



DOLPHIN WATCH

2010 – 2011



Photo: Gillian Johnson



Murdoch
UNIVERSITY



Curtin University

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Photo: Rachel Hutton

Foreword



1 April 2011 marked the conclusion of the second year of the Dolphin Watch project. River Guardians have continued to train as Dolphin Watch volunteers and currently 202 volunteers are monitoring dolphins in the Swan Canning Riverpark.

The Swan River Trust, Murdoch and Curtin universities have been working closely together to offer the community opportunities to be involved in citizen science by reporting their observations of dolphins.

Dolphin Watch volunteers are the 'eyes on the Riverpark', providing scientists with valuable observations to help discover new information on dolphins. It has been fantastic to see enthusiastic new volunteers joining the project and sending in their observations.

This year, we are encouraging volunteers to take photographs of the dolphins when they observe them. Dr Hugh Finn and a colleague at Murdoch University have compiled a new catalogue called Finbook which will aid the identification of the resident animals in the Swan Canning Riverpark. It is available online at www.riverguardians.com and we encourage observers to attempt to identify the animals and write the name or number in the notes section.

Thank you to those involved for your important contribution to the Dolphin Watch project.

Marnie Giroud
River Guardians Program Manager
Swan River Trust

Dolphin Watch Scientists and Staff



Dr Hugh Finn - Murdoch University

Post doctoral research fellow, Wildlife conservation, conservation biology

Dr Hugh Finn is a post-doctoral fellow at Murdoch University whose research focuses on black-cockatoos and bottlenose dolphins. He became involved with dolphins in the Swan River through his PhD research in Cockburn Sound and the Swan River from 2000 to 2003.

Hugh provides presentations and training for Dolphin Watchers and information and advice to the River Guardians team. His current research is examining the ecology of black-cockatoos in the Jarrah Forest and the Swan Coastal Plain. (Courtesy Murdoch University)



Chandra Salgado - Curtin University

**Research Fellow Marine Biologist
BSc Biology (NMT, USA), MSc Marine Biology (FIT, USA), PhD
Marine Ecology (CDU, Australia).**

Chandra Salgado is a Research Fellow with the Centre for Marine Science and Technology. Her main research interests are anthropogenic impacts on marine animals (including noise), vocalisation, distribution, migration patterns of marine mammals, and statistical analysis of biological data.

Recent assignments include analysis of blue and humpback whale vocalisation and experimental design and analysis of studies on ecology and behaviour of marine mammals. Chandra provides presentations and training for Dolphin Watchers and collates and analyses the data provided by the volunteers.



Marnie Giroud - Swan River Trust
River Guardians Program Manager

Marnie Giroud has worked with the Swan River Trust for more than three years in the role of River Guardians Program Manager which incorporates the Dolphin Watch project. Her passion for wildlife and conservation of the Swan Canning Riverpark is evident through her presentations and attendance at events for members and training for Dolphin Watchers.



Rachel Hutton - Swan River Trust
Community Engagement Officer

Rachel Hutton has worked with the Swan River Trust for more than five years in the role of Community Engagement Officer which incorporates the River Guardians program and Dolphin Watch project. Rachel creates River Guardians publications, contributes to community engagement planning and initiatives and coordinates events and presentations for the Trust and River Guardians.

Dolphin Watch project



The Swan River Trust, Murdoch and Curtin universities collaborated in 2009 to create a new social science research and education project recording the activities of bottlenose dolphins in the Swan Canning Riverpark.

Dr Hugh Finn, Dr Carly Palmer and Dr Nahiid Stephens from Murdoch University, and Dr Chandra Salgado from Curtin University are leading the research into Perth's Swan River dolphin community and investigating how environmental changes in the river and human activities can affect the dolphin community.

The research project builds on previous research conducted in 2002 and 2003. It works with the Trust's River Guardians program to monitor the movement and behaviour of the dolphins.

Community involvement is a great boost to the research project and allows information to be gathered on how dolphins use the Canning and upper reaches of the Swan River – areas that experience problems such as low oxygen and algal blooms.

Recognising dolphins as indicators of river health, the project aims to provide information on dolphin ecology and interactions with human activities in the Swan and Canning rivers, upstream of Perth waters. It will provide a comprehensive understanding of the Swan River dolphin community.

Dolphins playing in the rivers are an iconic and much loved sight but the mammals' habitat and community could be at risk. The Swan River dolphin community is small, dependent on a handful of females and living in an urban environment which places a lot of stress on the mammals. Dolphins living in an estuarine environment can experience pressure from rapid salinity changes, loss of habitat, decreasing prey, entanglement, boat strikes and noise.

