

Archaeological surveys of *Fauna and Monreith*

Wreck recording, Kirkcudbright Bay
for the Kirkcudbright Bay Views Project
Galloway Glens
October 2019



Recording the remains of *Fauna*, Gibbhill

Acknowledgements

The surveys of the Fauna and the Monreith were carried out as part of the Solway Firth Partnership's (SFP) Kirkcudbright Bay Views project, which is being supported by The Galloway Glens Scheme, a suite of projects being undertaken up and down the Ken/Dee Valley, connecting people to their heritage, driving economic activity and supporting sustainable communities. The Scheme is funded by the National Lottery Heritage Fund and is supported by a range of partners including Dumfries & Galloway Council and the Galloway & Southern Ayrshire UNESCO Biosphere.

The fieldwork was organised by Solway Firth Partnership and carried out by local volunteers with training and supervision by staff from SFP, Nautical Archaeology Society (NAS) and SCAPE. The report was prepared by Steve Liscoe (NAS) and Ellie Graham (SCAPE). Information was shared by many members of the local community, most notably David Collin. The contribution of volunteers and participants, and the enthusiasm of everybody involved in the project is gratefully acknowledged.

Introduction

As part of the Kirkcudbright Bay Views project SFP invited the SCAPE Trust and the NAS to work with volunteers to survey vulnerable coastal archaeological sites on the west side of Kirkcudbright Bay.

Over a long weekend on 4th to 7th October 2019, two intertidal sites were visited and the remains of two vessels were recorded:

- The *Fauna*, a 20th century trawler at Gibbhill ([SCHARP ID 3951](#))
- The wreck of the schooner the *Monreith*, at Nun Mill Bay ([SCHARP ID 3946](#))

The fieldwork was complemented by historical research and local knowledge of the history of the boats. A number of historic photographs were located which illustrate the deterioration of the vessels and the urgency of the threat to their condition.

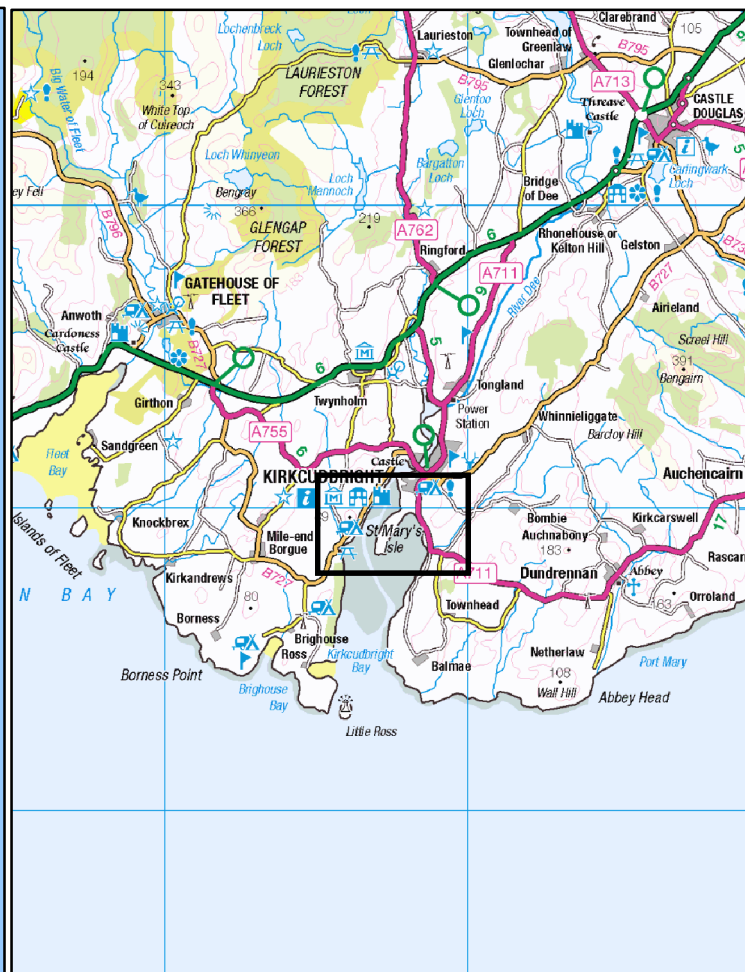
Background

The sites at Gibbhill and Nun Mill Bay (figure 1) were recorded by the 1996 Coastal Zone Assessment Survey of the Solway North Coast (CFA 1996) and were highlighted as high priorities for further investigation in a 2010 desk-based review of Scotland's vulnerable coastal heritage (Dawson 2010). They were subsequently visited by staff from SCAPE and the Solway Firth Partnership and very rapid records made, with recommendations for more detailed recording and ongoing condition monitoring. When the opportunity for community recording of coastal heritage sites arose as part of the Kirkcudbright Bay Views project, these threatened vessels were therefore selected for further work.

The work aimed to:

- Create a preservation by record of at-risk sites,
- Offer training to participants in archaeological survey skills,
- Offer participants the opportunity to benefit from the NAS partnership to gain an accredited qualification in intertidal archaeology,
- Provide an opportunity for participants to learn about the history and archaeology of Kirkcudbright Bay,
- Increase awareness and appreciation of the bay's heritage and landscape within the local community.

Fieldwork was undertaken by staff from SFP, SCAPE and the NAS and local volunteers. The SFP managed the organisation, advertising and bookings. The fieldwork complemented a programme of



1. Locations of Fauna and Monreith in Kirkcudbright Bay

GB Overview [TIFF geospatial data], Scale 1:5000000, Tiles: GB, Updated: 19 August 2013, Ordnance Survey (GB); 1:250 000 Scale Colour Raster [TIFF geospatial data], Scale 1:250000, Tile: nx, Updated: 11 May 2015, Ordnance Survey (GB), Downloaded: 2017-03-28 10:36:25.837
1:25 000 Scale Colour Raster [TIFF geospatial data], Scale 1:25000, Tiles: nx64_clipped,nx65_clipped,nx74_clipped,nx75_clipped, Updated: 12 November 2019, Ordnance Survey (GB),
Using: EDINA Digimap Ordnance Survey Service, <<https://digimap.edina.ac.uk>>, Downloaded: 2020-03-13 13:09:59.971

guided walks which visited coastal and intertidal archaeological sites around Kirkcudbright Bay, led by Nic Coombey of SFP, maximising the benefit and opportunities for participants.

