

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 |
|---------------------------------------|-----|-----|---|-----|-----|-----|-----|-----|-----|---|-----|---|-----|-----|-----|-----|-----|
| ROCKY INTERTIDAL MACROBIOTA | | | | | | | | | | | | | | | | | |
| Acorn barnacles | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 |
| Chlorophyta | 0-C | 0-C | | 0-C | 0-C | 0-C | 0-C | 0-C | 0 | | C | 0 | C | C | C | | C |
| Porphyra spp. | 0-C | 0-C | | 0-C | 0-C | 0-C | 0-C | 0 | | | | | | | | | 0-C |
| Pelvetiopsis limitata | C | C | | C | C | C | C | 0 | 0 | | 0 | 0 | C | C | C | | C |
| Endocladia muricata | C | C | | C | C | C | C | 0-C | 0 | | C | 0 | C | C | C | | C |
| Pelvetia fastigiata | | | | | | 0 | 0 | | | | | | | | | | |
| Fucus distichus | C | C | | C | C | C | C | C | 0 | | C | 0 | C | C | C | | C |
| Gigartina spp. | C | C | | C | C | C | C | 0-C | 0 | | C | 0 | C | C | C | | C |
| Pollicipes polymerus | C | C | | C | C | C | C | C | 0 | | C | 0 | C | C | C | | C |
| Mytilus californianus | 0-C | 0-C | | 0-C | 0-C | 0-C | 0-C | C | 0 | | C | 0 | C-A | C-A | C-A | | C |
| Corallina spp./Gigartina spp. | 0-C | 0-C | | 0-C | 0-C | 0-C | 0-C | C | | | C | | C | C | C | | 0 |
| Postelsia palmaeformis | C | C | | C | C | C | C | C-A | 0 | | C | 0 | C | C | C | | C |
| Halosaccion glandiforme | C | C | | C-A | C-A | C-A | C-A | 0 | | | C | | C | C | C | | C |
| Iridaea spp. | C | C | | C | C | C | C | C | 0 | | C | 0 | C | C | C | | C |
| Odonthalia spp./Rhodomela larix | C | C | | C | C | C | C | C | | | C | | C | C | C | | C |
| Coralline algae | C | C | | C | C | C | C | C-A | 0 | | C | 0 | C | C | C | | C |
| Phyllospadix spp. | C | C | | C | C | C | C | C | | | C | | C | C | C | | C |
| Alaria marginata | C-A | C-A | | C-A | C-A | C-A | C-A | C | 0 | | C | 0 | C | C | C | | C |
| Egria menziesii | C | C | | C | C | C | C | C | | | C | | C | C | C | | C |
| Laminaria spp. | C | C | | C-A | C-A | C-A | C-A | C | 0 | | C | 0 | C | C | C | | C |
| Lessoniopsis littoralis | C | C | | C | C | C | C | C-A | 0 | | C | 0 | C | C | C | | C |
| OTHER MACROBIOTA | | | | | | | | | | | | | | | | | |
| Kelp beds: | | | | | | | | | | | | | | | | | |
| Macrocystis spp. | | | | | | | | | | | | | | | | | 0-C |
| Nereocystis luetkeana | | | | | | | | C | C | C | C | C | C | C | C | A | C |
| Marine mammals: | | | | | | | | | | | | | | | | | |
| Elephant seal | | | | | | | | | | | | | | | | | |
| Harbor seal | | | | 0 | | 0-C | 0-C | | 0-C | | 0-C | | | | | 0-C | 0-C |
| Steller sea lion | | | | | | 0 | | | | | | | | | | | |
| California sea lion | | | | | | 0 | | | | | | | | | | | |
| Seabird nesting colonies: | | | | | | | | | | | | | | | | | |
| Fork-tailed storm petrel | | | | | | | | | | | | | | | | | |
| Leach's storm petrel | | | | | | | | | | | | | | | | | |
| Ashy storm petrel | | | | | | | | | | | | | | | | | |
| Brandt's cormorant | | | | | | | A | A | | | | | | | | | |
| Double-crested cormorant | | | | | | | | | | | | | | | | | |
| Pelagic cormorant | | C | | | | A | C-A | C-A | C | | C | | | | C | C | A |
| Black oystercatcher | | 0 | | | | 0 | 0 | 0 | 0 | | 0 | | | | 0 | 0 | 0 |
| Western gull | | | | | | | 0 | 0 | | | | | | | A | | 0-C |
| Common murre | | | | | | | | | | | | | | | | | |
| Pigeon guillemot | | 0 | | | | C | 0-A | 0-A | C | | 0 | | | | C-A | | C |
| Cassin's auklet | | | | | | | | | | | | | | | | | |
| Rhinoceros auklet | | | | | | | | | | | | | | | | | |
| Tufted puffin | | | | | | | 0 | 0 | | | | | | | 0 | | |
| Threatened/Endangered Species: | | | | | | | | | | | | | | | | | |
| Aleutian Canada goose | | | | | | | | | | | | | | | | | |
| Southern sea otter | | | | | | | | | | | | | | | | | |