The Trust continues to urge the Perth public to look after the Riverpark to minimise stress on the dolphins. The public can play an essential role in monitoring this iconic species. Becoming a member of the River Guardians program is a way the community can get directly involved in looking after these mammals. River Guardians members can train to become Dolphin Watch volunteers. With more than 200 trained Dolphin Watchers observing dolphins the information is helping to provide more observations to be analysed by research scientists.

Caring for dolphins



Dolphins are part of the Swan Canning Riverpark and we all need to look after them by caring for their habitat the rivers. For river conservation tips check out our website www.riverguardians.com. When out on or around the Riverpark there are four simple things you can do to help care for dolphins.



Keep away from dolphins – never approach a wild dolphin. It is illegal to disturb or harass dolphins under the *Wildlife Conservation Act (1950)*. Boat-based observers should stay at least 100 metres away from dolphins and not attempt to approach them. Shore-based observers should also take care to avoid disturbing river dolphins.



Slow down for dolphins - dolphins often form resting groups in the middle reaches of the estuary, so keep an eye out for dolphins, and slow down if you spot any.



Never feed dolphins – it is illegal and leaves dolphins vulnerable to entanglement, boat strikes, and disease when they come into close contact with humans and boats.



Take your rubbish home - dolphins, particularly calves, can get tangled in fishing line. Make sure you dispose of unwanted monofilament line carefully.

Dolphins in the Riverpark



The Swan River Trust receives photographs of dolphins spotted in the Riverpark by Dolphin Watch volunteers. This year the community will be able to upload their photos of dolphins to our website. Photos and details of where and when they are taken will help researchers determine animals that are using the Riverpark on a constant basis.



Dolphins investigate a kayaker

Photo: Wayne Kerlake

This photo was taken by volunteer Wayne Kerlake and shows dolphins investigating a kayaker. Notice the person pictured has slowed down for dolphins and is allowing them to pass without disturbing the animals, a great way to care for dolphins.

Michael Rendell took this amazing shot of a dolphin jumping out of the water, quite a hard thing to capture if you have ever tried to take a photo of a dolphin!

There are more photos and information in the Dolphin Watch section on the River Guardians website. You will be able to upload your dolphin photos soon with our new online photo catalogue.

When photographing dolphins, remember to keep your distance and do not to disturb them. Photographs are most useful if they show the dorsal fin and are not in shadow. This helps scientists identify individual dolphins and sunlight on the animal helps to capture markings on the body which may also aid identification.

Identifying dolphins



FinBook is a new catalogue of dolphins observed within the Swan Canning Riverpark and the Inner Harbour of the Port of Fremantle over recent years. The first edition was created by Dr Hugh Finn and Dee McElligott and will be updated over time.

It is important that all the dolphins that use the Riverpark are identified, so their welfare can be monitored long-term. FinBook gives everyone the ability to participate in this process. Using FinBook, community members can recognise individual dolphins and contribute information to assist in monitoring of these unique residents of Perth's rivers.

Dolphins can be identified by the markings and nicks that are present on their dorsal fins. Many of these markings are permanent, thus allowing for dolphins to be monitored. Some dolphins are hard to identify because of a lack of markings and are known as 'clean fins'. FinBook is like a catalogue of 'fin-prints' for dolphins. The tables in FinBook show the right and left sides of each dolphin's dorsal fin. It also describes other unique features that can be used to identify individuals.

To view FinBook follow the link to the River Guardians website.

<http://www.riverguardians.com/DolphinWatch/IdentifyingDolphins/default.aspx>

FinBook



DOLPHIN
WATCH

An identification catalogue for dolphins
observed in the Swan Canning Riverpark
and Fremantle Port

1st Edition - May 2011



This year there is a new online monitoring process for all Dolphin Watch volunteers to log their sightings. This will enable volunteers to quickly and easily log their observations and will replace the old paper system.

Visit <http://www.riverguardians.com/DolphinWatch/DolphinWatchers/default.aspx> to sign in if you are a Dolphin Watch volunteer and contribute online.



Dolphin Watch volunteer Shirley Oliver with River Guardians program Manager Marnie Giroud

