



Oct 2011: James Price Point gas hub

Flawed whale, dolphin and dugong 'science' exposed

An analysis by independent scientists¹ reveals serious flaws in the Department of State Development's *Marine Mammals Impact Report* - prepared by DSD for its James Price Point gas hub project.

Key excerpts from the scientist's submission – printed with permission

"In general, we find the report lacks the referencing of peer-reviewed, readily available scientific papers that deal with impacts of human activity on cetaceans and dugongs. **This shortcoming means we have very little confidence in the scientific integrity of the report and this is evidenced by the unfounded conclusions reached within.**"

Dolphins

"There are no supporting data for the above assessments [i.e. claimed lack of impacts of gas hub on whales, dolphins and dugong] and we find it **unacceptable** that the smaller cetaceans (delphinids) have not been considered within the SAR. These species have completely different habitat requirements to humpback whales and dugongs, and will likely be impacted in different ways by the Browse LNG (BLNG) development."

"There has been no targeted effort to identify and to quantify the abundance of coastal delphinid [dolphin] species in the area, and no effort to use genetics to determine the degree of isolation amongst areas. **These are a glaring omission in the EIA.** Thus, the conclusion that, *"It is considered that activities associated with the development and operation of the BLNG Precinct Port area, are not likely to impact these species [Indo-Pacific humpback dolphin, snubfin dolphin]....."*, is **unsubstantiated and based on field efforts that were aimed at quantifying humpback whale and dugong numbers only.**"

"Furthermore, there are no publications to our knowledge on the presence/absence, abundance or habitat use of dolphins across the entire Pilbara/western Kimberley that might provide the basis for assessing the potential impacts of such a development."

"As noted in various peer-reviewed papers, studies evaluating effects of human activity on wildlife typically emphasize short-term behavioral responses from which it is difficult to infer biological significance or formulate plans to mitigate harmful impacts (Bejder *et al.* 2009). There is an exception to this: *based on some 15 years of detailed behavioral records*, Bejder *et al.* (2006) evaluated long-term impacts of vessel activity on bottlenose dolphins (*Tursiops* sp.) in Shark Bay, Australia. **This study showed a significant decline in relative dolphin abundance within an area of low vessel activity, during a period of increased exposure to vessels. Thus, vessel activity certainly has the potential to cause long-term effects on the distribution of coastal dolphins (Australian snubfin, Indopacific humpback and Bottlenose dolphins).**"

"Research **over a significant temporal scale** would be needed to make any conclusion on possible effects on distribution and abundance of the coastal delphinid species in the proposed development area."

"Furthermore, it is important to note: the Australian snubfin dolphin (*Orcaella heinshoni*) and the Indo-Pacific humpback dolphin (*Sousa chinensis*) are classified "data deficient" species in Western Australian state waters (WA DEC 2009). Internationally, they are considered "data deficient" and "near threatened" (the IUCN Redlist). The federally funded Tropical Inshore Dolphin Workshop held in May 2010 identified **coastal zone development as "the major threat" to tropical inshore dolphins** and recommended the following actions; "...establish the distribution of tropical inshore dolphins... through spatial modelling"; "...identify "hotspots" of inshore dolphin distribution"; "identify population structure...(local and large scale)... using genetics to determine the degree of isolation amongst areas" (DEWHA 2010).

Whales

"At a bare minimum, we would have expected the supporting documents about the aerial and vessel-based surveys to provide data about incidental cetacean sightings other than humpback whales. Unfortunately, none of the supporting documents include any information about other cetaceans other than a single sentence: "only five individual whales (0.2% of all whales recorded) were thought to be other species of large cetacean, these being minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*) and three sightings of unidentified beaked whales" (Appendix C-8, Section 5.1.1). **This is a misleading statement, however, because 14% of whale groups seen during the aerial surveys were unidentified** (Appendix C-8, Section 5.1.1)."

