional use permit.

4. The McNamara parcel (AP #120-020-23) has the easterly area in TPZ due to non-response of the property owners. This parcel is low site IV and therefore has poor timber quality. Due to this low site class and its proximity to the urban area this parcel shall be designated for rural land use which shall consist of rural woodlot densities or a clustering of the equivalent number of units. Considerations shall be given to maintaining the wooded quality of the site and its proximity to the airport glide path.

5. The development of the Bauer parcel on Inyo (AP #120-020-06) shall be a combination of single family homes and multiple family dwellings. The clustering of units shall have priority and the drainage of Marhoffer Creek shall be maintained.

6. The existing four residences on the west side of Pebble Beach Drive shall be allowed to continue to exist. The State shall provide funding to the County to acquire the following parcels west of Pebble Beach Drive: 120-290-01, 120-040-32, and the westerly portion of AP 120-040-20. The County reserves the use of these parcels for road maintenance and slope protection of Pebble Beach Drive. Until funding is provided these parcels shall be considered single-family residential subject to the physical abilities of each parcel.

7. Should the State acquire lands in Crescent Manor, the County and State shall cooperate in a land exchange granting the County 20 acres of land immediately south of the present County land fill. The County will then grant the State the Countys'

interest in 10 acres of subdivided land and the Countys interest in the right-of-ways for those lands acquired by the State. The purpose of the exchange is to consolidate ownership and activities of each agency.

8. The Mavris medical facility shall be allowed to continue in its existing capacity as a medical facility. Limited residential use may be continued and expanded if a conditional use permit is secured for the expansion.

9. The State, the Bureau of Land Management and the County shall cooperate on establishing a limited walkway access westerly from the existing parking lot at Point St. George. The agricultural use of the lands may be continued on a lease basis. Should this agricultural use be discontinued, limited day use facilities may be considered.

~~10. For those parcels designated as agricultural, 1 unit per 5 acres and adjacent to Pebble Beach Drive and its extension (Radio Road on 7½ quads): Any proposed or related development shall be encouraged to cluster or transfer the development rights (TDRs) based on a total acreage. To encourage the transfer of development rights for those parcels west of Pebble Beach Drive (and its extension) those parcels shall receive a transferred development right of 1.75 times the land use designation.~~

11. Assessors parcel 120-020-03, a small parcel located west of Pebble Beach Drive, shall be a high priority for the provision of State funding of the purchase of development rights or other methods of fee acquisition and agricultural leasing. However until such funds are submitted to the County and a purchase is obtained the development rights of the subject parcel are retained by the parcel.

12. As hobby farming areas generate traffic beyond the amount associated with larger scale agricultural production, hobby farming parcels shall be focused into areas presently having this existing use and on improved County maintained roads.

13. The division of agricultural lands in order to separate the existing farmhouse from the ranch or farm lands for the purposes of sale, lease, financing or inclusion in the Williamson Act of the lands or the farmhouse may be approved by the Planning Commission for parcels less than the minimum parcel size. This action is subject to the following:

    a. the minimum lot for the farmhouse shall be one acres; and

    b. the subject residence must have existed prior to the County's zoning of the lands to AE; and

c. the subject lands are designated agricultural prime in the Coastal Land Use Plan, or are larger than 20 acres in a 20 acre minimum area.

14. Parcels of 20 acres or larger committed to agricultural use shall be afforded the opportunity to participate in Williamson Act contracts or an equivalent method of taxation.

15. The continued use of the overflow lands for pasture shall be allowed to continue. Should the State acquire any of these lands the adjoining property owner (in many cases the previous owner) shall be offered a lease of the lands for grazing and pastoral uses.

16. The State shall specifically provide for agricultural leases of lands it has acquired and any lands acquired in the future. Agricultural leases need not be granted where it can be shown to the Planning Commission that direct conflicts between the agricultural use and the visitors utilizing an improved access would occur.

17. New parcels created within the urban/rural boundary shall be a minimum of 1 acre in size if no public sewer and/or water is provided. If public water or sewer is provided the parcels may be 1/2 acre minimum in size. Should both public water and sewer be provided the land use designation shall determine the maximum density for each area.