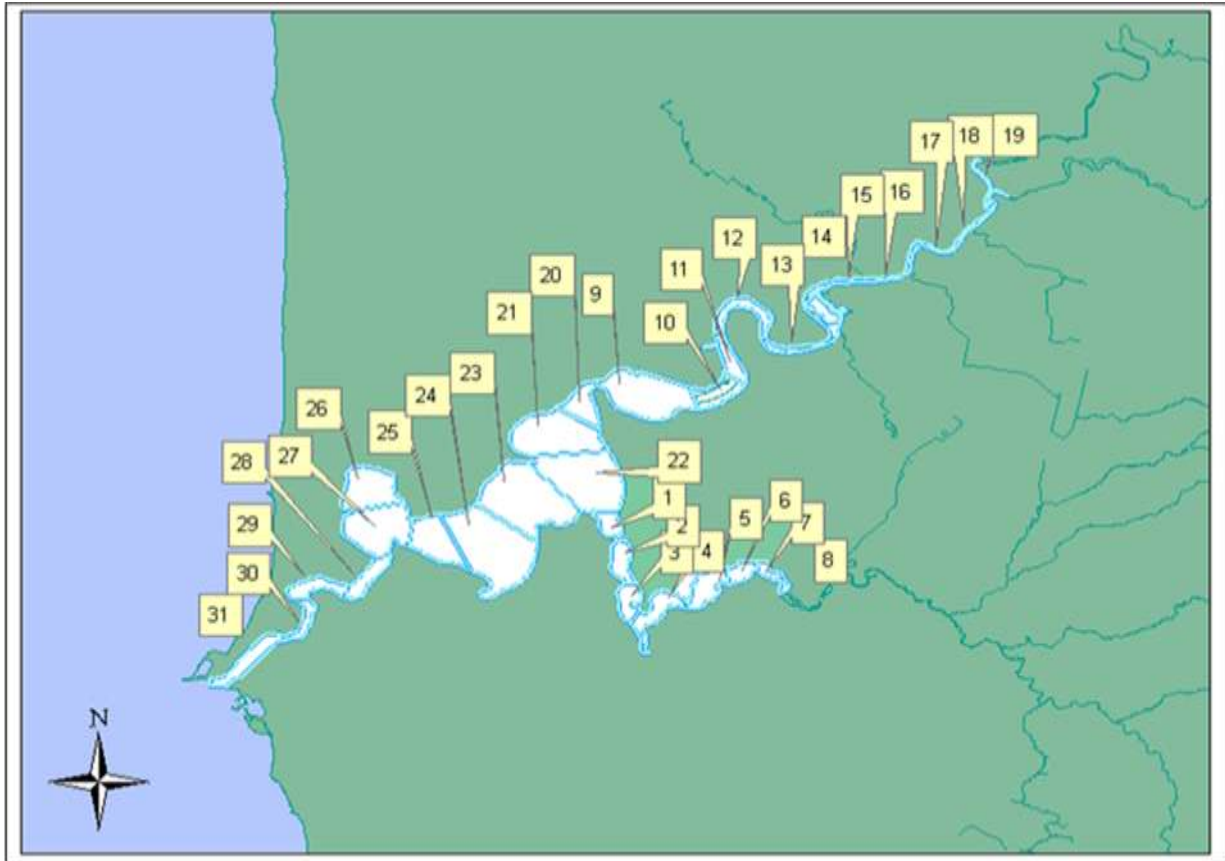
A new opportunity for the general community to participate will be through the Trust's new online photo catalogue. Visitors to the River Guardians website www.riverguardians.com will be able to upload their dolphin photos which will help develop an understanding of the animals visiting the Riverpark.



Dolphins socialising in the river

Photo: Rachel Hutton

During the last year, the Dolphin Watch study has been expanded to include the entire Riverpark after the community was keen to be involved in all areas. Although the areas from the Port of Fremantle to Perth waters had been studied previously, current information from these areas will also be helpful in the study.

