Sebastián E. Cornejo Guzmán

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Profesional Summary

Highly trained in the field of oceanography and geophysics, with experience in technical assistance, code development, modeling and complex data analysis. Including roles in technical consulting for environmental organizations such as WWF, as well as renowned academic institutions such as the University of Concepción. Creating and leading specialized projects, as the evaluation of ecosystem services and establishment of oceanographic monitoring networks, along with operational strategies and administrative advice from data analysis to private companies. In parallel, commercial and business fields practical expertise acquired, managing projects and contributing to specialized business and legislative research through data science and machine learning.

Work Experience

2023 -

Legal advice and GeoData Science
WWF-EE.UU.

Evaluation of ecosystem services, legislative state of the art, and geoanalysis of biodiversity indices in Chilean Patagonia for the Marine Spatial Planning project

2021 -

Data Science and project coordination
Blaue Meer LTDA

Head of the oceanographic consulting and ecosystem services area, and assistance in administration, planning, and protocolization of projects for the extraction of shipwreck remains and ship recycling

2022 - Mar 2023

Oceanographic consulting and modeling
EnSoil Ambiental SpA

Technical assistance in the implementation of dispersion plume simulations in the Iquique Bay. Within the *"Baseline and diagnosis of environmental quality and biodiversity of the Iquique Bay"* project of the United Nations Development Program and the Chilean Ministry for the Environment

2018 - 2022

Scientific and academic assistant
Department of Geophysics, University of Concepción

Assistant and developer of hydrodynamic-biogeochemical models off Central Chile and island domains (Desventuradas Islands and Juan Fernández Archipelago). Analysis, spatio-temporal variability and identification of oceanographic events/processes. Thesis co-supervisor and professor tutee

2017 - 2022

Technical assistance and EcoData Science
Department of Oceanography, Fishiries Section, University of Concepción

Responsible of the analysis and coordination of continuous monitoring of oceanographic and meteorological variables related to the crustacean fishery in the Multiple Use Marine Protected Area of the Juan Fernández Archipelago and Nazca-Desventuradas Marine Park. Development of codes for the automation of storage and visualization of databases of ecosystem indicators

Nov 2015 & Jul 2016

Intership

M/N FORREST Ship

Collaborator on the research expedition for the *"Land-sea interaction effects on the local carbon cycle of the western Patagonian Archipelago Interior Sea"* project around the Madre de Dios archipelago, XII Magallanes Region and Chilean Antarctica.

Education

2011 - 2017

Bachelor's degree in Geophysics

University of Concepción, Concepción, Chile

2016 - 2018

Degree in Geophysics

University of Concepción, Concepción, Chile

Courses

Apr - Nov 2008

Applications of Mathematics in everyday life

Institute of Mathematics and Physics, Talca University, Talca, Chile

Dic 2015

Ocean Acidification Workshop

Dictated by Dr. Rodrigo Torres, University of Concepción, Concepción, Chile

Mar - Apr 2021

Atlantis Ecosystem Model

Dictated by Dr. Beth Fulton & PhD. (c) Bec Gorton, CSIRO, Tasmania, Australia (Online)

May - Aug 2023

R Open Class

Dictated by National Institute of Statistics Team, Chile (Online)

Oct - , 2023

Machine Learning and Data Science

Dictated by Technical University of Valencia, UPValenciaX DSC201x (edX.org)

Additional Skills

Programming and Software: Matlab (Octave), Python, R (GLM and GAM models), bash scripts (Unix shell), SQL, ROMS-CROCO (Regional Ocean Modeling System), WRF (Weather Research and Forecasting), Ichthyop model, Global Mapping Tool (GMT), ArcGIS, netCDF Operator (NCO), Climate Data Operators (CDO), JavaScript (basic), Fortran (basic) and Servers

Data analysis: Linear algebra, correlations, applied statistics, graph visualization, Empirical Orthogonal Functions (EOF), spectral analysis, Machine Learning, and principles of economics - project evaluation

General computing: Linux, Microsoft Office (Excel, PowerPoint and Word), Power BI, LaTeX, HTML, CSS, Git, VS Code, Microsoft Windows, Virtual Box, VMware, Adobe Creative Cloud, Google Earth Studio & Engine, and GPT-4

Languages: Spanish (native), English (B1-B2)

Licenses: Driver's license, Safety Familiarization and Basic Training - Navigation Permit (Chile & International Waters).

Publications

Submitted

Cornejo-Guzmán, S., Parada, C., Medel, C., Dewitte, B., Veliz, D., Ernst, B., Pinto, M., Connectivity between the coastal upwelling zone off central Chile and the oceanic Juan Fernández Archipelago: Role of a meandering oceanic coastal jet. Original Research, Front. Mar. Sci. - Marine Ecosystem Ecology.

2023

von Dassow, P., Mikhno, M., Percopo, I., Rubio-Orellana, V., Aguilera, V., Álvarez, G., Araya, M., **Cornejo-Guzmán, S.**, Llona, T., Mardones, J.I., Norambuena, L., Salas-Rojas, V., Kooistra, W.H.C.F., Montresor, M., Sarno, D., Diversity and toxicity of the planktonic diatom genus Pseudo-nitzschia from coastal and offshore waters of the Southeast Pacific, including Pseudo-nitzschia dampieri sp. nov.. Harmful Algae, Volume 130, 2023, 102520, ISSN 1568-9883. https://doi.org/10.1016/j.hal.2023.102520

Veliz, D., Rojas, F., Rojas-Hernández, N., **Cornejo-Guzmán, S.**, Ernst, B., Dewitte, B., Parada, C., Population genomic and biophysical modeling show contrasting patterns of population connectivity in a lobster inhabiting oceanic islands. Marine Environmental Research: 106253, ISSN 0141-1136. https://doi.org/10.1016/j.marenvres.2023.106253

Santa Cruz, F., Parada, C., Haltuch, M., Wallace, J., **Cornejo-Guzmán, S.**, Curchitser, E., Petrale sole transboundary connectivity and settlement success: A biophysical approach. Frontiers in Marine Science, 10, 1155227. https://doi.org/10.3389/fmars.2023.1155227

2021

Veliz, D., Rojas-Hernández, N., Fibla, P., Dewitte, B., **Cornejo-Guzmán, S.**, Parada, C., High levels of connectivity over large distances in the diadematid sea urchin Centrostephanus sylviae. PLoS ONE 16(11): e0259595. https://doi.org/10.1371/journal.pone.0259595

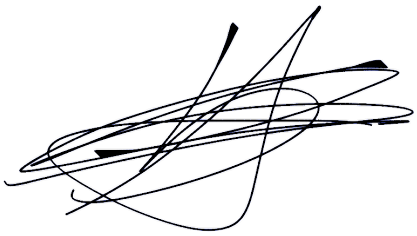
Parada, C., Ernst, B., **Cornejo-Guzmán, S.**, Santa-Cruz, F., Sandoval-Belmar, M., Rivara, P., Tapia, B., Gauthier, S., Pino-Aguilera, J., Escribano, R., Morales C.E., Local and remote physical processes driving variability of the planktonic system in the Juan Fernández Archipelago: A multidisciplinary framework providing conservation insights. Aquatic Conserv: Mar Freshw Ecosyst.; 31: 253 272. https://doi.org/10.1002/aqc.3499

Degree Thesis

Mecanismos de mesoescala y variables biogeoquícas que determinan la variabilidad de clorofila-a en el Archipiélago de Juan Fernández

Supervisor: Dr. Carolina Parada (carolina.parada@dgeo.udec.cl).

Extra information
& References



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