18. Due to a preference to follow lot lines or quarter section lines, areas designated as forestlands in the Elk Creek drainage contain large, sizeable areas of unforested lands used for low intensive agricultural production (primarily grazing). This is due to the conflicts between the timber yield taxation legislation and the Coastal Act. Those lands designated as forestlands but used agriculturally are deemed not to be in conflict. Similar lands designated agriculturally but presently zoned TPZ are deemed not to be in conflict. This policy applies throughout the Coastal Zone.

19. The small family operation (assessors parcel 110-300-09), on Elk Valley Road has existed as a historical commercial/light industrial use with no physical impacts on the surrounding lands. The continued use of the light industrial facility shall be permitted. However, the residential use of the parcel may be separated from the plant site on a parcel of not less than one acre in size.

20. Approximately 35 acres of assessors parcel 117-020-07 may qualify for forestland designation but is designated on the land use map as commercial due to its proximity to Parkway

Drive, Washington Boulevard and Highway 101. In addition, the physical characteristics of this portion of the parcel are conducive to such development and sewer and water are potentially available to the site.

21. The Coastal Conservancy shall provide funding, other assistance, or direct action to consolidate lots to provide the continued maintenance of wetland values while retaining private ownerships. Areas of priority shall be:

    a. Northerly portion of Crescent Tract #3 (Elk Creek)

    b. Southerly portions of Dundas Tract (Elk Creek and adjoining pocket wetlands)

    c. Northerly portion of Crescent Tract #2 (Elk Creek)

    d. Westerly portion of Crowley Subdivision (Elk Creek)

    e. The northeast quarter of Harbor View #3 (Elk Creek)

    f. Overflow areas of Crescent City Manor #2 (Dead Lake)

    h. Southerly portion of Harbor View Tract #2

    i. Southerly portion of SE¼, NE¼ of Sec 27 T16N, R1W.

    j. The northerly low areas of the area commonly referred to as the Filkins Tract.

22. The State shall provide an improved visitor serving facility at the Nor-Cal site adjacent to Dead Lake. Improved access shall be provided for the public to the dunes and to the shoreline.

23. The State shall provide a day use facility west of Highway 101 across from Sandmine Road. The State shall also provide two pathway accesses from Humboldt Road to the beach as agreed in the Bauer Subdivision of land for the state acquisition.

24. The State shall provide a bicycle trail/path from Point St. George to Lake Earl with a tie-in to Old Mill Road. Along the trail the State shall include day use facilities for the bikers and hikers using the trail. The County will provide an easement across the airport property for the bike trail/path.

25. The parcel known as assessors parcel no. 120-020-03, which lies west of Pebble Beach Drive, 300 feet south of the intersection of Pebble Beach Drive and Washington Boulevard, shall be allowed as a potential building site subject to the physical standards of development. Due to the location of this parcel and its pre-existance this, parcel is identified as funding priority for the Coastal Conservancy for acquisition of developed rights or outright purchase. Until such time as an acquisition method is agreed upon the parcel shall continue to be considered a potential buildable site.

26. The parcel lying east of Highway 101 and Humboldt Road, known as assessors parcel no. 115-020-28 shall be identified for an agricultural use as an interim use. Should the parcel be developed for a public or quasi-public use, such as a community education center this area may be used for low intensive uses related to the public or quasi-public use in conformance with the local coastal program.

27. Point St. George

~~The land use designation for the Point St. George area west of the County airport (see Exhibit II) shall be changed from agriculture-general (5 acre minimum parcel size) to resource conservation area/B (RCA/B) in area C and to agriculture-general (20 acre minimum parcel size)/B in area D near Radio Road. The "B" suffix refers to a density bonus option described below.~~ Given potentially severe septic constraints at the Point St. George site, development in area D shall be conditional upon the applicant's demonstration of adequate water supply and wastewater disposal capability, consistent with LUP policies and Regional Water Quality Control Board requirements (Policy on the Control of Water Quality with respect to Individual Waste Treatment Disposal Practices, North Coast Region) as implemented by the County. Any land divisions in area D shall be contingent on the permanent protection of area C by use of an open space or conservation easement.

As an alternative to development in area D, in recognition of special circumstances constraining development there, the landowner may utilize a density bonus allowing an increase in potential density at another site near Lopez Creek. The landowner would be allowed one bonus credit per per 20 acres of Point St. George site; a maximum density bonus of 16 credits would be allowed. This density bonus can only be used at a site immediately north of Lopez Creek (see Exhibit III) designated for agriculture-general (5 acre minimum parcel size). The designation for this site shall indicate the density bonus option ("B" suffix). At the time the density bonus is first utilized, the entire Point St. George site shall be permanently protected by an open space or conservation easement. To avoid water quality impacts from septic wastes, no parcels less than 1 acre in size shall be created at the Lopez Creek site. Development on this site is subject to other LUP policies and should minimize visual impact. This density bonus option shall apply only to these two sites, due to the special development constraints cited in the conditional certification findings.

