



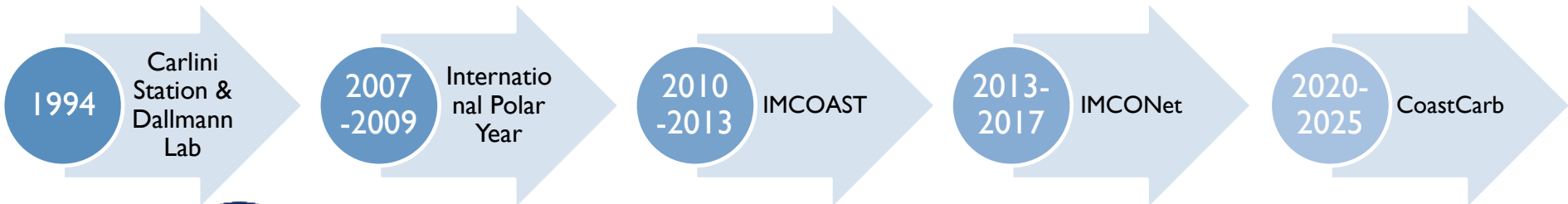
# COLLAORATION BETWEEN AWI AND ARGENTINA

DynAMo (BMBF)

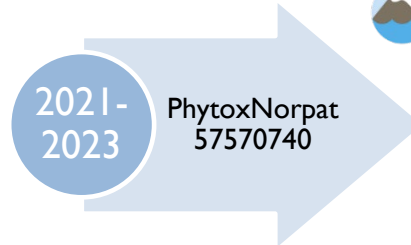
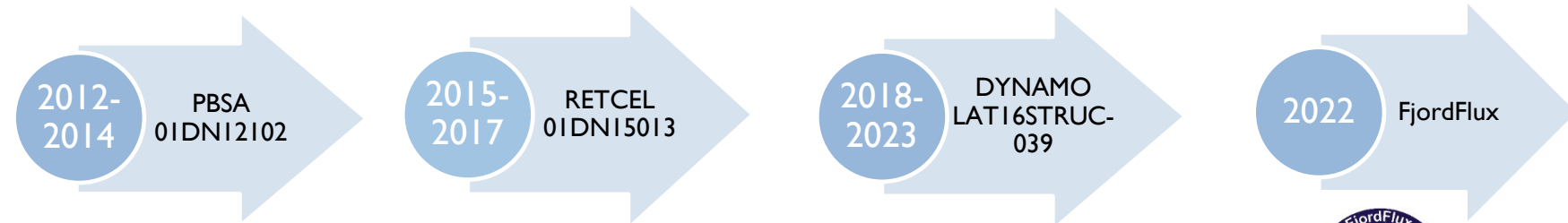
CoastCarb (EU)

FjordFlux (RV Meteor)

# LONG-TERM FACILITIES, COOPERATION AND FUNDING WITH ARGENTINA INVOLVED

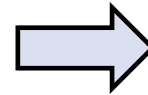
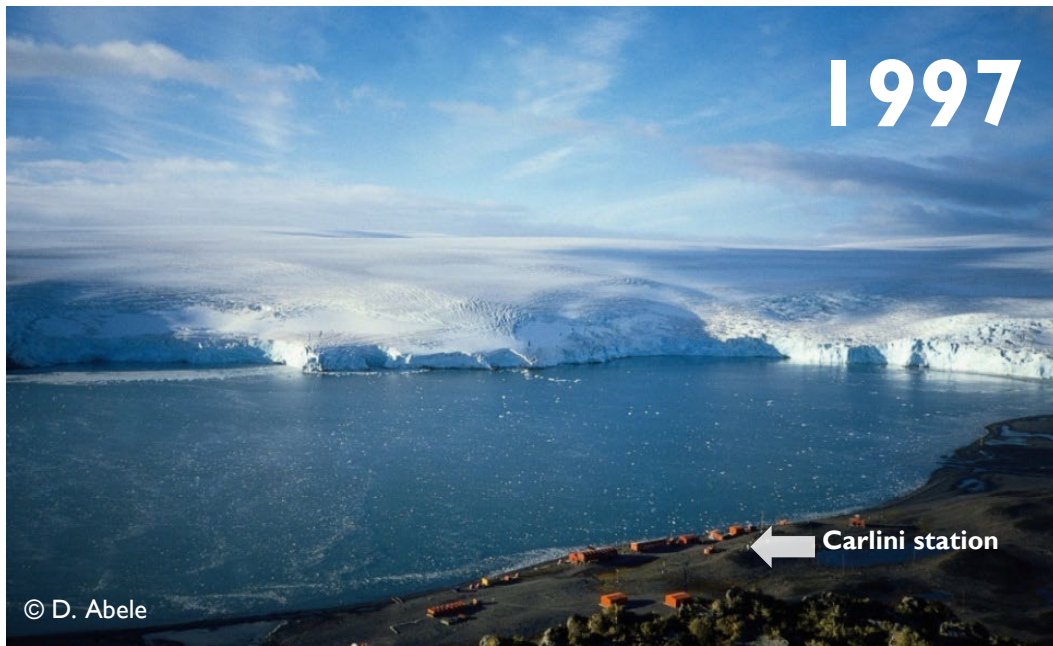


