

Site Inspection Report

City of York Bay Unidentified - *Transit* (1875-1899)

City of York Bay - Wadjemup/Rottnest Island



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**Report No. 359 — Western Australian Museum, Department of Maritime
Heritage**

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MUSEUM**

Cover image: Drone Photograph of City of York Bay (Patrick Morrison, Western Australian Museum)

Acknowledgements

The authors thank Rottnest Island Authority for reporting the degradation of the City of York Bay Unidentified shipwreck to the WA Museum Department of Maritime Heritage. The authors specifically thank Jess Green from Rottnest Island Authority who transported timber samples that had washed ashore to the WA Shipwrecks Museum for further study. Jess also accommodated Maritime Heritage staff via logistical support to visit the City of York Bay Unidentified for further inspection, to decide next steps for the conservation and management of the site.

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Site inspection details

Site Name: City of York Bay Unidentified/ *Transit*

Date Lost: 1899

Reported by: The City of York Bay Unidentified wreck was originally reported by John Ephgrave in 1992. As it was unable to be identified at the time, the wreck was known as the 'Ephgraves wreck' or 'City of York Bay Unidentified'. This Site Inspection Report was produced in follow up to reports by the Department of Biodiversity, Conservation and Attractions (DBCA), via Rottnest Island Authority, that the site was deteriorating with timbers washing up on shore.

Date and time of Inspection: Wednesday 5 February 2025, 0945-1230.

Personnel:

Aurora Philpin (WAM)

Patrick Morrison (WAM)

Jessica Green (DBCA)

Cameron Raabe (DBCA)

Location: City of York Bay, Rottnest Island.

The site inspection was unable to confirm the current location of the City of York Bay Unidentified, due to not being able to re-locate the site. Co-ordinates for the City of York Bay Unidentified were updated via Landgate aerial photographs in 2019, listed in Worsley & Green (2019). As a result of GPS selective availability in 1992, the original GPS position listed in the initial inspection for this site was only accurate ± 50 m. Co-ordinates used in this survey were those listed in Green & Worsley 2019:753, as the co-ordinates from 1992 were shown to be on land (Figure 1).



Figure 1 Updated location for City of York Bay Unidentified derived via aerial images in 2019, shown with the location listed in the initial Site Inspection from 1992 – City of York Bay, Rottnest Island (Aurora Philpin, WA Museum).

Position: 31.994896° S, 115.496701° E

Datum: WGS84

Sailing Directions: The site has previously been located on the north-western side of Wadjemup/Rottne Island, in City of York Bay. Reportedly, the site is located in shallow water that requires those visiting via boat to carefully thread a path through shallow reefs towards the beach (McCarthy 1992:2).

Site Location: The City of York Bay Unidentified is recorded as being located in the surf zone, at the northern end of City of York Bay (McCarthy 1992:2). The site location is described in 1992, as 10 m from shore and 15 m from the reef, 500 m south-east of *City of York*.

Site Photographs:

Images located on WA Museum server.

- City of York Bay UNID 2025 Patrick drone photos (DJI_0253-63).
- City of York Bay UNID 2025 Aurora underwater photos (P2050007-30).

Site Conditions on Inspection:

Sea and Swell: Nil

Tide: Mid

Surge: Nil

Visibility: 0-3 m

Current: Nil

Sea-bed Coverage: sand, rock and thick weed.

Description of Site

During this site inspection, the authors were unable to re-locate the City of York Bay unidentified shipwreck underwater. This was possibly due to visibility, extensive marine growth, sand coverage or the total degradation of the wreck. During a swim line search, we noted that dense seaweed covered the most likely location of the site.

The City of York Bay Unidentified was originally recorded in 1992, described as loose timbers amongst thick ribbon weed and sand (Figure 2). Wreck site timbers were recorded in 1992 as lying at a right angle to the shore, with some projecting under the sand. In total, exposed wreckage measured 9.6 m in length and 4 m in breadth. Visible timbers appeared to consist of the keel, a section of flat-bottomed hull with machine cut frames measuring 12-14 cm x 10-12 cm and planking with dimensions 22 x 3 cm (insert reference e.g. McCarthy 1992).

