Geomorphology and the Deadwater Wreck[1]

Background

The "Search for the Deadwater Wreck" is a project of the Australia on the Map Division of the AHS. It was adopted as a project because of its potential in making Australians aware of their early maritime history and heritage. It also has a particular resonance with hydrography, as I hope will become evident in this presentation.

The Deadwater Wreck is an 'undiscovered' shipwreck, probably of Dutch origin, dating from the period 1650 to 1750. I use the word 'undiscovered' advisedly as it was actually seen and reported on by highly credible informants on numerous occasions in the 19th century.

The Deadwater is an arm of the Vasse-Wonnerup Estuary System, about 10 km east north east of the resort/retirement town of Busselton in Western Australia, about 230 km south of Perth.

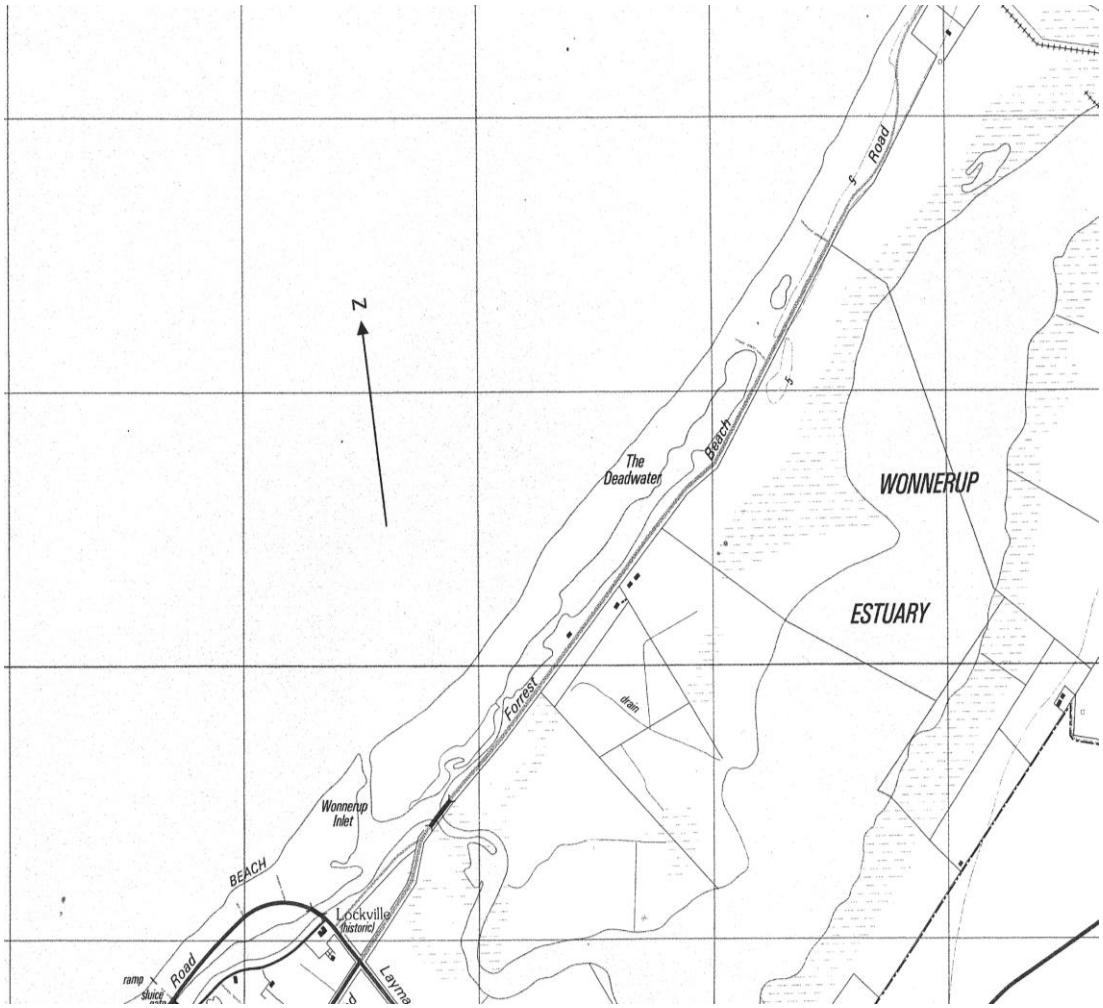

Figure 1: *Map of the Vasse and Wonnerup Estuaries and the Deadwater*

[1] This is a modified form of a presentation given at the Eastern Australian Region of the Australasian Hydrographic Society Annual Symposium in Sydney on 13 September 2010.

