CALIFORNIA

COASTAL COMMISSION

STATEWIDE INTERPRETIVE GUIDELINES

These Statewide Interpretive Guidelines were adopted by the California Coastal Commission pursuant to Public Resources Code Section 30620 (b) and are "designed to assist local governments, the commission, and persons subject to the provisions of this chapter in determining how the policies of this division shall be applied in the coastal zone prior to certification of local coastal programs."

The guidelines should assist in applying various Coastal Act policies to permit decisions; they in no case supersede the provisions of the Coastal Act nor enlarge or diminish the powers or authority of the Commission or other public agencies.

Interpretive guidelines for the six districts are published separately.

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STATEWIDE INTERPRETIVE GUIDELINE FOR WETLANDS AND OTHER WET ENVIRONMENTALLY SENSITIVE HABITAT AREAS

(Adopted 2/4/81) (Sections Rescinded 6/13/00)

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STATEWIDE INTERPRETIVE GUIDELINE FOR WETLANDS AND OTHER WET ENVIVIRONMENTALLY SENSITIVE HABITAT AREAS (Adopted 2/4/81)

I. INTRODUCTION

The Commission adopted this guideline as a decision of the Commission after receiving extensive public testimony and comments and holding ten public hearings at numerous locations in the coastal zone. In addition, the Regional Commissions provided valuable comments and information as a result of an approximately equal number of hearings which they held. Guidelines should be viewed as a tool in reviewing coastal permit applications and LCPs for wetlands and adjacent areas. The Commission intends local governments to use the guideline when developing LCPs but believes that more flexibility may be appropriate in an LCP than in an individual permit decision. Guidelines of necessity must focus on issues primarily of statewide concern. The LCPs will focus in depth on regional wetlands issues. For example, the Humboldt County Northcoast Area Land Use Plan addressed farmed wetlands in detail, a subject only footnoted in this guideline. It adopted explicit criteria for identifying farmed wetlands and designated the areas exclusive agriculture. The Commission certified the LUP as consistent with the policies of Chapter 3, even though such specific criteria are not contained or endorsed in this guideline. This example illustrates that the guideline is a valuable tool, but only a tool, to be used in conjunction with permit and planning decisions.

A. What Are "Wetlands"?

The Coastal Act defines wetlands as land "which may be covered periodically or permanently with shallow water." Wetland areas, such as marshes, mudflats and lagoons, serve many functions: to absorb pollutants and storm energy; to serve as nutrient sources and genetic reservoirs; and to provide some of the world's richest wildlife habitats.

Wetlands are highly diverse and productive. The combination of shallow and deep water, and the variety of vegetation and substrates produce far greater possibilities for wildlife feeding, nesting and resting than is found in less diverse areas. Individual wetlands may be inhabited by hundreds of species of birds, mammals, fish and smaller organisms. Abundant microorganisms serve as food for crabs, clams, oysters, and mussels which live in the tidal flats.

Wetlands' natural abundance draws people for recreation such as clamming, bird watching and fishing. Fish such as the king and silver salmon and steelhead trout live much of their lives in the ocean but return to freshwater to spawn. Commercially important fish such as herring, anchovy and California halibut are also found in California's estuaries.

Food for ocean fauna is supplied from California's coastal estuaries. Estuarine productivity therfore contributes to a complex ocean food web. For example, a significant amount of the net areal primary productivity of the Tijuana Estuary is exported in the form of dissolved carbon which can be taken up and used by oysters, bacteria and phytoplankton, which may in turn be eaten by other creatures. Perhaps more importantly, estuaries provide habitat for organisms to use that food, therefore making these habitats important for man, for example, as aquaculture sites.

Migratory animals feed and rest in California's coastal wetlands in large enough numbers to make the wetlands invaluable habitat areas. Most waterfowl and shorebirds found in North America, such as ducks, geese, sandpipers, and dunlines, are migratory. They nest in Alaska or Canada in the summer, and winter in the U.S. or points south. During the fall and spring migrations, millions of these birds move along well-defined routes called flyways. The California coast, part of the Pacific Flyways, was assigned third highest priority (out of a total of 33 areas nationally) for wintering habitat preservation by the U.S. Fish and Wildlife Service.

Wetlands also serve as rich laboratories for ecological studies.

B. How the Coastal Act Protects Wetlands

Since wetlands are so valuable from both an economic and biologic standpoint, the California Coastal Act, and many other Federal and state statutes and regulations, mandates governmental regulation of these areas. Section 30001 of the Coastal Act states (in part) that the Legislature finds and declares as follows: that the California coastal zone is a distinct and valuable resource and exists as a delicately balanced ecosystem; that the permanent protection of the state's natural resources is of paramount concern to present and future residents of the state and the nation; and that it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction. Therefore, the Act requires that the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes be maintained and, where feasible, restored. Sections of the Act provide general policies for development in and adjacent to wetlands, and specific policies for protecting these areas.

In order to apply Coastal Act policies on wetlands to specific areas and developments, the Commission has adopted this interpretive guideline. The guideline integrates ecological concepts and policies found in many sections of the Act into a consistent whole, explains policies for protecting natural resources, defines technical terms, and facilitates application of the policies by the State and regional commissions. Since many of the natural resource policies in the Coastal Act overlap, this guideline distinguishs the relative importance of the policies and their interrelationships. Statutory provisions which govern all environmentally sensitive habitat areas are laid out and specific development standards and criteria are explained for particular habitat areas (e.g., wetlands, estuaries, open coastal waters, lakes and streams).

Wetlands are not isolated, independently functioning systems, and they depend upon and are highly influenced by their surroundings. Therefore, the guideline includes standards for the review and evaluation of proposed projects adjacent to environmentally sensitive habitat areas.

The State Department of fish and Game is the authorized custodian of California's fish and wildlife resources and serves as the Commission's principal consultant on all matters related to these resources. This responsibility includes but is not limited to: determination of project impacts; adequacy of technical data; and identification of appropriate mitigation or restoration measures for affected habitat.

C. Use of the Guideline and Its Relationship to LCPs

This guideline is meant to assist the public and the Commissions in applying Coastal Act policies for wet environmentally sensitive habitat areas and is in no way meant to supersede those policies. The guideline should be viewed as a tool in reviewing coastal permit applications and LCPs for wetlands and adjacent areas as explained above.

The question of the relationship between interpretive guidelines and Local Coastal Programs (LCPs) has been hotly debated and underscores the importance of developing a comprehensive, consistent approach to these valuable coastal areas, but the LCPs (such as Humboldt County example discussed above) become the standard of review after certification. This guideline is a decision of the Commission, and therefore, it does serve as a tool or guide to local governments in preparing their LCPs as specified in Section 30625 (c) of the Act and in Section 00113 of the LCP Regulations.

II. WHAT ARE "ENVIRONMENTALLY SENSITIVE HABITAT AREAS"?

The Coastal Act defines "environmentally sensitive area" in Section 30107.5 as follows:

> "'Environmentally sensitive area' means 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."

The term "environmentally sensitive habitat area" is also used in Section 30240 of the Coastal Act. The two terms are synonymous.

The Commission generally considers wetlands, estuaries, streams, riparian habitats, lakes and portions of open coastal waters to be environmentally sensitive habitat areas because of the especially valuable role of these habitat areas in maintaining the natural ecological functioning of many coastal habitat areas and because these areas are easily degraded by human developments. In acting on an application for development one of these areas, the Commission considers all relevant information. The following specific policies apply to these habitat areas: Sections 30230; 30231; 30233; and 30236. Section 30240, a more general policy, also applies, but the more specific language in the former sections is controlling where conflicts exist with general provisions of Section 30240 (e.g., port facilities may be permitted in wetlands under Section 30233 even though they may not be resource dependent). This guideline addresses wet environmentally sensitive habitat areas only. The discussion in this section and in section VII is not intended to describe or include all environmentally sensitive habitat areas which may fall under Section 30240 of the Coastal Act.

As stated in the "INTRODUCTION," wetlands are not isolated, independently functioning systems. Rather, they depend upon and are highly influenced by their associated watersheds and upland transition areas. Therefore, when the Commission determines that any adjacent area is necessary to maintain the functional capacity of the wetland, the Commission will require that this area be protected against any significant disruption of habitat values consistent with Section 30240(a). These areas may be protected either by inclusion in a buffer area subject to land use restrictions or through provision of a buffer area around the ecological related adjacent area itself, or through other means. Section VII of this guideline discusses the use of buffers.

A. "Wetlands"

The Coastal Act defines "wetland" in Section 30121 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."

