

FIGURE 1: The Buiten Rattel area, 1 of the two 2 areas of the MACHU project, in which 21 wreck sites could be localised so far. © VIOE

ONGOING RESEARCH AT TWO TEST AREAS IN BELGIAN WATERS (FLANDERS)

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The first MACHU report included an introduction to the two MACHU project test areas in Belgian territorial waters, 'Buiten Rattel' and 'Vlakte van de Raan'. On the basis of the results of desk-based research the Flemish Heritage Institute (VIOE) has been organising the investigation of listed wreck positions from two private vessels, 'Ephyra' and 'Divestar', and the research vessel 'Zeeleeuw' (with the use of 'Vloot', the governmental shipowner) in cooperation with a team of voluntary divers (see article: *Cooperation with non-archaeological scientific institutes, organisations and individuals - Ine Demerre, page 30*).

This approach is designed to provide a fuller description of each wreck site and thereby to assist in identification and/or dating. The condition of each wreck is examined, with sedimentation, preservation, the extent and possible causes of damage, and potential threats all being considered. The seabed around each wreck site is also recorded as much as possible through observation and

sediment sampling.

Of the 21 recorded wreck sites in the 'Buiten Rattel' area (figure 1), 11 have been investigated in this way. In two cases the reported wreck was not found. This may have been because of inaccuracy in the identification of the location – perhaps the result of some non-archaeological feature such as an anomaly in the seabed – or because the wreck has

been buried by sediment. Nine shipwrecks were investigated successfully by divers.

The most thoroughly studied site is the 'Buiten Rattel wreck'. The 'vzw NATA' (a non-profit association called 'Noordzee Archeologisch Team Aquarius') has been engaged in underwater research at this site for 10 years, and now its records, including observations and artefacts, have for the first time been described and thoroughly analysed by the VIOE.

The Buiten Rattel wreck was a large wooden ship. Four of its large anchors are visible at the site. Only small sections of the wreck itself protrude above the seabed, but these include a large wooden beam and several parallel planks spread over an area of about 21 by 8 m. It is intended that the site should

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be recorded in greater detail. The Renard Centre for Marine Geology (Ghent University) (see article: *Cooperation with non-archaeological scientific institutes, organisations and individuals*, page 30) has made acoustic (seismic) recordings of the seabed and subsoil in this area, and these give an idea not only of the shape of the wreck, but also of the level of sedimentation. The amount of wood on the surface restricts measuring deeper parts of the wreck remains underneath, using this recording technique.

Many of the objects recovered from the wreck over the years have been linked with specific places situated in The Netherlands. Among these are a pocket watch from Amsterdam, clay pipes from Gouda, and the bottom of a tobacco box with Dutch inscriptions. Stylistic attributes and markings suggest a mid-eighteenth century date for many of the artefacts. Two wooden barrels were dendrochronologically dated to 1733 and 1735 respectively (Kristof Haneca, VIOE), dates which provide a terminus post quem for the sinking of the ship (figure 2 & 3). The wreck has not yet been identified. In the 'Vlakte van de Raan' area three sites were the subject of a successful preliminary investigation in 2008. All three were WWI or WWII submarines.

RESULTS

SEDIMENTATION

Most of the wrecks in the Buiten Rattel area are covered with a thick layer of sediment – this is especially true for two WWI destroyers, 'G-96' and 'Branlebas' (figure 4). One site, B109/230, yielded only pieces of metal, wheels and wooden beams; perhaps the cargo of a 19th century ship carrying materials for railway construction (figure 5 & 6).

There has also been significant sedimentation in the 'Vlakte van de Raan' area. Two identified wrecks – the 18th century 't *Vliegende Hart*, and the 20th century fishing vessel, Z.442 *Andre Jeannine* – could not be traced on the known positions through the use of 'multi-beam' measurements and the wreck at site B126/306 could not be detected by depth sonar either.

