FinBook

An identification catalogue for dolphins observed in the Swan Canning Riverpark

NINTH EDITION – 2022

RIVER GUARDIANS

DOLPHIN WATCH

Murdoch University | Harry Butler Institute

ECU EDITH COWAN

GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

SWAN CANNING RIVERPARK

Foreword

It is a great pleasure, as Patron of *Dolphin Watch*, to write the foreword to the latest edition of this splendid book, which is based on the very best science and the dedicated work of so many individuals and teams.

Using the book as a guide, we now know so much more about the animals that are held dear by Western Australians and visitors to our State alike by bringing joy and being valuable components of ecosystems. The book makes it possible to identify individual dolphins and to build up a more comprehensive picture of their behaviours and needs. Their 'secret lives' are now being revealed, an essential prerequisite to ensuring their future in our ever-changing waterways.

I continue to be amazed by the success of *Dolphin Watch*. I am sure that, at the outset, none of us could have imagined that the project would have grown so much and have had such a lasting impact. At the heart *Dolphin Watch* are our extraordinary volunteers and we have striven to always give them the tools to do the very best job.

It is testimony to the importance and significance of the program that we have, despite a pandemic, recruited 93 new volunteers in the Perth region over the last two years. Who would have imagined that, in the Swan Canning Riverpark alone, we could have generated 31,000 reports over the life of the program! Of course, it is wonderful that we now have two additional sites in the Peel Harvey Estuary and Roebuck Bay.

Close to my heart, and to those of many in the *Dolphin Watch* family, is the Junior Dolphin Watch program. Congratulations to all the team who, in 2021 and 2022, delivered 28 river-related events, both incursions to schools and excursions, reaching an impressive total of 1170 students.

Dolphin Watch, supplemented by the FinBook, can justifiably claim to be establishing a legacy for future generations of West Australians and continues to enhance the efforts of all those who care about the natural world across the globe. Each time you reach out to this book please accept a heartfelt 'thank you' from me and from many others. Long may *Dolphin Watch* thrive!

Professor Lyn Beazley AO FAA FTSE

Front cover: Dunedoo, with Marnz (prior to having the middle nick he now has on his dorsal fin) and Super as a calf (June-July 2020). Photo: Sue Harper

Other photos by Delphine Chabanne, Sue Harper, Holly Smith, Krista Nicholson, Simon Allen, Matt Kleczkowski, Wayne Theobold, Alistair Ritchie, Rachel Hutton and Miranda Jackson.

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Dolphin Watch

Dolphin Watch is a collaborative, citizen science research and education project. The project was developed in 2009 by the Swan River Trust (now the Department of Biodiversity, Conservation and Attractions, or DBCA) together with Murdoch and Curtin universities. The aim is to help learn more about the resident Indo-Pacific bottlenose dolphin community that calls the Riverpark home.

For the last few years, the collaboration has been among DBCA's Parks and Wildlife Service, Edith Cowan and Murdoch universities. In 2018, Dolphin Watch expanded to also monitor the resident Indo-Pacific bottlenose dolphins in the Peel-Harvey Estuary in Mandurah, as well as the Australian snubfin dolphins in Roebuck Bay, Broome.

Researchers from Edith Cowan and Murdoch universities work with the Parks and Wildlife Service's River Guardians team to train volunteers in techniques for monitoring the movement and behaviour of dolphins. Volunteers play an essential role in monitoring dolphins as citizen scientists. By becoming a member of the River Guardians program and attending training, people become more informed about conservation issues and can participate in activities to help the waterways and coastline, and the wildlife that inhabits them.

With over 1500 trained **Dolphin Watchers** and 885 volunteers observing dolphins in Perth, researchers are gaining a greater understanding of what dolphins do in one of the three monitored areas.

Volunteer information, photographs and video helps build a picture of the community of dolphins in the monitored areas. The Marine Fauna Sightings smartphone app enables community members to record information such as location and behaviour of the dolphins they observed. The app is available to download for free from the App Store (iPhone) or Google Play (Android).

Dolphin Watch shares information and expertise so that industry, government and the community can develop effective management activities and policy to help protect dolphins and their habitats.

Dolphin Watch continues to expand research capabilities and encourage volunteers to participate through online monitoring, smartphone apps and other initiatives.

