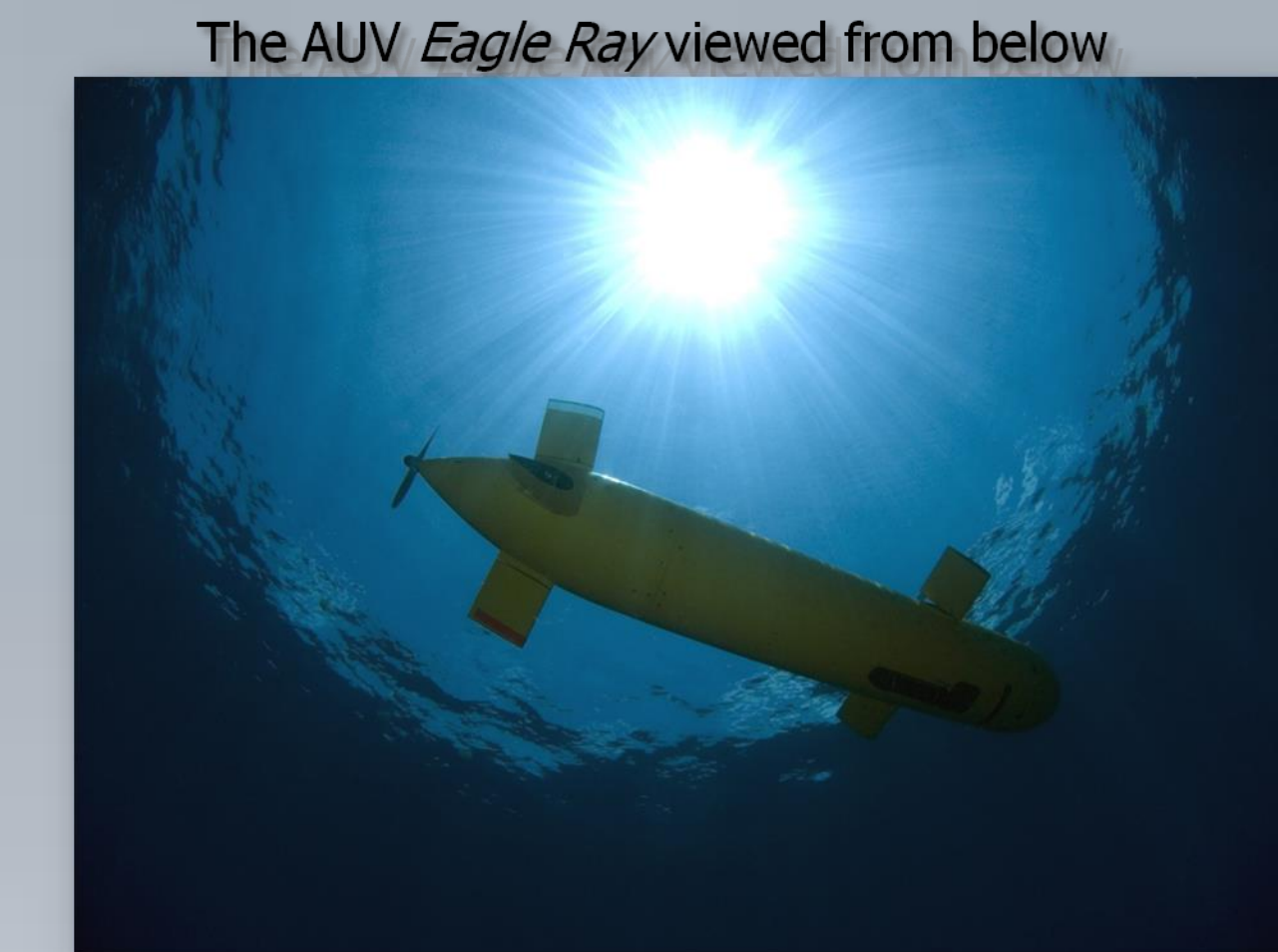
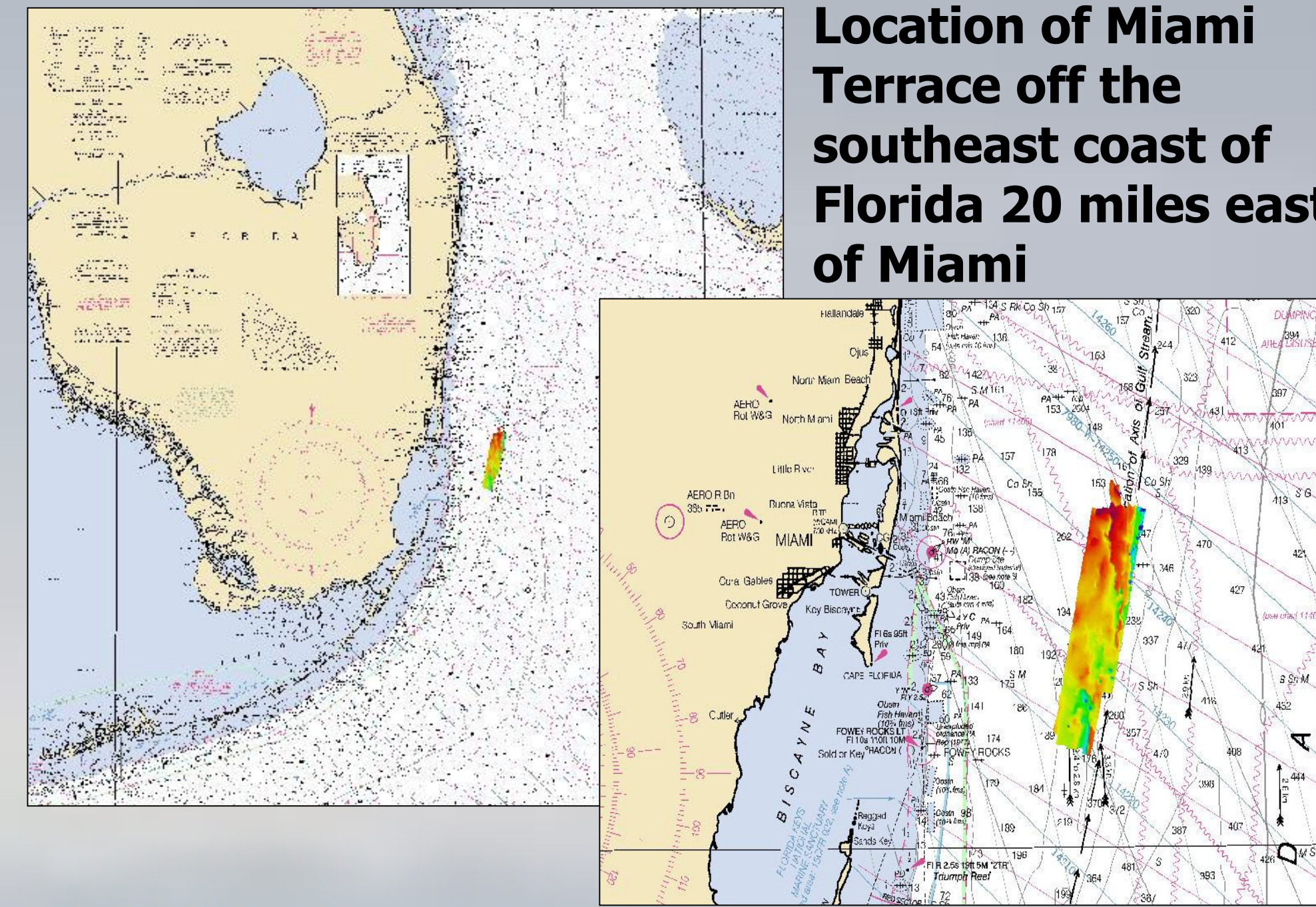


# Characterization of Geologic Features at the Miami Terrace off the Southeast Coast of Florida

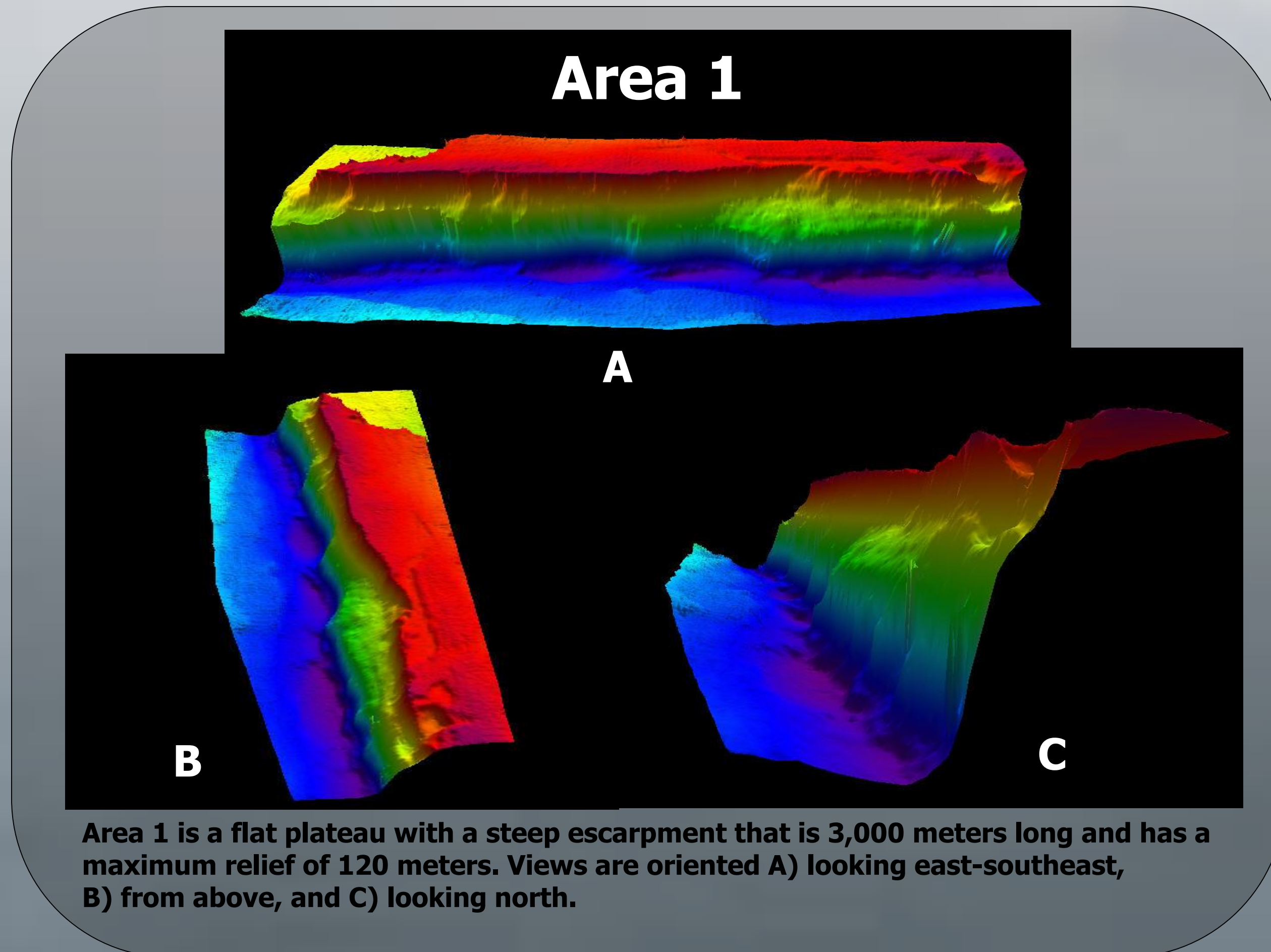
