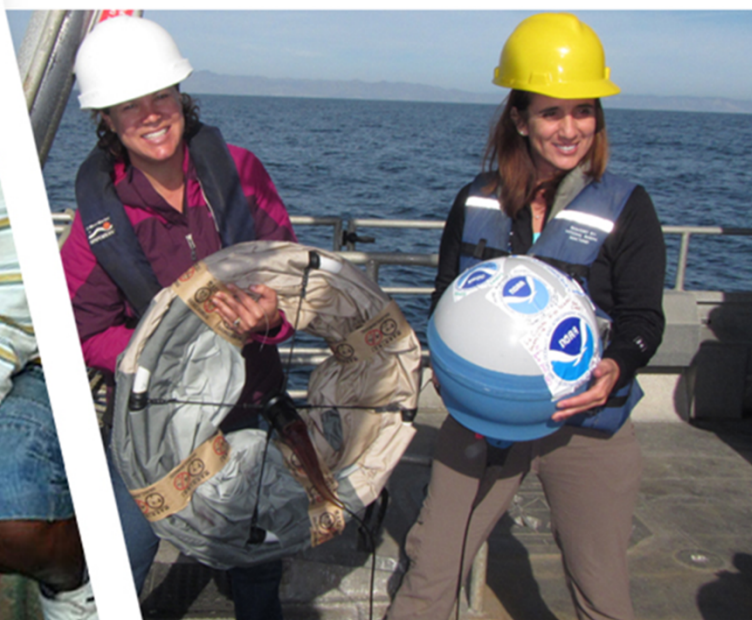




NOAA'S Adopt A Drifter Program



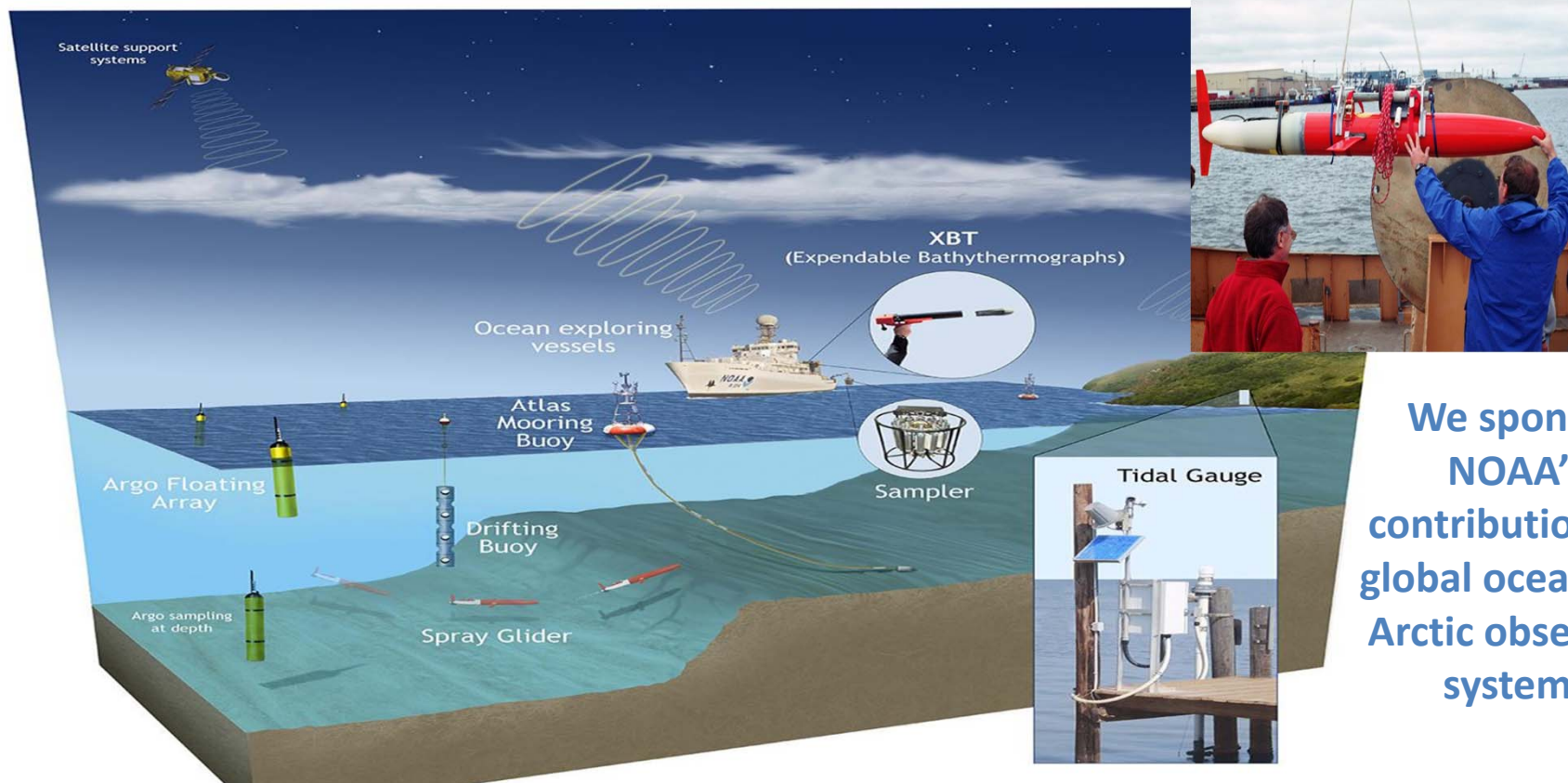
Emily A. Smith, PhD

Global Ocean Monitoring and Observing Program

NOAA

Our Mission

Provide long-term high-quality global observations, and climate information and products to researchers, forecasters and other users to inform and prepare society for environmental challenges



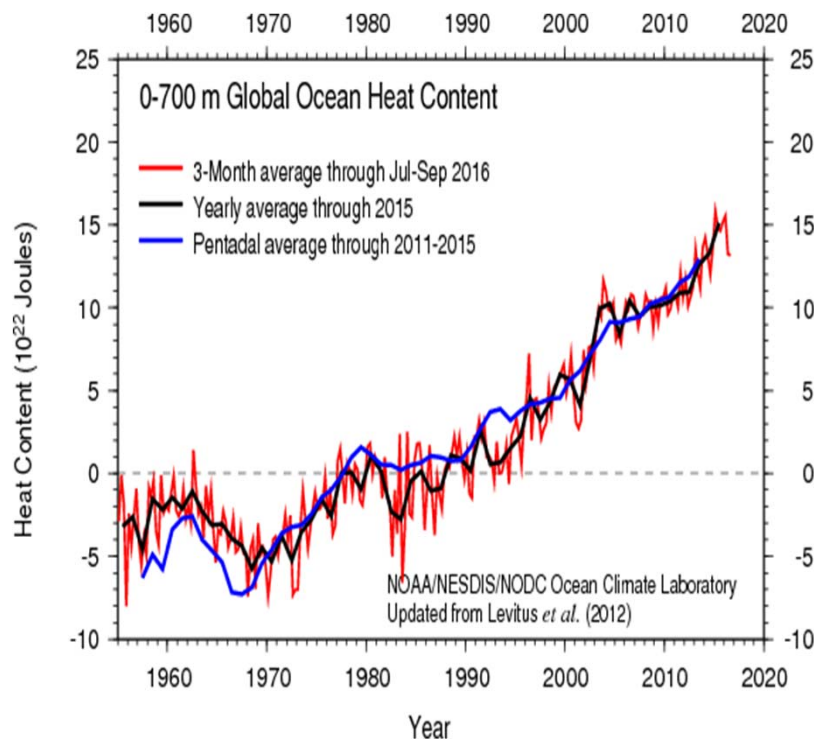
We sponsor NOAA's contributions to global ocean and Arctic observing systems



