



Bottlenose Dolphin Occurrence off the Virginia Coastline and its relationship to Sea Surface Temperature

The Dolphin Research Team



(From Left to Right)

Andrew Thompson, Kimberly Mason, Mr. Kevin Foss (Mentor), Javon Griffin

Individual Team Pages

Project Purpose:

Due to the unpredictable nature of their movements, bottlenose dolphins are very susceptible to physical injuries and disturbance of behavioral patterns. Several research organizations, such as the Office of Naval

Research (ONR) in compliance with the Marine Mammal Protection Act(MMPA) have allotted funds towards finding a reliable method of locating dolphins using remote sensing. To help minimize these threats, we studied the possibility of locating the presence of bottlenose dolphins using Advance Very High Resolution Radiometer (AVHRR) using sea surface temperature and chlorophyll data obtained from the National Oceanic Atmospheric Administration-National Ocean Service Center for Operational Oceanographic Products and Services (NOAA-NOS CO-OPS) and the Coastal Ocean Observation Lab (COOL) at Rutgers University respectively.

Project Goal:

To analyze and compare the field data to SST and chlorophyll data, to determine if there is a correlation.

Methods in Brief:

Sea Surface Temperature (SST) from AVHRR data served as the primary source, however, records from the National Oceanic Atmospheric Administration data station at Sewell's Point was used where temperature from AVHRR was not available. Chlorophyll level data was obtained from AVHRR graphics. Field data was collected from May 2000 to October 2001 using the passive observation technique from small boat cruises on set transects. The 75 transects that were made, there were 39 encounters. The voyages took place on the Elizabeth River in Norfolk, Virginia.

The field data, SST and chlorophyll data were entered into MS Excel for analysis. The dolphin

presence/absence data was normalized to reduced bias from uneven effort. Comparisons were made between SST and presence/absence, between SST and groups size, and between chlorophyll and presence/absence for the study period.