IPY



- Akselman, R., B. Krock, T. J. Alpermann, U. Tillmann, C. M. Boral, G. O. Almandoz and M. E. Ferrario (2015). "*Protoceratium reticulatum* (Dinophyceae) in the austral Southwestern Atlantic and the first report on YTX-production in shelf waters of Argentina." *Harmful Algae* 45(0): 40-52.
- Almandoz, G. O., E. Fabro, M. Ferrario, U. Tillmann, A. Cembella and B. Krock (2017). "Species occurrence of the potentially toxic diatom genus *Pseudo-nitzschia* and the associated neurotoxin domoic acid in the Argentine Sea." *Harmful Algae* 63: 45-55.
- Barrera, F., R. J. Lara, B. Krock, J. E. Garzón-Cardona, E. Fabro and B. P. Koch (2017). "Factors influencing the characteristics and distribution of surface organic matter in the Pacific-Atlantic connection." *Journal of Marine Systems* 175: 36-45.
- Bianchi, V. A., H. Langlois, U. Tillmann, B. Krock, A. Müller, U. Bickmeyer and D. Abele (2019). "Separate and combined effects of neurotoxic and lytic compounds of *Alexandrium* strains on *Mytilus edulis* feeding activity and hemocyte function." *Fish & Shellfish Immunology* 84: 414-422.
- D'Agostino, V. C., M. Degrati, V. Sastre, N. Santinelli, B. Krock, T. Krohn, S. L. Danz and M. S. Hoffmeyer (2017). "Domoic acid in a marine pelagic food web: Exposure of southern right whales *Eubalaena australis* to domoic acid on the Peninsula Valdés calving ground, Argentina." *Harmful Algae* 68: 248-257.
- D'Agostino, V. C., B. Krock, M. Degrati, V. Sastre, N. Santinelli, T. Krohn and M. S. Hoffmeyer (2019). "Occurrence of Toxicogenic Microalgal Species and Phycotoxin Accumulation in Mesozooplankton in Northern Patagonian Gulfs, Argentina." *Environmental Toxicology and Chemistry* 38(10): 2209-2223.
- Fabro, E., G. O. Almandoz, M. Ferrario, U. John, U. Tillmann, K. Toeba, B. Krock and A. Cembella (2017). "Morphological, molecular, and toxin analysis of field populations of *Alexandrium* genus from the Argentine Sea." *Journal of Phycology* 53(6): 1206-1222.
- Fabro, E., G. O. Almandoz, M. Ferrario, U. Tillmann, A. D. Cembella and B. Krock (2016). "Distribution of Dinophysis species and their association with lipophilic phycotoxins in plankton from the Argentine Sea." *Harmful Algae* 59: 31-41.
- Fabro, E., G. O. Almandoz, M. E. Ferrario, M. S. Hoffmeyer, R. E. Pettigrosso, R. Ubrig and B. Krock (2015). "Co-occurrence of *Dinophysis tripos* and pectenotoxins in Argentinean shelf waters." *Harmful Algae* 42(0): 25-33.
- Fabro, E., G. O. Almandoz, B. Krock and U. Tillmann (2020). "Field observations of the dinoflagellate genus *Azadinium* and azaspiracid toxins in the south-west Atlantic Ocean." *Marine and Freshwater Research* 71(7): 832-843.