The first public reference to what has become known as the Deadwater Wreck appeared in a Perth newspaper, the *Inquirer and Commercial News*, in 1856:

'*For years past it has been reported that the remains of a Dutch vessel were to be seen in a portion of the Wonnerup Inlet termed the Dead Water, and some persons stated they saw the wreck*' (Anon. 1856:3)

Apparently a search for the wreck triggered the newspaper report, which added that 'the party returned unsuccessful'. Five years later, in 1861, a paper, 'On the geology of a part of Western Australia.' published in London by the *Geological Society of London*, revealed further information about the wreck:

'*the remains of a vessel of considerable tonnage have been discovered in a shallow estuary near the Vasse Inlet, now quite shut out from the sea, which, from its appearance I should judge to have been wrecked more than two hundred years ago, during which time the land appears to have risen two or three feet* [60-90 cm]' (Gregory 1861:482)

Apart from its apparent age, the situation of the wreck, 'shut out from the sea' where the land had apparently 'risen two or three feet', was indeed a rather curious aspect to the account. The informant Frank Gregory's credentials are well-accepted however, he was a surveyor who became an explorer of some renown, receiving the Royal Geographical Society's Founder's Medal in 1863, and later becoming a member of the Legislative Council in Queensland.

Further incidental information was recorded in 1869 in the diary of local settler, Henry Prinsep, who wrote, 'saw Reynolds who told me he had found the old ship in the dead water at Wonnerup' (Prinsep 1 May 1869). Then in 1876 a local timber company foreman, Thomas Bindloss, applied to the Colonial Secretary's Office for the salvage rights to the Deadwater Wreck (Bindloss 1876). This triggered further revelations about the wreck. It would appear a party had visited the wreck around 1846. This included Worsley Clifton who was in fact now the Receiver of Wrecks. As a 16 year-old it seems he had seen the wreck while in the company of his brother-in-law George Eliot, the Resident Magistrate of Bunbury at that time (Clifton 1876).

In his reports to the Colonial Secretary, Clifton stated that the wreck was,

'*situated in ... the Dead Water ... to the North of its present mouth about 40 yards* [36 m] *from the beach and 2 ¼ miles* [3.6 km] *from the Jetty of the West Australian Timber Company,'* and that there was a *'sand hill of low height between her and the Sea.'* (Clifton 1876)

He went on to say that it was *'covered in Water, Sand and Seaweed to a depth of about fourteen feet* [4.2 m]*,'* and that it was *'evidently ancient*'. (Clifton 1876)

It would appear Bindloss's 1876 salvage claim also led to further investigations of the wreck being carried out. Captain Archdeacon, leader of an Admiralty hydrographic survey being conducted in that part of Western Australia (Anon 1876:3), and Alfred

Burt, one of the surveyors, reportedly visited the wreck-site around this time. Burt, who went on to became the Registrar of Titles and Deeds, recalled years later that one of the early settlers in the district, John McGibbon, had informed him 'some old timbers still standing in the middle of deep water about half a mile [800 m] from shore had, when the settlers first arrived in the Vasse, formed part of the hulk of an old ship'. McGibbon led Captain Archdeacon and Burt to the 'mysterious old ship', (DCC 1910) and informed them that 'according to rumour, it was the remains of an old Dutch man o'war' (Cowan 1929). According to Burt it 'was embedded in sand and water of a land-locked pool not far from the sea', it 'stood two or three feet [60-90 cm] above the water', had 'a high stern', and was 'built in the olden style' (Cowan 1929).

