

## REFERENT PROJECT

# Installing a swell gauge to illustrate the consequences of climate change (Saint-Pierre and Miquelon)



## CONTACT

✉ [dtecrem.cerema@cerema.fr](mailto:dtecrem.cerema@cerema.fr)

## PURPOSE OF THE INITIATIVE

Saint-Pierre and Miquelon is a French archipelago lying in the mouth of the Gulf of Saint Lawrence. It is made up of small, low-lying islands connected by fragile dune ridges: the Miquelon Langlade isthmus (11km), the Mirande dune (3km) and the western dune. This situation exposes the archipelago to the known consequences of climate change, such as storms, rising sea levels, and coastal erosion.

Some infrastructure is jeopardised and major protective actions are often taken at urgent notice. The archipelago's size severely limits strategic options.

The Saint-Pierre and Miquelon Department for Regional Development, Agriculture, and Maritime Affairs (DTAM 975) wanted to carry out research into climate change and its effects on the Saint-Pierre and Miquelon islands. Initial areas of research revealed the importance of recording offshore sea states.

DTAM 975 therefore decided to install a swell measurement station on Saint-Pierre and Miquelon.

## CLIENT/PARTNER NEEDS

DTAM 975 wanted to obtain:

- A swell measurement point representative of the waves breaking on Saint-Pierre and Miquelon
- An archived series of measurements taken over several years, in order to identify the average wave state and estimate the height of extreme waves
- Real-time measurements, with the data fed into Météo-France forecasting models, and used to inform mariners of sea states

## CEREMA'S SOLUTION

DTAM 975 wanted to obtain:

- A swell measurement point representative of the waves breaking on Saint-Pierre and Miquelon
- An archived series of measurements taken over several years, in order to identify the average wave state and estimate the height of extreme waves
- Real-time measurements, with the data fed into Météo-France forecasting models, and used to inform mariners of sea states

### CLIENT

Department for Regional Development,  
Agriculture, and Maritime Affairs  
Saint-Pierre-et-Miquelon  
Population: 6080

### PROJECT PILOT

Water, Sea and Rivers Department  
Environment and Risks Department  
Hydraulic Measurements & Modelling Division

### SCHEDULE

Since 2011