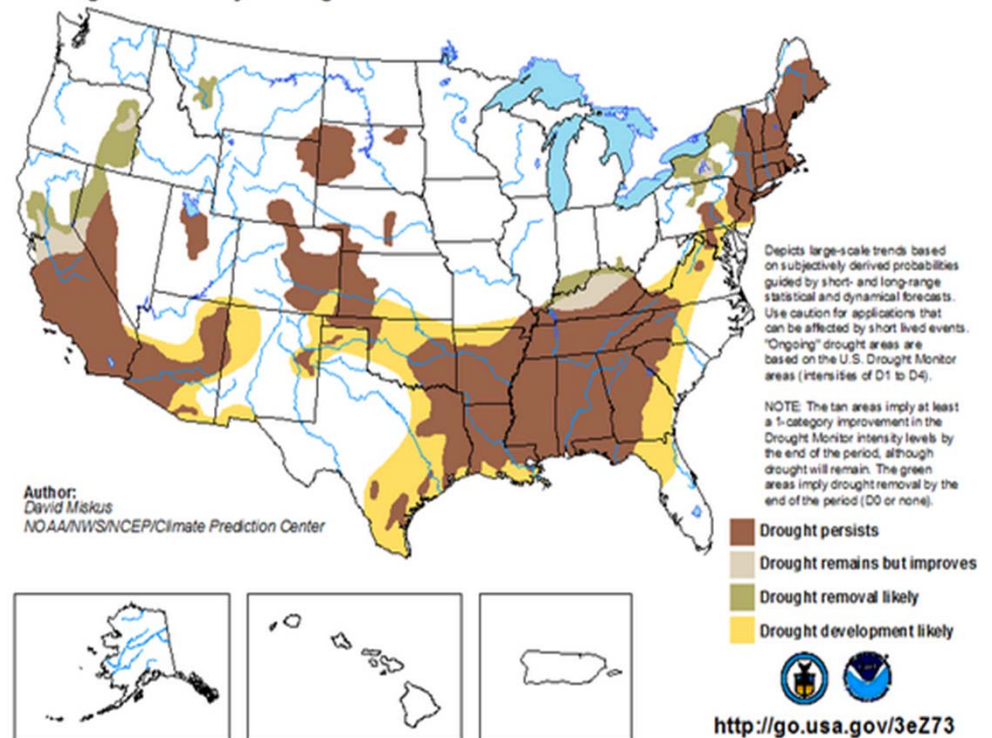
NOAA'S Adopt A Drifter Program

Scientific Impacts

Develop products about our changing environment
and support NOAA's Services

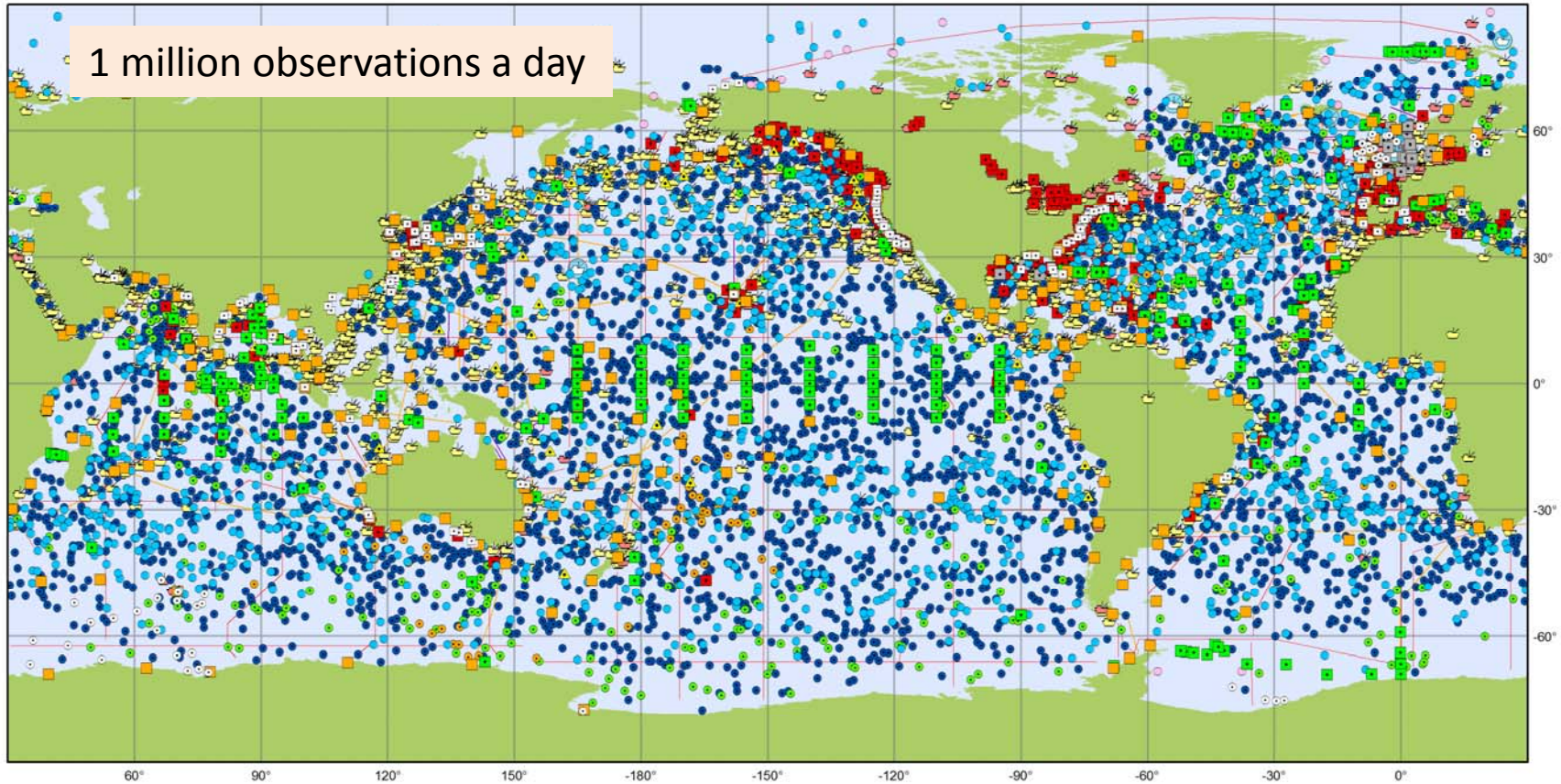


U.S. Seasonal Drought Outlook Valid for November 17 - February 28, 2017
Drought Tendency During the Valid Period
Released November 17, 2016



NOAA'S Adopt A Drifter Program

1 million observations a day



Main in situ Elements of the Global Ocean Observing System

August 2018

Profiling Floats (Argo)

- Core (3944)
- Deep (70)
- BioGeoChemical (329)

Data Buoys (DBCP)

- Surface Drifters (1383)
- Offshore Platforms (97)
- Ice Buoys (16)
- Moored Buoys (392)
- ▲ Tsunameters (36)

Timeseries (OceanSITES)

- Interdisciplinary Moorings (451)
- Repeated Hydrography (GO-SHIP)
- Research Vessel Lines (61)
- Sea Level (GLOSS)
- Tide Gauges (252)

Ship based Measurements (SOT)

- Automated Weather Stations (254)
- Manned Weather Stations (1738)
- Radiosondes (16)
- eXpendable BathyThermographs (37)

Other Networks

- HF Radars (270)
- Animal Borne Sensors (53)
- Ocean Gliders (31)



