Opportunistic sightings of Indo-Pacific humpback dolphin, *Sousa chinensis* from Kuwait waters with notes on their behaviour

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Abstract

Sightings of Indo - Pacific humpback dolphin (*Sousa chinensis*) recorded during 2006 - 2009 from Kuwait are reported with notes on their behaviour.

Keywords: *Sousa chinensis*, humpback dolphin, Kuwait waters

Introduction

The Indo - Pacific humpback dolphin, *Sousa chinensis* is a commonly reported delphinid from the Arabian Gulf (Bruyns, 1960; Al Robaae, 1970, 1974; Pilleri and Gihr, 1974; Leatherwood, 1986; Gallagher, 1991; Weitkowitz, 1992; Robineau and Fiquet, 1994, 1996; Baldwin et al., 1999; Preen, 2004; Bishop and Alsaffar, 2008). However recently there is very scanty or little scientifically valid information on distribution, abundance and behaviour of *S. chinensis* from Kuwait, with the exception of recent sighting records from Boubyan Island (Bishop and Alsaffar, 2008) and undocumented sightings by divers, tourists and researchers. The present sighting records of *S. chinensis* are from opportunistic surveys off Kuwait during the period 2006-2009. The northern Gulf was impacted by the gulf war oil spill in 1991 and reduction in the riverine input due to water extraction (Al-Yamani et al., 2007). Although it is reported that there is considerable reduction in dolphin populations of the gulf (Preen, 2004), further studies are necessary to understand the reasons for this decline (Sheppard et al., 2010). Hence information on dolphins is important to understand their present abundance and distribution in the gulf.

Material and Methods

During the years 2006 - 2009, opportunistic sightings of dolphins were recorded between Al Khiran (28° 39’ N lat., 48° 23’ E long. ) and Min Al Zour (28° 42’ N lat., 48° 24’E long.) coastal waters in Kuwait (Fig. 1) using a 5.3 m fibreglass speed boat fitted with Yamaha Enduro 115 HP engine. The boat was primarily engaged for monitoring water quality parameters. The team consisted of one observer onboard and a photographer. As the surveys were opportunistic, there was no planned line-transect surveys. The number of hours of observation depended on water quality sampling requirements. Hence, sighting frequency per hour could not be determined. Whenever a dolphin group was sighted, the boat was allowed to drift towards the group with engine switched off. Sighting data such as date, time, GPS location, pod size, water depth, tidal information, sea state (Beaufort scale) and behaviour were recorded (Table 1). Positions were recorded using Garmin GPS (Model GPS 60). Sightings were carried out from 300 to 500 m from shoreline at a depth of 4 to 7 m. Bathymetry data were obtained from maps (MOC, 1999). Dolphins were observed with binoculars (Olympus 10x25WP1) and photographed with a digital camera (Nikon D3 x 24 megapixel, Nikor Lens 400 mm). Sighted dolphins were identified following Jefferson et al. (1993). Majority of the sightings was at a distance of about 4 m from the boat. The length of dolphins was estimated by visually relating to the length of the boat. Calves were identified from their size and lighter colour (Jefferson and Karczmarski, 2001).
Animals that were half the size of the adults were considered as sub adults.

**Results and Discussion**

**Identification and group characteristics**: On all occasions only the Indo-Pacific humpback dolphin, *Sousa chinensis* was sighted (Fig. 2, A-E). Sighting events occurred at almost regular intervals (every 4-5 months) during the years 2006, 2008 and 2009. No sighting was recorded in 2007 although similar effort was employed.