The Fauna

Context and location

The original CZAS record ([SCHARP ID 3951](#)) for this site was brief, and combined an unrelated cluster of features on both sides of the River Dee, including a 'stone and concrete jetty' (actually a Second World War cement and concrete slipway at NX 67237 50476) and 2 abandoned boats on the west side of the River Dee, at Gibbhill (NX 67221 550496, NX 67210 50582) and a yair constructed of a line of wooden piles on the east bank (NX 67346 50538) (figure 1). SCAPE's initial visit in 2015 made a rapid record of the remains, and highlighted the larger, northern boat (subsequently identified as the *Fauna*) as an unusual example of a wet-well trawler, and particularly worthy of further recording. In addition to the general objectives of the project, the poor state of *Fauna* and the urgency of the threat informed the specific aim of undertaking a detailed survey to create a preservation by record before these vulnerable remains deteriorate further.

Organisation and methodology

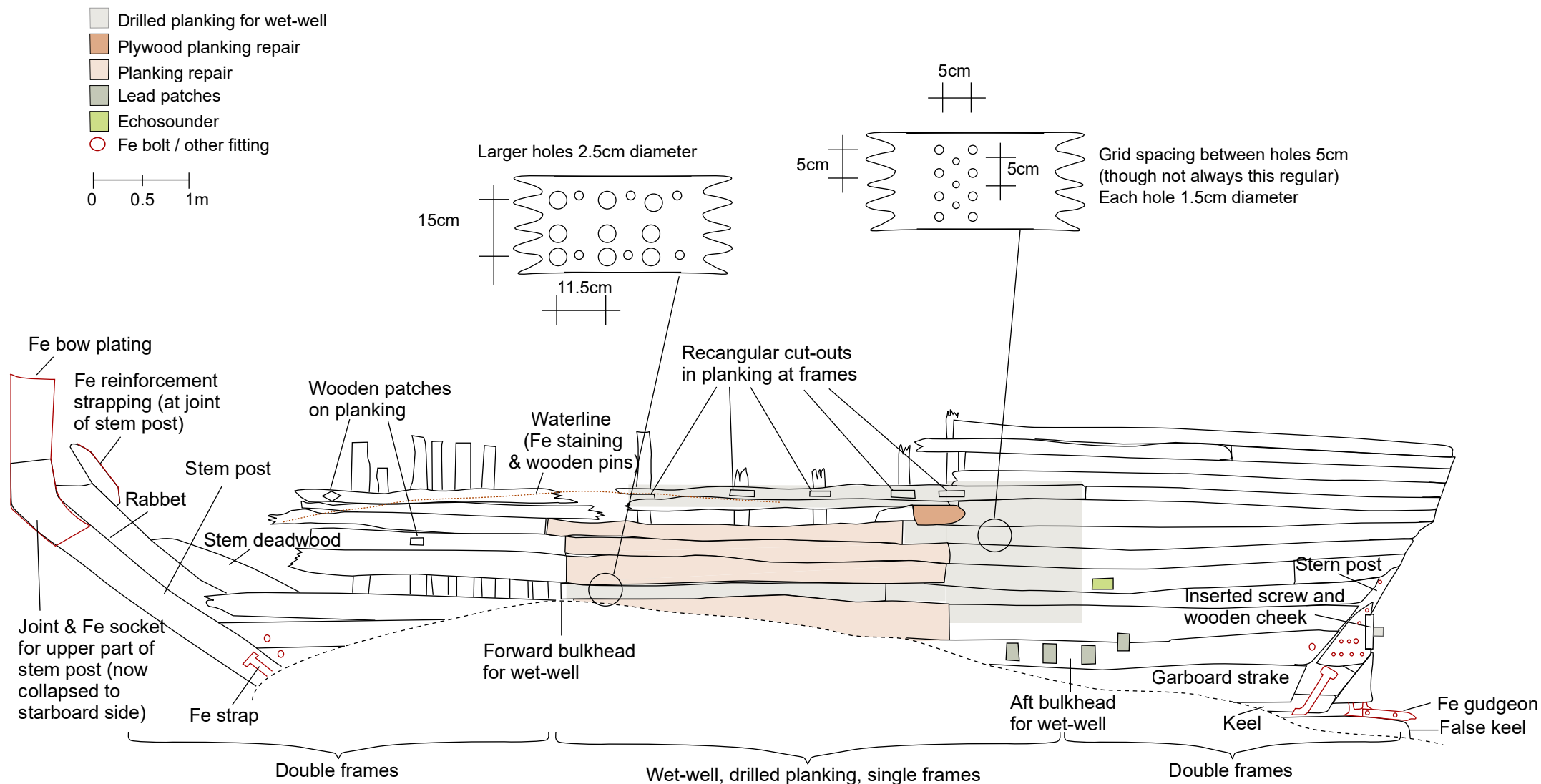
A two-day event was planned to focus on recording *Fauna*. Prior to the fieldwork, local research carried out by Nic Coombey identified key members of the Kirkcudbright community whose knowledge could contribute to the history of the site. Information and photographs were gathered and helped to inform the fieldwork.

On signing up for the event, volunteers were offered the opportunity to register for the NAS Foundation Qualification in intertidal archaeology with the fees covered by the project. They were given access to the NAS online training in archaeological theory, while the fieldwork constituted the practical requirements. Two participants gained an accredited NAS qualification in intertidal archaeology through the project.

The event began with a half-day training workshop for volunteers. David Collin whose knowledge of the *Fauna* and the port of Kirkcudbright was invaluable, was invited to share his information with the group. This workshop also provided historical context about the wider Kirkcudbright Bay, specific background about the *Fauna*, and covered the practicalities of the archaeological survey techniques. This was followed by two days of survey fieldwork. The fieldwork involved ground and low-level aerial photography, creation of annotated scaled sketch drawings highlighting the main features identified by the ground survey, and written records using an adapted version of the NAS timber vessel pro-forma. A 3-dimensional digital model was created of the vessel using the drone photography (available online at <https://sketchfab.com/3d-models/the-fauna-kirkcudbright-bay-da30e22d20a849dc88f9fe18abbb6a0c>).

Historical background and research

Kirkcudbright Bay, with the natural shelter provided at the mouth of the river Dee, provides safe anchorage and landing places in virtually all weather conditions. Mariners past and present have appreciated the qualities of Kirkcudbright Bay and it has a long history as a port and more recently as a focus for commercial fishery. When vessels reach the end of their working life, they have often been abandoned on the banks of the river out of the way of the busy harbour, frequently at Gibbhill opposite the harbour to the southwest, but far enough from the port and the channel so as to not cause an obstruction to working vessels. The slipway at Gibbhill was constructed during the Second World War when it operated as an air sea rescue base, and its construction is a typical wartime style.