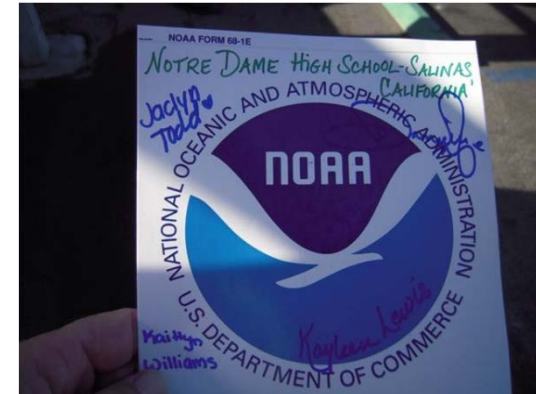
Generated by www.jcommops.org, 17/09/2018



NOAA'S Adopt A Drifter Program

NOAA's Adopt a Drifter Program

A Program to Enhance Informal Education



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

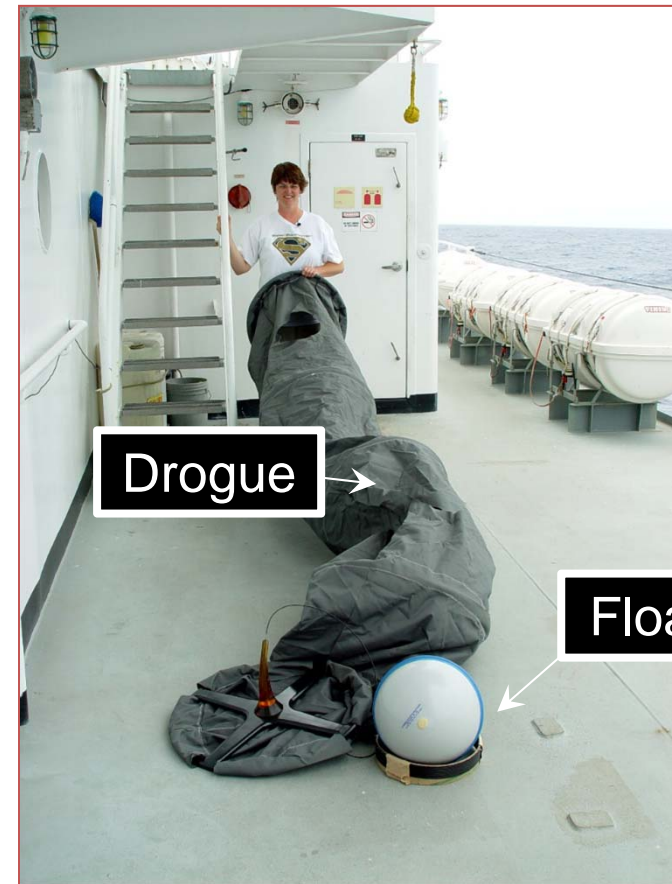


NOAA'S Adopt A Drifter Program

NOAA's Adopt a Drifter Program: All Alumni 2004 – present (90+ schools)



NOAA'S Adopt A Drifter Program

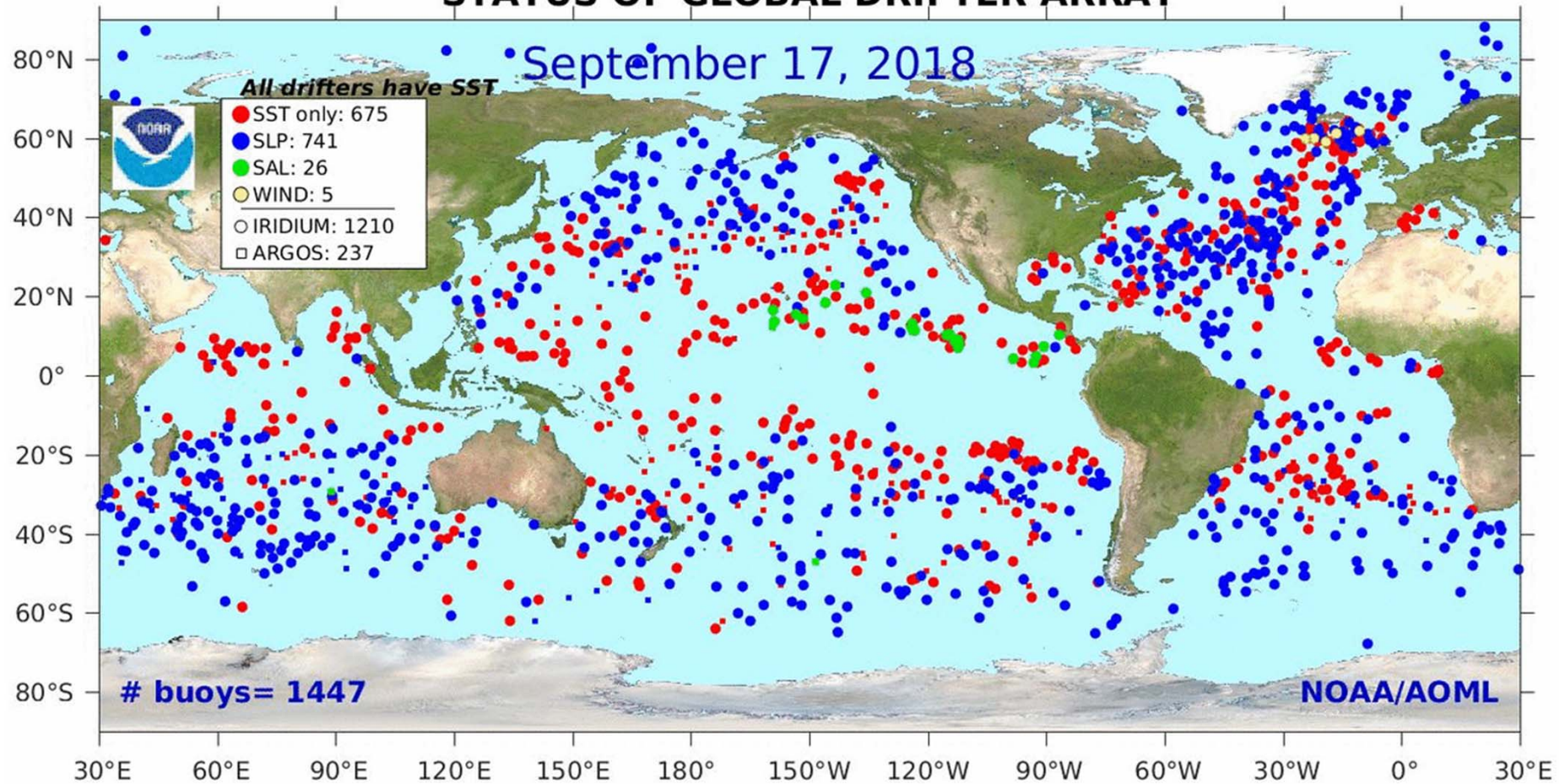


The modern drifter is a high-tech version of the "message in a bottle". Drifting buoys measure sea surface temperature and are used to track ocean currents. The drifter's data are transmitted to a satellite and received in near real-time at the Adopt a Drifter Program website (www.adp.noaa.gov).



