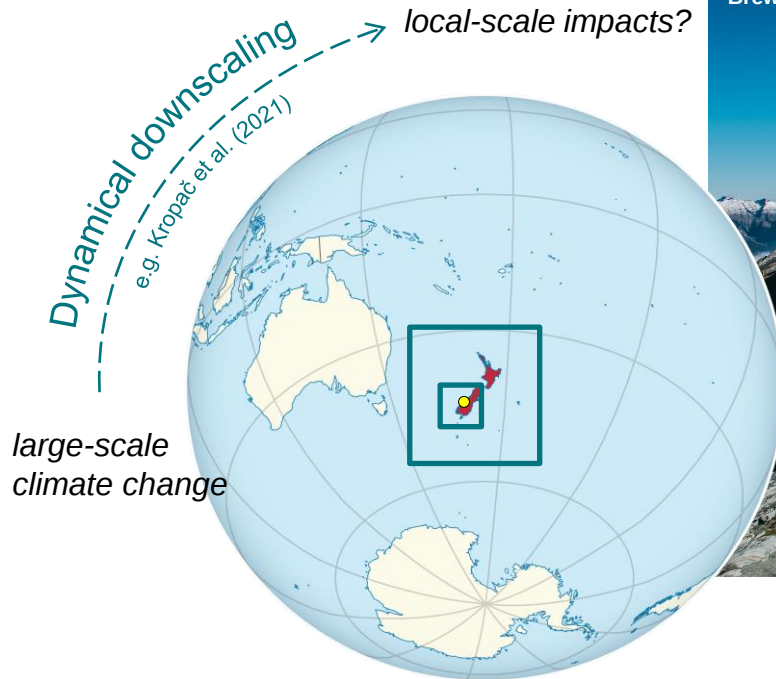
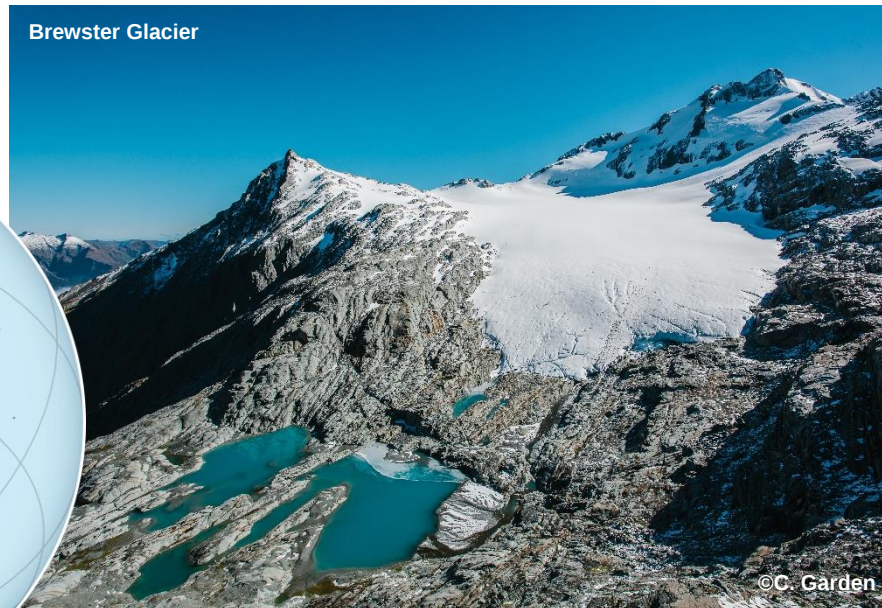


NZ-PROXY

The potential of coralline algae as SST proxy and for climate model evaluation: A New Zealand case study





Objective: Improve the reliability of climate models and downscaling studies in the New Zealand region

- Selection of suitable GCMs for downscaling in the New Zealand region



Pickler & Mölg (2021): Generic **GCM selection technique** based on atmospheric state variables

- New Zealand is strongly influenced by the surrounding oceans



Incorporation of **SST** into the selection algorithm

- Few reliable SST observations that go back to the 19th century, thus covering the historical simulations of GCMs (1850-present)



