

Surface Drifter Program

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Project Summary

The Surface Drifter Program is the Atlantic Oceanographic and Meteorological Laboratory's (AOML) contribution to NOAA's Global Drifter Program (GDP), a branch of NOAA's Integrated Ocean Observing System, Global Ocean Observing System (IOOS/GOOS) and a scientific project of the Data Buoy Cooperation Panel (DBCP). The primary goals of this project are to maintain a global 5°x5° array of satellite-tracked surface drifting buoys to meet the need for an accurate and globally dense set of in-situ observations transmitting in real time for weather forecasting, and to provide a data processing system for the scientific use of these data that support short-term (seasonal-to-interannual, "SI") climate predictions as well as climate research.

AOML's GDP responsibilities are to: (1) recruit ships and manage drifting buoy deployments around the world using research ships, Volunteer Observation Ships and aircraft; (2) insure the data is placed on the Global Telecommunications System (GTS) for real-time distribution to meteorological services everywhere; (3) maintain metadata files describing each drifter deployed, (4) quality control and interpolate the data (updated quarterly) and archive it at AOML and at Canada's Integrated Science Data Management (ISDM; formerly MEDS); (5) develop and distribute data-based products; (6) maintain the GDP; and (7) maintain liaisons with individual research programs that deploy drifters.

The drifters provide sea surface temperature (SST) and near surface currents. A subset of the drifters also measures air pressure, winds, subsurface temperatures and salinities. These observations are needed to calibrate SST and sea surface salinity observations from satellites, initialize global SI forecast models to improve prediction skill, and provide nowcasts of the structure of global surface currents. The surface drifter array provides the largest area coverage of all components of the global ocean observing system for surface temperature and currents, with observations provided by the drifters at approximately hourly resolution. Secondary objectives of this project are to use the resulting data to increase our understanding of the dynamics of SI variability and to perform model validation studies, in particular in the Atlantic Ocean. Thus, this project addresses both operational and scientific goals of NOAA's program for building a sustained ocean observing system for climate. The data are made available in near-real time on the Global Telecommunications System for weather forecasting efforts, and in delayed mode (approximately three months, after quality control and interpolation) at the GDP web page and (with an additional six months' delay) at the data archive at ISDM.