



RECOMMENDED DOLPHIN-WATCHING PROTOCOL FOR RECREATIONAL & COMMERCIAL VESSELS

Introduction

These recommendations have been developed as a result of extensive research into behaviour and acoustic responses of bottlenose dolphins to different types of vessels and their behaviour. Recommendations outlined here have been developed for both recreational and commercial vessel users who frequent coastal and estuarine environments in addition to marine resource managers. Recreational and commercial vessels include all motorised vessels, sail craft, Jet Skis, kayaks, surfboards and other personal watercraft.

The development and implementation of these recommendations will provide greater protection of dolphins inhabiting the coastal regions of Australia without compromising the viability of commercial or recreational vessel operations. Recommendations outlined here also promote responsible boating along Australia's coastline. In addition, this document is designed to be used as an educational reference for vessel operators and managers.

Purpose of Recommendations

Many human activities occur along the coastal regions of Australia. These regions are not only extensively used by humans, but are also home to resident populations of coastal dolphins species. Many resident dolphins (i.e. individuals that inhabit a specific area throughout the year) encounter numerous vessels frequently on a daily basis. Recreational and commercial vessel activities are one of the main human activities occurring in these regions.

Frequent encounters with vessels can cause significant changes and disruption to the behaviour and acoustic communication of dolphins. Over time, the disturbances can accumulate and have long-term consequences such as reductions in reproductive success and displacement from core habitat areas. These long-term consequences can endanger the population viability of dolphins inhabiting regions of the coastline.

Identification of Frequently Encountered Dolphins Species in Coastal Waters of Australia

Many species of dolphins inhabit the coastal waters of Australia. The most frequently encountered species of dolphins along the coastal waters of southeastern, southern and

western Australia are bottlenose dolphin (*Tursiops sp.*) and common dolphins (*Delphinus delphis*). In northern Australian waters, Irrawaddy or Snubfin dolphin (*Grampus griseus*) and Indo-Pacific Humpback (*Sousa chinensis*) dolphins may be the most regularly encountered species. These species may be easily distinguished by their external features (Figure 1). Photos of the four most frequently encountered species of dolphins along the Australian coastline are shown below (Figure 2).

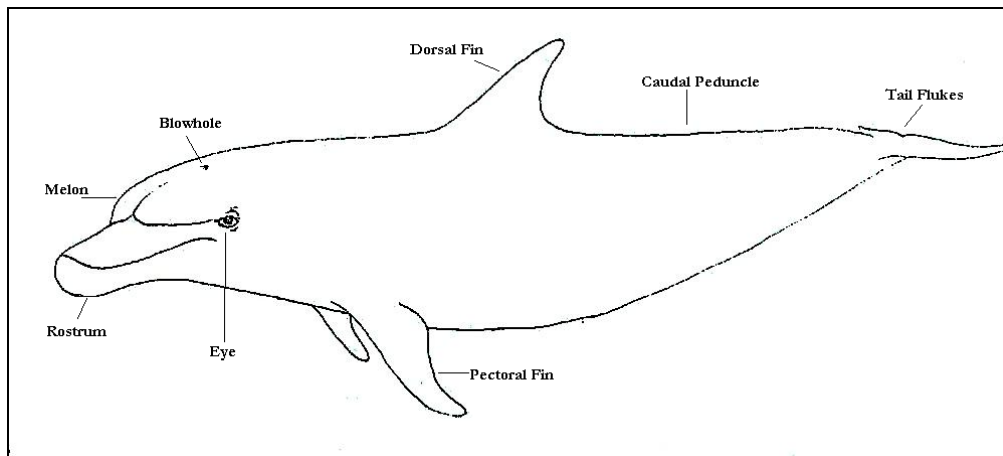


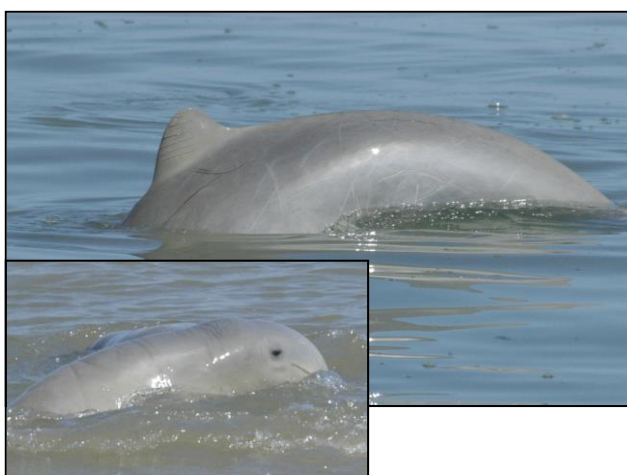
Figure 1: External features of a dolphin (© E. Hawkins).