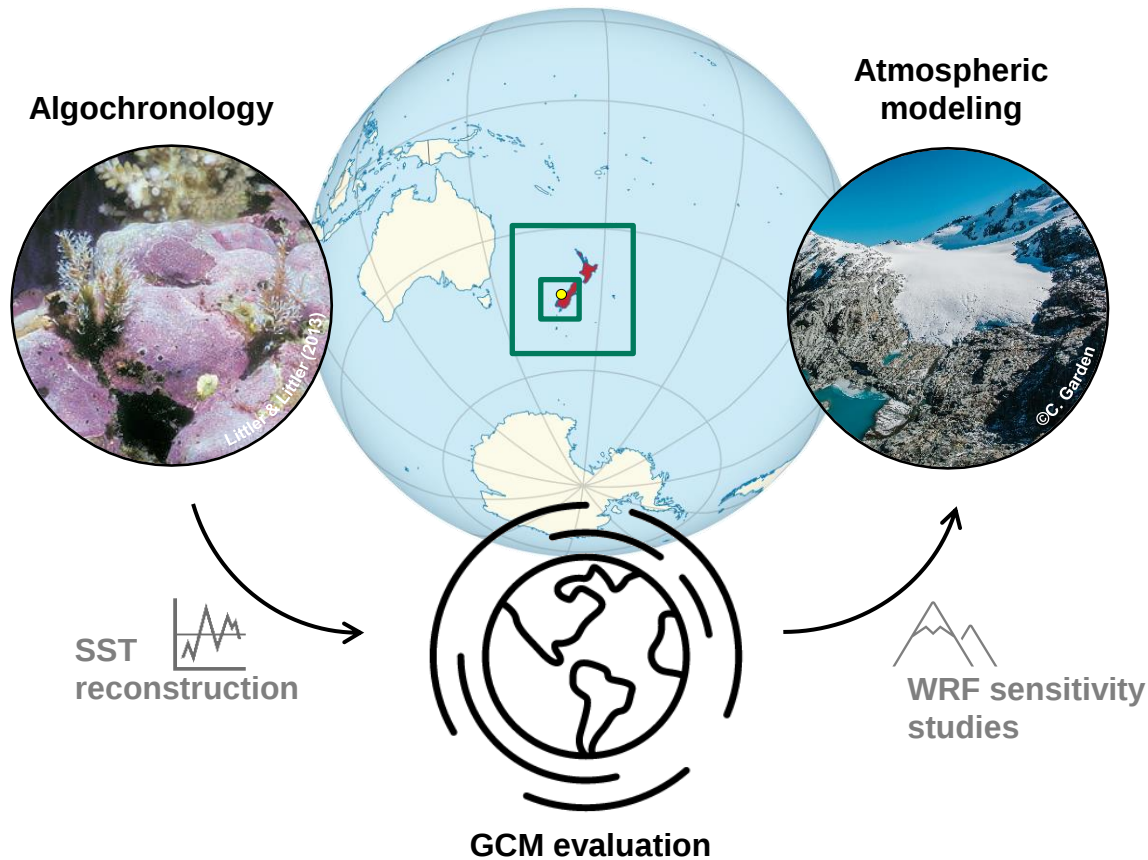
Retrieval of local SST data from marine proxy archives: **Crustose Coralline Algae (CCA)**