*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 | |
|---|----------------------------------|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|------------------|---------------------------|-------------------------|---------------------------|-------------------------|----------------|--------------------------|-----------------|--------------------------|------------------|-------------------------------------|------------------|
| ALONGSHORE LENGTH (km) | 0.8 | 1.0 | 0.3 | 0.9 | 0.3 | 3.5 | 2.7 | 1.5 | 0.7 | 0.3 | 0.6 | 0.4 | 1.4 | 0.3 | 1.2 | 0.6 | 2.3 | |
| ACROSS-SHORE WIDTH (m) | 5-30 | 0-30 | 30 | 0-50 | 30 | 0-20 | 10-50 | 0-20 | 20 | - | <5 | 20 | <5 | 10-30 | <5 | 20-50 | <5 | |
| WAVE EXPOSURE | 10 | 8 | 1-10 | 10 | 10 | 8 | 8-10 | 10 | 10 | 1-10 | 10 | 8 | 8 | 10 | 10 | 1-10 | 10 | |
| ACROSS-SHORE COMPONENTS (morphology, texture) | Cc,Rm Pi,Rm Ores,Rm | Cc,Rm Pi,Rm Ores,Rm | Ca,Rs Bs,Cs Bf,Cs | Cc,Rm Pi,Rm Ores,Rm | Ca,Rm Bf,Csr Bf,Cs | Cc,Rm Pt,Rm Ores,Rm | Cc,Rs Ores,Rs | Cc,Rs Pt,Rs Ores,Rs | Cc,Rs Bb,Cs Bf,Cs | Cc,Rs Pi,Rm Ores,Rs | Ee,Cs Ie,Cs Ii,Cs | Cc,Rs Or,Rs | Ca,Rs Bf,Csb Oe,Rs | Cc,Rs Ore,Rs | Ca,Rs Ph,Rs Ore,Rs | Cc,Rs Ores,Rs | Ca,Rs Bb,Csg Bf,Cs Or,Rs | Cc,Rs Ores,Rs |
| Primary | Cc,Rm Bi,Ccgs Pf,Ccb Rm | | Rs,Cs Ie,Cs Bf,Cs | | Rs,Cs | | Cc,Rs Bi,Csc | Cc,Rs Bi,Csg Ore,Rs | | | | | | | | | Rs,Csg Ie,Csg Bb,Ccg Bf,Cs | |
| Secondary | Ores,Rm | | | | | | | | | | | | | | | | | |
| MICRO RELIEF | R | R | S | R | S | R | R | R | S | - | R | R | R | R | R | R | R | |
| MACRO RELIEF | R | R | S | R | S | R | R | R | S | - | R | S | R | R | R | S | R | |
| SUMMARY CHARACTERISTICS | Rpb'mo | RPO | bsIe | RPO | Rbm | RPO | Rb'mo | Rpb'mvo | Rbs | RbsIE | R | Rbs | RO | RPO | RO | bmIe | RO | |
| OIL RESIDENCE INDEX | 3 | 3 | 1-2 | 3 | 3 | 3 | 3 | 3 | 2 | 1-2 | 3 | 3 | 3 | 3 | 3 | 1-2 | 3 | |
| GROUND TRUTH | 0 | 0 | 0 | 0 | 0 | 0 | 3,4 | 3 | 3 | 0,4 | 0 | 0 | 0 | 0 | 0 | 3 | 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, Csg + 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 terrace
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 t logs u wood (structural; e.g., pilings or boards)
e concrete (individually formed)

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 f silt g gravel
p pebble f clay r rubble

Bedrock (R)
l 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., Cs/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., Cs:Rl).

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Sheet 2 of 2