

## **Clymene dolphin (*Stenella clymene*):**

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 species occurs mainly on the lower continental slope and beyond (Davis et al. 1998, Maze-Foley & Mullin 2006). This was supported by the analysis of mean depth values of cells associated with high encounter rates of this species (61 available occurrence records from OBIS in 38 cells) as well as the plotted observed densities reported from line transect surveys (Davis et al. 2000, Mullin & Fulling 2003, Mullin & Fulling 2004). I therefore adjusted the depth envelope to the values summarized in Table 1. In addition, I adjusted the temperature envelope based on the regionally available data, which suggested that this species might not occur as widely throughout the Gulf of Mexico as other small delphinids. 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 *Stenella clymene* (Clymene dolphin)\_4

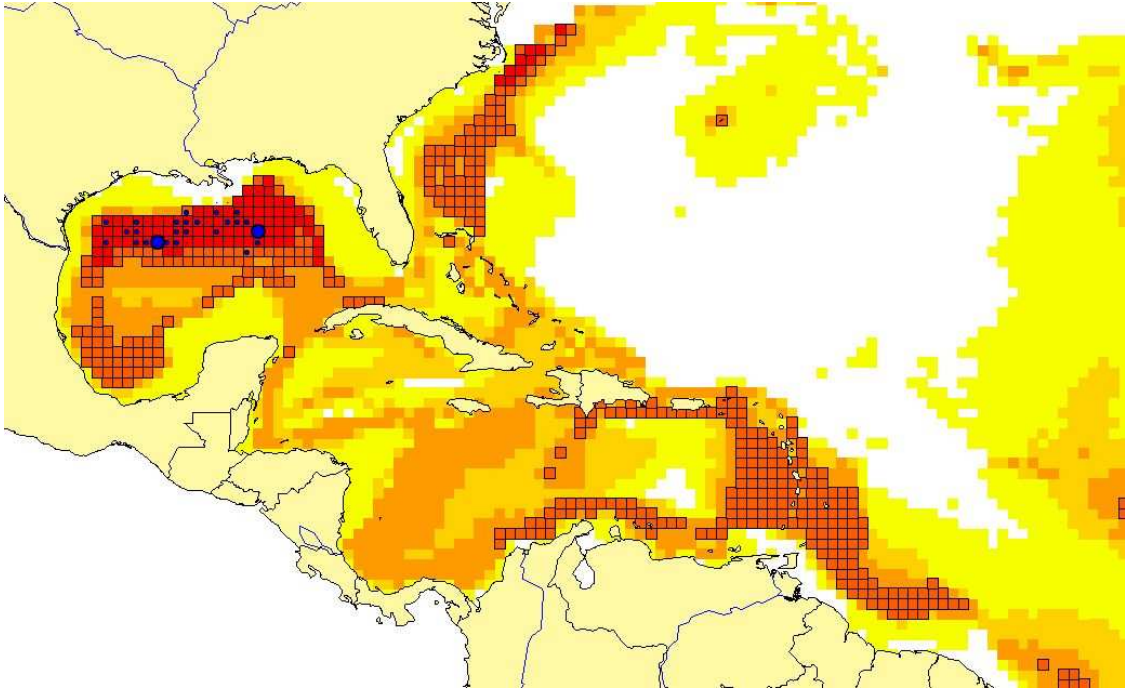
FAO Areas: 21 | 27 | 31 | 34 | 41 | 47

Pelagic: True

Bounding Box

(NSWE):	90	-90	-180	15
	Min	Pref Min (10th)	Pref Max (90th)	Max
Depth (m)	0	1000	3000	5000
SST (&deg;C)	20	22	26.5	30
Salinity (psu)	30	34.09	35.48	38
Primary Production	0	333	938	1410

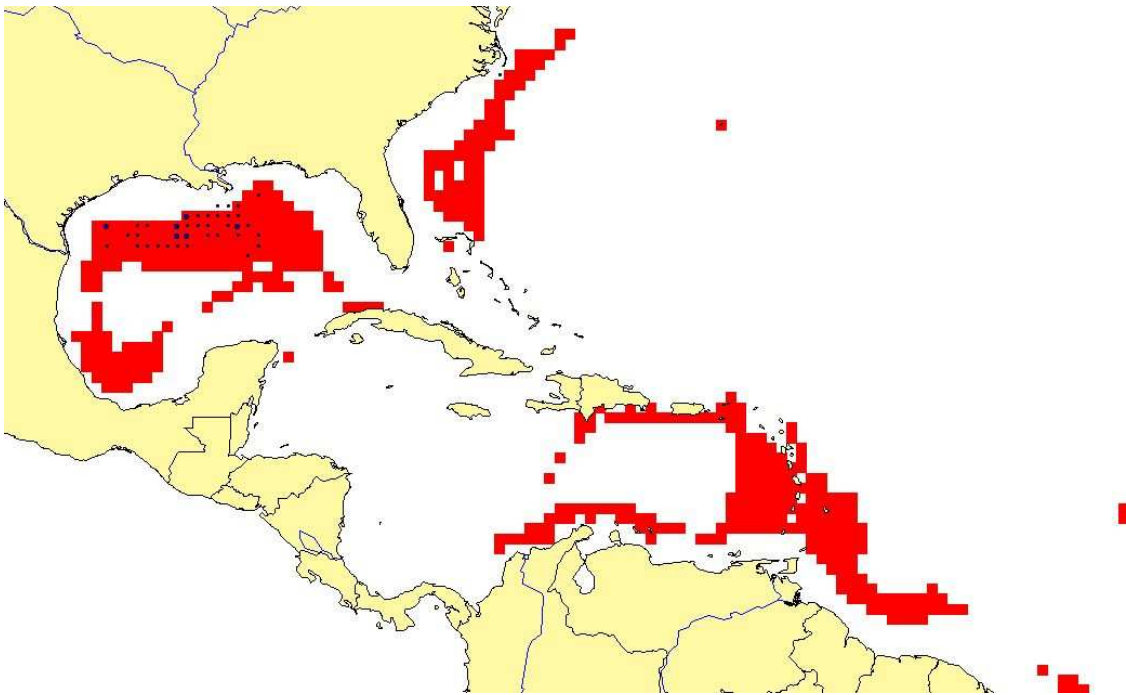
Table 1: AquaMaps input parameter settings for revised map generation



**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)

Perrin and Mead (1994) stated that *S. clymene* had been observed “only in deep water (250-5000m or deeper),” which generally agrees with the line transect survey results mentioned by KK. Although Jefferson (1994) acknowledged that these dolphins occur in the Gulf of Mexico “primarily in deep oceanic waters,” he noted an exceptional sighting of 18 Clymene dolphins on the Texas continental shelf in water only 44 m deep. The occurrence of this species in the Caribbean seems highly uncertain as it has been only rarely reported in stranding and sighting data (e.g. at St Vincent and Venezuela; Perrin and Mead 1994). The presence of Clymene dolphins near St. Vincent (and presumably other Antillean islands) is likely explained by the proximity to shore of deep water in that region (Jefferson 2009).



**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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