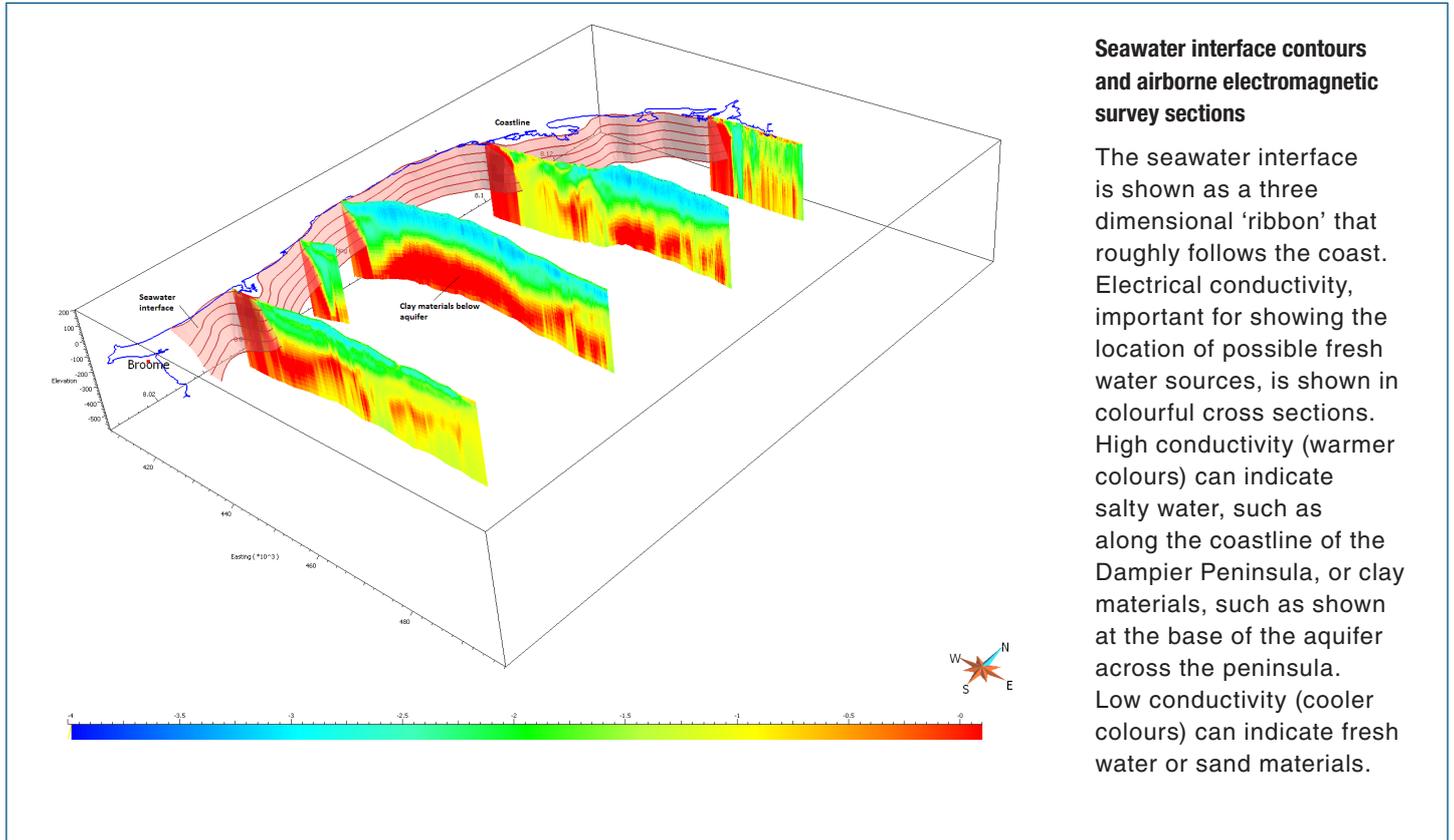


Locating the seawater interface on the Dampier Peninsula



The discovery

For the first time, the Department of Water's scientists have produced detailed three-dimensional maps of the seawater interface along the Dampier Peninsula coast north of Broome in the West Kimberley. As part of our \$2.9 million Royalties for Regions funded groundwater investigation of the area, we can now clearly see how far inland the seawater interface comes.

Along the peninsula near Willie Creek, the seawater interface reaches 11 km inland at depths of 250 m in the shallowest aquifer, while further north around Coulomb Point the interface is sharp, shallow and comes 1.7 km inland.

This important discovery has been possible by using sophisticated computer software to combine data from an airborne electromagnetic (AEM) survey of the project area with water quality and geophysical information from drilling bores.

What is the seawater interface?

The interface is a zone where dense salty water from the ocean meets the fresh water flowing out to sea below the surface of the land along our coastlines. In some parts of Western Australia this line does not exactly follow the coastline and can be inland, or even underneath the ocean.