Another individual who seem to be well acquainted with the Deadwater Wreck was Augustus Gregory. He was a surveyor in WA at same the time as his brother Frank, and he also became a famous explorer, and later Survey-General of Queensland. In the 'Inaugural Address' he gave to the first meeting of the Queensland Branch of the Geographical Society of Australasia in 1885 he referred to the Deadwater Wreck, noting that it was a vessel, 'the construction of which indicated a very early date in naval architecture' (Gregory 1886:24). Some years later he added to this, indicating:

'*This wreck is wholly covered by the tide, and was found by a bather, who, resting on what he took for the stump of a tree, found that it was the mast of a vessel. Several articles were recovered from the wreck, and their patterns are similar to Dutch ships of that period* [late 17th century]' (Gregory 1902-3:131)

By 1902 Bindloss's salvage rights to the wreck had lapsed and farmer Joseph Reynolds, the same person mentioned by Prinsep in 1869, and whose farm was adjacent to the wreck, applied for and was granted the salvage rights. He admitted in correspondence to the Colonial Secretary's Office that he been already removed much material from the wreck in the 1860s (Reynolds 1902). Thereafter all credible sightings of the wreck ceased.

In summary, based on all the available information, the Deadwater Wreck is believed to be a Dutch vessel, estimated to have been about 30 metres long and dating from the period 1650 – 1750 (Gerritsen 1995). There are four Dutch ships that left Cape Town and disappeared in this period, the *Zeelt* (1672), the *Ridderschap van Holland* (1694), *Fortuyn* (1724) and *Aagtekerke* (1726). Based on size, the *Zeelt*, a hooker, is the most likely candidate (Gerritsen 2008:15) The references to the Deadwater Wreck, such as 'a high stern' and 'built in the olden style' indicate it was a vessel that perhaps looked something like this:

Figure 2: *Representative Ship (*Duyfken *Replica)*

Regarding the location of the wreck, informants in all cases bar one consistently indicate that it was in the Deadwater, and that there was a low dunal ridge between it and the sea. Clifton's account provides a fairly specific location, '2 ¼ miles [3.6 km] from the Jetty of the Western Australian Timber Company at Wonnerup' (Clifton 1876). Reynolds claim that it was on his land, Sussex Location 11, which encompassed all of the Deadwater, is consistent with this. Accordingly we believe the Deadwater Wreck is located here:

Figure 3: *Location of Deadwater Wreck (area marked in* ***red****)*

The ‘ramp’ located on the beach in south west corner of the map is where the Western Australian Timber Company Jetty used to be, so that the 2 ¼ miles Clifton stated is measured from there. Allowance is made in delineating the Search Area for possible uncertainties in Clifton’s estimate and by which route, along the beach, as the crow flies or along the Deadwater, he meant.

This is the actual location of the Search Area, where we believe the remnants of the Deadwater Wreck to be:

Figure 4: *Photo of Deadwater Wreck Search Area*

How Did the Wreck Come to be Here

Of course an obvious and very perplexing question in relation to this site is - how in the world could a ship end up here? Furthermore, there are couple of puzzling references to the location of the wreck, that on the surface just don’t seem to add up.

Firstly Clifton stated that it was only “*40 yards* [36 m] *from the beach*”, yet he then goes on to say “*there was a ‘sand hill of low height between her and the Sea.’*

But then McGibbon, who led Burt to the wreck, is reputed to have claimed it was in ‘deep water about half a mile [800 m] from shore,’ whereas Burt later indicated that it was in ‘a land-locked pool not far from the sea.’

The centre of the area where we think the remnants of the Deadwater Wreck lies is, according to my measurements, approximately 185 metres from the water’s edge of nearby Geographe Bay. Geographe Bay has a dynamic shoreline that advances and then retreats, as a result of storm surges, by up to 200 metres in a cycle that has a

period of about 60 years. (Gerritsen 1995:18-19). But even if one takes this aggradation and erosion into account one cannot reconcile these reports.

So how do we resolve all these apparent conundrums and contradictions? The answer lies, I believe, in an understanding of the geomorphology of the Deadwater and how that has changed over time.

Figure 5: *The Deadwater and Lower Vasse-Wonnerup Estuarine System*

The Deadwater is a long shallow channel three kilometres long but only about 100 metres wide at its widest. It runs for almost its entire length behind a low coastal barrier dune fringing Geographe Bay and is very shallow, currently only a metre or so deep at its deepest point (Personal Observation).

Figure 6: *Deadwater Wreck Search Area*

As can seen in the photo of the search area, there are low dunes [on left], only a few metres high, on the seaward side of the Deadwater, but also a high bank on the landward side [on right], while the water is very shallow here, as this is where the main water body currently terminates [foreground].

