Climate Service in French Polynesia

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Toujours un temps d'avance

Plan

1. A brief description of French Polynesia
   - Location
   - Climatology
2. Capacities for our Climate service
   - Observational network
   - Human resources
3. Status of our Climate service
   - Climate data
   - Climate monitoring
   - Climate prediction
4. Climate research activities

A brief description of French Polynesia

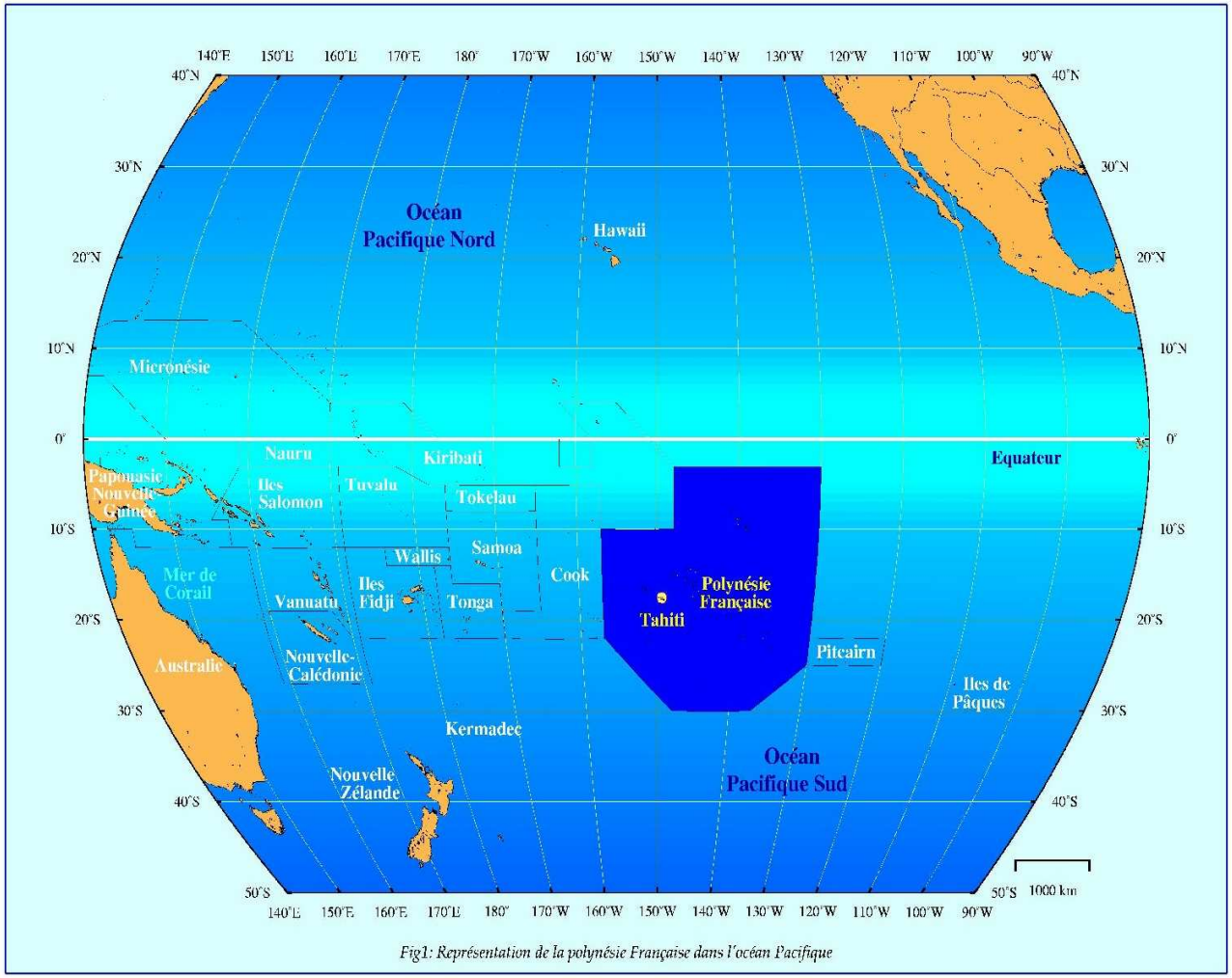

Fig1: Représentation de la polynésie Française dans l'océan Pacifique

Located in the middle of the South Pacific Ocean

5°S/30°S and135°W/155°W

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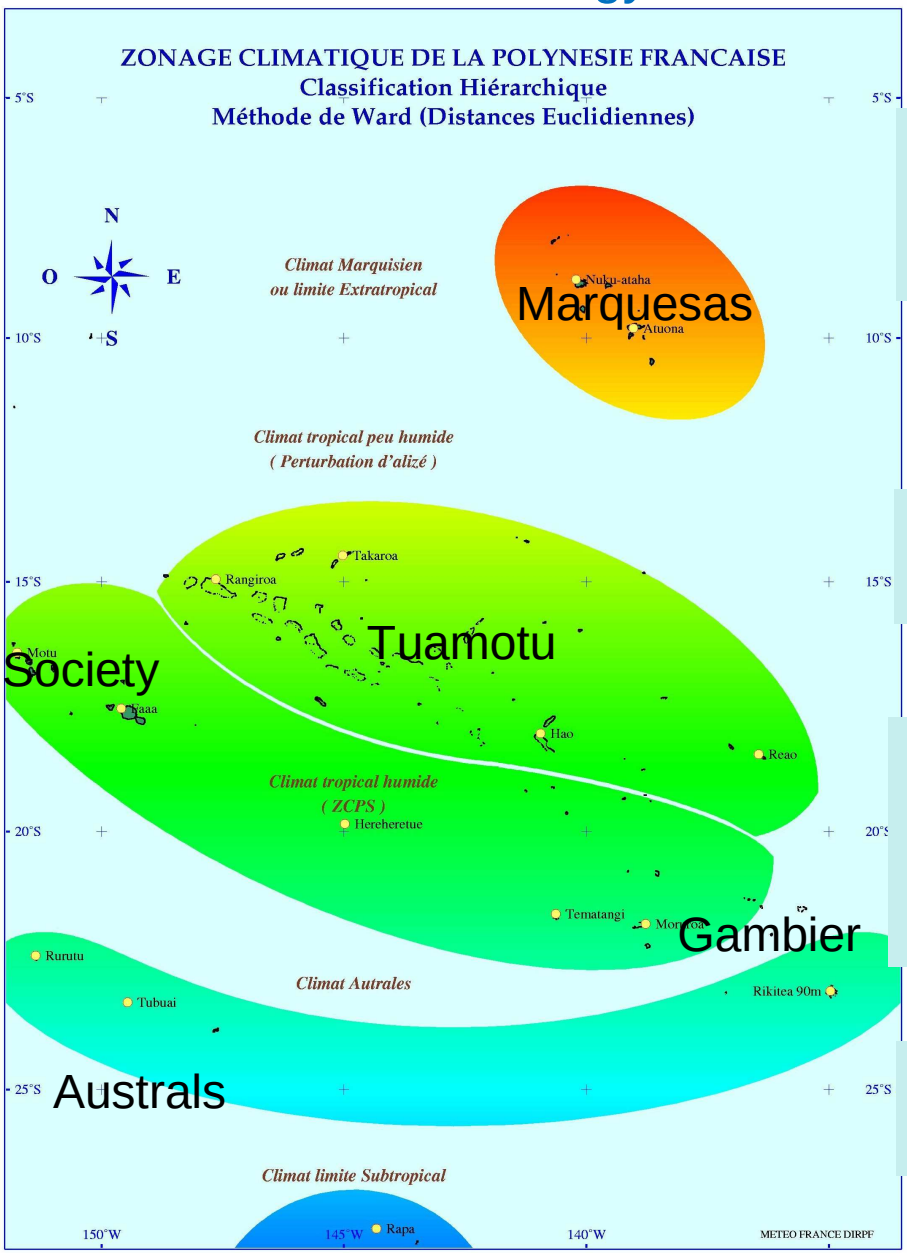
A brief description of French Polynesia

