

Pygmy killer whale (*Feresa attenuata*):

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

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

There are only 11 occurrence records of this species currently available through OBIS (October 2011), resulting in 11 presence cells, only one of which fell into waters < 1000 m. Mean depth of sightings observed during line transect surveys conducted in the northern Gulf of Mexico indicated the species occurs mostly along the lower part of the continental slope and into the deeper waters seaward of the slope in this region (Maze-Foley & Mullin 2006). I therefore adjusted the depth envelope to reflect this. Final input parameter settings can be seen in Table 1 and 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 presence threshold of 0.6 supported by recent validations for global predictions (Kaschner et al. 2011) (Figure 2). It should be noted that a review of the regional literature suggest that there is a relative dearth of records from waters surrounding most of the central Caribbean islands (Jefferson & Schiro 1997, Rodriguez-Lopez & Mignucci-Giannoni 1999, Mignucci-Giannoni et al. 2000, Romero et al. 2001, Davis et al. 2002, Bermudez-Villapol et al. 2006), suggesting that the species occurrence might be overestimated in these areas

Mapping parameters for *Feresa attenuata* (pygmy killer whale)_3 (final)

FAOAreas: 21 | 27 | 31 | 34 | 41 | 47 | 51 | 57 | 61 | 67 | 71 | 77 | 81 | 87

Pelagic: True

Bounding Box (NSWE):	90	-90	-180	180
	Min	Pref Min (10th)	Pref Max (90th)	Max
Depth (m)	0	1000	4000	8000
SST (°C)	20	25	30	32.91
Salinity (psu)	28	33.7	36.01	37.5
Primary Production	0	304	778	2521

Table 1: AquaMaps input parameter settings for revised map generation

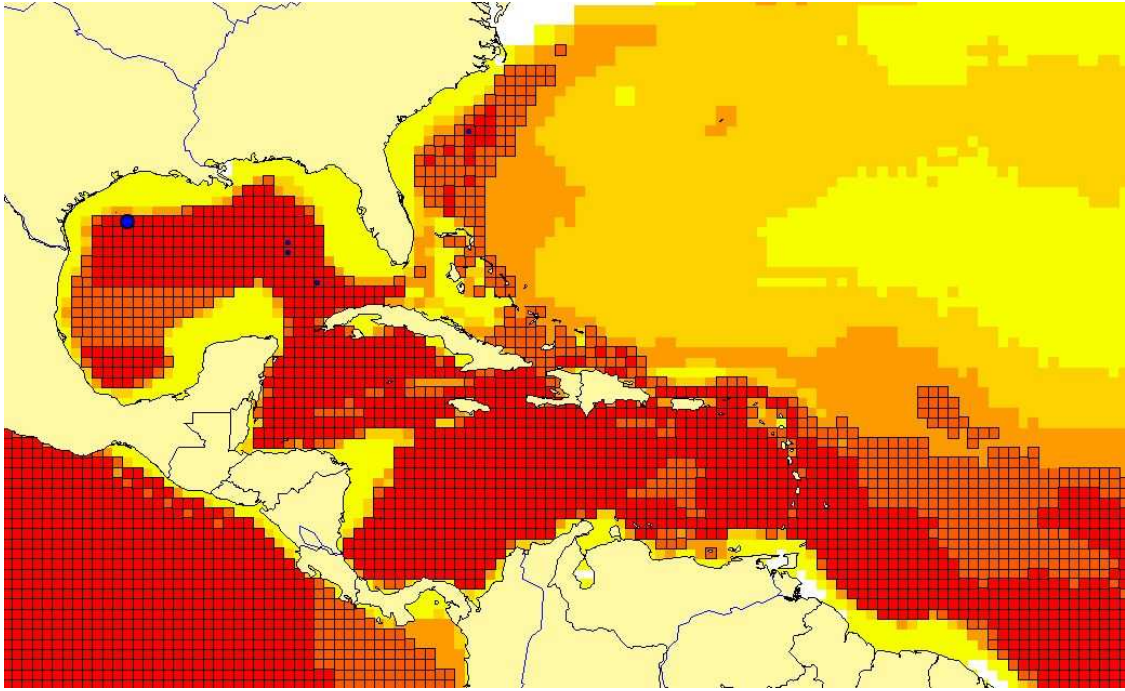


Fig 1. Predicted relative habitat suitability based on envelope settings in Table 1 and calculated relative encounter rates based on available sightings from OBIS (blue). Cells with probability values above the selected threshold are shown with boundaries. *Note that not all occurrences are available/accessible 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 expert (Randall Reeves)

