

Project Information	
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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
Due date	31.10.2020
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Resubmission date	20.12.2021 (Executive Summary and Conclusions added)
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.



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1. 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 practises, and best practises and standards to strengthen and develop these vital ocean observing networks.

2. 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.

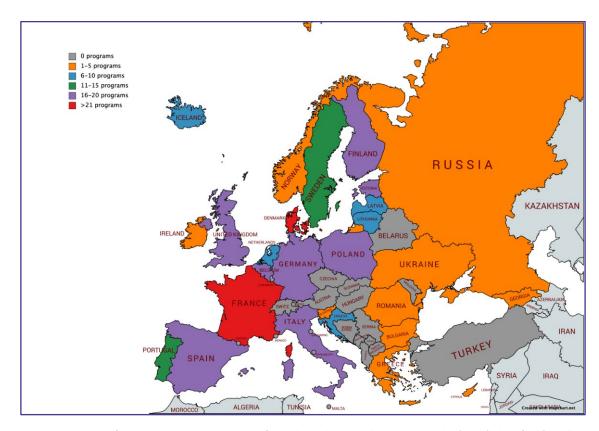


Figure 1. Number of marine monitoring programs for biological Essential Ocean Variables (EOVs) identified (up till 22 February 2021) within the European continent.

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 EOV (or more) and the respective marine monitoring programs which monitor the selected EOV(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 practises, and best practises and standards whilst strengthening engagement with national and international research and observation programs across Europe.

3. Conclusions

In conclusion, there was a lot of interest and willingness to cooperate in this survey, however the survey highlighted the large variety of governance (e.g., academic institutions, government agencies etc.), Standard Operating Procedures/Best Practises as well as data and reporting structures being used. This indicates that there is both an appetite and a need for increased coordination for coastal monitoring in Europe and we anticipate good response to the next stage of this project - the regional workshops. The regional workshops will help build the EU regional monitoring community for the two prioritised coastal ecosystems. This is the first step in developing greater regional cooperation and improved regional scientific products which will lead to greater impact from the science being done.



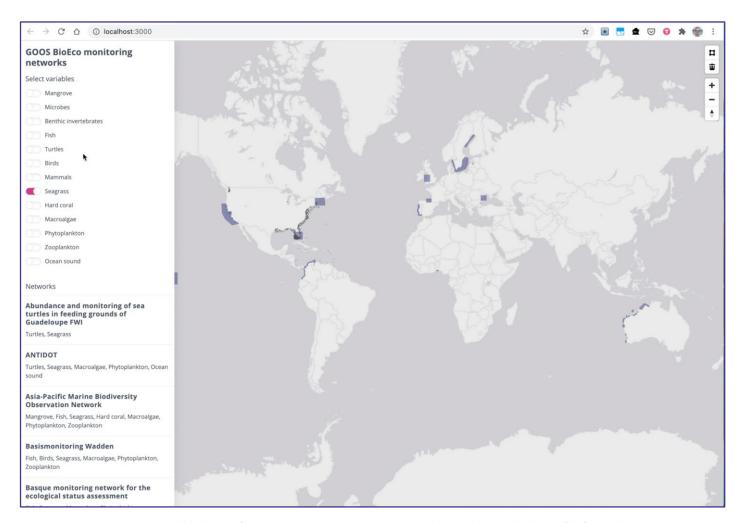


Figure 2. Global map of seagrass marine monitoring programs that will be available via a 'live' portal



Table 1. List of countries with marine monitoring programs with at least one EOV 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	PHYTOCLY Time Series		1979- current	2 x a week since 2005	No		х											
Belgium	Corsica Research Institute for Nature and Forest (INBO)	Breeding Seabirds in Belgium	Belgian coast	1997- current		Yes							х						OSPAR
Belgium	Research Institute for Nature and Forest (INBO)		Belgian part of the North Sea	2005- current		Yes							х						OSPAR
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)		Belgian part of the North Sea	1973- current	Annual (Sept)	Yes					х								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				х	х								ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Mammals – population abundance	Belgian part of the North Sea	1995- current	2x per year	Yes								х					OSPAR/ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Mammals – strandings	Belgian coast	1995- current	Continually	Yes								х					OSPAR/ICES
Belgium	Institute for Agriculture,	Benthic soft- sediment environmental	Belgian part of the North Sea	1979- current	Annual	Yes				х									OSPAR/ICES



	Fishery and Food research (ILVO)	impact monitoring programme												
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			х					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		х	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		х						OSPAR/ICES
Belgium	Institute for Agriculture, Fishery and Food research (ILVO)	Fisheries-	Belgian part of the North Sea	1973- current	Continually	Yes		х	х					ICES
Belgium	Royal Belgian Institute of Natural Science (RBINS)	Chlorophyll a	Belgian part of the North Sea	2010- current		Yes	х							OSPAR
Belgium	Flanders Marine Institute (VLIZ)	Phytoplankton observations in the Belgian part of the North Sea – LifeWatch observatory data	of the North Sea	2017- current		Yes	х							



	ı																
Belgium	Flanders Marine	Zooplankton	Belgian part	2012-		Yes			x								
	Institute (VLIZ)	observations in		current													
		the Belgian part															
		of the North Sea															
		- LifeWatch															
		observatory															
		data															
Belgium	Research Institute	Monitoring of	Belgian	1962-	Monthly	Yes							х				OSPAR
	for Nature and	beached	coast	current													
	Forest (INBO)	seabirds															
Belgium	Flanders Marine	Passive acoustic	Belgian part	2016-	Continually	Yes								х			OSPAR
_	Institute (VLIZ)	monitoring of	of the North	current													
		marine	Sea														
		mammals															
Belgium	Royal Belgian	Monitoring of	Belgian	2020-	Daily	Yes								х			OSPAR
Ŭ	Institute of	seals on	coast	current	·												
	Natural Science	beaches/in															
	(RBINS)	harbours															
Bulgaria	Institute of	Laboratory of	Sozopol	2009-	Quarterly	Yes				х	х				х	х	
	Biodiversity and	Marine Ecology,		current	,												
	Ecosystem	Sozopol															
	Research at the																
	Bulgarian																
	Academy of																
	Sciences																
Bulgaria	LTER Europe ->	Black Sea	Kaliakra	1991-	Spring/Sum	Yes		х	х	х	х				х	х	
Daigaria	LTER Bulgaria	macrosite	, manania	current	mer					_ ^	_ ^					,	
Bulgaria	LTER Europe ->	Black Sea	Galata	1991-	Spring/Sum	Yes		х	х	х	х				х	х	
Duigaria	LTER Bulgaria	macrosite	Guiata	current	mer					_ ^						,	
Bulgaria	LTER Europe ->	Black Sea	Varna Bay	1991-	Spring/Sum	Yes		х	х	х	х				х	х	
Duigaria	LTER Bulgaria	macrosite	varia bay	current	mer	103		_ ^	_ ^	_ ^	_ ^				^	^	
Croatia	Institute of	Mobile species -		2021-	Annual								х				
Croatia	Oceanography and			current	Aiiiidai								^				
	Fisheries	characteristics		Current													
Croatia	Institute of	Mobile species -	1	2021-	Once in 3		 	+	+			х					
Civatia	Oceanography and			current	years							^					
	Fisheries	characteristics		Current	years												
Croatia	Institute of	Activities	+	2021-	Monthly		_	+	1		· ·						
	Oceanography and			l	ivioritiiiy						х						
				current													
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		including															