The above two alternatives are discrete options for the Point St. George site, and may not be combined. Once a development application pursuant to one option is approved, the other option will no longer be available.

KLAMATH AREA

The coastline of the Klamath area is all within the boundaries of the Redwood National Park. Private ownership along the coast is inland with some private ownership along the Klamath River. Existing predominate uses are visitor-serving facilities along the river, commercially owned & Timberland Prezerve Zones and scattered rural homesites. Urban development is limited to the new Klamath Townsite. A limited amount of industrial land remains in the Coastal Zone at the existing Simpson Timber Company site, this is a significant reduction from the 50's and early 60's of the Klamath area.

The Bureau of Indian Affairs owns in trust several parcels on Requa Hill which totals approximately 60 acres. Other BIA trust lands within the Coastal Zone is the Resighini Rancheria at the Klamath River Bridge and a smaller parcel of the north side of the river. These federal lands are identified on the land use maps.

Future urban development in the Coastal Zone in this area is anticipated to focus on the new Klamath Townsite. This area is elevated above the 100 year flood line and was constructed after the 1964 flood, above that years high water mark. Current zoning allows commercial, residential and multiple family development.

The proposed urban-rural boundary is to include the new Klamath Townsite and adjacent flood protected area. This small addition is located at the intersections of Highway 101 and State Route 169. Existing development is commercial and industrial with little area for expansion.

Specific Area Recommendations

1. The grazing area on each side of Wilson Creek may be used for low-intensive recreational activities including but not limited to day-use and organized recreational functions.

2. The division of agricultural lands in order to separate the existing farmhouse from the ranch or farm lands for the purposes of sale, lease, financing or inclusion in the Williamson Act of the lands or the farmhouse may approved by the Planning Commission for parcels less than the minimum parcel size. This action is subject to the following:

   a. the minimum lot for the farmhouse shall be one acre; and

   b. the subject residence must have existed prior to the County's zoning of the lands to AE; and

   c. the subject lands are designated agricultural prime in the Coastal Land Use Plan, or are larger than 20 acres in a 20 acre minimum area.

3. Parcels of 20 acres or larger committed to agricultural use shall be afforded the opportunity to participate in Williamson Act contracts or an equivalent method of taxation.

4. Agricultural uses in the floodplain of the Klamath River and its adjacent streams, shall be allowed to continue.

5. New parcels created within the urban/rural boundary shall be a minimum of 1 acre in size if no public sewer and/or water is provided. If public water or sewer is provided the parcels may be 1/2 acre minimum in size. Should both public water and sewer be provided the land use designation shall determine the maximum density for each area.

6. The area north of the Klamath Townsite and east of Highway 101 shall be designated for future visitor serving facilities.

7. The State Coastal Conservancy shall provide funding assistance for construction of a boat launching facility to be located at the area designated as Public Reserve, providing a launching access to the lower Klamath River.

8. Wing dams or channel navigation modifications on the Klamath at the Highway 101 bridge shall be allowed if the following is determined:

   a. The modifications are not permanent and will be removed before or during the following highwater period.

b. the modifications are necessary to provide a free movement of recreational and/or commercial boating of the River.

9. Water service from the Klamath townsite may be extended northward along Highway 101 to serve the commercial area immediately north of the Klamath townsite.

10. Assessors parcels number 140-060-01 and 04 shall be designated as Public Reserve Area. The purpose of which is to reserve this area for its intended use as a part of the sewage treatment facility of the Klamath townsite and to allow the development of day-use facilities in conjunction with access to the lower river. Day-use development shall not be allowed to interfere with the sewage treatment facility.

LUP Mapping Revisions, per conditions of certification

1. Point St. George

The land use designation for the Point St. George area west of the County airport (see Exhibit II) shall be changed from agriculture-general (5 acre minimum parcel size), to resource conservation area/B (RCA/B) in area C and to agriculture general (20 acre minimum parcel size)/B in area D near Radio Road.