NOAA'S Adopt A Drifter Program

STATUS OF GLOBAL DRIFTER ARRAY



NOAA'S Adopt A Drifter Program

Tools for Schools

TRACK YOUR DRIFTER

Schools and Teachers:

Kepler Neighborhood School

Anna Cordes

Fresno, CA

Marianna Poli

Lycee Laperouse Kerichen

Brest, France

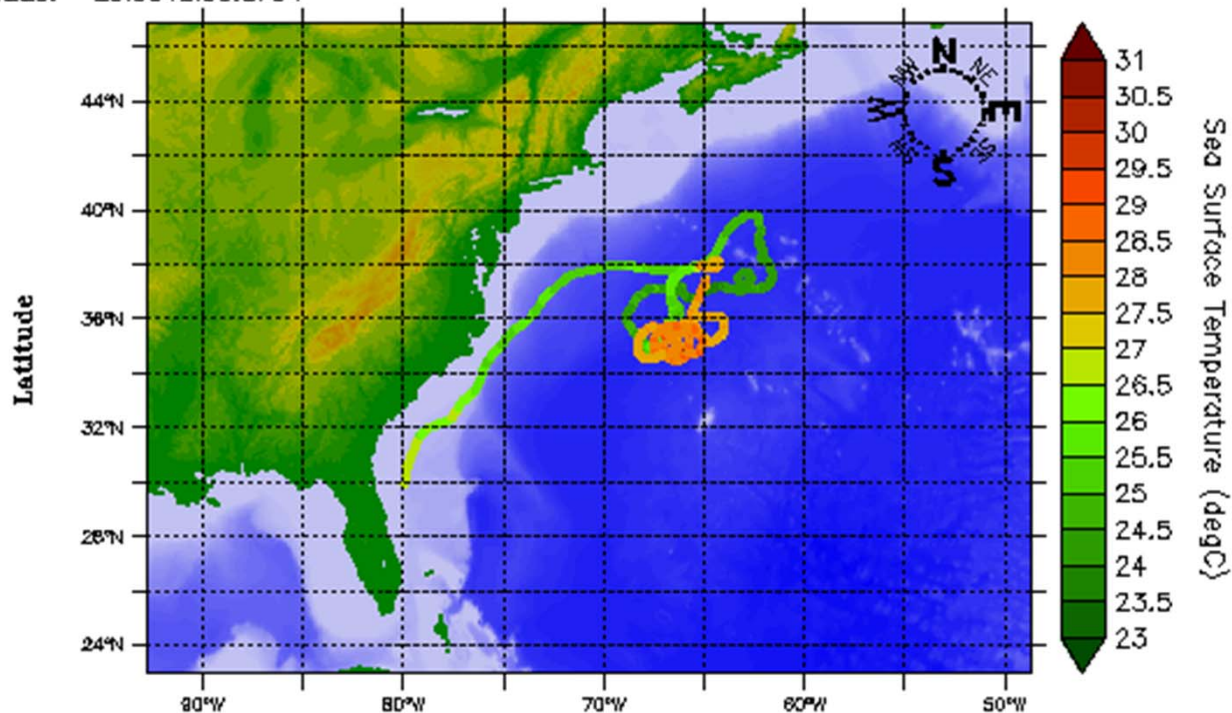
Ocean	WMO ID	Buoy Serial#	Deployment Date	
Atlantic	4101649 <input checked="" type="radio"/>	65382690	May 5, 2018	
	4101650 <input type="radio"/>	65385680		
Select from the Map or Measurements				
Select an option from "Maps or Measurements" below to view a map of the drifter's track or data from the drifter.				
Maps or Measurements:				
<input checked="" type="radio"/> Map showing measurements	<input type="radio"/> Map showing drifter track dates	<input type="radio"/> Table of measurements	<input type="radio"/> View track on Google Earth	<input type="radio"/> CSV Table of measurements
Drifter Variable:				
<input checked="" type="radio"/> Sea Surface Temperature				
Track your Drifter!				



NOAA'S Adopt A Drifter Program

Recent Deployment (map showing measurements)

Drifter ID: 4101649
Number of SST Observations: 3362
Dates: 5-May-2018:24-Sep-2018
Longitude: -79.9364;-61.5736
Latitude: 29.9042;39.8754



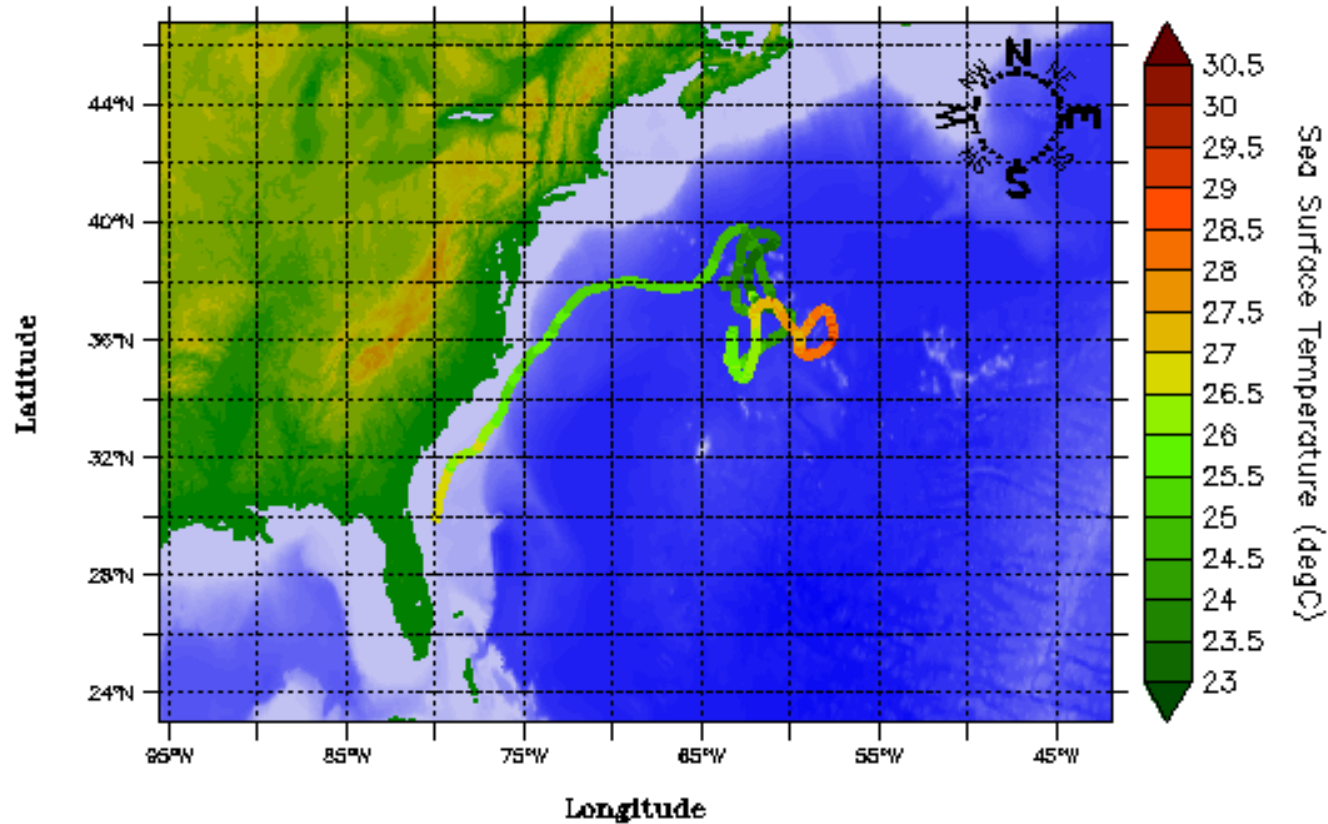
Adopt a Drifter Tracking Page - http://www.adp.noaa.gov/track_drifting_buoys.html



