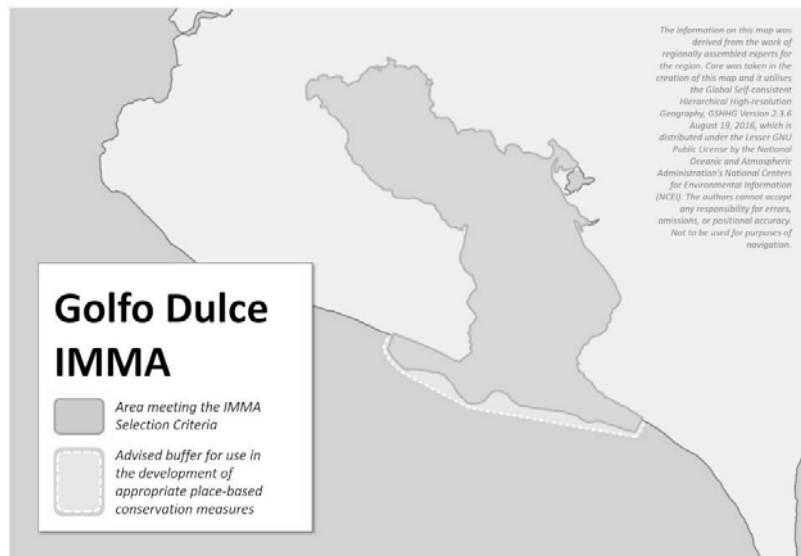




## MARINE MAMMAL PROTECTED AREAS TASK FORCE



# GOLFO DULCE IMMA



## Size in Square Kilometres

910 km<sup>2</sup>

## Qualifying Species and Criteria

Common bottlenose dolphin – *Tursiops truncatus*

Criterion B (1)

Pantropical spotted dolphin – *Stenella attenuata*



[Coastal – *S. a. graffmani*]

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PROTECTED AREAS  
TASK FORCE**



[North Pacific – *M. n. kuzira*]

Criterion C (1)

[Southern – *M. n. australis*]

Criterion C (1)

**Marine Mammal Diversity**

*Pseudorca crassidens*, *Steno bredanensis*

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Golfo Dulce is a rare 'tropical fjord' in southwestern Costa Rica that provides several critical habitats for cetaceans. North of the mouth of the gulf (500-m), two resident populations of coastal dolphins show year-round site fidelity for foraging and calving. They exhibit habitat partitioning, with common bottlenose dolphins (*Tursiops truncatus*) occurring primarily close to shore, especially near river mouths, and inshore pantropical spotted dolphins (*Stenella attenuata graffmani*) foraging in the deeper waters of the middle of the gulf. Two populations of humpback whales (*Megaptera novaeangliae*) from both the Northern (*M. n. kuzira*) and Southern Hemispheres (*M. n. australis*) use the Golfo Dulce as critical calving and reproductive habitat, evidenced by observations of mother-calf pairs engaged in nursing behaviour and singing males. False killer whales (*Pseudorca crassidens*) are also commonly seen in the Golfo Dulce IMMA, adding to the abundance of marine life that marks the inlet as a biodiversity hotspot.

## DESCRIPTION OF QUALIFYING CRITERIA



### Criterion B: Distribution and Abundance





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(*Stenella attenuata graffmani*) are considered year-round residents (Acevedo-Gutiérrez & Burkhart, 1998; Cubero-Pardo, 2007; Oviedo, 2007) with a significant level of photographic recaptures and site fidelity (Pacheco-Polanco, 2016; Oviedo, 2018; Oviedo et al., 2018). Calving areas for bottlenose dolphins have been identified in coastal areas near river mouths, where resident females form nursing groups (CEIC, unpubl. data). River mouths also serve as key foraging habitat for that species (Oviedo, 2007; Herra-Miranda et al., 2016; Pacheco-Polanco, 2016; Oviedo et al., 2018, 2019). Pantropical spotted dolphin nursing groups have been recorded in the species' core foraging habitat (CEIC, unpubl. data), which covers a sizeable area of the deep inner basin, where the dolphins follow the movement of preferred prey species, such as ballyhoo (*Hemiramphidae sp.*) and flying fish (*Exocoetidae sp.*) (Oviedo 2007; Oviedo et al., 2018). Modelled photo-identification data indicate relatively small populations of 119 (95% CI: 108.55–130.35) bottlenose dolphins and 368 (95% CI: 341.51–396.31) spotted dolphins (Oviedo, 2018).

