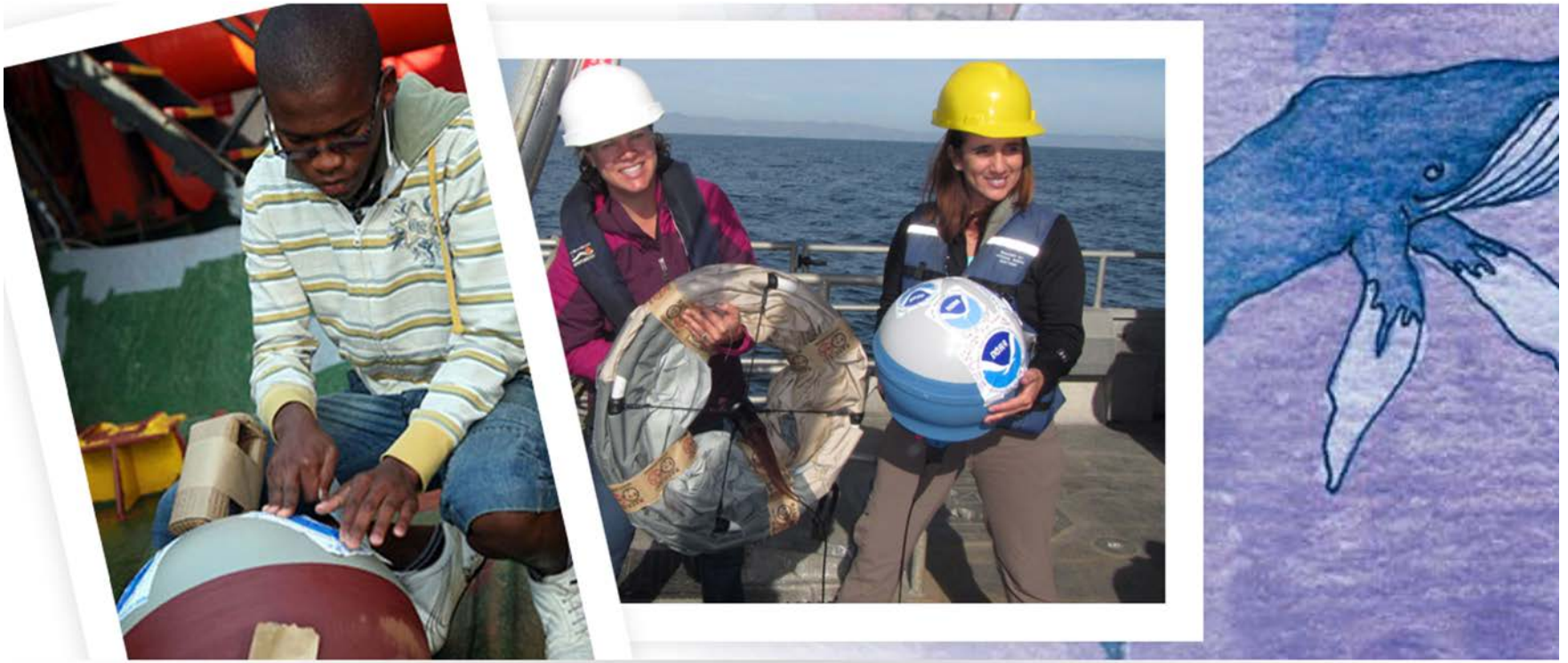
NOAA'S Adopt A Drifter Program



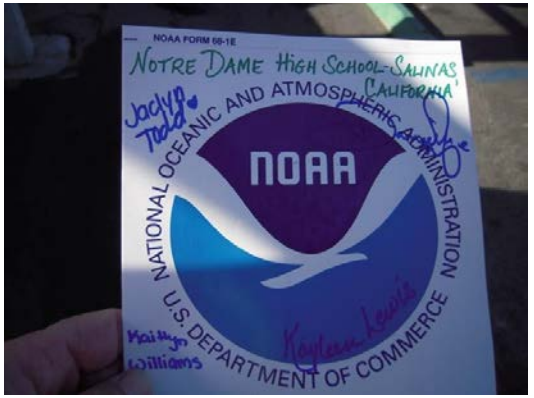
Emily A. Smith

Ocean Observing and Monitoring Division

Climate Program Office, NOAA

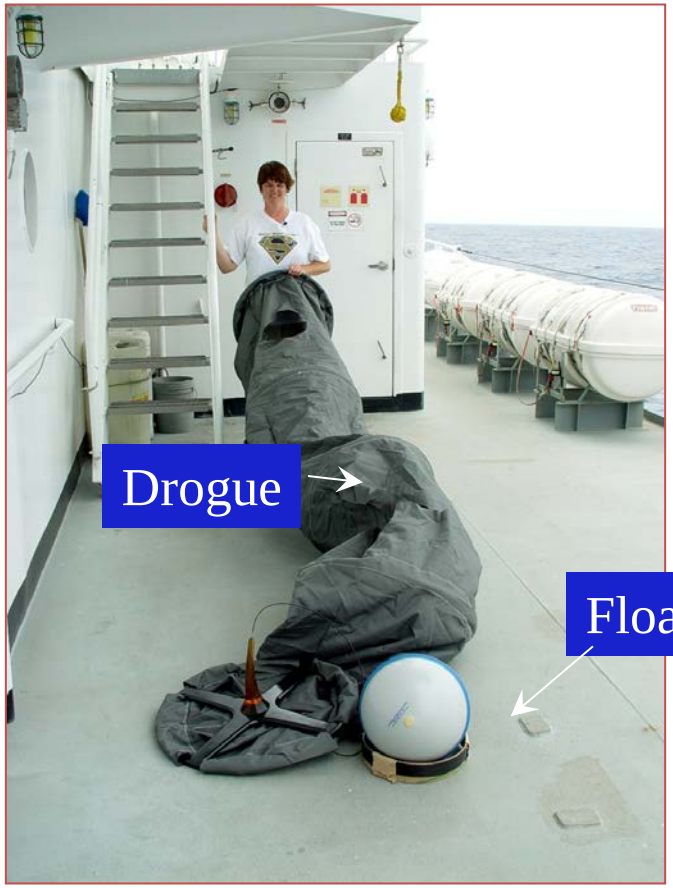
NOAA's Adopt a Drifter Program

A Program to Enhance Informal Education



<u>Mission</u>: To establish scientific partnerships between schools around the world to engage students in activities and communication about ocean climate science