2. The port side of the hull, October 2019. Drawn by Nic Coombey, Robert Burton and Ellie Graham

The sides are formed of bags of cement laid in courses, and the hardened cement retains the shape of the hessian bags.

David Collin, local resident and historian recollected that the *Fauna* was originally a Belgian eel fishing vessel working out of Fleetwood fishing for sole off Brighthouse in the 1970s. He recalled that the *Fauna* was involved in an incident at Kirkcudbright when caught between a larger vessel and the quayside, damaging the hull. The *Fauna* was then laid up at the pier, before the engine was salvaged and the hulk abandoned at the boat graveyard at Gibbhill. He also identified a Joe Kennedy of Fleetwood as the owner (D. Collin pers. comm.).

Following a blog and Facebook post about the project, SCAPE was contacted by Richard Patterson, who confirmed that his uncle Joe Kennedy was skipper of the *Fauna*, which worked out of Fleetwood, with a 2 man crew, and that he brought it to Kirkcudbright for winter fishing. However, this story tells that the owner was reluctant to spend money on routine maintenance, and the boat suffered a severe breakdown, which according to this version of events necessitated a new engine – an uneconomic repair. Kennedy then beached the hulk and abandoned it (R. Patterson pers comm).

This initially appeared to contradict the original story, however, as pointed out by Robert Burton (site volunteer and marine engineer) the two versions are not necessarily mutually exclusive. It could be that a breakdown away from the home port may have been beyond the pale for the existing owner, but after abandonment, a local with knowledge, access and equipment may have seen more value in the broken down engine, and subsequently salvaged it.

Two photos (figures 30 & 31) shared by David Collin however, appear to show the *Fauna* laid up at Kirkcudbright harbour, suggesting that even if not damaged at the quayside there as indicated by the first story, the redundant vessel was temporarily stored there prior to being finally dumped at Gibbhill.

However, the boat's origin and history are indicated by some fundamental features in its construction that illustrate its earliest purpose, later adaptations and ultimate abandonment.

Results and description

The full wreck recording form is presented in Appendix 2 and figure 2 is a sketch elevation of the hull showing key features. Specific details are discussed in detail below, but in summary, the *Fauna* is a small carvel-built fishing boat, originally a wet-well trawler and subsequently converted to a conventional trawler. Originally a sailing vessel, it was later converted to a diesel engine, but remained tiller steered.

Current condition

The hull lies on its starboard side, exposing the port side from the top of the keel to the level of the weather deck (figures 3 & 4).

The port side bow is in poor condition, four sets of double frames survive, with some of the associated strakes up to the level of the first futtock, but the frames and all the planking around the stem post have been lost. In the midships section on the port side, the frames have failed at the joint between the first and second futtocks; the second futtocks, the framing and attached strakes have collapsed inward. The aft end of the hull is in better condition and currently mostly intact to weather deck level on both sides (figures 5 & 6).

Forward of this, most of the upper part of the hull on the starboard side has collapsed under its own weight with the failure of the fittings and the joints between timbers, fallen onto the shingle and fragmented, leaving the ends of frames standing proud with occasional fragments of associated



3. Aerial view of port side



4. Aerial view of deck and interior



5. General view of the port side of the hull, showing the patched strakes in the wet-well



6. General view of the deck and interior



7. Bow area showing collapsed upper timber of stem post



8. Stern area showing stern post, transom and trawl gantry

strakes. Around the wet-well, the hull survives to the orlop deck which formed the top of the wet-well compartment. Below this, it is buried in the beach sediment. At the bow the structure of the hull has largely disintegrated. Three pairs of double frames and a single frame survive attached to the keel, with some associated strakes. Neither frames nor strakes survive around the stem post, which has itself broken at a joint between two timbers, with the upper portion sagging to the starboard side (figure 6).

Little survives of deck structures other than an iron trawl gantry. Parts of the deck planking survive on both sides at the stern (figure 6).

Features of interest and evidence of modification

Wet-well

Fauna started life as a fishing vessel that was built specifically to keep the catch alive. The particular feature that tells us this is that almost half the vessel's hull is taken up by a free flooding "wet-well" (figure 9) isolated from the bow and stern compartments by substantial watertight bulkheads (figures 10 & 11).

These divide the central lower part of the hull into three compartments forming the wet-well, a larger forward compartment and two smaller ones behind. Some of the strakes on the visible port side appear to have been replaced with solid boards, but the original planks are perforated with regular grid patterns of round holes in this section (figure 9). Where these original strakes survive, it appears that each of the three wet-well compartments had holes of different sizes, suggesting that the different compartments may have been intended to hold different catches. These holes have been painstakingly individually plugged with wooden pegs, many of which remain in situ (figure 9) – turning the vessel from a wet-well boat to a conventional fishing vessel and representing a significant investment of time and effort.

Propulsion

Fauna started life as a sailing fishing vessel. The evidence for it originally being sail powered is laid out below, but based on the fact that it was retrofitted with an engine, its construction will almost certainly predate the 1920s, when there was a wholesale move in commercial fishing of the conversion of former sailing fishing vessels to engine power.

1. Evidence that the vessel was originally sail propelled:-

1.1. A putative mast step (figures 10 & 11) was recorded over the keelson in the forepeak, this was immediately forward of the large floor timber that formed the lower part of the foremost bulkhead to the wet-well. The rebate for the step had been infilled with a timber block at some point after the mast was removed.

1.2. The truncated remains of two chainplates were recorded. One remained bolted to the head of a full frame still upstanding on the port bow, the second was found detached and loose in collapsed debris beneath the starboard bow (figure 12). A second upstanding frame on the port bow exhibited bolt holes that matched the size, length and spacing of the detached chain plate (figure 13) indicating that at least four chainplates had originally been fitted to stay a mast located at the fore part of the *Fauna*. Both the chainplates identified had been cut down to gunwhale height with the upper eye removed. A similar, third, chain plate is visible under *Fauna's* bow, on the beach, in one of the historical photographs.

1.3. The position of a mast, and pairs of chain plates, so far forward on the vessel corresponds very well with images of late 19th century oyster dredgers fitted with a lugsails rigged foremast with pairs of after stays. Footage of continental (French) oyster trawlers dating to the 1940s show the



9. Detail of the holed strakes in the wet-well, and timber pegs plugging holes; replacement strakes in lower hull without holes. This repair post-dates the Fauna's time as a wet-well vessel



10. Mast step for a small foremast in the bow compartment, and forward bulkhead of wet-well on left with holed strakes visible



11. View along keelson across wet-well towards engine mounts



12. Chainplate attached to port bow frame



13. Bolt holes for chainplate in second port bow frame

foremast almost immediately abaft of the stem and rigged with lugsails in marked contrast to the rig of contemporary sailing trawlers from Colchester and the like.