- Fabro, E., B. Krock, A. I. Torres, F. E. Papparazzo, I. R. Schloas, G. A. Ferrerías and G. O. Almandoz (2018). "Toxicogenic Dinoflagellates and Associated Toxins in San Jorge Gulf, Argentina." *Oceanography* 31(4): 145-153.
- Garzón-Cardona, J. E., A. Martínez, S. Pantoja, V. Guinder, B. Koch, B. Krock, F. Barrera and R. Lara (2019). "Linking optical and chemical signatures of dissolved organic matter in the southern Argentine shelf: Distribution and bioavailability." *Journal of Marine Systems* 195: 74-82.
- Giannuzzi, L., B. Krock, M. C. C. Minaglia, L. Rosso, C. Houghton, D. Sedan, G. Malanga, M. Espinosa, D. Andriolo and M. Hernando (2016). "Growth, toxin production, active oxygen species and catalase activity of *Microcystis aeruginosa* (Cyanophyceae) exposed to temperature stress." *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology* 189: 22-30.
- Gracia Villalobos, L., N. Santinelli, V. Sastre, B. Krock and J. L. Esteves (2015). "Dinophysis Species Associated with Diarrhetic Shellfish Poisoning Episodes in North Patagonian Gulfs (Chubut, Argentina)." *Journal of Shellfish Research* 34(3): 1141-1149.
- Guinder, V. A., A. Malits, C. Ferronato, B. Krock, J. Garzón-Cardona and A. Martínez (2020). "Microbial plankton configuration in the epipelagic realm from the Beagle Channel to the Burdwood Bank, a Marine Protected Area in Sub-Antarctic waters." *PLOS ONE* 15(5): e0233156.
- Guinder, V. A., U. Tillmann, B. Krock, A. L. Delgado, T. Krohn, J. E. Garzón Cardona, K. Matias, C. López Abbate, R. Silva and R. Lara (2018). "Plankton Multiproxy Analyses in the Northern Patagonian Shelf, Argentina: Community Structure, Phycotoxins, and Characterization of Toxic *Alexandrium* Strains." *Frontiers in Marine Science* 5(394).
- Hernando, M. P., C. Houghton, L. Giannuzzi, B. Krock, D. Andriolo and G. Malanga (2016). "Oxidative stress in *Microcystis aeruginosa* as a consequence of global climate change." *Biocell* 40(1): 23-25.
- Hoffmeyer, M. S., M. S. Dutto, A. A. Berastegui, M. D. Garcia, R. E. Pettigrosso, G. O. Almandoz, V. D'Agostino, T. M. García, E. Fabro, F. E. Papparazzo, M. Solís, G. Williams, J. L. Esteves and B. Krock (2020). "Domoic acid, *Pseudo-nitzschia* spp and potential vectors at the base of the pelagic food web over the northern Patagonian coast, Southwestern Atlantic." *Journal of Marine Systems* 212: 103448.
- Krock, B., C. M. Boral, F. Barrera, U. Tillmann, E. Fabro, G. O. Almandoz, M. Ferrario, J. E. Garzón Cardona, B. P. Koch, C. Alonso and R. Lara (2015). "Analysis of the hydrographic conditions and cyst beds in the San Jorge Gulf, Argentina, that favor dinoflagellate population development including toxicogenic species and their toxins." *Journal of Marine Systems* 148(0): 86-100.
