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ReefTEMPS, FAIRs access to reef ecosystem environmental measurements

Sylvie Fiat 1, Jérôme Aucan 2, David Varillon 3, Régis Hocdé 4

ReefTEMPS is a coastal ocean observatory in the South, South West and West Pacific that provides long-term monitoring of climate change and its effects on the status of coral reefs and their resources. The network has been deploying sensors for temperature, pressure, conductivity, fluorescence and/or turbidity at 98 sites throughout the coastal zone of some 20 island states and territories since 1958.

ReefTEMPS, labelled Service National (for) Observation (SNO), is part of the French research infrastructure "coastal ocean and nearshore observations" IR ILICO.

α http://reeftemps.science

β www.ir-ilico.fr

Figure 1. The ReefTEMPS network federates 4 data producers covering in part the South, South West and West Pacific: the Institute of Research for sustainable Development, the Pacific Community, the University of the South Pacific and the University of New Caledonia.

Figure 2. Installation of a sensor by a diver.

Figure 3. Underwater sensor.

Figure 4. Underwater platform.

Figure 5. Getting Anse Vata (New Caledonia) temperature data in ReefTEMPS: 1/ station metadata, 2/ station location on interactive map (blue spot), 3/ Dataset metadata, 4/ Interactive data diagram to preview data, 5/ Download available, 6/ DOI reference, 7/ Data licence, 8/ Data science products as a result.

Figure 6. Effect of reef protection from tsunamis.

Figure 7. Wave height during tropical cyclones.

FAIR, SUSTAINABLE DEVELOPMENT

20 island states and overseas territories of the Pacific

Long-term monitoring

Natural disasters studying

Open source software architecture

INDABLE

doi:10.17882/55128

Unique and persistent identifier

SEANOE

Bi-annual updates

September 2019 update :
doi:10.17882/55128#66815

Findable by data generic search engines

ACCESSIBLE

HTTP

HTTPS

Access through standards

DOWNLOAD & ACCESS OPEN

No registration, no restriction, no constraints, no fees

INTEROPERABLE

WMS

WFS

OGC

Web Map Service Web Feature Service

SOS

Sensor Observation Service

CSW

Catalog Service for the Web

Open source

Project for a Network Data Access Protocol

NetCDF 4

Climate and Forecast (CF) Convention, format Observations

EUSABLE

Data usage licence

Creative Commons Attribution - ShareAlike 4.0 International

Rich metadata

& multiple layers

Dataets metadata

Data quality control flags

Sensors metadata

Observation service metadata

Provenance / Citation

How to cite

0.16deg/decade +/-0.03