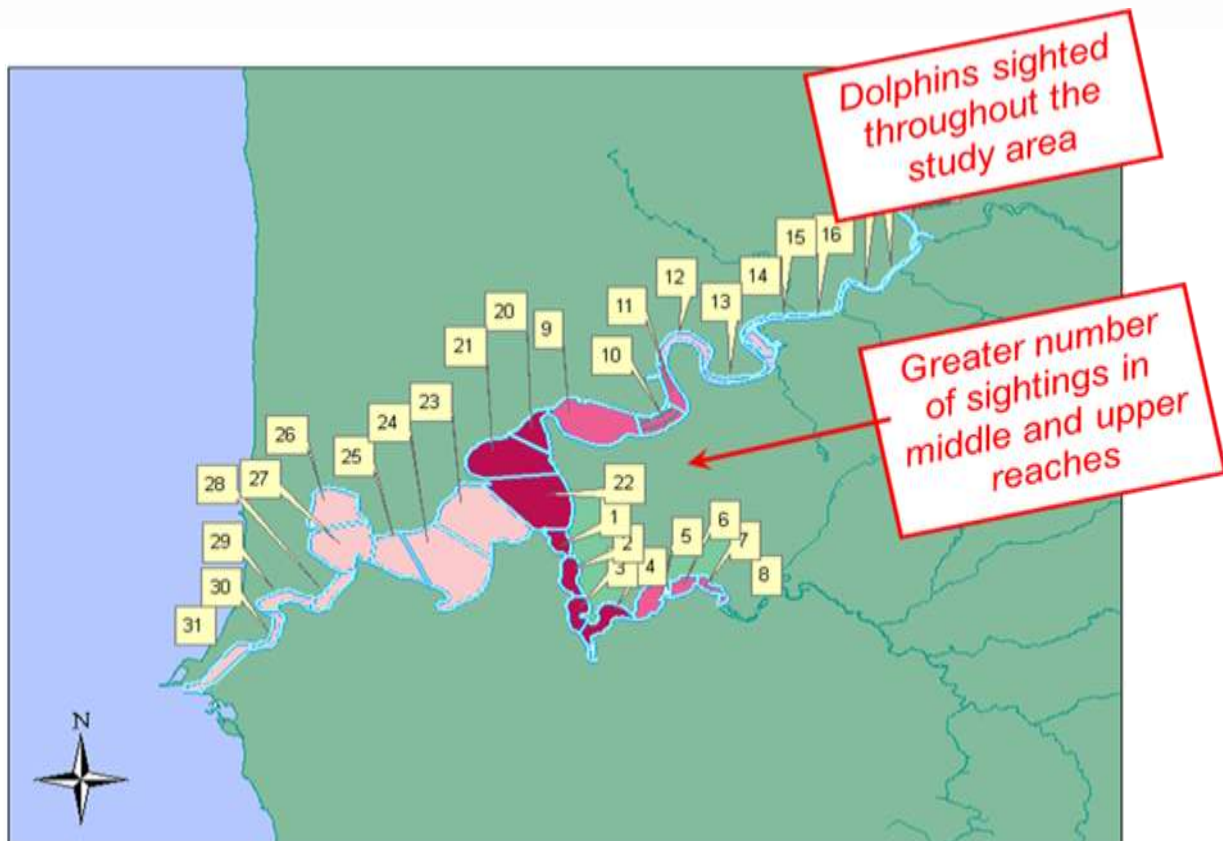


Dolphin Watch monitoring areas in the Swan Canning Riverpark



Numbers of observers and observations since 2009

As more people train to become Dolphin Watch volunteers, observations have increased four-fold in just over a year. With more than 200 trained volunteers, the average amount of monitoring per day has increased to three hours a day.



Areas with the greatest number of sightings (dark red)

Although this figure shows a high concentration of sightings in the Canning and Swan rivers, this could be attributed to the numbers of volunteers monitoring in these areas. Dolphin Watch staff would like to encourage volunteers to monitor all areas. Areas 15-19 and 26-28 are locations that require further monitoring. Most of the mid to lower reaches of the Swan also require further monitoring to achieve an overall picture of dolphins in the Riverpark.

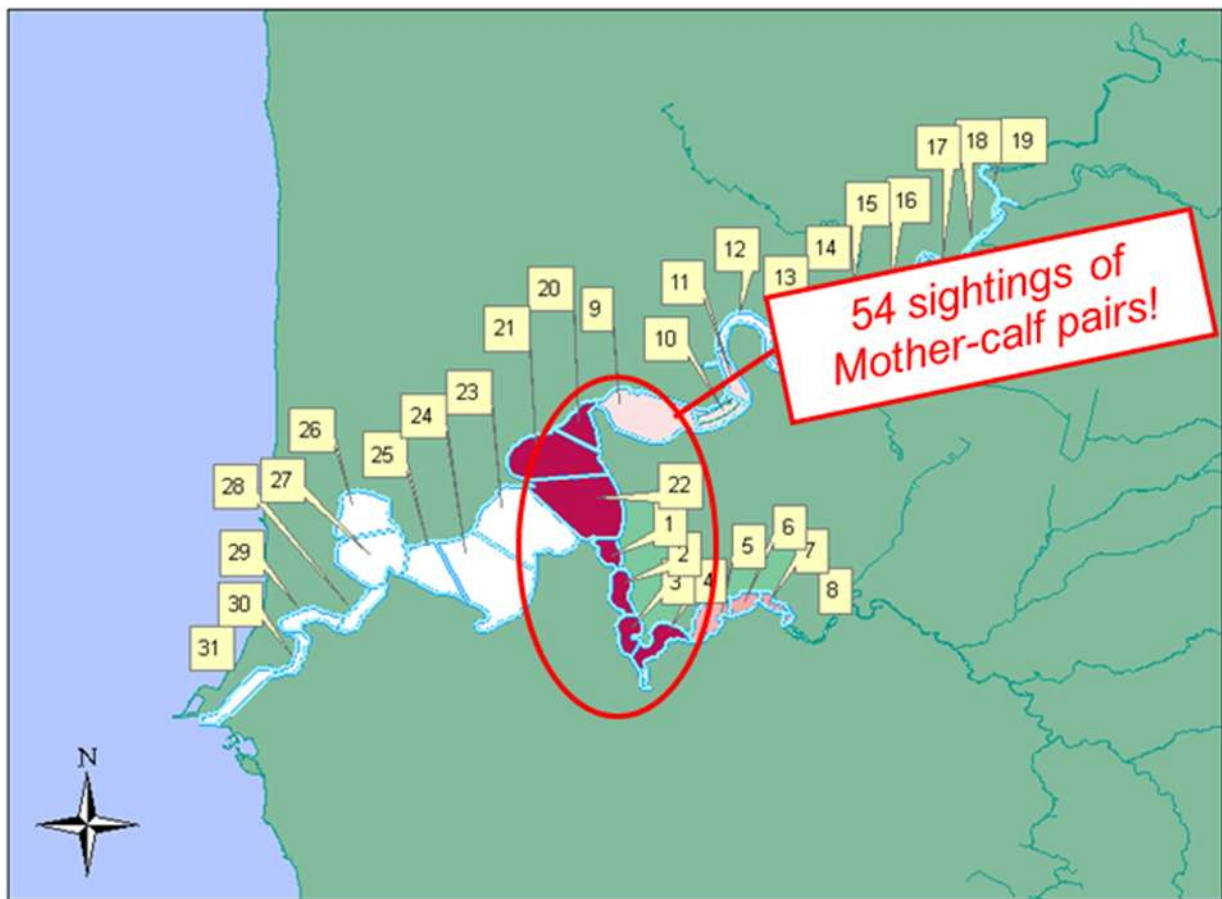
The quality of the data has improved since the beginning of the project, with more volunteers completing all parts of the monitoring forms. This has aided the research by providing a full data set. Dolphin Watch staff are now encouraging all volunteers to fill out monitoring forms when no dolphins are seen as well as the time start and end of searching. Having this extra information helps researchers understand where high concentrations of dolphins are occurring rather than just relying on sightings.

