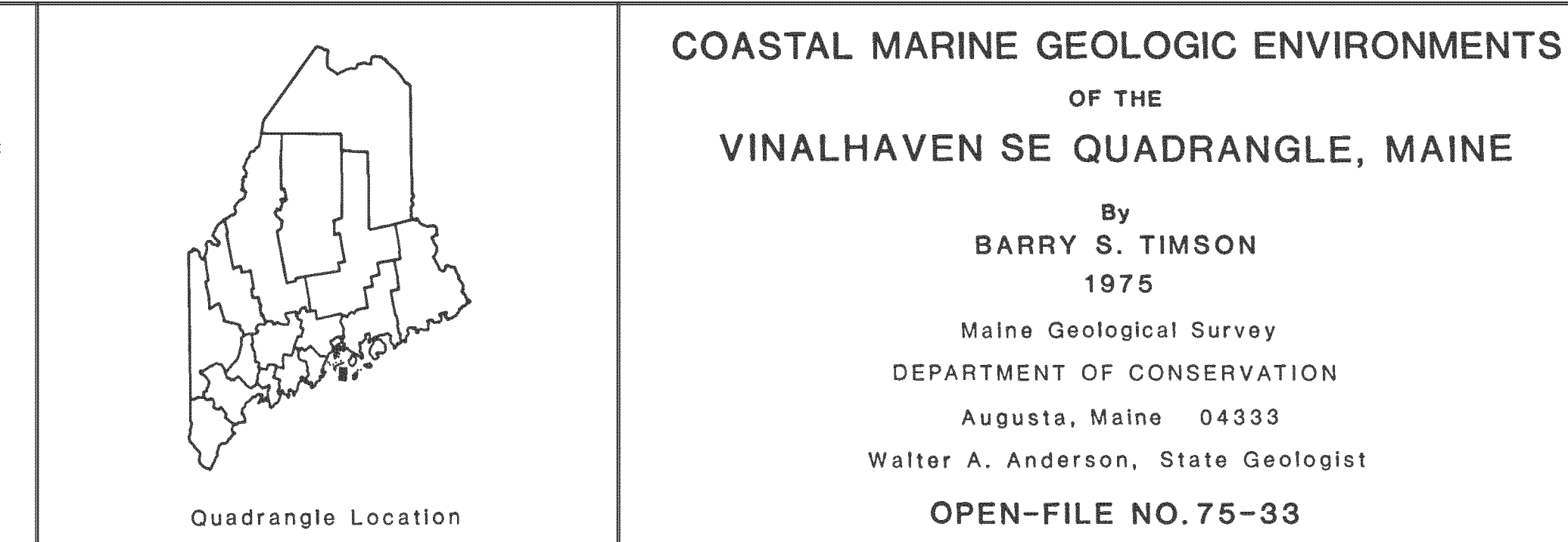
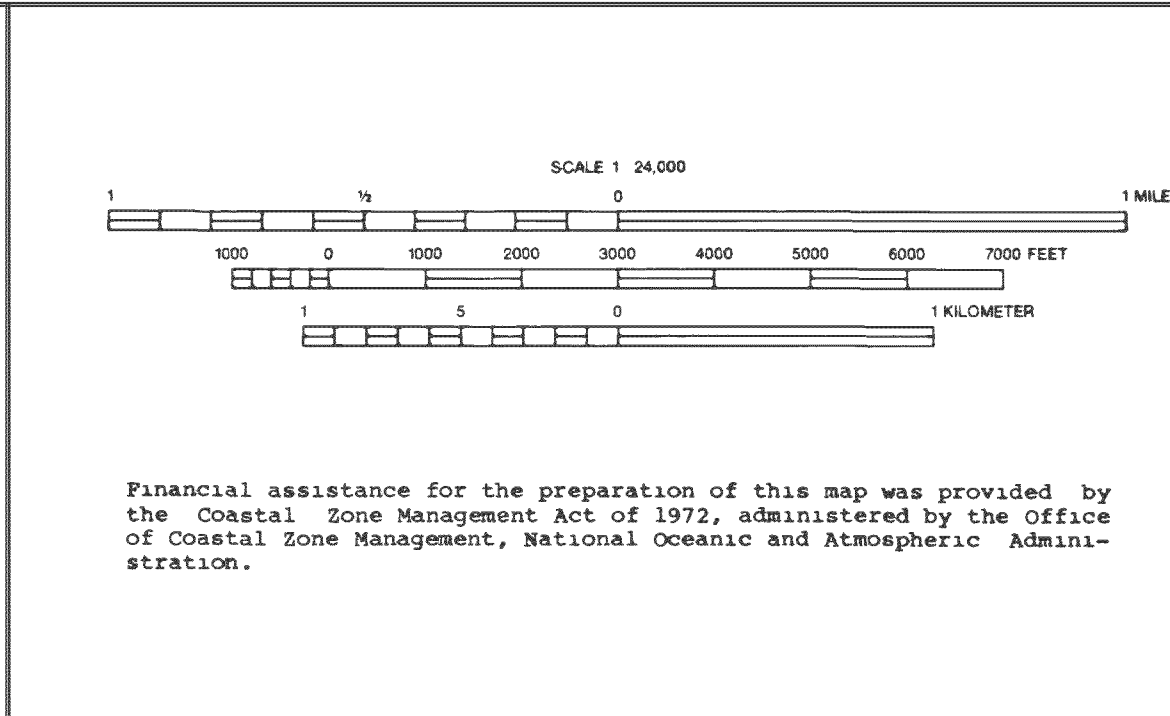




