

Instructions for this table:

You are asked to endorse or change any or all of the provisional entries in four tables.

For each of the phenomena below, enter 2 in each box which corresponds to a user group that would be directly interested in detecting change in the phenomenon.

Enter 1 for indirect or partial, but significant interest. 0 indicates insignificant or no interest.

The scores entered below in red are provisional — you are asked to endorse or change these entries. Your entries will appear in black.

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		Sea state	Coastal flooding	Surface currents	Rising sea level	Changes - shoreline & bathymetry	Chemical contamination of seafood	Human pathogens in water & shellfish	Habitat modification and loss	Eutrophication / oxygen depletion	Changes in species diversity	Biological responses to contaminants	Harmful algal events	Invasive species	Water clarity	Disease & mass mortalities - marine	Chemical contamination - environment	Harvest of capture fisheries	Aquaculture harvest	Abundance of LMR
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19
Shipping	U1	2	1	2	0	2	1	0	0	0	1	1	1	1	1	1	1	0	0	0
Marine energy and mineral extraction	U2	2	1	2	1	1	1	0	2	0	1	0	0	0	0	0	1	0	0	0
Insurance and re-insurance	U3	0	1	0	1	2	0	1	0	0	1	1	1	1	0	0	1	0	1	0
Coastal engineers	U4	2	2	2	2	2	1	1	1	1	1	1	0	2	1	0	1	0	1	0
Fishers	U5	2	0	1	0	1	2	2	2	1	2	2	2	1	1	2	2	2	1	2
Agriculture	U6	0	1	0	1	0	1	1	1	2	1	1	2	0	2	0	2	1	1	1
Aquaculture	U7	1	1	1	1	1	2	2	1	2	1	2	2	2	2	2	1	1	2	1
Hotel - restaurant industry	U8	1	2	1	1	1	2	2	1	1	0	1	1	0	1	1	1	1	1	1
Consulting companies	U9	2	2	2	1	2	1	1	2	2	1	1	1	1	1	0	1	1	2	1
Fisheries management	U10	0	0	1	0	0	2	2	2	2	1	1	2	1	1	2	2	2	1	2
Search and rescue	U11	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Port authorities and services	U12	2	2	2	2	2	1	1	1	1	0	1	1	1	1	0	2	1	0	1
Weather services	U13	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental regulation agencies	U14	0	1	1	1	0	2	1	2	2	2	2	1	1	1	1	2	0	1	0
Freshwater management/damming	U15	0	2	1	1	2	0	0	1	1	0	1	1	0	1	0	1	2	1	1
Public health authorities	U16	0	1	2	0	0	2	2	1	0	0	1	2	1	0	1	2	0	0	0
National security (including navies)	U17	2	1	2	1	2	1	1	0	1	0	1	1	1	2	0	1	0	0	0
Wastewater management	U18	0	2	2	0	2	1	2	1	2	1	2	2	0	1	2	2	1	1	1
Integrated coastal management	U19	0	2	0	1	2	1	1	2	2	1	2	2	2	1	1	2	1	2	1
Emergency response agencies	U20	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Ecotourism	U21	2	2	1	0	1	1	2	2	2	2	1	1	1	2	1	1	1	0	2
Conservation and amenity	U22	0	1	0	2	1	2	2	2	2	2	2	2	2	1	2	2	2	1	2
Consumers of seafood	U23	0	0	0	0	0	2	2	0	0	1	1	2	0	0	2	2	2	2	2
Recreational swimming	U24	2	1	1	0	1	0	2	0	1	0	1	2	1	2	1	2	0	0	0
Recreational boating	U25	2	2	2	0	2	0	1	0	0	0	0	1	1	0	0	0	0	0	0
News media	U26	2	2	0	1	1	2	2	1	1	1	1	2	2	1	2	2	2	1	1
Educators	U27	1	1	1	2	1	2	2	1	1	2	2	1	2	1	1	2	2	1	2
Scientific community	U28	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2

Matrix 1: Users x Phenomena

Instructions: For each of the variables below, evaluate the degree to which its measurement could be used to detect change in each phenomenon.
 Enter 2 for direct or highly significant importance in detection. Enter 1 for indirect or partial, but significant relevance. 0 indicates insignificant or no relevance.

