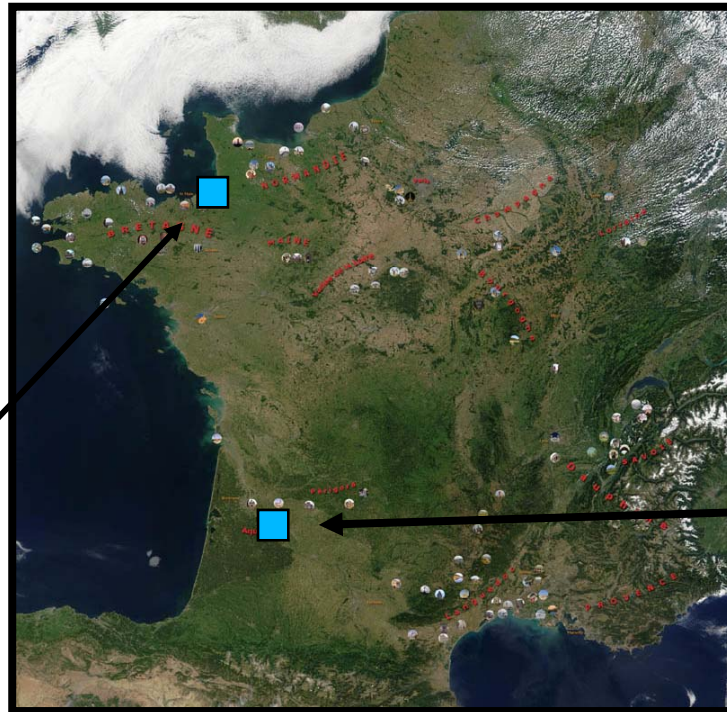


# **Waste on the ocean**

**Adopt a buoy to study  
plastic Island**

« Collège  
Notre-Dame »

Avranches (50)  
France



« Collège  
Esquinance »

La Réole (33)  
France

# Both teams



Pupils from the two schools  
met in La Rochelle

The background of the image is a vast, deep blue ocean meeting a clear blue sky at a distant horizon. The water has a slight texture of ripples. The entire scene is enclosed within a thin, bright red rectangular border. Centered in the middle of the image is the text "we discover the plastic island" in a dark blue, sans-serif font with a white drop shadow.

we discover  
the plastic island

In the Pacific Ocean gradually appears :

PLASTIC

ISLAND

THE TRASH VORTEX



# Island's position in the Pacific Ocean

## Out of sight, out of mind

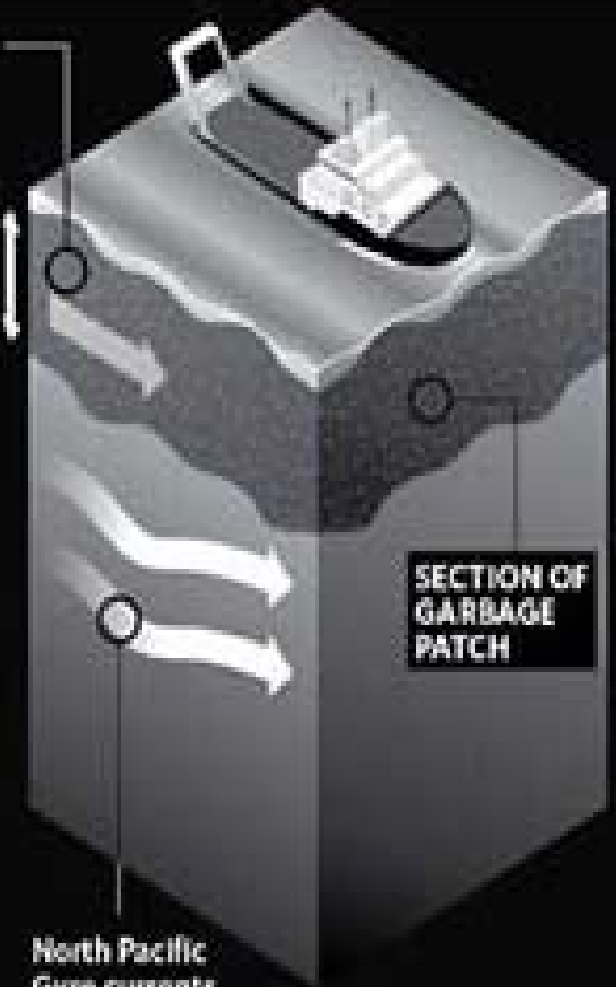
The continent-sized vortex of plastic waste blighting the Pacific

Approximate areas of 'rubbish soup'

Translucent soup of degrading plastic waste




Depth to 10 metres



North Pacific Gyre currents keeps soup in constant movement

# A few figures about this Island ...

Waste quantity	<b>From 1 to 3.3 million per sqkm</b>
Area	<b>3,43 million sqkm or about 5 times the size of France</b>
Depth	<b>Down to 30 meters</b>