### **Criterion C: Key Life Cycle Activities**

#### ***Sub-criterion C1: Reproductive Areas***

North Pacific humpback whales (*Megaptera novaeangliae kuzira*) belong to the Central America Distinct Population Segment, designated under the United States Endangered Species Act (Bettridge, 2015). Southern Hemisphere humpback whales (*Megaptera novaeangliae australis*) belong to the population designated by the International Whaling Commission as Breeding Stock G. Both these populations seasonally migrate to the Eastern Tropical Pacific, and use Golfo



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PROTECTED AREAS  
TASK FORCE**



González et al., 2001). The whales spend time in both the inner basin and sill area (Oviedo et al., 2015; Herra-Miranda et al., 2016; Pelayo-González et al., in review). Neonates have been documented (Bessesen, 2015), and mothers with nursing calves have been demonstrated to prefer the coastal areas, especially along western portion of the sill area, while singing males and competitive groups remain in the deep waters (Herra-Miranda et al., 2016).

The Southeast Pacific humpback whale carries out long seasonal migrations from feeding grounds off the coasts of southern Chile and Antarctica to winter calving grounds in tropical waters. Humpback whales from the Southern Hemisphere have multiple wintering areas comprising a large breeding habitat in Central America including Golfo Dulce, Costa Rica. The region is utilized between July and November with high numbers of documented observations of mother-calf pairs and mature males (Acevedo-Gutierrez & Smultea, 1995). By contrast, the number of observations of the Central American humpback whales in both Golfo Dulce and Osa Peninsula IMMAs, recorded between December and April, have declined in recent years (Pelayo-Gonzalez et al., in press), and sightings of this subpopulation are not as frequent as those whales migrating from the Southern Hemisphere. Calves from the Northern Hemisphere are commonly observed (Bessesen, 2015) but behaviours related to reproduction such as competitive groups have yet to be documented during the Northern Hemisphere breeding season.

According to historical data in Golfo Dulce (July–October 2010–2019), humpback whales primarily occur in the



## MARINE MAMMAL PROTECTED AREAS TASK FORCE



western portion between Puerto Jimenez and Cabo Matapalo. Two additional areas are identified by a spatial usage trend: the coastline from the entrance of Golfito towards Punta Gallardo; and along the northern coast of Golfo Dulce from the western side of Punta Estrella towards the Esquinas River. These aggregation areas could result from calving females moving away from the sill area where they are most likely to encounter males. Competitive groups and singing males are mainly observed in the sill area (Herra-Miranda et al., 2016).

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**MARINE MAMMAL** *del agua en el Golfo*  
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GEBCO Compilation Group 2021. GEBCO 2014 Grid.

[doi:10.5285/c6612cbe-50b3-0cff-e053-6c86abc09f8f](https://doi.org/10.5285/c6612cbe-50b3-0cff-e053-6c86abc09f8f).

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**MARINE MAMMAL  
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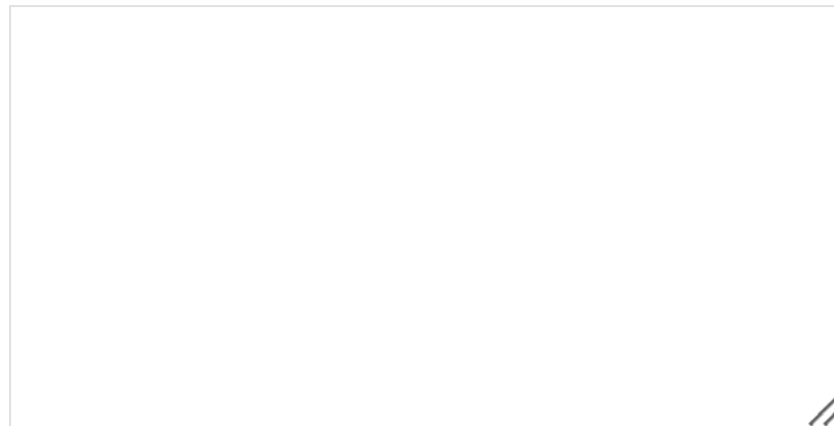
  




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