The soil samples taken from most of the investigated sites, and from the area around each, ought to give an idea of sediment types and distribution on wreck sites as compared with the sediments of the Belgian Continental Shelf. The grain size of sediment taken from the wrecks seems to be different from that of the sediment of the surrounding area.

FIGURE 2: Drawing of one wooden barrel found on the Buiten Ralte wrecksite (inv.nr.BW 079).
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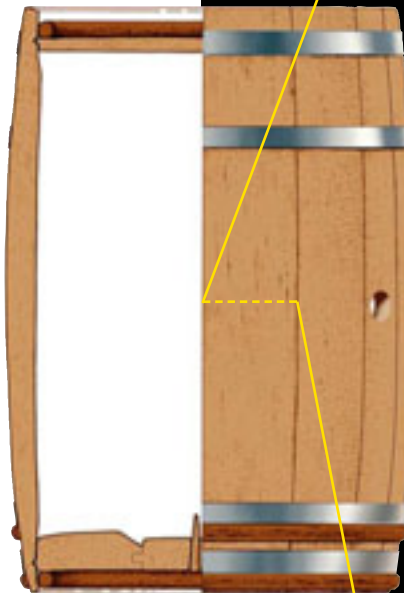
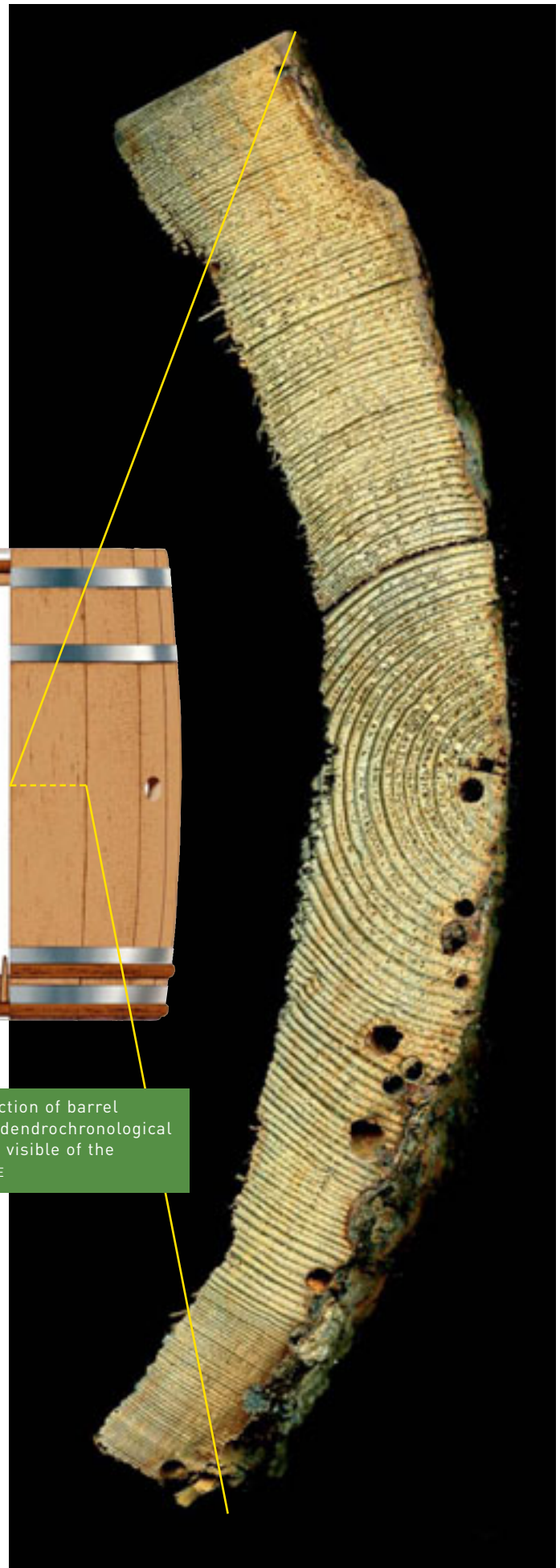


FIGURE 3: Cross section of barrel (inv. nr. BW 079) for dendrochronological dating. Tunnelling is visible of the *Teredo navalis*. © VIOE



Samples from the Buiten Ratel wreck (B114/230a), for example, had a median size of around 535 and 515 μm , while the median size of recorded sediment from the surrounding area was between 200 and 250 μm .