This is the definition upon which the Commission relies to identify "wetlands." The definition refers to lands "...which may be periodically or permanently covered with shallow water ..." However, due to highly variable environmental conditions along the length of the California coast, wetlands may include a variety of different types of habitat areas. For this reason, some wetlands may not be readily identifiable by simple means. In such cases, the Commission also will rely on the presence of hydrophytes and/or the presence of hydric soils as evidence that an area may be periodically or permanently covered with shallow water. These are useful indicators of wetland conditions, but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the Commission identifies wetlands under the Coastal Act. In the past, the Commission has considered all relevant information in making such determinations and relied upon the advice and judgement of experts before reaching its own independent conclusion as to whether a particular area will be considered wetland under the Coastal Act. The Commission intends to continue to follow this policy. The discussion in "APPENDIX D" provides more detail and further guidance on wetland identification.

B. "Estuaries"

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. The salinity may be periodically increased above the open ocean by evaporation. In general, the boundary between "wetland" and "estuary" is the line of extreme low water (see Appendix D for a more complete discussion of wetland/estuary boundaries).

C. "Streams" and "Rivers"

A "stream or a "river" is a natural watercourse as designated by a solid line or dash and three dots symbol shown on the United States Geological Survey map most recently published, or any well-defined channel with distinguishable bed and bank that shows evidence of having contained flowing water as indicated by scour or deposit of rock, sand, gravel, soil, or debris.

D. "Lakes"

A "lake" is a confined, perennial water body mapped by the United States Geologic Survey on the most current 7.5 minute quadrangle series.

E. "Open Coastal Waters" and "Coastal Waters"

The terms "open coastal waters" or "coastal waters" refer to the open ocean overlying the continental shelf and its associated coastline. Salinities exceed 30 parts per thousand with little or no dilution except opposite mouths of estuaries (see Appendix D).

Some portions of open coastal waters, generally areas without especially significant plant or animal life, may not be considered environmentally sensitive habitat areas. Environmentally sensitive habitat areas within open coastal waters may include "Areas of Special Biological Significance", as identified by the State Water Resources Control Board, habitats of rare or endangered plant and animal species, nearshore reefs, rocky intertidal areas (such as tidepools), and kelp beds.

F. "Riparian Habitats"

A "riparian habitat" is an area of riparian vegetation. This vegetation is an association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other bodies of fresh water (see Appendix D).

III. WHEN IS DEVELOPMENT PERMITTED IN AN ENVIRONMENTALLY SENSITIVE HABITAT AREA?

"Development" is defined in Section 30106 of the Coastal Act, and includes the placement of fill; construction or alteration of any structure or facility; discharge of any waste material; dredging or extraction of any materials; change in the density or intensity of use of land; removal or harvest of major vegetation except for agricultural purposes; and other alterations to the land and water in the coastal zone (see Appendix A).

A. Requirements For All Development Proposals in Environmentally Sensitive Habitat Areas

Under the Coastal Act, there are two basic steps in determining if development is permitted in an environmentally sensitive habitat area. First, the type of development proposed must be a permitted use under the applicable section of the Coastal Act. For example, any development proposed in a wetland must be specifically described in Section 30233(a) of the Act. The permitted developments allowed in each type of environmentally sensitve habitat area are discussed in subsequent sections. Additional permitted developments in environmentally sensitive habitat areas are projects which depend on the natural resources in that habitat area and therefore require a site in that particular type of environmentally sensitive habitat area in order to function.

Second, any permitted use must also meet all general requirements. For example, before development could be approved in a wetland, the Commission must find that there is no feasible, less environmentally damaging alternative, that feasible mitigation measures have been provided to minimize adverse environmental effects, and that the functional capacity of the wetland is maintained or enhanced. These requirements are discussed in subsequent sections.

B. Requirements for Additional Project Information.

To meet the statutory requirements of Sections 30230, 30231, 30233, 30236, and 30240 of the Coastal Act, an applicant for a permit to develop within or near an environmentally sensitive habitat area may be required to submit supplemental information, including any or all of the maps described below. The size of the study area will depend upon natural topographic features, location of existing development, and potential biological significance of adjacent lands. In undeveloped areas, the required study area may extend 500 feet or more around the environmentally sensitive habitat area, but the 500 foot distance is not an absolute standard. It is recommended that this information be developed before the application comes before the Commission, but the Commission may require additional information as a part of its permit process.

When there is a dispute over the adequacy of the information, the Commission will request the State Department of Fish and Game to review the material and submit written comments to the Commission. A qualified private professional acceptable to the applicant may be employed by the Commission to assist in this review or to provide additional information. The Commission may require the applicant to reimburse it for any reasonable expenses incurred in providing additional information or in the review of the applicant's information.

1. Maps

a. Topographic base map. The base map should be at a scale sufficiently large to permit clear and accurate depiction of vegetative associations and soil types in relation to any and all proposed development (normally the scale required will be 1"=200'). Contour intervals should be five feet, and the map should contain a north arrow, graphic bar scale, and a citation for the source of the base map (including the date). The map should show the following information:

1) Boundary lines of the applicant's property and adjacent property, including assessor's parcel numbers, as well as the boundaries of any tidelands, submerged lands or public trust lands.

2) Names and locations of adjacent or nearby roads, streets or highways, and other important geographic, topographic and physical features.

3) Location and elevation of any levees, dikes or flood control channels.

4) Location, size and invert elevation of any culverts or tide gates.

b. Inundation map. For nontidal wetlands, a map should be prepared indicating permanent or seasonal patterns of inundation (including sources) in a year of normal rainfall.

c. Vegetation map. Location and names of plant species (e.g., Salicornia virginica) and vegetation associations (e.g., saltmarsh). This map should be prepared by a qualified ecologist or botanist based upon the technical criteria provided in Appendix D.

c. Soils map. If no soil survey is available, a soils map should be prepared by a qualified soils scientist, and should show the location of soil types and include a physical description of their characteristics based upon the technical criteria provided in Appendix D.

2. Supplemental information

A report should be prepared which demonstrates that all of the criteria for development in environmentally sensitive habitat areas have been met. The report should investigate physical and biological features existing in the habitat area and evaluate the impact of the development on the existing ecosystem. The information should be prepared by an ecologist or professional environmental scientist with expertise in the ecosystem in which the development is proposed. For example, in preparing such a report for a proposed development in a salt marsh, the expertise of a qualified wetland ecologist, botanist, ornithologist, hydrologist, soil scientist or other technical professional may be required. The report should be based on an on-site investigation, in addition to a review of the existing information on the area, and should be sufficiently detailed to enable the Commission to determine potential immediate and long range impacts of the proposed project.

The report should describe and analyze the following:

a. Present extent of the habitat, and if available, maps, photographs or drawings showing historical extent of the habitat area.

b. Previous and existing ecological conditions.

1) The life history, ecology and habitat requirements of the relevant resources, such as plants, fish and wildlife, in sufficient detail to permit a biologist familiar with similar systems to infer functional relationships (the maps described in above may supply part of this information).

2) Restoration potentials.

c. Present and potential adverse physical and biological impacts on the ecosystem.

d. Alternatives to the proposed development, including different projects and off-site alternatives.

e. Mitigation measures, including restoration measures and proposed buffer areas (see pp. 14-17 and pp. 20-23).

f. If the project includes dredging, explain the following:

1) The purpose of the dredging.

2) The existing and proposed depths.

3) The volume (cubic yards) and area (acres or square feet) to be dredged.

4) Location of dredging (e.g., estuaries, open coastal waters or streams).

5) The location of proposed spoil disposal.

6) The grain size distribution of spoils.

7) The occurrence of any pollutants in the dredge spoils.

g. If the project includes filling, identify the type of fill material to be used, including pilings or other structures, and specify the proposed location for the placement of the fill, the quantity to be used and the surface area to be covered.

h. If the project includes diking, identify on a map the location, size (length, top and base width, depth and elevation of the proposed dike(s)) as well as the location, size and invert elevation of any existing or proposed culverts or tide gates.

i. If the project is adjacent to a wetland and may cause mud waves, a report shall be prepared by a qualified geotechnical engineer which explains ways to prevent or mitigate the problem.

j. Benchmark and survey data used to locate the project, the lines of highest tidal action, mean high tide, or other reference points applicable to the particular project.

k. Other governmental approvals required and obtained. Indicate the public notice number of Army Corps of Engineers permit if applicable.

Any maps or technical data submitted by the applicant will be subject to review by the State Department of Fish and Game, the State Lands Commission, or other applicable agencies who may submit comments to the Commission.

IV. DEVELOPMENTS PERMITTED IN WETLANDS AND ESTUARIES

Of all the environmentally sensitive habitat areas mentioned specifically in the Coastal Act, wetlands and estuaries are afforded the most stringent protection. In order to approve a project involving the diking, filling[1], or dredging of a wetland or estuary, the Commission must first find that the project is one of the specific, enumerated uses set forth in Section 30233 of the Act (these developments and activities are listed in section A. and B. below). The Commission must then find that the project meets all three requirements of Section 30233 of the Act (see pp. 14-17). In addition, permitted development in these areas must meet the requirements of other applicable provisions of the Coastal Act.