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		recreational,													
		maerl, seaweed)													
Croatia	Institute of	Activities	2021-	Once in 6					х						
	Oceanography and	extracting living	current	years											
	Fisheries	resources													
		(fisheries													
		including													
		recreational,													
		maerl, seaweed)													
Croatia	Institute of	Activities	2021-	4x per year					х						
	Oceanography and	extracting living	current												
	Fisheries	resources													
		(fisheries													
		including													
		recreational,													
		maerl, seaweed)													
Croatia	Institute of	Seabed habitats	2021-	Once in 3										х	
	Oceanography and	- community	current	years											
	Fisheries	characteristics													
Croatia	Institute of	Mobile species -	2021-	Once in 2					х						
	Oceanography and	population	current	years											
	Fisheries	characteristics													
Croatia	Institute of	Mobile species -	2021-	Varies								Х			
	Oceanography and	population	current												
	Fisheries	characteristics													
Croatia	Institute of	Pelagic habitats	2021-	Varies			х	х							
	Oceanography and	- community	current												
	Fisheries	characteristics													
Croatia	Institute of	Plankton blooms	2021-	Once in 6			х								
	Oceanography and		current	years											
	Fisheries	frequency)		'											
Cyprus	Department of	Biodiversity	2005-	Varies	Yes		х	х	х	х	х	х		х	
· ·	Fisheries and		current												
	Marine Research,														
	Ministry of														
	Agriculture, Rural														
	Development and														
	Environment														
Denmark		Mobile species -	1980-	Annual	Yes						х				HELCOM,
	Environmental	abundance -	current												OSPAR
	Protection Agency	birds wintering													



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Denmark	Denmark	Danish	Mobile species -	19	980-	Annual	Yes				х			
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Environmental Protection Agency abundance and/or biomass - Survey CODS_Q4 (CODS_Q4 - Cod survey) Denmark Danish Environmental distribution, abundance and or biomass - Or bio	Denmark	Danish		20	008-	Annual	Yes			х				
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CCDS_Q4 - Cod survey														
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Environmental distribution, current Protection Agency abundance and or biomass -	Denmark	Danish		20	004-	Annual	Yes			х				
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or biomass -		Protection Agency	abundance and											
		,												
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Flatfish survey)			Flatfish survey)											
Denmark Danish Foodwebs - 1983- Varies Yes x x x x	Denmark	Danish		19	983-	Varies	Yes	х	х	х				
Environmental biodiversity, current		Environmental		cu	ırrent									
Protection Agency abundance		Protection Agency												
Denmark Danish Benthic species - 1987- Varies Yes x	Denmark			19	987-	Varies	Yes						х	
Environmental abundance current														
Protection Agency and/or biomass														



Denmark	Danish Environmental Protection Agency	Benthic species - abundance		1990- current	Varies	Yes		х					
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish	North Sea : DNAMAP- 1510007	1989- current		Yes	х	х			х	х	HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Ringkobing Fjord: DNAMAP-1	1980- current		Yes	х						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	х						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	х						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	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish	Århus Bugt: DNAMAP- 170006	1979- current		Yes	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment	Køge Bugt: DNAMAP- 1727	1985- current		Yes	х						HELCOM



		Program (DNAMAP)										
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Hevring Bugt: DNAMAP- 190004	1985- current	Yes	х						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	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish	Ålborg Bugt: DNAMAP- 409	1981- current	Yes	х						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	х						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	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment	Ven: DNAMAP- 431	1979- current	Yes	х						HELCOM



		Program (DNAMAP)										
Denmark		The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Arkona: DNAMAP- 444	1979- current	Yes	х						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	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish		1979- current	Yes	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish	Lillebælt- South: DNAMAP- 6300043	1979- current	Yes	х						HELCOM
Denmark		The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Lillebælt- North: DNAMAP- 6870	1979- current	Yes	х						HELCOM
Denmark	Danish Centre for Environment and Energy (DCE)	The Danish National Aquatic Monitoring and Assessment	Odense Fjord: DNAMAP- 6900017	1979- current	Yes	х						HELCOM



		Program (DNAMAP)											
Denmark		The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Gniben: DNAMAP- 925	1979- current		Yes	х						HELCOM
Denmark		The Danish National Aquatic Monitoring and Assessment Program (DNAMAP)	Storebælt: DNAMAP- 939	1982- current		Yes	х						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	х						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		Annual	Yes				х			HELCOM, ICES
Estonia	Ministry of the Environment of	Estonian National	Abundance of water	1957- current	Annual	Yes				х			



						_							
	the Republic of	Monitoring	birds in the										
	Estonia, Estonian	Program	breeding										
	Environment		season										
	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												
Estonia	Ministry of the	Estonian	Abundance	2004-	Varies	Yes							
	Environment of	National	of migratory	current									
	the Republic of	Monitoring	water birds										
	Estonia, Estonian	Program	(coastal										
	Environment	Ü	area)										
	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												
Estonia	Ministry of the	Estonian	Abundar	nce of	Annual	Yes							HELCOM, ICES
ESTOTIL	Environment of	National	migratory w		Ailliudi	162							TILLCOIVI, ICES
		INGLIOTIGI	migratory w	ater birds									
	the Republic of								1				



	1 1		/c !! :	***	1	1	1									1		
	Estonia, Estonian	Monitoring	(feeding in															
	Environment	Program	area	ıs)														
	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																	
E-ti-		F-ti	Seals	1994-	Annual	Yes												HELCOM
Estonia	Ministry of the	Estonian	Abundance	1	Annuai	res							х					HELCOIVI
	Environment of	National	Abundance	current														
	the Republic of	Monitoring																
	Estonia, Estonian	Program																
	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																	
Estonia	Ministry of the	Estonian	Seals –	1990-	Annual	Yes							х					HELCOM
	Environment of	National	breeding	current														
	the Republic of	Monitoring	success															
	Estonia, Estonian	Program																
	Latorna, Latornali	110514111	1	1	l .	1	I	1	1	1	1	1		1	l .	I	I	l ,



Estonia	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 Ministry of the Environment of the Republic of Estonia, Estonian	Estonian National Monitoring Program	Coastal fish	1975- current	Annual	Yes			x				HELCOM
Estonia	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		Off-share	1992-	Δηημαί	Ves							ICES
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment	Estonian National Monitoring Program	Off-shore fish	1992- current	Annual	Yes			х				ICES



	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),												
Estonia	NPA Pro Mare Ministry of the	Estonian	Migratory	1993-	Annual	Yes			х				
LStorila	Environment of	National	fish	current	Alliluai	163			^				
	the Republic of	Monitoring											
	Estonia, Estonian	Program											
	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												
Estonia	Ministry of the	Estonian	Phytoplankt	1993-	Α	Yes	х						HELCOM
	Environment of	National	on species	current									
	the Republic of	Monitoring	composition										
	Estonia, Estonian	Program	, abundance										
	Environment		and biomass										
	Agency, Estonian												



Estania	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	Estanian	Zankalita	1003	Annual	Vec								USICOM
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	current	Annual	Yes		x						HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency, Estonian Marine Institute of	Estonian National Monitoring Program	Seabed habitats – community characteristi CS	1974- current	Annual	Yes			X			х	х	HELCOM



	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												
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	Macrozoobe nthos	current	Annual	Yes		x					HELCOM
Estonia	Ministry of the Environment of the Republic of Estonia, Estonian Environment Agency,	Estonian National Monitoring Program	Phytobenthi c communitie s	1995- current	Annual	Yes					х	х	HELCOM



