

# Office of the Environmental Monitor

## Fact Sheet: Fish Stock and Recruitment Monitoring Program

### What is fish stock and recruitment?

A wide range of fish species are supported by the feeding, spawning and nursery grounds in Port Phillip Bay (the Bay). Discrete fish stocks, which are individual populations of a type of fish that live in and breed in the same waters, are identifiable in the Bay. As they breed, a proportion of new juvenile fish are recruited into the stock each year.



Photo: Snapper

Stock and recruitment levels of fish in the Bay vary naturally. These levels are influenced by environmental conditions such as water quality, including salinity and water temperature, currents, habitat availability and by fishing pressures that affect predator-prey numbers in the food chain. Dredging of sediment can also result in localised disturbances to water quality and seafloor habitat.

There is a large amount of historical information on fish populations, which has been collected from the Bay through commercial and recreational fishing activities. This information provides trends of fishing catch rates between years, identifying the quantities of fish both released and kept, and also provide information on recruitment levels.

### Fish Stock and Recruitment Monitoring Program

The Channel Deepening Project (the Project) has a rule book, the Environmental Management Plan, which limits how the Project can affect fish stocks in the Bay. It sets standards and controls to avoid and minimise environmental effects to fish stocks by managing the extent, duration and timing of dredging and minimising the dredge plume.

The rule book includes the Fish Stock and Recruitment Monitoring Program, which is one of nine Baywide Monitoring Programs. The program's objective includes: the detection of changes in the distribution, abundance and types of fish in the Bay, their population structures and larval distribution and abundance, outside expected variability.

The program will use five types of monitoring to assess fish stock and recruitment:

1. Annual trawl survey of fish in the Bay to provide information on populations trends of species such as snapper, anchovy and flathead.
2. Snapper (see photo) and anchovy egg and larval surveys conducted twice during the spawning season (December to January) at seven sites within the Bay.
3. Anchovy abundance and population study. This is a new program.
4. Recreational fishery surveys consisting of on-site surveys of catch from boat-based recreational anglers and angler-based assessments of fish stocks.
5. Sampling of fish from shallow and deep seagrass at three sites within the Bay. This is a new program.

Data from other ongoing Fisheries Victoria monitoring will also be considered.

## How the Port of Melbourne Corporation will use the data

The Port of Melbourne Corporation (PoMC) will use results from the Fish Stock and Recruitment Monitoring Program to detect changes in the distribution, abundance and types of fish in the Bay their population structures and larval distribution and abundance, outside expected variability. Where changes outside of expected variability are detected, a risk review will be undertaken. It will determine if the changes are significant to the ecosystem of the Bay and any action that may be required. Risk reviews will also consider information from other Baywide Monitoring Programs such as Water Quality, Plume Intensity and Extent, Algal Blooms and Seagrass.

## The role of the Office of the Environmental Monitor

The Office of the Environmental Monitor (the Office) will scrutinise the Project's effects on fish stock and recruitment to detect if there are changes in the distribution, abundance and types of fish in the Bay, their population structures and larval distribution and abundance, outside expected variability.

The Office will also monitor all data relating to PoMC's compliance with the management actions specified in the Environmental Management Plan that have been designed to minimise effects on fish.

These include Environmental Controls relating to when, where and how dredging can take place and have been designed to minimise the location and duration of the plume on fish migration patterns, and habitat, feeding and spawning grounds. Environmental Limits are also set to limit the intensity of the plume on juvenile fish and the effect of reduced light on fish habitat such as seagrass.

The combination of these monitoring results and results of existing programs will provide the Office with an understanding of potential changes to fish populations. The Office will use the results to judge the environmental performance of the Channel Deepening Project.

For further information on the nine Baywide Monitoring Programs visit [www.oem.vic.gov.au/Monitoringprogramsandresults](http://www.oem.vic.gov.au/Monitoringprogramsandresults).