

Project Information

Project full title	EuroSea: Improving and Integrating European Ocean Observing and Forecasting Systems for Sustainable use of the Oceans
Project acronym	EuroSea
Grant agreement number	862626
Project start date and duration	1 November 2019, 50 months
Project website	https://www.eurosea.eu

Deliverable information

Deliverable number	D1.2
Deliverable title	Map of BioEco Observing networks/capability
Description	This deliverable maps the locations and properties of sustained biological observing networks through Europe including identifying coordinating groups and data aggregators. Data come from a global survey of networks, supplemented by an analysis of sustained observations in OBIS (that receives all biological data from EMODNet).
Work Package number	1
Work Package title	Governance and Coordination of ocean observing and forecasting systems
Lead beneficiary	IOC/UNESCO
Lead authors	Lavenia Ratnarajah
Contributors	
Due date	31.10.2020
Submission date	26.02.2021
Version	1.0
Comments	The delay of the deliverable was caused by Covid-19 related disruptions causing some delay in recruitment plans and people taking up their roles remotely. Additionally, tasks undertaken to improve the deliverable, that were not foreseen in the outline, were taking additional time but were worthwhile to deliver an accurate mapping for the European Biological networks - The European observing system is complex and currently lacking cross-nation coordination in the biological space. The report and an initial map of the European Biological networks was reviewed internally by the EuroSea consortium.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 862626.

Table of Contents

Executive Summary	3
Map of BioEco observing networks/capability.....	3

Table of Figures

Figure 1. Number of marine monitoring programs for biological Essential Ocean Variables (EOVs) identified (up till 22 February 2021) within the European continent.....	4
Figure 2. Global map of seagrass marine monitoring programs that will be available via a 'live' portal	5

Table of tables

Table 1. List of countries with marine monitoring programs with at least one EOV monitored	6
Table 2. List of countries with no marine monitoring programs identified to date.....	7
Table 3. List of all marine monitoring programs in Europe as of 11 December 2020.....	8

Executive Summary

This report maps the current state of the sustained ocean observing networks that monitor biological Essential Ocean Variables (EOVs), such as phytoplankton, microbes, zooplankton, benthic invertebrates, fish, birds, marine mammals, turtles, seagrass, macroalgae, hard coral and mangroves across Europe. To date, 363 marine monitoring programs have been identified across 29 European countries. This initial inventory of the sustained biological ocean observing system across Europe, will be developed into an online tool and the networks strengthened through action in EuroSea. Based on the monitoring programs identified, a workshop will be organised in 2021 to develop observation strategies, data sharing practices, and best practices and standards to strengthen and develop these vital ocean observing networks.

Map of BioEco observing networks/capability

The database of European marine monitoring programs was built upon the initial global survey undertaken as part of the PEGASuS/Future Earth project. The global survey sought to identify active marine monitoring programs and coordinating networks for biological Essential Ocean Variables (EOVs). These EOVs include phytoplankton, microbes, zooplankton, benthic invertebrates, fish, birds, marine mammals, turtles, seagrass, macroalgae, hard coral and mangroves. The survey identified 130 marine monitoring programs in Europe. Efforts through the EuroSea initiative identified an additional 233 active marine monitoring programs within the European region. Through the PEGASuS/Future Earth and EuroSea efforts, a total of 363 marine monitoring programs have been identified for the European region at present (Figure 1). The EuroSea project identified 30 European countries that undertakes national marine monitoring programs, and 20 regional monitoring programs that are administered by more than 1 European country or other global organisations (Table 1). In addition, Israel undertakes 2 monitoring programs in the Mediterranean region (Table 1). To date, 19 countries have no known marine monitoring programs, 15 of which are landlocked (Table 2). The 4 countries where marine monitoring programs have yet to be identified are: Bosnia and Herzegovina, Malta, Monaco and Montenegro.

A list of all marine monitoring programs identified to date (22 February 2021) is provided in Table 3. Within each country, marine monitoring programs can be administered by government bodies, academic institutions and/or non-governmental organisations. In some countries (e.g., Denmark, Estonia, Finland and Sweden), we have yet to identify marine monitoring programs that are administered by academic institutions and/or non-governmental organisations. In these countries, the marine monitoring programs identified are administered by government agencies (Table 3). This list is not exhaustive as online information on many marine monitoring programs, including the reporting, are only available in the country's native language. The list of marine monitoring programs (Table 3) will be continually updated to reflect incoming information and available to be viewed on the EuroSea website.

To date, 146 monitoring programs have been identified for phytoplankton in Europe, followed by 95 monitoring programs for zooplankton, 83 for benthic invertebrates, 66 for fish, 47 for microbes, 40

for marine mammals, 34 for birds, 30 for macroalgae, 15 for seagrass, 13 for turtles and 4 for hard corals. There are no monitoring programs for mangroves in Europe as they grow in sheltered tropical and subtropical coastal areas across the globe. However, some countries (e.g. France) have overseas territories where mangroves are monitored.

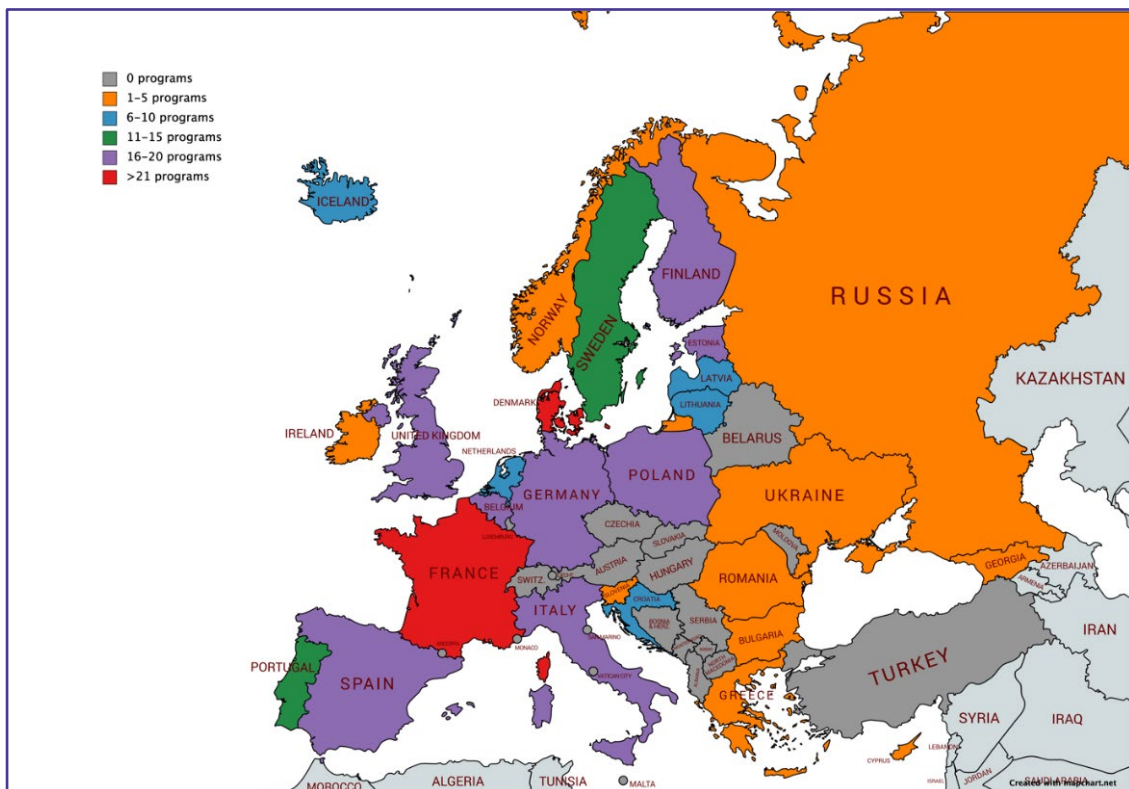


Figure 1. Number of marine monitoring programs for biological Essential Ocean Variables (EOVs) identified (up till 22 February 2021) within the European continent.

