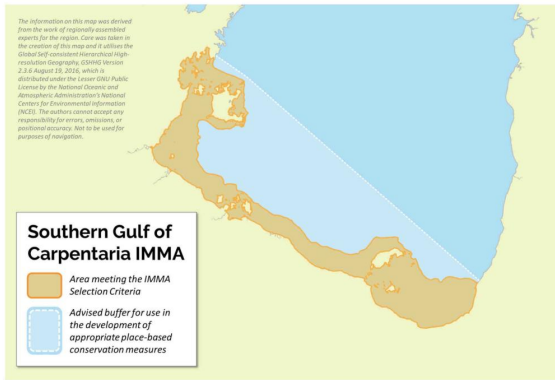


# Southern Gulf of Carpentaria IMMA

## Description:

The Gulf of Carpentaria is a large (310,000 km<sup>2</sup>), remote, shallow embayment shared by the Northern Territory, Queensland and Commonwealth jurisdictions, bounded by Arnhem Land to the west and Cape York Peninsula to the east. Most of the Gulf has a meso-tidal range (2-4 m). The coastline generally has low wave energy enabling inshore seagrass and mangrove communities to establish, especially along the southern coast where there are offshore islands (Poiner et al. 1987, Roelofs et al. 2005, Taylor et al. 2007). The major rivers influence the local hydrodynamics and the mixing of fresh and marine waters plays an important role in the sedimentation of organic matter and locking of nutrients into the shallow coastal zone (Palmer and Smit 2019). The inshore waters are extremely turbid.

This IMMA comprises the coastal waters from the northern boundary of Blue Mud Bay (13°S) to west coast of Cape York (around 141° longitude) to the 30 m depth contour and comprises the most important dugong habitats in the Northern Territory (Elliott et al. 1979, Marsh et al. 2008, Groom 2020). The Wellesley Islands in Queensland are also globally significant dugong habitat. The seagrass beds in parts of this region are intermittently destroyed by cyclones (e.g.



## Area Size

49,955 km<sup>2</sup>

## Qualifying Species and Criteria

Dugong – *Dugong dugon*

Criterion A, C1, C2

Australian snubfin dolphin – *Orcaella heinsohni*

Criterion A

## Marine Mammal Diversity

*Pseudorca crassidens*, *Sousa sahalensis*, *Stenella longirostris roseiventris*, *Tursiops aduncus*

## Summary

The Gulf of Carpentaria is a shallow, turbid, remote, low-energy coastal region shared by the Northern Territory, Queensland and Commonwealth jurisdictions, bounded by Arnhem Land to the west and Cape York Peninsula to the east. Seagrass beds and mangroves grow along much of the coast. This IMMA supports > 3% of the global population of dugongs, has the highest density of dugongs in the Northern Territory and contains consistent hotspots for Australian snubfin dolphins in Blue Mud Bay and the Limmen Bight. Both these species are listed as Vulnerable by IUCN.

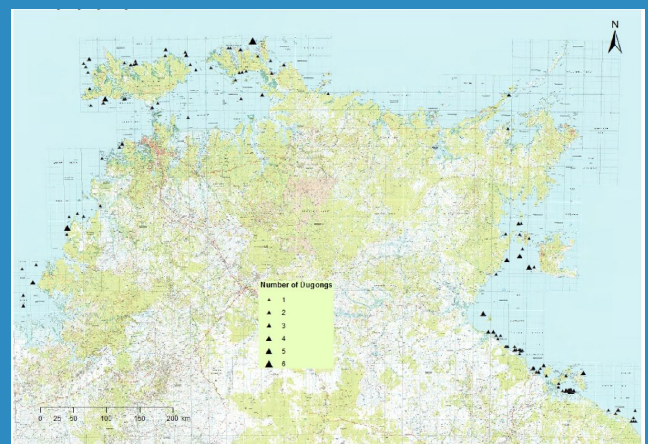


Figure 1 – Dugong sightings in the Northern Territory section of the IMMA based on a systematic aerial transect survey for dugongs in 2015 (Groom et al., 2017).

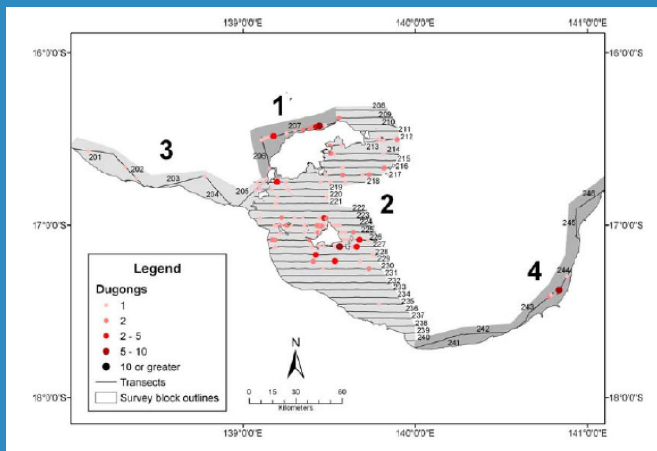


Figure 2 – Dugong sightings in the Queensland section of the IMMA in 2007 based on a systematic transect aerial survey (Marsh 2008).