Perth dolphin research

Coastal and Estuarine Dolphin Project

Research for the Coastal and Estuarine Dolphin Project (CEDP) is driven by the belief that the best future for Perth's dolphins lies with ecosystems that are healthy and resilient and with communities that are actively engaged in caring for their local dolphin populations and the environments they inhabit.

CEDP addresses the health, ecology and conservation of dolphins in the Perth region. Curtin University and Murdoch University founded CEDP as a response to the deaths of six dolphins within the Swan River in 2009. In 2018, Curtin CEDP researchers have moved from Curtin University to Edith Cowan University with the collaboration continuing between these two universities. CEDP works in partnership with State and local government, industry and the community of Western Australia.

Current CEDP Research

Since 2010, CEDP researchers have been monitoring the Riverpark dolphin community because of its small size and exposure to anthropogenic (man-made) activities. From 2011 to 2015, researchers conducted boat-based fieldwork to assess dolphin abundance and distribution within a study area extending from Rockingham to Scarborough along the coast and inland to the cities of Perth and Canning. With the very small resident dolphin community in the Riverpark, it was vital that its status and connections to other communities was understood. Other CEDP research investigated the effect of anthropogenic noise on dolphins.

Researchers work with DBCA staff to train Dolphin Watch volunteers and analyse volunteer data, which has revealed valuable insights into the Riverpark dolphins.

The overall ongoing objectives of CEDP are to:

- conduct rigorous and innovative research into the ecology of dolphins in the Perth region
- provide scientific information and advice to industry and government to support the conservation of dolphins and their habitat
- share information and expertise with the public to improve community-based conservation and monitoring for dolphins.

Dolphins in the Riverpark

Dolphins are a unique part of the Riverpark. What do we know about the ecology of the dolphins inhabiting the Swan and Canning rivers?

A resident community

The Riverpark is home to a resident community of 24 dolphins, including six dependent calves (updated in October 2022). These dolphins account for nearly all the Dolphin Watch sightings in the Riverpark, although dolphins from nearby coastal areas are occasional visitors (see Visitors section in the catalogue).

The dolphins are classified as 'resident' because they use the Swan Canning Riverpark year-round. Based on our knowledge of bottlenose dolphins elsewhere, these animals are also likely to be life-long residents of the Riverpark.

The resident dolphins in the Riverpark are said to comprise a community of dolphins because they range over similar areas (the Riverpark) and frequently interact and associate with one another. These ranging and association patterns distinguish them from other dolphins that reside in Cockburn Sound or Owen Anchorage.

Nonetheless, the resident dolphins in the Riverpark are genetically connected to adjacent communities, This may explain the origin of some of the dolphins who were already adults when first encountered in the Riverpark. Similarly, resident dolphins have some interactions with the adjacent communities that may be sufficient to reproduce with and resulting in the birth of dolphins having its genetic material from two different locations. Such behaviour is beneficial to maintain high genetic diversity which allows dolphins to better adapt to a change of environmental conditions.

The Swan Canning Riverpark resident dolphins have suffered from two outbreaks of Cetacean Morbillivirus in 2009 and 2019. In those years, we lost six and five resident dolphins, respectively (CeMV, see FACTS section).

How to use **Fin**Book

This is the ninth edition of FinBook, our guide to the Indo-Pacific bottlenose dolphins (*Tursiops aduncus*) inhabiting the Swan Canning Riverpark.

We hope experienced *Dolphin Watchers* enjoy the opportunity for an update on our Riverpark dolphins and that newcomers to Dolphin Watch can begin their own journey of discovery with these fascinating and unique creatures.

FinBook is a catalogue of dolphin fin-prints. The identification tables show the right and left sides of the dorsal fin for each of the dolphins observed regularly in the Riverpark. Information such as sex, age, first time recorded and others (e.g., previous calves, injuries) are also given.

We use the markings on the dorsal fins of dolphins to identify individual animals. These markings come from interactions with other dolphins and sometimes from shark attacks or entanglements. When born, dolphins have dorsal fins that lack markings – we refer to them as 'clean fins' – until their first interactions (natural or from human activities) occur.

FinBook sections

FinBook is divided into three sections according to the dolphins' age class and sex. The females' section also includes any calves that were still dependent on their mother in October 2022.

Adult females

There are eight adult females, with six of them having a dependent calf, the youngest one being born in June 2022.

Adult males

There are four males, including the oldest being known from surveys in the Riverpark conducted in the early 2000s.

Juveniles

There are six juveniles, although they aren't necessary seen together.

