

# Kikori Delta IMMA

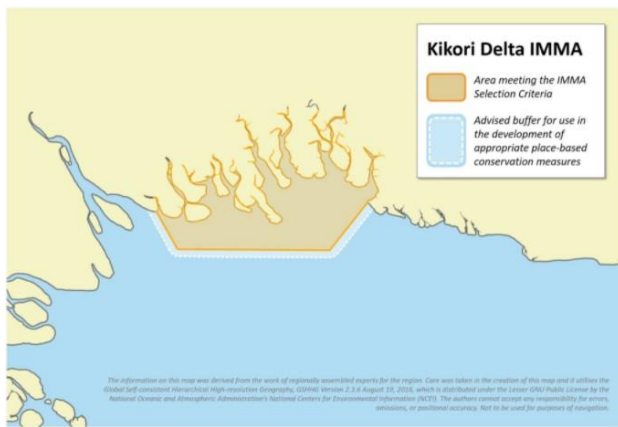
## Description

The Kikori Delta is located in Gulf Province, Southern Papua New Guinea. The region is renowned for its biodiversity and ecological significance, with extensive mangrove, forest, wetland and delta habitats (WWF, 2015). Marine mammal species known to inhabit the Kikori Delta are the Near Threatened Australian snubfin dolphin, *Orcaella heinsohni* and Australian humpback dolphin, *Sousa sahulensis* (hereafter referred to as snubfin and humpback dolphins, respectively), Near Threatened Indo-pacific bottlenose dolphin, *Tursiops aduncus*, and Vulnerable dugong, *Dugong dugon*. Additional marine megafauna species known to regularly inhabit the Kikori Delta are the Vulnerable riverine pig-nosed turtle, *Carettochelys insculpta*, Endangered speartooth shark, *Glyphis glyphis* and Critically Endangered largetooth sawfish, *Pristis pristis* (Kyne et al., 2013; Compagno et al., 2009; Asian Turtle Trade Working Group, 2000).

The Kikori Delta holds the northern-most snubfin dolphin population. There have been no other confirmed reports of humpback or snubfin dolphins from any other locations in Papua New Guinea, the Pacific Islands, or adjacent waters of Torres Strait in Northern Australia (Beasley et al., 2016; Department of Environment, 2013). Snubfin and humpback dolphins are known to occur throughout northern Australia, from the Fitzroy River on the East coast to Roebuck Bay on the West coast (Department of Environment, 2013). Humpback dolphins are known to occur in some areas along the Indonesian Provinces of Papua and West Papua (western New Guinea), although distribution and abundance remains unknown (Beasley et al., 2016).

## Criterion A: Species or Population Vulnerability

Australian snubfin (Fig. 1) and humpback dolphins (Fig. 3) are listed as Vulnerable on the IUCN Red List. Snubfin and humpback dolphins in the Kikori Delta are thought to be declining due to bycatch in



## Area Size

2,032 km<sup>2</sup>

## Qualifying Species and Criteria

Australian snubfin dolphin – *Orcaella heinsohni*

Criteria A, B1, B2, C1, C2

Australian humpback dolphin – *Sousa sahulensis*

Criteria A, B1, B2, C1, C2

## Marine Mammal Diversity

*Tursiops aduncus*, *Dugong dugon*, *Orcaella heinsohni*, *Sousa sahulensis*

## Summary

The Kikori Delta IMMA is located in the Gulf Province of Southern Papua New Guinea. It is recognised as one of the most important areas of forest and wetland/riverine biodiversity in the Asia/Pacific region and has been nominated as a UNESCO World Heritage Site because of its cultural and biodiversity value. There are small, resident populations of two inshore dolphin species (Australian snubfin and Australian humpback dolphins) within the IMMA. The boundary selection of the Kikori Delta IMMA is based on the core area of resident dolphin sightings obtained during four comprehensive surveys in the region since 1999. Surveys also recorded the Indo-Pacific bottlenose dolphin and the dugong in the Delta region.



Figure 1: Australian snubfin dolphins surfacing in the IMMA. Photo: Isabel Beasley

subsistence fisheries, and possibly due to increasing levels of direct catch. There are strong indications based on interview surveys that inshore dolphin extent of occurrence in the Kikori Delta has declined. Many respondents to standardised interviews reported that prior to gillnets being introduced to the delta (in the 1960s), inshore 'dolphins' (species unknown) could be sighted swimming in front of Kikori Township (approx. 50km upstream from the coastal headlands) (Beasley et al., 2011). No dolphins are now sighted in front of Kikori Township, and the maximum distance dolphins are now reported upstream is 30 km from coastal headlands.