- Krock, B., M. E. Ferrario, R. Akselman and N. G. Montoya (2018). "Occurrence of Marine Biotoxins and Shellfish Poisoning Events and Their Causative Organisms in Argentine Marine Waters." *Oceanography* 31(4): 132-144.
- Krock, B., I. R. Schloas, N. Trefault, U. Tillmann, M. Hernando, D. Deregibus, J. Antoni, G. O. Almandoz and M. Hoppert (2020). "Detection of the phycotoxin pectenotoxin-2 in waters around King George Island, Antarctica." *Polar Biology* 43(3): 263-277.
- Krock, B., U. Tillmann, A. D. Cembella, G. A. Lovrich and C. M. Boral (2013). "Comparison of phycotoxin composition and distribution in toxicogenic plankton from the north and south Atlantic." 9th International Conference on Molluscan Shellfish Safety, Sydney, Australia, FAO.
- Paineñú, J. C., V. A. Bianchi, B. Krock, J. S. De Anna, G. Kristoff and C. M. Luquet (2020). "Effects of paralytic shellfish toxins on the middle intestine of *Oxcarinichus mykiss*: Glutathione metabolism, oxidative status, lysosomal function and ATP-binding cassette class C (ABCC) proteins activity." *Ecotoxicology and Environmental Safety* 204: 111069.
- Tillmann, U., C. M. Boral, F. Barrera, R. Lara, B. Krock, G. O. Almandoz, M. Witt and N. Trefault (2016). "*Azadinium poporum* from the Argentine Continental Shelf, Southwestern Atlantic, produces azaspiracid-2 and azaspiracid-2 phosphate." *Harmful Algae* 51: 40-55.
- Tillmann, U., M. Gottschling, V. Guinder and B. Krock (2018). "Amphidoma *parvula* (Amphidomataceae), a new planktonic dinophyte from the Argentine Sea." *European Journal of Phycology* 53(1): 14-28.
- Tillmann, U., M. Gottschling, B. Krock, K. F. Smith and V. Guinder (2019). "High abundance of Amphidomataceae (Dinophyceae) during the 2015 spring bloom of the Argentinean Shelf and a new, non-toxicogenic *Amphidoma* genotype of *Azadinium spinosum*." *Harmful Algae* 84: 244-260.
- Bianchi, V. A., U. Bickmeyer, U. Tillmann, B. Krock, A. Müller and D. Abele (2021). "In Vitro Effects of Paralytic Shellfish Toxins and Lytic Extracellular Compounds Produced by *Alexandrium* Strains on Hemocyte Integrity and Function in *Mytilus edulis*." *Toxins* 13(8): 544.
- D'Agostino, V. C., A. Fernández Ajó, M. Degrati, B. Krock, K. E. Hunt, M. M. Uhart and C. L. Buck (2022). "Potential endocrine correlation with exposure to domoic acid in Southern Right Whale (*Eubalaena australis*) at the Peninsula Valdés breeding ground." *Oecologia* 198(1): 21-34.
- Fabro, E., B. Krock and G. O. Almandoz (2018). "Dinoflagelados productores de yessotoxinas en el Mar argentino." *Boletín De La Sociedad Argentina De Botánica* 53(4): 551-566.
- Ramírez, F. J., V. A. Guinder, C. Ferronato and B. Krock (2022). "Increase in records of toxic phytoplankton and associated toxins in water samples in the Patagonian Shelf (Argentina) over 40 years of field surveys." *Harmful Algae* 118: 102317.