1.4. A heavily corroded turnbuckle attached to a short chain was found in the forepeak. This may have been part of the removed standing rigging that remained onboard after the mast was dispensed with, though this is a tenuous suggestion.

2. Evidence that the absent engine and screw propulsion were retrofitted:-

2.1. The remaining steel engine beds have been accommodated by cutting down of the stern floors; with the aftermost floors reduced to such a degree that they appear to be cut through to the keel to allow the propshaft to pass through the sternpost and a stern gland to be fitted (figure 14).

2.2. The large floor, that formed the aftermost bulkhead of the wet-well, has been cut down to accommodate the timber engine bearers and the engine itself. The next large floor, that formed the bulkhead between the two after wet-wells, is cut down immediately forward of the engine beds, presumably to accommodate the overhanging front of an engine (figure 15).

2.3. The internal face of the sternpost had a large timber affixed to it as reinforcement and to substitute for the substantially reduced floors. This timber had the inner part of the stern gland mounted on a flat piece of timber rebated into it (figure 14).

2.4. The loss of structural integrity caused by the cutting down of the floors had been compensated for by pouring concrete around the base of the sternpost and covering it with pitch (figure 14).

2.5. The external part of the stern gland was mounted on a flat piece of timber that had been rebated into the sternpost (figure 16).

2.6. The aft face of the sternpost had been cut back, to almost a half of its depth, in a partial semicircle to accommodate the radius of a screw propeller. This thinning of the sternpost had necessitated the insertion of the internal large timber, described in 2.3, to maintain strength at the stern and to accommodate the penetrating stern gland (figure 16).

2.7. The rudder has been rehung to accommodate the screw, which extended beyond the stern post. Before an engine was fitted the rudder would have hung directly onto gudgeons mounted on the sternpost. To refit the rudder, so as to clear the propeller, the gudgeons were extended beyond the sternpost so as to give an appropriate 'stand-off' to provide clearance. There is also a cutout in the leading edge of the rudder to accommodate the propeller boss. This cutout is assumed to have been made during the fitting of the last engine (figure 17).

3. Evidence that at least two engines have been fitted during the life of the vessel

3.1. The evidence apparent on the remains of *Fauna* shows that at least two engines were successively installed in the after part of the hull. What seemed to be the initial engine bed and bearers were still in place but had latterly been adapted to carry the later, larger, engine that was in the hull when the vessel went out of service (figure 15). There may have been intermediary engines fitted (though no evidence was apparent to suggest this) but the last engine installed in *Fauna* was reportedly removed when it was hulked.

3.2. Immediately over the top of the floors, two large parallel wooden engine bearers have been carefully profiled to fit over and between the existing structures. On top of these bearers two paired sets of steel engine mounts have been fitted. The longer pair has four mounting points (two on each bearer), the other, shorter, pair has two mounting points (one on each bearer) (figure 15). This suggests that the initial engine installation possibly comprised a standard terrestrial stationary



14. Aftermost floors cut down to accommodate engine and allow propshaft to pass through sternpost; poured concrete around base. Internal softwood timber fitted to internal face of sternpost to accommodate later stern gland associated with second engine



15. Aftermost two bulkheads of wet-well compartments cut down to accommodate engine. Earlier wooden engine bearers sitting on cut down floors with two pairs of steel engine mounts fitted on top and discarded Hardy Spicer joint.



16. Cut in aft face of sternpost to accommodate screw propeller, with cheek fitted where prop-shaft cuts through, triangular extension for lower gudgeon for mounting of repositioned rudder. Stern gland mounted on softwood inset further cut into sternpost and cheeks



17. Transom with fallen rudder below with rehung offset setting for rudder to accommodate screw

engine unit fitted to the four forward mounts with a separate marine gearbox mounted on the two aftermost. As was conventional in this initial installation, drive was provided to the screw via a short shaft that penetrated the stern post through a stern gland; now removed (figure 14).

3.3. Mounted along the top of these initial sets of engine/gearbox mounts are two longitudinal steel beams fitted with various welded brackets. These overhang the earlier engine mounts, both fore and aft, and would appear to have carried a later and much larger combined engine/gearbox unit (figures 14 & 15).

3.4. A Hardy Spicer joint that lies alongside the engine bearers was assumed to be a discard from the operation which removed the last engine that was installed (figure 15). The coupling dimensions closely matched that of the propshaft that would have fitted the stern gland still extant on the hulk.

3.5. The stern post showed evidence of having had two phases of alteration to allow a screw propeller to be fitted. The first adaptation was of distinctly superior workmanship. The sternpost had been dressed down, as described in 2.6, and had two cheeks, fitted where the propshaft passed through it, to effect a streamlined fillet to smooth the water flow past the propeller boss (figure 16).

3.6. A carefully dimensioned triangular extension to the foot of the sternpost had been fitted to take the elongated lower gudgeon for the bottom pintle of the repositioned rudder. A corresponding triangular timber had been fitted down the midline of the transom, to similarly accommodate the extensions of the upper gudgeons. (This timber is now lost but is clearly visible, both attached and detached from the transom, in photographs prior to 2015) (figures 16, 17 & 33).

3.7. The stern gland surviving on the hulk is equipment fitted after the primary engine installation, i.e. for a second engine, and replaced that of the former engine installation. This is determined by it being mounted on a large inset of softwood, that has latterly been let into the sternpost, and not directly onto the sternpost itself, as any primary installation would have been. The rebate to fit it cuts even further into the already reduced thickness of the sternpost and the streamline fillets of the initial stern gland installation. This has necessitated the fitting of an additional, internal, timber to accommodate the length of the second stern gland (figures 15, 16 & 17).

3.8. The above observations and evidence suggests that to supplement, or to replace, the meagre sail power of the vessel an early marine combustion engine, such as a hot bulb Bolinder, was fitted to the vessel. This entailed modification to the stern and rudder to accommodate a shaft and propeller as well as fitting substantial wooden engine beds. At the same time the installation of the engine necessitated the cutting down of the aftermost bulkhead of the free flooding compartments and the careful caulking and plugging of the perforated hull strakes of this wet compartment.

3.9. All this work can be seen to have been done to a professional standard and it is highly likely that it was carried out by a boatyard well practised and skilled in the retrofitting of engines to wooden vessels.

