



## Busselton Jetty Underwater Observatory

### Safety and Considerations

- Please use the handrails provided and don't run and jump on the stairways
- Please don't touch or knock the windows
- No food or drink (except bottled water) is permitted in the Observatory

### 1. The Underwater Observatory (UWO)

The UWO is a concrete cylinder 12metres high and 9metres in diameter with more than 50tons of steel reinforcement in the 250mm thick walls. The windows are made of 100mm thick acrylic and cost a minimum of \$20, 000 each. The overall weight of the structure is 550tons. The Observatory was built on land at Henderson shipping yards and then towed by tug boat to Busselton. The UWO was then secured to the sea floor using 18m long bolts. It was built at a total cost 3.6 million and was first opened in December 2003.

### Beneath the Jetty, above the waves

The piles of the Jetty are predominately Jarrah logs, 16metres in length, sharpened at one end and driven 4-5metres into the limestone seabed. The cross beams and head structures give the piles support and strength to support the decking above. This 12metre wide decking is important as it provides the shade required for the unique marine life on the Jetty piles beneath. The common birds seen are the seagulls, pied cormorants, welcome swallows and crested terns.

### 2. Intertidal zone

This window shows the difference between high tide ( $\frac{3}{4}$  up the window) and low tide (bottom of the window). In Busselton there is a tidal variation of only 1metre, a small variation compared to the Bay of Fundy in Canada which has 15-18m variation daily, the biggest variation in the world. The organisms found in this area are the hardiest of the marine environment. The creatures are exposed to constant turbulence and periods of the day in direct sunlight and air. Molluscs and crustaceans, such as barnacles, with a hard outer protective shell are commonly found in this zone.

### 3. The littoral open water zone

These windows exhibit the piles of Busselton Jetty and the growth that inhabits them. The shade of the jetty allows invertebrate organisms to colonise these piles where normally sun loving marine plants and algae would dominate. The Busselton Jetty is a great artificial reef with more than 300 known species and a remarkable biodiversity of cold, temperate and tropical species due to the southward flowing Leeuwin current and the northward flowing Capes current. The common schooling fish seen are the Australian Herring, Yellowtail Scad and Silver Trevally.

#### 4. The mid-water zone

The main invertebrates found growing on the piles are sponges, bryozoans, ascidians, and soft corals. The piles will take 10-12 years to become fully colonised. The long finger like projections coming off the pile is a symbiotic relationship between a soft Telesto coral (white) and encrusting orange sponge. Look closely for starfish, nudibranchs, sea cucumbers and small fish hiding in amongst the growth and crevices.

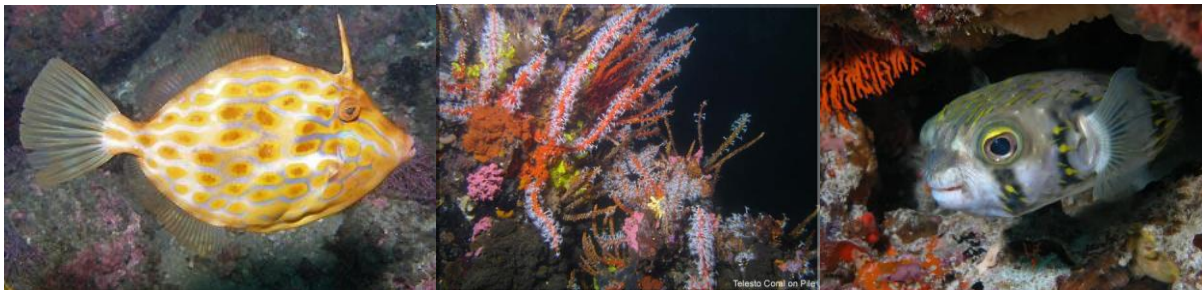
#### 5. The sea floor

The four windows at the bottom look out underneath the jetty structure. From the windows, jetty debris left behind after winter storm damage can be seen on the bottom. This now provides shelter and protection for many bottom-dwelling species including cuttlefish, octopi, numbfish, stingrays, Port Jackson and Wobbegong sharks.

#### The Seagrass window

This window shows what Geographe Bay looks like without the jetty structure. The window shows a mass of seagrass beds which covers 85% of the bay and open sandy areas. The shallow, sandy, nutrient poor bays of Western Australia are ideal for these marine plants and host 2/3rds of the world's seagrass species. These seagrass meadows are also important juvenile nursery habitats for many fish species in the bay.

The anchor is 130 years old and one of the original four mooring anchors used when the jetty was still a working jetty.



Mosaic Leatherjacket

Life on jetty piles

Globe Fish