



Palm Beach Artificial Reef

What is an artificial reef?

An artificial reef is a human-made underwater structure that has been designed to achieve a specific objective. Typically, these reefs are built for coastal protection, to promote marine life or to improve surfing amenity. The Palm Beach Artificial Reef is being constructed for coastal protection with consideration given to surfing amenity.

Why do we need the artificial reef at Palm Beach?

Historically, Palm Beach is one of the Gold Coast's most vulnerable beaches to the threat of coastal erosion. Storms and swell events can cause significant erosion along Palm Beach and can result in damage to the beach and public infrastructure. The artificial reef will promote a long-term increase in sand along vulnerable sections of Palm Beach, which will act as a buffer to protect the beach during storm and swell events.

Why not just nourish Palm Beach with sand more frequently?

The artificial reef is an important part of the solution as it helps the sand stay in place for longer along vulnerable sections of Palm Beach. Without the artificial reef, more frequent sand nourishment is required to ensure the beach has enough sand to withstand storm and swell events. This would come at a significant and ongoing cost to the City and is not a sustainable long-term solution.

Why can't the annual dredging program at Currumbin Creek be extended to provide the nourishment required?

This option has been previously considered, however it would not provide the volume of sand required to protect the vulnerable sections of Palm Beach.

How was the reef designed?

Coastal engineering projects of this nature are complex and challenging. The City has worked with a team of world-class experts in coastal science and engineering to develop the best possible outcome for Palm Beach. A variety of data sources such as wave buoys deployed offshore at Palm Beach, beach and hydrographic surveys, and coastal imaging have been used, along with extensive scaled physical modelling and numerical (computer) modelling to develop and refine the artificial reef design.

Has the project considered surfing amenity?

Surfing amenity has been considered in the design of the artificial reef, as a requirement of the City's Surf Management Plan. The formation and adoption of such a Surf Management Plan is a first for any council in Australia and also represents the first time anywhere in the world that a local government has formally recognised the importance of surf breaks to the local community.

Under certain swell conditions, there is predicted to be waves breaking on the structure suitable for intermediate surfers.

How big will the reef be and where will it be located?

The artificial reef will be located approximately 270 metres offshore from Nineteenth Avenue in Palm Beach, between the beach and the existing natural reef. It will be constructed of large rock boulders and will be 1.5 metres below the average water level at its highest point. The footprint of the artificial reef will be approximately 160 metres long and 80 metres wide.

How will the reef be built?

The artificial reef will be constructed using large rock boulders weighing up to 8 tonnes and quarried in South East Queensland. The rock will be loaded onto barges at the Port of Brisbane, transported to the site offshore from Palm Beach and placed to form the artificial reef using specialist marine vessels and equipment.

What can I expect to see during construction?

The Palm Beach Artificial Reef is being constructed approximately 270 metres offshore from Nineteenth Avenue, Palm Beach. Construction of the reef will be viewable from the shoreline and will include a barge transporting rocks to the site every couple of days as well as a backhoe dredger present at the site full-time, placing the rocks to form the reef.

No land-based impacts are expected during construction, however for the safety of ocean users, an exclusion zone in the water around the construction site will be in place during construction. This exclusion zone can be viewed at cityofgoldcoast.com.au/palmbeachshorelineproject

What's the timeframe for the construction of the artificial reef?

Construction of the artificial reef has been scheduled between April and October 2019, weather permitting. Marine construction works of this nature are sensitive to wave conditions and can only proceed when safe. Construction timeframes are therefore subject to change at any time.

Will access to water surrounding the reef be affected during construction?

To ensure the safety of all beach and ocean users, a temporary exclusion zone will be established offshore around the artificial reef construction site while the reef is under construction. This will prohibit all watercraft, swimmers, divers and boardriders from entering the reef construction site.

Will this project impact boat users?

During construction of the Palm Beach Artificial Reef there will be an exclusion zone around the artificial reef construction site. Boat users will be required to stay well away from the area for safety reasons. The exclusion zone will not restrict boat access to the Palm Beach Natural Reef.

Will the artificial reef affect the natural reef at Palm Beach?

No. The artificial reef will be located approximately 400 metres inshore from the natural reef. The artificial reef has been assessed by governmental agencies to make sure it meets strict environmental approval requirements under environmental legislation.

What are the impacts on sand supply to Burleigh Point?

The artificial reef will not impact the way sand moves into Burleigh Heads. Sand transport will return to a natural rate once it has moved north past the artificial reef.

How does the Palm Beach Artificial Reef work with other coastal management projects undertaken by the City?

Our Ocean Beaches Strategy highlights the City's ongoing commitment to managing and protecting Gold Coast beaches now and into the future. The Palm Beach Artificial Reef is one of many major projects being undertaken from 2013-2023 to protect our infrastructure from coastal hazards, ensure our beaches are healthy and clean, and to ensure everyone can enjoy a beach experience.

For more information

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