2. DeVol Rural Mobile Home Park, Planning Unit #3:

The county shall show this 33± acre parcel as "timberland", 20 acre minimum. The remaining 13± acres shall be designated as "rural residential (RR-1)", one dwelling unit per acre.

3. McNamara Parcel, Planning Unit #3: The County shall show this parcel, excluding the Vipond rural neighborhood extension, at a density of one unit per five acres for the area shown on the County's land use map as one unit per one acre, and the remainder at one unit per 20 acres.

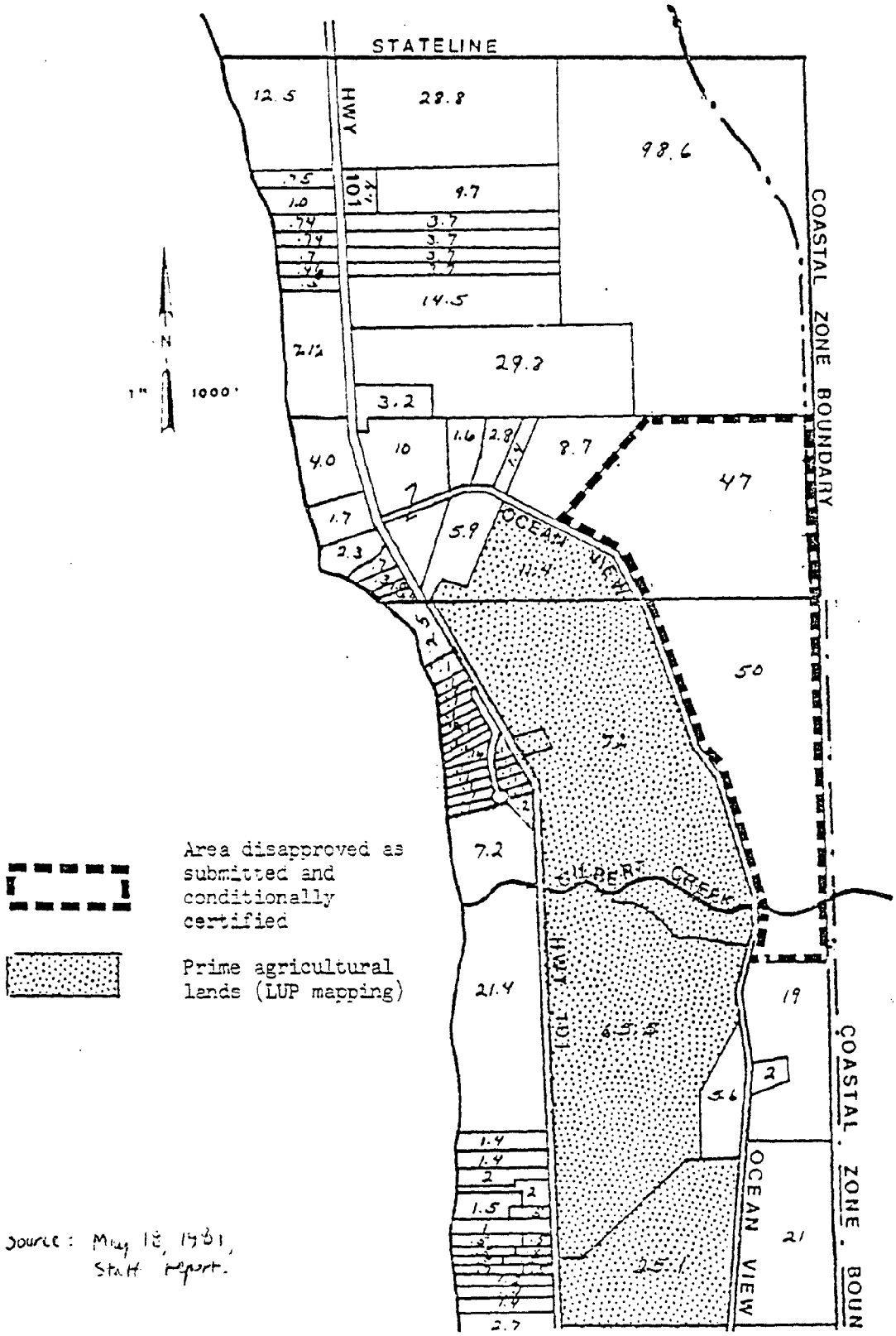
4. Final Mapping:

The county shall re-map all constraint areas to exclude existing development from such areas. The re-mapping can be done prior to final certification of the county's land use plan. The final mapping shall show all additional wetlands identified by the county and the California Department of Fish and Game.