Climatology

5 archipelagos

118 islands or atolls

Population ~ 265000



Marquesas : dry tropical climate on the North

Society-Tuamotu : wet tropical climate

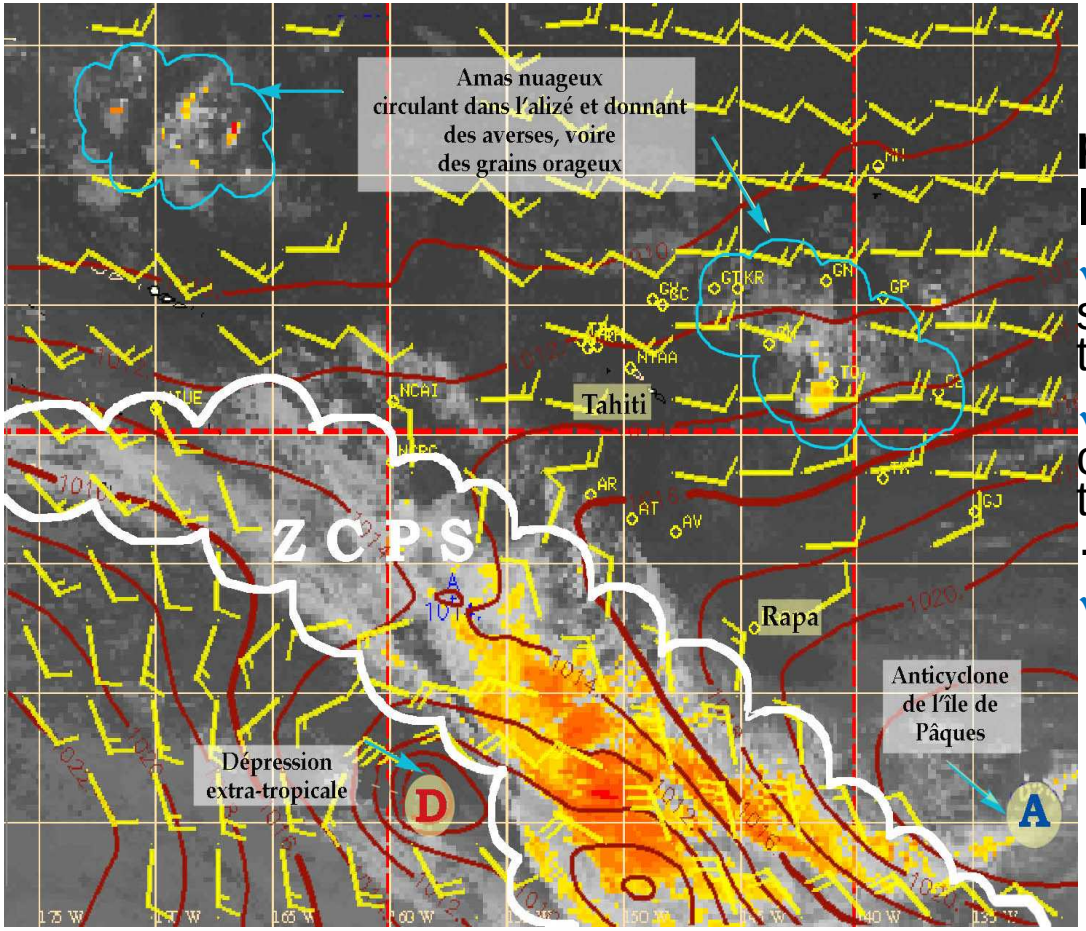
Australs North et Gambier : wet tropical climate and light cool

Australs South : mid-latitude climate

A brief description of French Polynesia

Climatology

CLIMATIC FEATURES : SPCZ (South Pacific Convergence Zone).



The SPCZ is the most important phenomenon in French Polynesia.

It is :

- ✓The convergence zone between subtropical fresh air masses and tropical warm air masses.
- ✓The genesis place for tropical cyclones developments, thunderstorms, squall lines, heavy rains …
- ✓Active especially in warm season