...and the  
consequences of all  
these waste on the  
ecosystem



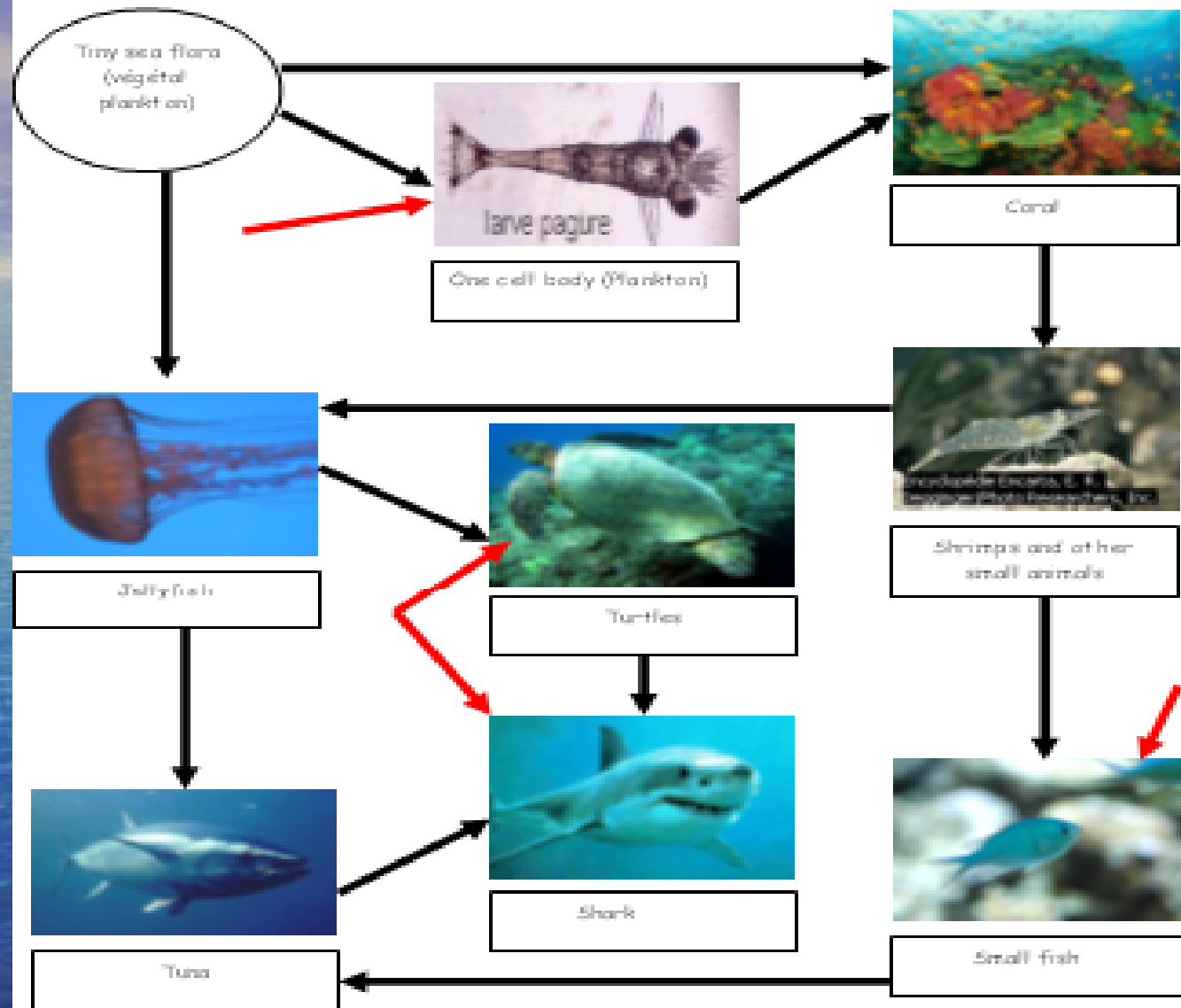


Plastic materials which float on the ocean are reduced in tiny particles by the light. They are eaten by some animals, and thus they come into the sea food chain and end in ours plates.

**So I can have fish with « plastic sauce »**

The concentration of plastic have not reached the level of toxicity yet ....

# One of the food chain in the Pacific



Once in seas and oceans, plastics get damaged because of tide movements and sea salts make transparent plastic balls or leaves - sometimes they are really microscopic - We can find them in food chain.

