

Gervais' beaked whale (*Mesoplodon europaeus*):

Summary of review of AquaMaps predictions for WCR undertaken by Kristin Kaschner
& Randall Reeves, December 2011-12-08

Revision of AquaMaps predictions based on available regional data (KK)

There are only a handful of sighting records of this species in the study area. However, mean depth of *Mesoplodon* sightings reported during line transect surveys conducted in the 1990s in the northern Gulf of Mexico (Davis et al. 1998, Maze-Foley & Mullin 2006) supported the global depth envelope which describes the species as an offshore oceanic species primarily associated with the edge of the continental slope. Nothing in the regional literature suggested the need to change any of the default environmental ranges. These can be seen in Table 1 and have previously been reviewed by Colin MacLeod, beaked whale specialist at the University of Aberdeen. The resulting gradient predictions, generated using the AquaMaps model (Kaschner et al. 2008), are shown in Figure 1. To show the most likely representation of known and probable occurrence of the species in the WCR I applied a precautionary presence threshold of 0.4 to reflect the limited information available for most beaked whale species (Figure 2).

Mapping parameters for *Mesoplodon europaeus* (Gervais' beaked whale)

FAOAreas: 21 | 27 | 31 | 34 | 41 | 47

Pelagic: False

Bounding Box (NSWE): 90 -90 -180 15

	Min	Pref Min (10th)	Pref Max (90th)	Max
Depth (m)	0	200	2000	8000
SST (°C)	15	20	30	35
Salinity (psu)				
Primary Production				

Table 1: AquaMaps input parameter settings for revised map generation

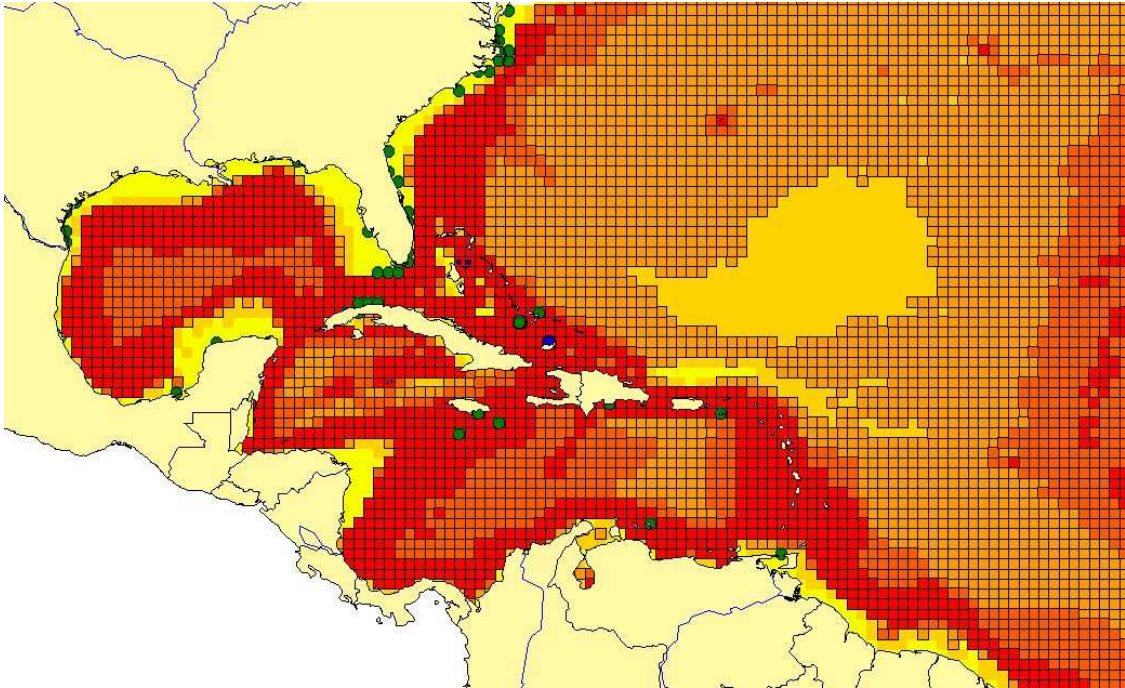


Fig 1. Predicted relative habitat suitability based on envelope settings in Table 1 and calculated relative encounter rates based on available sightings from OBIS (blue). Also including strandings (green) (MacLeod et al. 2006)). Cells with probability values above the selected threshold are shown with boundaries. *Note that not all occurrences are available/accessible through online data repositories, such as OBIS (www.iobis.org), and records shown on the map do not necessarily represent the whole extent of documented species occurrence!