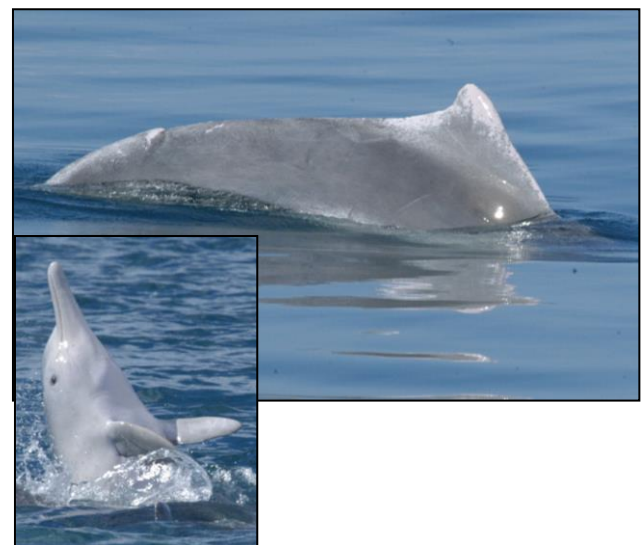
Bottlenose Dolphin (*Tursiops sp.*)
(Photo © E.Hawkins 2006)



Common Dolphin (*Delphinus delphis*)
(Photo © E.Hawkins 2006)



Snubfin dolphin
(*Grampus griseus*)
(Photo © D. Cagnazzi 2006)



Indo-Pacific Humpback Dolphin
(*Sousa chinensis*)
(Photo © D. Cagnazzi 2006)

Figure 2: Commonly encountered species in coastal regions of Australia.

Types of Dolphin Behaviour

The behaviour of dolphins can be highly diverse and difficult to define or identify. In order to simplify the activities of the dolphins, four general behaviour types are recognised; travelling, socialising, milling and feeding. Definitions of these behaviours are presented below (Table 1). Photographic examples of each behaviour type are presented in Figure 3. It is important to be familiar with the types of behaviours dolphins are exhibiting as dolphins are more sensitive to disturbance when they are engaged in different behaviour types.

Table 1: General behaviours of dolphins.

BEHAVIOUR	DESCRIPTION
<i>TRAVELLING</i>	Dolphin is moving consistently in a defined direction, with consistent dive times.
<i>SOCIALISING</i>	When two or more dolphins are clearly interacting with each other; involves physical contact between individuals.
<i>MILLING</i>	Dolphin is not travelling in any particular direction and is remaining within a specific area; entails frequent changes in direction and slow swimming speeds.
<i>FEEDING/FORAGING</i>	Dolphins are clearly involved in pursuit of prey and feeding; includes deep diving (caudal fin of dolphin is exposed when diving), fast swims, frequent changes in travel direction and irregular dive times.



Examples of travelling behaviours (Photo © E. Hawkins 2006)



Examples of socialising dolphins (Photos © E. Hawkins 2006)



Examples of milling behaviours (Photo © E. Hawkins 2006)



Examples of dolphins feeding (Photo © E. Hawkins 2006)

Figure 3: Photographic examples of the four general behaviour types of dolphins.

Vessel Approach Protocol

Recommended Vessel Approach Protocol

All vessel operators should act in accordance with state and national dolphin-watching guidelines (Figure 4). Recommendations outlined below include recommendations from both state and national guidelines (Australian National Guidelines for Whale and Dolphin Watching, 2006), with additional recommendations, explanations and practical suggestions for vessel operators. These recommendations have been developed as a result of extensive research and aim to increase conservation and protection measures of dolphins in coastal regions of Australia.

