U.S. IOOS® National HF Radar Network

Jack Harlan, Ph.D.
Program Manager: US IOOS National HF Radar Network
U.S. IOOS - High Frequency Radar Network

Stakeholders
- Operated by 30 institutions under IOOS
- Industry Partner: CODAR

Who Depends on it
- USCG Search and Rescue
- Oil spill response
- Water quality
- Criminal forensics
- Commercial marine navigation (PORTS)
- Offshore energy
- Harmful algal bloom warnings
- Marine fisheries
- NOAA Marine Forecasts (AWIPS-II)
- Tsunami prediction

Primary Portal: http://hfradar.ndbc.noaa.gov

135 Radars in Network
What HF Radar Does

- Provides Maps of Ocean Surface Currents
- Speed and Direction
- Covering Thousands of Square Kilometers
- 0.2 km to 6 km Spatial Resolution
- Near-real-time
- Independent of Weather
- Hourly
- Unattended
US IOOS Response to DWH

U.S. IOOS partnership demonstrated ability to:

• Quickly deploy technologies: Gliders and HF radar, saving resources/improving safety

• Models/Imagery ingested into NOAA/Navy models

• Data assimilation improved spill response decision-making and public understanding

Web Portal

HFR data informed NOAA trajectory forecasts

HFR validation of SABGOM Forecast with satellite detected oil slicks
HF Radars Decrease Search Area

96 hr: **Without** HFR (36,000 Km²)

96 hr: **With** HFR (12,000 Km²)
Tracking of Marine Debris

- Proactive public health actions after a known spill/release
- Enhances forensic investigations by indicating source locations
- Allows tracking of floating material
Support for Harmful Algal Bloom Events

- Tracking
- Prediction
- Combines with other data sets for decision-making
- Communicating to Health Officials

Vera L. Trainer, NOAA Fisheries
Barbara M. Hickey, University of Washington
Support for Water Quality Projects

- Inspection of Hyperion Outfall Pipe
- ~Billion gallons of sewage to be diverted to an in-shore outfall
- Concern about extent of impact and public health risks
- Offshore and surf zone circulation had to monitored
- Real-time trajectory tool implemented at surfacing outfall
Enables decision making
Fosters Advances in Science and Technology

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