

Time-series site	OSPAR region	Time-series start-end	Temporal resolution	Institution, current PI	Carbonate variables, depth	Analysing method, instrument	Accuracy (quality assurance)	Funding	Data available
OWS M (NO)	I	2001-	2001-2009: monthly 2009- : quarterly	NORCE Norwegian Research Centre/University of Bergen Ingunn Skjelvan	DIC: full water depth TA: full water depth	2001-2004: DIC: SOP 2, SOMMA; TA: SOP 3b, open cell (Haraldsson et al., 1997) 2004-: DIC: SOP 2, VINDTA 3D; TA: SOP 3b, VINDTA 3S	DIC ±2 µmol/kg (CRM) TA ±2 µmol/kg (CRM)	Project based, < 5 years	OCADS, GLODAP
Irminger Sea (IS)	I	1983-	Quarterly	Icelandic Marine and Freshwater Research Institute Solveig Olafsdottir	1983-1992: DIC, pCO2, surface 1993-2013: DIC, pCO2, full water depth 2013- : DIC, TA, full water depth	1983-2013: DIC SOP 2, pCO2 : SOP 4 2013- : DIC: SOP 2, TA: SOP 3b	pCO2 ±2 µatm (STD) DIC ±2 µmol/kg (CRM) TA ±2 µmol/kg (CRM)	Part of established network, sustained	OCADS, GLODAP
Iceland Sea (IS)	I	1985-	Quarterly	Icelandic Marine and Freshwater Research Institute Solveig Olafsdottir	1983-1992: DIC, pCO2, surface 1993-2013 : DIC, pCO2, full water depth 2013-: DIC, TA, full water depth	1983-2013: DIC SOP 2, pCO2 : SOP 4 2013- : DIC : SOP 2, TA : SOP 3b	pCO2 ±2 µatm (STD) DIC ±2 µmol/kg (CRM) TA ±2 µmol/kg (CRM)	Part of established network, sustained	OCADS, GLODAP
Stokksnes (IS)	I	2013-	Quarterly	Icelandic Marine and Freshwater Research Institute Solveig Olafsdottir	DIC, TA, full water depth	DIC: SOP 2 TA: SOP 3b	DIC ±2 µmol/kg (CRM) TA ±2 µmol/kg (CRM)	Part of established network, sustained	OCADS, GLODAP
Belgium coast (<10 km) (BE)	II	1985-	bi-monthly/ quarterly	Royal Belgian Institute of Natural Sciences Mark Knockaert	pH, surface	1985-2013: Beckman benchtop pH meter From 2014- : Hach HQd40 with Hach pH electrode with temperature sensor conform own procedure BMM LAB-SV002, Measurement of DO and pH with temperature compensation in seawater	1985-2013: pH ± 0.02, Control buffer pH 7.99 ± 0.03 2014-: pH ± 0.01, Control buffer pH 7.99 ± 0.03	Part of established network, sustained	pH: EMODNET
Belgium coast (10 - 80 km) (BE)	II	1985-	bi-monthly/quarterly	Royal Belgian Institute of Natural Sciences Mark Knockaert	pH, surface	1985-2013: Beckman benchtop pH meter From 2014- : Hach HQd40 with Hach pH electrode with temperature sensor conform own procedure BMM LAB-SV002, Measurement of DO and pH with temperature compensation in seawater	1985-2013: pH ± 0.02, Control buffer pH 7.99 ± 0.03 2014-: pH ± 0.01, Control buffer pH 7.99 ± 0.03	Part of established network, sustained	pH: EMODNET
The Netherlands coast (2 km) (NL)	II	1975-	Monthly	1985-2017: Dutch Directorate-General for Public Works and Water Management 2018- : Royal Netherlands Institute for Sea Research Matthew Humphreys	pH, surface	1975-2017: pH electrode 2018- : SOP 6b, Cary 8454 UV-VIS spectrophotometer (Agilent Technologies) with purified mCP at 25 °C	1975-2017: ±0.1 (NSB) 2018- : ±0.002 (CRM, TRIS)	Funded until 2025, continuation expected but not guaranteed	1975-2017: https://waterinfo.rws.nl/ 2017-: https://oa.iode.org/
The Netherlands coast (10 km) (NL)	II	1975-	Monthly	1985-2017: Dutch Directorate-General for Public Works and Water Management 2018- : Royal Netherlands Institute for Sea Research Matthew Humphreys	pH, surface	1975-2017: pH electrode 2018- : SOP 6b, Cary 8454 UV-VIS spectrophotometer (Agilent Technologies) with purified mCP at 25 °C	1975-2017: ±0.1 (NSB) 2018- : ±0.002 (CRM, TRIS)	Funded until 2025, continuation expected but not guaranteed	1975-2017: https://waterinfo.rws.nl/ 2017-: https://oa.iode.org/
