

## ***Orcaella heinsohni* (Beasley, Robertson and Arnold, 2005)**

English: Australian snubfin dolphin

German: Australischer Stupsflossen-Delphin

Spanish: Delfín a aleta chata de Australia

French: Dauphin à aileron retroussé d'Australie

Family Delphinidae

### **1. Description**

The Australian snubfin dolphin resembles the Irrawaddy dolphin (*O. brevirostris*), but, as opposed to its congener, the dorsal groove is absent. Furthermore, its back has a gray-brown cape, the sides are lighter and the belly is whitish. However, this colour pattern can be much brighter, almost white on the sides and light grey / ebony on the back. The head of the snubfin dolphin is blunt, round and bulbous and there is no beak. The line of the mouth is straight, and there is a distinct neck crease. Its dorsal fin is small and rounded and set somewhat behind mid-back. The large flippers have curved leading edges and their tips are rounded. Adult size reaches 2.3 m in females and 2.7 m in males, and body mass reaches 130 kg (Robertson and Arnold, 2009).

This species was previously considered as a sub-population of the Irrawaddy dolphin. However, clear and consistent differences in coloration, morphology and genetics are consistent with species-level differences (Beasley et al. 2005).

### **2. Distribution**

<http://www.iucnredlist.org/apps/redlist/details/136315/0/rangemap>

*Distribution of Orcaella heinsohni: warm coastal waters and rivers in Northern Australia; Papua New Guinea and Indonesia (Reeves et al. 2008 © IUCN).*

Snubfin dolphins are discontinuously distributed mostly in the coastal, shallow, brackish, or fresh turbid waters at the mouths of rivers. The species occurs in northwestern New Guinea; southern New Guinea from the coast of Merauke east to the Gulf of Papua, thence south to northern Australia where it ranges from Broome in Western Australia around to the Brisbane River in Queensland. The snubfin dolphin occurs on the Sahul shelf of Australia and Papua New Guinea and is separated from the Irrawaddy dolphin (Sunda shelf of South and Southeast Asia) by the deep oceanic waters between (Robertson and Arnold, 2009).

### **3. Population size**

Very little is known about the population size of this species (Reeves et al. 2008; Robertson and Arnold, 2009). Standard aerial survey techniques were used to survey coastal waters adjacent to the Northern Territory, Australia. Relatively few snubfin dolphins were observed in waters off the north-west coast. Substantial populations were located in the western Gulf of Carpentaria yielding a total estimate of approximately 1,000 individuals on the surface. The major concentration was located in Blue Mud Bay (Freeland and Bayliss, 1989). This is the

largest population known in Australia (Reeves et al. 2008), however, these data are now more than 20 years old and requires confirmation.

More recent abundance estimates were made by Parra et al. (2006b) who used photo-identification data collected between 1999 and 2002 in Cleveland Bay, northeast Queensland to estimate an abundance of 76 (CV = 0.08) individuals in 2000, 64 (CV = 0.11) in 2001 and 67 (CV = 0.14) in 2002. Due to low sample size and high CV, the authors estimated that it would take six years to detect a population change of 5% p.a., and two years to detect a 20% p.a. change. Parra et al. (2006b) estimated that population estimates at a regional level are likely to be in the order of thousands rather than tens of thousands; during aerial surveys covering most of the east Queensland Coast between 1987 and 1995, only 29 sightings of snubfin dolphins were recorded (Corkeron et al., 1997; Parra et al., 2002) and during boat-based line transect surveys in selected areas of northeast Queensland there were only 22 sightings (Parra, 2005).

#### 4. Biology and Behaviour

**Habitat:** In Australian waters, snubfin dolphins appear to avoid waters less than 2.5 m and greater than 18 m deep (Freeland and Bayliss 1989). Preference for nearshore, estuarine waters is likely related to the productivity of these tropical coastal areas (Parra et al. 2006a). Off Cleveland Bay there is evidence that animals occur mainly in waters close to the coast. Most sightings of snubfin dolphins made during aerial surveys (Corkeron et al., 1997; Parra et al., 2002) and boat-based line transect surveys including offshore waters (waters >10 km from the coast) of different areas along the Queensland coast, occurred in waters within 6 km of the nearest coastline. In summary, shallow coastal areas adjacent to river and creek mouths and sea grass beds form the preferred habitat. Surfacing is inconspicuous, with a low roll showing very little of the back and small dorsal fin. Therefore the species is easily missed in the field (Robertson and Arnold, 2009).

**Schooling:** Mean group size was 5.6 (Parra and Corkeron in IWC, 2000); group sizes of up to 14 animals have been observed (Parra et al. 2002). The species is observed to co-occur with the Indo-Pacific humpback dolphin, towards which it shows aggressive and sexual behaviour (Robertson and Arnold, 2009).

**Food:** Snubfin dolphins appear to be opportunistic-generalist feeders, eating a wide variety of fish and cephalopods associated with coastal-estuarine waters. Bottom-dwelling and pelagic fishes are consumed, indicating snubfin dolphins capture fish throughout the water column. The most important prey in numerical terms for snubfin dolphins was the cardinal fish (*Apogon sp.*), followed by the cuttlefish (*Sepia sp.*), the squid *Uroteuthis (Photololigo) sp.* and the toothpony fish (*Gazza sp.*) (Parra and Jedensjö, 2009)

**Reproduction:** The calving season is not well known. Gestation may last approximately 14 months. Maturity seems to be reached at 4-6 years of age and longevity is around 30 years (Robertson and Arnold, 2009).