A 'live' global marine monitoring portal is being developed by the Global Ocean Observing System (GOOS) Biology and Ecosystem and Ocean Biodiversity Information System (OBIS) that will house all the information collected via the EuroSea and PEGASuS/Future Earth projects. The interactive map will allow users to select an EOVS (or more) and the respective marine monitoring programs which monitor the selected EOVS(s) will be populated onto the map. Clicking the map at a specific dot point will automatically provide details of the marine monitoring program, and where available, the link to the OBIS dataset. A preview of the portal is provided highlighting the global seagrass marine monitoring program (Figure 2). The development of this database and portal is ongoing with information on additional marine monitoring programs still being gathered as they are identified. A complete report (D1.4 Report on European BioEco networks) is due in January 2022 following on from the workshop to be held in late 2021. The workshop aims to reach an agreement on observation strategies, data sharing practices, and best practices and standards whilst strengthening engagement with national and international research and observation programs across Europe.

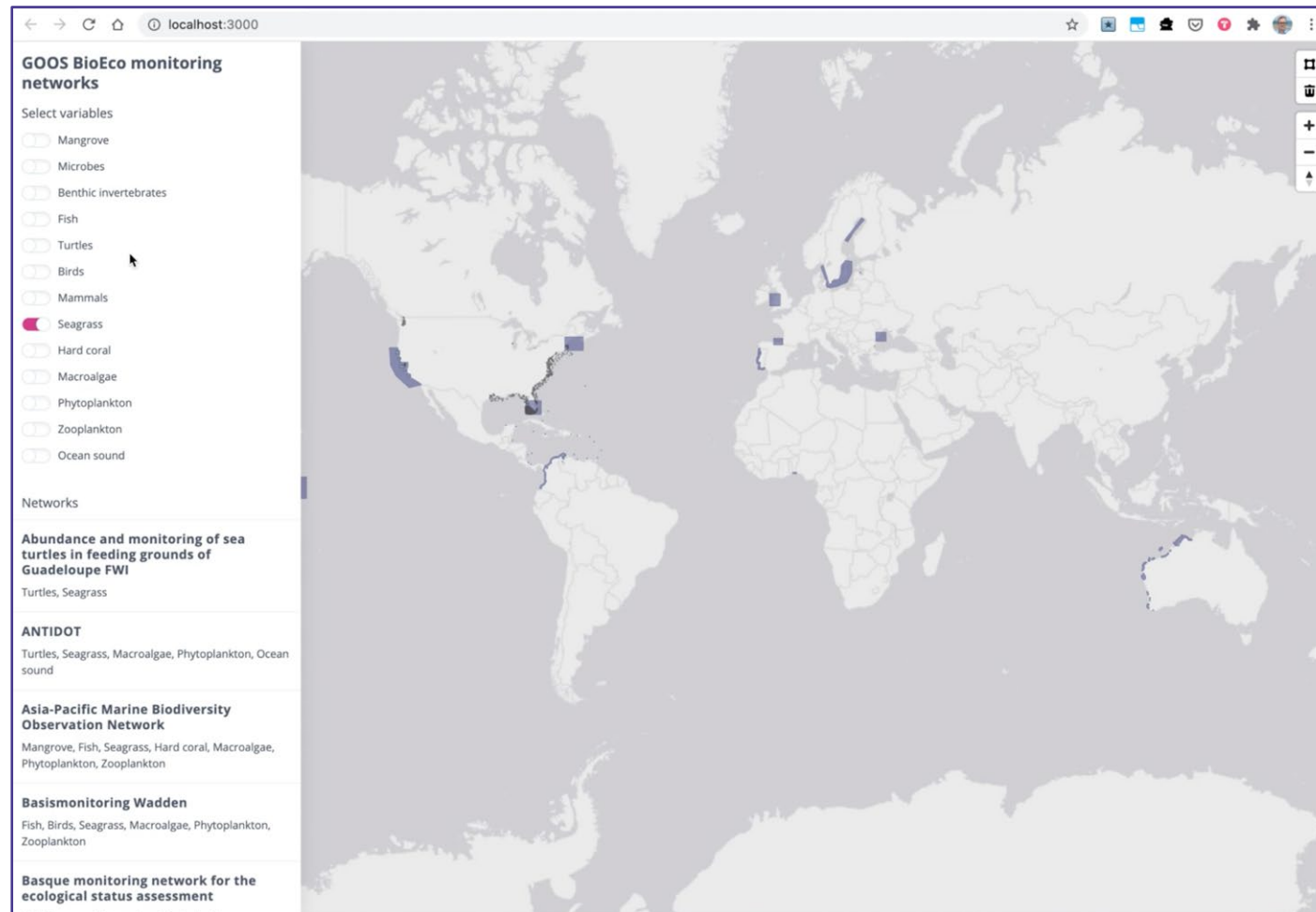


Figure 2. Global map of seagrass marine monitoring programs that will be available via a 'live' portal

Table 1. List of countries with marine monitoring programs with at least one EOY monitored

Countries	Number of observing programs
Belgium	18
Bulgaria	4
Croatia	10
Cyprus	1
Denmark	33
Estonia	17
Faroe Islands	13
Finland	17
France	54
Georgia	1
Germany	16
Greece	2
Greenland	5
Iceland	7
Ireland	3
Italy	20
Latvia	7
Lithuania	8
Netherlands	6
Norway	5
Norway & Scotland	2
Poland	19
Portugal	14
Romania	4
Russia	5
Slovenia	2
Spain	18
Spain & Scotland	1
Sweden	12
Ukraine	1
United Kingdom	18
Regional	18

Table 2. List of countries with no marine monitoring programs identified to date

Countries	Number of observing programs
Albania	0
Andorra	0
Austria	0
Belarus	0
Bosnia and Herzegovina	0
Czech Republic (Czechia)	0
Hungary	0
Liechtenstein	0
Luxembourg	0
Kosovo	0
Malta	0
Moldova	0
Monaco	0
Montenegro	0
North Macedonia	0
San Marino	0
Serbia	0
Slovakia	0
Switzerland	0