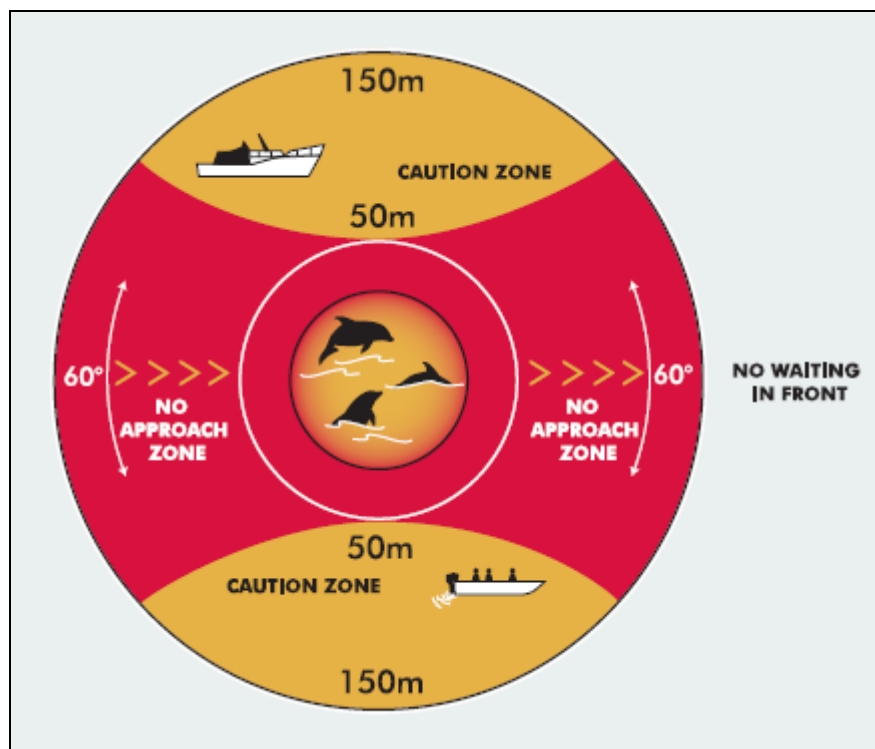


Figure 4: Vessel approach distances for dolphins
(DEH, 2006)

1) Approaching Dolphins

- When approaching dolphins all vessels should **approach a group of dolphins from behind and parallel to their direction of travel**. Vessel speed should be steadily reduced when within 150m of dolphins with no sudden changes in acceleration or direction.
 - If dolphins are milling, socialising or feeding, the direction of travel may be unclear. Under these circumstances, the vessel should be slowed at 150m and the behaviour of the dolphins assessed. If feeding, the vessel should avoid approaching closer and give the dolphins a wide girth to avoid disturbing the dolphins' prey. If the dolphins are travelling, milling or socialising, the vessel should proceed with no quick changes in acceleration, gear changes, sudden changes in movements or travel direction. **Fewer disturbances to dolphins arise when a vessel has a consistent speed and travel direction.**

- If a pod contains mothers and calves (Figure 5), caution should be made and vessels should not approach closer than 100m, particularly if the pod is milling or feeding or if a newborn (foetal fold) calf is present.
- Vessels should **not approach dolphins closer than 50m**.
- Vessels should **not purposefully be positioned in front of the dolphins travel path**.
- Vessels should **not travel through a pod of dolphins under any circumstances**.
 - Dolphins are less likely to approach or interact (e.g. bowride or wake-ride) when vessels are driven through a pod from any direction.
 - A significant amount of stress to dolphins can be created, particularly in young calves, when vessels are driven aggressively (with unpredictable movements or rapid changes in acceleration) and invasively (driven through the pod from any direction).

2) When Watching Dolphins from Vessels

- When watching dolphins, **maintain the vessels position parallel to and slightly behind the dolphins** direction of travel.
- Vessels should **not purposefully remain in close proximity (50m-150m) with dolphins for more than 20minutes**.
 - Dolphins will often begin to avoid vessels if vessels remain in close proximity (50m) for more than 20minutes.
- **No more than three motorised vessels should be within 150m** to dolphins at any time.
- **Touching dolphins is not permitted** under any circumstances under the Australian dolphin and whale watching regulations.
 - Pathogens and bacteria from humans are easily passed on to dolphins if physical contact is made. This can cause illness and death in dolphins.
- **Do not purposefully create noise to attract dolphins** to a vessel.
- **Do not attempt to feed wild dolphins** either by hand or by throwing fish or other objects to them.
- If dolphins **show any signs of disturbance, the vessel should immediately move away** from the dolphins (preferably more than 300m away).