¹ Browse LNG Precinct Strategic Assessment Report: Part 3 Environmental Impact Assessment (Marine) Public Submission; A Hodgson, L Bejder, S Allen, J Smith. Murdoch University Cetacean Research Unit Centre for Fish, Fisheries and Aquatic Ecosystem Research School of Biological Sciences and Biotechnology Murdoch University, South St, Murdoch WA 6150

“It is inappropriate to compare the historical movements of ships travelling to and from Port Hedland and/or Dampier Ports from 2007 and prior (which is not time-specific or remotely in accord with the period that the whales were tagged) with the movements of a maximum of three tagged whales traversing the Port Hedland and Dampier Port areas in late September 2010. The above statement suggests that because these three whales made their way south through shipping lanes without apparent interaction with ships, then vessel strikes are not a concern. **This is not an appropriate assessment of the potential impacts of vessel strikes.**”

“All comparisons between sites and between years presented in the report from all types of surveys (upon which the above statements are based) were conducted using raw sighting data only. There has been no attempt to correct these data for detection probability (i.e. the affects of different environmental conditions and observer biases). The sighting conditions could have been quite different between sites and between years (e.g. wind conditions ranged from sea state 0 to 6 throughout the surveys, and turbidity was probably different among the sites). **Presenting raw sighting data comparisons without incorporating covariates is inappropriate and as a result the findings in this report are unreliable.**”

“The report states that: ‘*Less than 5% of humpback whales were recorded within 8 km of the shoreline and therefore they are found only in low numbers in the James Price Point Marine Management Area, where the majority of the proposed development activities would occur.*’ Five percent actually equates to quite a large number of animals (if you use the population estimate presented in the report of 13,000, that is 650 whales) passing through the area where development activities would occur. **Stating that these are “only...low numbers” is misleading.**”

Dugongs

“**Dugongs are directly affected by dredging as it destroys seagrass in the dredged area and the resulting increase in sedimentation is known to cause long-term smothering and destruction of seagrass beds** (Price et al. 1983). The physical scouring caused by dredging can make seagrass growth impossible for many years. The effect of habitat loss on dugongs was indeed exemplified in Hervey Bay as stated above. However the widespread loss of seagrass beds during the cyclone resulted in the death and emigration of many dugongs from this important habitat area (Preen and Marsh 1995). In addition, when their access to forage is limited, dugongs also respond by delaying breeding, which can significantly reduce population growth (Marsh and Kwan 2008).”

“**There is no evidence to suggest that animals will simply ‘move away from an area’ when a spill takes place.** In fact, recent information available from the US Government agency (NOAA) speaks directly against this. Specifically, following the Gulf of Mexico Deepwater Horizon/BP incident, the number of whale and dolphin carcasses recovered has increased significantly.”

“Boats can interrupt dugongs’ feeding when they pass by dugong herds (Hodgson and Marsh 2007). Although dugongs are more likely to respond to boats passing within 50 m, they have been observed responding to boats over 500 m away (Hodgson and Marsh 2007). What determines dugongs’ detection distance and response to boats, and the effects of interrupting their feeding, have not been quantified (Hodgson and Marsh 2007). Potential costs of disturbance include reduced energy intake, increased energy expenditure while fleeing from boats, and exclusion from preferred seagrass patches (Hodgson and Marsh 2007). **By effectively reducing dugong habitat quality, disturbance from boats could cause emigration, reduced fecundity or even starvation in dugongs.**”

“**Boat strikes are a significant cause of dugong mortality in Australia** (Greenland and Limpus 2006), and can also cause serious injuries and mortalities to coastal dolphins (Wells and Scott 1997; Parsons and Jefferson 2000). The delayed response of dugongs to boats makes them particularly vulnerable to large and/or high speed vessels (Groom et al. 2004; Hodgson 2004). **Shallow waters represent particularly high risk areas for dugongs as they cannot dive deep to avoid vessels** (Hodgson 2004) and in Australia they have been crushed between boats and the seabed (Yeates and Limpus 2003).”

“**The background information provided in this report is poorly reviewed and refers mostly to reports and websites rather than peer reviewed articles that are widely accessible.** There are some statements within the background information that are **not supported by the existing literature, and as such, some of the information provided is misleading.** The review does highlight the paucity in data about the seagrass in the region, and little has been done to address this issue.

The Wilderness Society’s conclusion: The Strategic Assessment Report prepared by DSD cannot be relied upon by State or Commonwealth authorities in determining the impacts of the James Price Point gas hub proposal on marine mammals. Accordingly, based on the documentation provided, they cannot decide that the impacts are ‘acceptable’ or ‘manageable’. www.wilderness.org.au/kimberley