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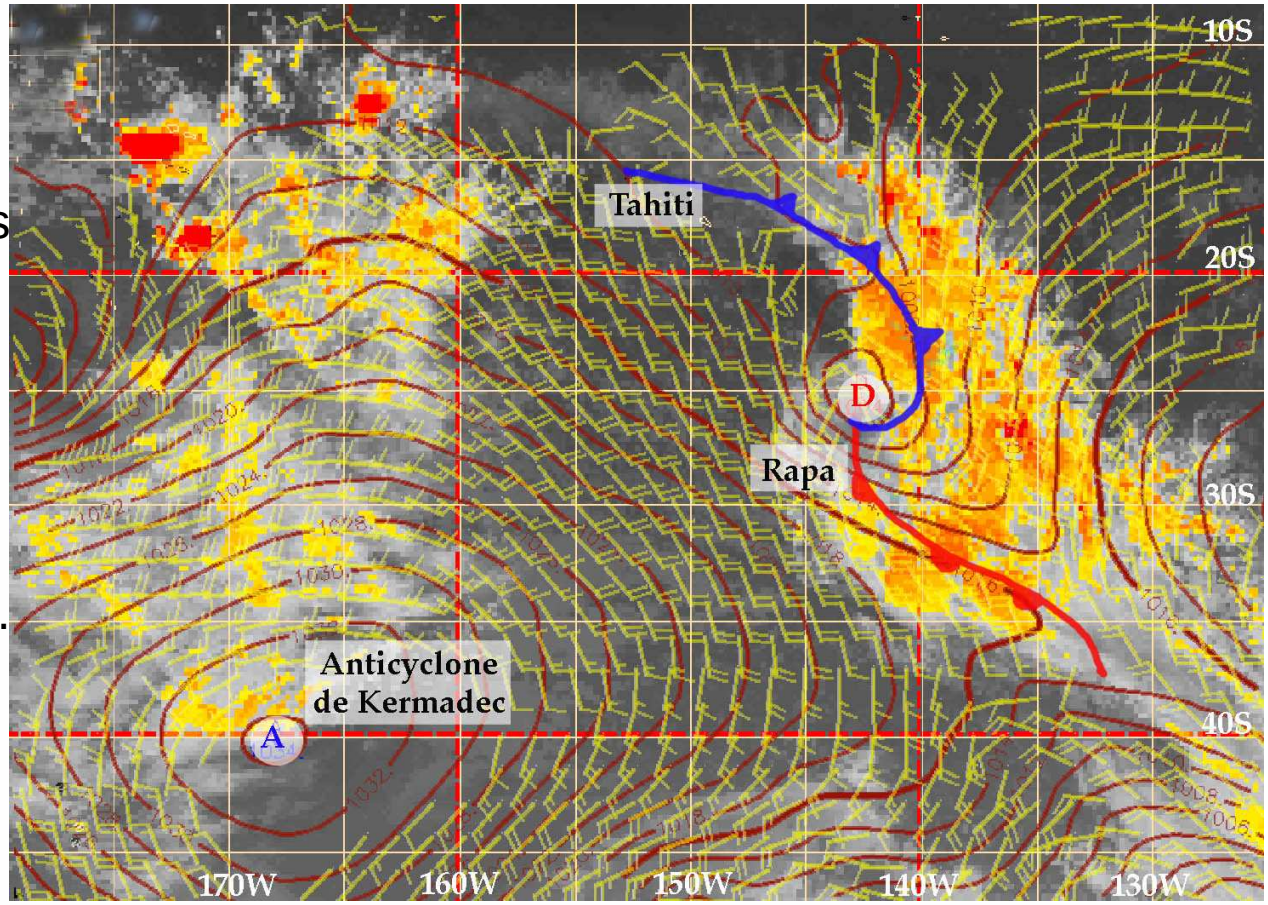
Climatology

CLIMATIC FEATURES : IN WINTER

Southern part of French Polynesia is often concerned with cold fronts issued from polar depressions moving between 30 and 40 south.

Even Society or Tuamotu Islands are sometimes reached by those systems.