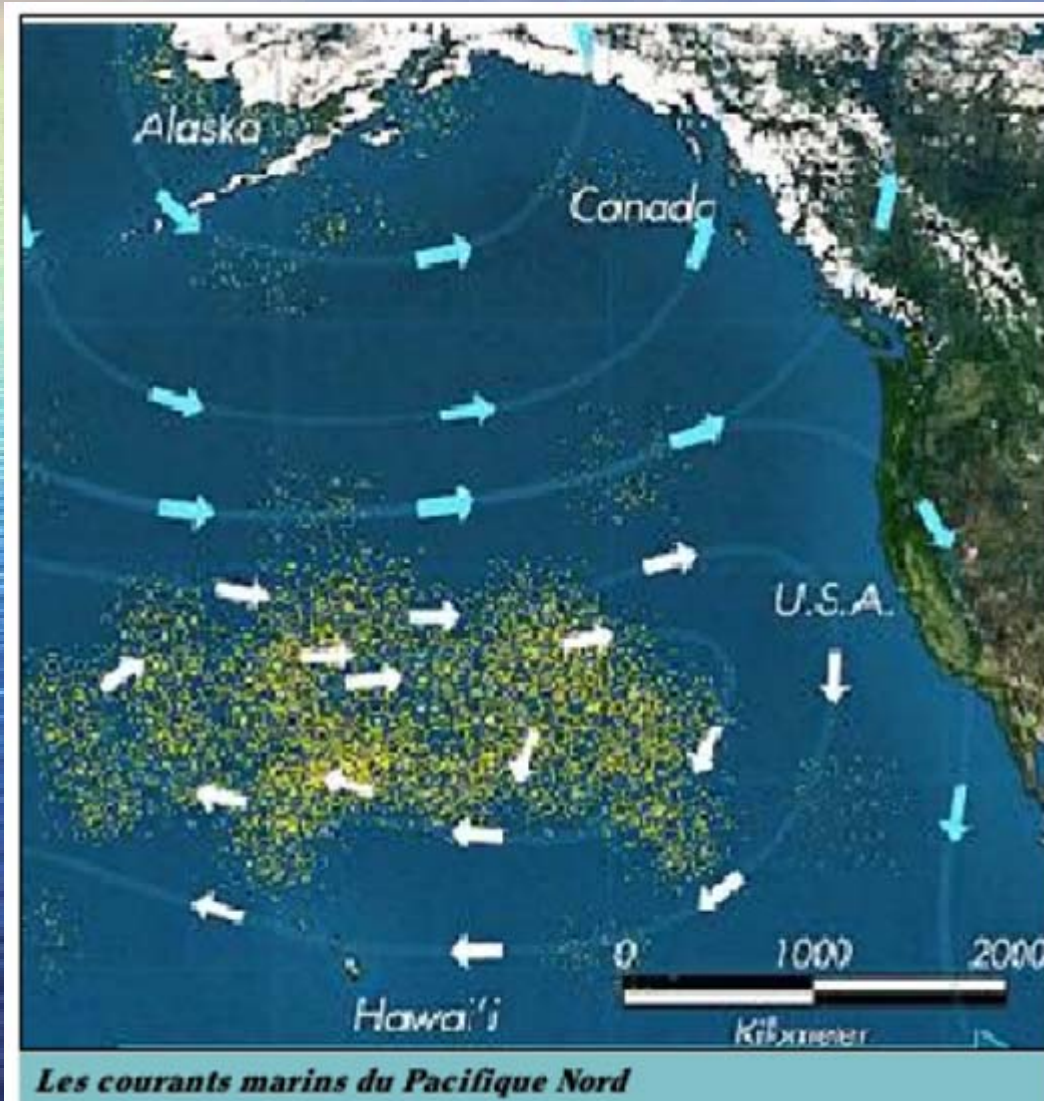
(Caption:  : plastic eaten by... )

The background of the slide is a photograph of a vast blue ocean under a clear blue sky. The water has a slight ripple, and the horizon is visible in the distance. A thin red border frames the entire image.

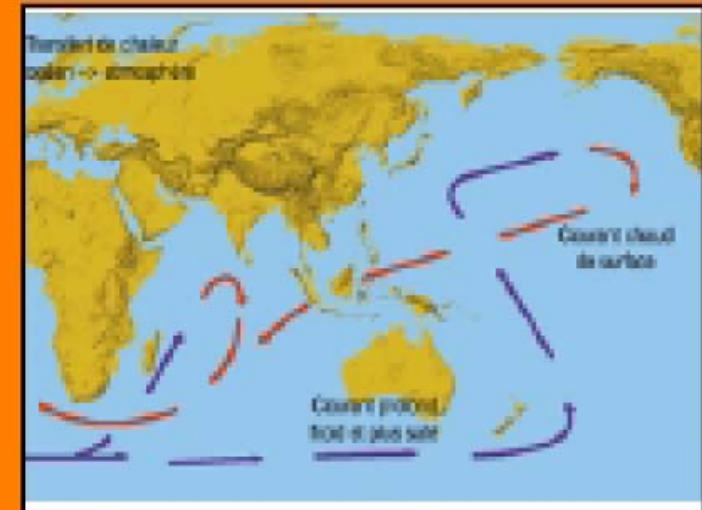
We try to  
understand how  
this trash can be  
trapped

This island leads us to study currents.

An island with no sand



UNE ILE SANS SABLE ...



