

ReefTEMPS: the Pacific Insular Coastal Waters 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 and feeds the ODATIS ocean cluster of the DATA TERRA RI with observation data.

From difficult and remote access to sensor platforms... to a FAIR data dissemination

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.

According to open data and FAIR principles, all ReefTEMPS data are immediately and unrestrictedly accessible via web services for visualization, access and download:

www.reeftemps.science/en/data/. A dataset containing all available time series is also published semi-annually in the SEANOE data portal: [10.17882/55128](https://doi.org/10.17882/55128)

Range of observable events with the ReefTEMPS network

- Extreme wave events and long term wave climate
- Occasional tsunamis.
- Heat waves potentially lead to coral bleaching.
- Global warming, by long trend monitoring more than 60 years.

R as Reusable

The data documents the local impact of climate and El Nino 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, it also helps in the calibration for the reconstitution of past series from coral analysis.