Table 3. List of all marine monitoring programs in Europe as of 11 December 2020

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Belgium	University of Liege (Belgium), Stareso SA (Calvi, France), Ifremer (France), the French Water Agency (PACA-Corsica), and the Territorial Collectivity of Corsica	PHYTOCLY Time Series		1979-current	2 x a week since 2005	No		x											
Belgium	Research Institute for Nature and Forest (INBO)	Breeding Seabirds in Forest (INBO)	Belgian coast	1997-current		Yes							x						OSPAR
Belgium	Research Institute for Nature and Forest (INBO)	Belgian Seabirds at Sea	Belgian part of the North Sea	2005-current		Yes							x						OSPAR
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)	Fish - Demersal Young Fish & Brown Shrimp Survey - Common Fisheries Policy	Belgian part of the North Sea	1973-current	Annual (Sept)	Yes					x								ICES
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)	Fish - North Sea Beam Trawl Survey - Common Fisheries Policy	Belgian part of the North Sea	1973-current	Annual (Aug - Sept)	Yes				x	x								ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Mammals – population abundance	Belgian part of the North Sea	1995-current	2x per year	Yes								x					OSPAR/ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Mammals – strandings	Belgian coast	1995-current	Continually	Yes								x					OSPAR/ICES
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)	Benthic soft-sediment environmental impact monitoring programme	Belgian part of the North Sea	1979-current	Annual	Yes				x									OSPAR/ICES

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)	Epibenthos and demersal fish environmental impact monitoring programme	Belgian part of the North Sea	1985-current	Annual	Yes					x								OSPAR/ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS), Research Institute for Nature and Forest (INBO), Institute for Agriculture, Fishery and Food research (ILVO) & Marine Biology Research Group, Ghent University	Ecological impact monitoring offshore windfarms	Belgian part of the North Sea	2005-current		Yes				x	x		x	x					OSPAR
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Hard substrate benthos - community characteristics	Belgian part of the North Sea	2015-current		Yes				x									OSPAR/ICES
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)	Fisheries-dependent observer-at-sea programme - Common Fisheries Policy	Belgian part of the North Sea	1973-current	Continually	Yes				x	x								ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Chlorophyll a	Belgian part of the North Sea	2010-current		Yes		x											OSPAR
Belgium	Flanders Marine Institute (VLIZ)	Phytoplankton observations in the Belgian part of the North Sea – LifeWatch observatory data	Belgian part of the North Sea	2017-current		Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Belgium	Flanders Marine Institute (VLIZ)	Zooplankton observations in the Belgian part of the North Sea - LifeWatch observatory data	Belgian part of the North Sea	2012-current		Yes			x										
Belgium	Research Institute for Nature and Forest (INBO)	Monitoring of beached seabirds	Belgian coast	1962-current	Monthly	Yes							x						OSPAR
Belgium	Flanders Marine Institute (VLIZ)	Passive acoustic monitoring of marine mammals	Belgian part of the North Sea	2016-current	Continually	Yes								x					OSPAR
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Monitoring of seals on beaches/in harbours	Belgian coast	2020-current	Daily	Yes								x					OSPAR
Bulgaria	Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences	Laboratory of Marine Ecology, Sozopol	Sozopol	2009-current	Quarterly	Yes				x	x					x	x		
Bulgaria	LTER Europe -> LTER Bulgaria	Black Sea macrosite	Kaliakra	1991-current	Spring/Summer	Yes		x	x	x	x					x	x		
Bulgaria	LTER Europe -> LTER Bulgaria	Black Sea macrosite	Galata	1991-current	Spring/Summer	Yes		x	x	x	x					x	x		
Bulgaria	LTER Europe -> LTER Bulgaria	Black Sea macrosite	Varna Bay	1991-current	Spring/Summer	Yes		x	x	x	x					x	x		
Croatia	Institute of Oceanography and Fisheries	Mobile species - population characteristics		2021-current	Annual								x						
Croatia	Institute of Oceanography and Fisheries	Mobile species - population characteristics		2021-current	Once in 3 years							x							
Croatia	Institute of Oceanography and Fisheries	Activities extracting living resources (fisheries including recreational, maerl, seaweed)		2021-current	Monthly						x								

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Croatia	Institute of Oceanography and Fisheries	Activities extracting living resources (fisheries including recreational, maerl, seaweed)		2021-current	Once in 6 years						x								
Croatia	Institute of Oceanography and Fisheries	Activities extracting living resources (fisheries including recreational, maerl, seaweed)		2021-current	4x per year						x								
Croatia	Institute of Oceanography and Fisheries	Seabed habitats - community characteristics		2021-current	Once in 3 years												x		
Croatia	Institute of Oceanography and Fisheries	Mobile species - population characteristics		2021-current	Once in 2 years						x								
Croatia	Institute of Oceanography and Fisheries	Mobile species - population characteristics		2021-current	Varies									x					
Croatia	Institute of Oceanography and Fisheries	Pelagic habitats - community characteristics		2021-current	Varies			x	x										
Croatia	Institute of Oceanography and Fisheries	Plankton blooms (biomass, frequency)		2021-current	Once in 6 years			x											
Cyprus	Department of Fisheries and Marine Research, Ministry of Agriculture, Rural Development and Environment	Biodiversity		2005-current	Varies	Yes		x	x		x	x	x	x			x		
Denmark	Danish Environmental Protection Agency	Mobile species - abundance - birds wintering		1980-current	Annual	Yes							x						HELCOM, OSPAR
Denmark	Danish Environmental Protection Agency	Mobile species - abundance - birds breeding		1980-current	Annual	Yes							x						

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Denmark	Danish Environmental Protection Agency	Mobile species - distribution, abundance and/or biomass - Survey IBTS (IBTS - International Bottom Trawl Survey)		1983- current	Every 6 months	Yes					x								
Denmark	Danish Environmental Protection Agency	Mobile species - distribution, abundance and/or biomass - Survey BITS (BITS - Baltic International Trawl Survey)		1988- current	Every 6 months	Yes					x								
Denmark	Danish Environmental Protection Agency	Mobile species - distribution, abundance and/or biomass - Survey CODS_Q4 (CODS_Q4 - Cod survey)		2008- current	Annual	Yes					x								
Denmark	Danish Environmental Protection Agency	Mobile species - distribution, abundance and or biomass - flatfish - Survey FFS (FFS - Flatfish survey)		2004- current	Annual	Yes					x								
Denmark	Danish Environmental Protection Agency	Foodwebs - biodiversity, abundance		1983- current	Varies	Yes		x	x		x								
Denmark	Danish Environmental Protection Agency	Benthic species - abundance and/or biomass		1987- current	Varies	Yes											x		
Denmark	Danish Environmental Protection Agency	Benthic species - abundance and/or biomass		1990- current	Varies	Yes				x									

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	North Sea : DNAMAP-1510007	1989-current		Yes		x		x						x	x		HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Ringkøbing Fjord: DNAMAP-1	1980-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Nissum Fjord: DNAMAP-22	1983-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Nissum Bredning: DNAMAP-3702-1	1982-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Lister Dyb: DNAMAP-3	1993-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Århus Bugt: DNAMAP-170006	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Køge Bugt: DNAMAP-1727	1985-current		Yes		x											HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Hevring Bugt: DNAMAP-190004	1985-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Løgstør Bredning: DNAMAP-3708-1	1980-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Skive Fjord: DNAMAP-3727-1	1980-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Ålborg Bugt: DNAMAP-409	1981-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Anholt East: DNAMAP-413	1981-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Vejle Fjord: DNAMAP-4273	1982-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Ven: DNAMAP-431	1979-current		Yes		x											HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Arkona: DNAMAP-444	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Mariager Fjord: DNAMAP-5503	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Horsens Fjord: DNAMAP-5790	1981-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Roskilde Fjord: DNAMAP-60	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Lillebælt-South: DNAMAP-6300043	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Lillebælt-North: DNAMAP-6870	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Odense Fjord: DNAMAP-6900017	1979-current		Yes		x											HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Gniben: DNAMAP-925	1979-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Storebælt: DNAMAP-939	1982-current		Yes		x											HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Bornholm Deep: DNAMAP-bmpk2	1980-current		Yes		x											HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Abundance of wintering birds	1967-current	Annual	Yes							x						HELCOM, ICES

