

# Central and Northern California Coastal Marine Habitats: Oil Residence and Biological Sensitivity Indices

## RELATIVE ABUNDANCE OF MAJOR MACROBIOTA\*

Taxa	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
<b>ROCKY INTERTIDAL MACROBIOTA</b>																							
Acorn barnacles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chlorophyta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Porphyra spp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C
<i>Pelvetiopsis limitata</i>																							
<i>Endocladia muricata</i>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Pelvetia fastigiata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Fucus distichus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gigartina</i> spp.	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Pollicipes polymerus</i>					0	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C
<i>Mytilus californianus</i>					0	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C
<i>Corallina</i> spp./ <i>Gigartina</i> spp.	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Postelsia palmaeformis</i>	C	C	C	C	C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C
<i>Halosaccion glandiforme</i>																							
<i>Iridaea</i> spp.	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Odonthalia</i> spp./ <i>Rhodomela larix</i>					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coralline algae	C-A	C-A	C-A	C-A	C-A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Phyllospadix</i> spp.	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Alaria marginata</i>	C	C	C-A	C-A	C-A	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C
<i>Egregia menziesii</i>	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C	0-C
<i>Laminaria</i> spp.	0	0	0	0	0	0	0	0	0	0	0-C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Lessoniopsis littoralis</i>																							
<b>OTHER MACROBIOTA</b>																							
<b>Kelp beds:</b>																							
<i>Macrocystis</i> spp.	C	C	C	C	C-A	C-A	C-A	C-A	C-A	C-A	C	C	C	C	C	C	C	C	C	C	C	C	C
<i>Nereocystis luetkeana</i>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<b>Marine mammals:</b>																							
Elephant seal																							
Harbor seal				0-C	0	0-A	0-A	0-A			0-A				0-C								
Steller sea lion																							
California sea lion											0-A												
<b>Seabird nesting colonies:</b>																							
Fork-tailed storm petrel																							
Leach's storm petrel																							
Ashy storm petrel																		0	0				
Brandt's cormorant					A	C																	
Double-crested cormorant																							
Pelagic cormorant																0		C	C				
Black oystercatcher																							
Western gull																							
Common murre																							
Pigeon guillemot																							
Cassin's auklet																							
Rhinoceros auklet																							
Tufted puffin																							
<b>Threatened/Endangered Species:</b>																							
Aleutian Canada goose																							
Southern sea otter	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

\*Relative abundance for summer conditions: 0 = occasional, C = common, A = abundant

## PHYSICAL SHORE-ZONE CHARACTERISTICS

UNIT IDENTIFIERS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
ALONGSHORE LENGTH (km)	0.3	0.2	0.7	2.7	2.8	0.9	0.7	0.7	0.6	0.6	0.4	0.5	0.2	.1	4.0	0.6	0.3	1.0	0.4	0.3	0.2	0.2	2.0	
ACROSS-SHORE WIDTH (m)	10-20	0-15	10-20	0-15	<10	10-20	<5	20	10-30	<5	75-100	0-15	50	<5	10-20	0-15	<5	10-20	10-30	<10	50	<5	30	
WAVE EXPOSURE	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
ACROSS-SHORE COMPONENTS (morphology, texture)	Ca, Rm Bi, Cbr: Rm Ore, Rs Ca, Rm Bi, Cbr: Rm Ore, Rs	Ca, Rm Ore, Rs Ca, Rm Bi, Cbr: Rm Ore, Rs	Ca, Rs Bi, Cbr: Rs Ore, Rs Ca, Rm Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Cc, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Bi, Cbr: Rs Ore, Rs	Cc, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Cp, Rs Ore, Rs Bb, Csp: Rs Ore, Rs	Ca, Rs Ore, Rs Bb, Csp: Rs Ore, Rs	Ca, Rs Ore, Rs Bb, Csp: Rs Ore, Rs	Cc, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Cc, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Cc, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs	Ca, Rs Ore, Rs Ca, Rs Bi, Cbr: Rs Ore, Rs
MICRO RELIEF	R	R	R	R	R	R	R	R	R	S	R	S	R	S	R	R	R	R	S	R	R	R	R	
MACRO RELIEF	R	R	R	R	R	R	R	R	R	R	S	R	S	R	R	R	R	R	R	R	S	R	R	
SUMMARY CHARACTERISTICS	Rbmv	Rv	Rbmv	Rb'mv	Rv0	Rbmv0	R	dmv	bg	R	bg	Rb'mv	Rbg	R	Rbmv0	Rb'mv	R	Rbmv	bg	Rv	bg	R	Rbmv	
OIL RESIDENCE INDEX	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
GROUND TRUTH	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	

