

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 |
|--|---|---|---|-----|---|-----|-----|---|-----|-----|-----|-----|-----|-----|---|---|---|-----|
| ROCKY INTERTIDAL MACROBIOTA | | | | | | | | | | | | | | | | | | |
| Acorn barnacles | | | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | C | | 0 |
| Chlorophyta | | | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | C | | 0 |
| Porphyra spp. | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| <i>Pelvetiopsis limitata</i> | | | | | | | | | | | | | | | | | | C-A |
| <i>Endocladia muricata</i> | | | | C | | C | C | | C-A | C-A | C-A | C-A | C-A | C-A | | | | C |
| <i>Pelvetia fastigiata</i> | | | | | | 0 | | | C | C | C | C | C | C | | | | C |
| <i>Fucus distichus</i> | | | | 0 | | 0 | 0 | | 0-C | 0-C | 0-C | 0-C | 0-C | 0-C | | | | 0-C |
| <i>Gigartina</i> spp. | | | | C | | C | C | | C | C | C | C | C | C | | | | C |
| <i>Pollicipes polymerus</i> | | | | 0-C | | 0-C | 0-C | | 0-C | 0-C | 0-C | 0-C | 0-C | 0-C | | | | 0-C |
| <i>Mytilus californianus</i> | | | | C | | C | C | | 0-C | 0-C | 0-C | 0-C | 0-C | 0-C | | | | 0 |
| <i>Corallina</i> spp./ <i>Gigartina</i> spp. | | | | C | | C | C | | | | | | | | | | | |
| <i>Postelsia palmaeformis</i> | | | | | | | | | | | | | | | | | | |
| <i>Halosaccion glandiforme</i> | | | | C | | C | C | | C | C | C | C | C | C | | 0 | | C |
| <i>Iridaea</i> spp. | | | | | | | | | | | | | | | | | | |
| <i>Odonthalia</i> spp./ <i>Rhodomela larix</i> | | | | | | | | | | | | | | | | | | |
| Coralline algae | | | | C | | C | C | | C | C | C | C-A | C-A | C-A | | | | C-A |
| <i>Phyllospadix</i> spp. | | | | C | | C | C | | C | C | C | C | C | C | | | | C |
| <i>Alaria marginata</i> | | | | C | | C | C | | C | C | C | C | C | C | | | | C |
| <i>Egregia menziesii</i> | | | | C | | C | C | | C | C | C | C | C | C | | | | C |
| <i>Laminaria</i> spp. | | | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 |
| <i>Lessoniopsis littoralis</i> | | | | | | | | | | | | | | | | | | |
| OTHER MACROBIOTA | | | | | | | | | | | | | | | | | | |
| Kelp beds: | | | | | | | | | | | | | | | | | | |
| <i>Macrocystis</i> spp. | | | | | | | | | | | | | | | | | | |
| <i>Nereocystis luetkeana</i> | | | | | | | | | | | | | | | | | | |
| Marine mammals: | | | | | | | | | | | | | | | | | | |
| Elephant seal | | | | | | | | 0 | | | | | | | | | | |
| Harbor seal | | | | | | | | | C | | 0 | | | | | | | |
| Steller sea lion | | | | | | | | | | | 0 | | | | | | | |
| California sea lion | | | | | | | | | | | A | | | | | | | |
| Seabird nesting colonies: | | | | | | | | | | | | | | | | | | |
| Fork-tailed storm petrel | | | | | | | | | | | | | | | | | | |
| Leach's storm petrel | | | | | | | | | | | | | | | | | | |
| Ashy storm petrel | | | | | | | | | | | | | | | | | | |
| Brandt's cormorant | | | | | | | | | | | | | | | | | | |
| Double-crested cormorant | | | | | | | | | | | | | | | | | | |
| Pelagic cormorant | | | | | | | | | | | | | | | | | | |
| Black oystercatcher | | | | | | | | | | | | | | | | | | |
| Western gull | | | | | | | | | | | | | | | | | | |
| Common murre | | | | | | | | | | | | | | | | | | |
| Pigeon guillemot | | | | | | | | | | | | | | | | | | |
| Cassin's auklet | | | | | | | | | | | | | | | | | | |
| Rhinoceros auklet | | | | | | | | | | | | | | | | | | |
| Tufted puffin | | | | | | | | | | | | | | | | | | |
| Threatened/Endangered Species: | | | | | | | | | | | | | | | | | | |
| Aleutian Canada goose | | | | | | | | | | | | | | | | | | |
| Southern sea otter | 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 |
|---|--|-----------------------------|--|--------------------|--------------------------------------|-----------------------------|-------------------|---|-------------------------|-----------------------------|--|--|-----------------------------|------------------------------------|-----------------------------|------------------------------|------------------|-------------------------------------|
| ALONGSHORE LENGTH (km) | 5.2 | 0.2 | 2.0 | 0.2 | 0.3 | 0.3 | 0.2 | 2.2 | 0.3 | 0.4 | 1.2 | 0.4 | 0.5 | 0.5 | 0.7 | 0.5 | 0.8 | 1.2 |
| ACROSS-SHORE WIDTH (m) | 100-200 | - | 100-200 | <5 | 50 | <30 | <10 | 75 | 20-50 | 20-50 | <20 | 20 | 50-100 | 50 | 100 | 30 | 5-50 | 5-50 |
| WAVE EXPOSURE | 10 | 1-10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| ACROSS-SHORE COMPONENTS (morphology, texture) | Dl, Cs Bs, At Cs Bb, Cs Bf, Cs Bt, Cs | Ee, Cms Ie, Cs Bt, Cs | Cp, Cs Dl, Cs Bs, At Cs Bb, Cs Bf, Cs Bt, Cs | Ca, Rm Ores, Rm | Ca, Rs Bb, Cs Bf, Cs Bt, Cs | Cc, Rm Pi, Rm Ore, Rm | Ca, Rm Ore, Rs | Cp, Rs Bs, Csp Bb, Cs Bf, Cs Bt, Cs | Cp, Rs Bi, Csp Rm | Ca, Rm Pi, Rm Ore, Rm | Ca, Rm Pi, Rm Bi, Cbs Ore, Rm | Ca, Rm Pi, Rm Bi, Cbs Ore, Rm | Ca, Rs Pf, Rm Ore, Rm | Cc, Rs Bf, Cs: Rs Ore, Rs | Ca, Rs Bf, Cs Ore, Rs | Ca, Rs Bi, Cbc Ore, Rs | Ca, Rs Bf, Cs | Ca, Rm Bi, Ccb: Rm Ore, Rm |
| Primary | | | | | | | | | | | | | | | | | | |
| Secondary | | | | | | | | | | | | | | | | | | |
| MICRO RELIEF | S | - | S | R | S | R | R | S | R | R | R | R | R | S | S | R | R | R |
| MACRO RELIEF | S | - | S | R | S | R | R | S | R | R | R | R | R | S | S | S | R | R |
| SUMMARY CHARACTERISTICS | bs | IeE | bs | R | bs | RPO | RO | bs | RPb's | RP | RO | Rb'sV | RPb'sO | Rb'sO | bs | RbmV | bs | RbmO |
| OIL RESIDENCE INDEX | 2 | 1-2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 |
| GROUND TRUTH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* Beach berm present during summer accretional period

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 | F Platform |
| B Beach | I Inlet | G 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 c 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) subtidal 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
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 # 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., 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:R).

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