Estonia	Ministry of the	Estanian	PhytopChla -	1993-	Annual	Yes	1	.,	1		T				HELCOM
ESTOTIIA	Environment of	Estonian National	Chlorophyll-	current	Annuai	res		x							HELCOIVI
	the Republic of	Monitoring		current											
	Estonia, Estonian	_	a												
	Environment	Program													
	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														
Estonia	Ministry of the	Estonian	Non-	2012-	Annual	Yes		x	x	x	х				HELCOM
	Environment of	National	indigenous	current											
	the Republic of	Monitoring	species –												
	Estonia, Estonian	Program	harbours												
	Environment		and adjacent												
	Agency,		regions												
Estonia	Ministry of the	Estonian	Non-	1993-	Annual	Yes		х	x	x	х				HELCOM
	Environment of	National	indigenous	current											
	the Republic of	Monitoring	species –												
	Estonia, Estonian	Program	abundance												
	Environment		and biomass												
	Agency,														
Faroe	Faroe Marine	Faroe Islands		1991-	Annually in	Yes	х	х	х						
Islands	Research Institute	Shelf Time		current	May										
		Series													
Faroe	Faroe Marine	Norwegian Sea		1990-	Annually in	Yes			х						
Islands	Research Institute	Transect (North		current	May										
		and South)													
Faroe	Faroe Marine			1973-	Annually							Х			
Islands	Research Institute			current	<u> </u>										



Faroe	Faroe Marine	Faroese Marine		2017-	Annually in	Yes	x	x	x	х	x		x		х	
Islands	Research Institute	Ecosystem Study		current	May											
		(FAMEOS)														
Faroe	Faroe Marine	International	Gridded	2004-	Annual	ly in			х		х					
Islands	Research Institute	Blue Whiting	Survey	current	March/	April										
		Spawning Stock														
		Survey (IBWSS)														
Faroe	Faroe Marine	International	Gridded	1995-	Annually in				х		х					ICES
Islands	Research Institute	Ecosystem	Survey	current	May											
		Survey in the	,													
		Nordic Seas														
		(IESNS)														
Faroe	Faroe Marine	International	Gridded	2009-	Annually in				х		х					ICES
Islands	Research Institute	Ecosystem	Survey	current	July/August											
		Summer Survey	,		,, ,											
		in the Nordic														
		Seas (IESSNS)														
Faroe	Faroe Marine	ICES North West	Gridded													
Islands	Research Institute	Working Group	Survey													
Faroe	Faroe Marine	North Atlantic	North	1987-	6-8y interva	al (1987. 1	1989. 1995.						х			
Islands	Research Institute	Sightings	Atlantic	current	1 1	1, 2007,20										
		Surveys				, ,	,									
Faroe	Faroe Marine	Bottom trawl	Gridded	1983-	Annually in					х	х					
Islands	Research Institute	survey	Survey	current	March											
Faroe	Faroe Marine	Bottom trawl	Gridded	1996-	Annually in					x	х					
Islands	Research Institute	survey	Survey	current	August					_ ^	,					
Faroe	Faroe Marine	Bottom trawl	Gridded	2014-	Annually in					x	х					
Islands	Research Institute	survey	Survey	current	September					_ ^	,					
Faroe	Faroe Marine	Pelagic trawl	Gridded	1983-	Annually in						х					
Islands	Research Institute	survey	Survey	current	September						_ ^					
Finland	Archipelago	Long-term	Survey	1967-	Monthly	Yes		х	х		х					
Tillialia	Research Institute	-		current	ivionitiny	103		^	^		^					
	incocarcii inotitute	monitoring:		current												
		Archipelago Sea														
Finland	Natural Resource	Seal abundance		1988-	Annual	Yes			+	 			x			
i iiiiaiiu	Institute Finland	Jear abundance		current	Ailliual	163							^			
Finland	Finnish	Abundance and		2001-	Continually	Yes			+	+			v			
Fillialiu	Environment	distribution of		1	Continually	162							х			
	Insitute	harbour		current												
	Insitute															
Sinley !	Figurials Banks 1	porpoises		1040	A			-	+	-						
Finland	Finnish Parks and			1948-	Annual	Yes						Х				
	Wildlife Service	birds		current												



Finland	Finnish	Marine	1975-	Annual	Yes					х				
	Environment	wintering birds	current											
	Insitute													
Finland	Finnish	White tailed	1972-	Annual	Yes					Х				
	Environment	eagle breeding	current											
	Insitute	success												
Finland	Natural Resource	Sea trout	1990-	Annual	Yes				х					
	Institute Finland		current											
Finland	Finnish	Coastal fish	2002-	Annual	Yes				х					
	Environment	gillnet survey	current											
	Insitute													
Finland	Finnish	Offshore soft	1964-	Annual	Yes			х						
	Environment	bottom	current											
	Insitute	macrozoobenth												
		os												
Finland	Finnish	Coastal waters	1964-	Annual	Yes			х						
	Environment	soft bottom	current											
	Insitute	fauna												
Finland	Finnish	Coastal hard	1993-	Annual	Yes								х	
	Environment	bottom	current											
	Insitute	macroalgae and												
		blue mussel												
		communities												
Finland	Finnish Parks and	Coastal sand and	2020-	Every 3	Yes								х	
	Wildlife Service	gravel bottoms	current	years										
Finland	Finnish Parks and	Soft bottom	2020-	Every 3	Yes							х	х	
	Wildlife Service	macrophytes	current	years										
Finland	Finnish	Zooplankton	1979-	Annual	Yes		х							
	Environment	species	current											
	Insitute	composition and												
		abundance												
Finland	Finnish	Phytoplankton	1979-	Annual	Yes	х								
	Environment	species	current											
	Insitute	composition and												
		abundance												
Finland	Natural Resource	Fisheries data	2002-	Annual	Yes				Х					
	Institute Finland	collection	current											
Finland	Finnish	Phytoplankton	1979-	Continually	Yes	х								
	Environment	pigments	current											
	Insitute													
France	Foundation Total,	Biodiversity,	2015-	1x per year	No						х			
	Univérsite Pierre	extreme	current											



	et Marie Curie,	environment												
	CNRS	and global												
		change												
France	, ,	Infrastructure de	DYFAMED	1991-	Monthly	Yes		x	х					
	RDF, IGN, Shom,	Recherche		current										
	French Ministry of	Littorale et												
	Higher Education, Research and	Côtière (ILICO): Mediterranean												
	Innovation	Ocean												
	(MESRI), BGRM,	Observing												
	AFB and CEREMA	System for the												
		Environment												
		(MOOSE)												
France	CNRS, Ifremer,	Infrastructure de	ANTARES	2009-	Monthly	Yes	х	х	х					
	RDF, IGN, Shom,	Recherche		current										
	French Ministry of													
	Higher Education,	Côtière (ILICO):												
	Research and Innovation	Mediterranean Ocean												
	(MESRI), BGRM,	Observing												
	AFB and CEREMA	System for the												
		Environment												
		(MOOSE)												
France	CNRS, Ifremer,	Infrastructure de		1998-	weekly	Yes		х						
	RDF, IGN, Shom,	Recherche	Sainte Anne	current										
	French Ministry of	Littorale et												
	Higher Education,	Côtière (ILICO):												
	Research and Innovation	PHYTOBS												
	(MESRI), BGRM,													
	AFB and CEREMA													
France		Infrastructure de	Boulogne	1992-	2x per	Yes		Х						
	RDF, IGN, Shom,	Recherche		current	month									
	French Ministry of	Littorale et												
	Higher Education,	Côtière (ILICO):												
	Research and	PHYTOBS												
	Innovation													
	(MESRI), BGRM, AFB and CEREMA													
France		Infrastructure de	At So	1987-	2x per	Yes		х						
riance	RDF, IGN, Shom,	Recherche	ALSO	current	month	163		^						
	French Ministry of	Littorale et			111011011									
	Higher Education,													



	Research and Innovation (MESRI), BGRM, AFB and CEREMA	Côtière (ILICO): PHYTOBS											
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	х						
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	х						
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	х						
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Les Hébihens - Arguenon	1987- current	2x per month	Yes	х						



