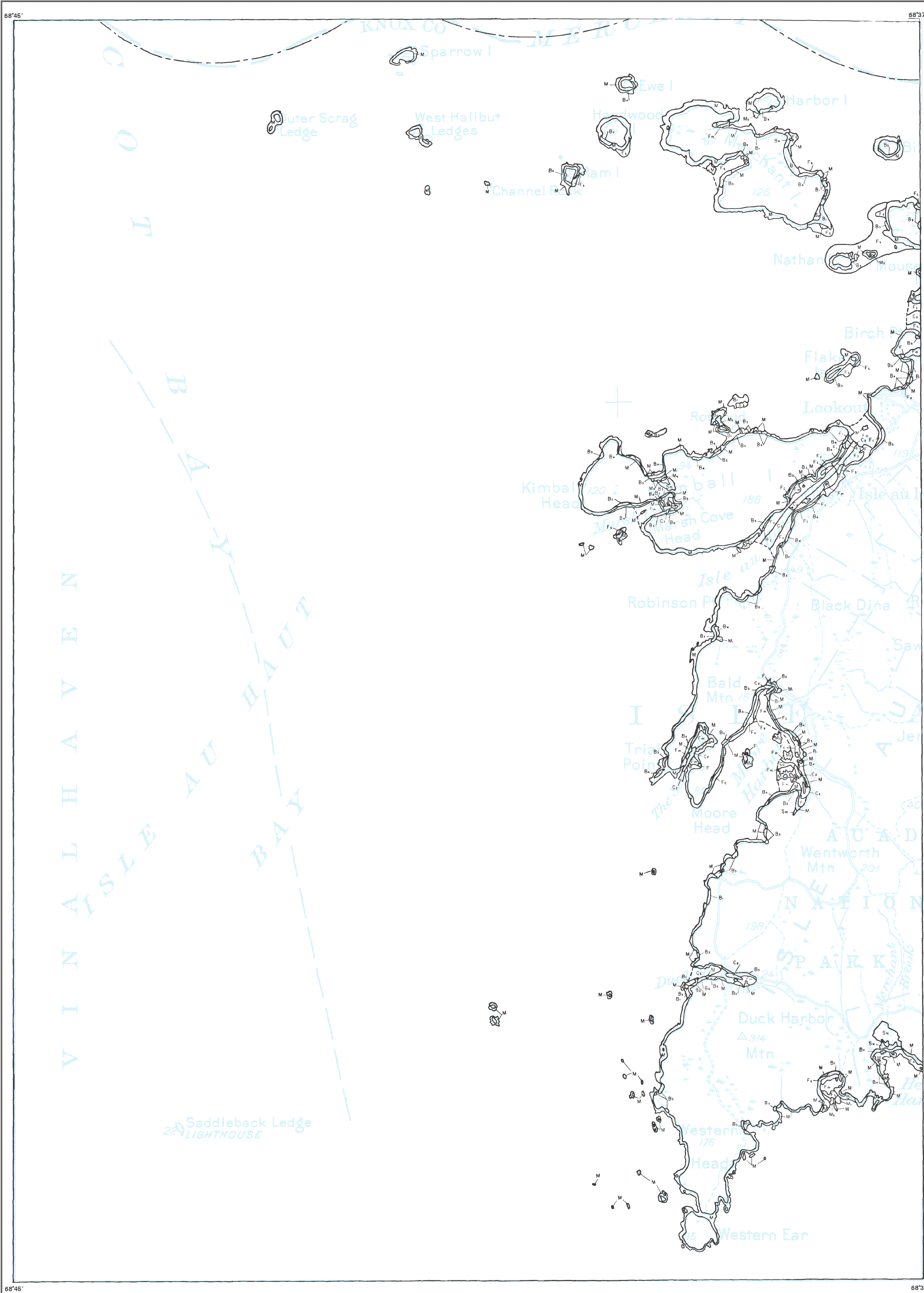




Financial assistance for the preparation of this map was provided by the Coastal Zone Management Act of 1972, administered by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration.

