Abstracts

We are examining trends in bottlenose dolphin strandings, contaminant loads and potential cytotoxic effects of contaminants. Since 1990, there have been a total of 442 marine mammals strandings. Before 2013 there was a maximum of 30 strandings per year, however in 2013, there was a record number of 81 marine mammal strandings; of which 72 were bottlenose dolphins. This increase was during an Unusual Mortality Event. We found that the bottlenose dolphin strands more frequently than any other marine mammal and that most strandings occurred between the spring and fall.

We also collected tissues from these animals and analyzed them for inorganic contaminants. In the livers we found significantly lower levels of mercury (Hg) than in the kidneys. Other studies have determined that an Hg level over 100 μg/g may cause hepatic damage; four of our samples exceeded this level. To understand the effects of these contaminants we plan to conduct cytotoxicity tests using Hg, Se and mercuric selenide (HgSe) on bottlenose dolphin blood cells. Determining demographic trends and identifying the extent of contaminants, are important in developing successful management strategies for marine mammal populations and helping NOAA Fisheries meet its mandates under the Marine Mammal Protection Act.