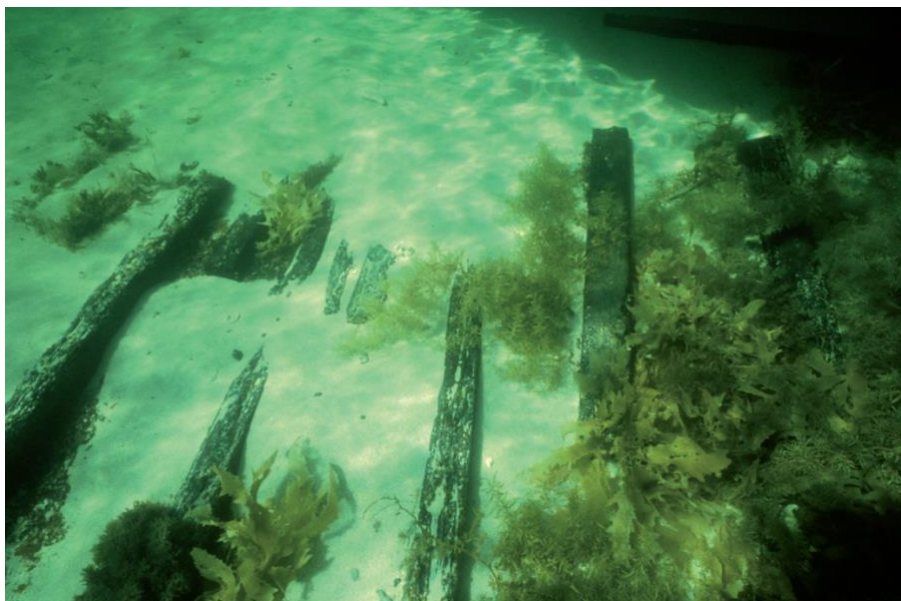


Figure 2 Visible timbers of the City of York Bay Unidentified (Michael McCarthy, Western Australian Museum, 1992).

The City of York Bay Unidentified was iron fastened, with treenails. One iron knee and other concreted wreckage was found at the south-western end of the site. The knee was identified as a staple knee, used between decks, and had a space of 1.22 m between arms (ibid).

The original finders of the site, John Ephgrave and Harry Wilmink located a small, iron stocked, admiralty pattern anchor and concreted iron chain. The anchor and chain were reportedly located 250 m away from the shipwreck, on a bearing of 130°. This anchor was also not re-located during the 2025 site inspection.

Despite not being able to locate the wreck site on this inspection, two timber hull planks had been placed on the shore via public interaction with the site. It is unknown whether the two timbers had become displaced from the wreck site due to site formation processes, resulting in them standing out to the public, causing them to be dragged up the shore or unknowingly removed from the site by the public. The timber planking found on shore (timbers 1 & 2), were recorded during the 2025 inspection.

Timber 1

Timber 1, a curved hull timber, had likely been dragged up on to the beach by a member of the public and placed vertically, lying flat along the beach. Dimensions for timber 1 were recorded (Table 1), as were the placement of its fastening holes which were approximately 17mm in diameter (Figure 3). Timber 1 had completely dried out due to being out of the water for an unknown period and there is extensive teredo worm damage from when the object was still located on the wreck site.

Table 1 Dimensions for timber 1 recorded in 2025.

Length	3662 mm
Width	162 mm
Thickness	25 mm



Figure 3 LiDAR model with measurement of timber 1 with fastening holes circled (Aurora Philpin & Patrick Morrison 2025).

Timber 2

At the northern end of City of York Bay, members of the public had placed a second timber on a makeshift stand, made from branches (Figure 4). Timber 2 is considerably shorter than timber 1 (Table 2) and has fastening holes present. The condition of timber 2 is poor, showing signs of teredo worm damage and being completely dried out as a result of being on the shore for some time.



Figure 4 Timber 2 on a makeshift stand crafted by the public (image credit?).

Table 2 Timber 2 dimensions.