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Abundance of water birds in the breeding season	1957-current	Annual	Yes							x						
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Abundance of migratory water birds (coastal area)	2004-current	Varies	Yes													

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Abundance of migratory water birds (feeding in off-shore areas)		Annual	Yes													HELCOM, ICES
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Seals Abundance	1994-current	Annual	Yes								x					HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Seals – breeding success	1990-current	Annual	Yes								x					HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Coastal fish	1975-current	Annual	Yes					x								HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Off-shore fish	1992-current	Annual	Yes					x								ICES
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Migratory fish	1993-current	Annual	Yes					x								

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Phytoplankton species composition, abundance and biomass	1993-current	A	Yes		x											HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Zooplankton species composition, abundance and biomass	1993-current	Annual	Yes			x										HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Seabed habitats – community characteristics	1974-current	Annual	Yes				x						x	x		HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Macrozoobenthos	1991-current	Annual	Yes				x									HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency,	Estonian National Monitoring Program	Phytobenthic communities	1995-current	Annual	Yes										x	x		HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of University of Tartu (UT EMI), Marine Systems Institute of the Tallinn University of Technology (TalTech MSI), Estonian Ornithological Society (EOS), Estonian University of Life Sciences (ULS), NPA Pro Mare	Estonian National Monitoring Program	Phytoplankton - Chlorophyll-a	1993-current	Annual	Yes		x											HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency,	Estonian National Monitoring Program	Non-indigenous species – harbours and adjacent regions	2012-current	Annual	Yes		x	x	x	x								HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency,	Estonian National Monitoring Program	Non-indigenous species – abundance and biomass	1993-current	Annual	Yes		x	x	x	x								HELCOM
Faroe Islands	Faroe Marine Research Institute	Faroe Islands Shelf Time Series		1991-current	Annually in May	Yes	x	x	x										
Faroe Islands	Faroe Marine Research Institute	Norwegian Sea Transect (North and South)		1990-current	Annually in May	Yes			x										

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Faroe Islands	Faroe Marine Research Institute			1973- current	Annually								x						
Faroe Islands	Faroe Marine Research Institute	Faroese Marine Ecosystem Study (FAMEOS)		2017- current	Annually in May	Yes	x	x	x	x	x			x			x		
Faroe Islands	Faroe Marine Research Institute	International Blue Whiting Spawning Stock Survey (IBWSS)	Gridded Survey	2004- current	Annually in March/April				x		x								
Faroe Islands	Faroe Marine Research Institute	International Ecosystem Survey in the Nordic Seas (IESNS)	Gridded Survey	1995- current	Annually in May				x		x								ICES
Faroe Islands	Faroe Marine Research Institute	International Ecosystem Summer Survey in the Nordic Seas (IESSNS)	Gridded Survey	2009- current	Annually in July/August				x		x								ICES
Faroe Islands	Faroe Marine Research Institute	ICES North West Working Group	Gridded Survey																
Faroe Islands	Faroe Marine Research Institute	North Atlantic Sightings Surveys	North Atlantic	1987- current	6-8y interval (1987, 1989, 1995, 2001, 2007, 2015)									x					
Faroe Islands	Faroe Marine Research Institute	Bottom trawl survey	Gridded Survey	1983- current	Annually in March					x	x								
Faroe Islands	Faroe Marine Research Institute	Bottom trawl survey	Gridded Survey	1996- current	Annually in August					x	x								
Faroe Islands	Faroe Marine Research Institute	Bottom trawl survey	Gridded Survey	2014- current	Annually in September					x	x								
Faroe Islands	Faroe Marine Research Institute	Pelagic trawl survey	Gridded Survey	1983- current	Annually in September						x								
Finland	Archipelago Research Institute	Long-term environmental monitoring: Archipelago Sea		1967- current	Monthly	Yes		x	x		x								
Finland	Natural Resource Institute Finland	Seal abundance		1988- current	Annual	Yes								x					
Finland	Finnish Environment Insitute	Abundance and distribution of harbour porpoises		2001- current	Continually	Yes								x					
Finland	Finnish Parks and Wildlife Service	Marine breeding birds		1948- current	Annual	Yes							x						