Research findings 2010-2011



There were 352 dolphin sightings during the year, making a total of 476 since the beginning of the Dolphin Watch project. Dolphins were sighted throughout the study area, from the river mouth (Port of Fremantle – area 31) all the way to the bend in the river around the Belmont area (area 33). Sightings of dolphins as far upriver as Belmont suggest that they may use all 40km of the Riverpark. A high number of dolphin sightings were made in the central areas of the river, like the mouth of the Upper Swan (zones 9 to 11) and Canning Rivers (areas 1-4) and within Matilda Bay (areas 20-22)(Figure 1).

Mother-calf pairs were recorded in the Riverpark during 54 observations. The sighting of mothers and calves was typically centred around the mouth of the Canning (17 sightings) and Matilda Bay area (15 sightings).



Mother-calf sightings in the Swan Canning Riverpark

Since November 2010, there has been a greater effort in recording the start and end times of searching effort as well as observations where no dolphins are sighted. This information is beginning to help tease out the volunteer effort in different areas of the Riverpark from the frequency of which dolphins occur in these areas. For example, in the figure below, the numbers of dolphins sighted in areas 29-31 are similar to those sighted in areas 12-14, yet the effort (total number of observations) is much higher in areas 12-14. If volunteers increased

their effort in areas 29-31, it would probably be found that dolphin sightings are more frequent in areas 29-31 than in areas 12-14.

