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**US Army Corps
of Engineers**
Waterways Experiment
Station

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SEABED DRIFTERS

If you find what looks like a red Frisbee with a 14-inch plastic tail, the U.S. Army Corps of Engineers wants to hear from you.

Several thousand of these "Frisbees" (technically known as seabed drifters) are being released offshore of Sand Island, Ala. These seabed drifters help to monitor movement of sand placed in that area as a result of dredging the Mobile Harbor Entrance Channel. This is part of a scientific experiment conducted by the Corps to use natural currents to transport the sand toward shore.

Bundles of drifters, weighted with sandbags, are dropped overboard from boats. The bundles are held together with salt rings that will dissolve, thus releasing the drifters. The individual drifters will then disperse with the bottom currents.

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Drifters may be washed ashore from Louisiana to Florida. Each has a unique serial number and a prepaid postage information card attached to its tail or stem. Anyone finding a drifter is asked to complete the printed form and deposit it in any convenient mailbox. The form asks for information regarding location, date, and time of recovery. The seabed drifter itself should be properly disposed of or may be retained as a souvenir.

A few of the drifters have small sonic transmitters attached to their tails. The transmitters are similar to those used by biologists to study the migration of fish and marine mammals. Different pulse rates and frequencies give each transmitter a unique signal. Hydrophones can detect the signals up to a mile away. Short term movement can thus be tracked.

These studies are being conducted by the Corps' Mobile District and the Coastal Engineering Research Center at the Corps' Waterways Experiment Station (WES) in Vicksburg, Miss.

The placement of sand directly on beaches to relieve erosion problems is technically achievable, environmentally safe, and often provides the most economical means of protecting a long stretch of shore. However, beach nourishment is expensive, especially where sand must be transported long distances. The present study investigates natural currents as an alternative means of moving sand from the vicinity of navigation channels to beaches where the sand is an asset.

At present, little is known about sand movement off Alabama's coast. Waves drive longshore currents that move sand eastward and westward along the shore. This longshore current is strongest inshore of breaking waves. Farther from shore, the interaction of winds, tide, and waves moves sand in even more complicated and less predictable patterns.

The offshore sand shoals, the enormous Mobile Bay ebb tidal delta, the nearshore bars, beach, dunes, and even the barrier islands themselves are all part of an active sand system. The present study looks at creative ways to determine natural sand movement and evaluate ways to improve the overall benefits of the Corps of Engineers Harbor Maintenance Program.

Drifter recovery information, combined with other measurements, improves the prediction of sediment transport patterns. Public participation in the seabed drifter program will be a key element in uniting navigational, ecological, and shore protection interests.

WES is the largest research and development laboratory within the Corps. It is a complex of six separate laboratories with a total annual budget exceeding \$130 million for research and development.

If you would like more information about the seabed drifters, you may call Paul Bradley, Mobile District, (205)690-2578.