Bycatch in subsistence fisheries appears to be a problem for inshore dolphins in the Kikori Delta. Data is admittedly limited, yet it appears that mortality levels may be unsustainable. As an example, during nine days of surveys during 2015, one humpback dolphin and four snubfin dolphin carcasses were recovered that had recently (i.e. within 1-10 days) been bycaught in fishing gear (Beasley et al., 2015). One large-mesh sized gillnet set around a headland at Gaorabari Island had three snubfin dolphins caught at the same time (two adults and one calf). There were also interview reports of local fishers beginning to eat dolphin carcasses after dolphins had been accidentally bycaught in nets (Beasley et al., 2015).

## Criterion B: Distribution and Abundance

### Sub-criterion B1: Small and Resident Populations

Based on surveys conducted in 2013 and 2015, humpback and snubfin dolphins were found to occur in the Kikori Delta in small populations (i.e. estimated to be <100 humpback dolphins and <200 snubfin dolphins) (Fig. 2) (Beasley et al., 2013; 2015).

The populations of both species are assumed to be isolated and resident in the Delta based on the complete lack of species occurrence records within at least 500km from the Kikori Delta (Beasley et al., 2016).

## Criterion B: Distribution and Abundance

### Sub-criterion B2: Aggregations

The Kikori Delta is a large, dynamic, estuarine ecosystem, recognised as one of the most important areas of forest and wetland/riverine biodiversity in the Asia/Pacific region (WWF 2015). Both inshore dolphin species aggregate in the outer Kikori Delta region. The core area of occurrence for both species is Banana Island/Paia Inlet east to Era/Baimurru Rivers (Bonoccorso et al., 2000; Beasley et al., 2011; 2013; 2015).

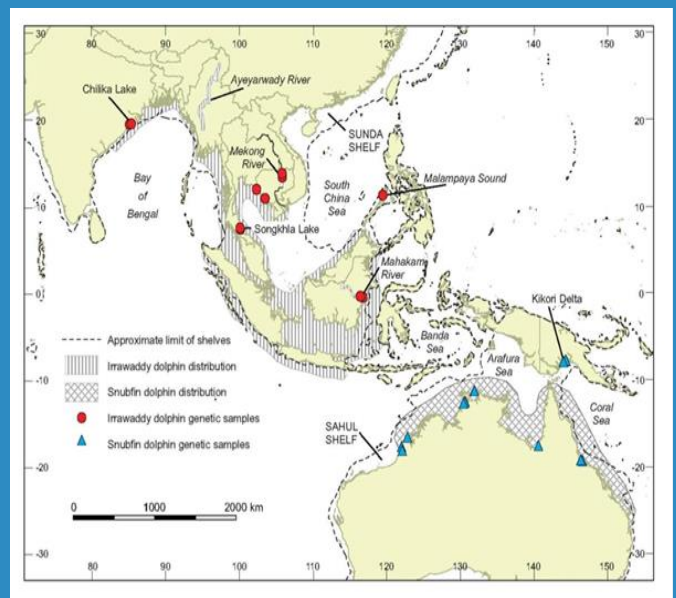


Figure 2: Australian snubfin dolphin distribution and sample location within the IMMA. From Beasley et al., in review.

## Criterion C: Key Life Cycle Activities

### Sub-criterion C1: Reproductive Areas

Neonates and calves, as well as mating behaviour, have been observed for both humpback and snubfin dolphins within the IMMA (Beasley et al 2013; 2015). Therefore, the Kikori Delta region provides important habitat for reproduction of both inshore dolphin species.

## Criterion C: Key Life Cycle Activities

### Sub-criterion C2: Feeding Areas

The Kikori Delta has been identified as an important area for feeding for both inshore dolphin species. The snubfin dolphin appears to utilise specific areas within the Delta where prey aggregations occur. Humpback dolphins have often been sighted foraging in the Paia Inlet region and around the Verabari Headland of Banana Island.

### Supporting Information

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Figure 3: Australian humpback dolphins surfacing in the Kikori Delta IMMA. Photo: Isabel Beasley

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**MARINE MAMMAL  
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Members of the Kikori community proudly displaying outreach information about the marine mammals within the IMMA. Photo: Isabel Beasley