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## ABSTRACT

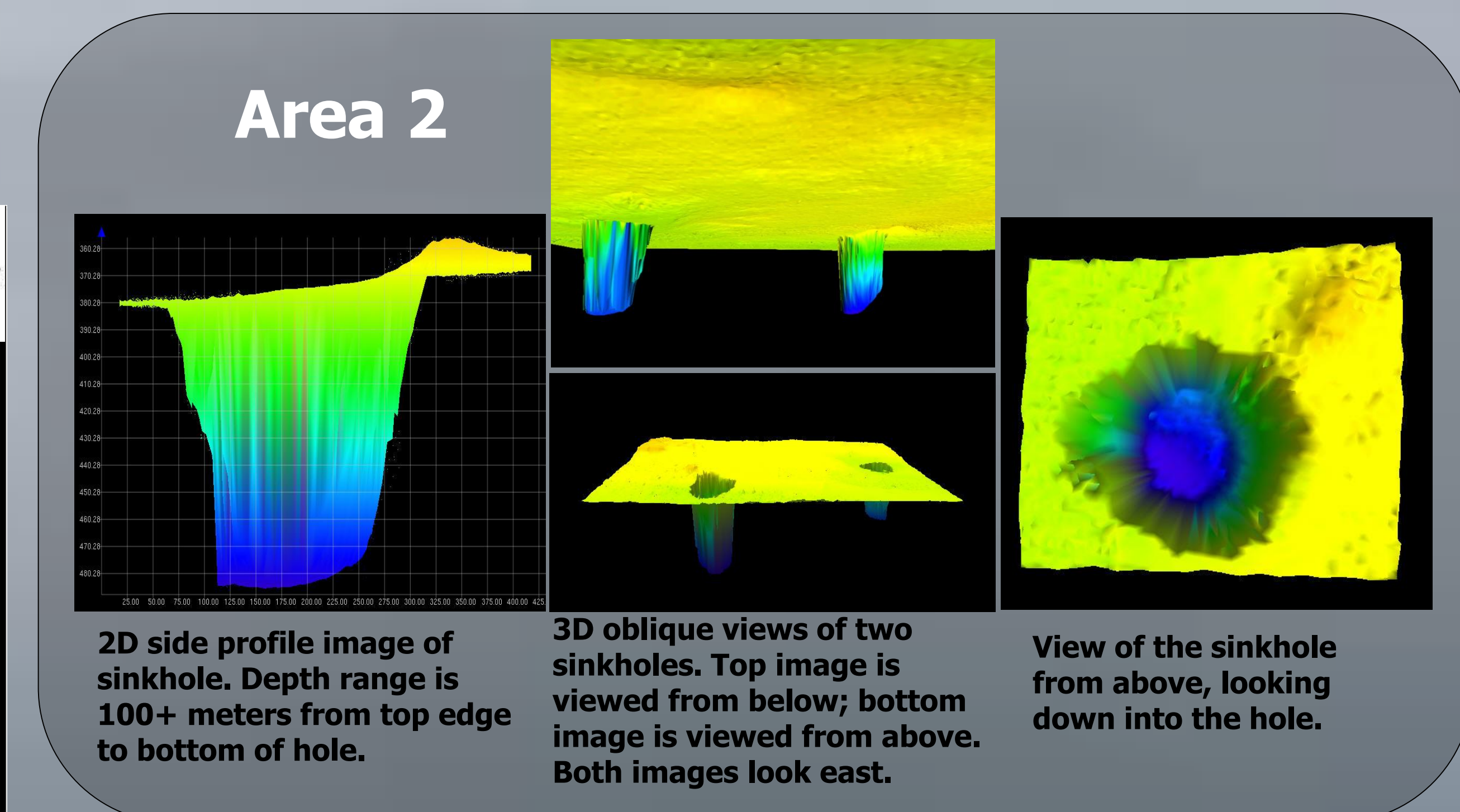
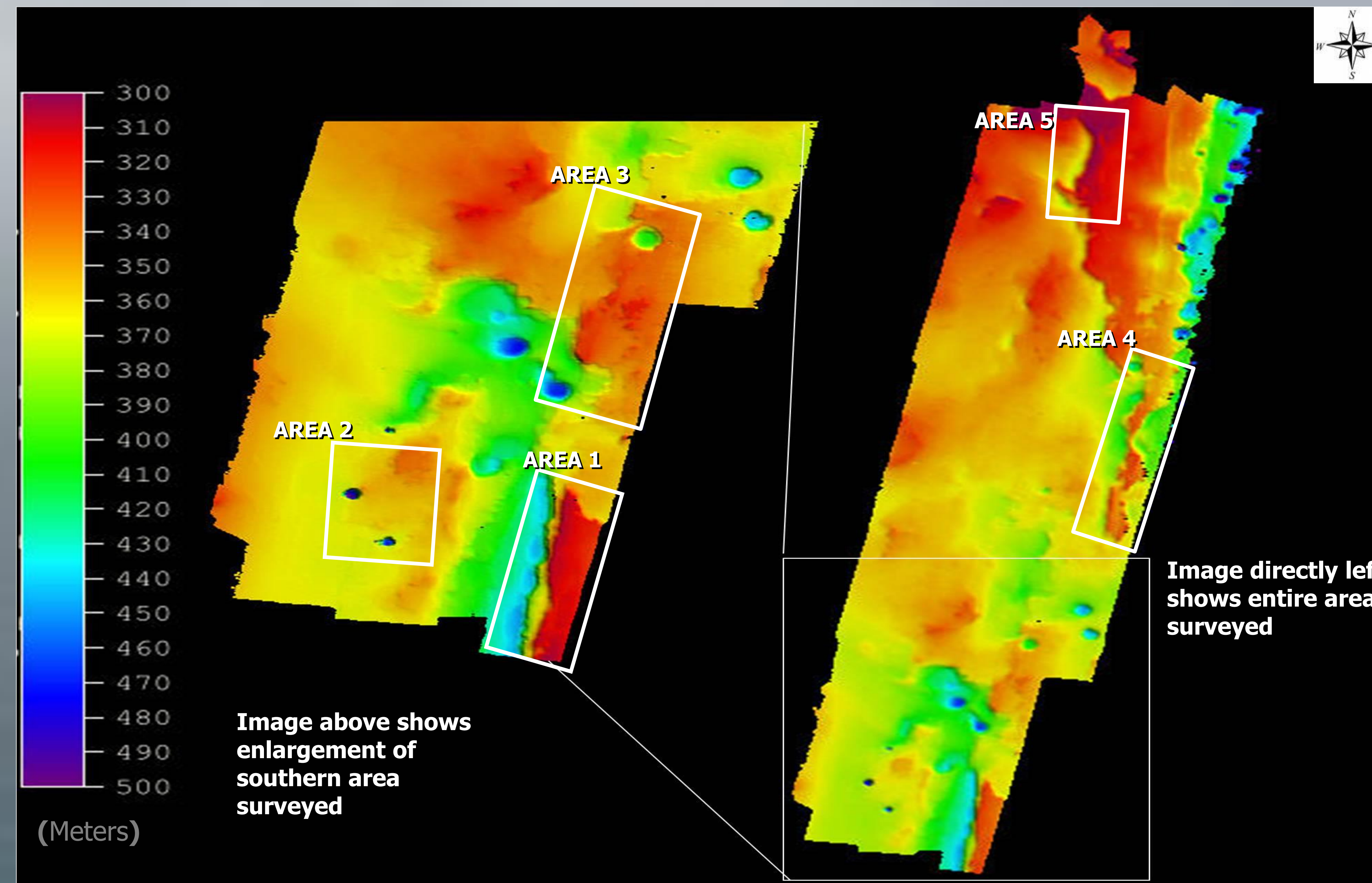
The Miami Terrace is a Miocene-age carbonate platform located off the Southeast coast of Florida. Throughout the Miami Terrace many geologic features exist that are conducive to marine benthic habitat. The NOAA ship *Nancy Foster* explored the features on a cruise from June 4-9, 2007. The expedition surveyed the area using high resolution multibeam sonar to gain a better understanding of the characteristics found at the Miami Terrace. After the data were collected, they were processed using CARIS HIPS 6.1 to analyze the features surveyed. The fully processed data shows undoubted evidence of multiple high relief escarpments and sinkholes. The images produced should prove to be invaluable when planning future cruises with submersibles to explore the area in greater detail.