At the same time (fitting of the initial ICE) the purpose and function of the vessel may well have changed, indeed this is likely to have been a primary reason for fitting an engine. It is most likely that the installation of the engine was the point at which *Fauna* became a trawler rather than a shellfish harvester. Fitting of an early hot bulb marine engine would date the event to the first two decades of the 20th century when large numbers of engines such as the Bolinder were retrospectively installed into fishing vessels. Deadweight of the engine increased draught and with the after bulkhead compromised, it is probable that the entire wet-well was made watertight at this time.

3.10. Probably some years later the initial engine, its transmission, shaft and propeller were removed and a larger unit fitted. This made use of the original beds and mounts but the replacement engine was somewhat longer and extended forward to the second (dividing) bulkhead of the former wet-well, and this was cut down to fit it in (figure 15). The original stern gland was replaced and it is possible that the fitting of the large starboard steel bunker was made contemporary to this work. The existing stern gland is much too deep for the reduced stern post, so a packing piece has been used on the inside face of the post to suit the length of the replacement gland. This stern gland may have been a salvaged or reused part that could not be altered to fit so the timber of the boat was adjusted to fit it. Concrete was then used to embed this inserted timber (figure 14). The character of the fitting of the final engine appears much inferior to the original installation and little skill is apparent in the work, which strongly infers that it was a DIY installation or was carried out by a second rate boatyard.

The aft area of the deck above the engine sits slightly higher than the deck at the bow and above the wet-well in midships, with a single step up. It was speculated on site that this area of the deck was raised when the engine was added, requiring additional space in the hold for operating and maintaining the engine. However, the deck planking of this part of the deck appears to be identical to both the rest of the deck planks and the ceiling planking, with distinctive moulding, suggesting that it is all original and built in a single phase. Associated with the addition of the engine is a small fuelling hole in the raised after part of the deck, stopped with wooden bung and rag (figure 18).

4. Use of concrete in the vessel

4.1. *Fauna's* days as a wet-well boat were probably over long before the installation of its last engine, but it is likely that the concrete ballast over the floors of the largest wet-well compartment was poured at the same time as this event (figure 19). The use of concrete ballast in wooden vessels is an unprofessional and exceptionally deleterious practice used by the ignorant and ill advised, or those who wish to take advantage of the former and make money from sub-standard boat repairs.

4.2. The use of concrete at the stern to consolidate the insertions and alterations at the stern post associated with the installation of the second engine, along with the concrete ballast, represents a period of poor boat repair practices and the two are almost certainly contemporaneous.

4.3. The concrete ballast overlays the replacement lower hull strakes on the port side (figures 9 & 19). This repair to the hull has been made without any boatbuilding competence and it is easy to believe that it dates to the same period/event as the installation of the second engine and the ballast.

Stem post

The massive stem post is formed of two timbers, and the upper part has collapsed to the starboard side, though still attached to the lower timber. Steel plates reinforce this joint, provided a socket for the upper timber to sit within and sheathed the upper part of the stem post (figures 20 & 21). Steel sheeting is visible in historic photographs (figure 32), attached over the hull planking above the waterline at the port bow, and on the port waterline there was evidence of iron staining and fasteners (wooden pins c. 30mm length) indicating that a series of ferrous sheets had been added to protect the hull strakes towards the bow (figures 21 & 22). Too flimsy to attach metal sheathing directly, these pins may have held a layer of textile cushioning between the planking and metal armouring.

Though mooted as a possibility this metal armour at the bows does not appear to have been fitted to protect the stem from abrasion whilst underway, such as ice breaking. There was no evidence



18. Fuelling hole in deck above engine



19. Concrete ballast over floors of the largest wet-well compartment, overlying the replacement strakes on the port side of the hull and likely contemporary with the installation of the later engine



20. Stem post with collapsed upper timber and remains of steel plating



21. Detail of stem post with tiny fasteners for sheeting



22. Iron staining and line of fasteners at waterline on port side bow



23. Collapsed samson post and windlass at bow

that the starboard hull had been protected similarly, as would have been expected on a wooden vessel that was regularly active in ice bound waters.

Applique metal armour can be seen on modern wooden fishing vessels engaged in shellfish trawling, as protection from the repeated abrasion of the timbers from recovery of metal dredges.

However the suggested pattern and location of the applique steel on *Fauna* does not reflect the usual location or extent of such protection and its exact purpose or function has not been established, though may be indicative of where an anchor would have been recovered over the bow. The position of the Samson post and windlass just aft of the stem also indicates that some item of heavy equipment was regularly recovered over the port bow (figure 23).

It appears that the steel sheathing of the stem, as well as providing protection against physical damage, was an unprofessional applique repair to bolster the weakened or degraded timber of the stem in the latter days of the vessel's service life. In its current state the timber of the stem has degraded to such a degree beneath the steel shrouding that little of any substance now remains (figure 20).

Hull shape

The broad beam and shallow draught of the *Fauna*'s hull does not exhibit a deep stern like most deep water wooden sailing fishing boats of the early 20th century. *Fauna* would have wallowed and struggled in heavy sea conditions, indicating that it may have operated as a coastal, estuarine or river fishing boat rather than plying deep, open seas.

The hull is very robustly constructed fore and aft with double frames, while the stem post and stem deadwood are very large for a vessel of this size. However, in midship around the wet-well the hull is much more lightly built, with single, widely spaced frames (figures 3, 5, 6 & 7).

Repairs

Small circular holes cut into the surface of the deck planking were presumably originally for the mounting of deck structures or equipment. Some of these settings retain partial wooden patches, suggesting that these earlier structures were later removed and the redundant holes covered (figure 24).

There is evidence of several phases of repairs to the hull. Rectangular and rhomboid wooden patches in the strakes on the port side near the bow have been secured to the main framing using thick timber pegs (figures 26 & 27). A rectangular wooden patch near the keel at the stern may be a similar repair, but sits close to four rectangular lead patches which appear to cover rectangular protrusions (figure 25).

Similarly, a regular line of rectangular cutouts in the strakes runs approximately along the waterline on the lines of the widely-spaced frames in the midships section at the top of the wet-well (figure 28). Most of these have been filled with rectangular wooden patches, and it is possible that the others were originally filled in the same way (figure 29).

As discussed above, the replacement of some of the holed strakes on the wet-well with solid boards represents poorly executed workmanship and may be contemporary with the insertion of the second engine, post-dating the conversion of the *Fauna* from a wet-well vessel and not associated with the change in use (figures 8, 9, 19 & 28).