#### 5. Migration

Freeland and Bayliss (1989) reported significant seasonal changes in distribution. Parra and Corkeron (in IWC, 2000) found that all animals identified during 1998 in Cleveland and

Bowling Green Bays in Northern Queensland, Australia, were resighted in 1999, suggesting some degree of residency. More recently, Parra et al. (2006b) found that 68% of the snubfin dolphins photo-identified in Cleveland Bay were identified in more than one calendar year.

## 6. Threats

**Incidental catch:** Snubfin dolphins are accidentally caught in fishing nets and in anti-shark nets in Australia (IWC, 2000). They occur close to river mouths; drowning in nearshore gillnets set across creeks, rivers, and shallow estuaries represents one of the major threats to nearshore dolphins along the Queensland coast (Parra et al. 2006a).

**Habitat degradation:** Habitat degradation is seen as an important conservation concern (Parra et al. 2006a; Robertson and Arnold, 2009). According to Hale (1997) the habitats in Australia include estuaries and near-shore coastal areas which are utilised for resource extraction and recreation and have been degraded in many areas as a result of urban, industrial and agricultural development. Conservation problems include loss of prey from over-fishing and destruction of fish habitat, vessel disturbance, possibly pollution and maybe directed killing. Long-term conservation will require a mixture of regulation, education and community involvement.

## 7. Remarks

Range states (Reeves et al. 2008) : Australia; Indonesia; Papua New Guinea

*O. heinsohni* is listed in appendix II of CMS. The species is also listed in Appendix II of CITES.

IUCN categorises *O. heinsohni* as “Near Threatened”. It is assumed that there are fewer than 10,000 mature individuals, that the range is limited, that densities in surveyed areas are low and that vulnerability, especially due to by-catch, is high. Reassessment of the species requires more extensive surveys and the outcome may be to classify the species as Vulnerable or even Endangered (Reeves et al. 2008).

In its report on small cetaceans (IWC, 2000) the IWC Scientific Committee’s sub-committee on small cetaceans recommended that comprehensive surveys be conducted to assess abundance, distribution, and habitat quality and that a review be carried out of the distribution and habitat preferences in marine systems and to define oceanographic, bathymetric and biological features associated with high density areas. The sub-committee expressed concern about increases in fishing effort, particularly with gillnets, in some parts of the range of this species. Given the apparently small size of some populations, some by-catches in these fisheries may be unsustainable. The sub-committee recommended that appropriate by-catch mitigation strategies be developed for use with this species (IWC, 2000). See also general recommendations on small cetaceans in Southeast Asia iterated in Perrin et al. (1996).

## 8. Sources

- Beasley I, Roberston KM, Arnold P (2005) Description of a new dolphin, the Australian snubfin dolphin *Orcaella heinsohni* sp. n. (Cetacea, Delphinidae). Mar Mamm Sci 21: 365-400.

- Corkeron PJ, Morissette NM, Porter LJ, Marsh H (1997) Distribution and status of hump-backed dolphins, *Sousa chinensis*, in Australian waters. *Asian Marine Biology* 14, 49–59.
- Freeland WJ, Bayliss P (1989) The Irrawaddy River dolphin (*Orcaella brevirostris*) in coastal waters of the Northern Territory, Australia: Distribution, abundance and seasonal changes. *Mammalia* 53: 49-58.
- Hale P (1997) Conservation of inshore dolphins in Australia. *Asian Mar Biol* 14: 83-91.
- IWC (2000) Annex K: Report of the sub-committee on small cetaceans. Rep Int Whal Comm, Cambridge, UK.
- Parra, G.J., 2005. Behavioural ecology of Irrawaddy, *Orcaella brevirostris* (Owen in Gray, 1866), and Indo-Pacific humpback dolphins, *Sousa chinensis* (Osbeck, 1765), in northeast Queensland, Australia: a comparative study. Ph.D. Thesis, James Cook University, Townsville.
- Parra GJ, Azuma C, Preen AR, Corkeron PJ, Marsh H (2002) Distribution of Irrawaddy dolphins, *Orcaella brevirostris*, in Australian waters. *Raffles Bulletin of Zoology Supplement* 10, 141–154.
- Parra GJ, Schick R, Corkeron PJ (2006a) Spatial distribution and environmental correlates of Australian snubfin and Indo-Pacific humpback dolphins. *Ecography* 29: 396-406
- Parra GJ, Corkeron PJ, Marsh H (2006b) Population sizes, site fidelity and residence patterns of Australian snubfin and Indo-Pacific humpback dolphins: Implications for conservation. *Biol Conserv* 129: 167-180
- Parra GJ, Jedensjö M (2009) Feeding habits of Australian Snubfin (*Orcaella heinsohni*) and Indo-Pacific humpback dolphins (*Sousa chinensis*). Project Report to the Great Barrier Reef Marine Park Authority, Townsville and Reef & Rainforest Research Centre Limited, Cairns (22pp.).
- Perrin WF, Dolar MLL, Alava MNR (1996) Report of the Workshop on the Biology and Conservation of Small Cetaceans and Dugongs of Southeast Asia. East Asia Seas Action Plan. UNEP(W)/EAS WG. 1/2, Bangkok, Thailand, 101 pp.
- Reeves RR, Dalebout ML, Jefferson TA, Karczmarski L, Laidre K, O’Corry-Crowe G, Rojas-Bracho L, Secchi ER, Sloaton E, Smith BD, Wang JY, Zhou K (2008) *Orcaella heinsohni*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>.
- Robertson KM, Arnold PW (2009) Australian snubfin dolphin *Orcaella heinsohni*. In: Encyclopedia of marine mammals (Perrin WF, Würsig B, Theewissen JGM, eds.) Academic Press, Amsterdam, pp. 62-64.

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