Visitors

There have been records of a few female dolphins residing in the adjacent waters and visiting the Fremantle Ports and the main section of the Riverpark with the resident adult males on several occasions.

Adult females

in order of calves age (youngest to older calf)

Name **Akuna**

Sex Female

Age Adult

First recorded 2009

Note Mother of juvenile dolphin Nala who died in November 2019 during an outbreak of the Cetacean Morbillivirus, juvenile dolphin Super who disappeared early 2022 after being observed in poor health and with injuries, and new calf born in March 2021 who was euthanised due to severe injuries from entanglement with fishing gear.

Left side

Right side

Calf's name **Kaya** (meaning 'hello' in the Noongar language, named by Dolphin Watch volunteer Sue Harper)

Born June 2022

Note Calf of Akuna.

Kaya and Akuna

Adult females

in order of calves age (youngest to older calf)

Name Daniele

Sex Female

Age Adult

First recorded 2009

Note Daniele lost her first calf in January 2013. Echo was her second calf but died in May 2019 during an outbreak of the Cetacean Morbillivirus.

Left side

Right side

Calf's name Blue
(named by Hannah Cahill, a Yr 5 student from Caversham Primary School)

Born February 2022

Note Calf of Daniele.

Blue and Daniele

Adult females

in order of calves age (youngest to older calf)

Name **Eden**

Sex Female

Age Adult

First recorded 2009

Note Mother of juvenile dolphins Garden and Heaven. Eden lost her most recent calf born in March 2016. Garden has not been seen since June 2018.

Left side

Right side

Calf's name **Apple** (named by Dolphin Watch volunteer, Melanie Moore)

Born February 2022

Note Calf of Eden.

Apple

Adult females

in order of calves age (youngest to older calf)

Name **Hugs**
Sex Unknown
Age Adult
First recorded 2011
Note Hugs knows the Riverpark. The dolphin first visited with its mother Cuddles in 2013. Hugs became independent from Cuddles in 2014. Hugs is generally observed in the Fremantle Ports and lower reaches of the estuary.

Left side

Right side

Calf's name **Bubbles**
(named by Fremantle Ports staff members)
Born July 2021
Note Calf of Hugs.

Left side

Right side

Adult females

in order of calves age (youngest to older calf)

Name **Moon**

Sex Female

Age Adult

First recorded 2001

Note Mother of juvenile dolphin Night and Djinda. Moon lost a newborn in January 2018 as well as a three-month old calf in 2019 from fishing line entanglement.

Left side

Right side

Calf's name **Nganga** (meaning 'sun' in Noongar language, named by Maddy Erines)

Born July 2020

Note Calf of Moon.

Left side

Right side

Adult females

in order of calves age (youngest to older calf)

Name **Claw**

Sex Female

Age Adult

First recorded 2009

Note Claw is missing the very tip of her rostrum. Although Claw's foraging is not affected, we do not know how this injury happened.

Left side

Right side

Calf's name **Bobby** (named after Robert (Bob) Broadway)

Born April 2019

Note Calf of Claw.

Left side

Right side

Adult females

(without a calf)

Name **Dunedoo**

Sex Female

Age Adult

First recorded 2009

Note Dunedoo lost her first newborn calf in September 2016 and her third calf born in February 2022.

Left side

Right side

Name **Panuni**

Sex Female

Age Adult

First recorded 2011

Note Mother of juvenile dolphin Cruze. In early 2019, Panuni lost a calf within the first month after birth. In October 2022, Panuni lost her six-month-old calf, named Dambart (meaning 'three' in Noongar language, named by Dolphin Watch volunteer, Melanie Moore).

Left side

Right side

Adult males

Name **Bottomslice**
Sex Male
Age Adult
First recorded 2001
Note Bottomslice is usually seen with Blackwall and has been visiting Cockburn Sound lately.

Left side

Right side

Name **Blackwall**
Sex Male
Age Adult
First recorded 2001
Note Chunk missing out of peduncle (probably old shark attack wound). Blackwall is usually seen with Bottomslice and has been visiting Cockburn Sound lately.

Left side

Right side

Adult males

Name **Extreme**

Sex Male

Age Adult

First recorded 2009

Note Extreme is now often seen with Kwillena lookalike and has been visiting the Cockburn Sound lately.

Left side

Right side

Name **Kwillena lookalike**

Sex Male

Age Adult

First recorded 2011

Note Kwillena lookalike was attacked by a shark in Winter 2014 leaving some scars on his body. He is now often seen with Extreme and has been visiting the Cockburn Sound lately.

