

Dates effective as of 3/5/2012

August 26 – September 27, Barrow – Dutch Harbor: Multibeam Echosounder Mapping in Nautilus Basin in Support of Delimiting an Extended Continental Shelf. (Chief Scientists Larry Mayer and Andy Armstrong)

The HEALY will collect mapping and geologic data necessary to delimit the US and Canadian Extended Continental Shelf i.e., the region beyond the 200-nm boundary of the Exclusive Economic Zone where coastal States (nations) can have sovereign rights over resources on and below the sea floor. In previous cruises, we have demonstrated that the “foot of the slope” a key parameter in delimiting the extended continental shelf, extends well north of Chukchi Cap into Nautilus Basin towards the Alpha/Mendelev Ridge. The exact location of the foot of the slope in the region of transition between Nautilus Basin and the Alpha/Mendelev Ridge needs to be determined and will be the focus of the 2012 cruise (see figure below). If time permits we will also collect dredge samples in critical locations to help establish the geologic nature of the seafloor in this region.

The primary measurements being made by the HEALY will be with the multibeam echosounder. Seafloor samples may be taken by dredge. Water column properties will be measured regularly (at least 2 XBT's per day) and several CTD casts will be taken over the course of the leg. Ancillary programs include weather and ice observations, deployment of ice buoys and ice studies, geochemical measurements to look at ocean acidification, bird and mammal observations, testing of ROV components, and testing of an autonomous aircraft (pending permitting).