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Variables for detecting change	Phenomena																			
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	
Attenuation of solar radiation	V1	0	0	0	0	0	0	0	2	1	0	0	0	1	0	2	0	0	0	0
Changes in bathymetry	V2	1	2	1	2	2	0	0	2	1	0	0	1	1	0	0	0	0	0	1
Benthic biomass	V3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	
Benthic species diversity	V4	0	0	0	0	0	0	0	2	0	2	2	0	1	0	1	0	0	1	
Biological oxygen demand	V5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	
Neutral red assay	V6	0	0	0	0	1	0	0	0	0	2	0	0	0	1	2	0	0	0	
Cytochrome p450 (e.g., oil)	V7	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	
Cholinesterase (pesticides)	V8	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	
Metallothionein (trace metals)	V9	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	0	0	
Currents	V10	0	0	2	1	1	0	0	1	1	0	0	1	1	1	1	0	0	1	
Dissolved inorganic nutrients (N, P, Si)	V11	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	
Dissolved oxygen	V12	0	0	0	0	0	1	1	2	1	1	0	0	0	1	1	1	0	0	
Eh in sediment	V13	0	0	0	0	0	1	1	2	0	1	0	1	0	0	2	0	0	1	
Fecal indicators	V14	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
Fisheries: Landings and effort	V15	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2	2	
Nekton biomass	V16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Incident solar radiation	V17	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	
Nekton species diversity	V18	0	0	0	0	0	0	0	0	2	1	0	1	0	1	1	0	0	1	
Particulate organic C and N	V19	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	
pH	V20	0	0	0	0	0	1	1	1	0	1	0	0	0	0	1	0	0	0	
Phytoplankton biomass (chlorophyll)	V21	0	0	0	0	0	0	0	2	0	0	1	0	2	0	0	0	0	0	
Phytoplankton species diversity > 20 µm	V22	0	0	0	0	0	0	0	0	2	1	1	1	0	0	1	0	0	0	
Primary production	V23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Salinity	V24	0	0	1	0	0	1	1	2	1	1	1	2	1	1	1	0	1	1	
Sea level	V25	2	2	1	2	2	0	0	1	1	0	0	1	0	1	0	1	0	0	
Sediment grain size, organic content	V26	0	0	0	0	2	1	0	1	2	1	1	0	1	0	0	1	0	1	
Changes in shoreline position	V27	1	2	1	2	2	0	0	1	1	0	0	0	1	0	0	0	0	0	
Surface waves	V28	2	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	
Total organic C and N	V29	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	
Total suspended solids	V30	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	
Water temperature	V31	0	0	2	1	0	0	1	1	1	0	1	1	1	0	1	0	0	1	
Zooplankton biomass	V32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Zooplankton species diversity	V33	0	0	0	0	0	0	0	0	2	1	0	1	0	0	1	0	0	0	
Colored dissolved organic matter - CDOM	V34	0	0	0	0	0	1	1	1	0	1	0	0	2	0	1	0	0	0	
Seabird abundance	V35	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	
Seabird diversity	V36	0	0	0	0	0	0	0	0	2	1	0	0	0	1	1	0	0	0	
Extent of submerged aquatic vegetation	V37	0	0	0	1	1	0	0	2	1	1	1	1	1	2	1	1	0	1	

Matrix 2: Variables x Phenomena

Instructions: For each of the models below, put a 2 in each box which corresponds to a user group that would be directly interested in the prediction. Enter 1 for indirect or partial, but significant interest. 0 indicates insignificant or no interest.