# Our modelling of deep'undercurrents.



*Beginning of the experiment*

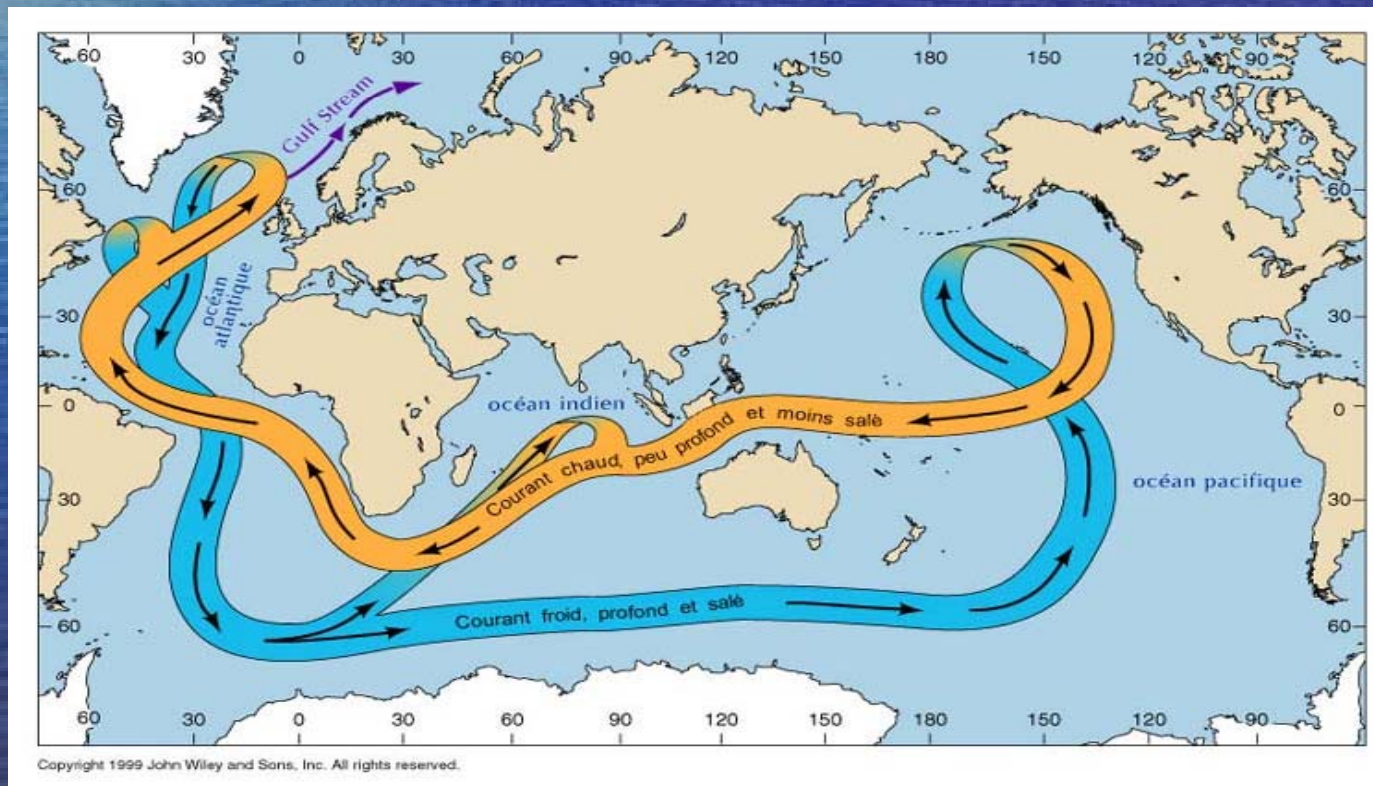



*End of the experiment*

# In the oceans

When a lot of *cold water* meets a lot of *hot water*  
When a lot of *salted water* meets a lot of *fresh water*

