ReefTEMPS:
the Pacific Insular coastal water observation network

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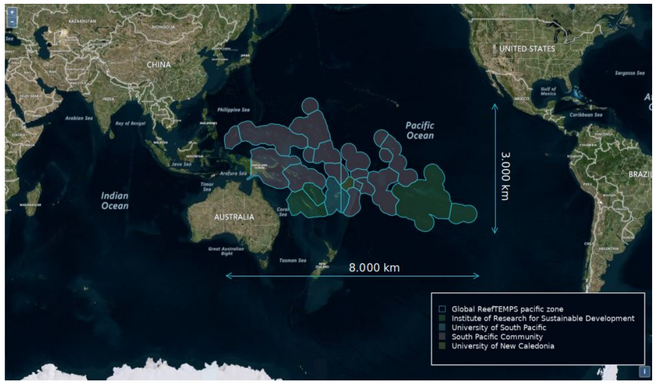
REEFTEMPS WITHIN THE FRENCH ILICO RI

ReefTEMPS is a coastal monitoring network initiated in 1958 in the South and West Pacific. It is part of the French national federative Research Infrastructure for coastal ocean and seashore observations ILICO (Cocquempot *et al.*, 2019). Data from ReefTEMPS are available via the ODATIS ocean cluster of the DATA TERRA RI (Schmidt *et al.*, 2020) with observation data.

FROM DIFFICULT AND REMOTE ACCESS TO SENSOR PLATFORMS…

ReefTEMPS monitors 7 physical parameters (temperature, pressure, salinity…) on a hundred platforms covering 14 countries of the Pacific region, including the three French territories. Some stations require autonomous solutions due to very remote and difficult access. Data is acquired at rates from 1 sec to 30 mn. As of today, a total of 200 sensors record around 350 million measurements per year.

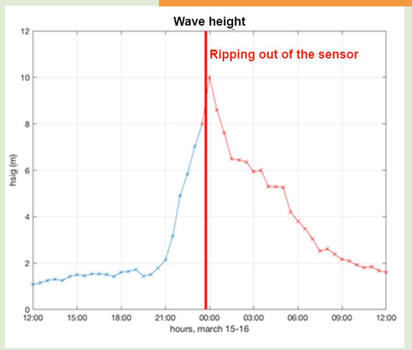


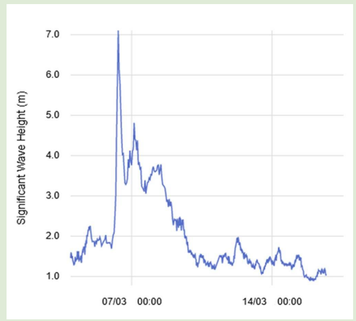
… TO A FAIR DATA DISSEMINATION

According to open data and FAIR principles (Wilkinson et *al.*, 2016 ; Sansone *et al.*, 2019), all ReefTEMPS data are openly accessible via web services for visualization, access and download: www.reeftemps.science/en/data/ under a Creative Commons licence “Attribution-Share alike” (CC-BY-SA). A dataset containing all available time series is also published semi-annually in the SEANOE data portal: https://doi.org/10.17882/55128.

RANGE OF OBSERVABLE EVENTS WITHIN THE REEFTEMPS NETWORK

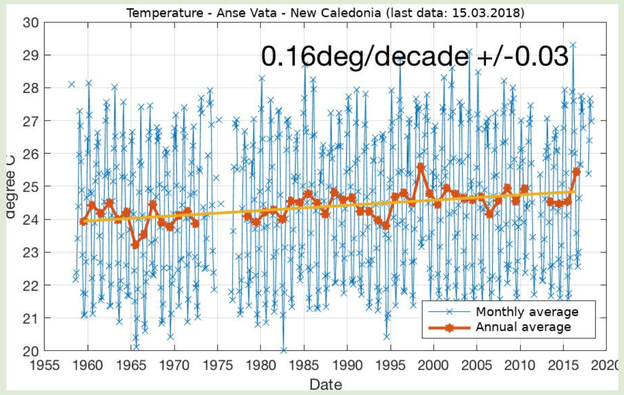
PRESSURE
extreme wave events and long term wave climate, occasional tsunamis

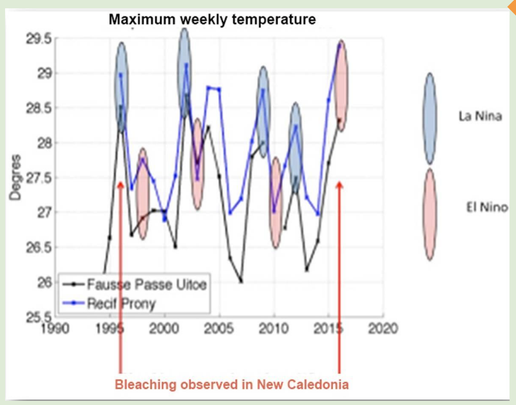




Significant wave height recorded in New-Caledonia a) of 10.5m on March 15, 2020 during the tropical cyclone GRETEL, b) of 7.1m during the Tropical Cyclone NIRAN on March 6, 2021 with a real time Wave Buoy and c) water height anomalies during the post-earthquake tsunami from Chile on September 16, 2015.

TEMPERATURE
global warming by long trend monitoring, heat waves potentially lead to coral bleaching





a) Over 60 years of acquired data in New-Caledonia, b) Effects of La Niña and El Niño on maximum weekly temperatures

How to cite

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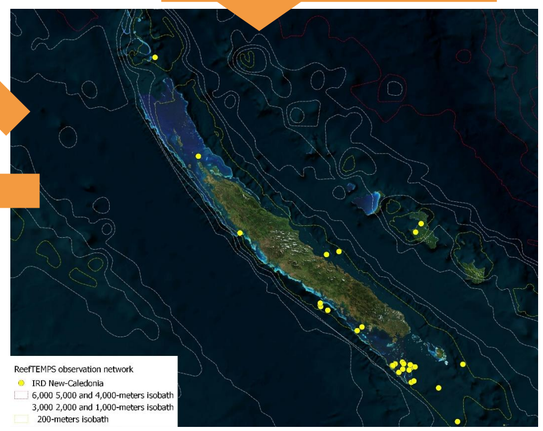
HTTP://REEFTEMPS.SCIENCE

R FOR REUSABLE

The data documents the local impact of climate change and El Niño phenomenon, the rapid appearance, at day scale, of cold water upwelling along reef barriers, in relation to winds and ocean thermal and biological structures… ReefTEMPS is also a support to the validation of lagoon models and coastal numerical simulations, finally it helps in the calibration for the reconstitution of past series from coral analysis.

Focus on New-Caledonia



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