

The Rutgers University Coastal Ocean Observation Lab is currently operating and expanding an ocean observatory for the west Florida shelf. Using surface measurements from satellites and high frequency (HF) radar, and subsurface measurements from autonomous underwater vehicles, the ocean is continuously monitored for a wide array of users. These include: 1) Coast Guard for search and rescue, 2) Coast Guard and Navy for homeland defense, 3) Department of Defense Counterdrug Technology Development Program for drug intervention, 4) NOAA HAZMAT response team for oil spills, 5) Scientists for the study of the distribution of contaminants in the Gulf of Mexico, and 6) The general public for fishing, swimming, and boating. All of this information is made available to the public in real-time on our web site: <http://www.thecoolroom.org>.

A major component of this observing system is an HF radar network. HF radar measures ocean surface currents out to about 100 nautical miles offshore. The system uses radio waves to measure the surface current of the ocean as well as track ships. With an operating frequency of about 5 MHz, the transmitted signal has a wavelength of about 60 m (1297 ft). This transmitted signal is close to the AM radio band. So, like AM radio, the signal is not harmful to humans or wildlife. Unlike AM radio, that transmits its signal at 1,000,000 watts, the output power of our HF radar signal is only 40 watts. A more detailed description of the emitted signal is attached.

Currently Rutgers operates ten HF radar sites along the New Jersey coast, from Wildwood to Sandy Hook.