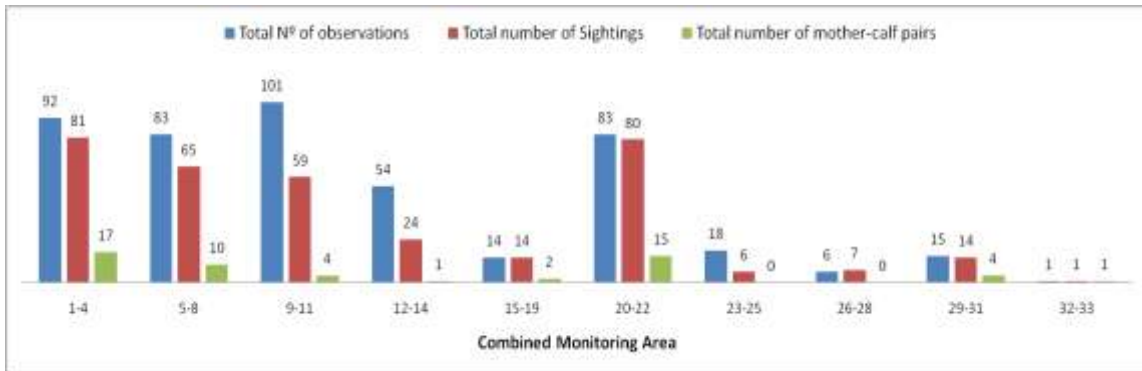
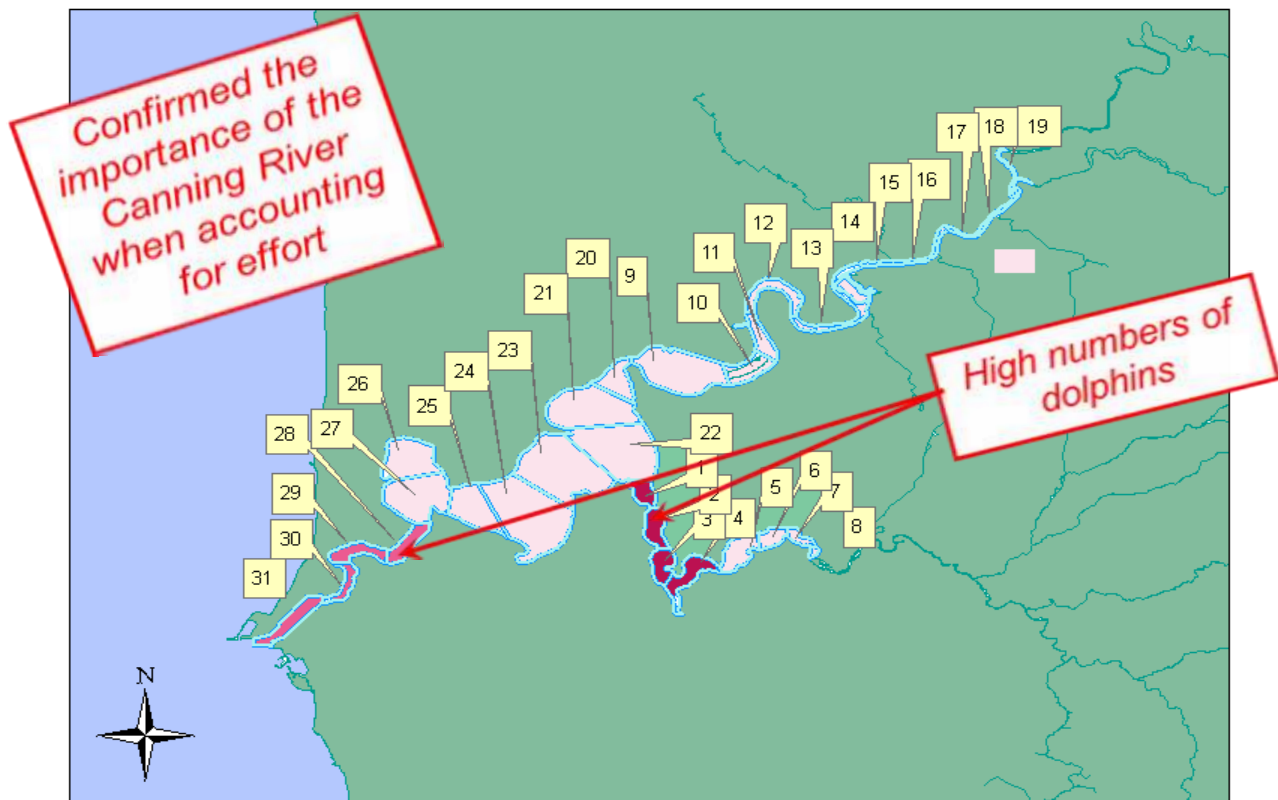


Figure 1 - N° of observations, sightings and mother-calf pairs in the study area.

Based on data collected since November 2009, and correcting it for volunteer effort, scientists can confirm the importance of the Canning River and the Port areas for dolphins. Much of the area between these two vicinities have not been monitored as closely. More observations (of dolphins as well as when no dolphins are seen) will help us obtain better estimates of dolphin occurrence in these areas. During this same period there was a high amount of effort in monitoring the upper reaches of the Swan River, but few dolphins were sighted here.



Monitored areas with the greatest number of sightings per hour of observation (dark red shows greater frequency of dolphin sightings)

Some of the areas in the Riverpark can be specifically used for ecologically important activities such as foraging. During this study, dolphin activities were classified as travelling, foraging and socialising. Foraging (defined as those behaviours which indicate that dolphins are seeking prey) was the most common activity, recorded in 44% of all sightings. Travelling was the least recorded of all activities with 20% and socialising with 31% (Figure 2).

