

# Questions and Answers

## SMITHS LAKE IS AT HISTORIC LOW WATER LEVELS

Smiths Lake is an Intermittently Closed and Open Lake or Lagoon (ICOLL). ICOLLs naturally open to the ocean in response to water levels in the Lake, and they close as a result of sand movement from waves, tides and wind.

Smiths Lake is manually opened when water levels in the lake are high and pose a flooding risk to existing development. *"It is important to recognise that ICOLLs have always been dynamic coastal environments. They are significantly different from bays, harbours or inlets which are permanently open to the sea."* DPI.

Visit the DPI website for a deeper understanding of the unique environment of ICOLLs and their management:  
<https://bit.ly/2N23U9R>

### **Q. Why is the Lake so low and has this happened before?**

The unprecedented low water levels currently seen in Smiths Lake are a natural phenomenon. The Lake is currently closed to the ocean and climatic conditions including high temperatures, below average rainfall and continual strong north easterly winds have resulted in evaporation exceeding precipitation, resulting in declining water levels in the Lake.

### **Q. How and when will the low Lake level situation be resolved?**

There are no practical management actions that can be undertaken to return water to Smiths Lake. Smiths Lake is naturally replenished when it rains and there is sufficient runoff. Opening the Lake to the ocean will not be effective as the Lake is

currently at sea level and there is not enough water pressure from the Lake or the ocean to

scour the entrance and achieve an effective opening. Any entrance mechanically created during low water levels would quickly fill with marine sand and close again. Lake opening relies on a high water level creating enough force to break through the sand barrier to the ocean by scouring a deep channel. It does not work in reverse. For now, the best thing we can do is monitor the water quality regularly so that we can try and manage any potential issues such as fish mortality or algal blooms. Only rainfall will result in increased water levels in the Lake.

### **Q. How bad can it get (fish kills, reporting, algal blooms)?**

Algal blooms and fish mortality can occur when there is a combination of high water temperatures and low dissolved oxygen in the water. The waves and turbulence created by the high winds are helping to oxygenate the water keeping them adequate for fish survival. If still water and high temperatures prevail, fish mortality may occur in shallow isolated areas within the Lake. The Department of Primary Industries (DPI) are the lead agency managing fish health and as such they are regularly monitoring the water quality conditions of the Lake.

The results of the monitoring have demonstrated that due to high winds and mixing in the Lake, oxygen levels are currently high enough for the survival of aquatic life. However, if low wind conditions prevail and the catchment does not receive adequate rainfall then a fish kill may occur.

Information on fish kills is available via <https://bit.ly/2mHy8RM> and fish mortality should be reported via phone to the Fishers Watch 24 hour hotline 1800 043 536 or the local fisheries office (phone 6591 6300).

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### **Q. Was it the location and timing of the most recent opening that has impacted upon the current low water levels?**

No. Historically, each time the Lake has been manually opened it naturally closes up after a period of time. Climatic factors that influence how long the Lake stays open include rainfall, ocean currents, wind strength and swell direction (wave height, strength and direction).

The Lake can close up quite quickly if particular environmental conditions happen to occur - such as east coast lows and high volumes of sand movement. When an ICOLL opens (either naturally or manually) the opening always tends to move in a southerly direction. The Lake is always opened in the same location (a fixed GPS location 70 metres from the southern dune) as indicated in the Smiths Lake Coastal Zone Management Plan.

This location allows space for the opening to naturally extend southward whilst reducing the risk of erosion in the adjacent National Park and was determined in close consultation with all agencies and professional fishing representatives. Professional fishers indicated that the most recent opening (June 2018) was a very effective opening, resulting in good fish and prawn spawning events.

### **Q. Who manages Smiths Lake?**

Different aspects of the management of Smiths Lake are controlled and/or regulated by different agencies, who together with community representatives, comprise the Wallis and Smiths Lake Coast and Estuary Committee.

Lake openings and some of the foreshore areas on crown land are managed by MidCoast Council; Marine Parks manages the compliance and adherence to Marine Park

Rules; Department of Lands – Crown Lands manage all of the remaining areas of crown land. All agencies and community representatives work together to achieve the actions identified in the Smiths Lake Coastal Zone Management Plan.

### **Q. When will Smiths Lake be opened to the ocean?**

Council manages the opening of Smiths Lake in line with the Smiths Lake Coastal Zone Management Plan. The Lake is opened when water levels reach between 1.8m and 2.1m Australian Height Datum (height above mean low water mark). This level is determined by a data logger that is installed near Tarbuck Bay which automatically logs details to a public website <https://bit.ly/2RWCGCk>. This logger

is maintained by Manly Hydraulics Laboratory. The water level for opening was determined to limit the risk of flooding to infrastructure and properties whilst maximising the volume of water within the Lake so that the openings are as effective as they can be.

### **Q. Is driving on the lake bed illegal? What is being done to stop this?**

Driving on the lake bed causes damage to protected marine vegetation, crustaceans and disturbs wading birds. Signs have been erected to advise the public that driving on the lake is illegal and fines are being issued by Council, Marine Parks for this activity.

To report illegal activity to Council you will need to be willing to provide your details as well as information about the time, location, car registration. Photographic evidence is preferred. Visit this link to send a report: [www.midcoast.nsw.gov.au/Council/Report-Request](http://www.midcoast.nsw.gov.au/Council/Report-Request)