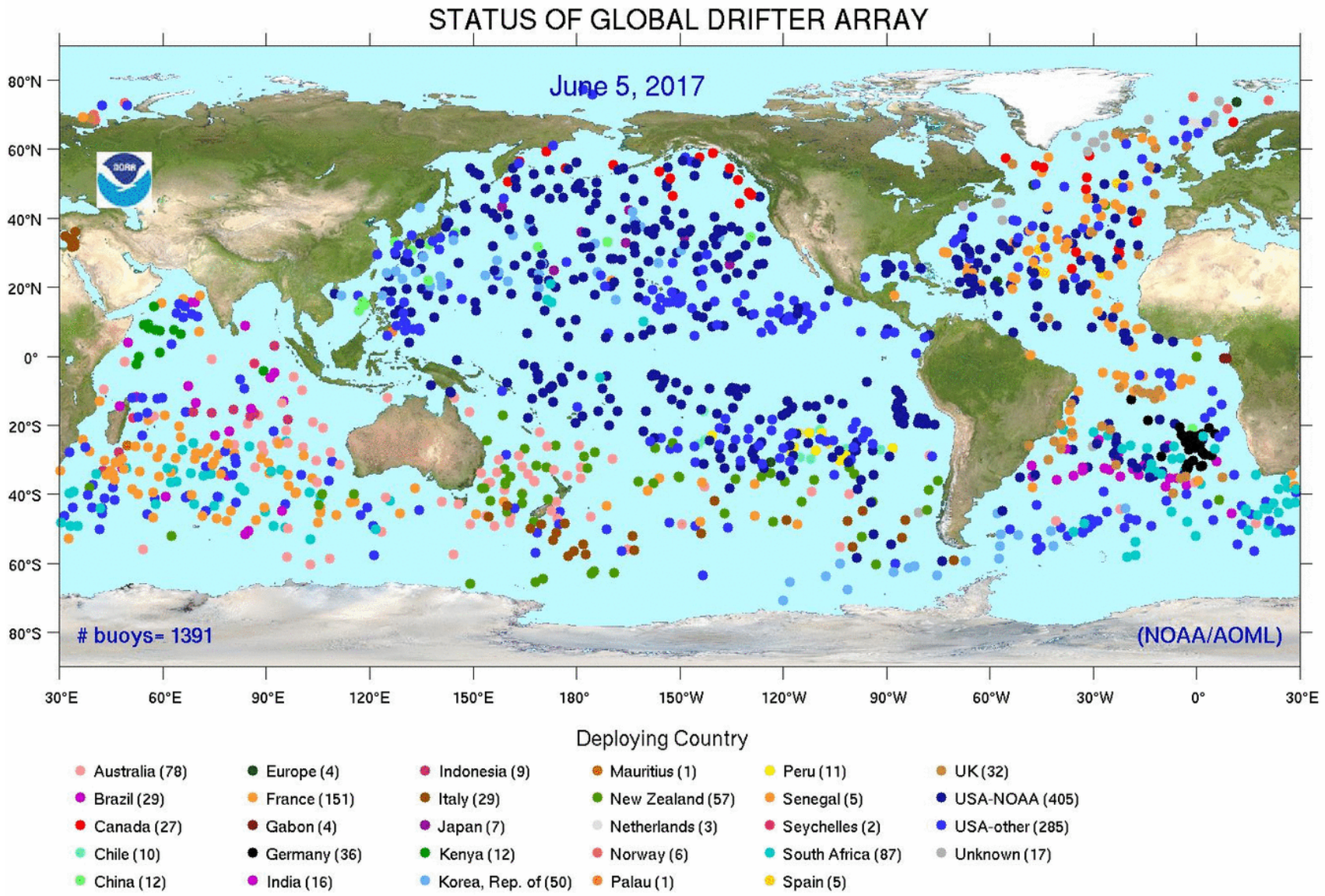
NOAA's Adopt a Drifter Program: All Alumni 2004 – present (80 schools)



The modern drifter is a high-tech version of the "message in a bottle". Drifting buoys measure sea surface temperature and are used to track ocean currents. The drifter's data are transmitted to a satellite and received in near real-time at the Adopt a Drifter Program website (www.adp.noaa.gov).

