

## SYNOPSIS OF BEACH SEGMENTS

### A. Overview of Regions and Beach Segments

The central California coastline (240 km) has been divided into seven regions; Tomales Bay and Bolinas Lagoon are also included.

Region 1: Bodega Head to Point Reyes  
Region 2: Point Reyes to Golden Gate  
Region 3: Golden Gate to Pillar Point  
Region 4: Pillar Point to Pigeon Point  
Region 5: Pigeon Point to County Line  
Region 6: Bolinas Lagoon  
Region 7: Tomales Bay

These regions differ by the general direction the shoreline faces and general type of shoreline habitat:

Region	Facing Direction	Shoreline
1	W to SW	rocky, sandy
2	SW to S	sandy
3	W	sandy
4	W	sandy
5	SW	rocky, sandy
6	lagoon with a narrow inlet and rapid flood currents	mudflats, marsh
7	somewhat enclosed estuary	sandy, rocky, marsh, mudflats

The various regions differ with regard to exposure to the open ocean, currents, wind regimes, distributions and abundance of birds at sea, proximity to ship/tanker lanes, and likelihood of being impacted by oil spills. We will not extrapolate results between regions. We will extrapolate within a region. Therefore, regional plans can be implemented separately from or in conjunction with other agency regional plans.

Within each region, the shoreline is divided into beach segments. A name and number is assigned to each segment, from north to south. Listed characteristics of beach segments are: length, beach type, beach rank, facing direction, and accessibility. The coded beach difficulties, beach types, and beach ranks are defined in Tables 11, 12, and 13 respectively. In creating segments, we attempted to include only one beach type, within a 1-3 km length, and to provide for efficient access and censusing. No segment exceeds 6.8 km.

### B. Regional Plans for Beaches

Each regional plan begins with a synopsis of beach segments containing: segment number, name, length, beach type, beach rank, facing direction, and accessibility.

### C. Maps and Directions to Beach Segments

Maps of beach segments provided show the location of beach segments and the boundaries between segments. Directions to Beach Segments contain these sections:

- Boundaries: usually defined by obvious physical landmarks or access points.
- Access Difficulty: ranked from 1(low) to 3 (high) see Table 11.
- Access Directions: directions to each beach segment.
- Coverage Difficulty: ranked from 1(low) to 3 (high) see Table 11.
- Coverage Directions: how to cover a beach segment by foot as well as safety considerations and efficient censusing suggestions.

Where possible, we have denoted public ownership of beach segments using abbreviations after the segment name: ANSR - Año Nuevo State Reserve; CP - County Park; GGNRA - Golden Gate National Recreation Area; MB - Municipal Beach; PRNS - Point Reyes National Seashore; SP - State Park; and USFWS - US Fish and Wildlife Service.

Beach segments that could not be accessed were not mapped.

#### **D. Access and Coverage Difficulty**

Beach monitoring can be physically tiring and exhausting, depending largely on weather condition and the health and stamina of the surveyor, so beach difficulty must be taken in to consideration when beach segments are assigned. Many beach segments are inherently dangerous, especially when high tides and high seas are encountered on narrow beaches. Access difficulty (from road to beach) and coverage difficulty (along shore) are ranked for each beach segment (see Table 11 for Difficulty Codes). Beaches are ranked for potential for carcass deposition and persistence (see Table 13 for Beach Rank Codes).

Table 11. Beach Difficulty Code Definitions

<u>Code</u>	<u>Difficulty</u>
1	Low difficulty; can be done without extra effort.
2	Medium difficulty; requires extra effort and is more strenuous but is not dangerous. Any beach over 3 km in length.
3	High difficulty; should be attempted only by extremely fit people. There is some danger involved and caution must be exercised. Any beach over 5 km in length.

Table 12. Beach Type (Backing and Surface) Code Definitions

<u>Code Prefix</u>	<u>Beach Backing</u>	<u>Suffix</u>	<u>Beach Surface Code</u>
B	Bluff	10	Sandy
D	Dune	11	Sandy, boulders
H	Harbor	12	Sandy, cobble
I	Island	13	Sandy, rock ledge
M	Marsh	14	Sandy, cobble, rock ledge
P	Pocket (creek mouth)	15	Sandy, no zone
U	Urban	16	Sandy, cobble, no zone
DB	Dune, bluff	17	Sandy, cobble, boulder, no zone
DU	Dune, urban	20	Boulders
HB	Harbor, bluff	21	Cobble
PU	Pocket, urban	22	Rock ledge
MHB	Marsh, harbor, bluff	23	Cobble, no zone
		24	Cobble, boulder, no zone
		30	Marsh vegetation, channels
		31	Marsh vegetation, sandy
		99	No carcass deposition zone

Table 13. Beach Rank (Carcass Deposition) Code Definitions

Code	Rank Description
0	Virtually no potential for carcass deposition and persistence. (Includes mainly beaches with no carcass deposition zone.)
1	Low potential for carcass deposition and persistence. (Includes mainly bluff beaches with rocky surfaces.)
2	Medium-low potential for carcass deposition and persistence. (Includes mainly bluff beaches with sandy surfaces.)
3	Medium-high potential for carcass deposition and persistence. (Includes mainly dune beaches.)
4	High potential for carcass deposition and persistence.

## F. The Leapfrog Method for Emergency Surveys

When a large number of surveyors are available (20 to 100 people) for an emergency survey (e.g., when an oil spill is approaching a region), the most efficient method of conducting a beach survey is for teams of two monitors (A and B) with one car to use the "leapfrog" technique. In this technique, A drops off B at the start of a beach. A drives to and leaves car at the end of the beach and begins covering the next (second) adjacent beach. When B finishes covering the first beach, B picks up the car, then drives to and leaves it at the other end of the second beach for A to pick up. B covers the next (third) adjacent beach, and so on. Large areas of coastline can be covered quickly using this technique. Ideally, beach segments start and end with car-accessible boundaries. Be sure that both surveyors have a driver's license and a key to the car. At the end of each regional plan are suggestions for most efficient censusing.