	(MESRI), BGRM,												
	AFB and CEREMA												
France	CNRS, Ifremer,	Infrastructure de	Kervel large	1987-	2x per	Yes	х						
	RDF, IGN, Shom,	Recherche	- Baie de	current	month								
	French Ministry of	Littorale et	Douarnenez										
	Higher Education,	Côtière (ILICO):											
	Research and	PHYTOBS											
	Innovation												
	(MESRI), BGRM,												
	AFB and CEREMA												
France		Infrastructure de	Roscoff -	2000-	2x per	Yes	х						
	RDF, IGN, Shom,		Bouée Astan		month	1.03	^						
	French Ministry of		Douce / istair	ou.rem									
	Higher Education,	Côtière (ILICO):											
	Research and	PHYTOBS											
	Innovation												
	(MESRI), BGRM,												
	AFB and CEREMA												
France		Infrastructure de	Concarneau	1992-	2x per	Yes	х						
Trance	RDF, IGN, Shom,	Recherche	large	current	month	103	^						
	French Ministry of		large	current	month								
	Higher Education,	Côtière (ILICO):											
	Research and	PHYTOBS											
	Innovation	11111003											
	(MESRI), BGRM,												
	AFB and CEREMA												
France		Infrastructure de	Men er Roué	1987-	2x per	Yes	х						
Trance	RDF, IGN, Shom,	Recherche	- Quiberon	current	month	103	^						
	French Ministry of		Quiberon	current	month								
	Higher Education,	Côtière (ILICO):											
	Research and	PHYTOBS											
	Innovation	11111003											
	(MESRI), BGRM,												
	AFB and CEREMA												
France		Infrastructure de	Ouest	1987-	2x per	Yes	х						
	RDF, IGN, Shom,	Recherche	Loscolo	current	month		,						
	French Ministry of		20300.0	Junion	111011111								
	Higher Education,	Côtière (ILICO):											
	Research and	PHYTOBS											
	Innovation	11111003											
	(MESRI), BGRM,												
	AFB and CEREMA												
	A D and CENTIVIA		1				I .	I .					



France	RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Côtière (ILICO): PHYTOBS		1994- current	2x per month	Yes	х						
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	х						
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	х						
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	х						
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	х						
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of	Infrastructure de Recherche Littorale et	Villefranche	1995- current	2x per month	Yes	х						



	Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Côtière (ILICO): PHYTOBS											
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	х						
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	х						
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	х						
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	х						
France	CNRS, Ifremer, RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation	Infrastructure de Recherche Littorale et Côtière (ILICO): PHYTOBS	Parc Leucate 2	1987- current	2x per month	Yes	х						



	(MESRI), BGRM,													
	AFB and CEREMA													
France	RDF, IGN, Shom, French Ministry of Higher Education, Research and Innovation (MESRI), BGRM, AFB and CEREMA	Côtière (ILICO): PHYTOBS	·	2017- current	2x per month	Yes		x						
France	of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Arcachon)	·	1997- current	2x per month	Yes	х	х						
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Arcachon)	Bouée 13	2005- current	2x per month	Yes	х	х						
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Arcachon)	Comprian	2005- current	2x per month	Yes	х	х						
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Banyuls)	Sola	1997- current	4x per month	Yes	х	х						
France	CNRS, Université de Bretagne Occidentale	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Brest)	Portzic	1998- current	4x per month	Yes	х	х						
France	MNHN	Infrastructure de Recherche Littorale et	Cézembre	2014- current	2x per month	Yes	х	х						



		Côtière (ILICO):												
		SOMLIT (Dinard)												
France		Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Dinard)	Bizeux	2012- current	2x per month	Yes	х	х						
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Gironde)	Pk 86	1997- current	1x per month	Yes	х	х						
France	of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Gironde)	Pk 52	1997- current	1x per month	Yes	х	х						
France	CNRS, University of Bordeaux	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Gironde)	Pk 30	1997- current	1x per month	Yes	х	х						
France	CNRS, La Rochelle Université	Recherche Littorale et Côtière (ILICO): SOMLIT (La Rochelle)		2011- current	2x per month	Yes	х	х						
France	Caen Normandie	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Luc- sur-mer)		2007- current	2x per month	Yes	х	х						
France	CNRS, Université Caen Normandie	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Luc- sur-mer)	Smile	2013- current	2x per month	Yes	х	х						



France	Marseille Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Marseille)		1997- current	2x per month	Yes	х	x						
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Roscoff)	Astan	2000- current	2x per month	Yes	х	х						
France	Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Roscoff)		1997- current	2x per month	Yes	х	х						
France	CNRS, Université de Montpellier	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Sète)	Sète	2015- current	2x per month	Yes	х	х						
France	CNRS, Sorbone Université	Infrastructure de Recherche Littorale et Côtière (ILICO): SOMLIT (Villefranche)		1997- current	4x per month	Yes	х	х						
France	CNRS, Université de Lille, Université du Littoral et de la Côte d'Opale	Recherche Littorale et Côtière (ILICO): SOMLIT (Wimereux)	Point C	1998- current	2x per month	Yes	х	х						
France	CNRS, Université de Lille, Université du Littoral et de la Côte d'Opale	Recherche	Point L	1998- current	2x per month	Yes	х	х						



	1		1	1			1									
France	CNRS-INSU,	French		1987-	Monthly	Yes		х								
	Ifremer, Université			current												
	de La Rochelle,	Monitoring		(?)												
	Université de Caen															
	Normandie	Phytoplankton														
		and Hydrology														
		in coastal waters														
		(REPHY)														
France	CNRS / Sorbonne	Bay of Morlaix	Pierre Noire	1977-	2x per year	Yes				х						
	Université	monitoring		current												
France	CNRS / Sorbonne	Bay of Morlaix	Rivière de	1977-	2x per year	Yes				х						
	Université	monitoring	Morlaix	current												
France	CNRS	Association of		2010-	Year round	Yes						х				
		New Tools to		current												
		Improve the														
		understanding														
		of the Dynamic														
		Of Threatened														
		marine turtles														
		(ANTIDOT)														
France	CNRS / Sorbonne	RadeZOO		1966-	Daily	Yes			х							
Trance	Université	Nauczoo		current	Daily	103			^							
France	Ifremer and	Gravelines		1975-	Monthly	Yes		х	х							
Trance	Electricite de	Station		current	IVIOIILIIIY	103		^	^							
	France (EDF)	Station		Current												
Georgia	National	Assessment and	Georgian	2006 -	Seasonal	Yes	х	х	х	Х	х					No
GCOIGIG	Environmental	commercial	part of the	current	Scasonar	103	^	^	^	^	^					140
	Agency of Georgia		Black Sea	current												
	(NEA). Dep. of	fish and other	Didek Sea													
	Fisheries,	hydrobionts														
	Aquaculture and	resources of the														
	Water	Black Sea coast														
	Biodiversity.	and inland														
	Biodiversity.															
		waters of														
		Georgia,														
		biological														
		monitoring,														
		determination														
		of the														
		environmental														
		status of the														
		reservoirs. /														
		Code - 4														



Germany	GEOMAR	LTER Boknis Eck	Eckernförde	1957-	Monthly	Yes		Х							
,		Time-Series	Bay, SW	current	,										
		Station	Baltic Sea												
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		х							
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		х							
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		х							
Germany	Senckenberg Society for Nature Research	Dogger Bank long-term monitoring programme		1991- current	Annual	Yes		х	х	х	х				
Germany	AWI	LTER Observatory Hausgarten		1999- current	Once per summer (cruise) + autonomou s instrument s throughout the year	Yes	х	х	х						
Germany	AWI	North Sea ecological time series	North Sea Benthos	1969- current	Annual	Yes				х					
Germany	AWI	North Sea ecological time series	Helgoland Roads	1962- current	Daily	Yes		х	х						



Germany	Senckenberg Society for Nature Research	LTER North Sea Benthos Observatory		1978- current	Annual or Seasonal	Yes			х	х				
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	х	х	х					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	х	х						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	Mecklenbur g Basin	1979- current	Varies	Yes	х	х	х					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	х	х						HELCOM