There is, however, a solid body of evidence that the Vasse-Wonnerup Outlet and the Deadwater have changed considerably over time. For example, the first British explorers in the area, Collie and Preston in 1829, and later Lt. Bunbury in 1836, indicate that the Vasse and Wonnerup Estuaries had a dual outlet (Collie and Preston 1829:102-3; Bunbury 1930:99-100). The first survey by H. M. Ommanney in 1838, as well as the earliest maps of the area, such as the one below, from 1850, also show separate outlets, about 1.5 kilometres apart.

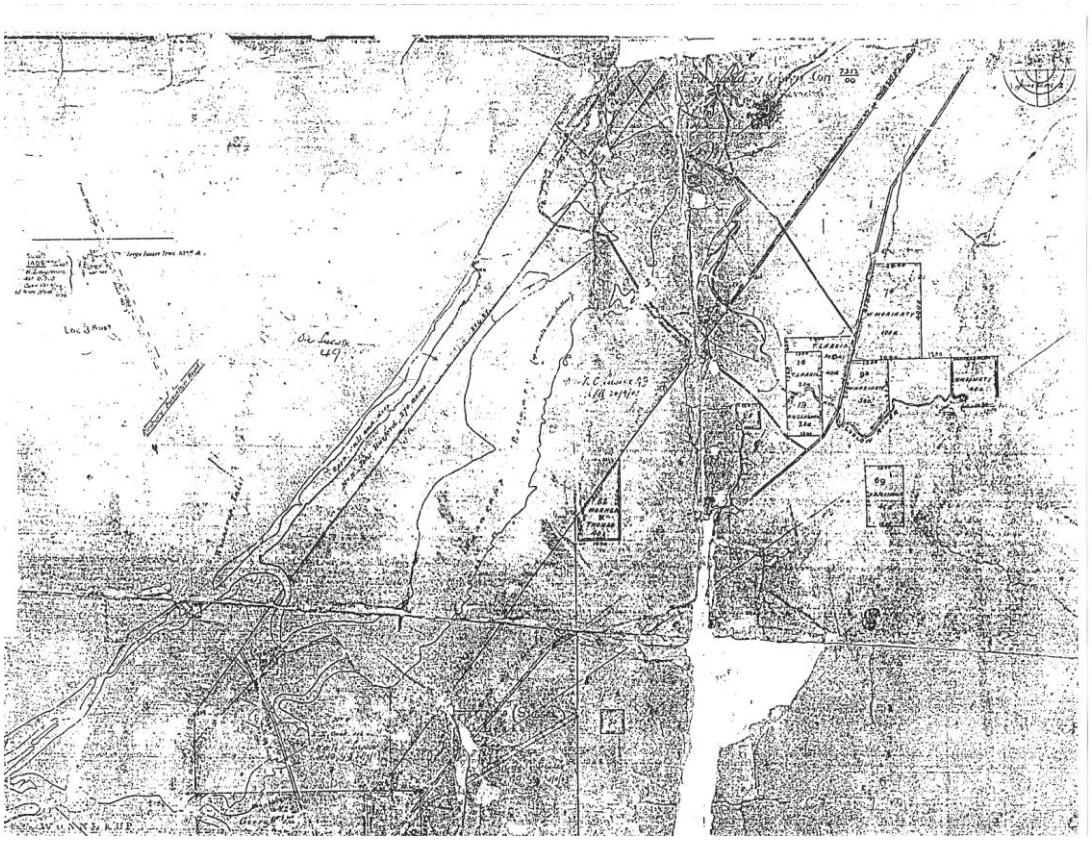

Figure 7: *Map - 'Landgate 1850'*

Also note, that the Deadwater extended much further north then as well. But by 1870 the separate outlets seem to have disappeared, and the original Wonnerup Estuary outlet is now the approximate location for the current joint outlet (Wonnerup Inlet), with the more southerly outlet blocked.

But I would contend that other significant changes have occurred, and that there was formerly a northern outlet prior to British colonisation which had been at one time the main outlet for the estuary system. The Deadwater is in fact a relict northern outlet. And it was through this northern outlet that the Deadwater Wreck sailed before becoming stranded. Traces of this feature are still evident, as can be seen in this Google Earth image.

