NOAA Science Update to the Science Advisory Board

Steven Thur, Ph.D.
National Centers for Coastal Ocean Science Director

November 1, 2018
Reduce the impacts of extreme weather and water events

Increase the sustainable economic contributions of our fishery and ocean resources
NOAA Science by the Numbers (July 2018 – October 2018)

1,012 Days at Sea across 5 Regions

837 Flight Hours

17 + Congressional Reports

70+ International Meetings
NOAA Participates in International Science Meetings
Reduce the impacts of extreme weather and water events
Warn-on-Forecast System Utilized During Hurricane Florence Landfall
NESDIS Ocean Winds Flight Experiment Collects Invaluable Data During ‘18 Hurricane Season
Doppler Radar Mounted “Hurricane Hunter” Aircraft Captures Bird’s-Eye View of Tornado Genesis
Satellite Products Continue Transition to Operations
Satellites Provide Critical Mapping of Floods
Increase the sustainable economic contributions of our fishery and ocean resources
NOAA Uses Autonomous Saildrones to Make Key Observations

Saildrone Sensor Suite

Specifications
Length: 7 m
Height: 4.6 m (above water line)
Depth: 2 m
Weight: 545 kg, (fully loaded)

Payload Power: 30W Steady state
Payload Capacity: 100 kg
Max deployed duration: 12 months
Longest voyage: 16,100 km

Atmospheric Measurements
- Wind Speed
- Wind Direction
- Sunlight & Infrared Radiation
- Air Temperature
- Humidity
- Air Pressure
- Air CO₂

Oceanic Subsurface Measurements
- ADCP @ -0.3 m Teledyne RDI 300 kfps Workhorse Sentinel
- Passive Acoustic Recorder @ -1.3 m Greenridge Sciences Inc. Acoustic
- Scientific Echosounder @ -1.8 m SIRAD WH2H
- Multi-beam Sonar @ -1.8 m Nortek iWBS5

Oceanic Surface Measurements
- Wave Height & Period
- Seawater pCO₂ & pH
- Dissolved Oxygen
- Water Temperature
- Salinity
- Magnetic Field
- SST IR Pyrometer @ +2.2 m Helectronics KT15 II
- Chlorophyll
- CDOM Concentration
- Red Backscatter
- Water Temperature
- Salinity

1. Anemometer @ +5.0 m Gill Windseeker 3D Ultrasonic 20Hz
2. Sunshine Pyranometer @ +2.5 m Delta-T Devices SPF1
3. Pyrgeometer @ -0.7 m Eppley PIR
4. Meteorological Probe @ +2.4 m Rotronic HCE -53 with rad shield
5. Digital Barometer @ +0.3 m Vaisala SURFACE PORT210
6. CO₂ System @ +0.5 m PMEL ASVCO₂
7. ADCP @ -0.3 m Teledyne RDI 300 kfps Workhorse Sentinel
8. Passive Acoustic Recorder @ -1.3 m Greenridge Sciences Inc. Acoustic
9. Scientific Echosounder @ -1.8 m SIRAD WH2H
10. Dual GPS & IMU Vectorsav / Kvh
11. CO₂ System PMEL ASVCO₂ @ -0.5 m
12. Honeywell Duralent @ -0.5 m
13. Aanderaa Oxdop @ -0.5 m
14. Sea-Bird Scientific SBE PRAWLER @ -0.6 m

NOAA Science Update to the SAB
NOAA Employs Unmanned Aerial Systems (UAS) to Assess the Health of Endangered Resident Killer Whales
Study Shows Potential for Interactions between Critically Endangered North Pacific right whale and vessels in high-traffic Aleutian Island Pass
National Survey Shows Ocean and Coastal Recreation is Big Business
Experimental HAB Forecast Product Deployed in FL’s Gulf Coast

Gulf of Mexico Harmful Algal Bloom Bulletin
Monday, October 22, 2018
NOAA National Ocean Service
NOAA Satellite and Information Service
NOAA National Weather Service

Instructions for viewing this geospatial pdf are available at: https://go.usa.gov/xX9g2.

The image above is the top layer in a series of maps for 19-25-18 to 10-25-18 deploying the highest level of potential respiratory irritation forecasts in each region.

Region: Southwest Florida

Conditions Report
Not present to high concentrations of K. brevis (commonly known as red tide) are present along- and offshore portions of southwest Florida, and are present in the Florida Keys. K. brevis concentrations are patchy in nature and levels of respiratory irritation will vary locally based upon nearby bloom concentrations, ocean currents, and wind speed and direction.

Recently Reported Impacts (Listed by County):
Respiratory irritation: Pinellas, Manatee, Sarasota
Dead fish: Pinellas, Manatee, Collier

Definition of respiratory irritation levels:

<table>
<thead>
<tr>
<th>RESPIRATORY IRRITATION LEVEL</th>
<th>NONE</th>
<th>CHRONIC RESPIRATORY IRRITATION</th>
<th>RESPIRATORY IRRITATION TO RED TIDE</th>
<th>GENERAL RESPIRATORY IRRITATION</th>
<th>RESPIRATORY IRRITATION TO RED TIDE</th>
<th>RESPIRATORY IRRITATION TO RED TIDE IN EMBAYMENTS</th>
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<tbody>
<tr>
<td>None</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
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<tr>
<td>Low</td>
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<tr>
<td>High</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

Additional Resources
Health Information:
Other resources: https://go.usa.gov/xQNWp

Recent, Local Observations and Data:
Mote Marine Laboratory Daily Beach Conditions: http://vitalbeaches.org
Florida Fish and Wildlife Conservation Commission: http://myfwc.com/redtidestatus
New PORTS® Established in Toledo, OH
Oil Spill Research Conducted at Mississippi Canyon Well Site (MC20)
Next NOAA Research and Development (R&D) Plan

• NOAA will be collecting public input for the next R&D Plan
  • Public comment period – to be announced in the Federal Register
  • Town halls
    • AGU in Washington, DC - December 13, 12:30-1:30 pm
    • AMS in Phoenix, AZ - January 8, 7:00-8:15 am

• Target release of plan: Spring 2019
Questions?