24. Patched setting in deck planking for structure / equipment



25. Wooden cutout with inset patch in strakes and lead patches near keel



26. Rhomboid patch in strakes



27. Interior side of patch showing wooden pin



28. Rectangular cutouts at waterline on port side strakes on line of frames above wet-well, filled with wooden patches



29. Detail of patched rectangular cutout in strake in line with frame above wet-well

Deterioration and threat

The remains are in poor condition, and are deteriorating rapidly. The change in condition is evident through comparison between the 2019 fieldwork photographs and those taken by SCAPE during their initial visit in 2015. However, the photo record has been pushed further back. The hulk is a popular and (currently) highly visible feature in the landscape of the River Dee estuary, and as a result is well-photographed. Many people have shared photographs online, and David Collin has also contributed images of the remains on site from 2010, as well as images of the *Fauna* laid up at Kirkcudbright in the 1970s (figures 30 & 31) but prior to its final abandonment at Gibbhill.

These show that the bow maintained its integrity until around 2010 and that the hull was largely intact (figures 32, 33 & 34) while several images also show traces of iron sheeting around the stem. Comparison between the 2010, 2015 and 2019 photos however (figure 34) show the steep decline in the hulk's condition, with the forward starboard side of the hull largely fallen away, detached and disintegrated. On the port side, the smaller, more widely spaced single frames in the lightly-built midships section have failed at the joint between the first and second futtocks resulting in the uppermost part of the port side of the hull, including the second futtocks and the strakes, collapsing inward. The frames are also failing lower down, at the joint between the floor timbers and the first futtocks. The bow is almost completely gone on both port and starboard side, with the stem post sagging forward, the forward frames and strakes lost (figure 34).

The speed of this underlines the fragility of such intertidal wooden vessels, and how rapidly and suddenly they can deteriorate once a tipping point has been reached. However, the natural processes of decay and deterioration may have been further accelerated and exacerbated by fire damage (presumably deliberate) indicated by the blackening and charring of timbers at the top of the exposed and now-collapsed port side of the hull (figure 3).

Discussion

Origins and function

Fauna's hull is divided into three distinct sections that are differentiated by a change in frame frequency and spacing. The bow and stern sections are formed by closely spaced double frames, reminiscent of Dutch building practices, giving strength to the two watertight compartments of the boat. These are separated from the midships section of the boat by very deep, solid floor timbers that served as watertight bulkheads to the free flooding, central, wet-well compartment that occupies nearly half of the vessel's length. The original suggestion resulting from local enquiries into *Fauna's* history indicated that it was an eel fishing vessel. However, vessels with a wet-well feature such as the *Fauna* were generally limited to the shellfish industries where their function was to dredge natural marine beds in order to harvest immature molluscs. These would then be transferred to commercially managed shellfish farms, in sheltered waters, and reared to maturity for the domestic market.

That *Fauna* would have originated from the continental oyster industry as suggested by local information is highly likely as there was direct commerce between the British and Belgian oyster concerns during the 19th and early 20th centuries.

Though it cannot be categorically proven, at this time, it seems that *Fauna* was most probably a specialist vessel commissioned by a Belgian oyster enterprise to dredge the continental estuaries and shallow coastal seas to provide 'seedling' stock for the large oyster farming nurseries of the Low Countries. The shallow beamy shape of the hull further supports the suggestion that *Fauna* was a specialist vessel constructed to ply these waters. If the catch was intended for landing and sale to a



30. 1970s photo of *Fauna* laid up at Kirkcudbright Harbour (David Collin)



31. 1970s photo of *Fauna* laid up at Kirkcudbright Harbour. The roof of the deckhouse has been removed and no engine is visible below, the propeller has been removed (David Collin)



32. The bow end of *Fauna* intact showing metal sheeting and deck structures (Rob Steward, 1995)



33. The stern showing the fallen rudder and plank mounted on transom to hold rudder offset to accommodate screw (Duncan McNeil, 2006)



34. Photo series showing the deterioration from 2010 to 2019 (2010: David Collin, 2015 & 2019: SCAPE)

market, and not a shellfish nursery, then a wet-well would have no purpose. The fact that the wet-well was subdivided into three compartments shows that selection of the catch was specialised.

Not enough is known yet of the Belgian oyster fishing industry, but Ostend oysters were hugely popular towards the end of the 19th century with tens of millions being exported annually. The industry was largely based on young oysters being imported from Britain which were then farmed in large ponds. Their oyster industry was flourishing up until the Great War, with over 270 farms in operation, after which it went into decline when the supply of young oysters was severely affected by a blight. A limited attempt to revive its fortunes was initially successful, but this was a period of rapid development.

In *Mariners of Brittany* (1930) Anson laments that at that time the French fishing industry was undergoing great change and the sailing boats, folklore and customs he was recording would be gone within a few years. No doubt Belgian fishing fleets were undergoing the same evolution and it could be around this time that *Fauna* was first converted from sail to engine propulsion. It is also possible that its function changed at around the same time and the wet-well was made watertight; certainly post 1940s its specialised juvenile oyster/wet-well function days were numbered.

Anson's images of contemporary Breton/Northern France fishing vessels show generic features of the vessels that undertook pelagic fishing and *Fauna* is clearly quite different and purposely designed and built for a specific environment and function. Its construction has some unusual features and the unfortunate parlous condition allows these to be clearly seen.

Any resurgence in the industry was thwarted by the Second World War; after which problems of water quality and competition with barnacles and crepidula saw its decline and eventual demise in the 1980s.

Suggested history

So a possible history for the *Fauna* is that it was built as a sail powered wet-well trawler, dredging natural beds and supplying live young oysters to commercial nursery farms. After the Great War it had an engine fitted, which reduced the wet-well capacity, but it continued to work in the declining Belgian oyster fishing. The recovery of the industry was prevented by WWII when a major part of the Belgian fishing fleet evacuated to Britain and it is possible that this is when *Fauna* came to Britain, never to return to its home waters.

This part of *Fauna*'s history remains speculative, but it is clear that at some time it did enter the UK fishing fleet and moved north to be based at Fleetwood, from where it fished out of Kirkcudbright during the winter. However, a modern plastic fish box, which hails from Concarneau, found within the engine compartment might suggest that it was operating in Europe until more recently; or its association could just be happenstance. Finally, at Kirkcudbright, age and a situation with the engine lead to *Fauna* languishing alongside the old wooden jetty for some time during the 1970s (figures 30 & 31) before its final abandonment to dereliction on Gibbhill's foreshore.

Modification

The nature of repairs to and conversion of *Fauna* also show a decline in fortunes over the decades. The initial construction was for a specific function and would have been carried out by a boat building concern with yards and ways and a workforce skilled and experienced in producing bespoke vessels for the fishing.