5. The County's land use constraint maps shall be revised to eliminate "Seasonal Wetland. ~~All areas designated as such shall be redesignated as Farmed Wetlands or Non-Farmed Wetlands.~~ All wetlands shall be designated wetlands or farmed wetlands.

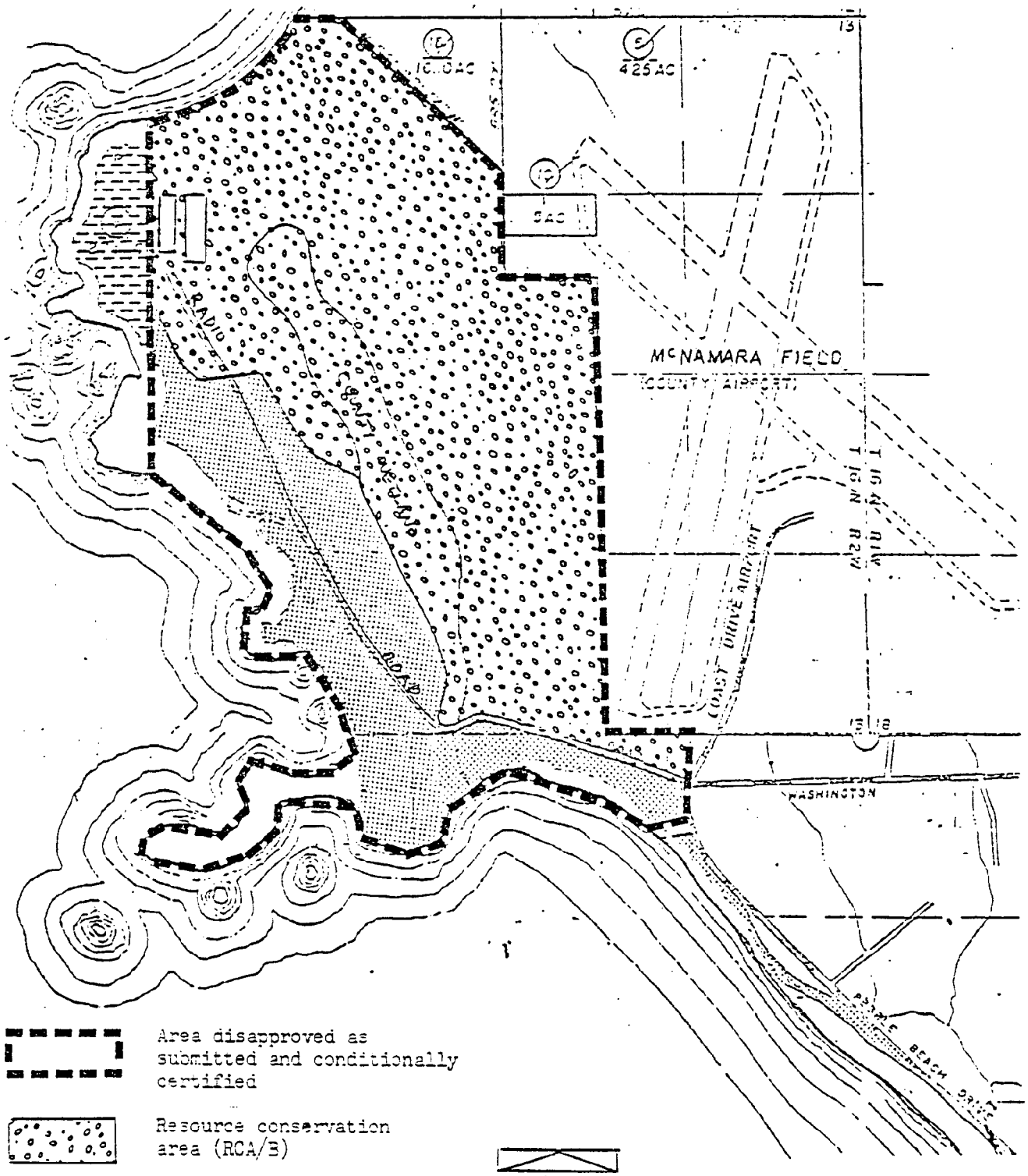
6. The county shall show, all offers to dedicate on the final land use plan access map with a brief description of each.