SCALE 1:24,000

1 MILE

1 KILOMETER

Quadrangle Location

COASTAL MARINE GEOLOGIC ENVIRONMENTS

OF THE

DEER ISLE SW QUADRANGLE, MAINE

By

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1975

Maine Geological Survey

DEPARTMENT OF CONSERVATION

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OPEN-FILE NO.75-28

SUPRATIDAL ENVIRONMENTS 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. Each 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.	
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.	
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.	
Se	Eolian Flat	Partially vegetated sand flats adjacent to dune fields. Subject to generally northwest winds and occasional storm flooding.	
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.	
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.	
INTERTIDAL ENVIRONMENTS Environments between the highest high water datum and the lowest low water datum subject to twice daily tidal flooding and all other marine forces.			
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	Mud or silty sand embankments sparsely to densely vegetated by the salt marsh grass <i>Spartina alterniflora</i> (salt cord-grass). Low salt marsh exists between mean tide level and mean high water.	
M3	Marsh Levee	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.	
M4	Salt Pannes and Salt Ponds	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.	
B1	Sand Beach	Beaches consisting of sand-size sediment which are subject to high or moderate wave energy (waves generated in the Gulf of Maine).	
B2	Mixed Sand and Gravel Beach	Beaches consisting of sand and gravel-size sediment which are subject to high or moderate wave energy.	
B3	Gravel Beach	Beaches consisting of gravel-size sediment which are subject to high or moderate wave energy.	
B4	Boulder Beach	Beaches consisting of boulder-size sediment which are subject to high or moderate wave energy.	
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 till. Boulder movement is limited to periods of intense storm wave activity.	
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.	
Ba	Spits	Partially-submerged beach ridges which extend offshore into open water. This category includes tombolos (spits joining an island with the mainland).	
F3	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 narrows where nutrient-laden oceanic waters first flood flat environments. Mussel bars accumulate on intertidal flats.	
F4	Channel Levee	Linear accumulations of sediment along margins of tidal channels built 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.	
F5	Algal Flats	High, coarse and fine-grained intertidal flats covered with the green algae, <i>Enteromorpha erecta</i> .	
F6	Veneered Ramp	Former boulder ramps presently covered by fine-grained sediment settling out of the water column.	
Miscellaneous Environment			
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).	
Ms	Swash Bars	Accumulations of sediment which occur where waves shoal onto intertidal flats.	
Mf	Flood-Tidal Delta	Lobate bars of sediment which accumulate landward of an inlet separating a back-barrier estuary or lagoon from open-ocean water.	
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.	
Md	Fan Delta	Coarse-grained, fan-shaped deposits which accumulate on intertidal flats where upland streams drain onto high tidal-range shorelines.	
Mi	Spillover Lobes	Lobate bars of sediment which extend from flood-tidal deltas into estuarine or tidal channel areas.	
SUBTIDAL ENVIRONMENTS Environments existing below lowest low water and subject to tidal current forces and wave-generated current forces.			
F1	Mud Flats	Flats comprised of sediment finer than sand.	
F2	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.	
F3	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>Ascophyllum</i> , and <i>Laminaria</i> .	
F4	Channel Slope	Gently to moderately sloping wall margins of large tidal channels. Channel slopes are confined to channel wall margins composed of sediment.	
F5	Abandoned Tidal Channel	Former tidal channel no longer carrying flow sufficient to erode the channel floor or margin walls. Abandoned channels usually occur in salt marsh tracts where meandering of the central drainage channel cuts off former channel segments.	
F6	Tidal Fluvial Channel	Lower portions of river channels under tidal influence but not carrying estuarine waters.	
F7	Tidal Creeks	Small tidal channels draining salt marshes or intertidal mud flats.	
F8	Marsh Drainage Ditch	Man-made, rectilinear ditches dug into marshes to facilitate marsh surface drainage.	
F9	Unit boundary.	Approximate transition boundary between estuarine and marine (30 ppt salinity) waters and between estuarine and river (0.5 ppt) waters.	
F10	Unit boundary.	Unit boundary.	
F11	Unit boundary.	Approximate unit boundary.	