The later conversion to engine power was undertaken with care and skill, without compromising the integrity of its original features. Additional frames were added to ensure the strength of the hull was

maintained where floors were cut to accommodate the engine (figures 14 & 15). Similarly, the plugging and caulking of the wet-well, to render the free flooding compartment watertight, has been done in a professional manner, and may have been contemporary to the installation of the first engine when the wet-well was reduced (figure 9). It is possible that when *Fauna* was converted from a wet-well vessel its focus ceased to be on shellfish and it may be that this period of its history could account for the local description of it as eel-fishing vessel. The shallow draft and distinctive hull shape which suggests *Fauna* was constructed to operate in coastal and estuarine waters as a shellfish vessel would also have been suitable for eel fishing in similar environments.

The second episode of major works to install a later engine was implemented with inferior skills and materials, cutting back major structural elements and using concrete not only as ballast but as a structural component of the vessel's fabric (figures 14, 16, 17 & 19). The sheathing of the stem with steel, probably as a repair for failing or degrading timber, could be contemporary to this refit (figure 20).

The last obvious repair event is to the hull strakes of the *Fauna* and was carried out using inappropriate material and methods to replace and patch a rotted or damaged section of the hull, using what appear to be softwood scaffold boards (figure 8). Though, in mitigation, there is a possibility that this was extremely extemporised work solely for the purpose of floating *Fauna* in order to move it to its last berth at Gibbhill.

Abandonment and salvage - When was Fauna's last engine removed?

As described above, the circumstance of the removal of the final engine installation in the history of the *Fauna* have been questioned. One source states that the vessel was abandoned due to a major engine breakdown, whilst another says that the engine was salvaged and removed after the hull was damaged at Kirkcudbright Harbour, where it subsequently lay forming an obstruction to the pier, and that the hulk was finally abandoned at Gibbhill.

There is no evidence in the remaining hull structure of substantial or indifferent demolition adjacent to the engine compartment to provide easy and adequate access for its removal. Neither is any such damage visible in the historic photographic record of the hulk, including the 1970s photographs of the *Fauna* laid up at Kirkcudbright prior to its ultimate abandonment at Gibbhill (figures 30 & 31).

Likely what has occurred is that the engine and transmission were removed at Kirkcudbright, in a situation where greater access to the necessary resources to do so were available (such as alongside a quay within a harbour). Indeed the photographs of *Fauna* on a mud berth alongside the former wooden jetty show that the propeller and shaft were already absent prior to the *Fauna* being abandoned at Gibbhill. At that same time it can also be seen that the roof of the engine room deckhouse has been removed and as far as you can see into the well there is no engine visible (figure 30 & 31).

If it was planned that the hull was to be abandoned at Gibbhill, then it had to retain the primary capability of floating and the engine was clearly removed respecting the integrity of the hull. Whether working or not, removing the machinery was possibly seen as means to recoup some of the loss associated with *Fauna's* abandonment. It would have had a resale potential for reuse, repair or spare parts or simply as scrap metal if it was unserviceable.

This evidence makes it very likely that the engine and transmission were removed whilst *Fauna* was securely moored alongside a pier somewhere before it was abandoned at the wooden jetty; from whence it was then towed for disposal at Gibbhill. This was likely on the harbour master's orders, to remove the hulk which obstructed other vessels' access to the pier.

As a surviving parallel to *Fauna*, the contemporary wet-well trawler the *Pioneer* of Colchester was built in 1864. *Pioneer* was ketch rigged and dredged for oysters around Britain and off the Netherlands' coast. In 1889 it was lengthened with an 11' wet-well added to keep the catch alive. *Pioneer* then dredged for young oysters which were used to seed commercial shellfish farms. Initially it was retrofitted with a steam capstan in 1925 but then had an oil engine installed in 1929. *Pioneer* went out of the fishing in 1939 to be then converted into a houseboat which sank at its moorings and was abandoned for many years before being recovered. Its career in the oyster fishing is likely not that dissimilar to that of *Fauna*.

Further work

Much of the putative history above is informed by examination of the surviving evidence of the vessel on site. Further outstanding questions remain, some of which could be resolved by archival research, and further work is needed. The confirmation from Richard Patterson that the *Fauna* was from Fleetwood and skippered by Joe Kennedy opens the possible avenue of research into the Registers of Fishing Vessels for Fleetwood, held at Lancashire Archives (reference number SS/13/8). This may allow us to trace an earlier history back to an original build date and place, and where and how the *Fauna* originally worked.

Dissemination

The results of the fieldwork to date have been shared on a blog post on the SCAPE website (<https://scapetrust.org/fauna-kirkcudbright-bay/>) and the 3d model generated from the drone survey has been shared on the Sketchfab website (<https://sketchfab.com/3d-models/the-fauna-kirkcudbright-bay-da30e22d20a849dc88f9fe18abbb6a0c>).

The Monreith

Context and location

The wreck of the *Monreith* (<http://scharp.co.uk/sites-at-risk/3946/>; Canmore ID <https://canmore.org.uk/site/125031>) lies partially buried in the foreshore sediment around 500m south of Nun Mill Bay (NX 65910 48330, figure 1). It has been previously archaeologically recorded (Project Samphire 2015) and its history has been recently shared through Project Adair (2011). Its history is well-understood and the wreck is a locally-valued element of the historic landscape of Kirkcudbright Bay, as illustrated by a commemorative plaque at the nearby car park.

Organisation and methodology

The rapid recording of the remains by this project therefore comprised a short site visit encompassing a brief condition and update survey, including ground and drone photography and completion of a wreck recording form listing the visible elements. A separate site visit was also undertaken with a group of local volunteers, but extremely poor weather conditions (figure 35) and the deep, sticky mud surrounding the remains precluded further detailed recording.

History

The Canmore-published record of the Monreith records that the 64-ton wooden schooner was built in Wigtown in 1876, and under the command of Captain Hill was carrying a cargo of stone when it stranded aground on the sands of Milton Bank on 12th November 1900 (Whittaker 1998).

However, Miller's *Galloway Shipwrecks* (1992) records that the Monreith was built at Port William in 1880 and was owned by Alex Hill of Annalong, Ireland. The date agrees with that recorded by Whittaker but states that the voyage was from Newcastle, County Down to Silloth and adds that the cargo was 110 tons of granite kerb stones when the vessel struck the bar and was driven into Goatwell Bay. This adds the further detail that the lifeboat was called out but was not required, as the crew got ashore in the ship's boat.

