

# University of Alaska at Fairbanks, Part 1: HF Radar Data Benefitting Alaska Oil Industry & Native Communities



UAF field experts prepare to make antenna pattern measurements from small skiff in the icy Chukchi sea.

**H**F radar for ocean observing has a long history in Alaska starting back in 1976. At that time NOAA deployed CODAR units (predecessor to the SeaSonde®) as part of an environmental impact assessment in Lower Cook Inlet for benefit of the Bureau of Land Management (which at the time was responsible for managing offshore oil leasing on the outer continental shelf). Since then, Alaska maintains its status as one of the most challenging environments to deploy and operate HF radar, though the benefits of having its data for serving oil industry and others have always been great enough to justify the effort!



UAF team members Hank Statscewich, Tom Weingartner & Rachel Potter

The HF radar team members at the University of Alaska, Fairbanks (UAF) School of Fisheries and Ocean Sciences have used their expertise to meet the challenges of radar deployments in the toughest of conditions. While deployments take them all around the state from the Gulf of Alaska in the South to the Beaufort Sea in the North, a present focus for 2010 is in Northwest Alaska's Chukchi Sea.

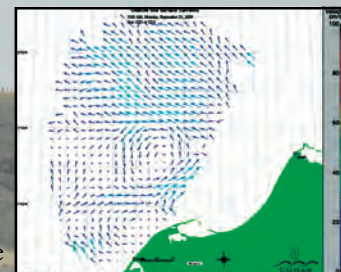
With funding from the United States Dept. of the Interior, Bureau of Ocean Energy Management, Regulation & Enforcement Division, Conoco Phillips Alaska, Inc., and Shell Oil Company, UAF has set up Long-Range SeaSondes in Barrow, Wainwright, and <in process> Point Lay to provide data to the offshore energy industry. As a bonus, native Alaskan Communities may also use the outputs to predict how sea ice conditions may change during subsistence hunting activities.

The data collected in the Chukchi Sea will be used for oil spill risk analysis as well as Environmental Impact Statements. Shell Oil was scheduled to drill in the Chukchi Sea this summer, 2010, until the moratorium on drilling was handed down by the Obama Administration. In addition to SeaSondes, UAF is also deploying a six mooring array stretching out from the shoreline that will measure currents, waves, ice thickness, temperature, and salinity from August 2010 through August 2011. For the month of August 2010, two Webb Slocum gliders will undulate within the SeaSonde coverage.

Long-Range SeaSonde antennas operating in Chukchi Sea at Wainwright, Alaska.



SeaSonde antennas have been striped with bright reflective tape for alerting snow machine operators to their presence.

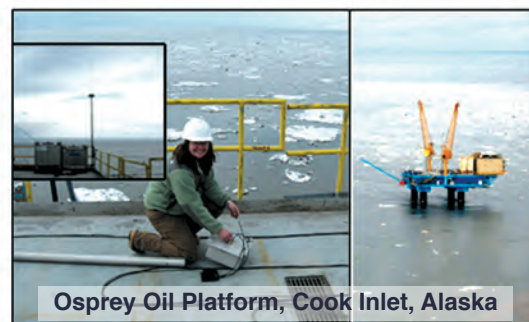


SeaSonde-derived Chukchi Sea current map produced during 2009 deployment

## Danger!!!

**W**hile most UAF field campaigns are carefully planned in advance, there are occasions when the radar team is called to action with only days or hours notice. Such was the case last year in Cook Inlet area, when Mt. Redoubt roared its ugly head. The volcanic eruption sent an avalanche of mud, known as a lahar, toward the oil storage tanks at the Drift River Oil Terminal (DROT) nearly causing an oil spill. The surprise lahar alerted people to the clear and present danger posed by Mt. Redoubt and possible devastation of local environment. As part of the emergency preparations UAF performed a rapid deployment of three SeaSondes in the area, including placement of a unit on Osprey Oil platform just west of the DROT.

Mt. Redoubt sending ash cloud into sky, 2009. Photo courtesy of James Isaak.



Osprey Oil Platform, Cook Inlet, Alaska



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