Left side

Right side

Juveniles

Name **Djinda** (meaning 'star' in Noongar language, named by Rhonda Harman)

Sex Female

Age Juvenile

Note Born in May-June 2014, Djinda was described as independent to her mum Moon when the latter gave birth to a newborn who unfortunately died in January 2018.

Left side

Right side

Name **Cruze** (named by Jennifer Cogan)

Sex Female

Age Juvenile

Note Born early 2015, Cruze was first seen without her mother Panuni and further up in the estuary when the latter gave birth to a newborn who unfortunately died in January 2018.

Left side

Right side

Juveniles

Name Click (named by Ruby Pyle)

Sex Unknown

Age Juvenile

Note Born in March 2016 from mum Tupac. Unfortunately, Tupac and her new calf born in March 2019 died in November 2019 during an outbreak of the Cetacean Morbillivirus. Click was attacked by a shark in Summer 2021, leaving a scar on its right-side body.

Left side

Right side

Name Slinky (name chosen by one of our long-term super citizen scientists Jennie Hunt).

Sex Unknown

Age Juvenile

Note Born early-2019 from mum Daniele.

Left side

Right side

Juveniles

Name Zephyr (named by Sue Friell)

Sex Female

Age Adult

Note Born in December 2018 from mum Eden.

Left side

Right side

Name Marnz (named after Marnie Giroud, a passionate advocate for wildlife and conservation and who worked hard for the *Dolphin Watch* project to be what it is today)

Sex Male

Age Juvenile

Note Born in November 2017 from mum Dunedoo.

Left side

Right side

Females visiting

Name **Clara**

Sex Female

Age Adult

First recorded 2011

Note Clara is known as a resident dolphin in the adjacent waters (south of Fremantle) and visited the Riverpark on several occasions with the males.

Left side

Right side

Name **Cuddles**

Sex Female

Age Adult

First recorded 2011

Note Cuddles is known as a resident dolphin in the adjacent waters (south of Fremantle). She visited the Riverpark on several occasions with the males and with her daughter Hugs when young.

Left side

Right side

Females visiting

Name **Infinity**

Sex Female

Age Adult

First recorded 2011

Note Infinity is known as a resident dolphin in the adjacent waters (south of Fremantle) and visited the Riverpark on several occasions with the males.

Left side

Right side

Name **Lola**

Sex Female

Age Adult

First recorded 2011

Note Lola is known as a resident dolphin in the adjacent waters (south of Fremantle) and visited the Riverpark on several occasions with the males.

Left side

Right side

Females visiting

Name **Inja**

Sex Female

Age Adult

First recorded 2011

Note Inja is known as a resident dolphin in the adjacent waters (south of Fremantle) and visited the Riverpark on several occasions with the males.

Left side

Right side

Name **Scarlett**

Sex Female

Age Adult

First recorded 2011

Note Scarlett is known as a resident dolphin in the adjacent waters (south of Fremantle) and visited the Riverpark on several occasions with the males.

Left side

Right side

Dolphin behaviour

The main dolphin behaviours are defined as being among one of four 'states' - travelling, foraging, resting, or socialising. Within a behavioural state, dolphins might display some instantaneous behaviour, also called 'events', such as vocalisations, sudden movements or ingestion of prey. Each of the behavioural states and some commonly observed events are described below.

Travelling

Dolphins show persistent movement in a consistent direction. This implies a directed effort to make progress in a particular direction. Dolphins may also ride a boat's bow or stern wake to go almost twice as fast using the same energy cost. Dolphins can travel alone or in the company of other individuals.

Dolphins often travel straight for periods and then, if they locate a fish, stop and mill around an area to forage for a little while.

Foraging and feeding

Dolphins that are actively searching for prey like finfish, squid and octopus are said to be foraging. Foraging is the most common activity for dolphins in the Riverpark. When dolphins are catching, processing and eating prey, they are said to be feeding.

Generally, dolphins consume prey underwater. However, as dolphins cannot chew, they sometimes throw larger prey around the surface or drag it along the bottom to break it up into smaller pieces. In deep water, foraging dolphins are usually spread apart from each other (at least 10m apart), often milling and changing directions with every surfacing. You may see them surface for a few breaths, dive again for a few minutes, then surface again for a few breaths. We refer to this behaviour as '**mill forage**'.