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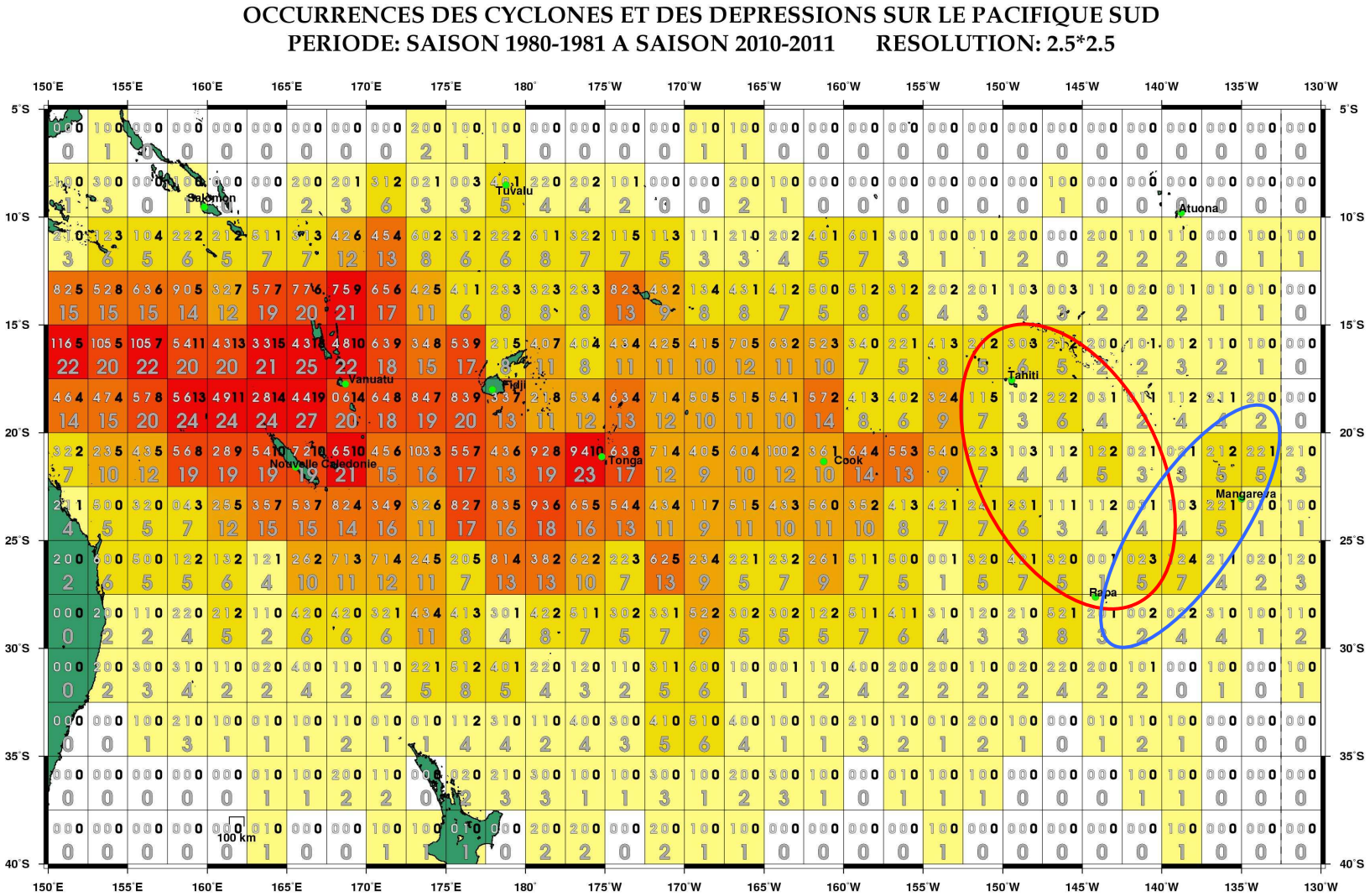
Climatology

Tropical cyclones :



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Capacities for our Climate service