A. Developments and Activities Permitted in Wetlands and Estuaries

1. Port facilities.

2. Energy facilities.

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[1] The Coastal Act defines "fill" as ". . . earth or any other substances or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area" (Section 30108.2).

3. Coastal-dependent industrial facilities[2], such as commercial fishing facilities.

4. Maintenance of existing or restoration of previously dredged depths in navigation channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

5. Incidental public service purposes which temporarily impact the resources of the area, which include, but are not limited to, burying cables and pipes, inspection of piers, and maintenance of existing intake and outfall lines (roads do not qualify)[3].

6. Restoration projects.[4]

(continued on next page)

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[2] For the purposes of this guideline, a coastal-dependent industrial facility is one which requires a site on, or adjacent to, the sea to function. See also Sections 30260 through 30264.

[3] When no other alternative exists, and when consistent with the other provisions of this section, limited expansion of roadbeds and bridges necessary to maintain existing traffic capacity may be permitted. Activities described in the Commission's Guideline on Exclusions from Permit Requirements applicable to roads also should be consulted.

[4] Restoration projects allowable under Section 30233 are discussed in detail on pp. 13-14.

7. Nature study, aquaculture,[5] or similar resource-dependent activities[6]

8. In wetland areas, only entrance channels for new or expanded boating facilities[7] may be constructed, except that in a degraded wetland,[8] other boating facilities may be permitted according to the requirements of Section 30411 discussed on pp. 23-27.

9. New or expanded boating facilities in estuaries.[9]

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[5] Aquaculture is not defined in the Coastal Act. The definition contained in Public Resources Code, Division 1, Chapter 4, Section 828 will be used for the purposes of this guideline. ". . . 'aquaculture' means the culture and husbandry of aquatic organisms, including, but not limited to, fish, shellfish, mollusks, crustaceans, kelp and algae. Aquaculture shall not mean the culture and husbandry of commercially utilized inland crops, including, but not limited to, rice, watercress, and bean sprouts." Aquaculture activities could only be sited in a wetland or estuary if they depended upon the resources of the wetland or estuary to be able to function at all. Support facilities which could be located on upland sites (e.g., parking lots, buildings) would not be permitted in the wetland or estuary. This requirement is not intended to discourage aquaculture projects or to prohibit vertical access. The Coastal Act encourages aquaculture.

[6] For the purposes of this guideline, similar resource-dependent activities include scientific research, hunting and fishing (where otherwise permitted). In addition, when wetlands are seasonally farmed, the continued use of agriculture is allowed. Expanding farming operations into non-farmed wetlands by diking or otherwise altering the functional capacity of the wetland is not permitted. Farm-related structures (including barns, sheds, and farm-owner occupied housing) necessary for the continuance of the existing operation of the farmed wetlands may be located on an existing farmed wetland parcel, only if no alternative upland location is available for such purpose and the structures are sited and designed to minimize the adverse environmental effects on the farmed wetland. Clustering and other construction techniques to minimize both the land area covered by such structures and the amount of fill necessary to protect such structures will be required.

[7] Boating facilities include, but are not limited to, boat landings, boat launching ramps, and marinas.

[8] The term "degraded wetland" (emphasis added) is discussed on pp. 24-25.

[9] The list of developments permitted in wetlands and estuaries is the same except that new or expanded boating facilities are permitted in estuaries but are not permitted in wetlands.

B. Special Limitations on Development in Those Coastal Wetlands Identified by the Department of Fish and Game.

Pursuant to Section 30233(c) of the Act, the type and amount of development in the coastal wetlands identified by the Department of Fish and Game is even more limited than those developments set forth in section A. above.

Not all coastal wetlands are identified by the Department of Fish and Game; rather, only 19 are identified for acquisition purposes in their report, "Acquisition Priorities for the Coastal Wetlands of California." However, the Department of Fish and Game may identify additional coastal wetlands pursuant to Section 30233(c). If the Department elects to identify additional wetlands pursuant to Section 30233(c), the Commission recommends that the Department develop standards and procedures for doing so. Wetlands not identified by the Department of Fish and Game are still protected by the Coastal Act, because development in any wetland as defined in the Coastal Act (see section II. A., above) must meet the requirements of Section 30233 and other applicable sections of the Act. The coastal wetlands identified for acquisition purposes to date are as follows:

1. Lake Earl
2. Ten Mile River
3. Big River
4. Bodega Bay
5. Estero Americano
6. Estero de San Antonio
7. Pescadero Marsh
8. Elkhorn Slough
9. Morro Bay
10. Santa Maria River
11. Carpenteria Marsh
12. Upper Newport Bay
13. Agua Hedionda Lagoon
14. Batiquitos Lagoon
15. San Elijo Lagoon
16. San Dieguito Lagoon
17. Los Penasquitos Lagoon
18. South San Diego Bay
19. Tijuana River

Development permitted in the wetland portions of those areas named above is limited to the following:

1. Very minor incidental public facilities which temporarily impact the resources of the area, such as the inspection of piers, and the maintenance of existing intake and outfall lines (see footnote #3).

2. Wetland restoration.

3. Nature study.

4. Commercial fishing facilities in Bodega Bay (the meaning of this phrase is further defined in Section 30233(c)).

5. Development in already developed parts of south San Diego Bay.

C. Restoration Projects Permitted in Section 30233 — Section Rescinded 6/13/00

Restoration projects which are a permitted development in Section 30233 (a)(7) are publicly or privately financed projects in which restoration is the sole purpose of the project. The Commission found in its decision on the Chula Vista LCP that projects which provide mitigation for non- permitted development may not be broadly construed to be restoration projects in order to avoid the strict limitations of permitted uses in Section 30233.

Restoration projects may include some fill for non-permitted uses if the wetlands are small, extremely isolated and incapable of being restored. This limited exception to Section 30233 is based on the Commission's growing experience with wetlands restoration. Small extremely isolated wetland parcels that are incapable of being restored to biologically productive systems may be filled and developed for uses not ordinarily allowed only if such actions establish stable and logical boundaries between urban and wetland areas and if the applicant provides funds sufficient to accomplish an approved restoration program in the same general region. All the following criteria must be satisfied before this exception is granted:

1. The wetland to be filled is so small (e.g., less than 1 acre) and so isolated (i.e., not contiguous or adjacent to a larger wetland) that it is not capable of recovering and maintaining a high level of biological productivity without major restoration activities.

2. The wetland must not provide significant habitat value to wetland fish and wildlife species, and must not be used by any species which is rare or endangered. (For example, such a parcel would usually be completely surrounded by commercial, residential, or industrial development which are incompatible with the existence of the wetland as a significant habitat area).

3. Restoration of another wetland to mitigate for fill can most feasibly be achieved in conjunction with filling a small wetland.

4. Restoration of a parcel to mitigate for the fill (see pp. 14-17 for details about required mitigation) must occur at a site which is next to a larger, contiguous wetland area providing significant habitat value to fish and wildlife which would benefit from the addition of more area. In addition, such restoration must occur in the same general region (e.g., within the general area surrounding the same stream, lake or estuary where the fill occurred).

5. The Department of Fish and Game and the U.S. Fish and Wildlife Service have determined that the proposed restoration project can be successfully carried out.

Additional flexibility will be allowed for restoration projects located in wetlands which are degraded (as that term is used in Section 30411 of the Coastal Act). Section VIII discusses the requirements of such projects.

D. Requirements for All Permitted Development

Any proposed project which is a permitted development must also meet the three statutory requirements enumerated below, in the sequence shown:

1. Diking, filling or dredging of a wetland or estuary will only be permitted if there is no feasible[10] less environmentally damaging alternative (Section 30233(a)). The Commission may require the applicant to submit any or all of the information described in section III. B. above.

2. If there is no feasible less environmentally damaging alternative, feasible mitigation measures must be provided to minimize adverse environmental effects.

a. If the project involves dredging, mitigation measures must include at least the following (Section 30233(b)):

1) Dredging and spoils disposal must be planned and carried out to avoid significant disruption[11] to wetland habitats and to water circulation.

2) Limitations may be imposed on the timing of the operation, the type of operation, the quantity of dredged material removed, and the location of the spoil site.

3) Dredge spoils suitable for beach replenishment shall, where feasible, be transported to appropriate beaches or into suitable longshore current systems.

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10 "Feasible" is defined in Section 30108 of the Act to mean "... capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." A feasible less environmentally damaging alternative may involve a location for the proposed development which is off the project site on lands not owned by the applicant. Feasible under the Coastal Act is not confined to economic considerations. Environmental, social and technological factors also shall be considered in any determination of feasibility.

