

## False killer whale (*Pseudorca crassidens*):

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)

Mean depth of sightings from line transect surveys in the northern Gulf of Mexico indicated that this is primarily an offshore, slope species (Maze-Foley & Mullin 2006). Based on this information, distribution of observed densities reported from available line transect surveys in the area (Davis et al. 1998, Fulling et al. 2003, Mullin & Fulling 2003) and the analysis of mean depth values of cells associated with high encounter rates of this species (18 available occurrence records from OBIS in 15 cells), I adjusted the depth envelope to the values summarized in Table 1. We could not find any information in the available regional literature that would indicate the need to modify any of the other environmental envelopes and defaults were therefore kept. 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 known and probable occurrence of the species in the WCR I applied a presence threshold of 0.6 as suggested by recent validation analyses (Kaschner et al. 2011) (Figure 2).

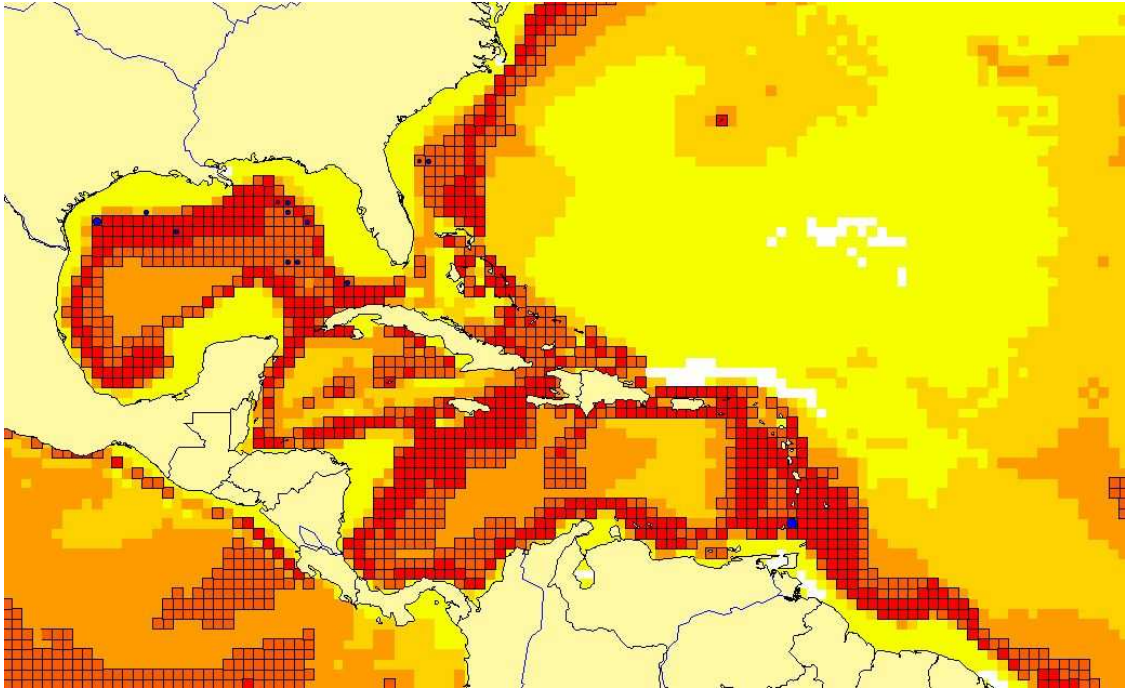
Mapping parameters for *Pseudorca crassidens* (false killer whale)\_2

FAOAreas: 21 | 27 | 31 | 34 | 37 | 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	2000	6000
SST (&deg;C)	10	15.32	27.65	31.85
Salinity (psu)	30.27	33.47	35.77	40
Primary Production	0	275	1519	2774

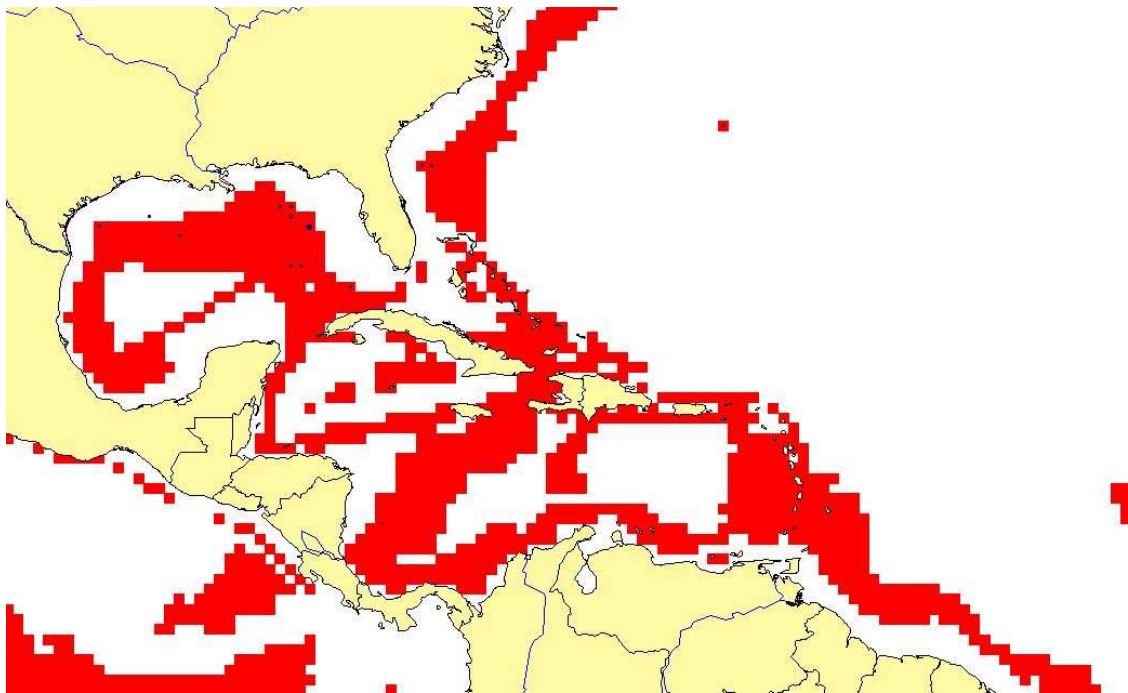
Table 1: AquaMaps input parameter settings for revised map generation



**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](http://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 consider the consensus map to be a reasonable depiction of the likely occurrence of this oceanic species. Odell and McClure (1999) state that it is found “primarily in deep water and offshore areas,” but also around oceanic islands like Hawaii and in some coastal areas. Judging by the relatively frequent observations around Guadeloupe, it is possible that it and some other Caribbean islands host “island-associated populations” of false killer whales in the same way as Hawaii. The documented WCR range states, according to IWC (2007), include Brazil, Venezuela, Guadeloupe, Martinique, Grenada, and St. Lucia. At least Dominica and St. Vincent should be added (based on references cited by Rinaldi et al. 2006). It seems clear that not much is known about this species in the WCR. The relatively large number of records around Guadeloupe (56 sightings in groups of 20-50 individuals from cetacean-watch tourism and survey vessels between 1998 and 2005; Rinaldi et al. 2006) is of particular interest.



**Fig 2.** Consensus map of known and probable occurrence of species in WCR plus sightings available through OBIS shown in blue. \*Note that not all occurrences are available/accessible through online data repositories, such as OBIS ([www.iobis.org](http://www.iobis.org)), and

records shown on the map do not necessarily represent the whole extent of documented species occurrence!

**Quality of outputs: ★★**

### **References**

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