Observational Network

✓11 Meteo-France real-time weather stations

4 stations with human and upper-air observations

✓Climatological stations

100 Volounteer observer stations

✓Partnership stations

E.D.T (Electricity of Tahiti) : 3 AWS

Civil Aviation : 2 AWS

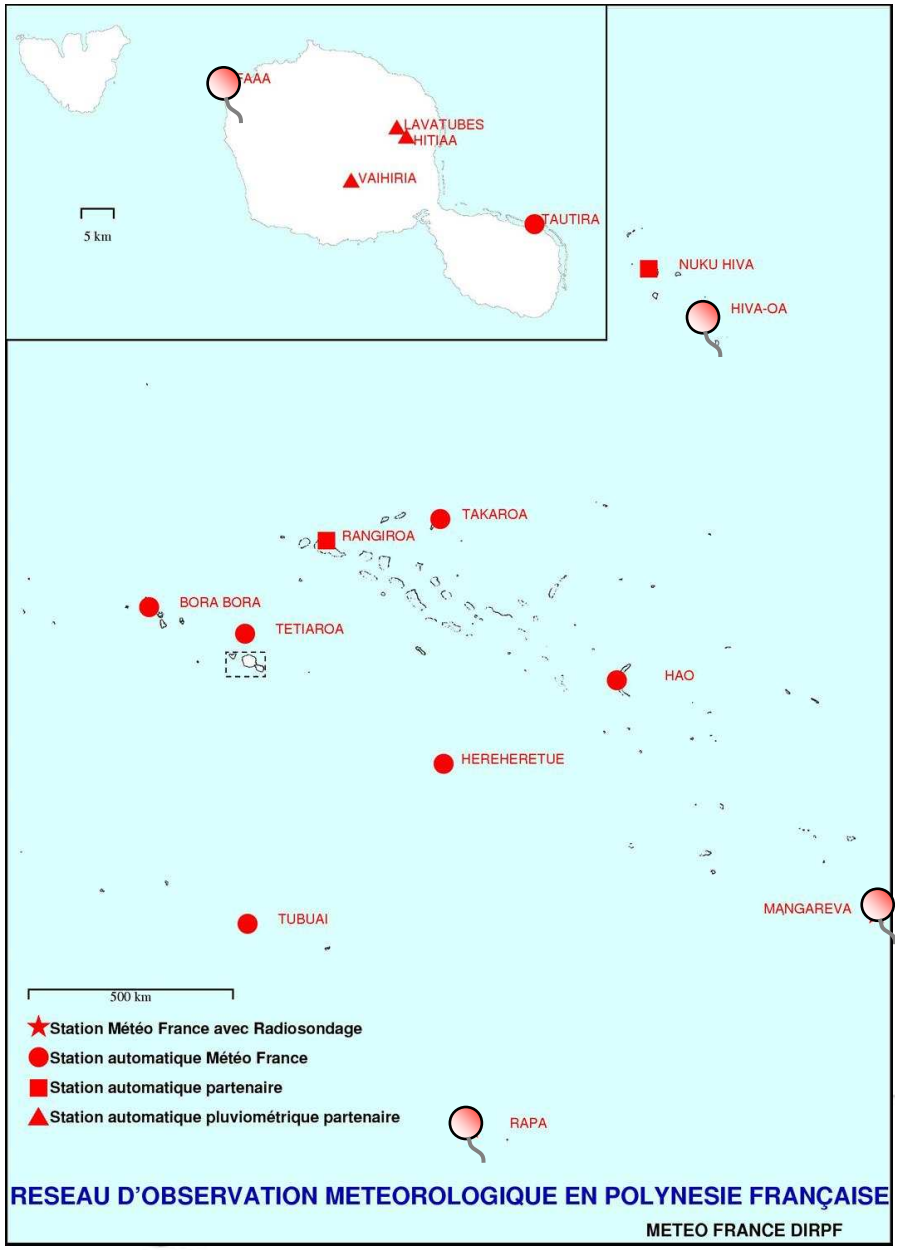
GEGDP (Hydrological service of F.P.)

Data availability

✓Long series for AWS daily datas (most begin in 1950's)

✓Oldest serie for climatological station : 1922 at Papeari-Tahiti

✓In Tuamotu, daily datas avaibility are still young (1998)



Capacities for our Climate service

French Polynesia's Climate division:

Human resources :

1 ingeneer

2 technicians for climate research

2 technicians for network management

1 technician for database management

1 technician for Data Rescue Program

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Status of our Climate service

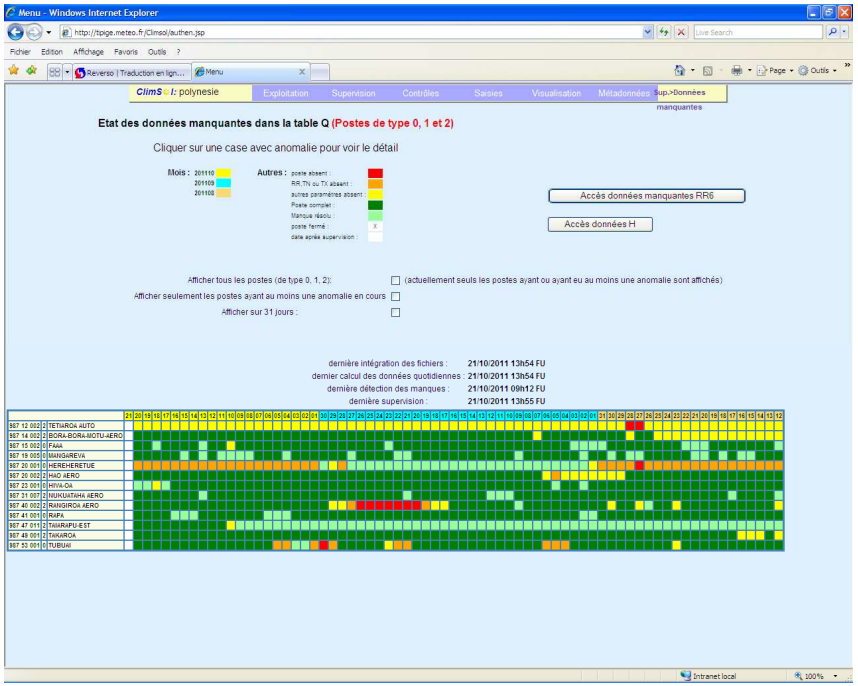
Climate data

All datas (6 minutes, hourly and daily datas) from our network are integrate in a national database (BdClim)in Toulouse, France.