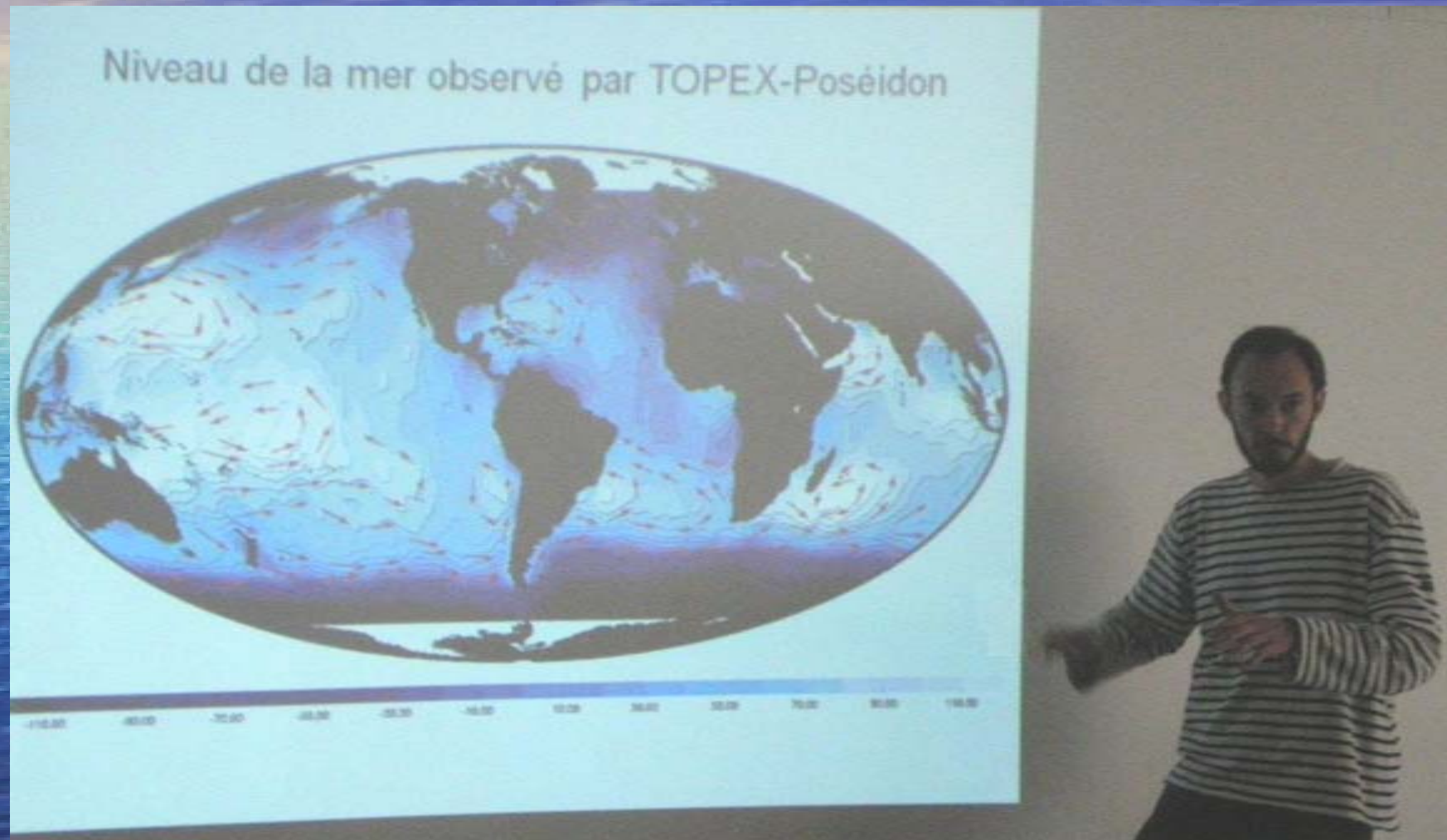
Water masses don't mix but move and create *deep currents*.