DAMAGE

Adorning each of the wrecks studied to date have been fishing nets – often complete, but snagged and entangled. While the snagging may cause damage, the nets sometimes cover and thereby protect parts of a wreck.

Poor visibility makes diving in the ‘Raan’ area difficult, but in spite of this complication at least as much evidence of looting has been detected at the ‘Raan’ sites as at sites in the more accessible ‘Buiten Ratel’ area. In each area items have been found which appear to have been lost in the course of efforts to recover parts and artefacts from the wreck sites. These include steel cables, dredges, and pieces of metal. Where shiny copper is visible, it is likely that the metal has recently been either cleaned or cut. At certain wreck sites the propeller and copper portholes have been removed.

In summary, the preliminary underwater investigations have yielded some important information about the wrecks in the MACHU test areas, notably in relation to the character of the different ships wrecked, and their condition. Damage to the ships is being recorded, whether caused inadvertently – through fishing, for example – or as a result of deliberate looting. Signs of looting have been identified on most of the wrecks studied. The visual record being compiled for the area around each site, together with sediment sampling, ought to provide data regarding sediment movement in the area of each wreck, and this in turn should assist with the development of conservation and protection measures. ■

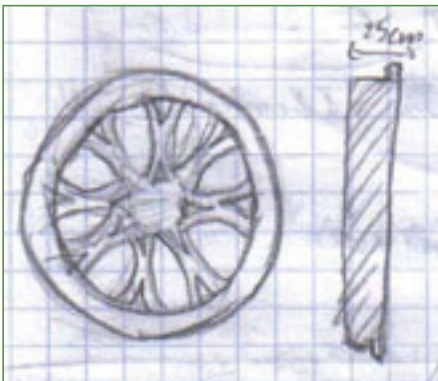


FIGURE 6: Sketch of one of the wheels of wrecksite B109/230 by divers. © VIOE BAS BOGAERT

