

2012 CMECS

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup
Geologic Substrate	Rock Substrate	Bedrock		
		Megaclast		
	Unconsolidated Mineral Substrate	Coarse Unconsolidated Substrate	Gravel	Boulder
				Cobble
				Pebble
				Granule
			Gravel Mixes	Sandy Gravel
				Muddy Sandy Gravel
				Muddy Gravel
			Gravelly	Gravelly Sand
				Gravelly Muddy Sand
				Gravelly Mud
		Fine Unconsolidated Substrate	Slightly Gravelly	Slightly Gravelly Sand
				Slightly Gravelly Muddy Sand
				Slightly Gravelly Sandy Mud
				Slightly Gravelly Mud
			Sand	Very Coarse Sand
				Coarse Sand
				Medium Sand
				Fine Sand
				Very Fine Sand
			Muddy Sand	Silty Sand
				Silty-Clayey Sand
				Clayey Sand
			Sandy Mud	Sandy Silt
				Sandy Silt-Clay
				Sandy Clay
			Mud	Silt
				Silt-Clay
				Clay
Biogenic Substrate	Algal Substrate	Algal Sand	Halimeda Sand	
		Rhodolith Substrate	Rhodolith Rubble	
			Rhodolith Hash	
			Rhodolith Sand	
	Coral Substrate	Coral Reef Substrate		
		Coral Rubble		
		Coral Hash		
		Coral Sand		
	Organic Substrate	Organic Debris	Peat Debris	
			Woody Debris	Fine Woody Debris
		Organic Detritus		Coarse Woody Debris
				Very Coarse Woody Debris
		Organic Mud		
	Ooze Substrate	Carbonate Ooze	Coccolithophore Ooze	
			Foraminiferan Ooze	Globigerina Ooze
			Pteropod Ooze	
		Siliceous Ooze	Diatomaceous Ooze	
			Radiolarian Ooze	
	Shell Substrate	Shell Reef Substrate	Clam Reef Substrate	Coquina Reef Substrate
			Crepidula Reef Substrate	
			Mussel Reef Substrate	
			Oyster Reef Substrate	
		Shell Rubble	Clam Rubble	Coquina Rubble
			Crepidula Rubble	
			Mussel Rubble	
			Oyster Rubble	
		Shell Hash	Clam Hash	Coquina Hash
			Crepidula Hash	
			Mussel Hash	
			Oyster Hash	
		Shell Sand	Clam Sand	Coquina Sand
	Worm Substrate	Sabellariid Substrate	Sabellariid Reef Substrate	
			Sabellariid Rubble	
			Sabellariid Hash	
		Serpulid Substrate	Serpulid Reef Substrate	
			Serpulid Rubble	
			Serpulid Hash	