Sometimes, when dolphins are in a hurry to get back underwater, you will see them surface for one quick breath, either by **leaping** or porpoising out of the water, or **rapidly surfacing** without their ventral side clearing the surface.

Foraging behaviours in shallow water often includes

- **fast swimming** and '**rooster tailing**' where streams of water come off the dorsal fin. This fast swim can turn into a hydroplane where most of the dolphin's body is visible above the water.
- **bottom-grubbing** where dolphins poke around in the mud, sand, seagrass or seaweed with their rostrum. After engaging in bottom grubbing, you can usually see the dolphin's rostrum and head, and sometimes even the dorsal fin, covered in mud.

Other foraging behaviours include:

- **belly-up fish chase** which involves dolphins swimming around on their backs while chasing fish. Their eyesight and echolocation work best in a slightly downwards direction, so it can be easier to keep track of fish that way.
- **herding fish against a structure** (e.g. a wall or breakwater).

Dolphins often travel along the edges of the rivers while searching for fish and display a forage/travel combination. For example, they often travel through marinas and moorings or along the edge of Point Walter. Sometimes, they stop and engage in mill forage for a little while, before moving on.

Resting

Dolphins that are engaged predominantly in a resting state and are not actively foraging/feeding, travelling or socialising.

In contrast to foraging dolphins, resting dolphins form groups that are tightly-spaced (i.e. less than 2m between dolphins), moving slowly, usually without a clear direction, and taking multiple breaths (four to eight or more) at each surfacing, then diving within a few seconds of each other.

Resting dolphins may be submerged for several minutes and may surface pointed in another direction.

Resting dolphins often '**snag**' at the surface for a few seconds, or even minutes. '**Snagging**' can be identified by a dolphin floating at the surface motionless, with their fluke and often the majority of the dorsal fin beneath the water, while the front part of their body is exposed to the air. They look a little like sausages when they do this, hence the term.

Sometimes you will see dolphins scan their head from side to side while snagging. This most likely means they are using their echolocation to take a scan of the area. They may do this while foraging too.

Socialising

Like humans, dolphins are very social animals who continuously interact with each other. Dolphins display a remarkable variety of social behaviour.

A socialising group is often a tight group of dolphins with a lot of body-to-body contact between individuals. Dolphins may rub their bellies together or against each other, they may stroke each other with their pectoral fin or nudge each other with their rostrum. Their bellies often turn pink when they are socialising because the tissue becomes perfused (blood flowing close to the skin) with blood.

Sometimes, you may see leaps, porpoising, and/or fast swims when dolphins are chasing each other. These behaviours can also occur while dolphins are foraging, so it's a good idea to watch for a while before jumping to conclusions about what dolphins are doing. You can also see calves socialising with each other while their mothers are foraging.

Not all social interactions between individuals are friendly. Some interactions, particularly among males, are antagonistic. The rake marks you see on many dolphins are caused by other dolphins' teeth as a result of unfriendly interactions.

Commonly observed behavioural events

Fast swim

Dolphins swimming at faster than normal cruising speeds. Dolphins may swim fast when chasing fish (foraging) or chasing each other (socialising). You may see a spray of water come off the dolphin

Leap

The entire body of a dolphin is out of the water. Leaps may occur when dolphins are foraging (i.e. a quick breath so they can get back underwater rapidly) or when they are socialising.

Rooster tail

A fast swim along the surface in which a sheet of water trails off the dorsal fin. Typically observed in the shallows when dolphins are foraging.

Dolphins chasing fish

To record dolphins chasing fish, you must observe the fish being pursued. Dolphins regularly chase fish along the edge of the rivers and other structures and often the fish can be seen jumping out of the water. When snacking, a dolphin swims belly-up near the surface chasing after small fish.

Dolphin with fish

Dolphins observed with fish (including cephalopods like squid and octopus) in their rostrum. Sometimes dolphins toss fish up in the air or repeatedly on the surface to immobilise or break their prey into smaller pieces. If you are able to confirm which species the dolphins are chasing, please note this.

Snagging

Dolphins hanging motionless at the surface with their flukes beneath the water and the front half of their body at the surface. They look like sausages when doing this, hence the term 'snagging'. Dolphins may turn their head from side to side to scan the water. Snagging most often occurs during resting bouts but may occur during pauses in other activities.