3) Moving Away from Dolphins

- **When moving away from dolphins**, the vessel should be operated in a similar fashion to an approach – with **slow speed to 150m then accelerated steadily with predictable directionality**.

4) If Dolphins Approach the Vessel

- If dolphins are bowriding or interacting with the vessel, **the speed and direction of travel should remain consistent**. If the vessel needs to be stopped, the speed of the vessel should be gradually reduced.
- Dolphins have been found to approach and interact (e.g. bowride) more with vessels when driven with predictability (i.e. speed and direction of **travel remains consistent at distances of more than 50m** or vessel remains at least 50m from the pod and is idle).

5) *Additional Recommendations for Specific Vessel Types*

It has been found that different types of vessels can have different affects on the behaviour and acoustics of dolphins. The following recommendations have been developed to address specific issues found with different types of vessels.

Kayaks

- Kayaks and other paddle craft should be operated similar to other vessels – with predictable direction of travel and remain at a distance of at least 50m from dolphins.
- If more than one kayak is present or more than one kayak is travelling together:
 - Kayaks should remain as close as possible when approaching dolphins.
 - Kayaks should approach dolphins from the same direction.
 - When observing dolphins, it is recommended that kayaks remain idle and ‘raft’ (i.e. hold kayaks together) to avoid kayaks drifting and spreading in close proximity to dolphins.
 - If more than one kayak approaches a pod of dolphins in a spread formation or from different directions, this can cause dolphins to become displaced (i.e. dolphins stop what they are doing and move to another area away from the cause of disturbance), altering their behaviour and causing considerable disturbance.

Surfers

- Dolphins will approach stationary or idle surfers more than those that attempt to approach dolphins. Dolphins have been found to be disturbed and avoid areas where surfers are present following repeated approaches from surfers. It is therefore recommended that surfers do not attempt to approach or follow dolphins. If a surfer does attempt to approach dolphins, it is recommended that they travel from behind and parallel to the dolphins (as outlined above).

Motorised Vessels (Including Jet Skis)

- Any vessel with an engine should be serviced regularly to keep the level of noise created from the engines to a minimum.
- Engines and propellers that are damaged or unserviced can also cause considerable levels of pollution in local waterways.
- Cavitation caused by damaged propellers can also generate excessive levels of noise in the coastal environment.
 - Noise created by vessels can disturb the communication of dolphins. As dolphins rely on acoustics in the marine environment to remain in contact with other group members, to locate food and to navigate, excessive noise pollution can disrupt these important components of communication.



Figure 5: Bottlenose dolphin (*Tursiops sp.*) calf with its mother (Photo © E. Hawkins).

Behavioural Indicators of Dolphin Disturbance

It is useful to be able to identify behavioural changes of dolphins which may occur as a result of disturbance from a vessel. These behaviours are:

- Increased changes in travel direction.
- Changes in travel direction or orientation away from a vessel.
- Dolphins move away and out of the area where the vessel is.
- Changes in the occurrence of surface behaviours including leaping, tail slapping and deep dives (fluke-up-dives).
- Dolphins group together into a tight formation following the approach of a vessel.
- Dolphins increase their travel speed following the approach of a vessel.
- Dolphins increase their dive time (i.e. the amount of time spent below the surface).
- Dolphins may also alter their acoustics when disturbed by a vessel, usually by increasing the number of whistles.

Conclusions

It is important to ensure that any interaction with dolphins is on their terms. If a vessel's behaviour remains predictable with consistent travel speed and direction and the vessel remains at least 50m from the pod, dolphins then have the choice to approach or remain undisturbed.

For further information on dolphin and whale watching guidelines:

Department of Sustainability, Environment, Water, Population and Communities
<http://www.environment.gov.au/coasts/species/cetaceans/whale-watching/>



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