



U.S. Department of the Interior  
Minerals Management Service  
Office of Public Affairs

---

**NEWS RELEASE**

For Immediate Release: November 23, 2004  
Release: 3206

Contact: Robin Cacy  
(907) -334-5208

**High Frequency Radar Study**

Ocean currents flow throughout the world's oceans and transport heat, water and nutrients over global distances. On smaller scales, local currents can also transport contaminants like spilled oil. To better understand the variability of surface currents during changing oceanographic conditions in Alaska's Beaufort Sea and Cook Inlet, a program to study their daily and seasonal change in speed and direction using high frequency Doppler radar has been launched. Sponsored by the Minerals Management Service, the National Ocean and Atmospheric Administration, and the National Oceanographic Partnership Program, the four-year study will use high frequency radar to map these currents.

The study will be conducted in cooperation with the Alaska Ocean Observing System, one of the regional systems in the nationwide Integrated Ocean Observing System. . If the approach is successful and can be made economic, many foresee a series of radars operating around the coast of Alaska to get better oceanographic information in near-shore waters for shipping, fishing, and other ocean users.

HF radar units emit power equivalent to a 40-watt light bulb at the same frequency as broadcast television. It uses Doppler shift to measure surface currents much like law enforcement radars measure automobile speeds.

Scientists at the University of Alaska Fairbanks will conduct the study in partnership with specialists on HF radar from CODAR Ocean Sensors in Los Altos, California. The team will set up radar stations onshore of the central Beaufort Sea to record surface currents during open water and mixed ice periods from June 2005 through October 2006. The units will then be moved to Cook Inlet to record surface currents for one full year beginning in October 2006 and ending in November 2007.

Dr. Dave Musgrave, associate professor for Marine Science at UAF School of Fisheries and Ocean Sciences, is the chief investigator on the study. His research team has mapped surface currents using HF radar in Cook Inlet and Prince William Sound.

“We have taken advantage of the open water conditions during early October in the Beaufort Sea to test the Doppler radar units for the distance from shore that we will be able to map surface currents, which is typically 50 miles. Initial results collected during the week of October 4, 2004, indicate that we can ‘see’ over the barrier islands into the open Beaufort Sea,” says Musgrave. “These units have the capability to map the surface currents every hour on a two-dimensional grid of points separated by one mile in each direction. We will deploy the units in 2005, which will give us the first quantitative look at the spatial patterns of surface currents in the Beaufort Sea and how they vary with time.”

The data collected through this study will contribute to the baseline oceanography of these two locations. Additionally, the data will be used by MMS for comparing hydrodynamic and circulation models used to develop oil spill risk analyses for offshore oil and gas operations.

“MMS is a unique participant in our nation’s development of IOOS; we are a developer, a user, and a contributor”, says James Kendall, MMS Studies Chief. “This project is an example of our effort to ensure that state-of-the-art technology is thoroughly explored as we strive for safe and environmentally sound operations on the OCS; a perfect match with IOOS societal goals.”

To ensure that the data are available to professional users who need information on surface currents such as ship tracking and routing, coastal zone management, search and rescue and oil spill response, an internet site will be developed which will provide near real-time surface current information.

The Minerals Management Service is the federal bureau in the U.S. Department of the Interior that manages the nation’s oil, natural gas and other mineral resources on the Outer Continental Shelf (OCS) in federal offshore waters. Currently, about 30 percent of the oil and 23 percent of the gas produced domestically comes from these federal waters. The bureau also collects, accounts for, and disburses mineral revenues from Federal and American Indian lands. MMS disbursed approximately \$8 billion in Fiscal Year 2004 and more than \$143 billion since it was created in 1982. Nearly \$1 billion from those revenues go into the Land and Water Conservation Fund annually for the acquisition and development of state and federal park and recreation lands.

Additionally, the State of Alaska receives 27% of all revenues generated as a result of federal leases that lie within 3-to-6 miles offshore the Alaska coast, and 50% of this money goes into the Alaska Permanent Fund Account.

For more information on this High Frequency Radar Mapping study, visit the following websites: [www.mms.gov/alaska](http://www.mms.gov/alaska) and [www.codaros.com](http://www.codaros.com). A preliminary web site has been developed for the project located at <http://halibut.ims.uaf.edu:8000/~salmon/CIBS-MAP/>.

**\* \* \* MMS: Securing Ocean Energy and Economic Value for America \* \* \***  
[www.mms.gov](http://www.mms.gov)