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Finland	Finnish Environment Insitute	Marine wintering birds		1975-current	Annual	Yes							x						
Finland	Finnish Environment Insitute	White tailed eagle breeding success		1972-current	Annual	Yes							x						
Finland	Natural Resource Institute Finland	Sea trout		1990-current	Annual	Yes					x								
Finland	Finnish Environment Insitute	Coastal fish gillnet survey		2002-current	Annual	Yes					x								
Finland	Finnish Environment Insitute	Offshore soft bottom macrozoobenthos		1964-current	Annual	Yes				x									
Finland	Finnish Environment Insitute	Coastal waters soft bottom fauna		1964-current	Annual	Yes				x									
Finland	Finnish Environment Insitute	Coastal hard bottom macroalgae and blue mussel communities		1993-current	Annual	Yes											x		
Finland	Finnish Parks and Wildlife Service	Coastal sand and gravel bottoms		2020-current	Every 3 years	Yes											x		
Finland	Finnish Parks and Wildlife Service	Soft bottom macrophytes		2020-current	Every 3 years	Yes										x	x		
Finland	Finnish Environment Insitute	Zooplankton species composition and abundance		1979-current	Annual	Yes			x										
Finland	Finnish Environment Insitute	Phytoplankton species composition and abundance		1979-current	Annual	Yes		x											
Finland	Natural Resource Institute Finland	Fisheries data collection		2002-current	Annual	Yes					x								
Finland	Finnish Environment Insitute	Phytoplankton pigments		1979-current	Continually	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	Foundation Total, Université Pierre et Marie Curie, CNRS	Biodiversity, extreme environment and global change		2015-current	1x per year	No									x				
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): Mediterranean Ocean Observing System for the Environment (MOOSE)	DYFAMED	1991-current	Monthly	Yes		x	x										
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): Mediterranean Ocean Observing System for the Environment (MOOSE)	ANTARES	2009-current	Monthly	Yes	x	x	x										
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Brest - Sainte Anne	1998-current	weekly	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Boulogne	1992-current	2x per month	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	At So	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Arcachon - Bouée 13	1999-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Cabourg	2002-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Loguivy - Trieux	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Wimereux	1998-current	2x per month	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Les Hébihens - Arguenon	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Kervel large - Baie de Douarnenez	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Roscoff - Bouée Astan	2000-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Concarneau large	1992-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Men er Roué - Quiberon	1987-current	2x per month	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Ouest Loscolo	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Marseille	1994-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Le Cornard - Pertuis Breton	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Luc-sur-Mer	2012-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Auger	1988-current	2x per month	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Teychan bis	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Villefranche	1995-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Bouzigues - Lagune de Thau	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	La Rochelle - Antioche	2011-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Sète	2002-current	2x per month	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Barcarès	1989-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Parc Leucate 2	1987-current	2x per month	Yes		x											
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Banyuls	2017-current	2x per month	Yes		x											
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Arcachon)	Eyrac	1997-current	2x per month	Yes	x	x											
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Arcachon)	Bouée 13	2005-current	2x per month	Yes	x	x											
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Arcachon)	Comprian	2005-current	2x per month	Yes	x	x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Banyuls)	Sola	1997- current	4x per month	Yes	x	x											
France	CNRS, Université de Bretagne Occidentale	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Brest)	Portzic	1998- current	4x per month	Yes	x	x											
France	MNHN	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Dinard)	Cézembre	2014- current	2x per month	Yes	x	x											
France	MNHN	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Dinard)	Bizeux	2012- current	2x per month	Yes	x	x											
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Gironde)	Pk 86	1997- current	1x per month	Yes	x	x											
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Gironde)	Pk 52	1997- current	1x per month	Yes	x	x											
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Gironde)	Pk 30	1997- current	1x per month	Yes	x	x											
France	CNRS, La Rochelle Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (La Rochelle)	Antioche	2011- current	2x per month	Yes	x	x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Université Caen Normandie	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Luc- sur-mer)	Luc-sur-mer	2007- current	2x per month	Yes	x	x											
France	CNRS, Université Caen Normandie	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Luc- sur-mer)	Smile	2013- current	2x per month	Yes	x	x											
France	CNRS, Aix- Marseille Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Marseille)	Frioul	1997- current	2x per month	Yes	x	x											
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Roscoff)	Astan	2000- current	2x per month	Yes	x	x											
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Roscoff)	Estacade	1997- current	2x per month	Yes	x	x											
France	CNRS, Université de Montpellier	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Sète)	Sète	2015- current	2x per month	Yes	x	x											
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Villefranche)	Point B	1997- current	4x per month	Yes	x	x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
France	CNRS, Université de Lille, Université du Littoral et de la Côte d'Opale	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Wimereux)	Point C	1998-current	2x per month	Yes	x	x											
France	CNRS, Université de Lille, Université du Littoral et de la Côte d'Opale	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Wimereux)	Point L	1998-current	2x per month	Yes	x	x											
France	CNRS-INSU, Ifremer, Université de La Rochelle, Université de Caen Normandie	French Observation and Monitoring program for Phytoplankton and Hydrology in coastal waters (REPHY)		1987-current (?)	Monthly	Yes		x											
France	CNRS / Sorbonne Université	Bay of Morlaix monitoring	Pierre Noire	1977-current	2x per year	Yes				x									
France	CNRS / Sorbonne Université	Bay of Morlaix monitoring	Rivière de Morlaix	1977-current	2x per year	Yes				x									
France	CNRS	Association of New Tools to Improve the understanding of the Dynamic Of Threatened marine turtles (ANTIDOT)		2010-current	Year round	Yes						x							
France	CNRS / Sorbonne Université	RadeZOO		1966-current	Daily	Yes			x										
France	Ifremer and Electricite de France (EDF)	Gravelines Station		1975-current	Monthly	Yes		x	x										

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Georgia	National Environmental Agency of Georgia (NEA). Dep. of Fisheries, Aquaculture and Water Biodiversity.	Assessment and commercial forecasting of fish and other hydrobionts resources of the Black Sea coast and inland waters of Georgia, biological monitoring, determination of the environmental status of the reservoirs. / Code - 4	Georgian part of the Black Sea	2006 - current	Seasonal	Yes	x	x	x	x	x								No
Germany	GEOMAR	LTER Boknis Eck Time-Series Station	Eckernförde Bay, SW Baltic Sea	1957- current	Monthly	Yes		x											
Germany	Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research GmbH	Coastal Observing System for Northern and Arctic Seas (COSYNA)	FerryBox	2009- current	10 minutes	Yes		x											
Germany	Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research GmbH	Coastal Observing System for Northern and Arctic Seas (COSYNA)	Glider	2011- current	Seconds	Yes		x											
Germany	Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research GmbH	Coastal Observing System for Northern and Arctic Seas (COSYNA)	Remote sensing	2009- current	Daily	Yes		x											
Germany	Senckenberg Society for Nature Research	Dogger Bank long-term monitoring programme		1991- current	Annual	Yes		x	x	x	x								

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Germany	AWI	LTER Observatory Hausgarten		1999- current	Once per summer (cruise) + autonomou s instrument s throughout the year	Yes	x	x	x										
Germany	AWI	North Sea ecological time series	North Sea Benthos	1969- current	Annual	Yes				x									
Germany	AWI	North Sea ecological time series	Helgoland Roads	1962- current	Daily	Yes		x	x										
Germany	Senckenberg Society for Nature Research	LTER North Sea Benthos Observatory		1978- current	Annual or Seasonal	Yes				x	x								
Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)	The IOW Baltic Sea Time Series	Arkona Basin	1979- current	Varies	Yes		x	x	x									HELCOM
Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)	The IOW Baltic Sea Time Series	Bornholm Basin	1979- current	Varies	Yes		x	x										HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)	The IOW Baltic Sea Time Series	Mecklenburg Basin	1979-current	Varies	Yes		x	x	x									HELCOM
Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)	The IOW Baltic Sea Time Series	Eastern Gotland Basin	1979-current	Varies	Yes		x	x										HELCOM
Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)	The IOW Baltic Sea Time Series	Pomeranian Bay north	1979-current	Annual	Yes				x									HELCOM
Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)	The IOW Baltic Sea Time Series	Pomeranian Bay central	1979-current	Annual	Yes				x									HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Germany	Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz (NLWKN) which is "Federal Agency for Watermanagement, Coastal Defense and Nature Conservation of Lower Saxony" in English	Norderney WQ-W2		1985-current	Weekly	Yes		x		x						x	x		
Greece	Tethys Research Institute	Ionian Dolphin Project		1991-current	Varies	Citizen science								x					
Greece	Hellenic Centre for Marine Research (HCMR)	POSEIDON system		2010-current	Monthly to biannually	Yes	x	x	x										
Greenland	Greenland Institute of Natural Resources	Greenland Ecosystem Monitoring	MarineBasis Zackenberg	2002-current				x	x					x			x		
Greenland	Greenland Institute of Natural Resources	Greenland Ecosystem Monitoring	MarineBasis Nuuk	2005-current				x	x				x	x			x		
Greenland	Greenland Institute of Natural Resources	Mapping and monitoring benthos communities								x									
Greenland	Greenland Institute of Natural Resources	Accoustic monitoring of marine mammals in a changing Arctic												x					
Greenland	Greenland Institute of Natural Resources	Photo identification of Humpback Whales												x					
Iceland	Marine and Freshwater Institute (MFRI)	Icelandic monitoring programme	Siglunes Transect - Lower	1958-current	May and June	Yes		x	x										
Iceland	Marine and Freshwater Institute (MFRI)	Icelandic monitoring programme	Siglunes Transect - Upper	1958-current	May and June	Yes		x	x										