see Kenyon and Poiner 1987) and dugongs have to move along the coast in search of food, which is why the IMMA includes the area between the Sir Edward Pellew Islands and the Wellesley Islands (Sheppard et al. 2006) and east of the Wellesley Islands, where seagrass has been recorded, especially near Burketown and the mouth of the Normanby River, near Karumba (Coles et al. 2018). The region also supports globally significant populations of Australian snubfin dolphins.

## Criterion A: Species or Population Vulnerability

Both the dugong (Marsh and Sobotzick 2019) and the Australian Snubfin dolphin (Parra et al. 2017) are listed by IUCN as Vulnerable. This IMMA supports the highest density of dugongs in the Northern Territory (Elliott et al. 1979, Marsh et al. 2008; Groom 2020). The most recent relative abundance estimates for the Northern Territory waters are 4600+/-se 1300, 2019 Pollock et al. method, Groom 2020), which is > 1% global population. Dugong numbers around the Wellesley Island group in Queensland area are also globally significant (relative abundance estimate 6000 +/-se1500 in 2007; >1% of global population using Pollock et al. method, Marsh 2008, Marsh et al. 2011). Overall, the IMMA supports >3% of the estimated global dugong population. Blue Mud Bay and Limmen Bight are consistent hotspots for snubfin

dolphins (Freeland and Bayliss 1989, Groom et al. 2017). The highest densities along the Northern Territory coast were recorded at these locations with 0.34 and 0.21 snubfin/km<sup>2</sup>, respectively. The focal areas mentioned above for both dugongs and Australian snubfin dolphins have been consistent for more than 30 years suggesting that the populations are resident. One dugong was satellite tracked moving between the Sir Edward Pellew and the Wellesley Island areas (Sheppard et al. 2006); the 10 other dugongs satellite tracked in the Sir Edward Pellew region were resident there over the 8 month tracking period (Udywer et al. 2019).

## Criterion C: Key Life Cycle Activities

### Sub-Criterion C1: Reproductive Areas

The percentage of dugong groups with calves in the Northern Territory waters of the Gulf of Carpentaria ranged from 13% to 20.6 % over the approximate 30-year period of the time series of aerial surveys but did not change significantly across years (Groom, 2020). The Sir Edward Pellew Islands and southern Limmen Bight areas have been consistently important areas for dugong calves (Groom 2020).

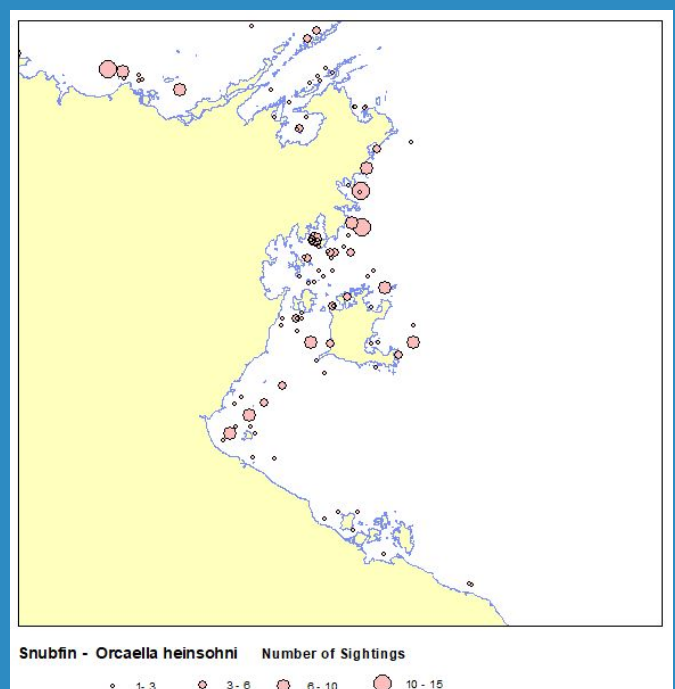


Figure 3 – Snubfin dolphin sightings in the Gulf of Carpentaria and north east Arnhem Land, Northern Territory (2015 aerial survey, Groom et al. 2017)

## Sub-Criterion C2: Feeding Areas

The dugong is a seagrass community specialist (Marsh et al. 2011, 2018). The IMMA contains vast shallow water seagrass meadows (Taylor et al., 2007). Dugongs have been recorded feeding in the area during aerial surveys and satellite tracking captures (Marsh 2008; Groom et al., 2017).

## Supporting Information

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