NOAA'S Adopt A Drifter Program

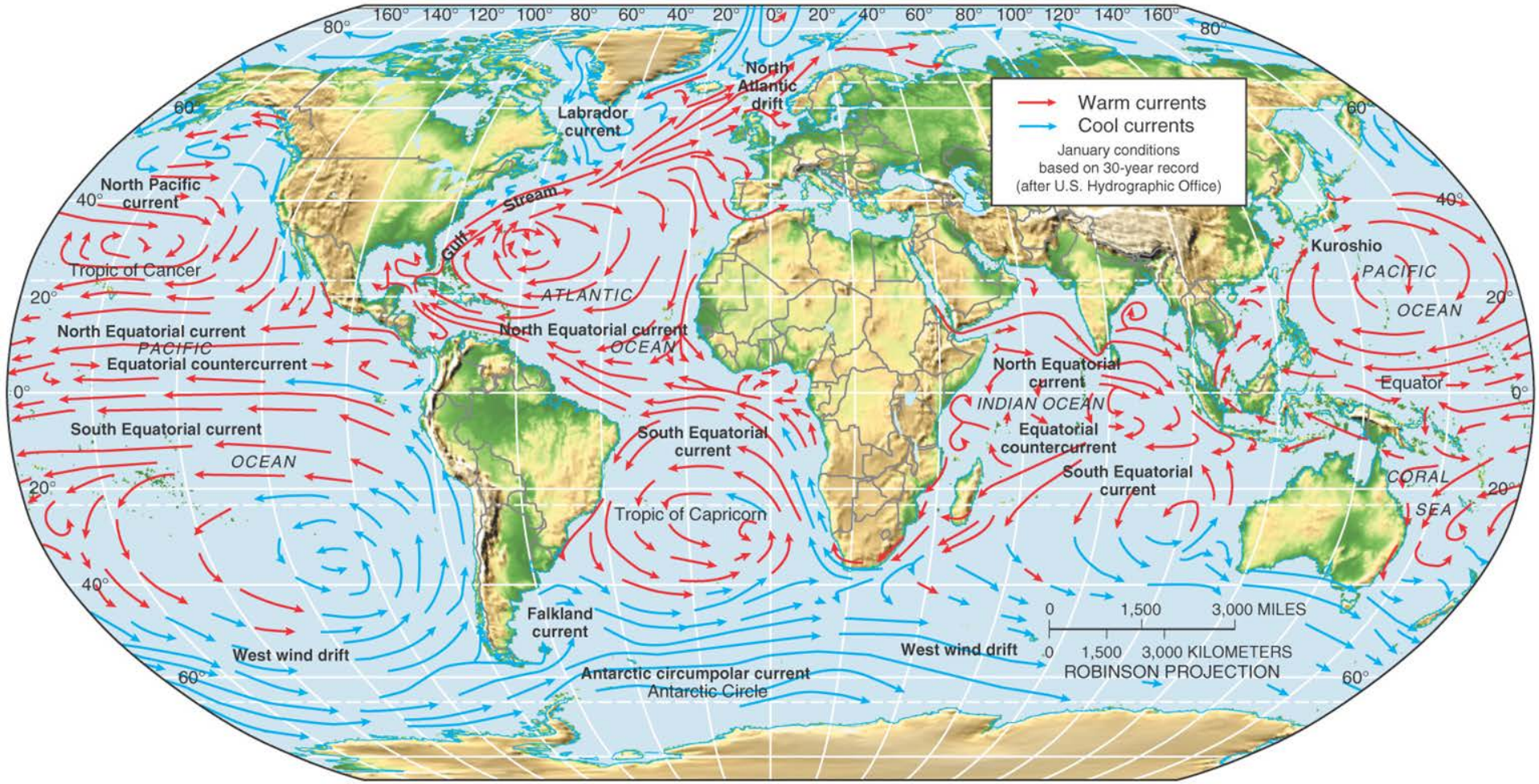
Deploying a drifter



NOAA'S Adopt A Drifter Program

Major Ocean Currents

Ocean current – any persistent, dominantly horizontal flow of water