11 To avoid significant disruption to wetland habitats and to water circulation the functional capacity of a wetland or estuary must be maintained. Functional capacity is discussed on page 17.

4) Other mitigation measures may include opening up areas to tidal action, removing dikes, improving tidal flushing, or other restoration measures.

The Executive Director or the Commission may request the Department of Fish and Game to review dredging plans for developments in or adjacent to wetlands or estuaries. The Department may recommend measures to mitigate disruptions to habitats or to water circulation.

b. If the project involves diking or filling of a wetland, required minimum mitigation measures are the following:[12]

1) If an appropriate restoration site is available, the applicant shall submit a detailed restoration plan which includes provisions for purchase and restoration of an equivalent area of equal or greater biological productivity[13] and dedication of the land to a public agency or otherwise permanently restricts its use for open space purposes. The site shall be purchased before the dike or fill development may proceed.

2) The applicant may, in some cases, be permitted to open equivalent areas to tidal action[14] or provide other sources of surface water. This method of mitigation would be appropriate if the applicant already owned filled, diked areas which themselves were not environmentally sensitive habitat areas but would become so, if such areas were opened to tidal action or provided with other sources of surface water.

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[12] Mitigation measures shall not be required for temporary or short-term fill or diking, if and only if a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time. For the purposes of this guideline, short-term generally means that the fill or dikes would be removed immediately upon completion of the construction of the project necessitating the short-term fill or diking (Section 30607.1).

[13] For an area to be of "equal or greater biological productivity," it must provide equivalent or greater habitat values to the same type and variety of plant and animal species which use the area affected by the proposal.

[14] "Opening up equivalent areas to tidal action" means to permanently open to tidal action former intertidal wetlands capable of providing equal or greater biological productivity. Mitigation measures should restore areas which are no longer functioning in a manner beneficial to wetland species. For example, returning a diked-off, formerly saltwater, but presently freshwater marsh to tidal action would not constitute mitigation. However, improving tidal flushing by removing tide gates, digging tidal channels and clearing culverts might qualify, if the Commission determines that such actions would restore an area to equal or greater habitat value than the area lost.

3) However, if no appropriate restoration sites under options 1 and 2 are available, the applicant shall pay an in-lieu fee of sufficient value to an appropriate public agency for the purchase and restoration of an area of equivalent productive value, or equivalent surface area.

This third option would be allowed only if the applicant is unable to find a willing seller of a potential restoration site. The public agency may also face difficulties in acquiring appropriate sites even though it has the ability to condemn property. Thus, the in-lieu fee shall reflect the additional costs of acquisition, including litigation, as well as the cost of restoration. If the public agency's restoration project is not already approved by the Commission, the public agency may need to be a co-applicant for a coastal development permit to provide adequate assurance that conditions can be imposed to assure that the purchase of the mitigation site shall occur prior to issuance of the permit. In addition, such restoration must occur in the same general region (e.g., within the same stream, lake, or estuary where the fill occurred).

A preferred restoration program would remove fill from a formerly productive wetland or estuary which is now biologically unproductive dry land and would establish a tidal prism necessary to assure adequate flushing. Few if any restoration projects have been implemented for a sufficient length of time to provide much guidance as to the long-term restorability of such areas. Since such projects necessarily involve many uncertainties, restoration should preceed the diking or filling project. At a minumum, the permit will be conditioned to assure that restoration will occur simultaneously with project construction. Restoration and management plans shall be submitted with the permit application.

The restoration plan should generally state when restoration work will commence and terminate, should include detailed diagrams drawn to scale showing any alterations to natural landforms, and should include a list of plant species to be used as well as the method of plant introduction (i.e., seeding, natural succession, vegetative transplanting, etc.).

The management plan would constitute an agreement between the applicant and the Commission to guarantee the wetland is restored to the extent established under stated management objectives and within a specified time frame.

The plan should describe the applicant's responsibilities in maintaining the restored area to assure the Commission that the project will be successful. The management plan should generally include provisions for a monitoring program and for making any necessary repairs or modifications to the mitigation site.

The applicant should periodically submit reports on the project which give information on the following:

- distribution and type of vegetation established
- benthic invertebrate abundance
- bird useage and establishment of endangered species
- fish and other vertebrate abundance

3. Diking, filling or dredging of a wetland or estuary must maintain or enhance the funtional capacity of the wetland or estuary [Section 30233(c)]. Functional capacity means the ability of the wetland or estuary to be self-sustaining and to maintain natural species diversity[15]. In order to establish that the functional capacity is being maintained, the applicant must demonstrate all of the following:

a. That the project does not alter presently occurring plant and animal populations in the ecosystem in a manner that would impair the long-term stability of the ecosystem; i.e., natural species diversity, abundance and composition are essentially unchanged as a result of the project.

b. That the project does not harm or destroy a species or habitat that is rare or endangered.

c. That the project does not harm a species or habitat that is essential to the natural biological functioning of the wetland or estuary.

d. That the project does not significantly reduce consumptive (e.g., fishing, aquaculture and hunting) or nonconsumptive (e.g., water quality and research opportunity) values of the wetland or estuarine ecosystem.

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[15] The intention here is to convey the importance of not only how many species there are but also the size of their populations (abundance) and the relative importance of the different species to the whole system (composition). It cannot be overemphasized that the presence of a species by itself is an inadequate indicator of the condition of a natural system. In a "healthy" wetland ecosystem, the absolute number of individuals of a species and the relative number compared to other species will depend on the size of the organism and its place in the food web (what it feeds on, what feeds on it, and what competes with it for the same food or other resources). Major changes in absolute or relative numbers of some species will have far-reaching consequences for the whole ecosystem because of their interactions with other species.

E. Provisions Applicable to Proposed Development in Wetlands and Estuaries Within Port Jurisdictions

Development within those portions of the Ports of Hueneme, Long Beach, Los Angeles, and San Diego Unified Port District lying within the coastal zone is generally governed by the provisions contained in Chapter 8 of the Coastal Act. However, wetlands and estuaries which have been identified on the Commission's Port Jurisdiction Maps (adopted by the Commission on April 6, 1977 pursuant to Section 30710) are not governed by the provisions of Chapter 8, but instead are subject to Chapter 3 policies of the Coastal Act as described above in this section (Section 30700).

Chapter 8 treats all other "water areas" (term used in this Chapter only) without regard to whether such areas may be considered "wetland," "estuary" or "open coastal waters" as described in this guideline.

The diking, filling or dredging of any water area within one of these ports is limited by the following sections of the Coastal Act: 30705, 30706 and 30708 (these sections are provided in full in Appendix A). The diking, filling or dredging of any wetlands or estuaries lying within any port or harbor district or authority not named in Chapter 8 (e.g., Humboldt Bay Harbor, Recreation and Conservation District and Moss Landing Harbor District) is subject to Chapter 3 policies of the Coastal Act as described above in this section.

V. DEVELOPMENTS PERMITTED IN OPEN COASTAL WATERS AND LAKES

Section 30233 lists the types of developments for which diking, filling or dredging may be permitted in open coastal waters and lakes. This Section also states requirements for determining when those developments are permitted. The types of development identified below are the only ones that are permitted in open coastal waters and lakes, and may only be permitted if consistent with the development requirements for these habitat areas.

A. Developments and Activities Permitted in Open Coastal Waters and Lakes

1. All developments allowed in wetlands and estuaries described as Items 1-7 (section IV. A).

2. New or expanded boating facilities.

3. In portions of open coastal waters that are not environmentally sensitive habitat areas,[16] sand or gravel may be extracted.

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[16] It shall be the responsibility of the permit applicant to provide evidence that the area is not an environmentally sensitive habitat area. The Executive Director or the Commission will usually require an applicant for a permit to extract minerals from open coastal waters to submit supplemental information.

B. Requirements for All Permitted Developments

Any proposed project which first is a permitted development as listed above must also meet the two statutory requirements enumerated below in the sequence shown.

1. Diking, filling or dredging of open coastal waters or lakes will only be permitted if there is no feasible less environmentally damaging alternative (Section 30233(a)).

2. If there is no feasible less environmentally damaging alternative, feasible mitigation measures must be provided to minimize adverse environmental effects (Section 30233(a)).

VI. DEVELOPMENTS PERMITTED IN STREAMS AND RIVERS

Sections 30236 and 30233 of the Coastal Act list all permitted developments in streams and rivers, including dams, channelizations, or other substantial alterations[17].

