

ENVIRONMENTAL ASSESSMENT MARINE MAMMALS

UNDERSTANDING MARINE MAMMALS

Marine mammals include whales, dolphins and seals. They live in the ocean but come to the surface to breathe, and rely on sound to communicate, find food and navigate.

How we studied them

Researchers studied waters up to 100 km from the Star of the South project area to determine which marine mammal species may use the area, when and how, including:

- Aerial surveys to spot animals from above
- Underwater acoustic monitors to detect whale calls
- Satellite tracking of seals
- Monitoring seal colonies on nearby islands

This work was supported by consultation and analysis of existing data sets to build a comprehensive picture.

What we found

While a range of marine mammals visit the broader region, almost 90% of our sightings were outside the project area. This suggests the site isn't a main area used by marine mammals.

Researchers identified 2 dolphin, 2 seal and 10 whale species in the broad study area. Whales were typically seen between late autumn and spring when migrating to or from warmer waters. Humpbacks were the most common, with small numbers of other species including the Southern Right, Pygmy Blue, Killer, Bryde's and Dwarf Minke. Dolphins and seals are present year-round in large numbers.



We're committed to protecting marine mammals using evidence-based approaches during construction, operation and decommissioning.

We'll:

- Follow strict Australian environmental requirements
- Use the best available science and technology
- Monitor marine life during and after construction
- Adapt our approach if needed.



Getting a bird's eye view.

Aerial surveys are one of the best ways to spot whales like the Pygmy Blue, which can swim underwater for up to 90 minutes. Experienced marine mammal observers flew as low as 300 m to identify and photograph the animals.



HOW WE'LL PROTECT MARINE MAMMALS

We'll manage our activities carefully to keep marine mammals safe at each stage.

Managing underwater noise

Because marine mammals rely heavily on their hearing, the main potential impact is underwater noise.

The main sources of noise from Star of the South are:

- Piling to install turbine foundations
- Vessels that use thrusters to hold their position in the water.

Some species are more sensitive to noise than others. We've planned for the most sensitive species, like baleen whales, to make sure all animals are protected.

Predicting noise levels

We've used advanced computer modelling to look at:

- How loud the noise could be
- How far it might travel, with and without mitigation measures
- How different species might respond.

The modelling used conservative assumptions, meaning the results likely overestimate real impacts. This provides confidence that the real-world effects will be no greater than predicted.

Construction noise

We'll implement a range of proven measures to protect marine mammals from underwater noise.

1. Pre-work checks

Before piling starts, trained observers will monitor a 'precaution zone' for marine mammals. Underwater acoustic monitors will help detect any animals that aren't visible at the surface. If animals are nearby, work won't start.

2. Soft start

When piling begins, it won't start suddenly. Instead, we'll use a 'soft start'. This involves ramping up gradually, giving any animals present a chance to move away from the area before noise levels increase.

3. Stop work procedures

If key species are detected nearby while piling is underway, work will be delayed, slowed down or stopped until it's safe to continue. If there is poor visibility during the day, infrared cameras and acoustic monitors will help identify any animals in the precaution zone.

4. Noise reduction measures

We'll use the best available technology at the time of construction to reduce piling noise such as 'bubble curtains'.

Marine fauna observers

Trained observers will monitor for whales, dolphins and seals during offshore wind farm construction, ensuring activities are adjusted or paused if animals are present.



5. Noise limits

Noise levels will be carefully controlled and kept within strict limits, based on detailed modelling completed before construction.

6. Species-specific protections

Special protections will be in place for threatened species like Southern Right Whales and Blue Whales.

7. Adaptive management

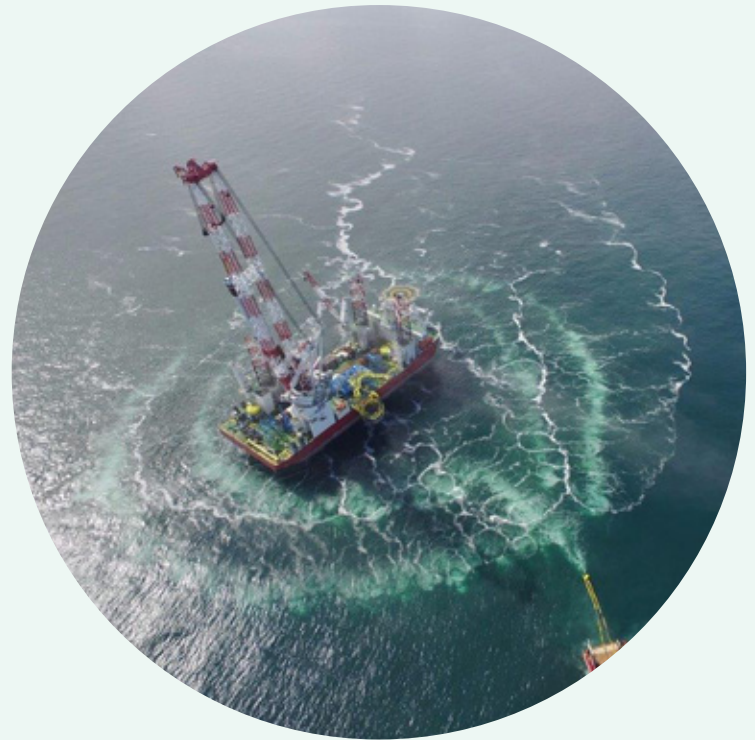
We'll keep a close watch on how marine mammals respond. If we see more animals than expected, or they behave differently, we'll make adjustments. This might include increasing safety distances, adding more observers, or using additional noise reduction measures.