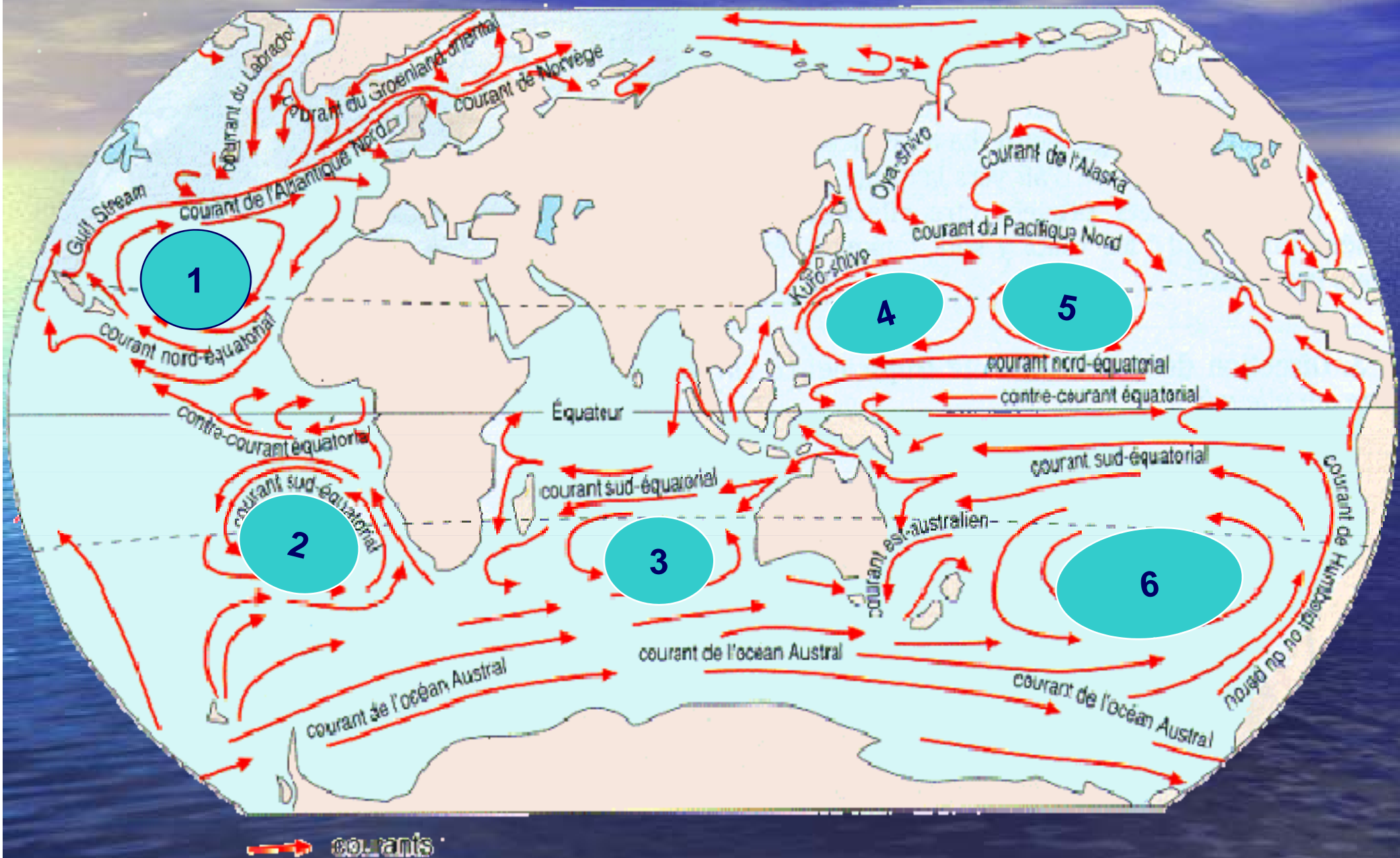
Then we asked the  
Cnes to help us


# Meeting with « Cnes »





# The creation of whirlpools (vortex)

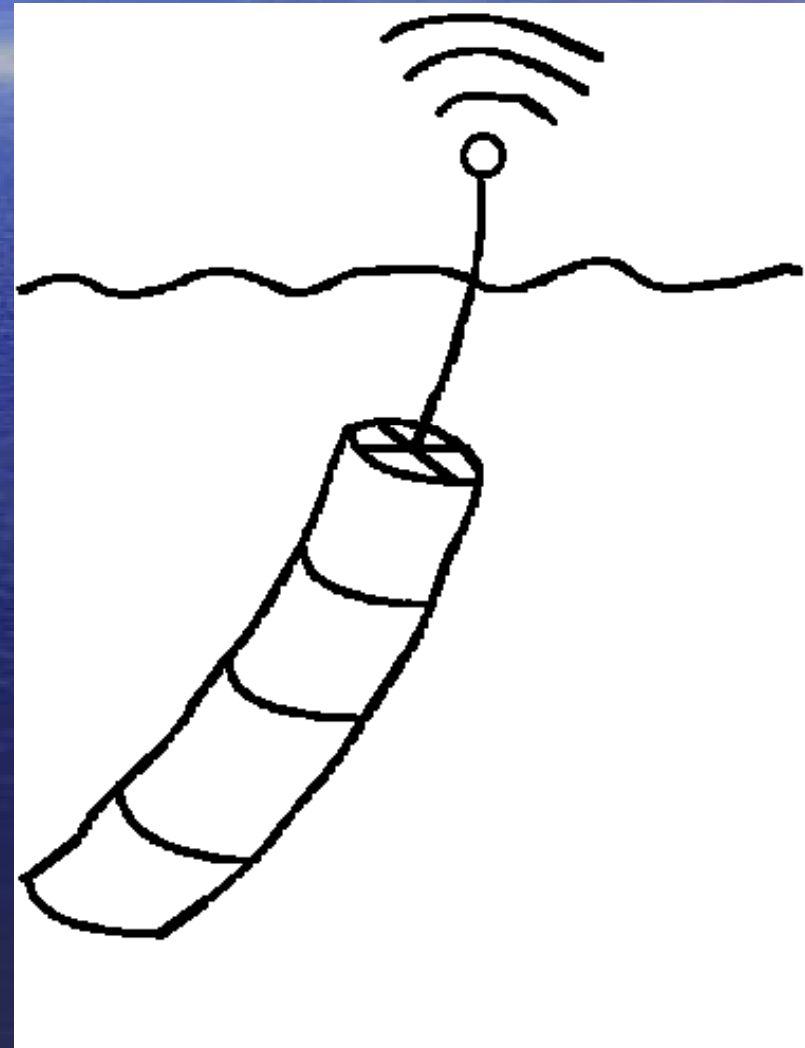




Cnes proposed to  
adopt buoys next  
to the island

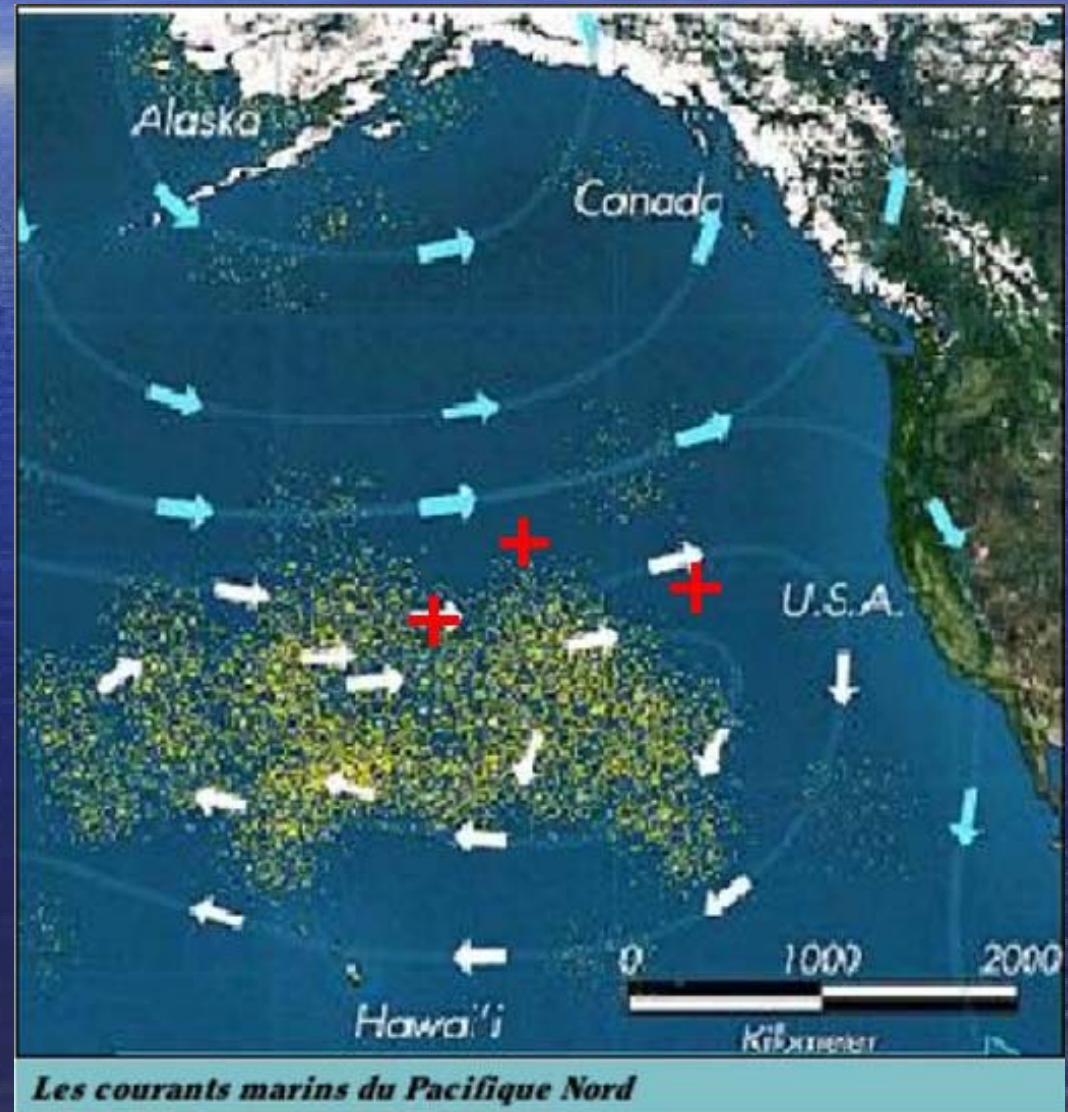
# The buoys

The buoys «between two water » only move with the currents.



# The follow-up of the buoys

- We have followed three buoys next to plastic Island in the North Pacific :
