

Overview

Bega Valley Shire Council assumes responsibility for the management of ocean entrances at a number of estuaries throughout the Local Government Area that are subject to periods of closure to the ocean. These estuaries are referred to as intermittently closed and open lakes and lagoons (ICOLLs).

The way ICOLLs behave naturally often involves an irregular cycle of open and closed entrance status. This is a cyclic process which relies on the amount of water in the catchment and sediment on the coastline to determine the form of the entrance.

When there is sufficient water flowing from the catchment to the ICOLL, water levels will rise. The water levels in many ICOLLs can rise rapidly in response to heavy rainfall events (eg. 50mm+). If the rainfall is sufficient to raise the water level to the height of the entrance berm low point, it will spill over the entrance berm and drain to the sea. The flow of the backed up water quickly scours an entrance channel through the beach and reconnects the ICOLL with the ocean. When ICOLLs are open, they become subject to tidal influence and sea water moves in and out in a regular cycle.

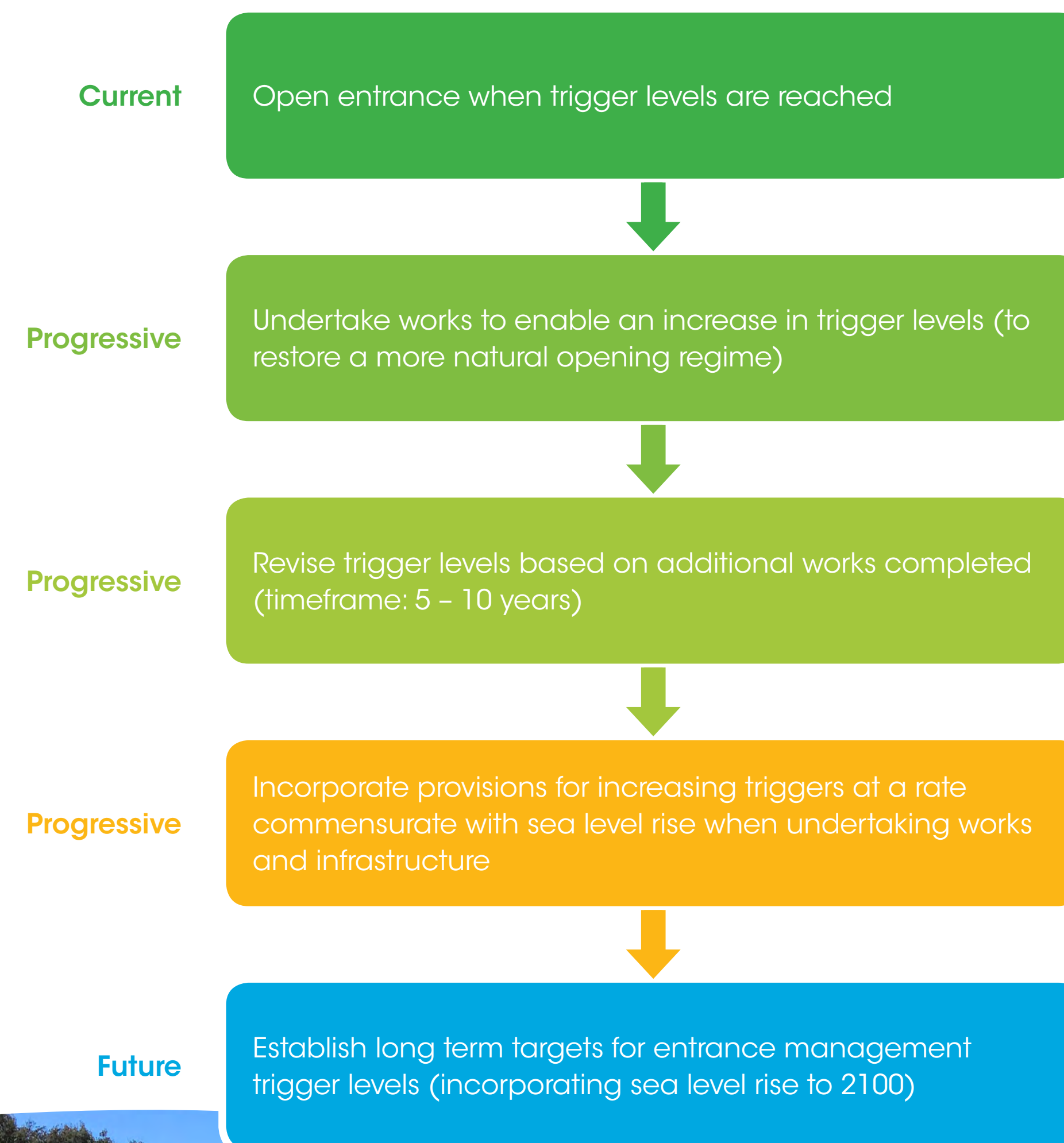
The duration for which an ICOLL remains open or closed to the sea depends on local environmental factors such as rainfall and wave conditions, as well as other factors such as catchment size, degree of protection from prevailing wave climate provided by headlands, and hydraulic controls such as presence of bedrock in and/or along the entrance.

Entrance management of ICOLLs essentially involves artificially removing or manipulating sand around the entrance berm, to release built-up waters to the sea. This is done typically when water levels within estuaries exceed specific 'trigger' levels as a precursor to potential detrimental impacts on access, infrastructure or industry around the waterways, typically as a result of flooding.

Through a holistic process including Government and public stakeholder consultation, BVSC has now developed Entrance Management Policies for the following ICOLLs:

- Wallaga Lake
- Cuttagee Lake
- Bega River
- Wallagoot Lake
- Back Lake
- Lake Curalo
- Wonboyn Lake

Entrance Management Philosophy



Aims & Objectives

The foremost objective of the Entrance Management Policies is to address the short and medium term requirements for the opening of the ICOLLs under certain environmental and climatic conditions. The Policies also aim to consider longer term impacts relating to climate change, and to strive for a 'natural as possible' entrance opening regime by progressively raising lake trigger levels.

The logic behind the Policies is the prevention of serious flooding to significant public and private assets if the water level in the lakes rises above these trigger levels. At water levels below the triggers, there is more opportunity to plan an opening to maximise lake flushing and to allow natural environmental processes to take place. Trigger levels for artificial opening may occur far below natural breakout levels due to poor coastal asset planning in the past, and it is important that we now plan coastal development to allow these trigger levels to be raised in the future.

Artificial opening of an ICOLL entrance involves the excavation of a pilot channel across the entrance to initiate opening of the lake to the ocean. Several important variables must be considered in planning an artificial opening:

- There needs to be sufficient depth of water in the ICOLL to create a scouring effect on the entrance when opened. This is important as it provides force to blast the built up sand out of the entrance. Even a small increase in water depth in the lake equates to a large volume of water overall.
- If entrances are opened prematurely and there is not enough water in the lake, it can lead to ineffective entrance openings. This will have limited benefit to water quality and fish migration, and prevents important environmental processes in the surrounding wetlands and fringing ecosystems from occurring. This in turn can impact plants and animals that depend on these processes.
- Entrance openings need to be performed on "ebb" or "run out" tides. If an entrance is opened on a flood tide, the water flowing out would be forced to fight against water trying to enter the ICOLL and would likely lead to a less effective opening. Hence, entrances are generally opened at the peak of the highest tide possible, allowing a constant drain until the tide changes.

Experience has shown that the more water is in the ICOLL when the entrance is breached, the more successful the opening will be due to the scouring effect on the entrance. If there is insufficient scouring of the entrance, it is likely that the mouth will close after a short period of time.