Length	1879 mm
Width	12 8mm
Thickness	26 mm

Timber 2 appears to have been burnt via blackening, however public interference with the timbers leaves the question of whether the timber was burnt at the time of wrecking or due to the individual timber being set on fire by a beachgoer. There are visible signs of iron oxidation on timber 2, as a result of the corrosion of iron fastenings embedded within the timber (Figure 5).



Figure 5 Comparison between timbers 1 & 2, showing iron oxidation and charcoal present on timber 2 (image citation?).

Materials Removed

Timbers

Between September 2024 and February 2025, a total of five timbers from the City of York Bay Unidentified shipwreck have been removed from the site and dried out. In September 2024, Rottnest Island Authority (RIA) informed the WA Museum Department of Maritime Heritage of a visitor to the island pulling two timbers out of the seabed and on to the beach, claiming they were from *City of York*. When Heritage Officers asked the member of the public where they came from, the person located the City of York Bay unidentified wreck. Further timbers were washing up on shore with another being transported to RIA for safe-keeping by staff on the island. One small timber fragment and a timber sample were kept damp by RIA Heritage Officers and transported from Rottnest Island to the WA Shipwrecks Museum, for analysis, with the hopes of identifying the wreck to determine its protective status.

Following the first two timbers being removed from the wreck site in November 2024, another timber had washed ashore, and a second had been displaced from the wreck, submerged 15 m from the shore. When Maritime Heritage staff arrived at City of York Bay in February 2025, this timber had been removed from the water and dragged up the beach (Figure 6).

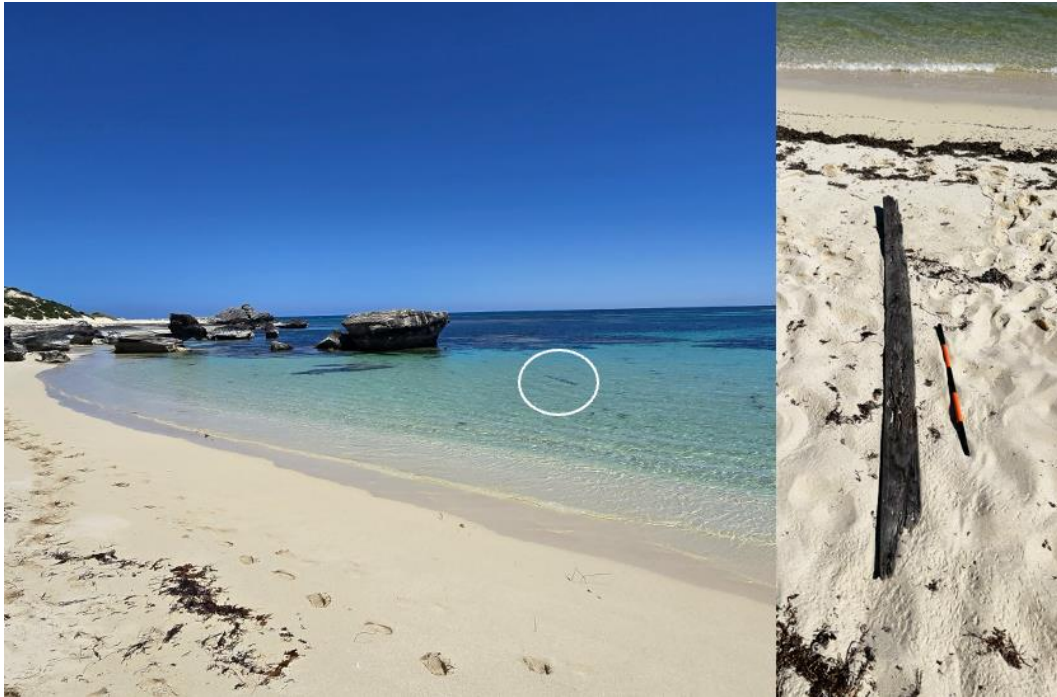


Figure 6 Timber 1 submerged in November 2024 (left) and after it had been dragged out of the water when it was recorded in February 2025 (right) (left: Rottnest Island Authority 2024, right: Patrick Morrison, WA Museum, 2025).