Figure 8: *Northern Part of Deadwater*
(Google Earth™ mapping services)

There are several grounds for this contention. The bank, about two metres high, forming the Deadwater's inland side, curves round to the beach at its northern end. This curve can be seen in Google Earth image if one follows the line of Forrest Beach Road, which sits atop the bank. Historical, geomorphological and cartographic evidence also indicates the water in the Deadwater was much deeper and extended further north in the past. Surveyor Ommanney reported in 1838 that the Deadwater had 'very deep water' (WAS 32 Ommaney Letters:75), and the 1850 map (and other early maps) shows the water extending almost as far as the northern end of the Deadwater. The inland ridge, made of an admixture of limestone, sand and loam shows undercutting at levels a metre or two above the present water level. At the northern outlet the dunal ridge on the seaward side of the Deadwater is much lower than further south as can be seen in this photos of what I contend was the former northern outlet.

Figure 9: *The 'Northern Outlet'*

The resultant scenario suggests the northern outlet formed the main outlet for at least the Wonnerup Estuary in the past, that the ship sailed into the Deadwater through this outlet, and then grounded in the area the wreck has been reported, where it was abandoned. With the blocking of the northern outlet, the Deadwater slowly began to silt up and retreat. But the water level was still high, as attested by Ommanney in the early days of British settlement in the district. This is probably what made the wreck difficult to find in earlier days, as indicated by A. C. Gregory's account of how it was first found. It may have only been visible when water levels were low, and this only occurred when a lengthy dry spell and low tides combined. A series of drainage and flood control measures undertaken since the 1920s, such as the floodgates at Lockeville and Wonnerup Estuary Outlet, appear to have also significantly affected the Deadwater, and this is what has primarily led to water levels falling and retreating to their present configuration, with a commensurate increase in siltation.

The 'northern outlet' scenario and the photo of the probable wreck site may also resolve a couple of the apparent contradictions noted earlier. McGibbon's reputed comments, that the wreck was in 'deep water half a mile from the shore' takes on new meaning when it is realised that he lived just north of the northern outlet, with his

house almost the only private residence shown on the 1876 Admiralty survey chart in which Burt was involved in preparing (WASA: CONS 3847). Thus McGibbon may have been using the northern outlet as his reference point, as a measurement of 800 metres from the northern outlet comes to the same location identified as the wreck-site based on the distance provided by Clifton. Finally, it will be noted from photo of the wreck site below:

Figure 10: *The 'Sandy Beach' at Northern End of Deadwater*

there is a narrow sandy strip running around the northern side of the water. This sandy strip, usually wider when the tide is lower, is the type of feature I believe was being referred to in reference to the wreck being '40 yards from the beach'. Given the changes in water and silt levels, the beach in the photo may not be the same beach as the one originally referred to, although a similar formation. That beach most likely has 'transmigrated' as the Deadwater's northern extension has retreated. Incidentally, two 'ancient coins' and 'about 70 lbs [32 kg] of quicksilver [mercury]', were reportedly found 'on the sand beach' some time prior to 1876 (Clifton 1976) by J. G. Bussell JP, one of the founders of Busselton.

The Search for the Deadwater Wreck

Because of the pilfering and salvage of the Deadwater Wreck in the 19th and early 20th century the wreck was, well, wrecked! All that probably remains is the bottom of the vessel and debris that has fallen into the sediment, which now covers the wreck to a depth of perhaps 1 metre or more. Consequently, the best hope of locating the wreck is through remote sensing. With the assistance of archaeological consultants, and funding support from Lotterywest, we hope to be carrying out this type of investigation in March next year [2011].[2] If anything is found we will immediately

[2] Delayed owing to withdrawal of the contracted consultant from the contract.

alert the WA Maritime Museum who will then have legislative responsibility for excavation and preservation of what remains of the Deadwater Wreck.

In the early 1990s there were attempts, often poorly researched and conducted on an *ad hoc* basis, to search for a longboat lost by the French Baudin expedition in 1801, three kilometres to the south, as well as the Deadwater Wreck. In these instances a difficulty was encountered which led to a number of 'false positives'. This confounding factor is the presence of ilmenite in the area. Ilmenite, a crystalline form of iron titanium oxide ($FeTiO_3$), is weakly magnetic. Consequently it gave rise to false magnetometer readings, so that the searchers, thinking they had found something of significance, frantically dug down, only to find it was just a patch of ilmenite.

With current technology this should not be a problem, and so we will benefit from improvements and innovations in remote sensing technology that have taken place since then. Consequently we are hopeful that we will be successful, and if so make a major contribution to the nation's maritime history and heritage.

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