A. Permitted Developments in Streams and Rivers

1. Necessary water supply projects.

2. Flood control projects.

3. Developments where the primary function is the improvement of fish and wildlife habitat.

4. New or expanded boating facilities.

B. Requirements for All Development

Any proposed project which is a permitted development must also meet the following statutory requirements:

1. All channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible to minimize adverse environmental effects.

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[17] Substantial alterations shall include channelizations, dams, or comparable projects which significantly disrupt the habitat value of a particular river or stream. A development which does not significantly disrupt the habitat value of a particular river or stream is one which maintains or enhances the functional capacity of that river or stream. Roads and bridges necessary to cross streams and rivers may be permitted if there is no feasible less environmentally damaging alternative and if feasible mitigation measures have been provided to minimize adverse environmental effects.

2. Flood control projects shall be subject to both of the following conditions (Section 30236):

a. The project must be necessary for public safety or to protect existing development.

b. There must be no other feasible method for protecting existing structures in the floodplain.

3. Boating facilities constructed in streams are subject to the same requirements as boating facilities constructed elsewhere.

VII. STANDARDS FOR SITING DEVELOPMENT ADJACENT TO ENVIRONMENTALLY SENSITIVE HABITAT AREAS

The general policies for development adjacent[18] to environmentally sensitive habitat areas appear in Section 30240(b) of the Coastal Act:

> "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." (emphasis added)

A. Criteria for Reviewing Proposed Development Adjacent to Environmentally Sensitive Habitat Areas

As with development located in environmentally sensitive habitat areas, the key standard for evaluating development adjacent to such areas is the extent to which the proposed development maintains the functional capacity of such areas (the standards to evaluate whether the functional capacity is being maintained are located on page 17). A development which does not significantly degrade an environmentally sensitive habitat area will maintain the functional capacity of that area. The type of proposed development, the particulars of its design, location in relation to the habitat area, and other relevant factors all affect the determination of functional capacity.

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18 Adjacent means situated near or next to, adjoining, abutting or juxtaposed to an environmentally sensitive habitat area. This will usually mean that any development proposed in an undeveloped area within a distance of up to 500 feet from an environmentally sensitive habitat area will be considered to be adjacent to that habitat area. In developed areas factors such as the nature, location and extent of existing development will be taken into consideration.

Accordingly, the Commission may set limits and conditions to development adjacent to environmentally sensitive habitat areas based upon any or all of the following sections of the Coastal Act: 30230; 30231; 30233; 30236; and 30240. The Commission has required the following types of mitigation measures: setbacks; buffer strips; noise barriers; landscape plans; pervious surfacing with drainage control measures to direct storm run-off away from environmentally sensitive habitat areas; buffer areas in permanent open space; land dedication for erosion control; and wetland restoration, including off-site drainage improvements. This section only discusses the requiements for establishing the width of buffer areas. It does not discuss any other measures as noted above which may also be necessary and more appropriate to ensure that the development is compatible with the continuance of the habitat area.

B. Criteria for Establishing Buffer Areas

A buffer area provides essential open space between the development and the environmentally sensitive habitat area. The existance of this open space ensures that the type and scale of development proposed will not significantly degrade the habitat area (as required by Section 30240). Therefore, development allowed in a buffer area is limited to access paths, fences necessary to protect the habitat area, and similar uses which have either beneficial effects or at least no significant adverse effects on the environmentally sensitive habitat area. A buffer area is not itself a part of the environmentaly sensitive habitat area, but a "buffer" or "screen" that protects the habitat area from adverse environmental impacts caused by the development.

A buffer area should be established for each development adjacent to environmentally sensitive habitat areas based on the standards enumerated below. The width of a buffer area will vary depending upon the analysis. The buffer area should be a minimum of 100 feet for small projects on existing lots (such as one single family home or one commercial office building) unless the applicant can demonstrate that 100 feet is unnecessary to protect the resources of the habitat area. If the project involves substantial improvements or increased human impacts, such as a subdivision, a much wider buffer area should be required. For this reason the guideline does not recommend a uniform width. The appropriate width will vary with the analysis based upon the standards.

For a wetland, the buffer area should be measured from the landward edge of the wetland (Appendix D). For a stream or river, the buffer area should be measured landward from the landward edge of riparian vegetation or from the top edge of the bank (e.g., in channalized streams). Maps and supplemental information may be required to determine these boundaries. Standards for determining the appropriate width of the buffer area are as follows:

1. Biological significance of adjacent lands. Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. That is, functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance would depend upon the habitat requirements of the species in the habitat area (e.g., nesting,

feeding, breeding or resting). This determination requires the expertise of an ecologist, wildlife biologist, ornithologist or botanist who is familiar with the particular type of habitat involved. Where a significant functional relationship exists, the land supporting this relationship should also be considered to be part of the environmentally sensitive habitat area, and the buffer area should be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer should be extended from the edge of the wetland, stream or riparian habitat (for example) which is adjacent to the proposed development (as opposed to the adjacent area which is significantly related ecologically).

2. Sensitivity of species to disturbance. The width of the buffer area should be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permittted development. Such a determination should be based on the following:

a. Nesting, feeding, breeding, resting or other habitat requirements of both resident and migratory fish and wildlife species.

b. An assessment of the short-term and long-term adaptibility of various species to human disturbance.

3. Susceptibility of parcel to erosion. The width of the buffer area should be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what degree the development will change the potential for erosion. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.

4. Use of natural topographic features to locate development. Hills and bluffs adjacent to environmentally sensitive habitat areas should be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from environmentally sensitive habitat areas. Similarly, bluff faces should not be developed, but should be included in the buffer area.

5. Use of existing cultural features to locate buffer zones. Cultural features, (e.g., roads and dikes) should be used, where feasible, to buffer habitat areas. Where feasible, development should be located on the side of roads, dikes, irrigation canals, flood control channels, etc., away from the environmentally sensitive habitat area.

6. Lot configuration and location of existing development. Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance will be required as a buffer area for any new development permitted. However, if that distance is less than 100 feet, additional mitigation measures (e.g., planting of native vegetation which grows locally) should be provided to ensure additional protection. Where development is proposed in an area which is largely undeveloped, the widest and most protective buffer area feasible should be required.

7. Type and scale of development proposed. The type and scale of the proposed development will, to a large degree, determine the size of the buffer area necessary to protect the environmentally sensitive habitat area. For example, due to domestic pets, human use and vandalism, residential developments may not be as compatible as light industrial developments adjacent to wetlands, and may therefore require wider buffer areas. However, such evaluations should be made on a case-by-case basis depending upon the resources involved, and the type and density of development on adjacent lands.

~~VIII. RESTORATION AND MAINTENANCE OF WETLAND HABITAT AREAS~~ — Section Rescinded 6/13/00

Originally there were approximately 300,000 acres of coastal wetlands in California; now there are about 79,000 acres (excluding San Francisco Bay). In addition to those acres lost, many wetlands have been severely altered through filling and/or sedimentation. The Coastal Commission encourages public agencies and landowners to work towards restoration and enhancement of these altered wetlands.

Restoration of habitat areas is strongly encouraged in the Coastal Act. The Legislature found that the protection, maintenance, and, where feasible, enhancement and restoration of natural resources is a basic goal of the Act (Section 30001.5). Section 30230 requires that marine resources be maintained, enhanced, and restored where feasible; that special protection be given to areas and species of special biological or economic significance; and that uses of the marine environment be carried out in a manner that will sustain the biological productivity[19] of coastal waters and will maintain "healthy populations"[20] of all species of marine organisms. Section 30231 requires that the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain "optimum populations"[21] of marine organisms

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[19] In general, biological productivity means the amount of organic material produced per unit time. For the purposes of this guideline, the concept of biological productivity also includes the degree to which a particular habitat area is being used by fish and wildlife species. Thus, an area supporting more species of fish and wildlife would be considered more productive than an area supporting fewer species, all other factors (e.g., the amount of vegetative cover, the presence or absence of endangered species, etc.) being equal.

[20&21] These phrases refer generally to the maintenance of natural species diversity, abundance, and compositon.

be maintained and where feasible restored, through, among other means, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section IV C previously discussed "restoration purposes," a permitted use in Section 30233(a)(7). Projects which qualify for consideration as a "restoration purpose" will be solely restoration projects, including only those permitted uses listed in Section 30233(a). Such projects may be carried out on wetlands which have not been determined to be degraded by the Department of Fish and Game. It is anticipated that public or private agencies performing restoration of wetland habitat areas by restoring tidal action, removing fill, establishing appropriate contours, and performing other similar activities will be permitted under Section 30233.

This section discusses a second alternative approach to wetland restoration, applicable only to wetlands formally determined by the Department of Fish and Game to be degraded and in need of major restoration activities, according to the procedures and requirements of Section 30411. By including Section 30411 in the Coastal Act, the Legislature provided the Commission and the Department with a means to encourage landowners and public agencies to develop restoration projects which can be implemented with public or pricate funds. Restoration projects under this approach may include uses that are not permitted in Section 30233 if the project meets all of the other requirements of Section 30233 and 30411.

