

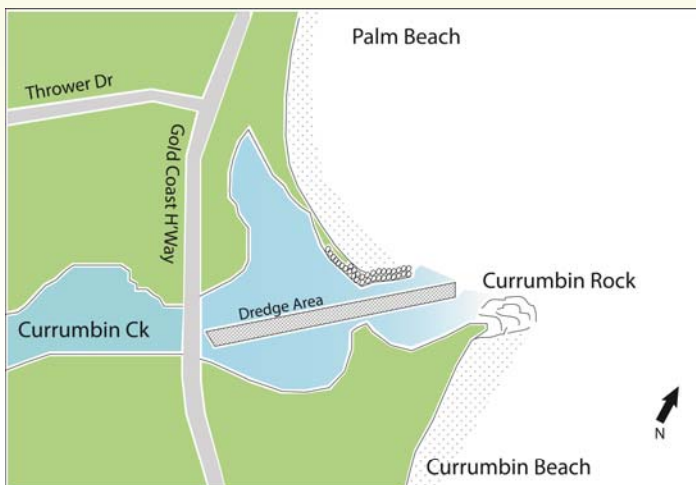
Currumbin Creek dredging

Currumbin Creek is managed through an annual dredging program. This program provides many benefits including flood mitigation, improved water quality and minor beach nourishment to southern Palm Beach.

Currumbin Creek: so much more than meets the eye

Currumbin Creek is part of a dynamic beach system. Longshore drift causes sand along our coast to move in a northerly direction. Sand travelling across the entrance to the Creek can sometimes become trapped, leading to rapid infilling. In the past, trapped sand has occasionally blocked the creek entrance, cutting it off from the ocean. This posed three main problems:

1. Sand trapped in the creek entrance limited the movement of sand along the coast, causing severe erosion to Palm Beach.
2. Localised flooding during heavy rainfall posed a risk to property and infrastructure when the creek was closed off from the ocean.
3. A reduction in tidal exchange compromised water quality in the creek, reducing recreational amenity.



Dredge area at Currumbin Creek

How is Currumbin Creek dredged?

After the major impacts of cyclones during the 1960s, the Currumbin Creek groyne was built in 1972 in an attempt to stabilise the creek entrance. Eight years later the Currumbin Creek training walls were constructed. These structures served the purpose of keeping the creek entrance in one place (see *Currumbin Creek Coastal Processes* information sheet).

Dredging is the removal of sand from the creek bottom by mechanical means and transporting it through a pipeline to a deposition site. Dredging in Currumbin Creek commenced in 1974. Sand was used to nourish neighbouring Palm Beach. The positive effects of dredging in Currumbin Creek were immediate: the water quality of the creek improved and Palm Beach became less prone to erosion.

Dredging has taken place at Currumbin Creek informally between 1974–1997 and then on a yearly basis to date. Over the years, over 1.85 million m³ of sand has been dredged from Currumbin Creek and used to nourish southern Palm Beach. The effects of dredging are monitored by Griffith Centre for Coastal Management and Gold Coast City Council coastal engineers. The findings from this monitoring inform the dredging process to be undertaken in future works.

Currumbin Creek is dynamic

The sandbar in Currumbin Creek is a product of the natural creek infilling process. During times of flooding, sand is discharged from the creek. Sand also moves around within the creek as a result of tidal movement and small waves pushing into the entrance.

How much sand?

The amount of sand dredged every year varies depending on conditions, including the number of storms that may have moved sand since the last dredging campaign, and the dominant wave direction (which influences the direction of sand movement along the coast). Council's survey team complete a number of surveys of the creek entrance each year. From these surveys it is possible to determine what quantity of sand is available to be dredged from the creek. Since the annual dredging commenced, the average volume of sand dredged varies between 29,900–70,000m³. This keeps the creek depth and condition reasonably constant and ensures a minor sand source is provided for Palm Beach.



Aerial photo of Currumbin Creek estuary (Source: GCCC)

Dredging is generally undertaken in August and takes about eight weeks to complete. The exercise is done at this time to prepare for the busy summer months. Council has a longstanding approval from the State government to dredge within a defined area in the creek, which extends from a central line of 600m along the length of the entrance to Currumbin Creek. The maximum depth to be dredged is 3m below AHD*. The sand is generally deposited between Lacey's Lane and Third Avenue street ends. From this deposition point, natural processes, wave and tidal movements will transport some of the sand to the north, providing benefits to the central and northern beach areas of Palm Beach.



Dredge in Currumbin Creek (Source: GCCC)

Navigation and Currumbin Creek

Currumbin Creek is not considered a navigable entrance for boating. Dredging of the limited available quantities of sand will continue to nourish southern Palm Beach.

Dredging Fast Facts

How often: annually

When: late winter to early spring

How long: approx 8 weeks

Where: around a 600m centre line along the length of the Currumbin Creek Entrance

How deep: up to 3m depth from AHD*

Approval: Department of Environment and Resource Management

*Australian Height Datum



Sand outlet at Palm Beach (Source: GCCC)