Site Identification

To identify the City of York Bay Unidentified, extensive review of current departmental documents with relevance to the site was conducted. Further historical research was undertaken to provide in-depth historical background for each of the vessels previously determined to be the possible identity of the site. Finally, timber analysis was carried out on timbers that had washed up in City of York Bay in 2024, to complement historical research and the study of the wreck site itself from the 1992 inspection.

The 1992 Inspection

The 1992 site inspection of City of York Bay Unidentified described the construction and size of a vessel consistent with that of a lighter, coastal fishing vessel, or watercraft associated with World War II (McCarthy 1992:4). During the 1992 inspection, construction features and the nearby anchor were recorded in an attempt to identify the site. McCarthy concluded that the submerged timbers were either part of a small coasting craft, or a flat-bottomed barge or lighter (McCarthy 1992:4; Worsley & Green 2019:753). Based on the size and shape of the anchor located on the site, it was deemed likely that the vessel was approximately 10 tons, and a late-19th or early-to-mid-20th century coasting vessel (McCarthy 1992:4). One iron knee was present on the site, described as the type that was used between decks (McCarthy 1992:4).

McCarthy (1992:4) provided three possibilities for the identity of the City of York Bay Unidentified wreck:

- *May Flower* (1896);
- A lighter associated with the salvage of *City of York*; and
- A wreck associated with army activities in World War II.

Further research carried out as part of this report has identified additional possibilities for identification, namely two lifeboats from *City of York* and the lighter *Transit* (1899), used to salvage the *City of York* wreck.

May Flower (1896)

Very limited resources detail the fishing vessel *May Flower*, that was reportedly lost while fishing on the northern side of Rottnest Island in 1896 (Cairns & Henderson 1995:258). *May Flower* was owned by Mr. Mitchell from Perth, approximately 8 tons and likely built locally of jarrah, as jarrah was the most common boat-building timber of that time (Green & Worsley 2019:663). On 19 May 1896, The West Australian and the Western Mail reported three fishers coming into the Rottnest Island settlement after their vessel wrecked while travelling near the Island's northern reefs at 4.30 am (The West Australian 1896; Western Mail 1896; McCarthy 1992:4).

The wrecking location for *May Flower* varies between sources, with the primary source, in this case a Colonial Secretary Record, being different to what is listed in secondary sources (Cairns & Henderson 1995:258; McCarthy 1992:4; Green & Worsley 2019:663). Previous sources have cited the colonial secretary record 1564/95 (SLWA) and stated that *May Flower* wrecked on the rocks, approximately 3 km north of the point, however where this point is located is unclear (Cairns & Henderson 1995:258; McCarthy 1992:4).

The below is a transcript by the authors of colonial secretary record 1564/96:

From the Superintendent, Rottnest Island to the Under Secretary, Perth.

This morning at 5 o'clock Am three men came in here shivering and in real distress. They reported that their names were

1. Angelo [Dimitri?]
2. Nicholas [Bruner?]
3. Tim

and that they were fishermen belonging to the boat May Flower / [illegible] [illegible] [illegible] belonging to a Mr. Mitchell of Perth. The boat was shipwrecked on the rocks on the North of this Island, and 2 miles south of the point. I took the men to the settlement for [illegible] a change of clothes and [rations?] and they will return to the mainland and the [illegible] [locals?] which is now approaching the [S?] [illegible]. Captain Tate has gone to look after the wreck and see if any thing can be saved [illegible] the shipwrecks men think it is entirely lost with their few valuables including [illegible] gold chain + [illegible] + purse. P.s. The boat is [still?] lost. It was [accurately?] [illegible] [illegible] [breakers?]. The men are all right.

The City of York Bay Unidentified is described in the original Site Inspection Report as approximately 1.6 km (one mile) south of west from North Point and about 3.2 km (two miles) east of north from Abraham Point, currently known as the western point of Rocky Bay (McCarthy 1992). Based on the location of the City of York Bay Unidentified, the only primary source information directly linking the vessel *May Flower* to the shipwreck site is that it wrecked on the north side of Rottnest Island.