NOAA'S Adopt A Drifter Program

Adopt A Drifter tracking page

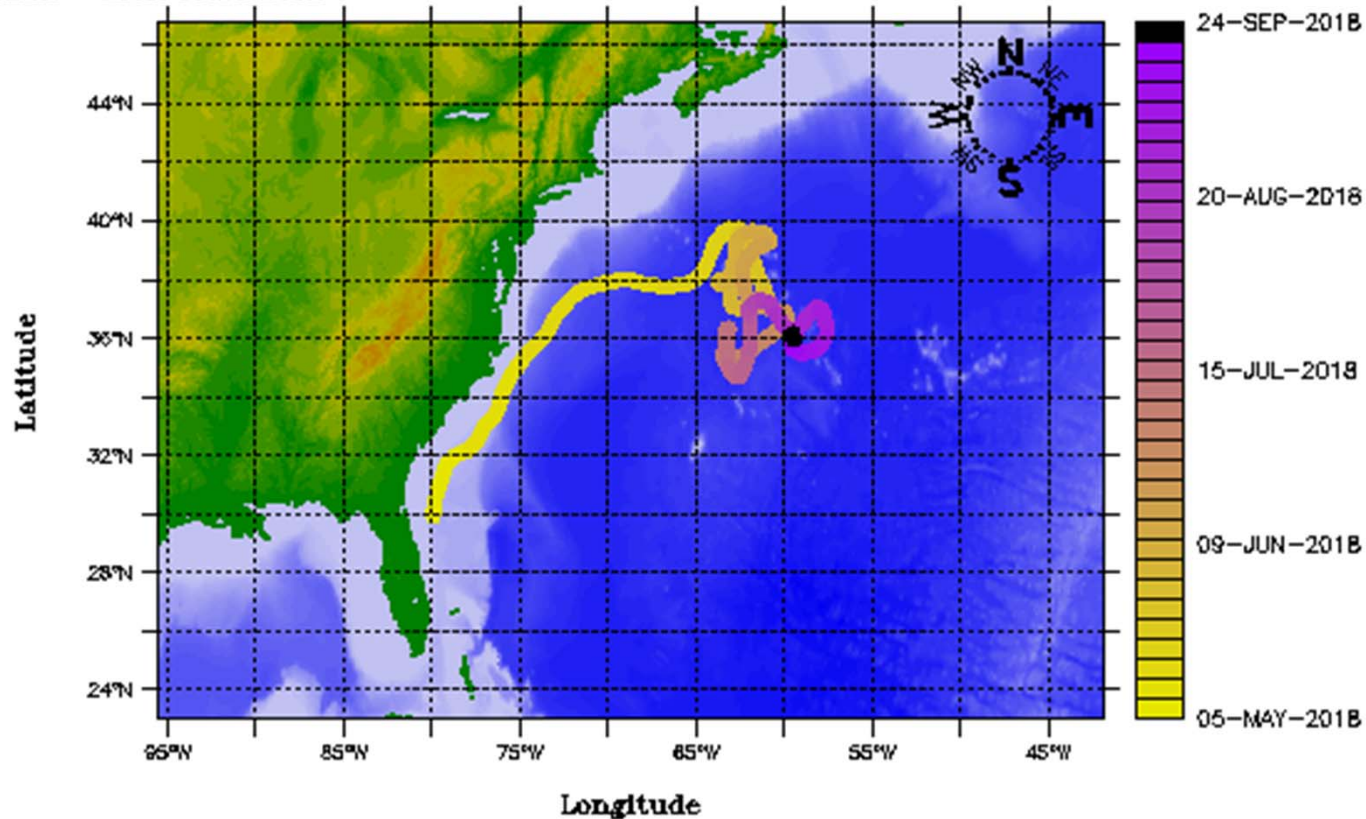
Drifter ID: 4101650
Number of SST Observations: 3361
Dates: 5-May-2018:24-Sep-2018
Longitude: -79.9332:-57.5562
Latitude: 29.8996:39.8152



NOAA'S Adopt A Drifter Program

Map by Date

Drifter ID: 4101650
Number of SST Observations: 3361
Dates: 5-May-2018;24-Sep-2018
Longitude: -79.9332;-57.5562
Latitude: 29.8996;39.8152



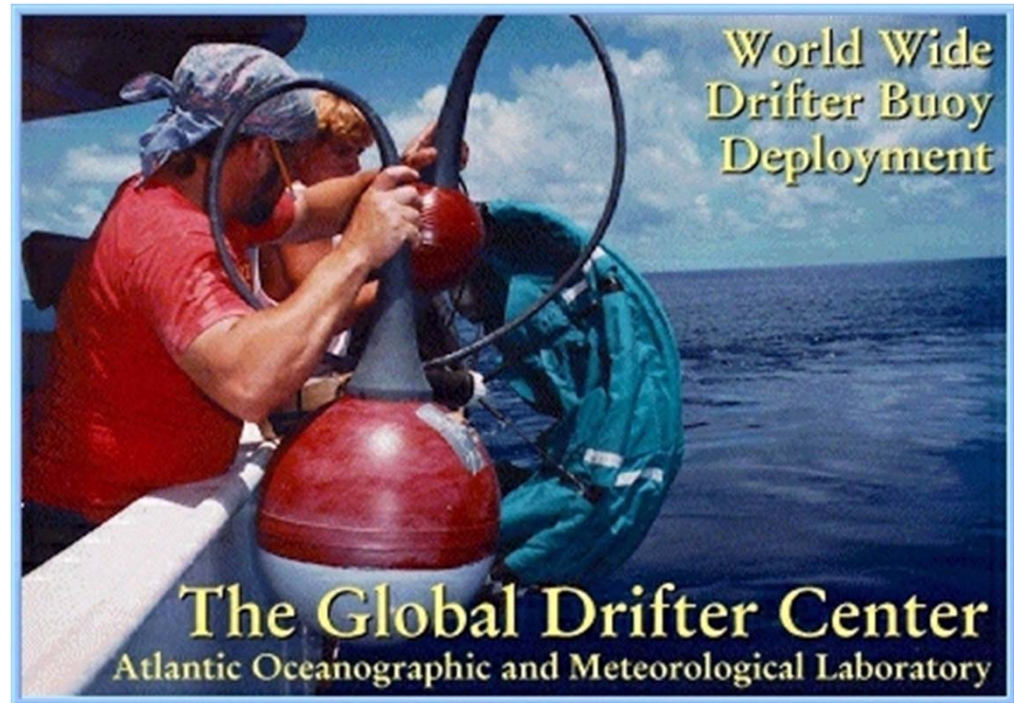
NOAA'S Adopt A Drifter Program

Table of Data

Row	ID	TYPE	COUNTRY	OBS_TIME	LATITUDE	LONGITUDE	PARAMETER	VALUE	UNITS
1	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 00:00:00	29.8996	-79.9332	SST	26.77	degC
2	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 01:00:00	29.9598	-79.9284	SST	26.74	degC
3	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 02:00:00	30.0192	-79.9206	SST	26.7	degC
4	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 03:00:00	30.0784	-79.9112	SST	26.68	degC
5	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 04:00:00	30.1362	-79.9012	SST	26.63	degC
6	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 05:00:00	30.1958	-79.8906	SST	26.63	degC
7	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 06:00:00	30.2532	-79.8806	SST	26.61	degC
8	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 07:00:00	30.3128	-79.8694	SST	26.61	degC
9	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 08:00:00	30.3738	-79.8554	SST	26.57	degC
10	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 09:00:00	30.4344	-79.8378	SST	26.57	degC
11	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 10:00:00	30.4926	-79.818	SST	26.57	degC
12	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 11:00:00	30.5492	-79.795	SST	26.57	degC
13	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 12:00:00	30.6054	-79.7694	SST	26.54	degC
14	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 13:00:00	30.6602	-79.7426	SST	26.54	degC
15	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 14:00:00	30.7152	-79.7136	SST	26.54	degC
16	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 15:00:00	30.7704	-79.6852	SST	26.57	degC
17	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 16:00:00	30.8234	-79.651	SST	26.57	degC
18	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 17:00:00	30.8774	-79.622	SST	26.61	degC
19	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 18:00:00	30.9334	-79.5916	SST	26.63	degC
20	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 19:00:00	30.9882	-79.5594	SST	26.63	degC
21	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 20:00:00	31.0442	-79.5278	SST	26.63	degC
22	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 21:00:00	31.1002	-79.4964	SST	26.63	degC
23	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 22:00:00	31.1588	-79.4706	SST	26.63	degC
24	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-05 23:00:00	31.2178	-79.442	SST	26.61	degC
25	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 00:00:00	31.2794	-79.4136	SST	26.61	degC
26	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 01:00:00	31.3392	-79.3816	SST	26.61	degC
27	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 02:00:00	31.3968	-79.348	SST	26.61	degC
28	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 03:00:00	31.4536	-79.3138	SST	26.57	degC
29	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 04:00:00	31.5076	-79.281	SST	26.57	degC
30	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 05:00:00	31.5604	-79.2468	SST	26.54	degC
31	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 06:00:00	31.6092	-79.2114	SST	26.54	degC
32	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 07:00:00	31.6598	-79.168	SST	26.47	degC
33	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 08:00:00	31.7072	-79.125	SST	25.74	degC
34	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 09:00:00	31.7484	-79.0788	SST	26.1	degC
35	4101650	DRIFTING BUOYS (GENERIC)	UNKNOWN	2018-05-06 10:00:00	31.7894	-79.031	SST	26.17	degC