Commonly observed behavioural events

Body-to-body contact

Obvious social interaction between dolphins usually involves body-to-body contact. You will often see splashes, fast swims or leaps by dolphins interacting with each other and their bellies flushed pink with excitement. Socialising often occurs in tightly-spaced groups.

Baby position

Calves travelling just behind and to one side of their mother. When a calf surfaces in baby position (BP), its head surfaces near the mother's midsection. Travelling in BP provides a small hydrodynamic benefit for the calf and also easy access to the mammary slits located in the mother's tail region for feeding. Young calves spend a lot of time in BP. As they grow older, they gradually spend less and less time in BP and venture further away from their mother until eventually they are fully weaned. The best way to confirm BP is to see if the calf is substantially smaller than the mother and whether the calf maintains BP for several surfacings.

Akuna's story

My name is Akuna and I'm one of the most recognisable females residing the waterways you call the Swan Canning Riverpark.

With my triangle notch at the top of my dorsal fin, you can easily identify me from the shore. Scientists got to meet me in 2009 when I was already an adult.

While I spend time with my female friends, I also like being by myself or with my little one and exploring the river further up. I know scientists often ask themselves where I am. In 2014, they did not see me and my girl for more than 6 months (I had a female calf during this period). She was called Nala by one of our favourite Dolphin Watch staff members. Unfortunately, I lost her in late 2019 from the Cetacean Morbillivirus.

I became a mum a few more times since, but none survived. Right now, I am doing everything in my power to protect my youngest one, Kaya, born in June 2022.

Akuna's story

Super was my second calf born in 2018. Super was joyful and often seen playing with Click or Marnz. Unfortunately, scientists lost track of Super after January 2022 after being sick and injured.

Living in an estuarine environment is not always easy for any of us dolphins as we cope with everything that ends up in the waterways. The year prior to losing Super, I gave birth to a male. Everything was going well until he got caught in fishing gear which injured him very badly. Despite the effort of authorities and scientists, it was best to let him go and freeing him from so much pain, even so it was hard to watch this from a few meters away in deeper waters.

The males did not wait for too long before they consorted me and as a result, twelve months later, I gave birth to another beautiful fella in June 2022. I introduced little Kaya to scientists and Dolphin Watch staff when they were doing a survey in October. Little Kaya was very excited and was leaping out of the water.

While we, mums, all have our own story, we have all been through the trauma of losing a calf that could have been avoided if fishing gear were used responsibly and discarded of properly. Help us to take care of our calves to the best of our ability by being Dolphin Wise and RiverWise.

Below: Akuna and Super. Photo - Delphine Chabanne

Male alliance

Male dolphins may form strong associations with one or two others. The pair or trio bond is called an alliance and can be seen side by side synchronously as they travel and socialise together.

This strong bond is thought to aid the males with hunting and mating success. Due to its benefits, some bonds are so strong, they last until one of the males passes away.

Among the Swan Canning Riverpark resident dolphins, the four adult males form two pairs of alliance: Bottomslice with Blackwall and Extreme with Kwillena lookalike.

All four have recently been observed in adjacent waters and would occasionally herd a non-resident female within the estuary, away from other males.

Bottomslice herding Infinity, a visiting female.

Facts – Cetacean Morbillivirus

What is Cetacean Morbillivirus (CeMV)?

Cetacean Morbillivirus or CeMV is a naturally occurring viral disease that affects a wide range of cetacean species (both toothed and baleen species i.e. dolphins, porpoises and some whale species). It is the most significant natural cause of cetacean sickness/death globally, with multiple outbreaks documented worldwide – most commonly in the Mediterranean Sea and the Atlantic Ocean. CeMV is caused by a group of virus strains that originate from a single virus species. These strains are related to viruses that occur in other species like dogs, seals, cattle, pigs, giraffes, camels, deer, goats, sheep, and humans (measles virus). CeMV is most closely related to the viruses in goats, sheep, cattle and pigs. CeMV only affects cetaceans, not other species. Humans are not at risk.

How many Swan Canning Riverpark dolphins have died from CeMV in this unusual mortality event in 2019, and how does it compare to 2009?

As of December 2019, four Swan Canning Riverpark residents; Zari, Echo, Nala and Tupac (and her new calf as a consequence of losing its mother); died due to CeMV, between February and May 2019 and November and December 2019.

In 2009, six Swan Canning Riverpark resident dolphins died over a five-month period. Two of the animals tested positive for CeMV. Although it is suspected that CeMV played a part in the deaths of all six, testing was inconclusive for the other four animals due to various confounding issues. It appears that this virus resurfaced in dolphins in Perth waters 10 years on from the first documented occurrence.