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Iceland	Marine and Freshwater Institute (MFRI)	Icelandic monitoring programme	Selvogsbanki Transect		May and June	Yes													
Iceland	Icelandic Institute of Natural History	Icelandic Christmas Bird Count		1952-current	Annual								x						
Iceland	South Iceland Nature Research Centre	Atlantic Puffin population monitoring program		2010-current	Varies								x						
Iceland	South Iceland Nature Research Centre	Icelandic nocturnal seabird monitoring program		2017-current									x						
Iceland	South Iceland Nature Research Centre	Icelandic Storm-Petrel & Manx's Shearwater Population Monitoring Programme		2017-current															
Ireland	National Biodiversity Data Centre	National Biodiversity Data Centre		2007-current	Varies	Citizen science	x		x	x		x				x	x		
Ireland	Marine Institute	Phytoplankton monitoring		1986-current	Weekly	Yes		x											
Ireland	Fisheries Ecosystems Advisory Service (FEAS) in the Marine Institute	Western European Shelf Pelagic Acoustic Survey (WESPAS)		2008-current	Annual	Yes	x	x	x		x		x	x					
Israel	University of Haifa	Israel Marine Mammal Research & Assistance Center		1993-current	Monthly to bimonthly	Yes								x					
Israel	University of Haifa	Morris Khan Research Station		2015-current	Varies	Yes		x		x	x			x					
Italy	University of Sassari	IT14-Marine ecosystems of Sardinia - Italy	Golfo dell'Asinara	1997-current	Seasonally		x	x											LTER
Italy	University of Sassari	IT14-Marine ecosystems of Sardinia - Italy	Golfo di Olbia - Italy	1992-current															LTER

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Italy	University of Sassari	IT14-Marine ecosystems of Sardinia - Italy	Laguna di Cabras	2006-current				x											LTER
Italy	University of Sassari	IT14-Marine ecosystems of Sardinia - Italy	Laguna di S'Ena Arrubia	1990-current															LTER
Italy	University of Sassari	IT14-Marine ecosystems of Sardinia - Italy	Laguna di Santa Giusta	2006-current				x											LTER
Italy	Tethys Research Institute	Cetacean Sanctuary Research		1990-current	Weekly from May to October									x					
Italy	Istituto di Scienze Marine (ISMAR)	IT12-Northern Adriatic Sea - Italy ("Acqua Alta" research tower)	Gulf of Venice	1970-current				x	x										LTER
Italy	Istituto Nazionale de Oceanografia di Geofisica Sperimentale	Gulf of Trieste Time series	Gulf of Trieste C1	1986-current	Monthly		x	x	x	x									LTER
Italy	Stazione Zoologica Anton Dohrn	MareChiara	Golfo di Napoli	1984-current	Weekly		x	x	x										LTER
Italy	KYMA sea conservation & research	On the tracks of great pelagic marine animals (whales, dolphins, sea turtles, swordfish and tunas)	1	2020-current	June-Sept	Yes					x	x		x					
Italy	KYMA sea conservation & research	On the tracks of great pelagic marine animals (whales, dolphins, sea turtles, swordfish and tunas)	2	2020-current	June-Sept	Yes					x	x		x					
Italy	National Research Council of Italy	The W1-M3A multidisciplinary observatory		2011-current	Daily	Yes		x											
Italy	CIMA Research Foundation	ZIPHIUS		2004-current	Summer	Yes								x					

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Italy	ISPRA Istituto Superiore per la Protezione e la Ricerca Ambientale	The Fixed Line Transect Mediterranean monitoring Network (FLT Med Net)		2007-current	weekly or bi-weekly	Yes						x	x	x					
Italy	MENKAB	ECHO	Northern point of Pelagos Sanctuary	2009-current	All year round but mostly from April to October							x		x					
Italy	Oceanomare Delphis	Ischia Dolphin Project	Archipelagos Campano and Pontino	1991-current	Weekly from May to October	Yes					x	x	x	x					
Italy	Delfini del Ponente APS	Delfini del Ponente - Dolphin Research Project	Western Ligurian Sea	2018-current	8-10x month	Yes					x	x	x	x					
Italy	DeITa - delfini e tartarughe nel Golfo di Trieste	N2K	Gulf of Trieste - Italian side	2016-current	June-Sept							x		x					
Italy	Jonan Dolphin Conservation	Researcher for a day	Gulf of Taranto - Italy	2009-current	March - November	Yes		x	x			x		x					
Italy	Stazione Zoologica Anton Dohrn	Naples Ecological REsearch for Augmented Observatories (NEREA)	Gulf of Naples	2019-current	Monthly	Yes	x	x	x										
Latvia	University of Latvia	Engure marine site - Latvia	Baltic Sea, Gulf of Riga	1997-current	once in 2 years	Yes	x	x	x	x						x	x		ILTER
Latvia	University of Latvia	The Gulf of Riga littoral biodiversity	Baltic Sea, Gulf of Riga	1997-current	once pr year	Yes	x	x	x	x							x		
Latvia	Latvian Institute of Aquatic Ecology, University of Daugavpils	Marine monitoring programme		1973-current	Annual	Yes		x	x	x									HELCOM
Latvia	Latvian Institute of Aquatic Ecology, University of Daugavpils	Marine monitoring programme		2014-current	once in 6 year period	Yes				x							x		HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Latvia	Institute of Food safety, animal health and environment	Latvia work plan for data collection in fisheries and aquaculture sectors		1960's-current	Annual	Yes					x								ICES and EC
Latvia	Nature Conservation Agency	Monitoring of biodiversity (State monitoring) - Aviation accounts of seawater waterbirds		2017-current	Annual	Yes							x						HELCOM
Latvia	Nature Conservation Agency	Monitoring of biodiversity (State monitoring) - coastal and inland wintering waterfowl surveys		1967-current	Annual	Yes							x						
Lithuania	Environmental Protection Agency	BALLT-D024_Zoopl		1990-current	Varies	Yes			x										HELCOM
Lithuania	Environmental Protection Agency	BALLT-D01256_Macrozoobenthos		1981-current	Annual	Yes				x									HELCOM
Lithuania	Environmental Protection Agency	BALLT-D01234_FishCoastal		1992-current	Annual	Yes					x								HELCOM
Lithuania	Environmental Protection Agency	BALLT-D025_Phyto		1980-current	Every 3 months	Yes		x											HELCOM
Lithuania	Environmental Protection Agency	BALLT-D01_BirdsWinter		1992-current	Every 3 years	Yes							x						HELCOM
Lithuania	Environmental Protection Agency	BALLT-D01234_FishOffshore		2005-current	Varies	Yes					x								ICES
Lithuania	Environmental Protection Agency	BALLT-D05_ChIA		1980-current	Every 3 months	Yes		x											HELCOM
Lithuania	Environmental Protection Agency	BALLT-D0156_SeabedVegetation		2007-current	Every 2 years	Yes											x		HELCOM