By the numbers



4326

line kilometres of AEM
were flown over the
Dampier Peninsula

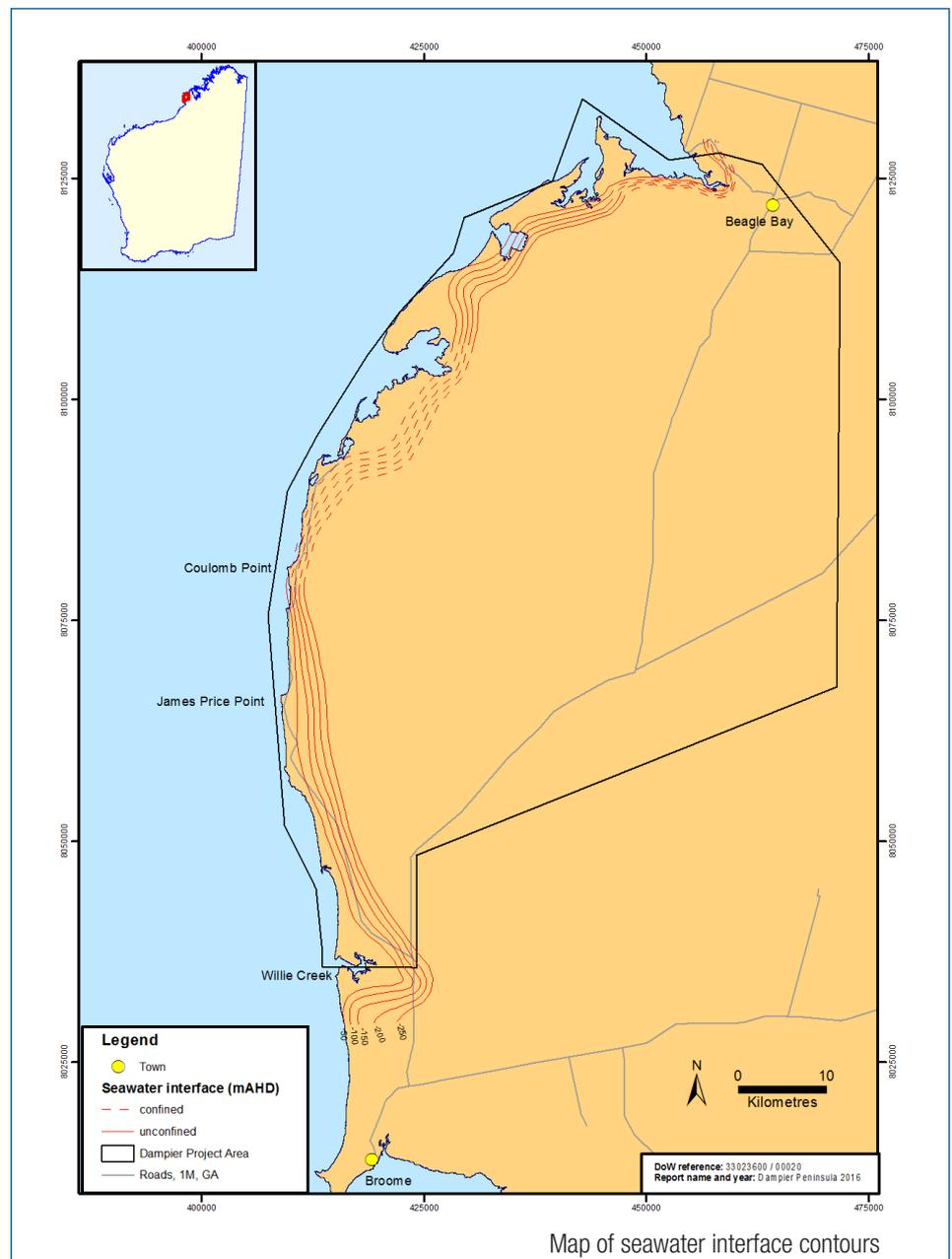


11km

inland – how far the
seawater interface reaches
in some parts.

How does this discovery benefit the people of the Dampier Peninsula?

Groundwater on the Dampier Peninsula is currently used by Aboriginal communities, camps and businesses for community water supply and it provides important livestock water for Country Downs pastoral station.



Map of seawater interface contours

Locating the seawater interface is important because it lets us know where bores can be drilled to access fresh, usable groundwater. The position of the seawater interface is usually kept stable by the natural pressure from the fresh groundwater pushing against it as the groundwater flows towards the sea. If the pressure drops because the volume of water flowing out to sea changes through rainfall variations or because too much groundwater is pumped out of the aquifers, the seawater interface can move further inland and make bores, that were once fresh, salty.

Groundwater use is currently low, but with growing communities and the increased interest in development in the region, it is very important to monitor for movement of the seawater interface so that current and future groundwater use is protected. This groundwater also supports a variety of groundwater dependent ecosystems along the coast of the Dampier Peninsula, many with significant ecological and cultural value, and it is vital for these ecosystems that we avoid increased saltwater intrusion.

For further information, please contact

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