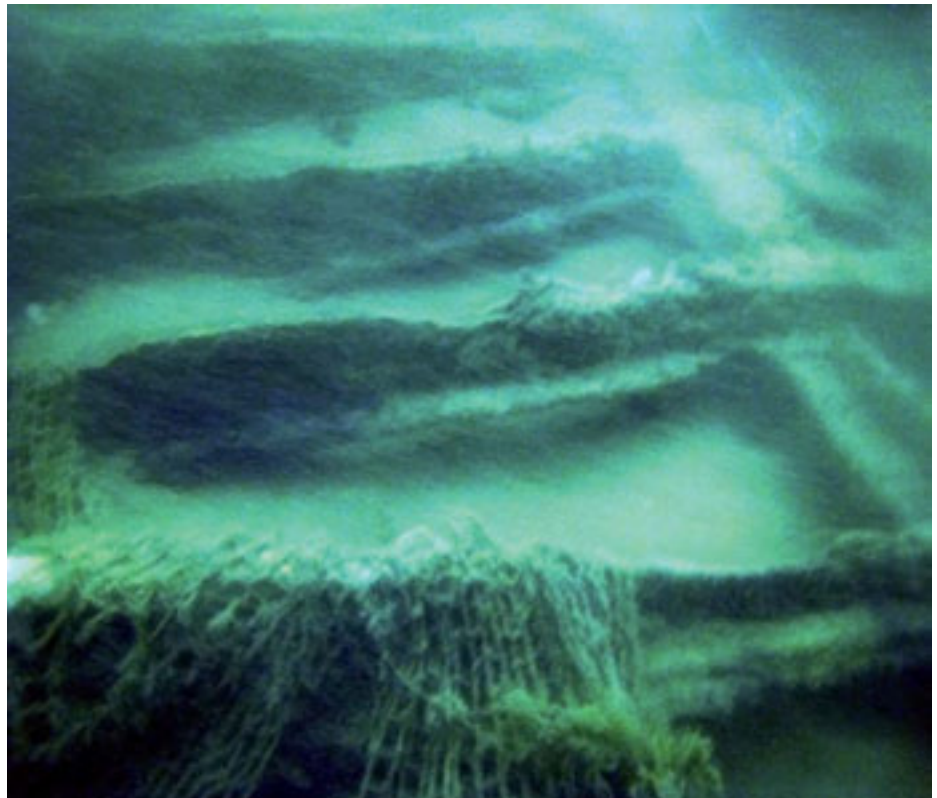


FIGURE 4: Photograph of a fragment on the wrecksite G-96 (B117/236a). The wreck is deeply covered in sediment. A large fishing net is visible. © VIOE

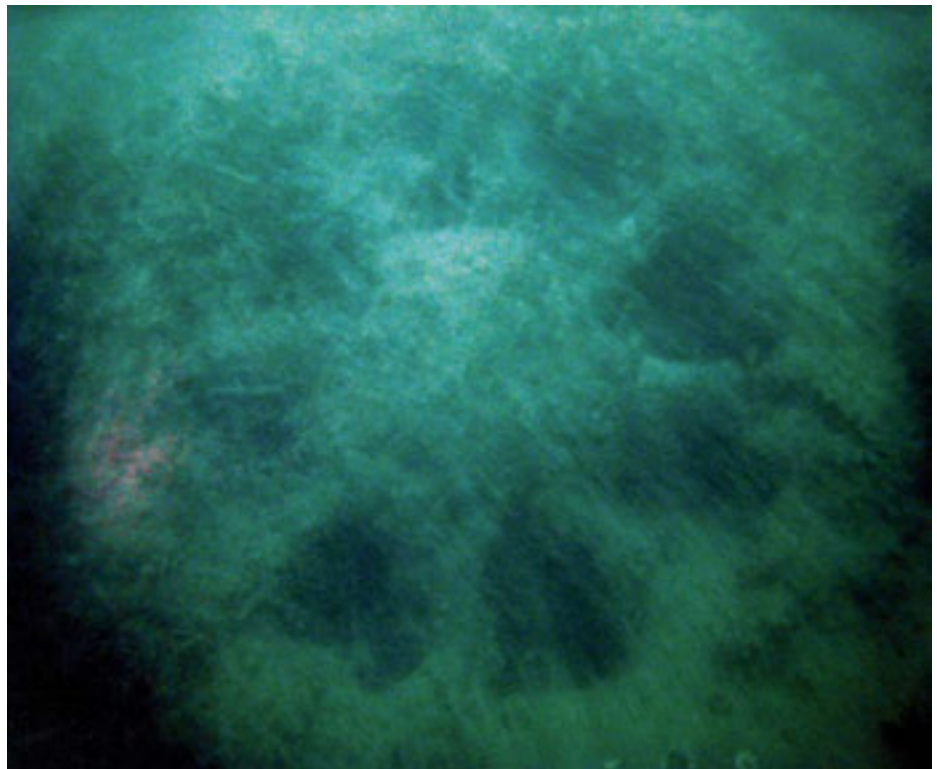


FIGURE 5: One of the five wheels detected on wrecksite B109/230, probably part of a train locomotive. © VIOE

REFERENCES

■ Zeebroek I. et al. 2009-2010: *Een 18de-eeuws scheepswrak op de Buiten Ratel zandbank (Belgische territoriale wateren): onderzoek van de site en analyse van de vondsten (1)*, Relicta 6, (in preparation).