City of York (1899) Lifeboats

City of York lies approximately 740 m west-north-west of the City of York Bay Unidentified wreck, providing some important context for the site (Figure 7). One of the *City of York*'s crew - Michael Murphy, was at the wheel when the vessel struck on 12 July 1899, and gives an account of the wrecking, as summarised below (Australian Town and Country Journal 1899):

When *City of York* struck reef, the captain gave the order to clear away the lifeboats. The clearing of the lifeboats began with the starboard vessel, requiring two crew onboard the lifeboat to keep it alongside due to the sea state. The port lifeboat was then launched with crew onboard and the captain ordered everyone else to board the lifeboats. After the captain made the order, five more people boarded the starboard lifeboat, including the First Mate and Michael Murphy. After boarding the starboard side lifeboat drifted away from the *City of York* with those onboard managing to pull it alongside again using the oars. The second mate and boatswain then boarded *City of York* from the starboard lifeboat, swapping with two others.

The Captain then ordered the starboard lifeboat with six people onboard to make their way over to the port side, where it was more sheltered. As the lifeboat moved around the stern of *City of York*, it almost filled with water. When the starboard lifeboat reached the port side, the port lifeboat had cast off. The captain tried to pull the port lifeboat in again while going around the ship's bow and the lifeboat capsized, throwing everyone onboard into the water.

The starboard lifeboat picked up one person from the water and could not save anyone else due to the condition of their vessel. After trying to seek shelter alongside the port side of *City of York*, a squall rolled in and drove them on to a reef. The crew pulled the boat over the reef, into deeper water on the other side. The oars had washed away so the crew pulled up the bottom boards of the lifeboat and turned them into paddles. At this time, those onboard were standing with water up to their torsos. Once clear of the reef and in smooth water, the current pulled the lifeboat in close to the rocks, where two people got out and sounded for the seabed.

The lifeboat made it to the shallows and the crew dragged the boat on to the shore, finding the bottom of the boat had broken inward. After arriving on shore, those onboard walked for the lighthouse. The mate had severely injured his leg and another was delirious with fatigue and had to be carried. The shipwreck survivors met the lighthouse keeper and their assistant and reached the light house at 2am, while 11 crew onboard the other lifeboat including the captain were believed to have drowned.

Eight people onboard *City of York* never made it into either of the lifeboats and remained onboard the vessel. They were later rescued by the crew of SS *Dunskey* (Mount Barker and Denmark Record 1932).

The Inquirer and Commercial News (1899) reported that when day broke on the morning of 13 July 1899, the superintendent on Rottnest Island signalled Fremantle urgently about the wrecking of *City of York*, followed by promptly sending out prisoners to search for bodies between the settlement and the wreck. At 9am, the superintendent rode to Bare Hill, where *City of York* could be sighted laying below. From Bare Hill, directly south-west of City of York Bay, the superintendent saw six oars and a small barrel of water being recovered by a member of the prisoner search party. There were also two boats sighted belonging to the wrecked ship, that had been washed ashore.

City of York (1899) salvage

The Inquirer and Commercial News (1899) outlines a visit in 1899 to the wreck of *City of York*, by members of insurance parties from North Queensland and Victoria onboard the chartered steamer *Gannet*. The visit was to assess the likelihood of salvaging the timber cargo that was onboard *City of York*. Inspectors arrived at the site and boarded the wrecked *City of York* via a boat launched from *Gannet*. It was found that *City of York* was full of water, however inspectors still hoped to save the 300-400 tons of timber on deck. In an unsuccessful attempt to save the timber cargo, those on *Gannet* tried to pull *City of York* off the reef, in the hope that it would float. Following the unsuccessful attempt at floating, it was decided that the timber would instead be salvaged by lighters.

Eventually, 3,000 m (10,000 ft) of timber cargo was salvaged by lighters, while 70 loads of the timber cargo was reported damaged (*The Daily News* 1899). During the salvage operations, multiple newspapers reported a pile of timber from *City of York* on shore, possibly holding human remains and producing a noticeably unpleasant smell (*The Daily News* 1899; *The Inquirer and Commercial News* 1899).