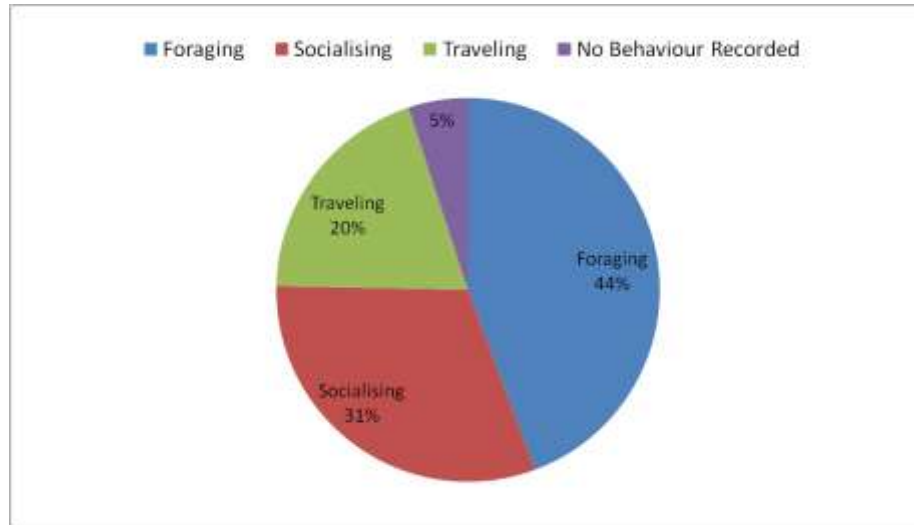


Figure 2 - Indicative behaviour of the dolphins.

Foraging was the most common activity in almost all parts of the study area. The combined monitoring areas 20-22 (Matilda Bay area) had high values of dolphins sighting, and in 58% of them the dolphins were foraging (Figure 3).

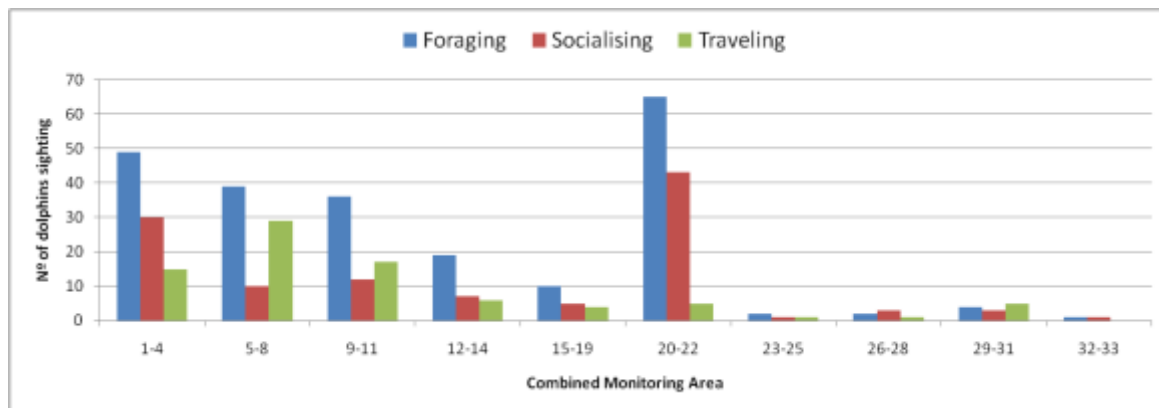


Figure 3 - Indicative behaviour of the dolphins in the different combined monitoring areas.

Observing the direction of travel of dolphins in the combined monitoring areas 20-22, 96% of their direction of travel was classified as stationary, suggesting that the dolphins stay in the area seeking prey most of the time. The stationary condition was recorded in all areas of the study and was predominant in 5 of the combined monitoring areas (Figure 4).

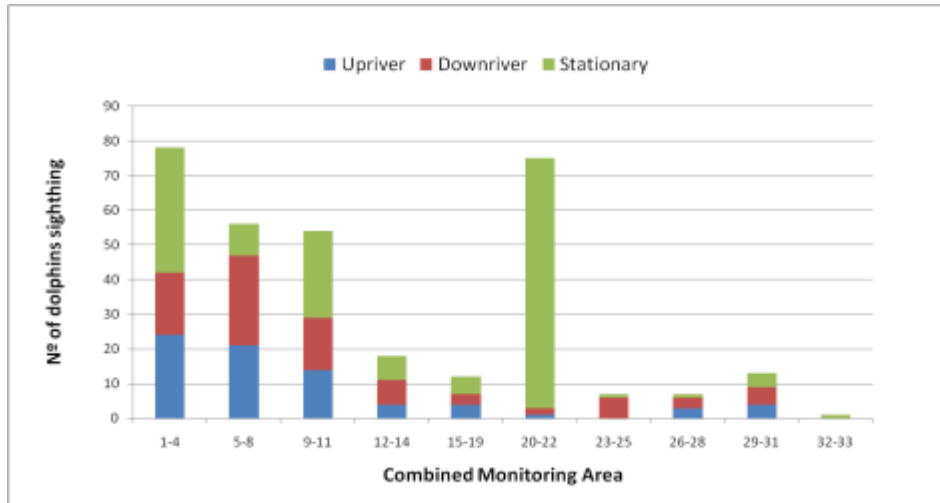


Figure 4 - Travel direction of the dolphins in the different combined monitoring areas.