# MASSIVE ICE LOSS IN POTTER COVE, ANTARCTICA IN RECENT 20 YEARS





CoastCarb



**AN INFORMATION SYSTEM ON CARBON BALANCE FOR  
SOUTH PATAGONIAN & ANTARCTIC COASTAL ECOSYSTEMS IN TIMES OF RAPID GLACIER MELT**



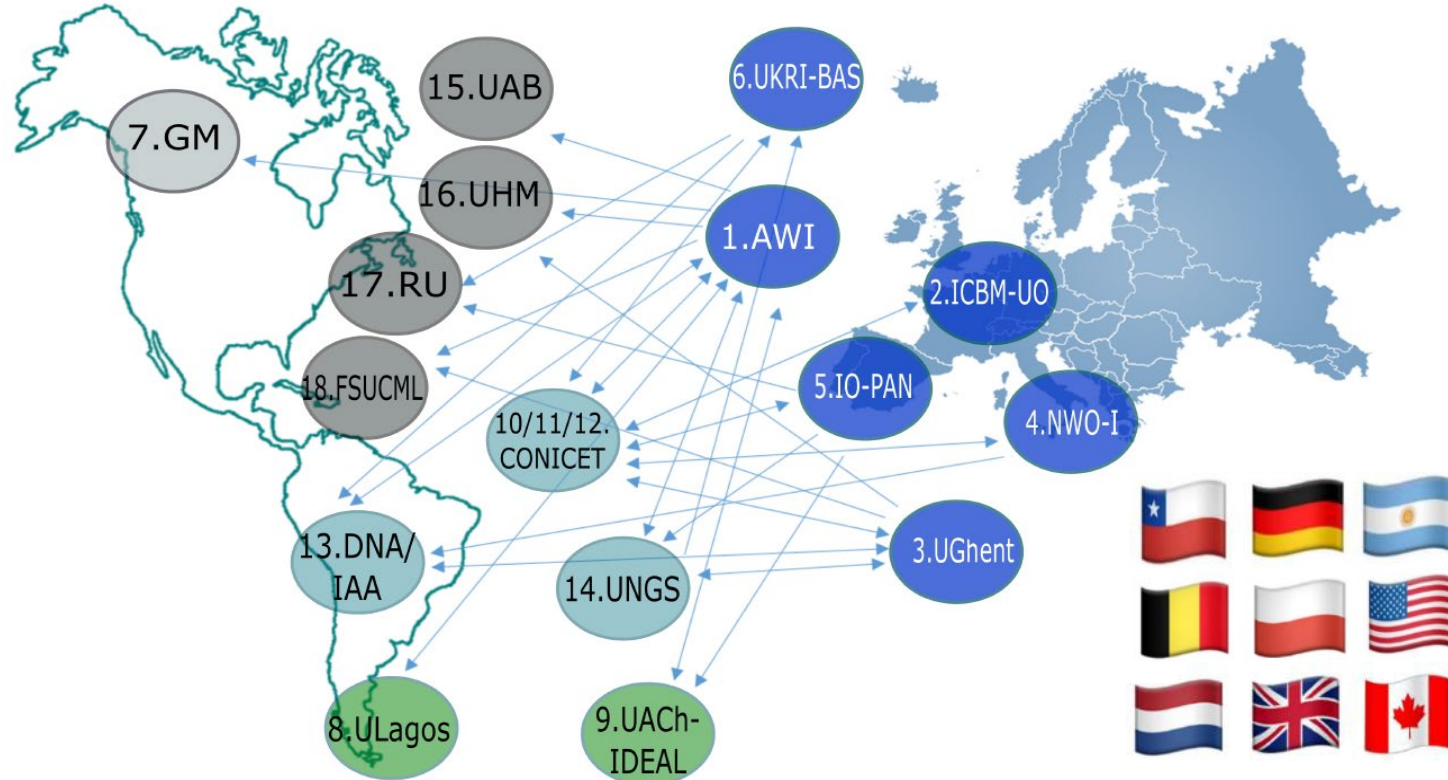
© K. Jerosch

[WWW.COASTCARB.EU](http://WWW.COASTCARB.EU)

