Drifting Buoy Programs

Drifting buoys are the most versatile and lowest in cost of all NDBO's buoy systems. They are also unique, in that they have the capability to fix and report their geographical position. Some 12 different organizations have used over 100 of these buoys.

Drifting buoys are capable of measuring and reporting a simple set of meteorological and oceanographic parameters. Communication and position determination, via the NIMBUS-6 and the future TIROS-N polar-orbiting satellites, provide world-wide deployment capability for these systems. For meteorological applications, wind speed, barometric pressure, air temperature and surface water temperature measurements can be reported. Work is continuing on the development of drifting buoys that can measure other oceanographic parameters such as subsurface water temperature.

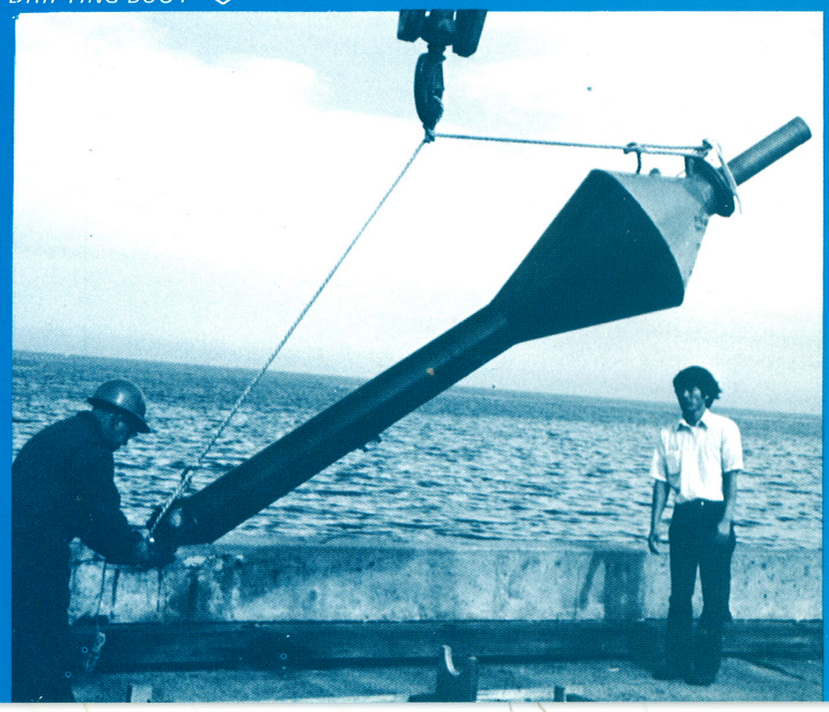
The drifting buoy, equipped with a drogue, is a popular oceanographic tool for mapping ocean currents using Lagrangian tracking techniques.

Ice buoys which use the same electronics equipment as a drifting buoy, have been developed to support scientific program with the objective of reaching a better understanding of the interaction of sea ice with the environment.

One of the ice buoy types is capable of being deployed by parachute into otherwise inaccessible areas.

AIR DROPPABLE ICE BUOY

DRIFTING BUOY



Low Cost Buoy Payload

In order to provide more buoy stations to users on an economical, reimbursable basis, NDBO has developed a program for a low-cost payload configured for ready adaption to hulls of opportunity. The payloads will report meteorological parameters consisting of wind speed, wind direction, air pressure, air temperature, and sea surface temperature. Also, data input ports will be provided for future sensor additions, including a wave measurement system and a multi-element thermistor line. The buoy, which will be battery powered, will use UHF-GOES satellite communications only. A system having a mean-time-between-failure of one year is the reliability goal.

Water Quality Buoys

NDBO has developed an experimental water quality monitoring system. This system measures the following parameters: Chlorophyll, conductivity, dissolved oxygen, pH, water temperature and turbidity. It is compact, light weight, has low power consumption and can be installed on a small buoy. The data from the system is relayed ashore by radio at preset intervals in near real time. The buoy reports meteorological parameters at the same time. Further development of this type is dependent on user's needs.