The group size observed was 3 to 15 (mean: 7, Table 1). According to Jefferson and Karczmarski (2001), the group size of *S. chinensis* varies from < 10 to < 25. However group size ranging from 30-100 individuals have been recorded in the Arabian Gulf and Arabian Sea (Baldwin *et al.*, 2004). In Kuwait waters group size of 30 individuals have been recorded from Boubyan Island (Bishop and Alsaffar, 2008). During the present sightings, individuals of 1 to 2.8 m total length were observed. Based on the published information on length of *S. chinensis* (Jefferson *et al.*, 1993; Jefferson and Karczmarski, 2001), it is probable that juveniles, sub adults and adults occurred in the groups (Fig. 2, A-E). Twice an adult humpback dolphin (< 3m in total length) was sighted swimming close to a calf (Fig. 2 A & B) off Min Al Zour (28° 40’ 58.5”N lat., 48° 23’ 30.5”E long. on 25 May, 2009) and south off Khor Al Mufateh entrance (28° 39’ 00.2”N lat., 48° 23’ 51.7”E long. on 4 July, 2009). Calves measured approximately 1 to 1.5 m in total length. Baldwin *et al.* (2004) have also reported sightings of adults with calves during April-May in the Arabian Gulf.

**Behaviour**: Two humpback dolphins sighted on 25 May, 2006 at 17:00 h exhibited helical swimming behaviour with one lying on its back with the other on top of it showing ventral body contact. These individuals continued to swim in this pattern for less
than a minute. This behaviour was repeated two times at short intervals. These observations suggest mating behaviour as described for humpback dolphins off Pakistan by Roberts et al. (1983) and in Algoa Bay, South Africa by Karczmarski et al. (1997) and Karczmarski and Cockcroft (1999). This behaviour coincides with the April–May (summer) mating season of humpback dolphin observed by Baldwin et al. (2004) in Arabian waters and peak sexual behaviour exhibited during summer in Algoa Bay, South Africa (Karczmarski and Cockcroft, 1999).

The dolphins observed on 4 July, 2009, near south off Khor Al Mufateh, Al Khiran (28º 39' 00.2''N lat. and 48º 23' 51.7''E long.) at 8:25 h were chasing a shoal of pelagic Gulf herring, *Herklotsichthys lossei*, which leapt out of water to escape attack. This behaviour is an indication of intensive feeding activity, similar to the feeding behaviour in the Arabian Gulf reported by Baldwin (1995). Daytime feeding behaviour of humpback dolphin also occurs in Algoa Bay, South Africa (Karczmarski and Cockcroft, 1999). On 8 August, 2009 three calves of about 1 m length were observed near Al Khiran (28º 40' 12.7''N lat., 48º 24' 08.6''E long.) at 6:55 - 7:50 h. Calves swam close to the water surface rolling one over the other in a spiral motion, flapping their tail flukes and rose vertically half out of the water (Fig. 2 D). Individuals lay on their back (Fig. 2 E) for circa two seconds.

Table 1. Sighting details of Indo-Pacific humpback dolphin (*Sousa chinensis*) from Kuwait during 2006-09