Germany	Leibniz Institute for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock) Leibniz Institute	The IOW Baltic	Bay north Pomeranian	1979- current	Annual	Yes				x					HELCOM
	for Baltic Sea Research Warnemuende (IOW) (On behalf of the Federal Maritime and Hydrographic Agency, Hamburg and Rostock)		Bay central	current											
Germany	Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz (NLWKN) which is "Federal Agency for Watermanagemen t, Coastal Defense and Nature Conservation of Lower Saxony" in English	W2		1985- current	Weekly	Yes		х		х			х	х	
Greece	Tethys Research Institute	Ionian Dolphin Project		1991- current	Varies	Citizen science						х			
Greece	Hellenic Centre for Marine Research (HCMR)	system		2010- current	Monthly to biannually		х	х	х						
Greenland	Greenland Institute of Natural Resources	Greenland Ecosystem Monitoring	MarineBasis Zackenberg					х	х			х		х	



															1
Greenland	Greenland	Greenland	MarineBasis	2005-			х	х			х	х		х	
	Institute of	Ecosystem	Nuuk	current											
	Natural Resources	Monitoring													
Greenland		Mapping and							x						
	Institute of	monitoring													
	Natural Resources	benthos													
		communities													
Greenland	Greenland	Accousic										х			
	Institute of	monitoring of													
	Natural Resources														
		mammals in a													
		changing Arctic													
Greenland	Greenland	Photo										х			
	Institute of	identification of													
	Natural Resources	Humpback													
		Whales													
Iceland	Marine and	Icelandic	Siglunes	1958-	May and	Yes	x	х							
	Freshwater	monitoring	Transect -	current	June										
	Institute (MFRI)	programme	Lower												
Iceland	Marine and	Icelandic	Siglunes	1958-	May and	Yes	x	х							
	Freshwater	monitoring	Transect -	current	June										
	Institute (MFRI)	programme	Upper												
Iceland	Marine and	Icelandic	Selvogsbanki		May and	Yes									
	Freshwater	monitoring	Transect		June										
	Institute (MFRI)	programme													
Iceland	Icelandic Institute	Icelandic		1952-	Annual						х				
	of Natural History	Christmas Bird		current											
		Count													
Iceland	South Iceland	Atlantic Puffin		2010-	Varies						х				
	Nature Research	population		current											
	Centre	monitoring													
		program													
Iceland	South Iceland	Icelanding		2017-							х				
	Nature Research	nocturnal		current											
	Centre	seabird													
		monitoring													
		program													
Iceland	South Iceland	Icelandic Storm-		2017-											
	Nature Research	Petrel & Manx's		current											
1	Centre	Shearwater													
		Population													



					1				1								
		Monitoring															
		Programme															
Ireland	National	National		2007-	Varies	Citizen	х		х	х		х			х	x	
	Biodiversity Data	Biodiversity		current		science											
landa a d	Centre	Data Centre		1000	14/	V											
Ireland	Marine Institute	Phytoplankton monitoring		1986- current	Weekly	Yes		х									
Ireland	Fisheries	Western		2008-	Annual	Yes	х	Х	х		х		х	х			
ireianu	Ecosystems	European Shelf		current	Annuai	res	×	×	×		×		×	X			
	Advisory Service	Pelagic Acoustic		current													
	(FEAS) in the	Survey															
	Marine Institute	(WESPAS)															
Israel	University of Haifa			1993-	Monthly to	Yes								х			
isiaci	Oniversity of Halla	Mammal		current	bimonthly	103								^			
		Research &		current	Simonemy												
		Assistance															
		Center															
Israel	University of Haifa			2015-	Varies	Yes		х		х	Х			х			
		Research Station		current	10.100												
Italy	University of	IT14-Marine	Golfo	1997-	Seasonally		х	х									LTER
,	Sassari	ecosystems of	dell'Asinara	current	· ·												
		Sardinia - Italy															
Italy	University of	IT14-Marine	Golfo di	1992-													LTER
	Sassari	ecosystems of	Olbia - Italy	current													
		Sardinia - Italy															
Italy	University of	IT14-Marine	Laguna di	2006-				х									LTER
	Sassari	ecosystems of	Cabras	current													
		Sardinia - Italy															
Italy	University of	IT14-Marine	Laguna di	1990-													LTER
	Sassari	ecosystems of	S'Ena	current													
		Sardinia - Italy	Arrubia														
Italy	University of	IT14-Marine	Laguna di	2006-				х									LTER
	Sassari	ecosystems of	Santa Giusta	current													
		Sardinia - Italy															
Italy	Tethys Research	Cetacean		1990-	Weekly from									х			
	Institute	Sanctuary		current	Octol	ber											
		Research															
Italy	Instituto di Scienze		Gulf of	1970-				х	х								LTER
	Marine (ISMAR)	Adriatic Sea -	Venice	current													
		Italy ("Acqua															
		Alta" research															
		tower)															



		1									1						
Italy	Instituto Nazionale de Oceanografia di Geofisica Sperimentale		Gulf of Trieste C1	1986- current	Monthly		х	х	х	х							LTER
Italy	Stazione Zoologica Anton Dohrn	MareChiara	Golfo di Napoli	1984- current	Weekly		х	х	х								LTER
Italy	KYMA sea conservation & research	On the tracks of great pelagic marine animals (whales, dolphins, sea turtles, swordfish and tunas)		2020- current	June-Sept	Yes					х	х		х			
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					х	х		х			
Italy	National Research Council of Italy			2011- current	Daily	Yes		х									
Italy	CIMA Research Foundation	ZIPHIUS		2004- current	Summer	Yes								х			
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						х	х	х			
Italy	MENKAB	ECHO	Northern point of Pelagos Sanctuary	2009- current	All year ro mostly from Octob	n April to						х		х			
Italy	Oceanomare Delphis	Ischia Dolphin Project	Archipelagos Campano and Pontino	1991- current	Weekly from May to October	Yes					х	х	х	х			
Italy	Delfini del Ponente APS	Delfini del Ponente -	Western Ligurian Sea	2018- current	8-10x month	Yes					х	х	х	х			



		Dolphin Research Project															
Italy	DelTa - delfini e tartarughe nel Golfo di Trieste	N2K	Gulf of Trieste - italian side	2016- current	June-Sept							х		х			
Italy	Jonan Dolphin Conservation	Researcher for a day	Gulf of Taranto - Italy	2009- current	March - November	Yes		х	х			х		х			
Italy	Stazione Zoologica Anton Dohrn	NaplesEcological REsearch for Augmented Observatories (NEREA)	Gulf of Naples	2019- current	Monthly	Yes	х	х	х								
Latvia	University of Latvia	Engure marine site - Latvia	Baltic Sea, Gulf of Riga	1997- current	once in 2 years	Yes	х	х	х	х					х	х	ILTER
Latvia	University of Latvia	The Gulf of Riga littoral biodiversity	Baltic Sea, Gulf of Riga	1997- current	once prt year	Yes	х	х	х	х						х	
Latvia	Latvian Institute of Aquatic Ecology, University of Daugavpils	Marine monitoring programme		1973- current	Annual	Yes		х	х	х							HELCOM
Latvia	Latvian Institute of Aquatic Ecology, University of Daugavpils	Marine monitoring programme		2014- current	once in 6 year period	Yes				х						х	HELCOM
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					х						ICES and EC
Latvia	Nature Conservation Agency	Monitoring of biodiversity (State monitoring) - Aviation accounts of seawater waterbirds		2017- current	Annual	Yes							х				HELCOM