Operational noise

Underwater noise from operating turbines is very low and is not a risk to marine mammals. Even so, we'll monitor underwater noise during operation to confirm this.

Will whales still be able to migrate through the operating wind farm?

Yes. Operating turbines don't present a barrier to whales passing through.



What's a bubble curtain?

A bubble curtain is created by laying hoses with small holes in them on the seabed around the monopile. Air is then pumped through the hose to create a ring of bubbles around the work area. This acts like a sound shield. When construction noise meets the bubble walls it is scattered and reduced before it can travel further.

Managing vessels safely

All project vessels will follow strict rules to protect marine life, including:

- Speed limits in some areas to reduce collision risk
- Designated travel routes where possible
- Keeping safe distances from whales, dolphins and seals
- Trained crew keeping watch.

If a Blue Whale or Southern Right Whale is sighted, vessels will slow down even further and keep a greater distance. Information about the location of any whales will be shared with other vessels through our marine coordination centre.



Further reading



Detailed information on this topic is available in Star of the South's environmental assessment documentation:

- EIS Chapter 11 - Marine mammals and turtles
- EIS Attachment III - Construction underwater noise management framework



WHALE THREATS AND PROTECTIONS

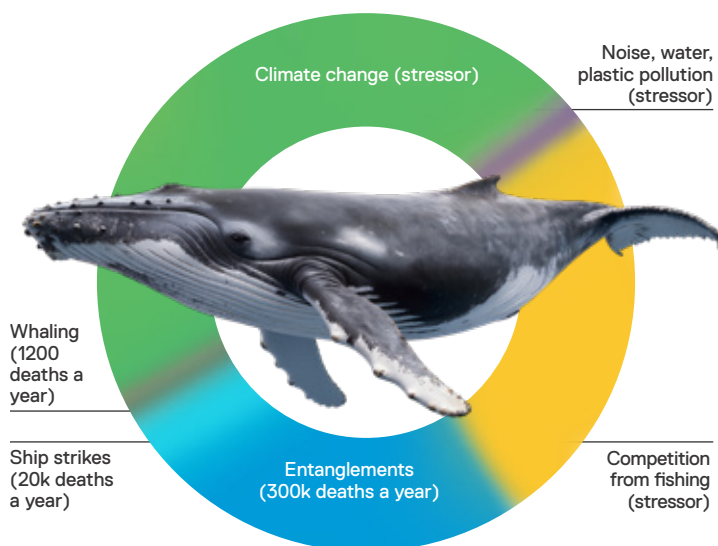
Many whale species are still recovering from past whaling and continue to face a range of threats.

Climate change is one of the biggest threats to marine mammals. It affects ocean temperatures, food availability and migration patterns. Offshore wind plays a role in addressing this by reducing carbon emissions, helping protect ocean ecosystems over the long term.

Threatened and migratory species are protected under Australian environmental law.

Star of the South overlaps with parts of the biologically important areas identified for Blue Whales and Southern Right Whales. These areas provide suitable habitat for feeding, breeding or migration. Projects in these areas must meet higher protection standards.

The biggest threats to whales and dolphins globally



Source: International Whaling Commission, Friend of the Sea.
Graphic: Matt Davidson, SMH



About Star of the South

Star of the South is Australia's most advanced offshore wind energy project. It will harness strong and consistent Bass Strait winds to power 1.2 million homes, cut emissions and create regional jobs.

It includes:

- An offshore wind farm located in Commonwealth waters off the Gippsland coast
- A transmission system of offshore substations and underground cables to transmit electricity from the turbines to the grid.

A PROJECT BY



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We acknowledge the people of the Gunakurnal nation as the original custodians of Country and pay respect to Elders past and present.