The Commission has closely examined the relationship of the two alternative approaches to restoration. The Coastal Act expressly distinguishes degraded from non-degraded wetlands. The importance of the distinction is related to the flexibility in consideration of permitted uses. Thus, Section 30233 allows the Commission to consider seven enumerated permitted uses in all wetlands without the mandatory involvement of the Department of Fish and Game. Section 30233 expressly allows only one additional use, a boating facility, in wetlands which the Department has determined to be degraded and in need of major restoration. In making this determination, the Department must consider all "feasible ways" other than a boating facility to accomplish restoration of degraded wetlands. The Commission interprets the boating facilities reference in Section 30233(a)(3) to include the "other feasible ways" of restoration which the Department must consider in Section 30411(b)(3). The remainder of this Section addresses the requirements of Section 30411.

A. Identification of Degraded Wetlands

The Department of Fish and Game must identify degraded wetlands. Generally, coastal wetlands are considered degraded if they were formerly tidal but their present resource value has been greatly impaired because they are presently diked or otherwise modified and, as a result, tidal influence has ceased or is greatly diminished. The Department has not yet transmitted to the Commission its criteria or procedures for identifying degraded wetlands, but the Commission considers the following factors relevant to determining whether or not a particular wetland is degraded.

1. Amount and elevation of filled areas.

2. Number and location of dikes and other artificial impediments to tidal action and freshwater flow and the ease of removing them to allow tidal action to resume.

3. Degree of topographic alterations to the wetland and associated areas.

4. Water quality.

5. Substrate quality.

6. Degree of encroachment from adjacent urban land uses.

7. Comparison of historical environmental conditions with current conditions, including changes in both the physical and biological environment.

8. Consideration of current altered wetland conditions and their current contribution to coastal wetland wildlife resources with relation to potential restoration measures.

9. Chemical cycling capabilities of the wetland including water quality enhancement, nutrient accumulation, nutrient recycling, etc.

As part of this identification process, the extent of wetlands on the site must be identified with precision.

B. Requirements Applicable to All Restoration Projects

Under the Act, the Department of Fish and Game, in consultation with the Commission and the Department of Boating and Waterways, is responsible for identifying those degraded wetlands which can most feasibly be restored in (a). If the Department undertakes a study, it shall include facts supporting the following determinations:

(1) The wetland is so severely degraded and its natural processes are so substantially impaired that it is not capable of recovering and maintaining a high level of biological productivity without major restoration activities.

(2) Restoration of the wetlands' natural values, including its biological productivity and wildlife habitat features, can most feasibly achieved and maintained in conjunction with a boating facility.

(3) There are no other feasible ways[22] besides a boating facility to restore the wetland.

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[22] "Other feasible ways" includes only less environmentally damaging alternative restoration projects; but may include uses not permitted in Section 30233(a)(3) according to priorities discussed herein.

C. Requirements applicable to Restoration of Degraded Wetlands in Conjunction with boating Facilities

Section 30411 explicitly provides for the construction of boating facilities when this is the most feasible and least environmentally damaging means to restore a particular degraded wetland. Recognition of boating facilities as a use in Section 30411 is consistent with the Coastal Act's emphasis on promoting recreational use of the shoreline (see Section 30224). The specific requirements for boating facilities are discussed in overlapping portions of Sections 30233 and 30411 as follows:

1. At least 75% of the degraded wetland area should be restored and maintained as a highly productive wetland in conjunction with the boating facilities project (Section 30411(b)(2)).

2. The size of the wetland area used for the boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, cannot be greater than 25 percent of the total area to be restored (Section 30233(a)(3)).

D. Requirements Applicable to Restoration of Degraded Wetlands Using Projects Other Than Boating Facilities

Section 30411 does not explicitly identify the other types of restoration projects. However, such projects are encouraged if they promote the restoration of degraded areas and if boating facilities are not feasible. An example would include flood control projects undertaken by a public agency. Such projects may be permitted under Section 30411 if they restore channel depths, are designed to enhance the functional capacity of the wetland area, and are the least environmentally damaging alternative to achieve restoration.

Boating facilities may be compatible with a wetland ecologically if they provide increased tidal flushing and deep-water habitat, but nonetheless it may not be physically or economically feasible to locate such facilities in a particular wetland. On the other hand, boating facilities may be feasible, but may be more environmentally damaging than other feasible means. For example, they may displace scarce intertidal habitats, introduce toxic substances, or damage natural estuarine channels by causing excessive scouring due to increased current velocities.

According to Section 30411, at least 75 percent of a degraded wetland area must be restored in conjunction with a boating facility, and Section 30233 requires that a boating facility cannot exceed 25 percent of the wetland area to be restored. However, this may still result in the net loss of 20 percent of the wetland area. The Coastal Act allows this tradeoff because additional boating facilities in the coastal zone are a preferred coastal recreation use and the Coastal Act explicitly provides for this type of wetland restoration project. Projects permitted under Section 30411 other than boating facilities should result in no net loss of the acreage of wetland habitat located on the site as a minimum. However, projects which result in a net increase in wetland habitat areas are greatly preferred in light of Coastal Act policies on wetland restoration and Senate Concurrent Resolution 29 which calls for an increase in wetlands by 50% over the next 20 years. For example, it has been the

Commission's experience in reviewing vegetation and soils information available for degraded wetlands in Southern California that sometimes wetland and upland sites are intermixed on a parcel. Since Section 30411 discusses percentage of wetland area as the standard of review for required restoration, the Commission will consider restoration plans which consolidate the upland and wetland portions on a site in order to restore a wetland area the same size or larger as the total number of acres of degraded wetland existing on the site.

The first priority for restoration projects is restoration as permitted under Section 30233(a)(7). Other preferred options include restoration in conjunction with visitor serving commercial recreational facilities designed to increase public opportunities for coastal recreation. Thus, the priority for projects used to restore degraded wetlands under the Coastal Act in a list are as follows:

1. "Restoration purposes" under 30233(a)(7).

2. Boating facilities, if they meet all of the tests of section C. (above).

3. Visitor serving commercial recreational facilities and other priority uses designed to enhance public opportunities for coastal recreation.

4. Private residential, general industrial, or general commercial development.

The Coastal Act does not require the Department of Fish and Game to undertake studies which would set the process described in this section in motion. Likewise, the Commission has the independent authority and obligation under Section 30233 to approve, condition or deny projects which the Department may have recommended as appropriate under the requirements of Section 30411. This section is, however, included to describe, clarify, and encourage, public and private agencies to formulate innovative restoration projects to accomplish the legislative goals and objectives described earlier.

Adopted February 4, 1981

APPENDIX D. TECHNICAL CRITERIA FOR IDENTIFYING AND MAPPING WETLANDS AND OTHER WET ENVIRONMENTALLY SENSITIVE HABITAT AREAS

The purpose of this discussion is to provide guidance in the practical application of the definition of "wetland" contained in the Coastal Act. The Coastal Act definition of "wetland" is set forth in Section 30121 of the Act which states:

> SEC. 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 is the definition upon which the Commission relies to identify "wetlands." The definition refers to lands ". . . which may be periodically or permanently covered with shallow water . . . ." However, due to highly variable environmental conditions along the length of the California coast, wetlands may include a variety of different types of habitat areas. For this reason, some wetlands may not be readily identifiable by simple means. In such cases, the Commission will also rely on the presence of hydrophytes and/or the presence of hydric soils. The rationale for this in general is that wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. For this reason, the single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water, and this is the feature used to describe wetlands in the Coastal Act. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil, and therefore only plants adapted to these wet conditions (hydrophytes) could thrive in these wet (hydric) soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria. In some cases, proper identification of wetlands will require the skills of a qualified professional.

The United States Fish and Wildlife Service has officially adopted a wetland classification system* which defines and classifies wetland habitats in these terms. Contained in the classification system are specific biological criteria for identifying wetlands and establishing their upland limits. Since the wetland definition used in the classification system is based upon a feature identical to that contained in the Coastal Act definitions, i.e., soil or substrate that is at least periodically saturated or covered by water, the Commission will use the

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* "Classification of Wetlands and Deep-Water Habitats of the United States." By Lewis M. Cowardin, et al, United States Department of the Interior, Fish and Wildlife Service, December 1979.

classification system as a guide in wetland identification. Applying the same set of biological criteria consistently should help avoid confusion and assure certainty in the regulatory process. This appendix discusses the adapation of this classification system to the Coastal Act definition of "wetland" and other terms used in the Act, and will form the basis of the Commission's review of proposals to dike, fill or dredge wetlands, estuaries or other wet habitat areas.