### ABBREVIATED PHYSICAL SHORE-ZONE CODING EXPLANATION

This is an abbreviated legend for the physical shore-zone coding sheets; consult the main text for a complete discussion of codes and rationale. Only the across-shore descriptors for morphology and texture are discussed.

ACROSS-SHORE COMPONENTS - dominant morphologic and textural character of each across-shore component, described in a landward to seaward sequence. Each component consists of a geomorphic form descriptor and a substrate descriptor:  
FORM = Bb, Csp + TEXTURE

The primary geomorphic forms are initially described by a series of 12 codes:

A Anthropogenic E Coastal Bay, Lagoon, Estuary P Platform  
B Beach I Inlet R River  
C Cliff M Marsh S Bar/Trough  
D Dune O Offshore Rocks T Delta

Each of these groups is then further modified by codes as indicated below.

#### Anthropogenic (A)

e causeway j jetty m marina t trench  
f float g groin r boat ramp s seawall w wharf

#### Beach (B)

b berm i inclined slope s storm ridge  
c washover channel m multiple intertidal bars t low-tide terrace  
f beach face r single intertidal bar w washover

#### Cliff (C)

a active or erosional p passive c caves present

#### Dune (D)

b blowout f foredune s ridge and swale  
d stabilized r random form l longitudinal

#### Coastal Bay, Lagoon, Estuary (E)

b enclosed bay e estuary

#### Inlet (I)

e ephemeral a opening fixed by offshore structures  
s stable f flood-tidal delta l ebb-tidal delta

#### Marsh (M)

c tidal creek

#### Offshore Rocks (O)

e intertidal reef s sea stack  
r rock outcrop (>2 m above M.S.L. and <10 m in width or length)

#### Platform (P)

h high-tide platform f horizontal t terraced  
l low-tide platform r ramp i irregular

#### River (R)

b braided m multiple s single channel

#### Bar/Trough (S)

r with rip channels

#### Delta (T)

c channel m multiple channels p delta plain  
f fan s single channel v crevasse  
l levee

Substrate type or sediment texture are described in detail by a series of codes. The

sediments or materials of the shore are initially coded into one of four groups:

A anthropogenic materials C clastic sediments  
B biogenic sediments R bedrock

Each of these groups is then further modified by texture or composition as indicated below.

#### Anthropogenic materials (A)

a metal n concrete (solid) w bark or wood debris  
d debris, rubble o logs  
e concrete (individually formed) u wood (structural; e.g., pilings or boards)

#### Biogenic sediments (B)

l trees or wood particles o organic litter  
s shell hash (with a texture as described below)

#### Clastic sediments (C)

b boulder s sand m mud  
c cobble t silt g gravel  
p pebble f clay r rubble

#### Bedrock (R)

i igneous m metamorphic s sedimentary

Where more than one texture is present in an across-shore component, several substrates or textures may be indicated. Where one texture physically overlies another, it is indicated by a slash (e.g., Cg/Rs, and over rock). Where several mutually exclusive textures occur within a component, such as rock outcrops within a sand beach, a colon is used to indicate that association (e.g., Cg:Ri).

Prepared for  
**Minerals Management Service**  
Pacific Outer Continental Shelf Region  
Los Angeles, California

by  
**Woodward-Clyde Consultants**  
Environmental Systems Division  
San Francisco, California

November, 1982

M.M.S. Map# 57

Sheet 2 of 2