Importance of Drifter Data

- Help to predict path of hurricanes
- Reveal ocean temperature patterns
- Monitor ocean currents and winds
- Ground truth satellite data
- Follow migrating marine species
- Predict the path of ocean pollutants



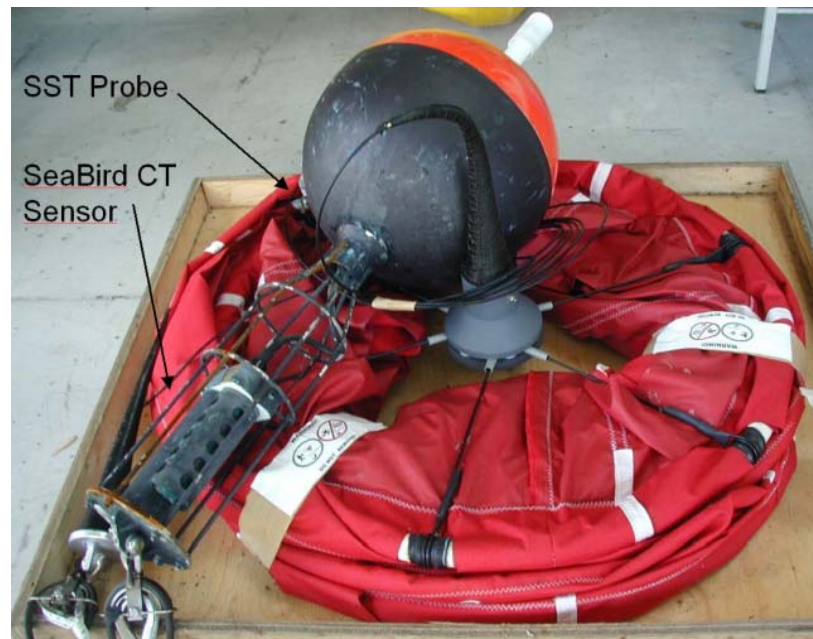
<http://www.aoml.noaa.gov/phod/dac/gdc.html>