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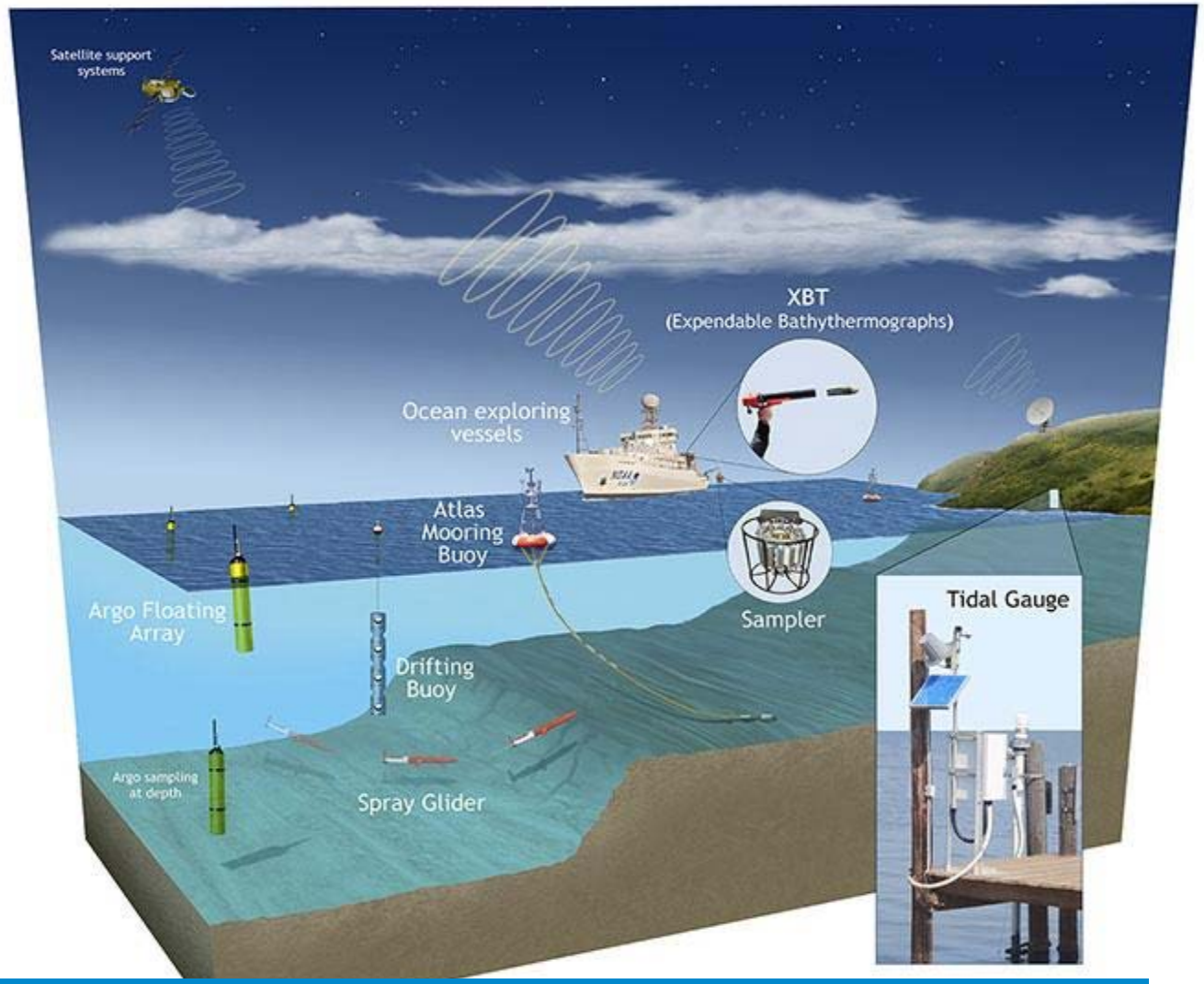
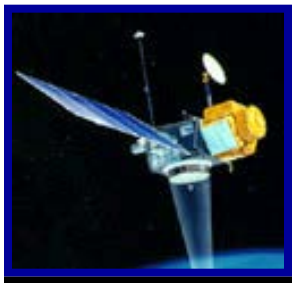
NOAA'S Adopt A Drifter Program

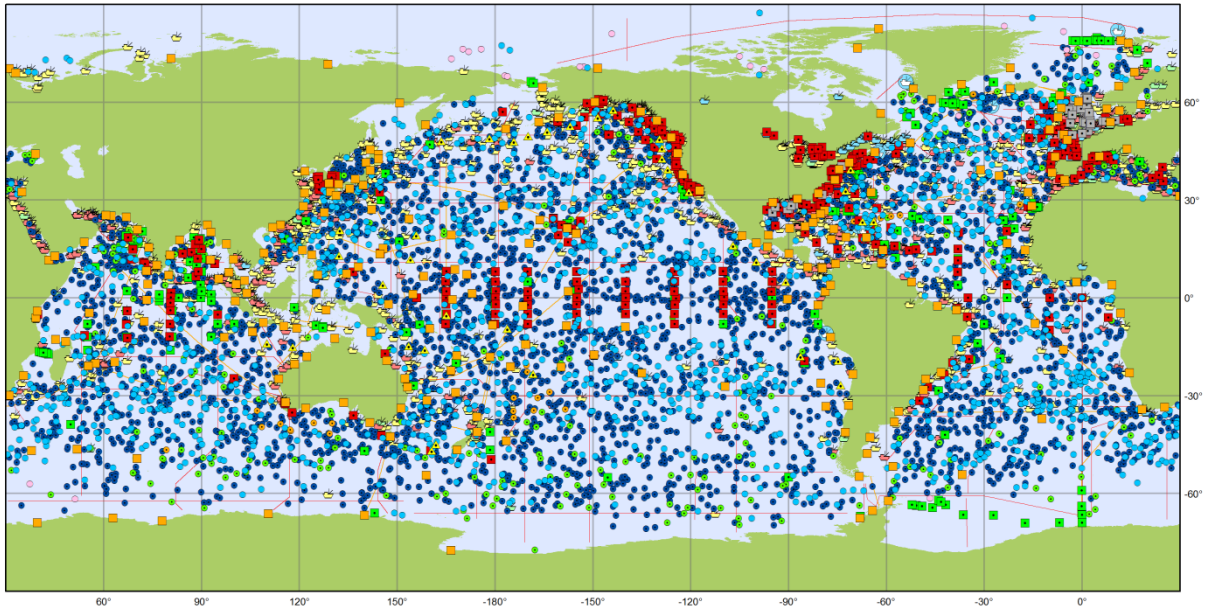
Tools for an ocean climate field program:

- Floats
- Gliders
- **Drifters**
- Moorings
- Ships
- Satellites
- Tide gauges





Sea Surface Temperature, Sea Surface Height, Surface Vector Wind, Sea Ice, and Ocean Color from Space



Main in-situ Elements of the Global Ocean Observing System **May 2017**

Argo
- Argo (3885)
- Deep-Argo (28)
- BGC-Argo (282)

DBCP
- Surface Drifters (1440)
- Fixed Platforms (103)
- Ice Buoys (22)
- Moored Buoys (405)
- Tsunameter (37)

OceanSITES
- Platforms (332)

GO-SHIP
- GO-SHIP (61)

GLOSS
- Tide Gauges (252)

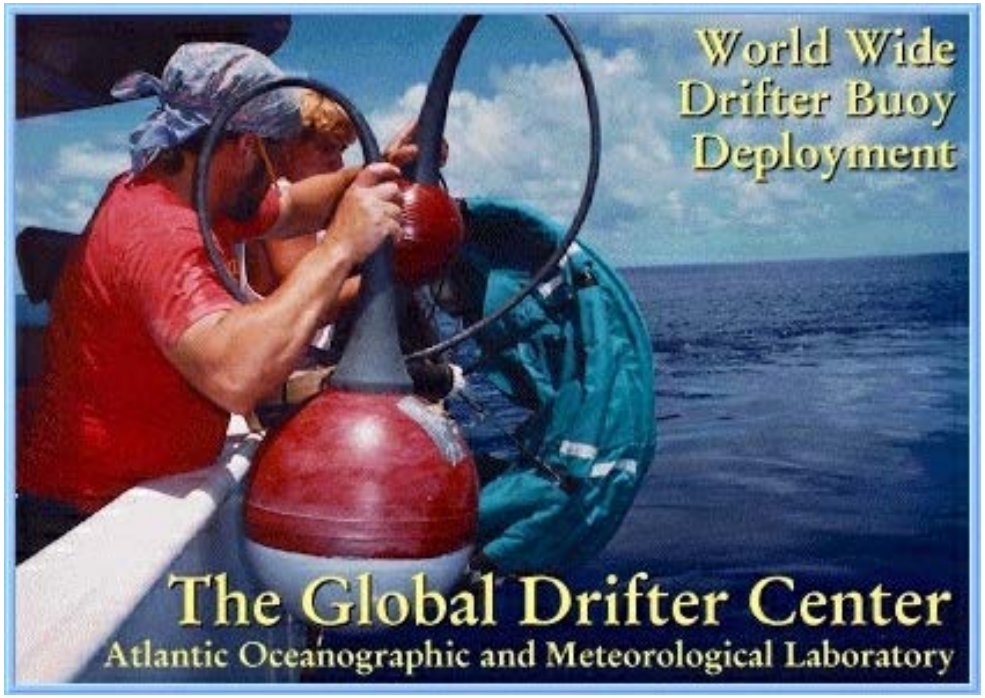
SOT
- VOSClim-Automated (103)
- VOSClim-Manned (372)
- VOS-Automated (149)
- VOS-Manned (1239)
- ASAP Radiosondes (18)
- SOOP XBTs (37)

