BULL SHARK

Scientific Name: *Carcharhinus leucas*
Other common names: **River Whaler, Freshwater Whaler**

NSW DPI scientists have been leading one of the world's largest tagging programs to learn more about shark movements in NSW.

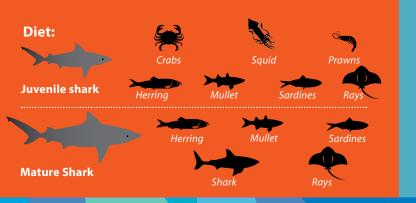## Basic Biology

Longevity: Maximum age 30-50 years

Size/age at maturity: Females – 2.3 m; Males – 2.3 m

How many offspring per female: Up to 15 pups are born around 55-85 cm.

Reproductive cycle: thought to be 10-11 month gestation and a 2-year reproductive cycle

Pregnant bull sharks move from coastal environments into rivers to give birth. It's believed that females pup every other year and pupping occurs in late spring/early summer.

Giving birth in low salinity environments reduces predation from larger predators. Bull sharks are the only species of shark to do this.

Pups remain in these areas for up to 4–5 years. In Australia, juvenile bull sharks have been found using the upper river reaches, as far as 110 km from the river mouth in very low salinity environments.

Diet:

Juvenile shark
Crabs Squid Prawns
Herring Mullet Sardines Rays

Mature Shark
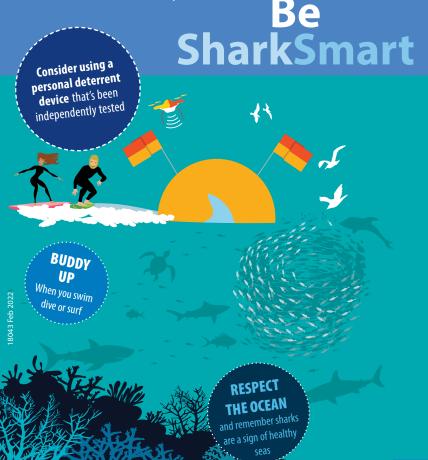Herring Mullet Sardines
Shark Rays

Sydney Harbour Bull Shark tagging & research

Sydney Harbour, the most urbanised and iconic waterway in Australia is an important habitat for adult and sub-adult Bull Sharks.

Very little was known about eastern Australian Bull Sharks until DPI started tagging them in Sydney Harbour in 2009. Now, over 87 Bull Sharks have been tagged in Sydney Harbour ranging in size from 2.0 – 3.2 m total length. Similar studies have been developed in Queensland (Qld).

By tagging and tracking large Bull Sharks (> 2.0m) our scientists have found that:

- Bull Sharks occur in Sydney Harbour and surrounding waterways during summer and autumn
- Bull Sharks use all areas of Sydney Harbour from Parramatta and Lane Cove Rivers to Middle and North Harbour
- Bull Sharks use slightly deeper water during the day and shallower water at night
- Water temperature is a key predictor of their presence. Bull Sharks are present when water temperatures are above 20 degrees
- When water temperature drops below 19 degrees, Bull Sharks leave Sydney Harbour and travel north to Qld for winter and spring
- Areas of increased use by Bull Sharks are associated with water depths less than 5m and **near steeper drop-offs.**
- Many tagged Bull Sharks return to Sydney Harbour on one or more years post-tagging. The greatest number of tagged Bull Sharks detected on any given day in Sydney Harbour was 18 sharks on 12 February 2012.
- Tagged bull sharks have often been detected in the Great Barrier Reef during winter and spring before migrating south to Sydney Harbour and other NSW estuaries in the summer, that's 1800 km one way!

This adult, male bull shark (Bull Shark 11) was tagged in Sydney Harbour in March 2016. By tracking the movements of this shark using an acoustic tag (battery-life of up to 10 years), we can determine that this shark left the Sydney region, travelling north when water temperatures cooled during the autumn months and was later detected as far north as Orpheus Island, in the Great Barrier Reef, Queensland in winter. This shark was tracked carrying out these north-south migrations for 6 years post-tagging; and travelled 13930 km over this time. These movements are typical of adult bull sharks and highlight the phenomenal distances these apex predators can travel.

Tagging and tracking sharks helps to understand their movements and behaviours

Be SharkSmart

Consider using a personal deterrent device that's been independently tested

BUDDY UP When you swim dive or surf

RESPECT THE OCEAN and remember sharks are a sign of healthy seas

Sharks are always present in coastal waters and bites are rare. Our research shows the conditions in which to take extra care:

- Murky, dirty water
- After high rainfall or floods
- Lots of baitfish and diving birds around
- Within 1 km of a river

Bull sharks are more active in summer and autumn months at dawn and dusk and particularly when waters are above 20°C and where shallow waters are close to steep drop-offs

There is no 100% guarantee that you won't encounter a shark when using the ocean and estuaries as they are wild spaces, however NSW DPI have tested and trialled a suite of measures to increase protection on NSW coastal waterways. Check out sharksmart.nsw.gov.au for all of the latest information as well as ways in which you can reduce the chances of a shark encounter.

Check the SharkSmart app, Instagram & Twitter for shark activity

@nsw_sharksmart

@NSWSharkSmart