Grant Agreement 872690



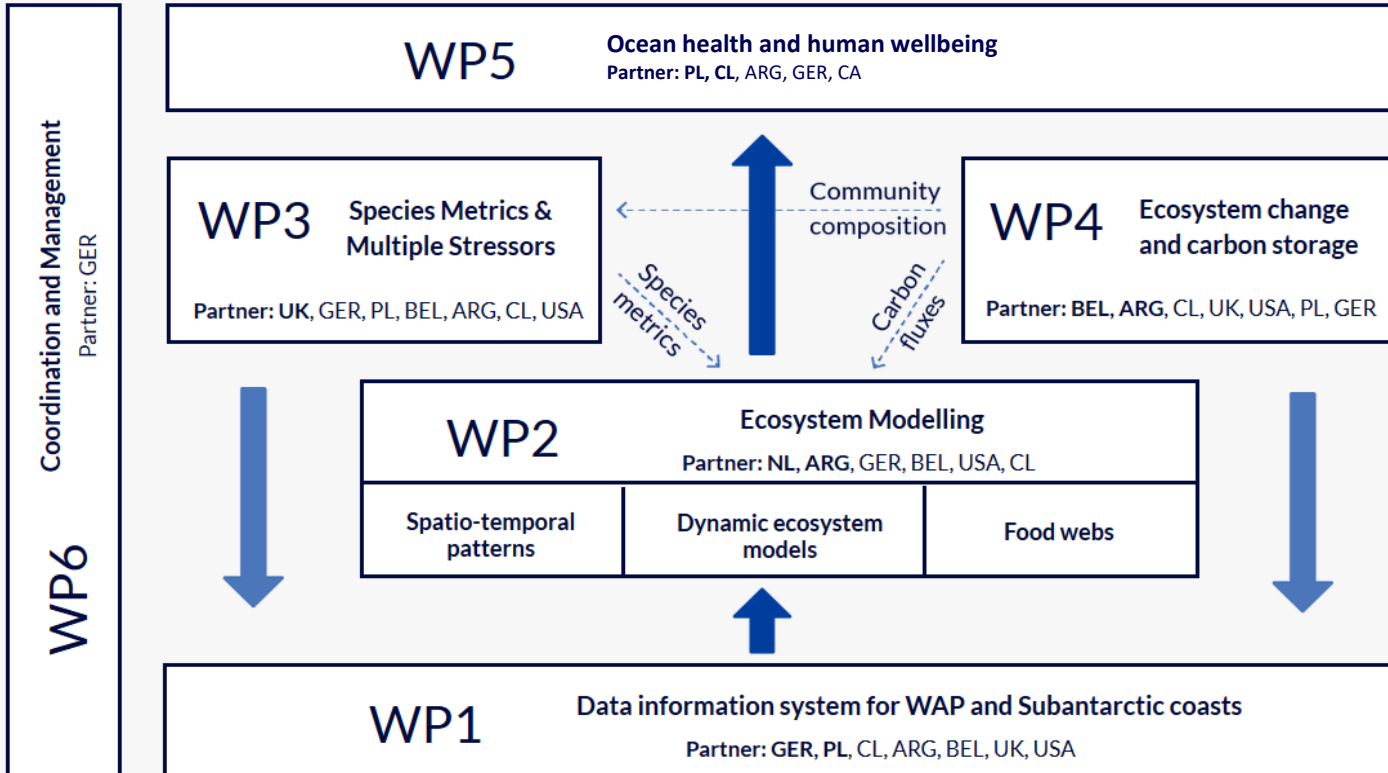
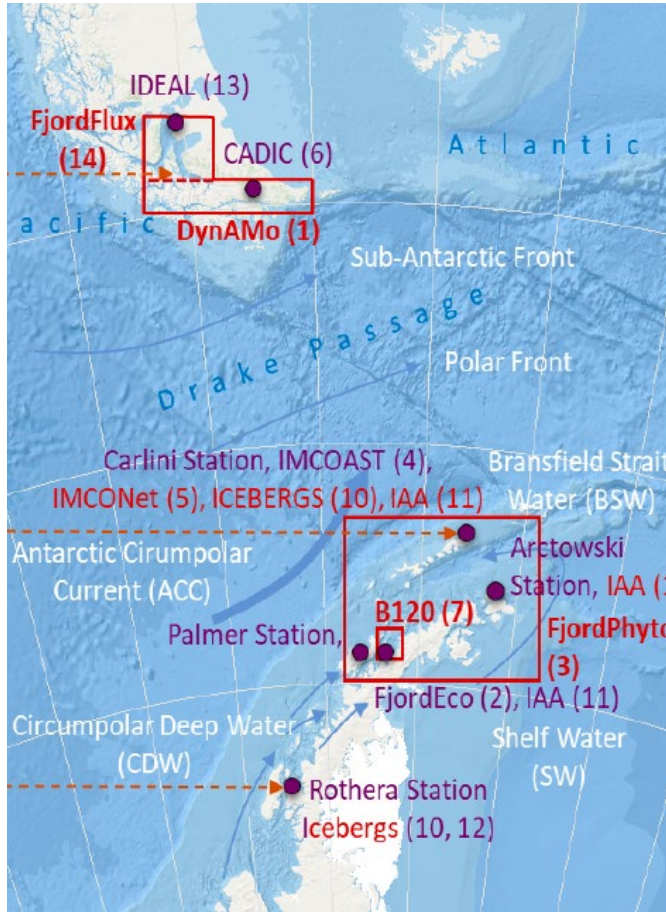
# COASTCARB CONSORTIUM



1. Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI)
2. Carl von Ossietzky University of Oldenburg, Institute for Chemistry and Biology of Marine Environment (iCBM-UO)
3. Ghent University (UGhent)
4. Netherland Foundation of Scientific Research Institute (NWO-I), Royal Netherlands Institute for Sea Research (NIOZ)
5. Institute of Oceanology, Polish Academy of Science (IO-PAN)
6. United Kingdom Research and Innovation (UKRI)-British Antarctic Survey (BAS)
7. Greencoast Media Inc (GM)
8. University of Los Lagos (ULagos)
9. Research Center Dynamics of High Latitude Marine Ecosystems, Universidad Austral de Chile (UACH-IDEAL)
10. National Scientific and Technical Research Council - Instituto de Diversidad y Ecología Animal (CONICET-IDEA)
11. National Scientific and Technical Research Council - Instituto Argentino de Oceanografía (CONICET- IADO)
12. National Scientific and Technical Research Council - Centro Austral de Investigaciones Científicas (CONICET-CADIC)
13. Dirección Nacional del Anrártico (DNA) / Instituto Antártico Argentino (IAA)
14. National University of General Sarmiento (UNGS)
15. University of Alabama at Birmingham (UAB)
16. University of Hawaii at Manoa (UHM)
17. Rutgers University (RU)
18. Florida State University Coastal and Marine Laboratory (FSUCML)

- about 100 scientists, 18 institutes, 9 countries
- 385 secondments months, about 54% between AWI & South America

# COASTCARB - AN INFORMATION SYSTEM ON CARBON BALANCE FOR SOUTH PATAGONIAN AND ANTARCTIC COASTAL ECOSYSTEMS IN TIMES OF RAPID GLACIER MELT (2020-2024)



# COASTCARB OBJECTIVES & WP LEADS

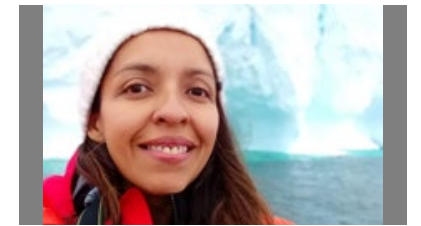


- O1 - Data and Information System: Compile a geo-referenced data information system for SP and WAP coastal change, including abiotic environmental factors, disturbance levels, and mapping coastal biosphere (WP1).
- O2 - Ecosystem Modelling: Develop a carbon flux model for SP/WAP coastal fjords and estuaries, considering different ecosystem processes such as carbon sequestration (production, coastal run-off fluxes, deposition and burial) and mobilization (bioturbation, remineralization, transport processes) (WP2).
- O3 – Species Metrics & Multiple Stressors: Parameterise the response of coastal biosphere (key species, groups, communities) to environmental change for different focal areas along SP and the WAP. Identify and fill present data gaps (WP3).
- O4 - Ecosystem Change and Carbon Storage: Develop a coastal status classification scheme (dynamic mapping of carbon sink and source areas) (WP4).
- O5 - Ocean health and human wellbeing: marine and coastal social-ecological systems (MCSES) and benefits of ocean health under climate change (WP5).

WP1



KERSTIN JEROSCH (AWI, DE)

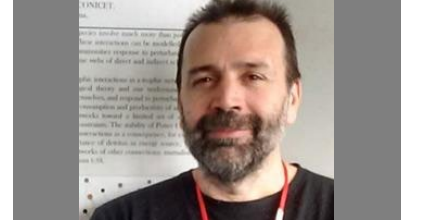


ANDREA PIÑONES (UACH-IDEAL, CL)

WP2



KARLINE SOETAERT (NOW-I, NIOZ, NL)



LEONARDO SARAVIA (UNGS, ARG)

WP3



SIMON MORLEY (UKRI-BAS, UK)



RICARDO SAHADE (CONICET-IDEA, ARG)

WP4



ULRIKE BREAKMAN (UGHENT, BE)



IRENE SCHLOSS (CONICET-CADIC, ARG)

WP5



JOANNA PIWOWARCZYK (IO-PAN, PL)



LAURA NAHUELHUAL (UACH-IDEAL, CL)