NOAA'S Adopt A Drifter Program

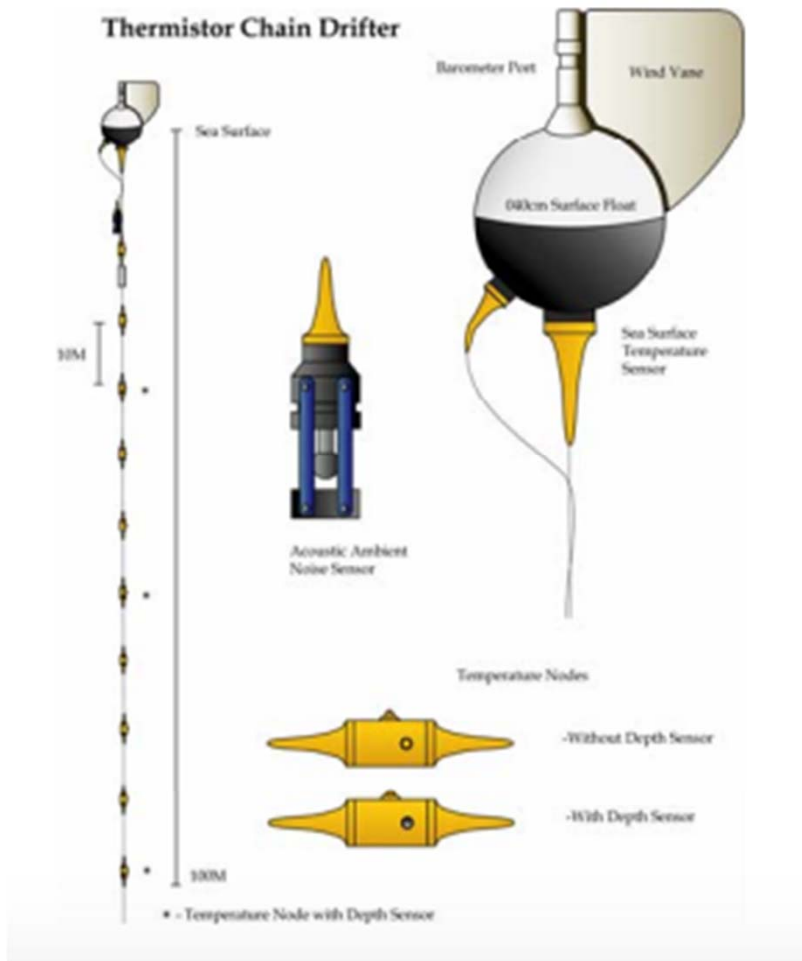
Satellite Validation

- Not the original intent!
- New HRSST buoys from EUMETSAT being tested



NOAA'S Adopt A Drifter Program

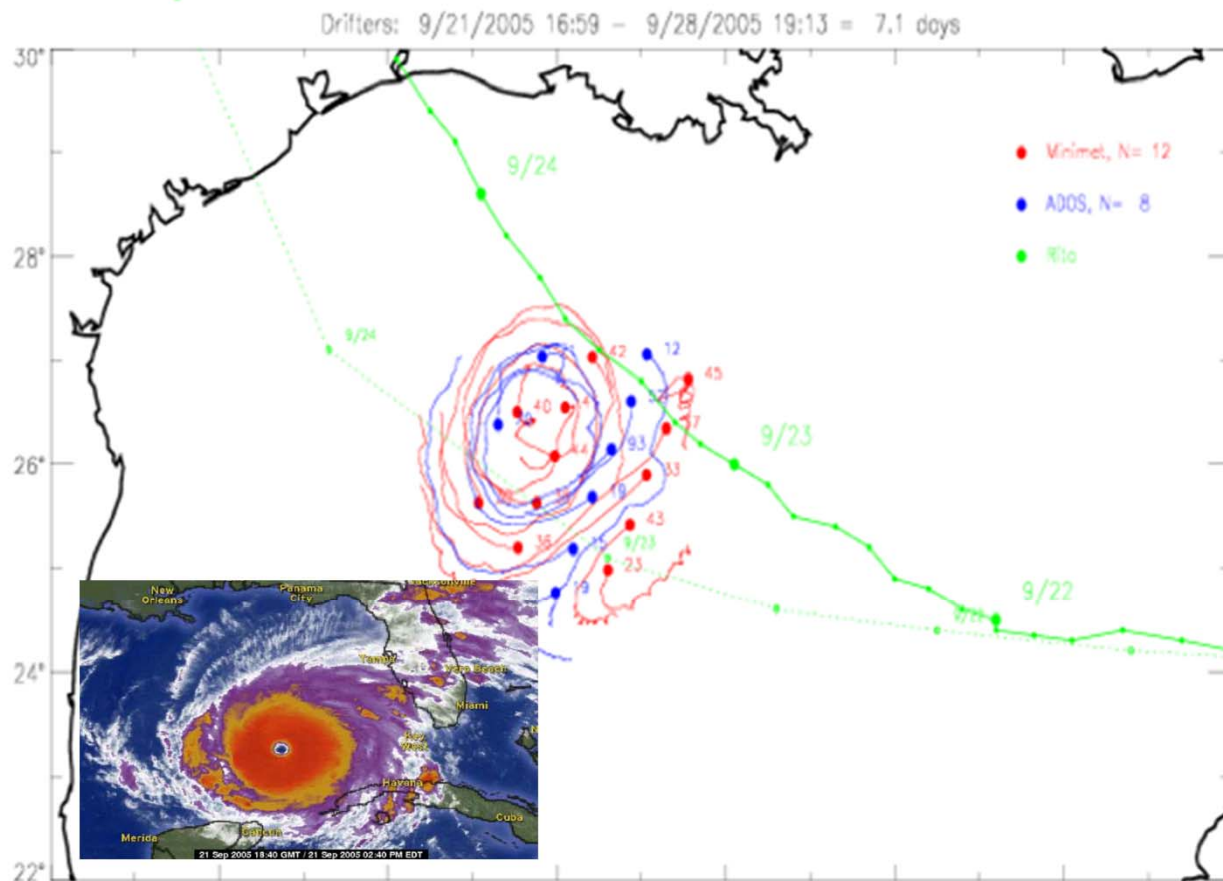
Drifter deployed from a plane



NOAA'S Adopt A Drifter Program

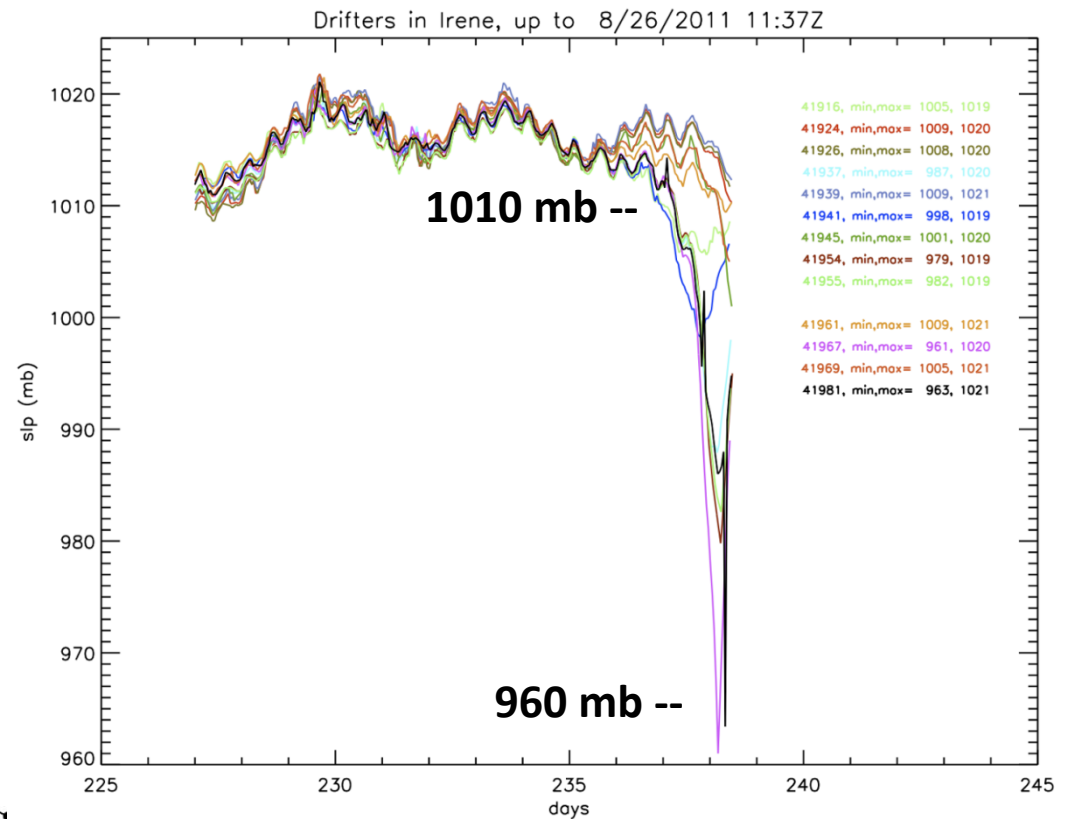
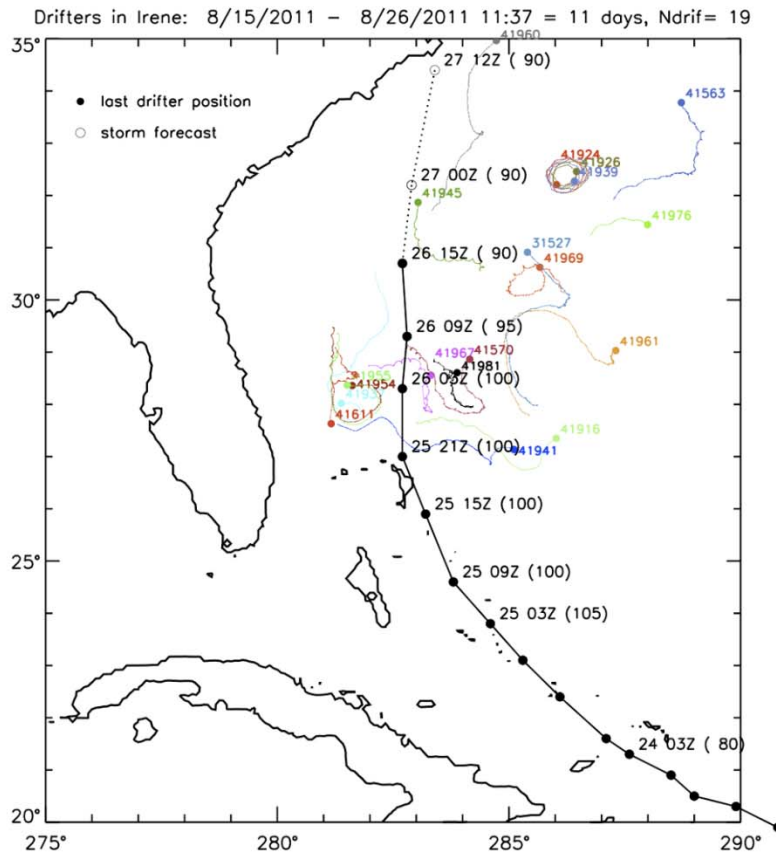
Drifter Tracks during Hurricane Rita