						1		1	1		1			1	1	ı	
Latvia	Nature	Monitoring of	1967-	Annual	Yes							х					
	Conservation	biodiversity	current														
	Agency	(State															
		monitoring) -															
		coastal and															
		inland wintering															
		waterfowl															
		surveys															
Lithuania	Environmental	BALLT-	1990-	Varies	Yes			х									HELCOM
	Protection Agency		current														
Lithuania	Environmental	BALLT-	1981-	Annual	Yes				х								HELCOM
	Protection Agency	D01256_Macroz	current														
		oobenthos															
Lithuania	Environmental	BALLT-	1992-	Annual	Yes					х							HELCOM
	Protection Agency	D01234 FishCoa	current														
	,	stal															
Lithuania	Environmental	BALLT-	1980-	Every 3	Yes		х										HELCOM
	Protection Agency		current	months													
Lithuania	Environmental	BALLT-	1992-	Every 3	Yes							х					HELCOM
Litindaina	Protection Agency		current	years	103							^					112200141
	1 Totalion Agency	r	Carrent	years													
Lithuania	Environmental	BALLT-	2005-	Varies	Yes					х							ICES
Zitiradina	Protection Agency		current	Valles													1020
	1 Totalion Agency	shore	Carrent														
Lithuania	Environmental	BALLT-D05_ChIA	1980-	Every 3	Yes		х										HELCOM
Littiuailia	Protection Agency	BALLI-DOS_CIIIA	current	months	163		^										TILLCOIVI
Lithuania	Environmental	BALLT-	2007-	Every 2	Yes										.,		HELCOM
Littiuania					res										Х		HELCOIVI
	Protection Agency		current	years													
	Cit Lit D	egetation	2005	0	.,												
Netherlan	Stichting Rugvin	North Sea	2005-	Once a	Yes							Х	х				
ds	(the Rugvin	Cetacean	current	month													
	foundation)	monitoring															
		programme															
		(Project Rugvin)															
Netherlan	Stichting Rugvin	Harbour	2015-	April -	Yes								х				
ds	(the Rugvin	porpoise Photo	current	October													
1	foundation)	Identification		(weather													
1		Programme,		dependent)													
		Eastern Scheldt															
		(Project Rugvin)															
Netherlan	NIOZ Royal	Synoptic	2008-	Once per	Yes				х								
ds	Netherlands	Intertidal	current	summer													



_													
	Institute for Sea	Benthic Survey											
	Research	(SIBES)											
Netherlan	NIOZ Royal	Shorebird	1998-	Varies/Dail	Yes					х			
ds	Netherlands	survival	current	У									
	Institute for Sea												
	Research												
Netherlan	NIOZ Royal	Shorebird	2017-	Varies/Dail	Yes					х			
ds	Netherlands	habitat use in	current	У									
	Institute for Sea	the western											
	Research	Wadden Sea											
Netherlan	Netherlands	Waddenmozaiek	2019-	Every 2	Yes			х	х			х	
ds	Institute for Sea	program	current	years									
	Research (NIOZ)												
	nd the University												
	of Groningen												
Norway	Institute of Marine	Svinøy Transect	1995-	4 - 10 times			х						
	Research (IMR)	- East and West	current	a year									
	Monitoring			,									
	Programme												
Norway	Institute of Marine	Fugløya-	1995-	3 - 6 times			х						
	Research (IMR)	Bjørnøya	current	a year									
	Monitoring	Transect - North		,									
	Programme	and South											
Norway	Institute of Marine	Vardø-Nord	1995-	3 - 4 times			х						
'	Research (IMR)	Transect - North	current	a year									
	Monitoring	and South		,									
	Programme												
Norway	Institute of Marine	Arendal Station	1994-	Twice a		х	х						
'	Research (IMR)	2	current	month									
	Monitoring												
	Programme												
Norway	University of	Ocean Weather	1948-	Daily		x							
,	Bergen	Station M	current	,									
Norway &	UiT The Arctic	Kongsfjorden	2002-	Daily			х	х	Х				
Scotland	University of	Rijpfjorden	current	,			1	**	"				
	Norway until 2026		,										
	in collaboration	Program -											
	with the Scottish	Kongsfjorden											
	Association for	Marine											
	Marine Science	Observatory											
	(SAMS)	(KROP)											
	(2/1/1/2)	(KNOF)		1			1		1				





Poland	Institute of	Svalbard	1988-	Once per		x	х	х					
	Oceanology Polish Academy of	- Trollodden	current	summer									
	Sciences (IOPAS)	- Irollouden											
Poland	Institute of	Svalbard	1988-	Once per		х	x	х					
1 Olaria	Oceanology Polish		current	summer		^	^	^					
	Academy of	- Kapp Bruun	current	Julillici									
	Sciences (IOPAS)												
Poland	Institute of	Svalbard	1988-	Once per		х	х	х					
	Oceanology Polish	Intertidal Project	current	summer									
	Academy of	- Storøya											
	Sciences (IOPAS)												
Poland	Institute of	Svalbard	1988-	Once per		x	х	х					
	Oceanology Polish		current	summer									
	Academy of Sciences (IOPAS)	- Isispynten											
Poland	Institute of	Svalbard	1988-	Once per		Х		х	+				
Polatiu	Oceanology Polish		current	summer		х	Х	×					
	Academy of	- Vibebukta	Current	Sullille									
	Sciences (IOPAS)	T I De Danta											
Poland	Institute of	Svalbard	1988-	Once per		х	х	х					
	Oceanology Polish	Intertidal Project	current	summer									
	Academy of	- Bennebukta											
	Sciences (IOPAS)												
Poland	Institute of	Svalbard	1988-	Once per		x	x	х					
	Oceanology Polish		current	summer									
	Academy of	- Kapp Lee											
Poland	Sciences (IOPAS) Institute of	Svalbard	1988-	0			-		-				
Poland	Oceanology Polish		current	Once per summer		Х	х	Х					
	Academy of	-	Current	Summer									
	Sciences (IOPAS)	Habenichtbukta											
Poland	Institute of	Svalbard	1988-	Once per		Х	х	х					
	Oceanology Polish		current	summer			-						
	Academy of	- Morenetangen											
	Sciences (IOPAS)												
Poland	Institute of	Svalbard	1988-	Once per		х	х	х					
	Oceanology Polish		current	summer									
	Academy of	- Palffyodden											
	Sciences (IOPAS)												



			1	4000							Т					
Poland	Institute of Oceanology Polish Academy of Sciences (IOPAS)	Svalbard Intertidal Project Calypsobyen		1988- current	Once per summer			х	x	х						
Portugal	Centre for Environmental and Marine Studies & University of Aveiro (CESAM)	LTER Ria de Aveiro		2011- current	Varies	Yes	х	х	х		х	х	х	х		
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	Opportunis tic	Yes							х			
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mondego1	2018- current	Daily	Yes		Х								
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mondego2	2018- current	Daily	Yes		х								
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Mondego3	2018- current	Daily	Yes		Х								
Portugal	Marine and Environmental Sciences Centre (MARE)	CoastNet - Portuguese Coastal Monitoring Network	Tejo1	2018- current	Daily	Yes		х								
Portugal	Marine and Environmental	CoastNet - Portuguese	Tejo2	2018- current	Daily	Yes		х								