2023 Proposed CMECS

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group	Substrate Subgroup	
Geologic Substrate	Consolidated Mineral Substrate	Bedrock			
		Megaclast			
		Tar			
	Coarse Unconsolidated Mineral Substrate	Gravel Substrate	Very Coarse Gravel	Boulder	
			Moderately Coarse Gravel	Cobble	
		Mixed Gravels		Pebble	
				Granule	
				Sandy Gravel	
				Muddy Sandy Gravel	
				Muddy Gravel	
				Gravelly Sand	
				Gravelly Muddy Sand	
				Gravelly Mud	
	Fine Unconsolidated Mineral Substrate	Trace Gravels	Sandy Mixes with Trace Gravel	Slightly Gravelly Sand	
				Slightly Gravelly Muddy Sand	
			Muddy Mixes with Trace Gravel	Slightly Gravelly Sandy Mud	
				Slightly Gravelly Mud	
		Sandy Substrate	Sand	Very Coarse Sand	
				Coarse Sand	
				Medium Sand	
				Fine Sand	
				Very Fine Sand	
			Muddy Sand	Silty Sand	
		Silty-Clayey Sand			
		Clayey Sand			
Muddy Substrate		Sandy Mud	Sandy Silt		
	Sandy Silt-Clay				
	Mud	Sandy Clay			
		Silt			
		Silt-Clay			
		Clay			
Biogenic Substrate	Consolidated Biogenic Substrate	Reef Substrate	Coral Reef		
			Algal Reef	Rhodolith Reef	
				Coquina Reef	
			Shell Reef	Crepidula Reef	
				Mussel Reef	
				Oyster Reef	
			Worm Reef	Sabellarid Reef	
				Serpulid Reef	
		Biogenic Pavement	Coralline Pavement		
		Very Large Wood	Very Large Trunk or Root	Very Large Trunk	
				Very Large Branch	
				Very Large Wood Fragment	
				Very Large Root or Root Network	
	Coarse Unconsolidated Biogenic Substrate	Biogenic Rubble	Algal Rubble	Rhodolith Rubble	
			Coral Rubble		
			Shell Rubble	Coquina Rubble	
				Crepidula Rubble	
				Mussel Rubble	
				Oyster Rubble	
			Wood Rubble	Very Coarse Woody Debris	
			Worm Rubble	Coarse Woody Debris	
			Sabellarid Rubble		
			Serpulid Rubble		
		Fine Unconsolidated Biogenic Substrate	Biogenic Hash	Algal Hash	Rhodolith Hash
				Coral Hash	Acropora Hash
	Shell Hash			Coquina Hash	
				Crepidula Hash	
				Mussel Hash	
				Oyster Hash	
				Fine Woody Debris	
	Biogenic Sand			Worm Hash	Sabellarid Hash
					Serpulid Hash
				Algal Sand	Halimeda Sand
				Rhodolith Sand	
			Coral Sand	Diploria Sand	
			Shell Sand	Coquina Sand	
				Mussel Sand	
				Oyster Sand	
			Sabellarid Sand		
			Serpulid Sand		
	Fine Organic Substrate			Peat	
			Organic Detritus		
			Organic Mud		

							Ooze Substrate	Carbonate Ooze	Coccolithophore Ooze
									Foraminiferan Ooze
									Pteropod Ooze
								Siliceous Ooze	Diatomaceous Ooze
									Radiolarian Ooze
Anthropogenic Substrate	Anthropogenic Rock	Anthropogenic Rock Reef Substrate			Anthropogenic Substrate	Consolidated (Fixed) Anthropogenic Substrate	Fixed Construction Aggregate Substrate		
		Anthropogenic Rock Rubble					Fixed Metal Substrate		
		Anthropogenic Rock Hash					Fixed Trash/Plastic Substrate		
		Anthropogenic Rock Sand					Fixed Anthropogenic Wood Substrate	Piling Substrate	
		Anthropogenic Rock Mud					Coarse Unconsolidated Aggregate Substrate	Aggregate Rubble	
	Anthropogenic Wood	Anthropogenic Wood Reef Substrate				Coarse Unconsolidated Anthropogenic Substrate	Coarse Unconsolidated Metal Substrate	Metal Rubble	
		Anthropogenic Wood Rubble					Coarse Unconsolidated Trash/Plastic Substrate	Trash/Plastic Rubble	
		Anthropogenic Wood Hash					Coarse Unconsolidated Anthropogenic Wood Substrate	Wood Rubble	
		Construction Reef					Fine Unconsolidated Aggregate Substrate	Aggregate Hash	
	Construction Materials	Construction Rubble				Fine Unconsolidated Anthropogenic Substrate	Aggregate Fines		
		Construction Hash					Fine Unconsolidated Metal Substrate	Metal Hash	
		Metal Reef Substrate						Metal Fines	
	Metal	Metal Rubble					Fine Unconsolidated Trash/Plastic Substrate	Trash/Plastic Hash	
		Metal Hash						Trash/Plastic Fines	
		Trash Rubble						Wood Hash	
	Trash						Fine Unconsolidated Anthropogenic Wood Substrate	Wood Fines	
		Trash Bits							