Transit (1899)

Transit was built in 1875 in Perth, Western Australia, by W. Lawrence senior and registered at Fremantle this same year (Cairns & Henderson 1995:168). The vessel was owned by Randell, Knight and Company, which changed its name to the Swan River Shipping Company in 1895 (Cairns & Henderson 1995:168; Murray 2004:13). *Transit* was constructed as a wooden, two-masted, forward and aft-rigged schooner, with one deck and a square stern. The vessel was 40.9 tons, had a length of 22.4 m, breadth of 4.7 m and draft of 1.5 m (Parsons 1971:27; WAM Maritime History Database; Cairns & Henderson 1995:168).

Before wrecking at Rottnest Island, during a storm at Fremantle on 10 August 1890, the lighter *Transit* was driven ashore on South Beach, while loaded with pipes from the barque *Sulietelma*. *Transit* was floated off South Beach six days later when the vessel flooded and sank in the deep water. *Transit* was later placed on the slip in Bazaar Terrace, Perth, to be repaired by W. and S. Lawrence (Cairns & Henderson 1995:168).

The wrecking event of *Transit* at Rottnest Island was only briefly covered by newspapers at the time of the event, with the wrecking of this vessel regarded as a minor or untraced casualty (Cairns & Henderson 1995:324). *The Daily News* Perth (1899), reported that the Swan River Shipping Company's lighter - *Transit*, which had gone to Rottnest to collect timber from the wreck of *City of York*, was blown ashore on the morning of Saturday 4 November 1899 during a storm. *Transit* was anchored about 200 yards (182 m) from the island when the vessel dragged anchor over a reef and ran on to a sandbank where it remained. The crew of *Transit* reached shore without difficulty after the vessel wrecked. At the time it was reported that *Transit* would be brought back to Fremantle in the course of a few days to inspect and repair the damage.

A more detailed account of the wrecking of *Transit* was recorded in *The Inquirer and Commercial News* (1899). *Transit* was anchored 200 yards (182 m) from the shore in the vicinity of the wreck of *City of York*. The vessel was secured by two port anchors, a starboard anchor, and a hawser fastened to the beach. The vessel was exposed to multiple storms and in the evening, the cable of one of the port anchors broke before the hawser and cable of the other port anchor broke hours later. *Transit* was left with one anchor in rough conditions until the cable finally broke, leaving the vessel adrift. Tons of water swept over the vessel, making it unstable while it travelled over around 54 m (60 yards) of reef with great force until it was caught on one rock for a quarter of an hour before floating off. The vessel continued to drift into Clear Bay, almost capsizing more than once, narrowly missing a dangerous rock, known at the time as 'Ragged Dick'. *Transit* managed to drift into the bay where all six crew made it to the shore safely with their belongings.

After the wrecking of *Transit*, there were reports that the lighter would likely be re-floated (Coolgardie Miner 1899; Kalgoorlie Western Argus 1899). There is no further historical information found on the fate of the lighter *Transit*, including any record of the vessel being refloated and brought back to Fremantle. In 1908, the vessel register for *Transit* was closed, as there hadn't been any trace of it for some time (Parsons 1971:27; Cairns & Henderson 1995:168).



Figure 7. City of York in relation to City of York Bay Unidentified/Transit

Timber Analysis

Two samples of timber (a circular core 60 mm in diameter and a piece 828 mm in length) from the City of York Bay Unidentified were microscopically examined by Dr Ian Godfrey, Department of Materials Conservation Research Associate on 29 October 2024 to determine their species (Appendix 1). Both samples were identified as *Eucalyptus*, a native species to Australia. Based on this result, the City of York Bay Unidentified is most likely to be an Australian built vessel.

Conclusion

Following the timber analysis and historical research, the City of York Bay Unidentified has been identified as the lighter *Transit*, wrecked in 1899. The identification is based on the vessel construction described in 1992, the location of the associated anchor in the bay, as well the historical research and timber analysis outlined in this report.

City of York Bay Unidentified was thought to be equally either a flat-bottomed barge, lighter or wrecked fishing vessel *May Flower* (1896). However, the historical wrecking information based on newspaper articles and a colonial secretary record, the wrecking account linking *May Flower* to the site is tenuous and covers essentially the entire northern side of Rottnest Island. The Description of the site in 1992 suggests that the remains of the wreck are more likely, part of a flat-bottomed barge or lighter, then that of a small coasting craft.