							1	1							
	Sciences Centre	Coastal													
	(MARE)	Monitoring													
		Network													
Portugal	Marine and	CoastNet -	Tejo3	2018-	Daily	Yes		Х							
	Environmental	Portuguese		current											
	Sciences Centre	Coastal													
	(MARE)	Monitoring													
		Network													
Portugal	Marine and	CoastNet -	Mira1	2018-	Daily	Yes		х							
	Environmental	Portuguese		current											
	Sciences Centre	Coastal													
	(MARE)	Monitoring													
		Network													
Portugal	Marine and	CoastNet -	Mira2	2018-	Daily	Yes		х							
	Environmental	Portuguese		current											
	Sciences Centre	Coastal													
	(MARE)	Monitoring													
		Network													
Portugal	Marine and	CoastNet -	Mira3	2018-	Daily	Yes		х							
	Environmental	Portuguese		current											
	Sciences Centre	Coastal													
	(MARE)	Monitoring													
		Network													
Portugal	Marine and	MARE-Madeira		2017-	Annual	Yes				x					
	Environmental	monitoring		current											
	Sciences Centre	programs													
	(MARE) - Madeira														
Portugal	Instituto	CASCAIS-WATCH	Cascais Bay	2005-					x						
	Portuguěs do Mar			current											
	e da Atmosfera														
	(IPMA)														
Portugal	Centre of Marine		Guadiana	1996-	Monthly		х	x							
	Sciences (CCMAR)		Estuary	current											
			(lower)												
Romania	National Institute	Marine													
	for Marine	Environment													
	Research and	Integrated													
	Development	Monitoring													
	"Grigore Antipa"	Program													
	(NIMRD),														
	Constanta,														
	Romania														



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		1987-	4 times a				х				х	
		Monitoring		present	year									
		Program												
		"Muddy-sandy												
		intertidal flats in												
		Kandalaksha Bay												
		(White Sea)"												
Russia	Zoological	White Sea	Kartesh D1	1957-	Every 10	Yes	х	x	х	х				
	Institute of	Hydrology and		current	days in									
	Russian Academy	Zooplankton			spring/sum									
	of Sciences	Time-Series			mer and									
					monthy in									
					winter									
Russia	Lomonoscov	Annual scientific	Pechora Sea	1	Annualy	Yes			х					
	Moscow State	expedition		current										
	Univerisity Marine													
	Research Centre	step", RV												
		Kartesh												
Russia	Lomonoscov	Annual scientific	Pechora Bay		Annualy	Yes			х					
	Moscow State	expedition		current										
	Univerisity Marine													
	Research Centre	step", RV												
<u> </u>		Kartesh	0 10 00	2046		.,		+		-				
Russia	Lomonoscov	Annual scientific	Gulf of Ob	2016-	Annualy	Yes			х					
	Moscow State	expedition		current										
	Univerisity Marine													
	Research Centre	step", RV												
		Kartesh							1					



	I	T						ı	1						 		
Slovenia	LTER Europe ->	LTER: Gulf of		1989-	Varies	Yes	Х	х	х	x						x	
	LTER Slovenia	Trieste -		current													
		Slovenia/Nation															
		al monitoring of															
		the ecological															
		and chemical															
		status of the															
		Slovenian sea															
Slovenia	Morigenos	Slovenian		2002-										x			
	Slovenian	Dolphin Project		current													
	Marine Mammal																
	Society																
Spain	Balearic Islands	Turtle Tracking	Western	2010-	Varies/Dail	Yes		х				х					
	Coastal Observing		Mediterrane	current	у												
	and Forecasting		an														
	System (SOCIB)																
Spain	Balearic Islands	Canales	Mallorca	2014-	4 per year	Yes		х									
,	Coastal Observing	Endurance Lines	channel/Ibiz	current	(1 per												
	and Forecasting	SOCIB-canales	a channel		season)												
	System (SOCIB)	seasonal cruise			·												
Spain	Balearic Islands	Oceanographic -	1 fixed	2015-	Monthly	Yes		х									
	Coastal Observing		station in	current	, ,												
	and Forecasting	buoy monthly	the Bay of														
	System (SOCIB)	sampling	Palma/1														
	5/510 (550)	54	fixed station														
			Ibiza														
			channel														
Spain	Balearic Islands	Canales glider	(Mallorca	2010-	6-8 x per	Yes		х									
Spain	Coastal Observing		channel/Ibiz		year (1	103		^									
	and Forecasting	missions	a channel)	current	mission of												
	System (SOCIB)	11113310113	a charmen,		2 months												
	System (Social)				length												
					approx.)												
Spain	AZTI	Basque	Estuaries	1995-	Every 3	Yes	 	Х		х	х				х	v	
Spain	AZII	monitoring	Estuaries	current		162		^		_ *	^				^	х	
		network for the		current	years												
		ecological status															
		_															
Casia	Fhre Delta Netural	assessment	-	1002	Varias	Vos	-	.,		-	H.,		.,				
Spain	Ebro Delta Natural	LIEK EDIO Delta		1983-	Varies	Yes		×			х		х				
	Park			current	24	.,					-						
Spain	University of the	URDAIBAI 35		1997-	Monthly	Yes			х								
	Basque Country	Time Series		current													



Spain	University of the	BII BAO 25 Time	1997-	Monthly	Yes		1	х						
Spaili	Basque Country	Series	current	IVIOIILIIIY	163									
Spain	AZTI	AZTI Station D2	1986-	Monthly	Yes		x							
Spain	7.2.1	/\ZII Station BZ	current	Widnessy	103		_ ^							
Spain	Universidad del	Nervion River	2000-				х							
Spa	Pais vasco/Euskal	Estuary E1	current											
	Herriko	,												
	Univertsitatea													
Spain	Universidad del	Nervion River	2000-				х							
· ·	Pais vasco/Euskal	Estuary E2	current											
	Herriko													
	Univertsitatea													
Spain	Instituto Español	RADIALES	1991-	Monthly				х						
	de Oceanografiía	Santander	current											
		Station E4SA												
Spain	Instituto Español	RADIALES A	1988-	Monthly			x	x						
	de Oceanografiía	Coruna Station	current											
		E2CO												
Spain	Instituto Español	RADIALES	2001-	Monthly			х	х						
	de Oceanografiía	Gijon/Xixon	current											
		Station E2GI												
Spain	Instituto Español	RADIALES Vigo	1994-	Monthly			x	x						
	de Oceanografiía	Station E3VI	current											
Spain	Instituto Español	RADIALES	1992-	Monthly				x						
	de Oceanografiía		current											
	~ .	E2CU	1001		.,									
Spain	Instituto Español	Mallorca	1994-	4 x per year	Yes			x						
	de Oceanografiía		current											
Spain	Instituto Español	ECOMALAGA	1992-					x						
0 1 /0 1	de Oceanografiía		current		.,									
Spain/Scot	Asociacion	Balearic Sperm	2003-	Annual	Yes						х			
land	Tursiops and Dr	Whale Project	current											
	Luke Rendell of the University of													
	Saint Andrews													
Sweden	Swedish Agency	Pelagic	1985-	24 x per	Yes	, v	х	х						2 milj SEK/year
Sweden	for Marine and	monitoring of	current		res	x	, x	, x						Z minj SEK/ year
	Water	the west coast	current	year										
	Management	the west todst												
Sweden	The Swedish			-			1							
Sweuell	Environmental													
	Protection Agency													
	1 TOLCCLION ABEILLY											<u> </u>		



	and Stockholm												
	University												
Sweden	The Swedish												
	Environmental												
	Protection Agency												
	and University of												
	Kalmar												
Sweden	The Swedish E												
	Protection Agend	cy and Swedish											
	Museum of Na	atural History											
Sweden		National											
		acoustic											
		monitoring											
		programme of											
		harbour											
		porpoises in											
		Swedish waters											
Sweden	Swedish Agency	Benthic fish	1972-	Annual	Yes				х				
	for Marine and	populations	current										
	Water												
	Management												
Sweden	Swedish Agency	Pelagic fish	1978-	Annual	Yes				х				
	for Marine and	populations	current										
	Water												
	Management												
Sweden	Swedish Agency	Migratory fish	1969/200	Annual	Yes				х				
	for Marine and	populations	4-current										
	Water												
	Management												
Sweden	Swedish	Swedish	1983-	Monthly	Yes		х	х					
	Meteorological	National	current										
	and Hydrological	monitoring											
	Institute (SMHI)												
Sweden	Swedish Agency	The pelagic	1991-	10x per	Yes	х	х	х					
	for Marine and	marine	current	year									
	Water	monitoring											
	Management and	program											
	Umeå Marine												
	Sciences Centre												
	(UMF), Umeå												
	University												