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		Shipping	Marine energy and mineral extraction	Insurance and re-insurance	Coastal engineers	Fishers	Agriculture	Aquaculture	Hotel - restaurant industry	Consulting companies	Fisheries management	Search and rescue	Port authorities and services	Weather services	Environmental regulation agencies	Freshwater management/damming	Public health authorities	National security (including navies)	Wastewater management	Integrated coastal management	Emergency response agencies	Ecolourism	Conservation and amenity	Consumers of seafood	Recreational swimming	Recreational boating	News media	Educators	Scientific community	
		U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13	U14	U15	U16	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	
Storm surges	M1	2	2	2	2	1	1	2	2	2	0	1	2	2	1	1	1	2	2	2	2	2	1	0	0	2	2	0	2	
Waves	M2	2	2	1	2	1	0	2	2	2	0	2	2	2	0	0	0	2	1	1	1	2	2	0	2	2	2	0	2	
Currents	M3	2	2	1	2	1	0	1	1	2	1	2	2	1	0	1	1	2	2	1	1	1	1	0	1	2	1	0	2	
Coastal erosion	M4	0	1	1	2	0	1	1	1	2	0	0	1	0	1	1	0	1	1	2	0	1	2	0	1	1	2	1	2	
consumption	M5	0	0	1	1	2	0	2	2	1	2	0	1	0	2	0	2	1	1	1	0	2	2	2	0	0	2	1	2	
Risk assessment: direct contact	M6	0	0	1	1	0	0	0	2	1	0	0	0	0	2	0	2	1	2	1	0	2	2	0	2	1	2	1	2	
Chemical contamination of seafood	M7	1	1	1	1	2	2	2	2	1	2	0	1	0	2	1	2	1	1	1	0	2	2	2	0	0	2	1	2	
Habitat modification / loss	M8	1	1	0	1	1	1	1	1	1	2	0	0	0	2	2	0	0	0	2	0	1	2	0	1	0	1	1	2	
HABs - population dynamics	M9	1	0	1	0	1	1	2	2	1	2	0	1	0	2	1	2	1	1	1	0	2	2	2	2	0	2	1	2	
Anoxia/hypoxia	M10	0	0	0	1	1	2	2	0	2	2	0	1	0	2	1	0	0	2	1	0	1	2	0	1	0	2	1	2	
Invasive species	M11	1	0	0	1	1	0	2	1	1	2	0	2	0	2	0	0	1	0	2	0	1	2	0	0	0	2	1	2	
Pollution effects - population	M12	2	2	0	1	2	1	1	0	1	1	0	1	0	2	1	1	1	2	1	0	0	1	1	0	0	1	1	2	
Water quality model	M13	1	1	0	2	1	1	2	1	2	1	0	1	0	2	2	1	1	2	2	0	1	2	1	2	1	1	1	2	
production/sustainability	M14	0	0	1	0	2	0	2	1	2	1	0	0	0	2	1	0	0	1	1	1	0	0	1	1	0	0	2	1	2
Aquaculture - finfish	M15	0	0	1	0	2	0	2	1	2	1	0	0	0	2	1	1	0	1	1	0	0	1	1	0	0	1	1	2	
Aquaculture - shellfish	M16	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	2	
Sequential population analysis	M17	0	0	0	0	2	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	1	2	
Community dynamics	M18	0	0	0	0	2	1	1	1	2	2	0	1	0	2	1	0	0	1	2	0	1	2	0	0	0	0	1	1	2
Ecosystem dynamics	M19	0	0	0	0	2	1	1	1	2	2	0	1	0	2	1	0	0	1	2	0	1	2	0	0	0	1	1	2	

Matrix 3: Models x Users

Instructions: For each of the variables below, evaluate the degree to which its measurement is needed to guide each predictive model.
 Enter 2 for direct or highly significant importance in the model Enter 1 for indirect or partial, but significant relevance. 0 indicates insignificant or no relevance.