I. U.S. Fish and Wildlife Classification System: Upland/Wetland/Deep-water Habitat Distinction

The United States Fish and Wildlife Service classification is hierarchical, progressing from systems and subsystems, at the most general levels, to classes, subclasses, and dominance types. The term "system" refers here to a complex of wetland and deep-water habitats that share the influence of one or more dominant hydrologic, geomorphologic, chemical, or biological factors.

The Service provides general definitions of wetland and deep-water habitat and designates the boundary between wetland and deep-water habitat and the upland limit of a wetland. The following are the Services' definitions of wetland and deep-water habitats:

A. Wetlands

> "Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.
>
> Wetlands as defined here include lands that are identified under other categories in some land-use classifications. For example, wetlands and farmlands are not necessarily exclusive. Many areas that we define as wetlands are farmed during dry periods, but if they are not tilled or planted to crops, a practice that destroys the natural vegetation, they will support hydrophytes.*

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* For the purposes of identifying wetlands using the technical criteria contained in this guideline, one limited exception will be made. That is, drainage ditches as defined herein will not be considered wetlands under the Coastal Act. A drainage ditch shall be defined as a narrow (usually less than 5-feet wide), manmade nontidal ditch excavated from dry land.

> Drained hydric soils that are now incapable of supporting hydrophytes because of a change in water regime are not considered wetlands by our definition. These drained hydric soils furnish a valuable record of historic wetlands, as well as an indication of areas that may be suitable for restoration.
>
> The upland limit of wetland is designated as (1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; (2) the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or (3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not."

Wetlands should be identifed and mapped only after a site survey by a qualified botanist, ecologist, or a soil scientist (See section III. B. of the guideline for a list of required information)*.

B. Deepwater Habitats

> "Deepwater habitats are permanently flooded lands lying below the deepwater boundary of wetlands. Deepwater habitats include environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live, whether or not they are attached to the substrate. As in wetlands, the dominant plants are hydrophytes; however, the substrates are considered nonsoil because the water is too deep to support emergent vegetation (U. S. Soil Conservation Service, Soil Survey Staff 1975)."

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* Further details regarding the standards and criteria for mapping wetlands using the Service's classification system may be found in the following, "Mapping Conventions of the National Wetland Inventory," (undated), published by the U.S.F.W.S. The document may be obtained from the U.S.F.W.S., Regional Wetland Coordinator, Region 1, Portland, Oregon.

"The boundary between wetland and deep-water habitat in the Marine and Estuarine Systems (i.e., areas subject to tidal influence) coincides with the elevation of the extreme low-water of spring tide (ELWS); permanently flooded areas are considered deep-water habitats in these systems. The boundary between wetland and deep-water habitat in the Riverine, Lacustrine and Palustrine Systems lies at a depth of 2m (6.6 ft.) below low-water; however, if emergents, shrubs or trees grow beyond this depth at any time, their deep-water edge is the boundary."

II. Wetland/Estuary/Open Coastal Water Distinction

For the purposes of mapping "wetlands" under the Coastal Act's definition of wetlands, and of mapping the other wet environmentally sensitive habitat areas referred to in the Act, including "estuaries," "streams," "riparian habitats," "lakes" and "open coastal water," certain adapations of this classification system will be made. The following is a discussion of these adaptations.

"Wetland," as defined in Section 30121 of the Coastal Act, refers to land covered by "shallow water," and the examples given in this section include fresh, salt and brackish water marshes, mudflats and fens. A distinction between "wetland" and the other habitat areas in the Act, for example, "estuary," must be made ecause the Act's policies apply differently to these areas, and because the Act does not define some of these terms (such as "estuary"). A reasonable distinction can be made between "wetland" and "estuary" on the basis of an interpretation of the phrase "shallow water." Using the service's classification system, "shallow water" would be water that is above the boundary of deep-water habitat, which would be the line of extreme low-water of spring tide* for areas subject to tidal influence and 2 meters for non-tidal areas. Therefore, wetland begins at extreme low-water of spring tide and "estuary" or "open coastal water" is anything deeper. The Coastal Act definition of "wetlands" would include the wetland areas of Estuarine, Palustrine, and Lacustrine ecological systems defined by the Fish and Wildlife classification system.

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* While the Service's classification system uses "extreme low-water of spring tide" as the datum to distinguish between "shallow-water" and "deep-water habitat," such datum is not readily available for the California coast. Therefore, the lowest historic tide recorded on the nearest available tidal bench mark established by the U. S. National Ocean Survey should be used as the datum.

Data for such bench marks are published separately for each station in loose-leaf form by the National Ocean Survey, Tideland Water Levels, Datum and Information Branch, (C23), Riverdale, MD 20840. These compilations include the description of all bench marks at each tide station (for ready identification on e ground), and their elevations above the basic hydrographic or chart datum for the area, which is mean lower low-water on the Pacific coast. The date and length of the tidal series on which the bench-mark elevations are based are also given.

For the purposes of the Coastal Act, an "estuary" is a coastal water body usually semi-enclosed by land, but which has open, partially obstructed, or intermittent exchange with the open ocean and in which ocean water is at least occassionally diluted by fresh water runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation.

"Open coastal water" or "coastal water" as used in the Act refers to the open ocean overlying the continental shelf and its associated coastline with extensive wave action. Salinities exceed 30 parts per thousand with little or no dilution except opposite mouths of estuaries.

III. Wetland/Riparian Area Distinction

For the purpose of interpreting Coastal Act policies, another important distinction is between "wetland" and "riparian habitat." While the Service's classification system includes riparian areas as a kind of wetland, the intent of the Coastal Act was to distinguish these two areas. "Riparian habitat" in the Coastal Act refers to riparian vegetation and the animal species that require or utilize these plants. The geographic extent of a riparian habitat would be the extent of the riparian vegetation. As used in the Coastal Act, "riparian habitat" would include the "wetland" areas associated with Palustrine ecological systems as defined by the Fish and Wildlife Service classication system.

Unfortunately, a complete and universally acceptable definition of riparian vegetation has not yet been developed, so determining the geographic extent of such vegetation is rather difficult. The special case of determining consistent boundaries of riparian vegetation along watercourses throughout California is particularly difficult. In Southern California these boundaries are usually obvious; the riparian vegetation grows immediately adjacent to watercourses and only extends a short distance away from the watercourse. In Northern California, however, the boundaries are much less distinct; vegetation that occurs alongside a stream may also be found on hillsides and far away from a watercourse.

For the purposes of this guideline, riparian vegetation is defined as that association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other freshwater bodies. Riparian plant species and wetland plant species either require or tolerate a higher level of soil moisture than dryer upland vegetation, and are therefore generally considered hydrophytic. However, riparian vegetation may be distinguished from wetland vegetation by the different kinds of plant species. At the end of this appendix, lists are provided of some wetland hydrophytes and riparian hydrophytes. These lists are partial, but give a general indication of the representative plant species in these habitat areas and should be sufficient to generally distinguish between the two types of plant communities.

The upland limit of a riparian habitat, as with the upland limit of vegetated wetlands, is determined by the extent of vegetative cover. The upland limit of riparian habitat is where riparian hydrophytes are no longer predominant.

As with wetlands, riparian habitats should be identified and mapped only after a site survey by a qualified botanist, freshwater ecologist, or soil scientist.* (See pp. 6-9 of the guideline for a list of information which may be required of the applicant).

IV. Vernal Pools

Senate Bill No. 1699 (Wilson) was approved by the Governor on September 13, 1980 and the Bill added Section 30607.5 to the Public Resources Code to read:

> 30607.5. Within the City of San Diego, the commission shall not impose or adopt any requirements in conflict with the provisions of the plan for the protection of vernal pools approved and adopted by the City of San Diego on June 17, 1980, following consultation with state and federal agencies, and approved and adopted by the United States Army Corps of Engineers in coordination with the United States Fish and Wildlife Service.

The Commission shall adhere to Section 30607.5 of the Public Resources Code in all permit and planning matters involving vernal pools within the City of San Diego.

All vernal pools located within the city of San Diego in the coastal zone are depicted on a map attached as Exhibit 1 to a letter from Commission staff to Mr. James Gleason, City of San Diego (4/29/80). While "vernal pool" is a poorly defined regional term, all information available to the Commission suggests that all vernal pools in the coastal zone are located in the City of San Diego. It is important to point out, however, that vernal pools are distinct from vernal ponds and vernal lakes, which exist in other parts of the coastal zone (e.g. Oso Flaco Lakes in San Luis Obispo County). The Commission generally considers these habitat areas to be wetlands for the purposes of the Coastal Act, and therefore all applicable sections of the Coastal Act will be applied to these areas.