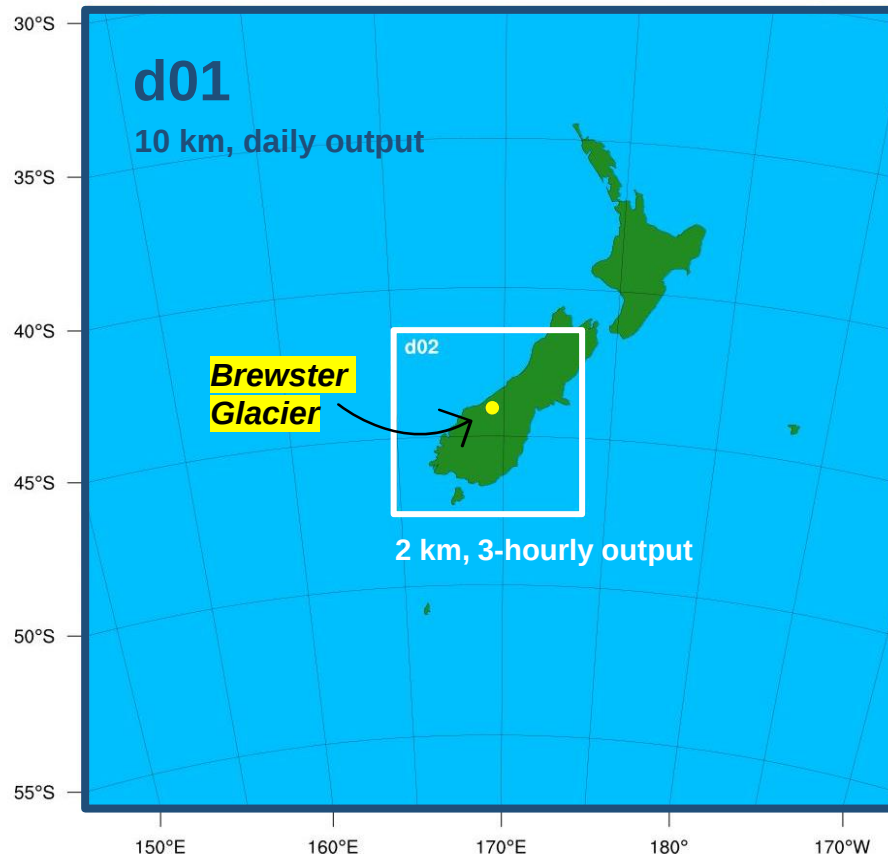




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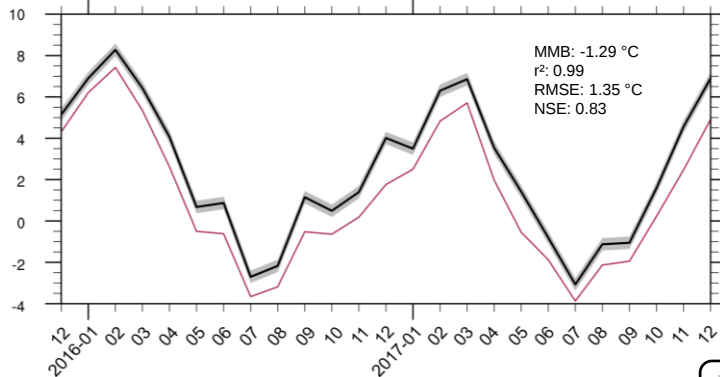
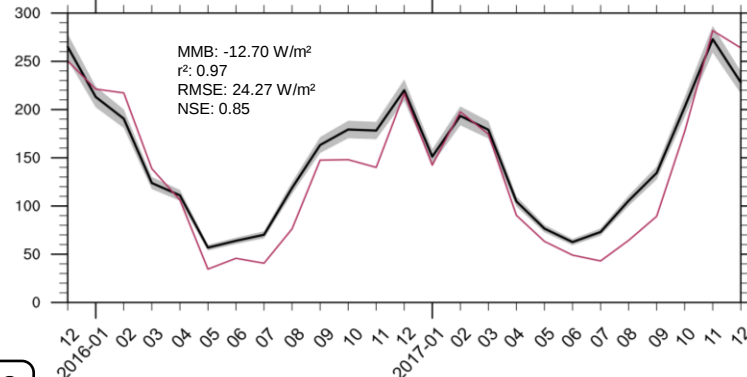
New downscaling dataset for New Zealand:

16-year high-resolution atmospheric simulation from 2005-2020

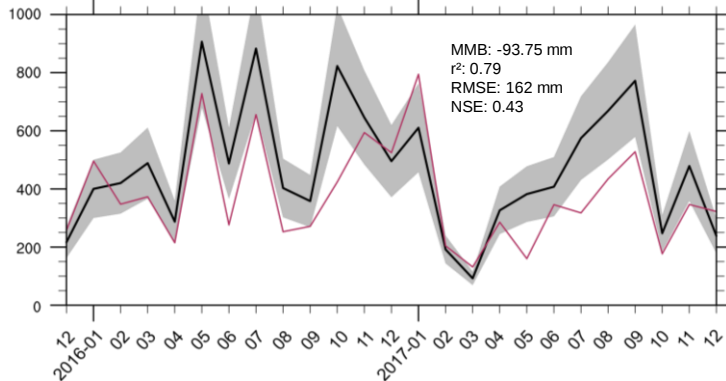
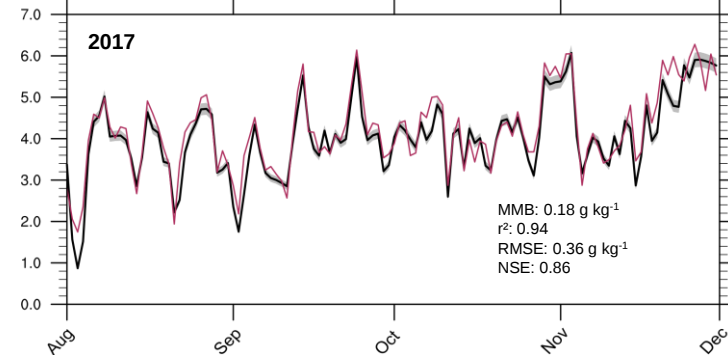
Model used: Weather and Research Forecasting (**WRF**) model, laterally driven by **ERA5-reanalysis** (31 km)



Monthly mean air temperature (°C)

Monthly mean inc. shortwave radiation (W m⁻²)

Monthly total precipitation (mm)

Daily mean specific humidity (g kg⁻¹)

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Thank you for your attention! – Questions?