Environments just above the highest high water datum, but under the partial influence of marine processes and forces.

Sd	Dunes and Vegetated Beach Ridges	Unconsolidated sand or gravel deposits capping beach environments. Dunes are subject to storm waves and winds, while gravel beach ridges are subject only to storm wash. Beach may be vegetated with salt-tolerant vegetation.	Sm	Fresh-Brackish Marsh	Water-saturated, organic-rich sediments characterized by broad-leaved vegetation tolerant of constant submergence in fresh water. Salinity of interstitial water is less than 5 ppt.	Se	Eolian Flat	Partially vegetated sand flats adjacent to dune fields. Subject to generally northwest winds and occasional storm flooding.
Sw	Fresh-Brackish Water	Ponded water behind beach ridges, man-made constrictions on former tidal embayments, or on marsh surfaces transitional between upland and salt marsh environments. Salinity of the water is less than 5 parts per thousand (ppt).	Sz	Man-Made Land	Structures or fill emplaced by man in the nearshore environment.	Sf	Washover Flat	Sand deposits covering salt marshes behind inlet mouths which originate from storm washover or inlet delta deposits on salt marshes. Subject to storm washover and spring tide flooding.
			SX	Landslide Excavation and Deposits	Natural excavation into shoreline upland slopes created by large-scale slumping or sliding of bank material and the resulting deposits at the base of the slopes.	Sr	Fluvial Marsh	Vegetated river floodplain and bank environments. Characterized by freshwater pond vegetation such as pond lilies, reeds, and wild rice. Subject to daily tidal flooding as well as inundation during high river discharge periods.

Environments between the highest high water datum and the lowest low water datum subject to twice daily tidal flooding and all other marine forces.