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Netherlands	Stichting Rugvin (the Rugvin foundation)	North Sea Cetacean monitoring programme (Project Rugvin)		2005- current	Once a month	Yes							x	x					
Netherlands	Stichting Rugvin (the Rugvin foundation)	Harbour porpoise Photo Identification Programme, Eastern Scheldt (Project Rugvin)		2015- current	April - October (weather dependent)	Yes								x					
Netherlands	NIOZ Royal Netherlands Institute for Sea Research	Synoptic Intertidal Benthic Survey (SIBES)		2008- current	Once per summer	Yes				x									
Netherlands	NIOZ Royal Netherlands Institute for Sea Research	Shorebird survival		1998- current	Varies/Dail y	Yes							x						
Netherlands	NIOZ Royal Netherlands Institute for Sea Research	Shorebird habitat use in the western Wadden Sea		2017- current	Varies/Dail y	Yes							x						
Netherlands	Netherlands Institute for Sea Research (NIOZ) and the University of Groningen	Waddenmozaiek program		2019- current	Every 2 years	Yes				x	x						x		
Norway	Institute of Marine Research (IMR) Monitoring Programme	Svinøy Transect - East and West		1995- current	4 - 10 times a year				x										
Norway	Institute of Marine Research (IMR) Monitoring Programme	Fugløya- Bjørnøya Transect - North and South		1995- current	3 - 6 times a year				x										
Norway	Institute of Marine Research (IMR) Monitoring Programme	Vardø-Nord Transect - North and South		1995- current	3 - 4 times a year				x										
Norway	Institute of Marine Research (IMR) Monitoring Programme	Arendal Station 2		1994- current	Twice a month			x	x										

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Norway	University of Bergen	Ocean Weather Station M		1948-current	Daily			x											
Norway & Scotland	UiT The Arctic University of Norway until 2026 in collaboration with the Scottish Association for Marine Science (SAMS)	Kongsfjorden Rjipfjorden Observatory Program - Kongsfjorden Marine Observatory (KROP)		2002-current	Daily				x	x	x								
Norway & Scotland	UiT The Arctic University of Norway until 2026 in collaboration with the Scottish Association for Marine Science (SAMS)	Kongsfjorden Rjipfjorden Observatory Program - Rjipfjorden Marine Observatory (KROP)		2007-current	Daily				x	x	x								
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Daudmannsodd en		1988-current	Once per summer			x	x	x			x						
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Poolepynten		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Tønseset		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Hamburgbukta		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Velkomstpynten		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Verlegenhukun		1988-current	Once per summer			x	x	x									

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Murchison Bay		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Depotodden		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Trollodden		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Kapp Bruun		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Storøya		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Isispynten		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Vibebukta		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Bennebukta		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Kapp Lee		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Habenichtbukta		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Morenetangen		1988-current	Once per summer			x	x	x									

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project - Palffyodden		1988-current	Once per summer			x	x	x									
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project Calypsobyen		1988-current	Once per summer			x	x	x									
Portugal	Centre for Environmental and Marine Studies & University of Aveiro (CESAM)	LTER Ria de Aveiro		2011-current	Varies	Yes	x	x	x		x		x	x		x			
Portugal	The Interdisciplinary Centre of Marine and Environmental Research (CIIMAR), University of Porto and the company TRANSINSULAR, Grupo ETE	CETUS Project - Cetacean monitoring in the Macaronesia		2012-current	Opportunistic	Yes								x					
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mondego1	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mondego2	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mondego3	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Tejo1	2018-current	Daily	Yes		x											

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Tejo2	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Tejo3	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mira1	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mira2	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mira3	2018-current	Daily	Yes		x											
Portugal	Marine and Environmental Sciences Centre (MARE) - Madeira	MARE-Madeira monitoring programs		2017-current	Annual	Yes				x									
Portugal	Instituto Português do Mar e da Atmosfera (IPMA)	CASCAIS-WATCH	Cascais Bay	2005-current					x										
Portugal	Centre of Marine Sciences (CCMAR)	CASCAIS-WATCH	Guadiana Estuary (lower)	1996-current	Monthly		x	x											
Romania	National Institute for Marine Research and Development "Grigore Antipa" (NIMRD), Constanta, Romania	Marine Environment Integrated Monitoring Program																	

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Romania		Monitoring and Conservation of Black Sea Cetaceans																	
Romania		Phytoplankton monitoring programme Romanian Black Sea waters																	
Romania		Romanian Marine Monitoring Program (Black Sea) - zooplankton																	
Russia		Long-Term Monitoring Program "Muddy-sandy intertidal flats in Kandalaksha Bay (White Sea)"		1987-present	4 times a year					x							x		
Russia	Zoological Institute of Russian Academy of Sciences	White Sea Hydrology and Zooplankton Time-Series	Kartesh D1	1957-current	Every 10 days in spring/summer and monthly in winter	Yes		x	x	x	x								
Russia	Lomonosov Moscow State University Marine Research Centre	Annual scientific expedition "Arctic: step by step", RV Kartesh	Pechora Sea	2016-current	Annually	Yes				x									
Russia	Lomonosov Moscow State University Marine Research Centre	Annual scientific expedition "Arctic: step by step", RV Kartesh	Pechora Bay	2016-current	Annually	Yes				x									
Russia	Lomonosov Moscow State University Marine Research Centre	Annual scientific expedition "Arctic: step by step", RV Kartesh	Gulf of Ob	2016-current	Annually	Yes				x									

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Slovenia	LTER Europe -> LTER Slovenia	LTER: Gulf of Trieste - Slovenia/National monitoring of the ecological and chemical status of the Slovenian sea		1989-current	Varies	Yes	x	x	x	x							x		
Slovenia	Morigenos – Slovenian Marine Mammal Society	Slovenian Dolphin Project		2002-current										x					
Spain	Balearic Islands Coastal Observing and Forecasting System (SOCIB)	Turtle Tracking	Western Mediterranean	2010-current	Varies/Daily	Yes		x				x							
Spain	Balearic Islands Coastal Observing and Forecasting System (SOCIB)	Canals Endurance Lines SOCIB-canals seasonal cruise	Mallorca channel/Ibiza channel	2014-current	4 per year (1 per season)	Yes		x											
Spain	Balearic Islands Coastal Observing and Forecasting System (SOCIB)	Oceanographic - meteorological buoy monthly sampling	1 fixed station in the Bay of Palma/1 fixed station Ibiza channel	2015-current	Monthly	Yes		x											
Spain	Balearic Islands Coastal Observing and Forecasting System (SOCIB)	Canals glider endurance line missions	(Mallorca channel/Ibiza channel)	2010-current	6-8 x per year (1 mission of 2 months length approx.)	Yes		x											
Spain	AZTI	Basque monitoring network for the ecological status assessment	Estuaries	1995-current	Every 3 years	Yes		x		x	x					x	x		
Spain	Ebro Delta Natural Park	LTER Ebro Delta		1983-current	Varies	Yes		x			x		x						
Spain	University of the Basque Country	URDAIBAI 35 Time Series		1997-current	Monthly	Yes			x										
Spain	University of the Basque Country	BILBAO 35 Time Series		1997-current	Monthly	Yes			x										