- Aquaréole 1
- Aquaréole 2
- Destropuce 1



# The route of the three Argos buoys in the Pacific



- The buoys seem to follow currents from North Pacific.
- So they follow the same route as the trash do.
- We suppose the buoys turn around Plastic Island.

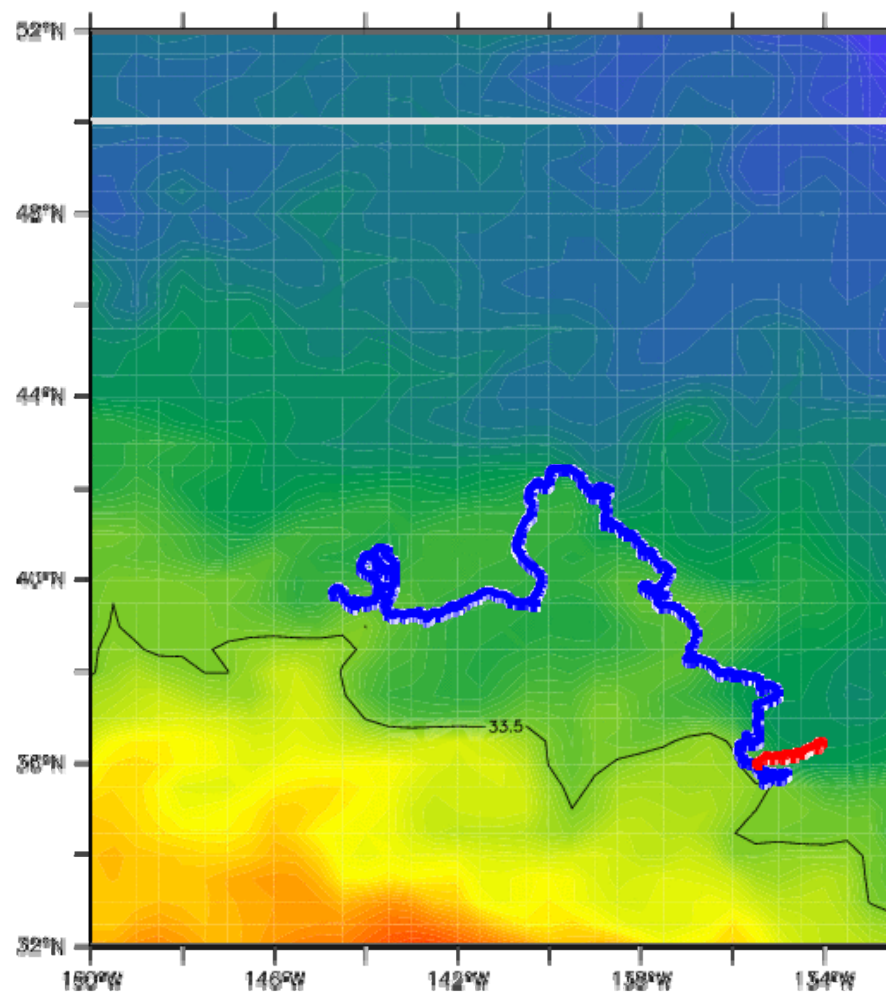
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2009 TerraMetrics  
Image © 2009 DigitalGlobe