Marsh Environments	Vegetated environments or isolated depressions within vegetated environments located above mean tide level in protected coastal areas.	B5	Low-Energy Beach	Beaches consisting of a wide variety of sediment sizes which are protected from high wave energy. Sediment characteristics are dependent upon sediment source, which is usually from upland scarps immediately shoreward of the beach. Low-energy beaches may exhibit growth of salt marsh grass when there is little sediment movement.	P3	Mussel Bar	Low mounds of living mussels, <i>Mytilus edulis</i> , and/or disarticulated and broken mussel shells accumulated by wave shoaling. Mussel bars generally occur at the mouths of estuaries or embayments at tidal channel margins where nutrient-laden oceanic waters first flood flat environments. Mussel bars accumulate on intertidal flats.
M1	High Salt Marsh						
	Organic-rich sediments densely vegetated primarily with the salt marsh grass <i>Spartina patens</i> (salt-meadow grass). High salt marshes are at the same level as mean high water.						
M2	Low Salt Marsh	Br	Boulder Ramp	Sloping surfaces in the lower intertidal zone veneered by large boulders. This environment is seaward of gravel or boulder beaches on high wave energy shorelines. Boulders are remnant lag deposits of eroded glacial tills. Boulder movement is limited to periods of intense storm wave activity.	F4	Channel Levee	Linear accumulations of sediment adjacent to tidal channels, but several tens of centimeters above the surrounding intertidal flats. Channel levees are constructed from sediment deposited on the flat as the tide rises above the channel margins.
M3	Marsh Levee				F5	Algal Flats	High, coarse and fine-grained intertidal flats covered with the green algae, <i>Enteromorpha recta</i> .
	Channel-margin sediments vegetated with salt-meadow grass which exist up to several tens of centimeters above the salt marsh surface. The marsh levee consists of sandy silt or silt-size sediment deposited from flood waters rising above channel margins, either from high river discharge into estuarine embayments or from storm-surge influenced flood tides from the ocean.	Bw	Washover Fan	Fan-shaped deposits of gravel located behind gravel beach ridges and covering portions of marshes. Few washovers have been recognized as mappable units on sand beaches. Washover fans are deposited by storm waves. Fan sediment is derived from the beach itself.	F6	Veneered Ramp	Former boulder ramps presently covered by fine-grained sediment settling out of the water column.
M4	Salt Pannes and Salt Ponds	Bs	Spits	Partially-submerged beach ridges which extend offshore into open water. This category includes tombolos (spits joining an island with the mainland).		Miscellaneous Environment	
	Salt-water filled, non-vegetated depressions on the high salt marsh surface (salt pannes) or salt-water filled depressions anywhere in the intertidal zone (i.e. tidal pools). Salt pannes may be dry and covered with algae during late summer months.				M	Ledge	Subaerially or subaqueously exposed bedrock.
					Mc	Fluvial-Estuarine Channel	Transitional channel between river and estuarine channels. The fluvial, tidal fluvial, or estuarine state depends upon the volume of river discharge entering the estuarine basin.
					Mp	Point or Lateral Bars	Accumulations of sediment adjacent to intertidal channel margins at channel bends (point bars) or along straight segments (lateral bars).
Beach Environments	Deposits of unconsolidated sediment which extend shoreward from the lowest tide line to the upland or vegetated field or beach ridge. Dominated by wave processes.		Flat Environments	Gently sloping or level environments composed primarily of fine sand, silt, and clay accumulated in relatively quiet water. Flats are depositional areas controlled primarily by tidal currents and sediment settling from the water column. Flat environments may be eroded temporarily by storm waves.	Ms	Swash Bars	Accumulations of sediment which occur where waves shoal onto intertidal flats.
B1	Sand Beach	F	Mud Flats	Flats comprised of sediment finer than sand.	ME	Flood-Tidal Delta	Lobate bars of sediment which accumulate landward of an inlet separating a back-barrier estuary or lagoon from open-ocean water.
B2	Mixed Sand and Gravel Beach	F1	Coarse-Grained Flat	Intertidal flats where sand or larger-size material comprises most of the sediments. Coarse-grained flats are subject to higher tidal-current velocities than mud flats.	Me	Ebb-Tidal Delta	Lobate bars of sediment which accumulate seaward of an inlet separating a back-barrier estuary or lagoon from open-ocean water.
B3	Gravel Beach				MD	Fan Delta	Coarse-grained, fan-shaped deposits which accumulate on intertidal flats where upland streams drain onto high tidal-range shorelines.
B4	Boulder Beach	F2	Seaweed-Covered Coarse Flat	Coarse-grained, shallow subtidal and low intertidal flats which act as a stable substrate for seaweed such as <i>Ulva</i> , <i>Enteromorpha</i> , <i>Acrophyllus</i> , and <i>Laminaria</i> .	ML	Spillover Lobes	Lobate bars of sediment which extend from flood-tidal deltas into estuarine or tidal channel areas.

Environments existing below lowest low water and subject to tidal current forces and wave-generated current forces.

Flat Environments		Channel Environments		Channel Slope	
	Submerged, gently sloping, or level environments composed primarily of fine sand, silt, and clay. Includes subaqueous exposures of coarse-grained, Pleistocene glacial sediments.		Linear, intertidal and subtidal depressions carrying tidal-current water.		Gently to moderately sloping wall margins of large tidal channels. Channel slopes are confined to channel wall margins composed of sediment.
Fm	Mud Flat	C1	High-Velocity Tidal Channel	Ch	Abandoned Tidal Channel
Fc	Coarse-Grained Flat	C2	Medium-Velocity Tidal Channel	Cf	Tidal Pluvial Channel
Fe	Belgrass Flat	C3	Low-Velocity Tidal Channel		
Fs	Seaweed Community	C4	Estuarine Channel	FC	Tidal Creeks
Fb	Upper Shoreface	C5	Estuarine Flood Channel	Ff	Marsh Drainage Ditch
Fp	Lower Shoreface	C6	Estuarine Ebb Channel		
		C7	Inlet Channel		
		C8	Dredged Channel		