Exhibit I. Ocean View Estates



Source: May 18, 1981, Staff report.

Exhibit II. Point St. George



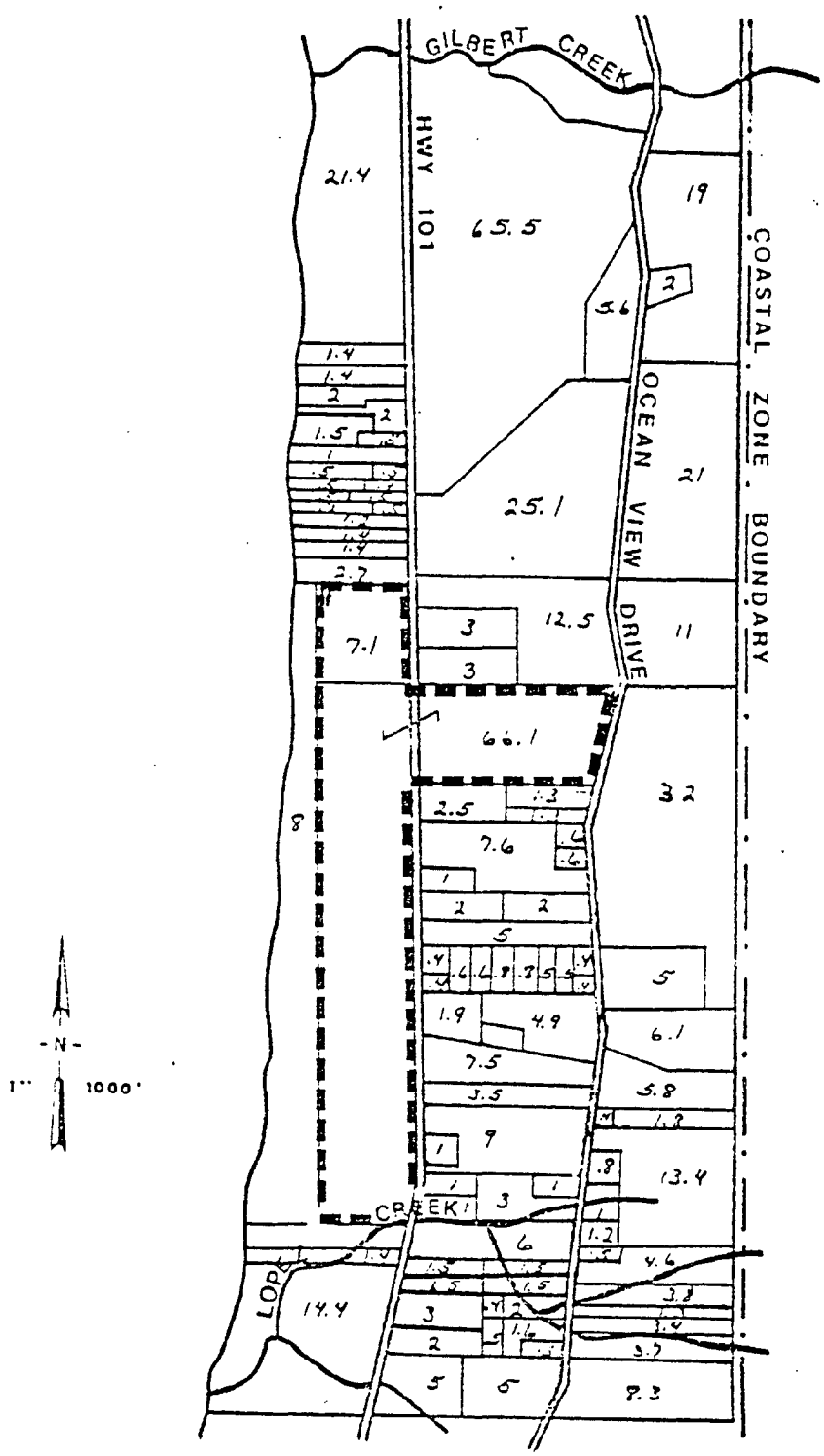
Area disapproved as submitted and conditionally certified

Resource conservation area (RCA/B)

Agriculture-general/B (20 acre minimum)

Source: May 18, 1982, Staff report

Exhibit III. Density bonus site near Lopez Creek



Source May 18, 1981, staff report.

NOAA COASTAL SERVICES CENTER LIBRARY
3 6668 14108 8965