©2009 Google

37°11'29.83" N 141°51'10.17" O

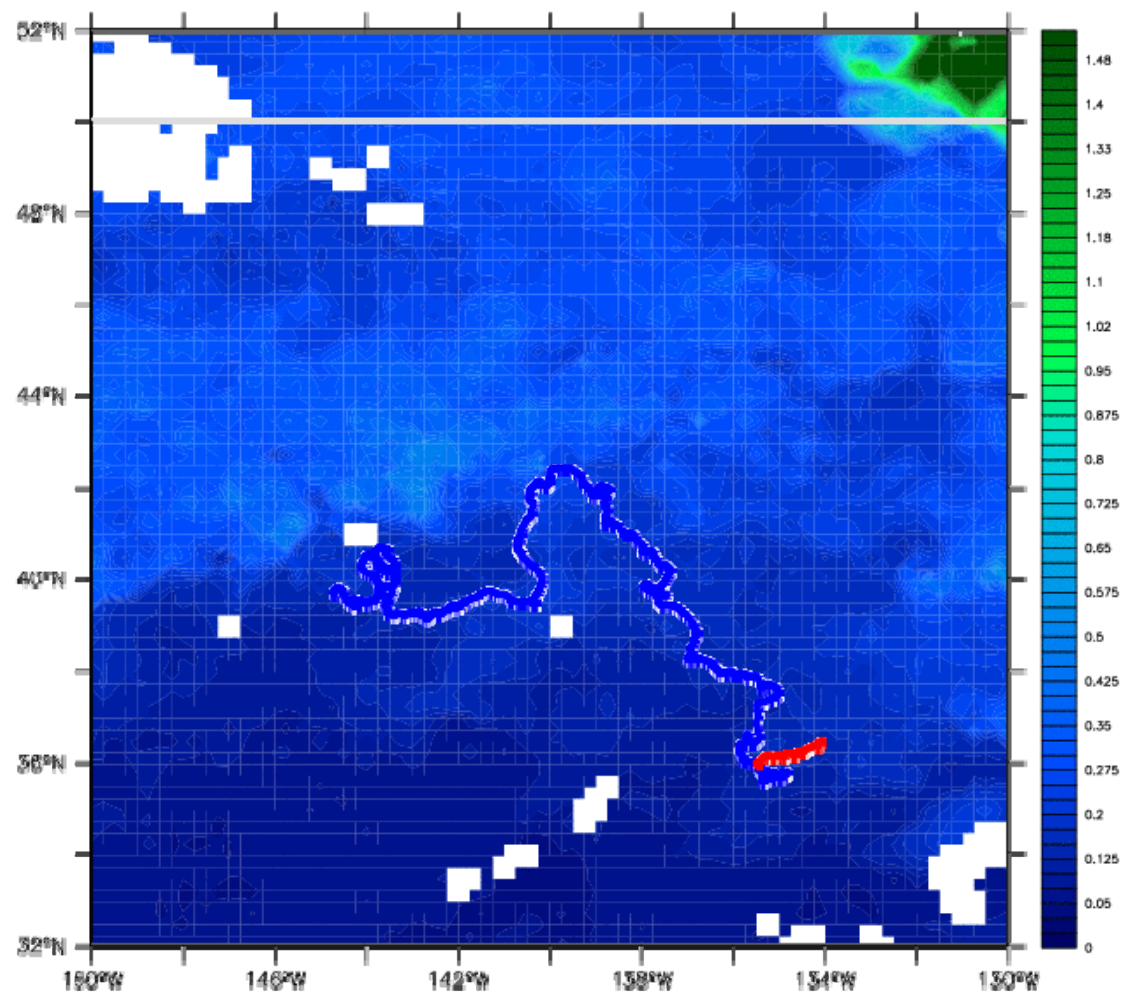
Altitude 1648.55 mi

Salinite\_de\_surface\_Mercator  
Zone\_balise\_aquareole\_2  
05-05-2009



**Salt content in water**

Couleur\_de\_l\_eau  
Zone\_balise\_aquareole\_2  
05-05-2009



**The color of water**

Unite : mg/m<sup>3</sup>

Source CLS

A photograph of a sunset over the ocean. The sky is a deep blue with wispy white clouds. The sun is low on the horizon, creating a bright glow and a rainbow on the left side of the image. The water is dark blue with gentle ripples.

We would like to be able to  
work with a californian school.