September 21-28, 2005



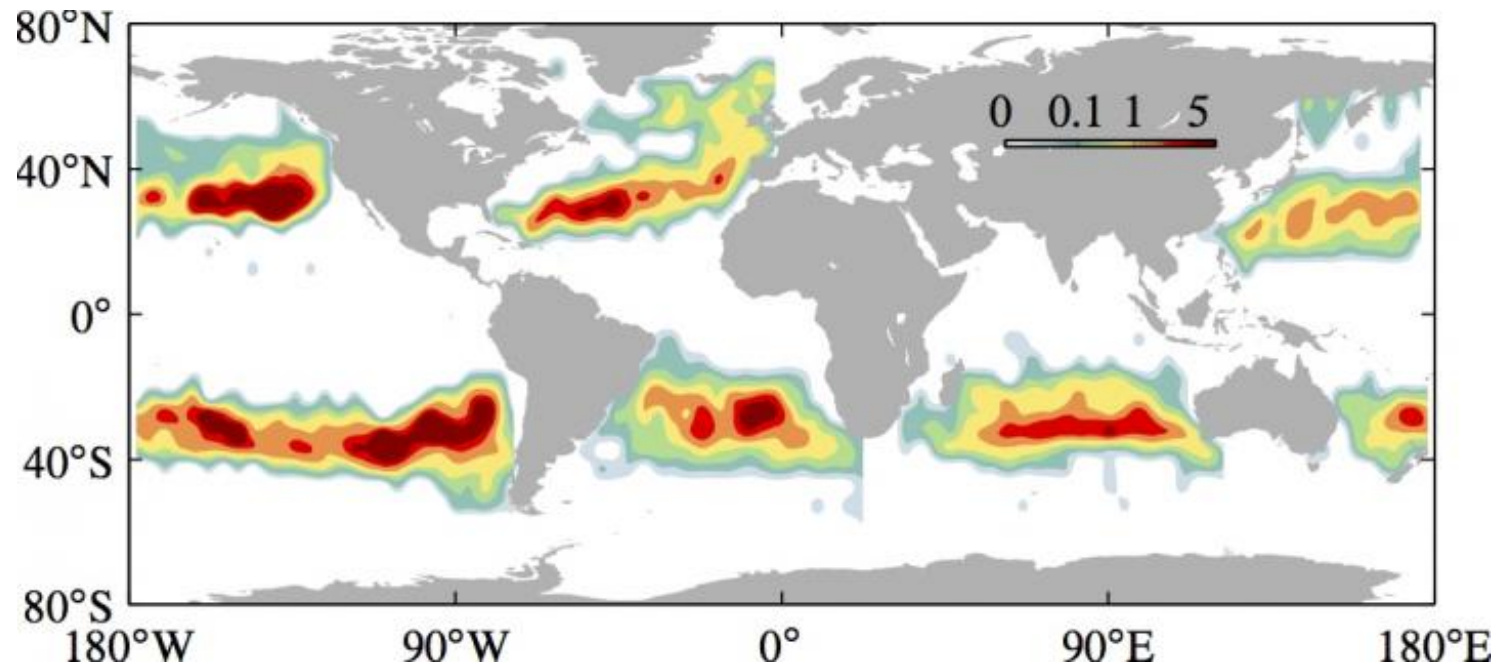
NOAA'S Adopt A Drifter Program

Hurricane Irene - August 26, 2011



NOAA'S Adopt A Drifter Program

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.



NOAA'S Adopt A Drifter Program



SEREAD Program

Scientific Educational Resources and Experience Associated with the Deployment of Argo profiling floats in the South Pacific Ocean

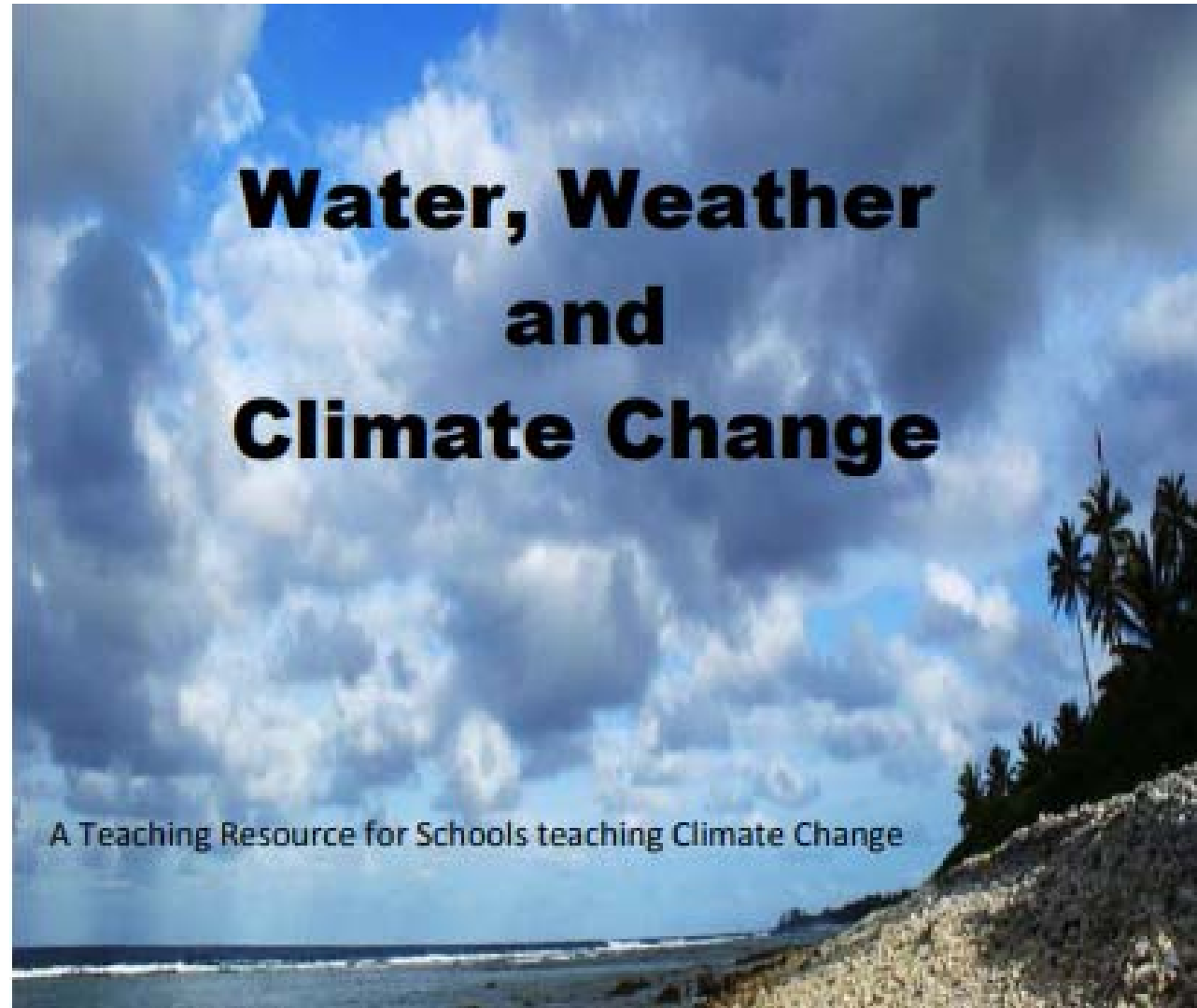


Goal of the Program

Generate awareness, discussion and an understanding of the ocean's role in the climate system.



Curricula Developed for Classrooms





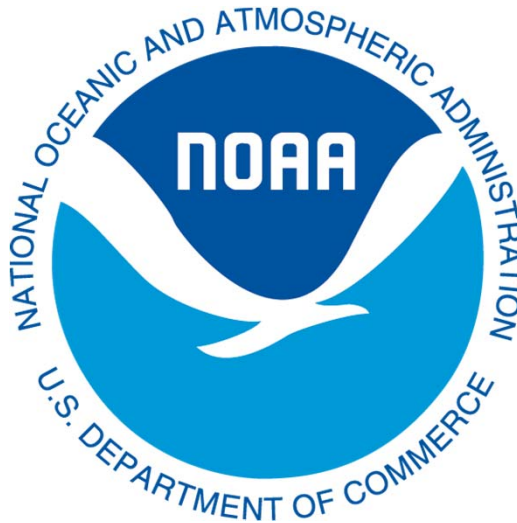
Partners for SEREAD

- 5 island nations currently use this curricula:
 - The Cook Islands, Kiribati, Tuvalu, Tonga, and Kiritimati
- Possible future partners:
 - Pohnpei
 - Solomon Islands



Thank you!

Looking for international school partners!



www.adp.noaa.gov

Emily.a.smith@noaa.gov