How does CeMV spread, i.e. how is it transmitted from one animal to the next?

Research carried out overseas and in eastern Australia indicates that the virus is present naturally at a baseline level within some of the off-shore pelagic species, such as pilot whales and possibly melon-headed whales. These animals are highly social and frequently travel in large groups, meaning the virus can continue to survive in whale groups. It is likely that when such species make periodic incursions closer in-shore (e.g. foraging, stranding if sick), they may come in close contact with in-shore/resident estuarine dolphins and other cetaceans, who are very social and inquisitive. As the virus is highly transmissible, it can then spread from animal to animal via infected particles they breathe out in their blow, with another animal then breathing them in (much like the way humans can catch respiratory viruses like colds). Although this respiratory route is the most important mode of transmission, there is also evidence the virus can spread from mother to foetus/calf. The virus cannot survive in the environment outside of a cetacean host.

What can we do to help dolphins, whales and other marine fauna?

Be Dolphin Wise, Be RiverWise.

Be Dolphin Wise

It's easy to help care for dolphins in the Riverpark by following these simple rules:

Enjoy dolphins from a distance – never approach a wild dolphin and ensure you stay at least 50m away if you're in the water or 100m if you're in a boat.

Go slow for those below – dolphins often form resting groups in the middle reaches of the Riverpark, so keep an eye out for dolphins, and slow down if you spot any.

Let dolphins feed themselves – it is illegal to feed dolphins and leaves them vulnerable to entanglement, boat strikes and disease.

Support a clean marine environment – take your rubbish home – when fishing on the rivers please fish responsibly. Dolphins, particularly calves, can become entangled in fishing line. Make sure you dispose of unwanted fishing line in a rubbish bin, use a biodegradable fishing line and help sustain fish stocks by taking only what you need.

Wildcare
HELPLINE
9474 9055

If you see dolphins in distress, call the Wildcare Helpline on **(08) 9474 9055**. The helpline provides round-the-clock assistance for anyone who finds sick or injured native wildlife.

If we want to continue to see dolphins in the Riverpark we must protect its ecological health so that these food resources remain available and abundant.

Be RiverWise

The Swan and Canning rivers are an important habitat for bottlenose dolphins. The Riverpark serves as a nursery to raise their calves and as a meeting place to socialise and feed. Good quality habitat in the river system will continue to support the growth, survival and reproduction of these dolphins.

There are abundant fish resources in the Riverpark with a large number of fish species and a multitude of invertebrates, including crabs, prawns and molluscs.

If we want to continue to see dolphins in the Riverpark we must protect its ecological health so that these food resources remain available and abundant.

Nutrients such as phosphorus and nitrogen can threaten Riverpark health by promoting algal blooms, deoxygenation and fish kills. We need to halve the amount of nutrients entering the Swan Canning river system to protect water quality and ecological health.

Everyone has a role to play in reducing nutrients and protecting dolphin habitat. You can do this by:

- only applying fertiliser when it's needed in spring or early autumn – follow application rate instructions, don't over-apply and never overwater
- growing local native plants – they need less water and fertiliser, and attract native birds, lizards and insects
- composting your leaves and grass clippings so they don't wash into drains and add nutrients to the rivers
- keeping garden weeds away from drains – they may end up in rivers and displace foreshore vegetation
- keeping harmful chemicals away from drains.

Check out **riverguardians.com** for more helpful tips and information.

Glossary

Calf – a dolphin still dependent on its mother, usually up to three years old, but some might become independent at a younger or older age (~ five years old).

Juvenile – a young, immature dolphin, usually about four to 10 years old.

Sub-adult – a dolphin that is not quite adult-size but larger than a juvenile, also not mature yet.

Adult – a mature, fully grown dolphin.

Dorsal fin – the fin on a dolphin's back (its dorsal surface), provides stability while swimming.

Leading edge (of dorsal fin) – the front edge of the fin (versus trailing edge).

Pectoral fin – fins on dolphin's side, provide directional control and can also be used for touching when socialising.

Peduncle – an anatomical term for the tail stock of a dolphin, the large muscle system that propels the dolphin through water.

Tail fluke – used for propulsion.

Blowhole – hole at the top of a dolphin's head through which the animal breathes air.

Department of **Biodiversity, Conservation and Attractions**

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