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Variables to predict change	Models	Storm surges	Waves	Currents	Coastal erosion	Risk assessment: seafood consumption	Risk assessment: direct contact	Chemical contamination of seafood	Habitat modification / loss	HABs - population dynamics	Anoxia/hypoxia	Invasive species	Pollution effects - population	Water quality model	Capture fishery production/sustainability	Aquaculture - finfish	Aquaculture - shellfish	Sequential population analysis	Community dynamics	Ecosystem dynamics
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19
Attenuation of solar radiation	V1	0	0	1	0	0	0	0	2	2	2	1	0	2	0	1	2	0	0	1
Changes in bathymetry	V2	1	2	1	2	0	0	0	1	0	1	0	0	1	0	1	1	0	0	1
Benthic biomass	V3	0	0	0	1	0	0	0	2	1	2	1	1	2	2	2	2	2	2	2
Benthic species diversity	V4	0	0	0	0	0	0	0	2	0	1	1	1	1	2	1	0	2	1	
Biological oxygen demand	V5	0	0	0	0	0	0	1	0	2	0	1	2	0	2	1	0	0	0	
Neutral red assay	V6	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	
Cytochrome p450 (e.g., oil)	V7	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	
Cholinesterase (pesticides)	V8	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	
Metallothionein (trace metals)	V9	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	
Currents	V10	2	1	2	2	1	2	1	1	2	1	1	1	2	0	2	2	0	1	2
Dissolved inorganic nutrients (N, P, Si)	V11	0	0	0	0	1	0	1	1	2	2	0	0	2	0	1	2	0	1	2
Dissolved oxygen	V12	0	0	0	0	0	1	1	2	1	2	0	1	2	0	2	2	0	1	1
Eh in sediment	V13	0	0	0	0	1	1	1	2	0	2	1	1	2	0	1	1	0	0	1
Fecal indicators	V14	0	0	0	0	2	2	0	1	0	1	0	1	2	0	2	2	0	0	0
Fisheries: Landings and effort	V15	0	0	0	0	2	0	0	1	0	1	0	0	2	1	1	2	2	2	2
Nekton biomass	V16	0	0	0	0	0	0	0	0	0	1	1	0	1	2	0	0	2	2	2
Incident solar radiation	V17	0	0	1	0	0	0	0	1	2	2	0	0	2	0	1	2	0	0	2
Nekton species diversity	V18	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	2	2
Particulate organic C and N	V19	0	0	0	0	0	0	0	1	1	2	0	0	2	0	1	1	0	0	1
pH	V20	0	0	0	0	0	1	1	0	0	1	0	1	1	0	1	1	0	0	1
Phytoplankton biomass (chlorophyll)	V21	0	0	0	0	0	0	0	1	2	2	1	1	2	0	2	2	0	0	2
Phytoplankton species diversity > 20 µm	V22	0	0	0	0	1	1	0	1	1	1	1	0	0	0	1	1	0	0	1
Primary production	V23	0	0	0	0	0	0	0	1	2	2	0	0	2	0	2	2	0	0	2
Salinity	V24	1	0	2	0	2	2	2	2	2	2	2	2	2	1	2	2	0	1	2
Sea level	V25	2	0	2	2	0	0	0	2	1	1	1	1	2	0	2	2	0	0	1
Sediment grain size, organic content	V26	0	1	1	2	1	0	1	2	0	1	1	1	2	0	1	1	0	1	2
Changes in shoreline position	V27	1	2	1	2	0	0	0	2	1	1	1	0	0	0	1	0	0	0	0
Surface waves	V28	2	2	1	2	0	0	0	2	1	1	0	0	0	0	2	2	0	0	0
Total organic C and N	V29	0	0	0	0	0	0	0	1	1	2	0	1	2	0	2	2	0	0	1
Total suspended solids	V30	0	0	0	2	0	0	0	1	1	1	0	1	2	0	2	2	0	0	0
Water temperature	V31	2	1	2	2	1	1	2	2	2	2	2	2	2	1	2	2	0	0	2
Zooplankton biomass	V32	0	0	0	0	0	0	0	0	1	1	0	0	2	1	1	1	0	0	2
Zooplankton species diversity	V33	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	1
Colored dissolved organic matter - CDOM	V34	0	0	0	0	0	1	1	1	1	1	0	0	1	0	0	1	0	0	1
Seabird abundance	V35	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	2
Seabird diversity	V36	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Extent of submerged aquatic vegetation	V37	0	0	0	1	0	0	0	2	0	1	1	0	1	0	1	1	0	0	1

Matrix 4: Variables x Models