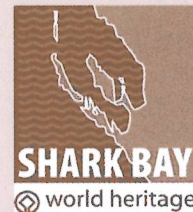


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Shark Bay World Heritage Notes



ENVIRONMENT AND CONSERVATION DISTRICT OFFICE, DENHAM, WESTERN AUSTRALIA

WHAT MAKES SHARK BAY SO SPECIAL?

THE SALT CONNECTION

Combine Shark Bay's seagrass created sills and banks together with the Bay's climate, location and barrier islands (Dirk Hartog, Bernier and Dorre) and you have a recipe for a very unique phenomena, one which occurs in very few other places on earth.

In Shark Bay's hot, dry and windy climate, evaporation rates are very high. Because of this, seawater in the area's shallow bays become concentrated and hyper saline (very salty).

In normal ocean environments, highly saline waters would be diluted by fresh water flowing in from waters or groundwater, or by low salinity waters of the open ocean flowing through on tides and currents. Shark Bay, however, has three features which conspire to prevent this from happening.

Firstly, with the exception of the occasional running of the Wooramel River, there is very little fresh water run-off or seepage into the Bay because of very low rainfall.

Secondly, Dirk Hartog, Bernier and Dorre Islands limit the flow of low salinity oceanic currents into the Bay.

Thirdly, and most importantly, the shallow water banks created by the seagrasses restrict tidal flows into and out of the southern parts of the Bay.

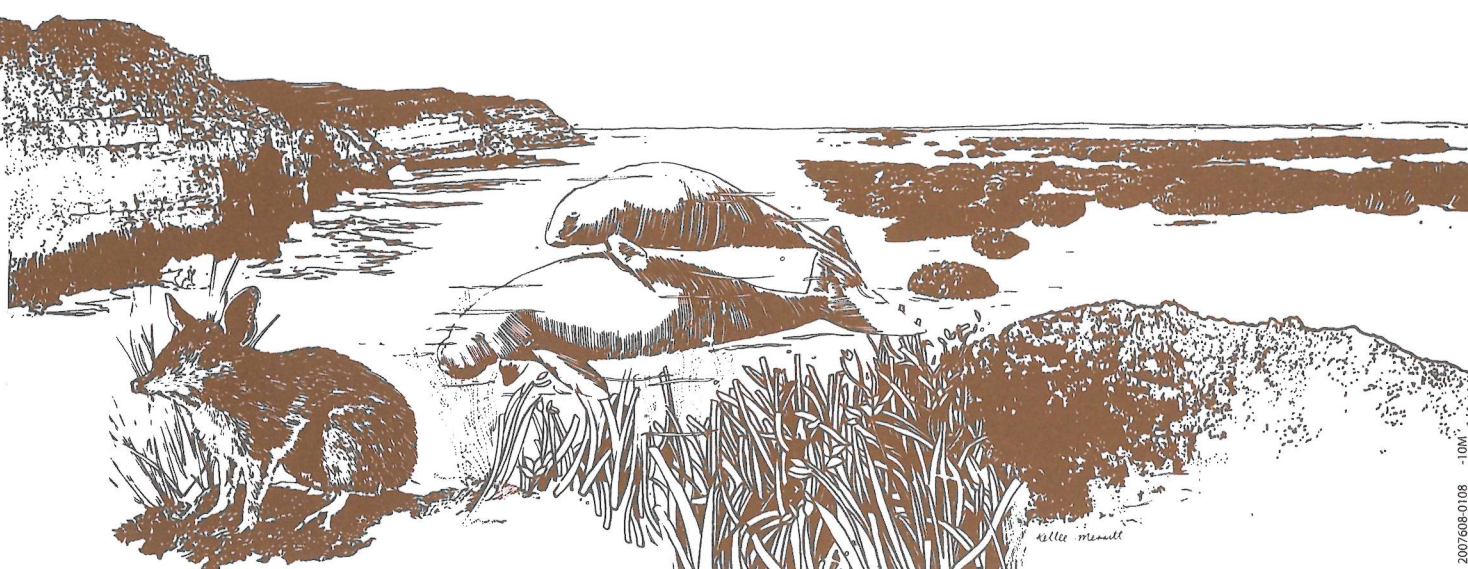
These three effects ensure low salinity water does not dilute Shark Bay's highly concentrated, hyper saline waters.

The most saline parts of the Bay are; Hamelin Pool, the southern half of L'haridon Bight and the southern extreme of Freycinet Harbour, which are almost twice as salty as the open ocean.

The northern part of the eastern gulf and almost all of the western gulf are 'metahaline' – meaning that they are up to 1.5 times as salty as the open ocean.

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While hypersaline and metahaline waters are not uncommon in shallow inland water bodies (such as salt lakes and birridas), they are very unusual in ocean environments.

In fact, Shark Bay is one of the very few marine environments in the world that has hypersaline waters, the other notable exception being Exuma Cays in the Bahamas.

Because hypersaline conditions occur so rarely in marine environments, Shark Bay's hypersaline waters are regarded as a globally significant phenomena.

So what if Shark Bay has super salty waters? Well, these hypersaline waters are one of the foundations of Shark Bay's World Heritage listing. To find out more, read the World Heritage Note titled 'What are Stromatolites?'