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* Identification of riparian habitat areas in Northern California presents peculiar difficulties. While in Southern California riparian vetetation generally occurs in a narrow band along streams and rivers, along the major rivers in Northern California it may be found in broad floodplains, abandoned river channels and the bottoms adjacent to the channels. In forested areas, the overstory of riparian vegetation may remain similar to the adjacent forest but the understory may contain a variety of plant species adapted to moist or wet substrates. For example, salmonberry, bayberry, willow, twinberry and lady fern, may all be more common in the understory of riparian habitat areas than in other types of forest habitat areas.

V. Representative Plant Species in Wetlands and Riparian Habitat Areas

This is a list of "representative" species that can be expected to be found in the various habitat areas indicated. Not all of them will be found in all areas of the State, and there are numerous others that could be included. However, this list should suffice to generally distinguish between these types of plant communities.

A. Salt Marsh

Pickleweed (Salicornia virginica)
Glasswort (S. subterminalis)
Saltgrass (Distichlis spicata)
Cordgrass (Spartina foliosa)
Jaumea (Jaumea carnosa)
Saltwort (Batis maritima)
Alkali heath (Frankenia grandifolia)
Salt cedar (Monanthochloe littoralis)
Arrow grass (Triglochin maritimum)
Sea-blite (Suaeda californica var pubescens)
Marsh rosemary (Limonium californicum var mexicanum)
Gum plant (Grindelia stricta)
Salt Marsh fleabane (Pluchea purpurescens)

B. Freshwater Marsh

Cattails (Typha spp.)
Bulrushes (Scirpus spp.)
Sedges (Carex spp.)
Rushes (Juncus spp.)
Spikerush (Heleochais palustris)
Pondweeds (Potamogeton spp.)
Smartweeds (Polygonum s .)
Water lilies (Nuphar spp.)
Buttercup (Ranunculus aquatilis)
Water-cress (Nasturtium officinale)
Bur-reed (Sparganium eurycarpum)
Water parsley (Venanthe sarmentosa)
Naiads (Na .)

C. Brackish Marsh

Alkali bulrush (Scirpus robustus)
Rush (Juncus balticus)
Brass buttons (Cotula coronopifolia)
Fat-hen (Atriplex patula var hastata)
Olney's bulrush (Scirpus olneyi)
Common tule (Scirpus acutus)
Common reed (Phragmites communis)

D. Riparian

Willows (Salix spp.)
Cottonwoods (Populus spp.)
Red alder (Alnus rubra)
Box elder (Acer negundo)
Sycamore (Platanus racemosa)
Blackberry (Rubus vitifolia)
So. Black walnut (Juglans californica) (So. Calif.)
California Bay (Umbelularia californicum) (So. Calif.)
Bracken fern (Pteris aquilinum) (Cen. Calif.)
Current (Ribes spp.)
Twinberry (Lonicera involucrata) (No. Calif.)
Lady fern (Athyrium felix-femina)
Salmonberry (No. Calif.)
Bayberry (No. Calif.)

E. Vernal Pools

Downingia (Downingia sp.)
Meadow-foxtail (Alopecurus howellii)
Hair Grass (Deschampsia danthonioides)
Quillwort (Isoetes sp.)
Meadow-foam (Limnanthes sp.)
Pogogyne (Pogogyne sp.)
Flowering Quillwort (Lilaea scilloides)
Cryptantha (Cryptantha sp.)
Loosestrife (Lythrum hyssopifolium)
Skunkweed (Navarretia sp.)
Button-celery (Eryngium sp.)
Orcutt-grass (Orcuttia sp.)
Water-starwort (Callitriche sp.)
Waterwort (Elatine sp.)
Woolly-heads (Psilocarpus sp.)
Brodiaea (Brodiaea sp.)
Tillaea (Crassula aquatica)

APPENDIX E. GLOSSARY OF TERMS

Aquaculture

". . . 'aquaculture' means the culture and husbandry of aquatic organisms, including, but not limited to: fish, shellfish, mollusks, crustaceans, kelp and algae. Aquaculture shall not mean the culture and husbandry of commercially utilized inland crops, including, but not limited to: rice, watercress and bean sprouts." (Public Resources Code, Division 1, Chapter 4, Section 828) (See also footnote #5 on page 11).

Biological productivity

Biological productivity generally refers to the amount of organic material produced per unit time (see also footnote 19 on page 23)

"Coastal-dependent development or use"

(see APPENDIX A [Section 30101])

Coastal-dependent industrial facility

A coastal-dependent industrial facility is one which requires a site on, or adjacent to, open coastal waters to function.

"Development"

(see APPENDIX A [Section 30106])

"Energy facility"

(see APPENDIX A [Section 30107])

"Environmentally sensitive area"

(see APPENDIX A [Section 30107.5])

Estuary

As 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 (see also page 4 and APPENDIX D).

"Feasible"

(see APPENDIX A [Section 30108])

Fen

A fen is a poorly defined regional term for a type of marsh (see APPENDIX D) usually said to be formed on peat that is circumneutral or alkaline in pH; vegetation is marked by high species diversity. A fen is equivalent to the sedge-meadow of many areas. (Note: To date the only fen known to exist in the coastal zone is Inglenook Fen in Mendocino County).

Fill

(see APPENDIX A [Section 30108])

Functional capacity

Functional capacity refers to the ability of a particular ecosystem to be self-sustaining and to maintain natural species diversity (also refer to page 17).

Healthy populations

The phrases, ". . . healthy populations of all species of marine organisms . . and ". . . optimum populations of marine organisms . . ." (Sections 30230 and 30231, respectively) refer generally to the maintenance of natural species diversity, abundance, and composition.

Hydric soil

Hydric soils are soils that for a significant period of the growing season have reducing conditions* in the major part of the root zone and are saturated** within 25 cm of the surface. Most hydric soils have properties that reflect dominant wetness characteristics, namely, they have immediately below 25 cm dominant colors in the matrix as follows:

1. If there is mottling, the chroma is 2 or less.

2. If there is no mottling, the chroma is 1 or less.

("Wet Soils of the United States" (draft copy), January 9, 1980, United States Department of Agriculture, Soil Conservation Service.)

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* Reducing conditions means soil solution is virtually free of dissolved oxygen.

** A soil is considered saturated at the depth at which water stands in an unlined borehole or when all pores are filled with water. Soils (temporarily) saturated as a result of controlled flooding or irrigation are excluded from ydric soils.

Hydrophytic plant

Any plant growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content (i.e., plants typically found in wet habitats).

Lake

A lake is a confined, perennial water body mapped by the United States Geologic Survey on the 7.5 quadrangle series, or identified in a local coastal program.

Mesophytic plant

Any plant growing where moisture and aeration conditions lie between extremes (i.e., plants typically found in habitats with average moisture conditions, not usually dry or wet).

Optimum populations

(see definition of "healthy populations" above)

Riparian habitat

A riparian habitat is an area of riparian vegetation and associated animal species. This vegetation is an association of plant species which grow adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other bodies of fresh water (see also APPENDIX D).

River or Stream

A "river or stream" is a natural watercourse as designated by a solid line or dash and three dots symbol shown on the United States Geological Survey map most recently published, or any well-defined channel with distinguishable bed and bank that shows evidence of having contained flowing water as indicated by scour or deposit of rock, sand, gravel, soil, or debris.

Vernal pool

A vernal pool may be defined generally as ". . . a small depression, usually underlain by some subsurface layer which prohibits drainage into the lower soils profile, in which, during the rainy season, water may stand for periods of time sufficient to prohibit zonal vegetation from developing. The habitat is intermediate in duration or inundation between marshes (never or only rarely dry) and most zonal communities (never or only rarely submerged)." ("The Vegetation of Vernal Pools: A Survey." By Robert F. Holland, Department of Agronomy & Range Science, University of California, Davis. Published in, Vernal Pools: Their Ecology and Conservation. A Symposium Sponsored by the Institute of Ecology, University of California, Davis, May 1-2, 1976).

Wetland

(see APPENDICES A and D [Section 30121])

Xerophytic plant

Any plant growing in a habitat in which an appreciable portion of the rooting medium dries to the wilting coefficient at frequent intervals (i.e., plants

DEFINITIONS

Where used in the specific guidelines, the following definitions of terms should apply:

1. Canyon Setback. In situations where other Interpretive Guidelines or Coastal Act policies do not apply, an adequate setback, generally no less than 10 feet in highly developed urban areas, from the crest of the slope of a canyon. Where existing structures are already built closer than this to the canyon rim, new structures shall not encroach on the line of primary canyon vegetation.

2. Stringline Method of Preventing Beach Encroachment. In a developed area where new construction is generally infilling and is otherwise consistent with Coastal Act policies, no part of a proposed new structure, including decks, shall be built farther onto a beachfront than a line drawn between the most seaward portions of the adjoining structures. Enclosed living space in the new unit should not extend farther seaward than a second line drawn between the most seaward portions of the enclosed living space of the adjoining structure.

Adopted May 3, 1977