								1							
Sweden	Swedish Agency	Soft-bottom	1983-	Annual	Yes				х						
	for Marine and	macrofauna	current												
	Water														
	Management and														
	Umeå Marine														
	Sciences Centre														
	(UMF), Umeå														
	University														
Sweden	Swedish Agency	Coastal fish	1960-	Annual	Yes					х					
	for Marine and	populations	current												
	Water														
	Management														
Ukraine		Marine Research	2003-	Varies	Yes	х	х		х	х		х		х	
	I. Mechnikov	Station "Zmiinyi	current												
	University	island"													
United	Department of														
Kingdom	Agriculture,														
	Environment and														
	Rural Affairs														
	(DAERA)														
United	Centre for	Eutrophication	1985-	Varies	Yes	х	х	х		х					
Kingdom	Environment,	Monitoring &	current												
	Fisheries and	SmartBuoy in													
	Aquaculture	situ marine													
	Science (Cefas)	monitoring													
United	National	Porcupine	1984-	Annual	Yes	х		х	х						
Kingdom	Oceanography	Abyssal Plain	current												
	Centre (NOC)	Sustained													
		Observatory													
United	Newcastle	Plankton Dove	1969-	Monthly	Yes		x	х							
Kingdom	University	Time Series	curren												
United	Newcastle	Benthic Dove	1971-	2-4 times	Yes				х						
Kingdom	University and the	Time Series	current	per year											
	University of														
	Liverpool														
United	Plymouth Marine	Western	1988-	Weekly	Yes	х	х	х							
Kingdom	Laboratory and	Channel	curren												
	Marine Biological	Observatory: L4													
	Association	(pelagic)													
United	Plymouth Marine	Western	2008-	Bi-monthly	Yes				x					x	
Kingdom	Laboratory and	Channel	current												



	Marine Biological															
	Association	(benthic)														
United	Plymouth Marine	Western	1903-	2 weekly /	Yes		x									
Kingdom	Laboratory and	Channel	curren	monthly												
	Marine Biological	Observatory: E1														
	Association	(pelagic)														
United	Marine Biological	Continuous	1931-	Monthly	Yes		х	х								
Kingdom	Association	Plankton	curren	:												
		Recorder (CPR)														
		Survey														
United	Marine Biological	Marine	1952-	Annual	Yes				х						х	
Kingdom	Association	Biodiversity and	curren	:												
		Climate Change														
		(MarClim)														
United	Britist Trust for	Wetland Bird	1947-	Monthly	Citizen						х					
Kingdom	Ornithology	Survey	curren	:	science											
United	The Scottish	Deep Sea	1973-	Opportunis	Yes				х							
Kingdom	Association for	Benthic	curren	tic												
(Scotland)	Marine Science	Biodiversity														
	(SAMS)															
United	The Scottish	Lorn Pelagic	1970-	Monthly	Yes	х	х									
Kingdom	Association for	Observatory	curren	:												
(Scotland)	Marine Science															
	(SAMS)															
United	The Food	Food Standards	2004-	Varies	Yes		х									
Kingdom	Standards	Agency (FSS)	curren	:												
(Scotland)	Scotland (FSS)	Official Control														
		Phytoplankton														
		monitoring														
		Programme														
United	Scottish	The Scottish	1997-	Weekly	Yes		х	х								
Kingdom	Government	Coastal	curren	:												
(Scotland)		Observatory														
		(SCObs)														
United	Natural Resource	Intertidal														
Kingdom	Wales	Protected Site														
(Wales)																
United	Natural Resource	Marine	1982-	Varies	Yes	х	х	х	х	Х	Х	х	х	х	х	
Kingdom	Wales	Monitoring	curren	:												
(Wales)		Programme														



United	Natural Resource	Skomer Marine														
Kingdom	Wales	Nature Reserve														
(Wales)																
Regional	Reef Life Survey	Reef Life Survey		2010-	Opportunis	Yes				х	х			х		
	,	,		current	tic											
Regional		LifeWatch														
Ŭ		Biodiversity														
		Observatory-														
		Belgium														
Regional		Ocean Tracking														
regional		Network														
Regional		eOceans	 	2011-	Opportunis	Citizen					· ·					
Regional		eoceans			tic	science					х					
- · ·		CAFF		current												
Regional	Conservation of	CAFFS		1991-	Varies	Yes	х	x	x	х	х	х	Х			
	Arctic Flora and	Circumpolar		current												
	Fauna and many	Biodiversity														
	partners	Monitoring														
	https://www.caff.i	Program (CBMP)														
	s/cbmp-partners															
Regional	Fod Standards	Phytoplankton						x								
	Agency	monitoring														
		(Northern														
		Ireland, England														
		and Wales)														
Regional		CEMP Long term														
		Benthos														
Regional		National														
"		Research														
		Infrastructure -														
		Norwegian														
		Marine Data														
		Centre														
Regional		Coastal							<u> </u>							
		biodiversity in														
		rocky shores														
		across the														
		Atlantic coast of														
		Europe														
Dogion-I		Small Cetacean	-				-		+							
Regional																
		Abundance in														
		the European														



Regional Atlantic and North Sea Regional UK Grey and harbour seal abundance and distribution Regional Biological Resource Centre (EMBRC) Regional Bathing Water Monitoring Programme Regional ORCA Regional Deep-Sea Research	Dogiona!		Atlantic and												
Regional UK Grey and harbour seal abundance and distribution Regional European Marine Biological Resource Centre (EMBRC) Regional Regional ORCA Regional ORCA Deep-Sea	Dogional														
Regional European Marine Biological Resource Centre (EMBRC) Regional Bathing Water Monitoring Programme Regional ORCA Regional Deep-Sea	Dogional														
Regional European Marine Buropean ARMS Discourse Discour	Regional														
Regional European Marine Biological Resource Centre (EMBRC) Bathing Water Monitoring Programme ORCA Deep-Sea Dee															
Regional European Marine Biological Resource Centre (EMBRC) Regional Regional ORCA Regional Deep-Sea															
Biological Resource Centre (EMBRC) Regional Regional Regional Deep-Sea Current Current															
Regional Bathing Water Monitoring Programme Regional ORCA Regional Deep-Sea	Regional				Annual	Yes	Х	х	х			х			
Regional Bathing Water Monitoring Programme Regional ORCA Regional Deep-Sea			programme	current											
Regional Bathing Water Monitoring Programme Regional ORCA Regional Deep-Sea															
Monitoring	- I	(EMBRC)	D 11: 14/ 1												
Programme Image: Control of the control o	Regional														
Regional ORCA Regional Deep-Sea															
Regional Deep-Sea	Pogional														
	Regional		UNCA												
Research Research	Regional		Deep-Sea												
			Research												
Program			Program												
Regional SeagrassNet SeagrassNet - 2001- Varies Yes x	Regional	SeagrassNet		2001-	Varies	Yes							х		
Global current			Global	current											
Monitoring															
Program Program Program															
Regional HELCOM: The FISH-PRO	Regional		FISH-PRO III		Annual	Yes				x					
Baltic Marine 2023				2023											
Environment															
Protection Protection															
Commission															
(Denmark,															
Estonia, the	1														
European Union, Finland, Germany,															
Latvia, Lithuania,															
Poland, Russia and															
Sweden)															
Regional The Secchi Disk The Secchi Disk 2013- Opportunis Citizen x			The Secchi Disk	2013-	Opportunis	Citizen		x							
Foundation current tic science	i Regional I	5 5 5 5 5 15 16	J J J J J J J J J J J J J J J J J					"							