Generated by www.jcommops.org, 06/06/2017

NOAA'S Adopt A Drifter Program

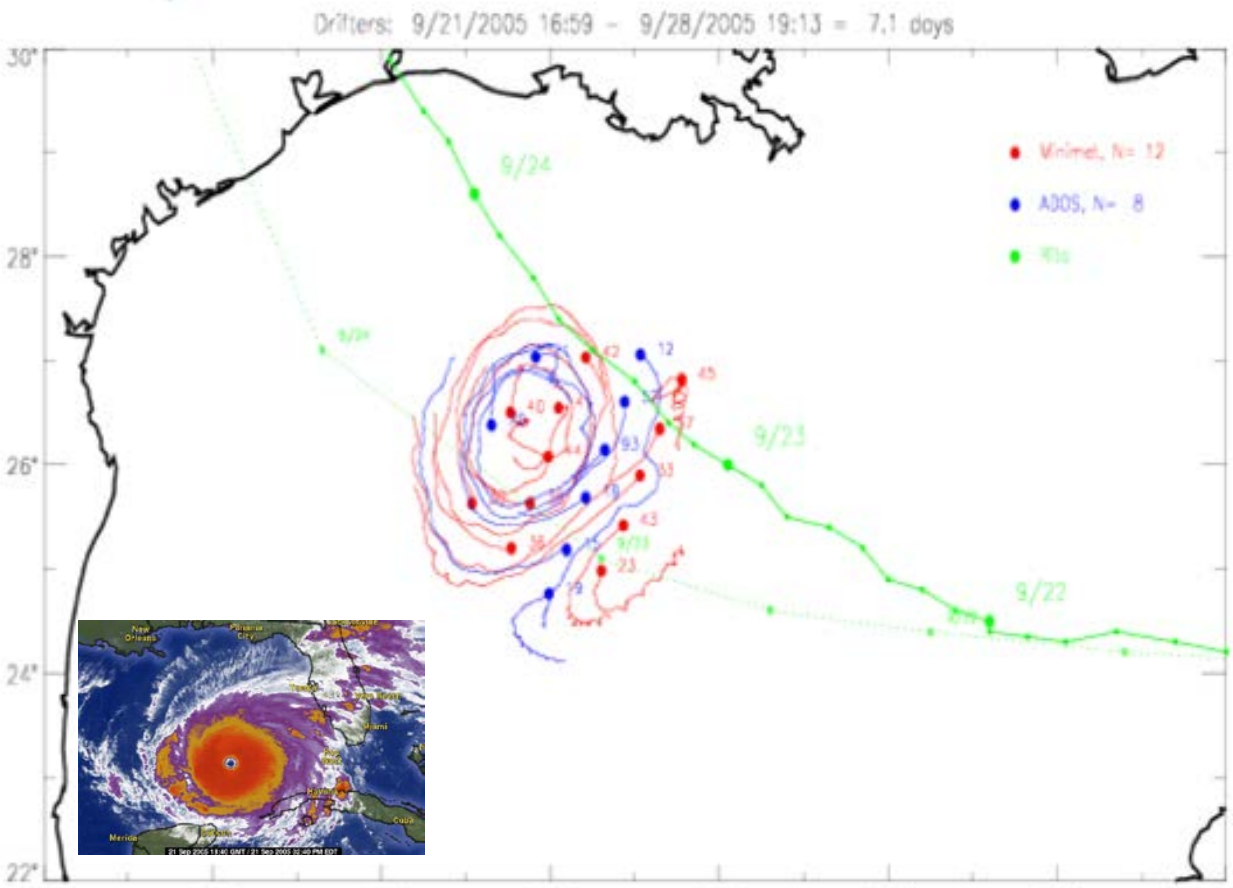
Drifter Data Are Important

- Help to Predict Path of Hurricanes
- Reveal Ocean Temperature Patterns
- Monitor Ocean Currents, Winds
- Ground truth Satellite Data
- Follow migrating marine species
- Predict the Path of Ocean Pollutants

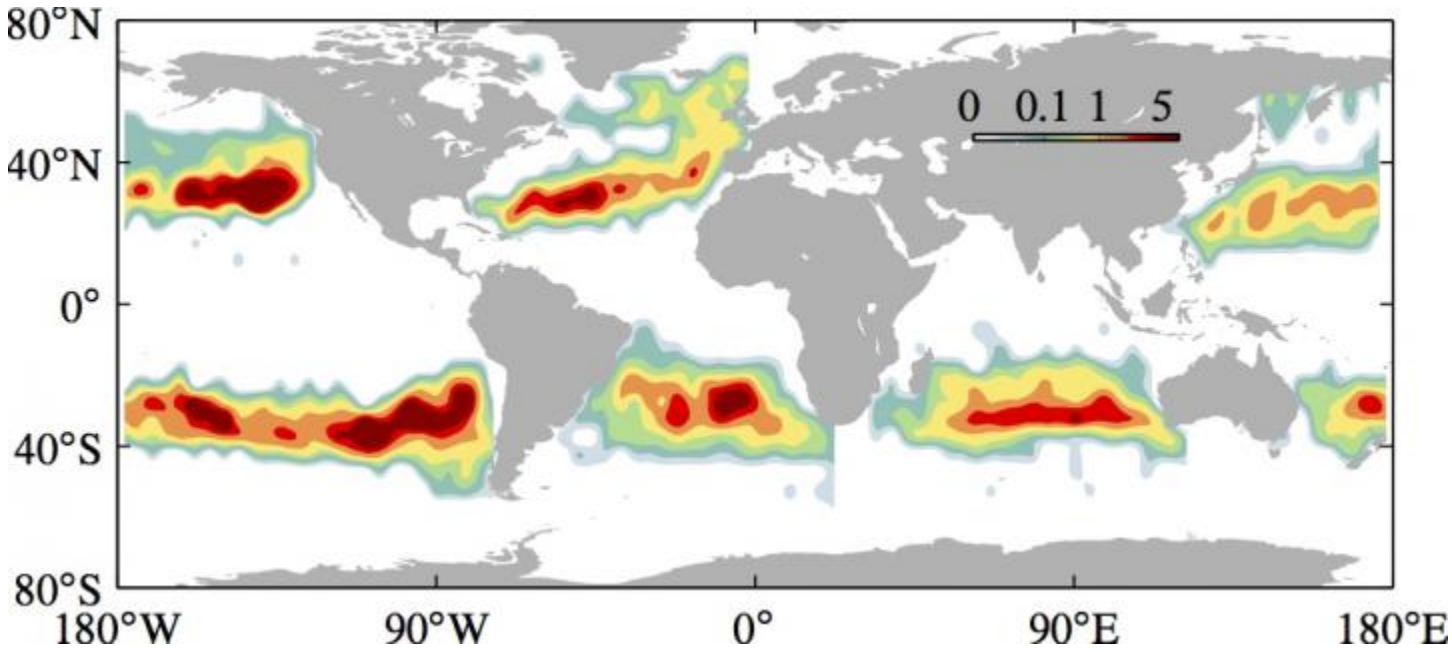


http://www.aoml.noaa.gov/phod/dac/gdc.html

Drifter Tracks during Hurricane Rita September 21-28, 2005



New study helps explain how garbage patches form in the world's oceans



This image shows the density of finite-size objects after 1.5 years of evolution starting from a uniform distribution under the combined action of simulated ocean currents and reanalyzed winds.