- ✓It’s a real-time integration for WS and AWS.
- ✓For climatological stations, datas are integrate monthly.

Automatic controls (twice a day): temporal and spatial controls. Missing datas control…

Human expertise for data validation with Climsol interface.



Data Rescue

Contribution to the Data Rescue Program in Meteo-France and for ERA Clim

-Inventory of avaibility of surface, upper-air datas and metadatas

-Digitalization

-Homogenneization with PRODIGE sofware

Status of our Climate service

Climate monitoring

In the South Pacific :

- ✓CLIPS (Climate Information and Predictions Services)
- ✓SPREP (South Pacific Regional Environment Program)
- ✓GCOS (Global Climate Observing System)
- ✓APN (Asia Pacific Network)
- ✓PCCSP (Pacific Climate Change Science Program)

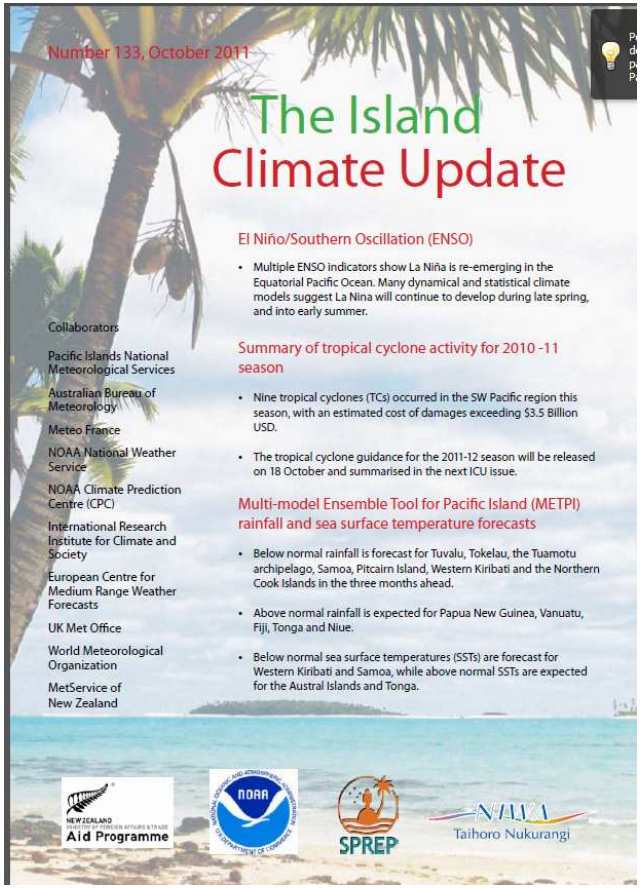
With France :

- ✓GCCL (Group Co-ordination of Climate)
- ✓RETIC (Study network and internal transfer of knowledge) from CNRM (National Center for Meteorological Research)

Status of our Climate service

Climate prediction

✓ICU : Since September 2000 , we are involved in the publication.

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CONFERENCE
METEO-FRANCE
et
LA DIRECTION DE LA DEFENSE ET DE LA PROTECTION CIVILE

Mercredi 26 octobre 2011

PERSPECTIVES
SAISON CHAUDE 2011 – 2012
en Polynésie Française
(De novembre 2011 à avril 2012)

LE POINT SUR LE PHENOMENE ENSO

Température de la mer

En fin de saison fraîche, les conditions océaniques présentent encore une structure typique d'une phase La Niña. Ainsi, au mois de septembre 2011 sur l'est et le centre du Pacifique, le long de l'équateur, la température de la mer avec un écart moyen de -0,7°C est plus froide que la normale. Sur l'ouest du Pacifique, la température de la mer est proche des normales.

ECARTS DE TEMPERATURE DE LA MER PAR RAPPORT A LA MOYENNE SEPTEMBRE 2011

Fig. 1 : Graphe issu du bulletin climatique ICU "Island Climate Update" n°133 rédigé par le NIWA (National Institute Water and Atmospheric)

✓Before the wet season, a media briefing is given concerning the cyclone activity (El Niño/La Niña).