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Spain	AZTI	AZTI Station D2		1986- current	Monthly	Yes		x											
Spain	Universidad del Pais vasco/Euskal Herriko Unibertsitatea	Nervion River Estuary E1		2000- current				x											
Spain	Universidad del Pais vasco/Euskal Herriko Unibertsitatea	Nervion River Estuary E2		2000- current				x											
Spain	Instituto Español de Oceanografía	RADIALES Santander Station E4SA		1991- current	Monthly				x										
Spain	Instituto Español de Oceanografía	RADIALES A Coruna Station E2CO		1988- current	Monthly			x	x										
Spain	Instituto Español de Oceanografía	RADIALES Gijon/Xixon Station E2GI		2001- current	Monthly			x	x										
Spain	Instituto Español de Oceanografía	RADIALES Vigo Station E3VI		1994- current	Monthly			x	x										
Spain	Instituto Español de Oceanografía	RADIALES Cudillero Station E2CU		1992- current	Monthly				x										
Spain	Instituto Español de Oceanografía	Mallorca Balears Station		1994- current	4 x per year	Yes			x										
Spain	Instituto Español de Oceanografía	ECOMALAGA		1992- current					x										
Spain/Scotland	Asociacion Tursiops and Dr Luke Rendell of the University of Saint Andrews	Balearic Sperm Whale Project		2003- current	Annual	Yes								x					
Sweden	Swedish Agency for Marine and Water Management	Pelagic monitoring of the west coast		1985- current	24 x per year	Yes	x	x	x										2 milj SEK/year
Sweden	The Swedish Environmental Protection Agency and Stockholm University																		

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Sweden	The Swedish Environmental Protection Agency and University of Kalmar																		
Sweden	The Swedish Environmental Protection Agency and Swedish Museum of Natural History																		
Sweden		National acoustic monitoring programme of harbour porpoises in Swedish waters																	
Sweden	Swedish Agency for Marine and Water Management	Benthic fish populations		1972-current	Annual	Yes					x								
Sweden	Swedish Agency for Marine and Water Management	Pelagic fish populations		1978-current	Annual	Yes					x								
Sweden	Swedish Agency for Marine and Water Management	Migratory fish populations		1969/2004-current	Annual	Yes					x								
Sweden	Swedish Meteorological and Hydrological Institute (SMHI)	Swedish National monitoring		1983-current	Monthly	Yes		x	x										
Sweden	Swedish Agency for Marine and Water Management and Umeå Marine Sciences Centre (UMF), Umeå University	The pelagic marine monitoring program		1991-current	10x per year	Yes	x	x	x										

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Sweden	Swedish Agency for Marine and Water Management and Umeå Marine Sciences Centre (UMF), Umeå University	Soft-bottom macrofauna		1983-current	Annual	Yes				x									
Sweden	Swedish Agency for Marine and Water Management	Coastal fish populations		1960-current	Annual	Yes					x								
Ukraine	Odessa National I. I. Mechnikov University	Marine Research Station "Zmiinyi island"		2003-current	Varies	Yes	x	x		x	x			x			x		
United Kingdom	Department of Agriculture, Environment and Rural Affairs (DAERA)																		
United Kingdom	Centre for Environment, Fisheries and Aquaculture Science (Cefas)	Eutrophication Monitoring & SmartBuoy in situ marine monitoring		1985-current	Varies	Yes	x	x	x		x								
United Kingdom	National Oceanography Centre (NOC)	Porcupine Abyssal Plain Sustained Observatory		1984-current	Annual	Yes	x		x	x									
United Kingdom	Newcastle University	Plankton Dove Time Series		1969-current	Monthly	Yes		x	x										
United Kingdom	Newcastle University and the University of Liverpool	Benthic Dove Time Series		1971-current	2-4 times per year	Yes				x									
United Kingdom	Plymouth Marine Laboratory and Marine Biological Association	Western Channel Observatory: L4 (pelagic)		1988-current	Weekly	Yes	x	x	x										
United Kingdom	Plymouth Marine Laboratory and Marine Biological Association	Western Channel Observatory: L4 (benthic)		2008-current	Bi-monthly	Yes				x							x		

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
United Kingdom	Plymouth Marine Laboratory and Marine Biological Association	Western Channel Observatory: E1 (pelagic)		1903-current	2 weekly / monthly	Yes		x											
United Kingdom	Marine Biological Association	Continuous Plankton Recorder (CPR) Survey		1931-current	Monthly	Yes		x	x										
United Kingdom	Marine Biological Association	Marine Biodiversity and Climate Change (MarClim)		1952-current	Annual	Yes				x							x		
United Kingdom	Britist Trust for Ornithology	Wetland Bird Survey		1947-current	Monthly	Citizen science							x						
United Kingdom (Scotland)	The Scottish Association for Marine Science (SAMS)	Deep Sea Benthic Biodiversity		1973-current	Opportunistic	Yes				x									
United Kingdom (Scotland)	The Scottish Association for Marine Science (SAMS)	Lorn Pelagic Observatory		1970-current	Monthly	Yes	x	x											
United Kingdom (Scotland)	The Food Standards Agency (FSS) Scotland (FSS)	Food Standards Agency (FSS) Official Control Phytoplankton monitoring Programme		2004-current	Varies	Yes		x											
United Kingdom (Scotland)	Scottish Government	The Scottish Coastal Observatory (SCObs)		1997-current	Weekly	Yes		x	x										
United Kingdom (Wales)	Natural Resource Wales	Intertidal Protected Site																	
United Kingdom (Wales)	Natural Resource Wales	Marine Monitoring Programme		1982-current	Varies	Yes	x	x	x	x	x		x	x	x	x	x		
United Kingdom (Wales)	Natural Resource Wales	Skomer Marine Nature Reserve																	
Regional	Reef Life Survey	Reef Life Survey		2010-current	Opportunistic	Yes				x	x				x				

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Regional		LifeWatch Biodiversity Observatory- Belgium																	
Regional		Ocean Tracking Network																	
Regional		eOceans		2011- current	Opportunis- tic	Citizen science					x								
Regional	Conservation of Arctic Flora and Fauna and many partners https://www.caff.is/cbmp-partners	CAFFs Circumpolar Biodiversity Monitoring Program (CBMP)		1991- current	Varies	Yes	x	x	x	x	x		x	x					
Regional	Fod Standards Agency	Phytoplankton monitoring (Northern Ireland, England and Wales)						x											
Regional		CEMP Long term Benthos																	
Regional		National Research Infrastructure - Norwegian Marine Data Centre																	
Regional		Coastal biodiversity in rocky shores across the Atlantic coast of Europe																	
Regional		Small Cetacean Abundance in the European Atlantic and North Sea																	
Regional		UK Grey and harbour seal abundance and distribution																	

Country	Organisation	Program name	Programs/ Location	Time period	Frequency	SOP/BP	Microbes	Phytoplankton	Zooplankton	Benthic invertebrates	Fish	Turtles	Birds	Mammals	Hard coral	Seagrass	Macroalgae	Mangrove	Regional coordination
Regional	European Marine Biological Resource Centre (EMBRC)	European ARMS programme		2017-current	Annual	Yes	x	x		x					x				
Regional		Bathing Water Monitoring Programme																	
Regional		ORCA																	
Regional		Deep-Sea Research Program																	
Regional	SeagrassNet	SeagrassNet - Global Monitoring Program		2001-current	Varies	Yes										x			
Regional	HELCOM: The Baltic Marine Environment Protection Commission (Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden)	FISH-PRO III		2018-2023	Annual	Yes					x								
Regional	The Secchi Disk Foundation	The Secchi Disk		2013-current	Opportunistic	Citizen science		x											