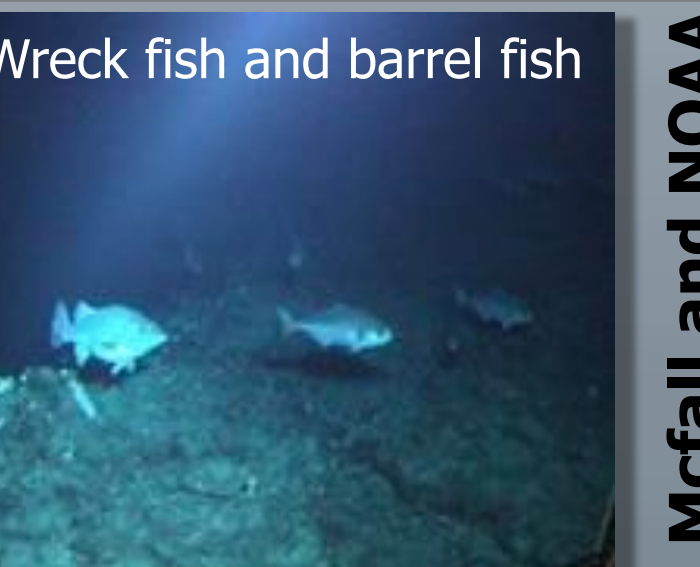
Cartoon of NOAA ship collecting multibeam data



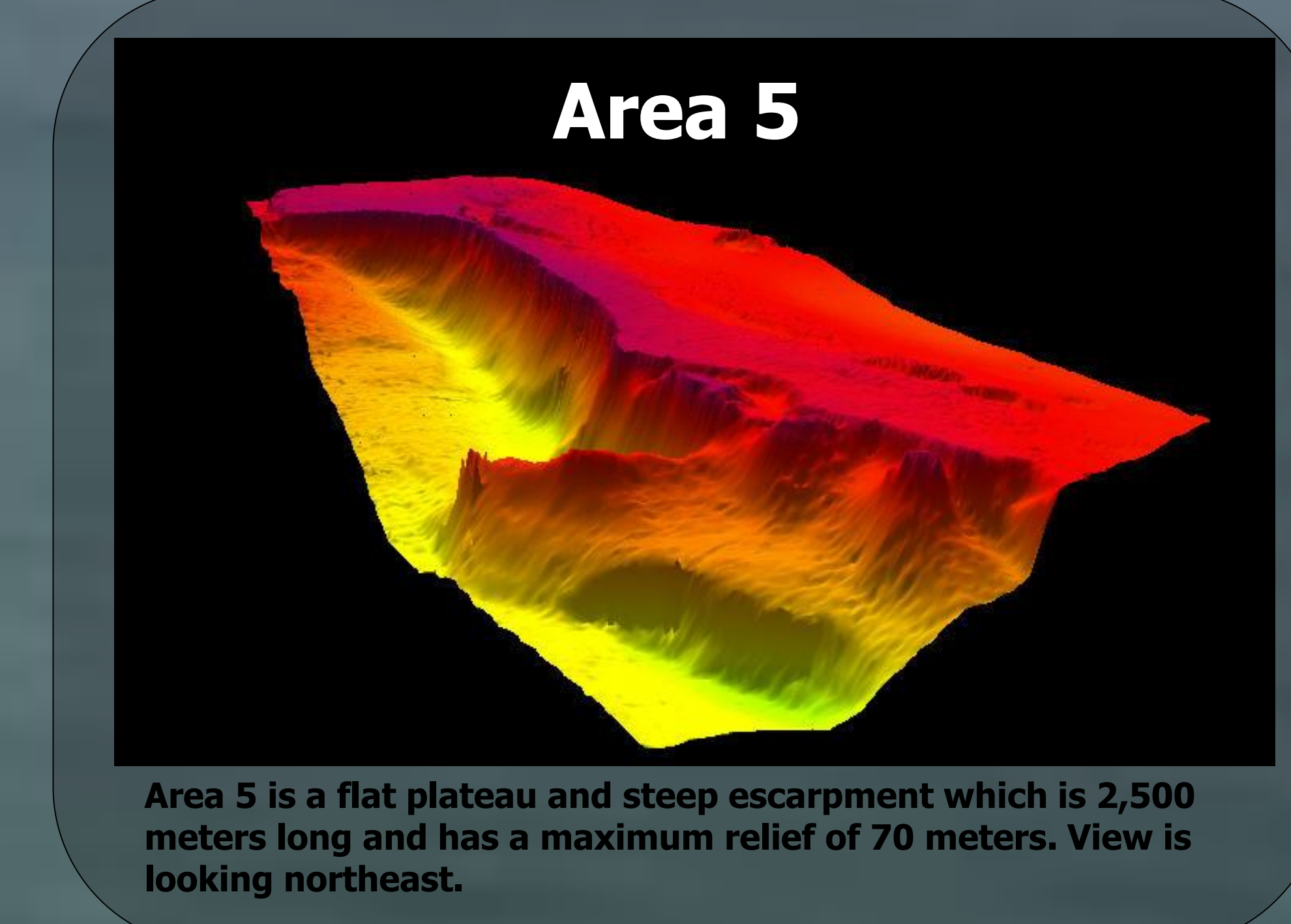
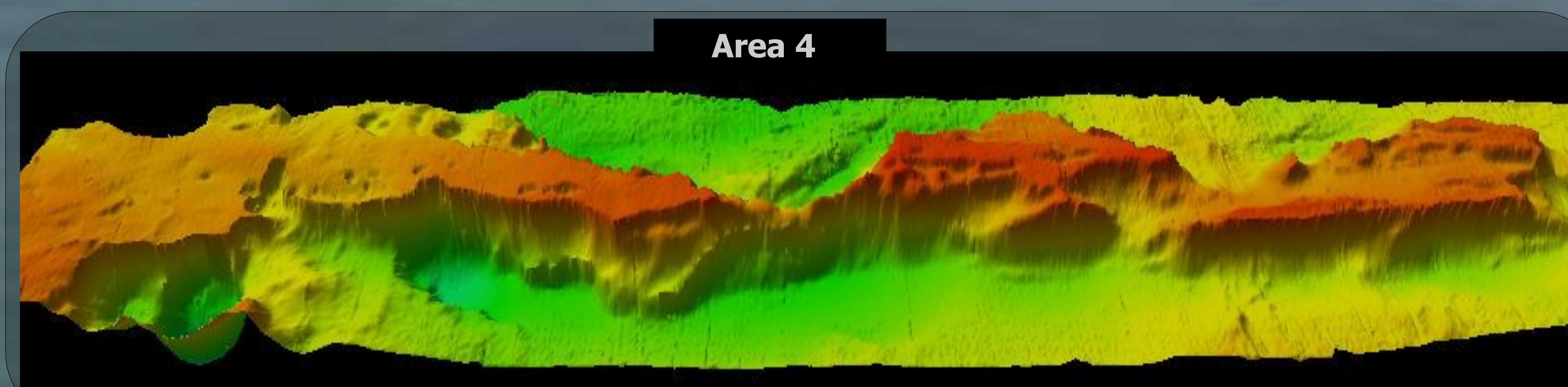
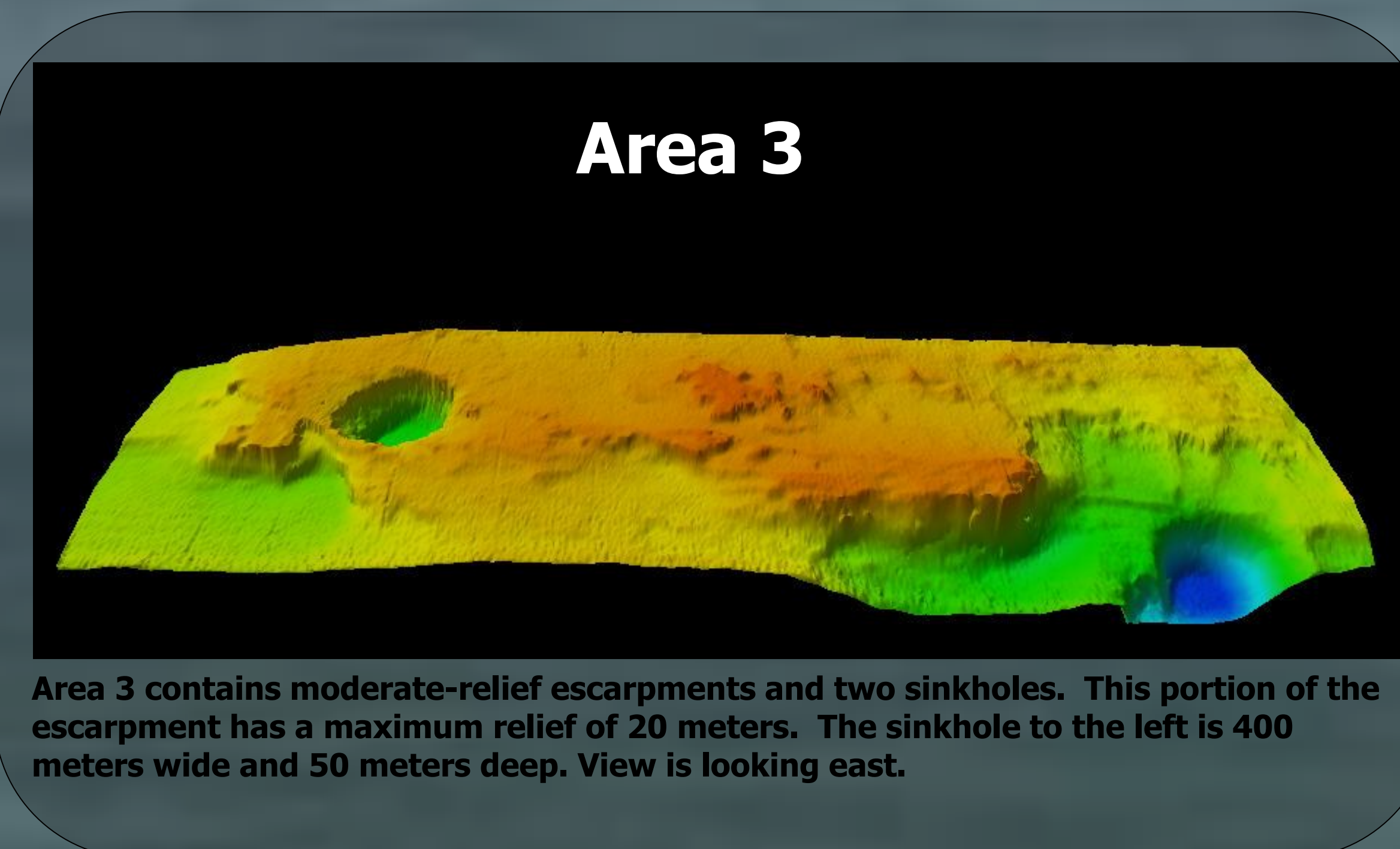
Data were collected aboard the NOAA ship *Nancy Foster* on a cruise from June 4-9, 2007 led by Greg McFall of the Gray's Reef National Marine Sanctuary. Survey lines were planned with a HYPACK data acquisition and processing system. Sound velocity profiles were acquired using a SeaBird 911 CTD mounted to a twelve bottle Niskin system. Survey data were collected with a Simrad EM1002 system. Data were processed using CARIS HIPS 6.1. Images were also produced using this software.



The Miami Terrace is littered with pristine benthic marine habitat that includes escarpments of all reliefs and multiple sinkholes. These hard rocky bottoms are composed of carbonate limestone. The escarpments provide essential protection for all types of fish, corals and sponges. The Miami Terrace is also in the direct track of the Gulf Stream, which replenishes nutrients and foods to the marine habitat. The power of the Gulf Stream may play a part in the erosion and formation of these high relief escarpments. Faulting may also play a role. The sinkholes are thought to be formed from sub-seafloor percolating freshwater which eventually causes the ground above to give way to gravity. These sinkholes are also thought to add a level of protection to benthic animals, and biota probably persist around the top edges as well as into the depths of the holes. These high resolution images provide a better level of understanding about the features that exist off the southeast coast of Florida. Continuous protection of the Miami Terrace is essential due to its uniqueness and the diversity of life that it sustains.



Photographs courtesy of Greg McFall and NOAA



References:  
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 Karazsia, Jocelyn, South Atlantic Fishery Marine Council, NOAA Fisheries  
 McFall, Greg, Gray's Reef National Marine Sanctuary, NOAA  
 Wenner, Elizabeth, South Atlantic Bight Coastal Assessment Survey, SCDNR