The tide level was measured during the dolphin sightings. This information is important and can suggest if the dolphins are using this hydrologic condition for a particular behaviour as foraging or travelling. Figure 5 shows that a high number of dolphins were sighted in the falling condition of tide in the areas 1-4 and 20-22. The observation can suggest that dolphins are using areas like the mouth of the Canning River and Matilda Bay for foraging activity during the falling tide, using this condition as favourable for this behaviour.

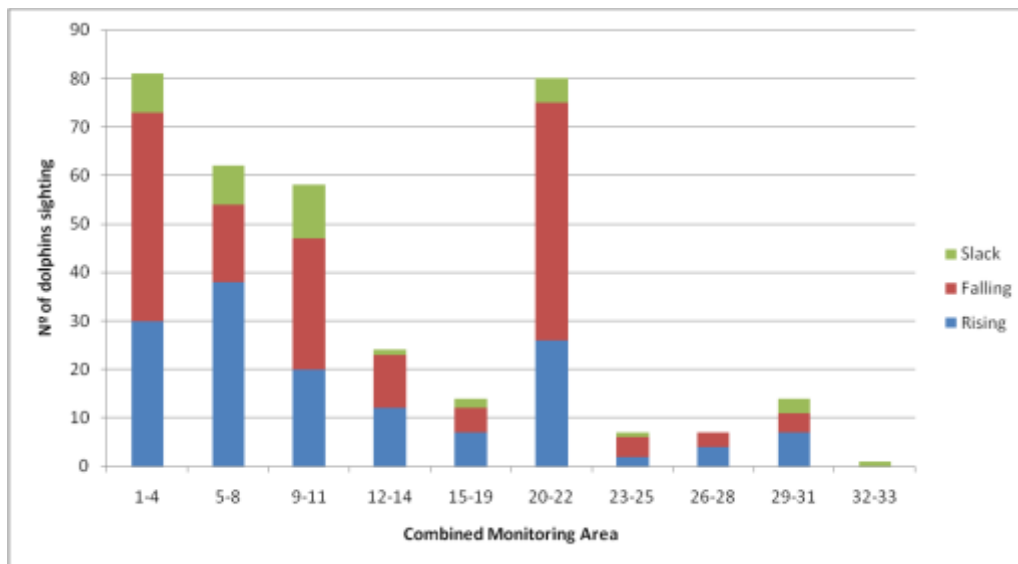


Figure 5 - Tide condition during the sightings in the different combined monitoring areas.

CONCLUSIONS

- Bottlenose Dolphins are present in all areas of the Riverpark and observer sightings indicated areas of high use in the Upper Swan, mouth of the Canning and Matilda Bay areas.

- The presence of calves suggests that the river is an important breeding/nursing area.
- The most frequently observed activity within the Riverpark was foraging (44%), suggesting that finding food is an important element of dolphin ecology in the Riverpark.
- Dolphin Watch observations suggest an association between dolphin behaviour and tidal cycle. In some areas dolphins were observed in a stationary condition (staying in the area) and they could be using the falling tide as a favourable factor for foraging.



Dolphin seen chasing a fish around a jetty pylon near Royal Perth Yacht Club

Photos: Rachel Hutton



Dolphin Watch Profile

Stuart Walton, General Manager
Royal Perth Yacht Club



Royal Perth Yacht Club at night

Royal Perth Yacht Club is proud to be a member of the Swan River Trust River Guardian and Dolphin Watch programs. Having a Clubhouse perched on the banks of the Swan and a marina that provides the perfect feeding ground – RPYC provides a fantastic vantage point to monitor visits from our Dolphin friends.

The condition of the River is of utmost importance to Royal Perth Yacht Club and to our members who rely on the beautiful Swan for their beloved sport of sailing. Dolphins are not only a delight to witness when members are out for a sail or when they visit the marina, but more importantly they are key indicator to the health of our river.

Some moments in life are precious, they make you smile, feel warm inside and add that spark to an otherwise normal day. These moments occur daily at Royal Perth Yacht Club for our members and staff the moment the cry of “dolphins” is heard.

All conversations stop, meals and drinks are quickly forgotten and people’s gaze immediately turns to the bay to watch one of nature’s finest creatures in action.

Some days the Club is blessed with a quick five minute visit – other days the dolphins frolic, jump, play and hunt for hours. However long the visit, each time dolphins visit the magic from the encounters lingers all day long.

We even have one regular dolphin who takes great delight in giving our members a fright as they walk down the jetties at night time. It often seems to bide its time until the members seem quite comfortable, and then jumps out of the water right next to them. Many members who have reported the sighting are sure they have heard the dolphin chuckling as it swims away.

Our members have embraced this program with gusto and report each sighting of dolphins to our Dolphin Watch Representative.