<table>
<thead>
<tr>
<th>Date</th>
<th>Observation time</th>
<th>Latitude, Longitude</th>
<th>Location</th>
<th>Group size</th>
<th>Depth (m)</th>
<th>Tide</th>
<th>Beaufort scale</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-5-06</td>
<td>16:30 - 17:45</td>
<td>28º 40' 58.5 N, 48º 23' 30.5 E</td>
<td>Near Min Al Zour</td>
<td>7</td>
<td>6</td>
<td>Low 0</td>
<td>Two dolphins exhibited helical swimming patterns with ventral body contact; adult and a calf observed.</td>
<td></td>
</tr>
<tr>
<td>14-9-06</td>
<td>9:45 - 10:10</td>
<td>28º 39' 16.2 N, 48º 23' 49.9 E</td>
<td>Al Khiran</td>
<td>3</td>
<td>5.3</td>
<td>Low 1</td>
<td>Sub adults and adults observed.</td>
<td></td>
</tr>
<tr>
<td>22-7-007</td>
<td>10:30 - 11:00</td>
<td>28º 41' 17.2 N, 48º 23' 34.2 E</td>
<td>Al Khiran</td>
<td>14</td>
<td>4</td>
<td>High 1</td>
<td>Sub adults and adults.</td>
<td></td>
</tr>
<tr>
<td>27-8-08</td>
<td>8:45 - 9:05</td>
<td>28º 42' 18.1 N, 48º 23' 27.9 E</td>
<td>Min Al Zour</td>
<td>3</td>
<td>6</td>
<td>Low 1</td>
<td>Adults.</td>
<td></td>
</tr>
<tr>
<td>11-1208</td>
<td>7:50 - 8:15</td>
<td>28º 39' 42.5 N, 48º 23' 56.3 E</td>
<td>Al Khiran</td>
<td>5</td>
<td>4.3</td>
<td>High 0</td>
<td>Adults.</td>
<td></td>
</tr>
<tr>
<td>19-2-09</td>
<td>8:00 - 8:25</td>
<td>28º 40' 53.8 N, 48º 24' 02.0 E</td>
<td>Near Min Al Zour</td>
<td>3</td>
<td>7</td>
<td>High 1</td>
<td>Adults.</td>
<td></td>
</tr>
<tr>
<td>4-7-09</td>
<td>8:20 - 8:50</td>
<td>28º 39' 00.2 N, 48º 23' 51.7 E</td>
<td>South of Khor Al Mufateh, Al Khiran</td>
<td>10</td>
<td>4.7</td>
<td>High 2</td>
<td>Adult and a calf observed isolated from the group; Adult dolphins observed chasing a shoal of Gulf Herring, <em>Herklotsichthys lossei</em>.</td>
<td></td>
</tr>
<tr>
<td>5-7-09</td>
<td>7:45 - 8:05</td>
<td>28º 39' 57.9 N, 48º 23' 51.7 E</td>
<td>Al Khiran</td>
<td>3</td>
<td>4.3</td>
<td>High 2</td>
<td>Adults.</td>
<td></td>
</tr>
<tr>
<td>19-7-09</td>
<td>7:25 - 8:45</td>
<td>28º 39' 27.0 N, 48º 23' 52.4 E</td>
<td>Near Khor Al Ama, Al Khiran</td>
<td>4</td>
<td>4.3</td>
<td>High 2</td>
<td>Adults.</td>
<td></td>
</tr>
<tr>
<td>7-8-09</td>
<td>8:00 - 8:15</td>
<td>28º 39' 53.4 N, 48º 23' 53.2 E</td>
<td>Near Al Khiran</td>
<td>15</td>
<td>4</td>
<td>High 2</td>
<td>Adults and calves</td>
<td></td>
</tr>
<tr>
<td>8-8-09</td>
<td>6:55 - 7:50</td>
<td>28º 40' 12.7 N, 48º 24' 08.6 E</td>
<td>Near Al Khiran</td>
<td>10</td>
<td>4</td>
<td>High 2</td>
<td>Adults and calves</td>
<td></td>
</tr>
</tbody>
</table>

1 Depth (m) data from bathymetric chart (MOC, 1999).
and then resumed normal swimming. These may be socializing behaviours exhibited by the calves, which are similar to the observations made in adults by Roberts et al. (1983).

Based on sightings of *S. chinensis* off Boubyan Island in Kuwait, Bishop and Alsaffar (2008) suggested the presence of a resident population. The present study supports this view. It is also possible that *S. chinensis* in the Arabian Gulf is a single population. Genetic studies by different countries in the Arabian Gulf would expand our understanding on this species. A more detailed study on diurnal behaviour, population characteristics and habitat patterns will help to frame appropriate conservation measures for the Indo-Pacific humpback dolphin. However, it appears that the impacts of oil spill and reduced freshwater discharge into the northern gulf have not restricted the breeding grounds of *S. chinensis*.

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Fig. 2. A-E. Indo-Pacific humpback dolphin, *Sousa chinensis* sighted off Kuwait (2006-09)
Opportunistic sightings of Indo-Pacific humpback dolphin, Sousa chinensis

Reference


MOC. 1999. *Approaches to Mina Az Zor*, Published by Ministry of communications, State of Kuwait (map).


* Not referred in original.