I am not necessarily convinced that occurrence in the Caribbean is overestimated by the consensus map. Although this is clearly a rare and non-abundant species, the sightings as well as strandings data from the N Gulf of Mexico suggest a widespread, if low-density, distribution (occurrence) in deep water far from shore. The lack of more sightings and strandings from the Caribbean and other parts of the Gulf may partly reflect the absence of deep-water survey effort and beach monitoring, respectively. With the relatively intensive cetacean-watch tourism and survey effort that began in Guadeloupe in 1998, pygmy killer whales were found to be present regularly; they were observed on 62 occasions through 2005 (Rinaldi et al. 2006). Their often small group size and cryptic behavior (Rinaldi et al. report that off Guadeloupe the animals typically dive when approached by a boat, then remain submerged for about 5 minutes before surfacing some distance away), added to the fact that they are numerically few and possibly quite mobile, may also help explain why there are not more records region-wide. There is a recent observation in Dominica (Gero and Whitehead 2006).

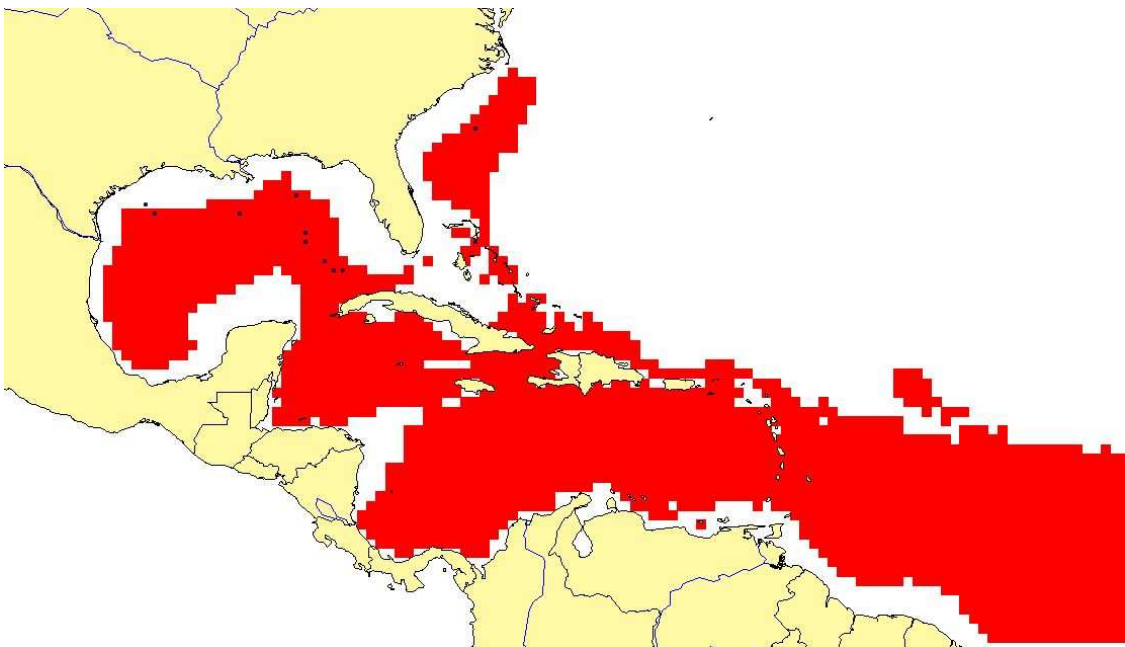


Fig 2. Consensus map of known and probable occurrence of species in WCR plus available sightings from OBIS (blue)). *Note that not all occurrences are

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: ★★

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