How does a teacher/educator get involved?

- www.adp.noaa.gov

- Fill out an application online
- Partner with an international school
- Submit a lesson plan following the deployment

CLEAN

CLIMATE LITERACY & ENERGY AWARENESS NETWORK

CLEAN
- Climate and Energy Educational Resources
  - NGSS Browse
  - NGSS Middle School Climate Systems
  - NGSS Middle School Climate Solutions
  - NGSS High School Climate Systems
  - NGSS High School Climate Solutions
  - NGSS at a Glance
- Teaching Climate and Energy Science
- CLEAN Network
- About CLEAN

Sea Surface Salinity Influence on Earth's Climate

http://svs.gsfc.nasa.gov/vis/a010000/a010700/a010735/

Brooke Harris, NASA/Goddard Space Flight Center

Jump to this Video »

This short NASA video focuses on the Aquarius satellite, which was launched in 2011 to observe how variations in ocean salinity relate to climatic changes. By measuring salinity globally, Aquarius shows the ocean's role in climate change and climate's effects on ocean circulation.

Video length: 2:13 min.

Learn more about Teaching Climate Literacy and Energy Awareness»

See how this Video supports the Next Generation Science Standards»

Middle School: 5 Disciplinary Core Ideas

High School: 3 Disciplinary Core Ideas

Notes From Our Reviewers

The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how CLEAN reviews teaching materials

Teaching Tips | Science | Pedagogy | Technical Details

Teaching Tips

- Background information about the Aquarius satellite mission at http://www.nasa.gov/mission_pages/aquarius/news/aquarius20110610.html.
- When used in the classroom, the video needs adequate scaffolding to focus students on satellites, remote sensing, climate, nature of science, or the topic of choice.

About the Science

- Water's salinity and temperature, which together determine seawater density, regulate ocean

Topics

Ocean and Climate
See more on this topic.

Climate Data
See more on this topic.

Global Climate Modeling
See more on this topic.

Grade Level

High School (9–12)
See more at this grade level.

College Lower (13–14)
See more at this grade level.

Regional Focus

cleanet.org/resources/42842.html#ngss

NOAA'S Adopt A Drifter Program

The Adopt a Drifter web site allows you to select a Buoy to Track Ocean Currents and Sea Surface Temperature in Real Time

Canterbury School of Florida, Admiral Farragut Academy, Lakewood High School, The International School of Monaco

TRACK YOUR DRIFTER

Schools and Teachers:

Canterbury School of Florida
Gina Donovan and Jenna LoDico
St. Petersburg, FL

Admiral Farragut Academy
Sari Deitche
St. Petersburg, FL

Lakewood High School
James Kostka
St. Petersburg, FL

The International School of Monaco
France

Deployment Date: Dec 1, 2016
Ocean: Gulf of Mexico

Ocean	WMO ID	Buoy Serial#	Deployment Date
Atlantic	4200539 ◉ 4201504 ○	118532 63706970	Dec 1, 2016

Select from the Map or Measurements

*Select an option from "**Maps or Measurements00**" below to view a map of the drifter's track or data from the drifter.*

Maps or Measurements:

Map showing measurements	Map showing drifter track dates	Table of measurements	View track on Google Earth	CSV Table of measurements
○	○	○	◉	○

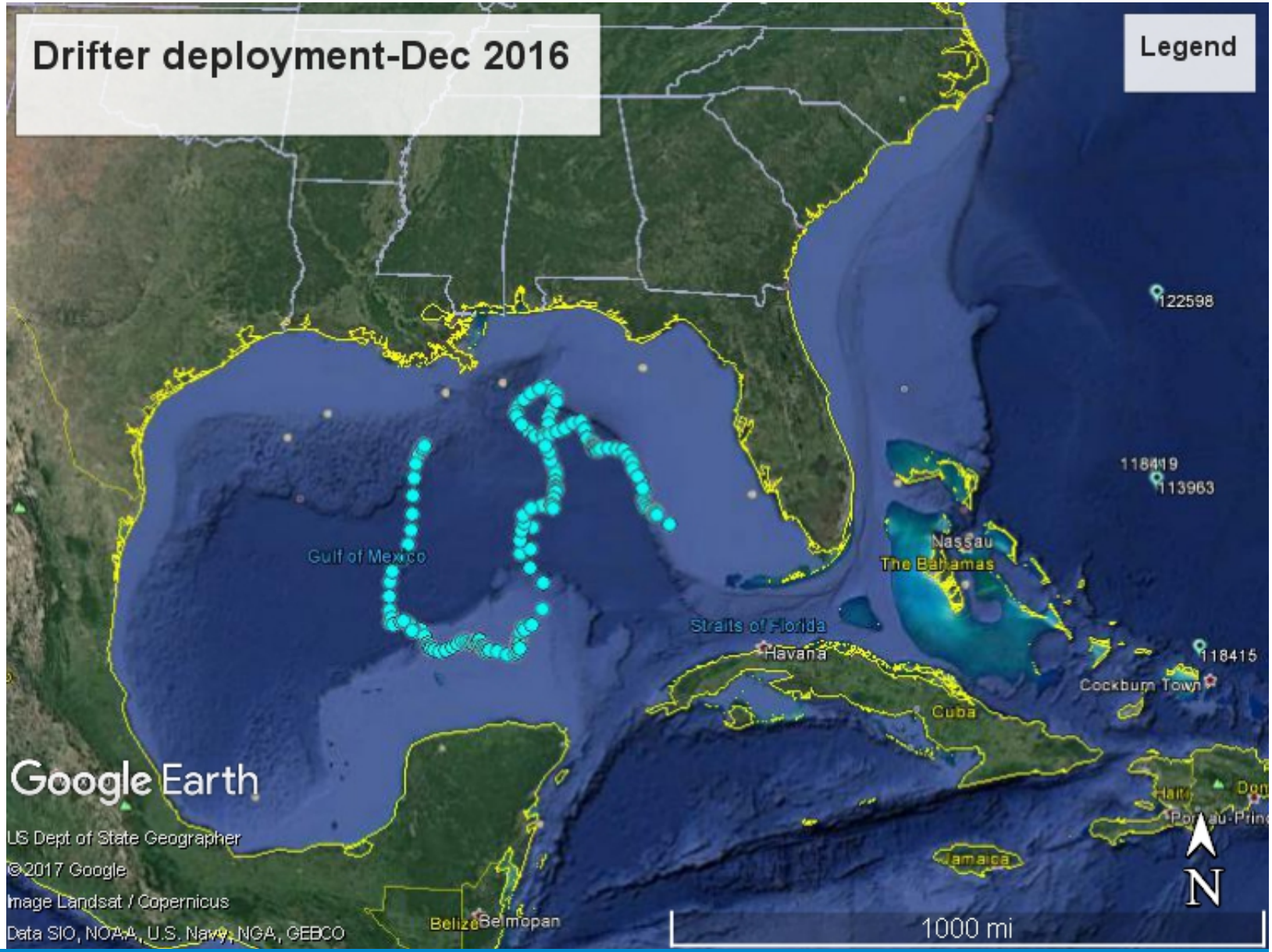
Drifter Variable:

◉ Sea Surface Temperature

Track your Drifter!

Adopt a Drifter Tracking Page - http://www.adp.noaa.gov/TrackaDrifter.aspx

NOAA'S Adopt A Drifter Program



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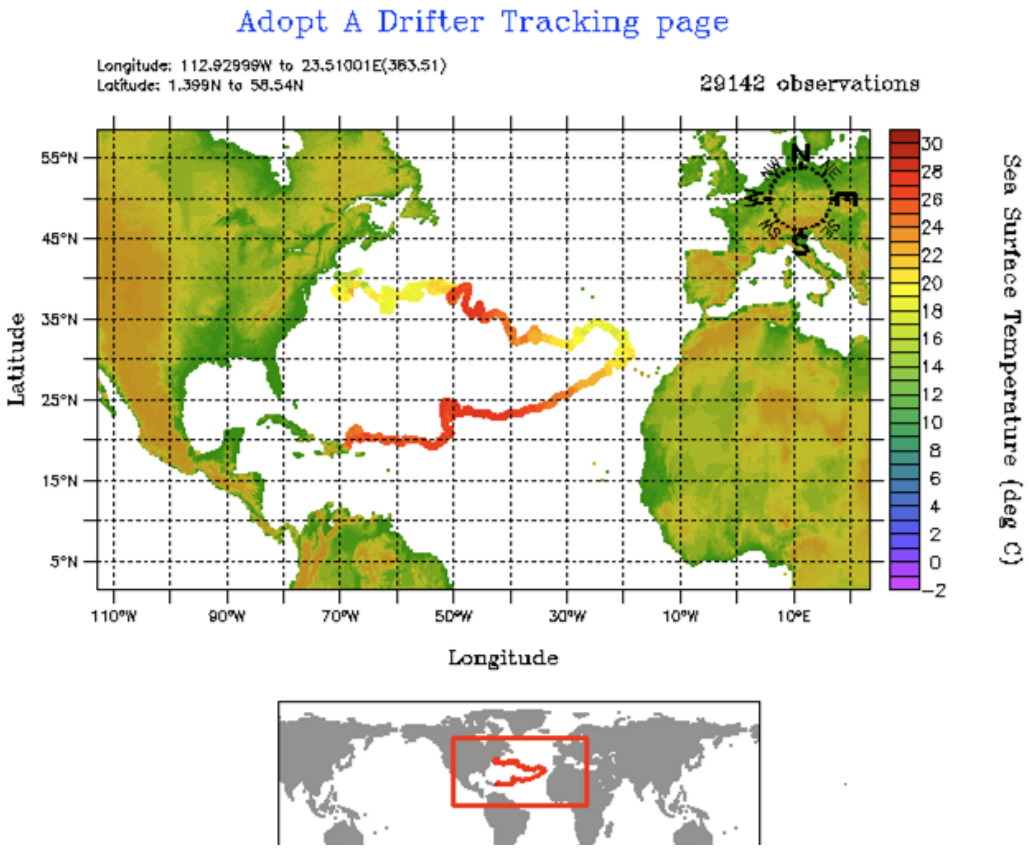

Adopt a Drifter Tracking Page - http://www.adp.noaa.gov/track_drifting_buoys.html

NOAA'S Adopt A Drifter Program

Please contact me for any questions!

Website:

www.adp.noaa.gov

Email:

Emily.a.smith@noaa.gov