The Netherlands coast (20 km) (NL)	II	1975-	Monthly	1985-2017: Dutch Directorate-General for Public Works and Water Management 2018- : Royal Netherlands Institute for Sea Research Matthew Humphreys	pH, surface	1975-2017: pH electrode 2018- : SOP 6b, Cary 8454 UV-VIS spectrophotometer (Agilent Technologies) with purified mCP at 25 °C	1975-2017: ±0.1 (NSB) 2018- : ±0.002 (CRM, TRIS)	Funded until 2025, continuation expected but not guaranteed	1975-2017: https://waterinfo.rws.nl/ 2017-: https://oa.iode.org/
The Netherlands coast (70 km) (NL)	II	1975-	Monthly	1985-2017: Dutch Directorate-General for Public Works and Water Management 2018- : Royal Netherlands Institute for Sea Research Matthew Humphreys	pH, surface	1975-2017: pH electrode 2018- : SOP 6b, Cary 8454 UV-VIS spectrophotometer (Agilent Technologies) with purified mCP at 25 °C	1975-2017: ±0.1 (NSB) 2018- : ±0.002 (CRM, TRIS)	Funded until 2025, continuation expected but not guaranteed	1975-2017: https://waterinfo.rws.nl/ 2017-: https://oa.iode.org/
The Netherlands coast (135 km) (NL)	II	1991-	Monthly	1985-2017: Dutch Directorate-General for Public Works and Water Management 2018- : Royal Netherlands Institute for Sea Research Matthew Humphreys	pH, surface	1975-2017: pH electrode 2018- : SOP 6b, Cary 8454 UV-VIS spectrophotometer (Agilent Technologies) with purified mCP at 25 °C	1975-2017: ±0.1 (NSB) 2018- : ±0.002 (CRM, TRIS)	Funded until 2025, continuation expected but not guaranteed	1975-2017: https://waterinfo.rws.nl/ 2017-: https://oa.iode.org/
Stonehaven (UK)	II	2008-2014 2018-	~Weekly	Marine Science Scotland Pablo Leon Diaz	DIC, TA, surface and bottom	DIC: SOP 2, VINDTA 3C TA: SOP 3b, VINDTA 3C	DIC ± 1.5 µmol/kg (CRM) TA ± 1.5 µmol/kg (CRM)	No clear long erm funding	British Oceanographic Data Centre (BODC) (https://www.bodc.ac.uk/)
WCOL4 (UK)	II	2008-	~Weekly	Plymouth Marine Laboratory Helen Findlay	DIC, TA, full water depth	DIC: SOP 2, Apollo SciTech Inc. DIC Analyser AS-C3 TA: SOP 3b, Apollo SciTech Alkalinity Titrator AS-ALK2	DIC ±1.7 µmol/kg (CRM) TA ±0.2 µmol/kg (CRM)	Project based, < 5 years	British Oceanographic Data Centre (BODC) (https://www.bodc.ac.uk/)
1 - Point C (FR)	II	1998-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface and bottom	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
2 - Point L (FR)	II	1998-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface and bottom	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
17 - Luc-sur-Mer (FR)	II	2007-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
23 - Smile (FR)	II	2013-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
19 - Bizeux (FR)	III	2012-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
21 - Cézembre (FR)	III	2014-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
3 - Astan (FR)	III	2001-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface and bottom	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
4 - Estacade (FR)	III	2001-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface and bottom	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
5 - Portzic (FR)	III	2002-	Weekly	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
6 - Eyrac (FR)	IV	1997-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
15 – Bouée 13 (FR)	IV	2005-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
16 - Comprian (FR)	IV	2006-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/
18 - Antioche (FR)	IV	2011-	Every 2 weeks	SOMLIT French Coastal Monitoring Network Nicolas Savoye (EPOC/OASU, Univ.Bordeaux)	pH, surface	Old: pH meter (potentiometer) New: SOP 6b	Old: ±0.03 New: ±0.003 (CRM)	Sustained observations	https://www.somlit.fr/demande-de-donnees/

DIC=Dissolved Inorganic Carbon; TA=Total Alkalinity

SOP (Standard Operational Procedure) 2: acidification and coulometric detection (Dickson et al., 2007)

SOP (Standard Operational Procedure) 3b: potentiometric detection (Dickson et al., 2007)

SOP (Standard Operational Procedure) 6b: spectrophotometer (Dickson et al., 2007)

CRM=Certified Reference Material provided by Prof. A. Dickson, UCSD, USA

STD=STandarD reference gas