Review of outputs by independent experts (Randall Reeves)

After reviewing and considering the available information, and after several exchanges with KK, I am satisfied that the current consensus map is as good as we will get. An important consideration is the authoritative input received from Colin MacLeod, who is indeed a world authority on the ziphiids.

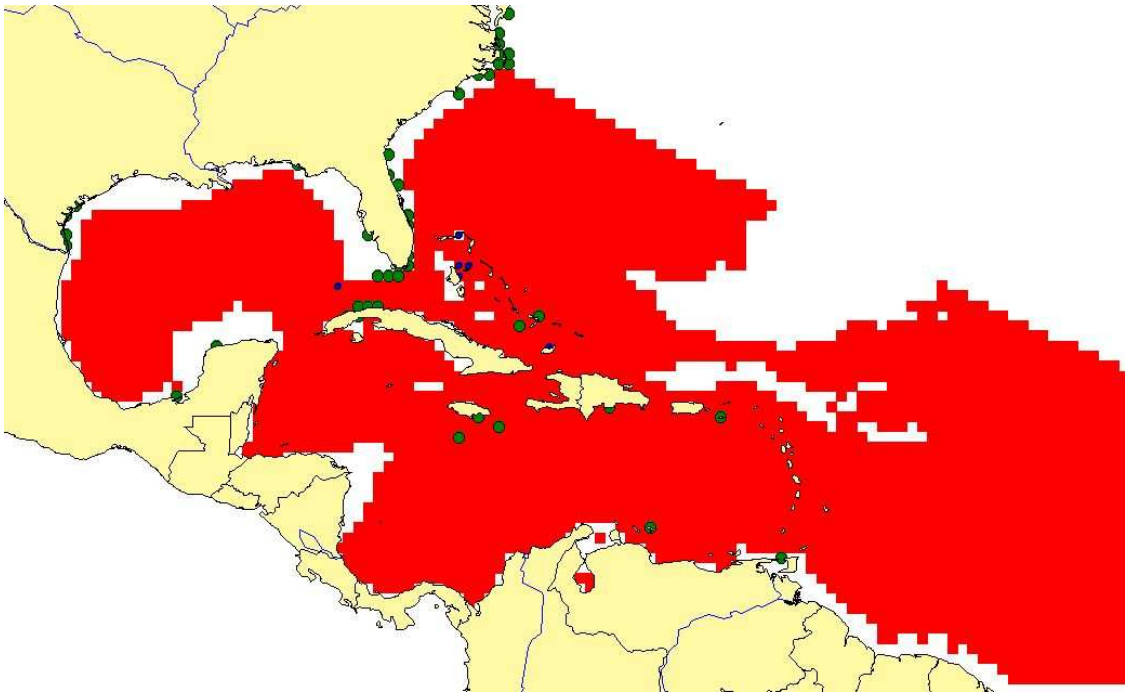


Fig 2: Consensus map of known and probable occurrence of species in WCR plus available sightings from OBIS (blue) and strandings from MacLeod et al. (2006) (green).

*Note that not all occurrences are available/accessible through online data repositories, such as OBIS (www.iobis.org), and records shown on the map do not necessarily represent the whole extent of documented species occurrence!

Quality of outputs: ★★

References

- Davis RW, Fargion GS, May N, Leming TD, Baumgartner MF, Evans WE, Hansen LJ, Mullin KD (1998) Physical habitat of cetaceans along the continental slope in the northcentral and Western Gulf of Mexico. *Marine Mammal Science* 14:490-507
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Maze-Foley K, Mullin KD (2006) Cetaceans of the oceanic northern Gulf of Mexico: Distributions, group sizes and interspecific associations. *Journal of Cetacean Research and Management* 8:203-213