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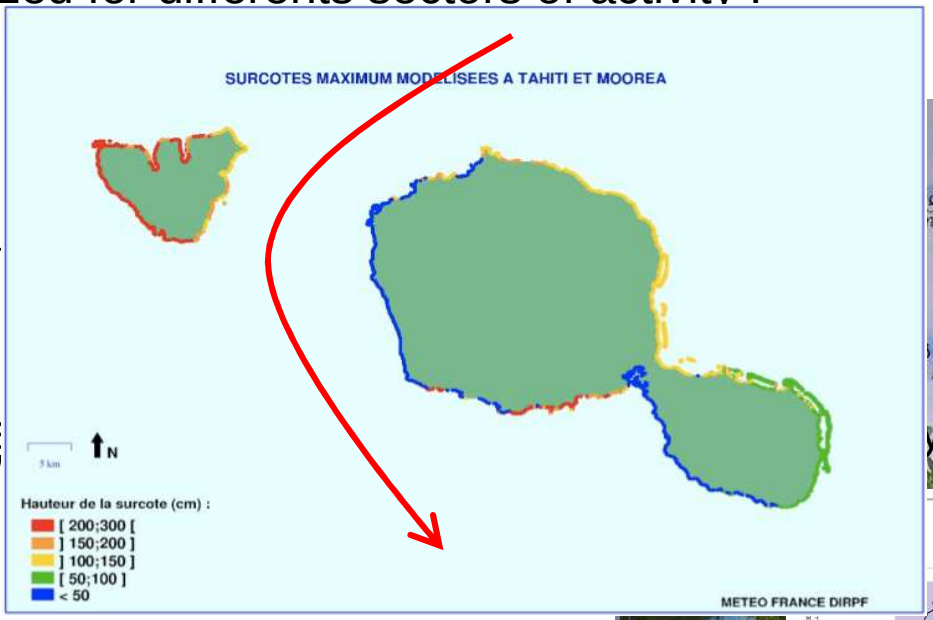
Climate research activities

Studies had been realized for differents sectors of activity :



Education

2004 : Climatological Atla
V. Laurent and al.

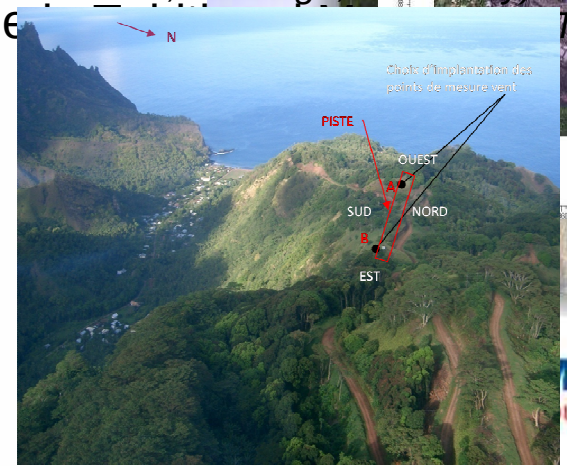
Industrial sector

2006 : Dispersal of pollut
2011 : Society Islands' W

(DIRPF)

Meteorological activities

2005 : Tropical Cyclone Genesis in French Polynesia: Analyzis SST *(J. Elacott)*
2006 : TSUP position during ENSO phases *(V. Laurent, P.Ortega, P. Varney)*
2010 : Risk areas mapping of cyclonic searise *Teng)*
2011 : MJO impact in Tahiti *(T. Jardonnet)*



Aeronautical activities

2007-2009 : Meteorological conditions at Fatu Hiva for an airport built *(DIRPF)*

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Climate research activities

Studies in progress :

Education

A History of Tropical Cyclones in French Polynesia from 1831 to 2010
(V. Laurent, S. Hugony, P. Varney)

Public sector

Study of climatological rainfalls in Tuamotu archipelago (sizing rainwater tanks)
(DIRPF)

Studies in 2012.....

✓Beginning of climate change impact in French Polynesia. PhD student

"Climate change in French Polynesia: detection of the observed changes and evaluation of the projections"

➢Datas homogenneization, SPCZ position improvement

✓Operational Seasonal forecasts : Demeter and Downscaling


Thank you
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