In 1992, McCarthy described the construction of City of York Bay Unidentified as possibly a flat-bottomed barge or lighter dating to the late-19th or early-20th century. While the entire length of the City of York Bay Unidentified was unable to be determined in 1992, the breadth of the City of York Bay Unidentified was found to be 4 m, closely matching the registered dimensions of the lighter *Transit*.

After the wrecking of *City of York*, historic newspaper reports show that lighters were used to salvage the large amount of timber cargo onboard the vessel. Recent historical research into the salvage operations shows that *Transit* was one of the lighters used in this operation, before wrecking in the bay during a storm. An anchor and chain located in 1992, lying 250 m away from the shipwreck on a bearing of 130° also correlates with the wrecking event of *Transit*, that snapped its anchor cables before being blown ashore in 1899.

Lastly, timber analysis results showed that the timbers used in the construction of the City of York Bay Unidentified were Eucalypt – a native species to Australia. With one of the *City of York* lifeboats being a possible contender for the identity of City of York Bay Unidentified, timber analysis has made this unlikely. City of York was built in Scotland, making it more likely that its lifeboats were built of local materials such as oak or pine. With the timbers being eucalypt, it is likely that this vessel was locally built. The results of the timber analysis align with the construction of the lighter *Transit* built in 1875 in Perth, Western Australia.

Statement of Significance

Historical

Transit (1899) has historical significance relating to its use within the context of the late-19th century. Firstly, due to its association with the salvage of the extensive amount of timber cargo onboard *City of York*, after it wrecked the same year. *Transit*, also demonstrates the importance of lighters and barges for the transport or salvage of cargo, including timber, during the late-19th century that was an essential commodity supporting the development of Perth and its growing population, and associated maritime activities.

Archaeological

Transit (1899) is archaeologically significant in relation to the study of vessel construction for vessels built locally in Perth, Western Australia, during the late-19th century. If further remains of *Transit*'s hull are still intact underneath the sand, this site can be further studied to understand local ship construction during the 1870s, which may include further information on the sourcing of materials and trade during that time, and more specifically the construction of river barges, 'flats' and lighters. This site is also archaeologically significant in terms of the study of site formation processes, to assist researchers in understanding the process of sites degrading in a dynamic environment over a known period of time.

Legal Protection

Under the Commonwealth *Underwater Cultural Heritage Act 2018* (UCH Act), automatic protection is afforded to vessels that have been in Australian waters for at least 75 years. As *Transit* (1899) is over 75 years old and in Commonwealth waters, it is automatically protected under section 16 of the UCH Act. Although this site is protected, there is no restriction on people visiting or diving on the site, provided they do not anchor on, disturb or damage the site, including the removal of timbers or other artefacts.

Recommendations

1. That *Transit* is added to the Commonwealth Australasian Underwater Cultural Heritage Database and the WA Museum's Shipwreck Database.
2. Rottnest Island Authority, DBCA, are provided with a copy of this report, to promote awareness of the identity and significance of this site, as it is protected under the UCH Act and for RIA to continue informing the Museum of any further degradation or significant observations. We note the success of signage at other Wadjemup shipwrecks like *Uribes*, and suggest this as a strategy for interpretation and management of the site.
3. The WA Museum Maritime Heritage Department to revisit the site during a different time of year to re-locate the site and map the remaining extent of the wreckage. This would then inform next steps in terms of management and in-situ conservation of the remaining vessel structure.

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Appendix

Appendix 1

Wood identifications:

City of York unidentified

Two samples from the *City of York* (wood core and longer piece) were cut and the end-grains polished to a 1200 grit finish prior to low power microscopic examination. The samples were both in very good condition apart from some teredo damage to the longer piece. Features on both samples were identical.

End-grain features:

- Rays are narrower than the pores
- No growth rings evident
- Red-brown colour
- Pores were intermediate in size, moderately numerous and contained tyloses
- Pores were arranged in oblique fashion with parenchyma surrounding the pores.

These features are typical of *Eucalyptus* species, timbers that are native to Australia. No attempt was made to further identify the type of eucalyptus species.

Dr Ian Godfrey
Honorary Associate
Dept of Materials Conservation
WA Museum

29 October 2024