Description

A full description is given in Appendix 2, but in summary, the wreck is currently visible defined by the upstanding ends of frames outlining the shape of the vessel for its entirety from stem to stern, with the stem post at the south end, the stern post at the north end, and up to three strakes visible above the level of the beach. The extent and condition of the remains in 2019 are presented in the wreck recording form (Appendix 2) and in figures 37-40. A historic image dating to c. 1920 (figure 36) shows the hull standing to the height of the gunwhales with some of the top rail intact. Much of the hull has been lost in the intervening 100 years, but comparison between the remains as recorded by this project in 2019 and the visible wreck as shown in previous photographs available on Canmore from 2012 (George Geddes) and 2015 (Project Samphire) (<https://canmore.org.uk/site/125031>) and those taken by Nic Coombey in 2014 (<http://scharp.co.uk/sites-at-risk/3946/>) shows little visible difference, indicating that the process of decay and deterioration is significantly slower than that affecting *Fauna*.



35. Hazards of recording *Monreith*: foreshore conditions around the wreck coupled with inclement weather during the survey with intrepid community volunteers



36. The wreck of *Monreith* c. 1920



37. Drone view of *Monreith*, bow on left of image, stern to right. Red end of scale aligned approximately to north



38. Stern end and starboard side of *Monreith* facing approximately south



39. Bow end and port side of *Monreith* facing approximately north west



40. Detail of capstan near bow

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Appendix 1: List of volunteers

Information and photographs contributed by:

- David Collin
- Richard Patterson
- Rob Steward
- Duncan McNeil

Site:

- Elizabeth Tindal
- Robert Burton
- Jennifer Roberts
- Morag Walker (SFP)
- Nic Coombey (SFP)
- Steve Liscoe (NAS)
- Ellie Graham (SCAPE)

Post-excavation and processing:

- Emma Porter
- Jillian Reid

Appendix 2: Wreck recording forms

Vessel ID:	Fauna		
Dimensions (m)			
Length:	14.2		
Height:	2.9		
Breadth:	2.6 (surviving crossbeam at transom) 4.1 (spread of remains)		
Vessel type:	Wooden fishing boat		
Propulsion:	Screw. Likely originally sail, converted to diesel engine. Tiller steered.		
Construction:	Carvel		
Date range:	~1900-1970s		
Visible elements:	Bow	Midships	Stern
Present:			Dimensions:
Frames	Yes. Double framed forward and aft of wet-well		2.47 x 0.14 x 0.12
Deck planking	Partial weather deck to aft and port side: plugged fuelling hatch, and small several circular holes cut in aft deck (mounting or setting for equipment?) later covered and patched. Moulded on underside. Step up from deck level in central area over wet-well to level in aft section. Circular hatch cut in port side decking, covered with metal cover in historic photos (now detached). Second cover on site suggests that collapsed area of deck planking on starboard side had corresponding opposite hole. Orlop deck level forming top of wet-well partially survives on starboard side		3.6 x 0.14 x 0.04
Crossbeam	2 surviving near stern		2.95 x 0.13 x 0.12
Stanchion	Bulwark stanchions only		0.79 x 0.135 x 0.1
External planks	Yes. Replacement planking in wet-well. Wet-well holes in central section later patched and plugged		5.64 x 0.19 x 0.45
Internal planks	Yes, moulded		3.37 x 0.17 x 0.4
Floors	Some visible, for insertion of engine		3.37 x 0.17 x 0.4
Keel	Yes, largely buried		0.16 x 0.24
Keelson	Yes, partially visible at bow		0.19 x 0.24
Knees	Yes		0.42 x 0.09 x 0.175
Rudder	Yes		3.00 x 0.99 x 0.1
Stem post	Yes, base obscured, Fe plating, small timber pins around metal sheeting. Upper part of stem is a separate timber, the joint has failed leaving the upper timber hanging to the starboard side. Fe plating, reinforcement		2.42 x 0.19 x 0.56

	strapping and socket for joint between upper and lower timbers of stem post. Rabbet for planking. Further timber added behind joint of stem post apparently to reinforce at join between upper and lower timbers.	
Stern post	Yes, modified for screw	2.68 x 0.24 x 0.2
Gudgeons	Yes, mounted on transom and false keel, offset to accommodate inserted screw	
Mast step	Small foremast step on keelson near bow mast setting filled with wooden block	0.66 x 0.195 x 0.1
Deck structure	Retrofitted metal trawl gantry	1.45 x 2.55 x 1.6
Ballast	Yes, poured concrete ballast in wet-well area	

Other visible elements:

Large stem deadwood knee

Engine mount aft of wet-well, retrofitted, remodelled for larger later engine

Round inspection hatch in deck over wet-well

Collapsed samson post towards bow

Four timber bulkheads to form wet-well and divide into three compartments

False keel for mounting of lower gudgeon to accommodate rudder after engine fitted

Metal pin on transom for timber post mounting of upper gudgeon for rudder

Wet-well holes in hull beneath waterline in midships, subsequently plugged

Echosounder fitting

Lengths of wiring around engine mount

Rectangular cut outs in planking in wet-well area on line of frames

Fe staining and small holes in hull planking at waterline forward of wet-well – some holes retaining wooden pins

Several patches to original external planking

Limber holes in crossbeams sitting on orlop deck planking above wet-well

Frame spacing	0.24 between double frames, 0.52 centre to centre (bow and stern areas);
(centre to centre)	0.84 between single frames, 0.95 centre to centre (midships at wet- well)

Fastenings	Predominantly Fe, some Cu alloy
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Waterproofing	Rope caulking
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Toolmarks	None visible
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Contents	Debris. Corroded Fe anchor chain. Fish box
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Treatment	Red paint, pitch sealing. Pb patches above keel aft of wet-well
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Description:

Remains of wet-well trawler the *Fauna*.

A wooden fishing boat, resting on the starboard side, exposing all of the port side of the hull almost to the keel.

Apparently originally built as a wet-well trawler, and originally a sailing vessel, small step for foremast visible.

Subsequently substantially modified. Converted from a wet-well trawler to a conventional fishing boat, holes in hull plugged with wooden pegs. At least two engines retrofitted with modification and cutting of the internal timber bulkheads which formed the aft wet-well compartments and of the frames and two engine mounts of different sizes.

The stern post and rudder mounting were modified to accommodate the screw, with a cutout of the stern, and cheeks added either side of the screw. A false keel and triangular insert have been added for the lower gudgeon to mount the rudder in order to leave space of the screw.

Rectangular cutouts, subsequently patched with wood above the waterline in the midships section on the line of the frames, of unknown purpose.

Several small circular holes cut in the deck planking in aft section which have been later covered with wooden patches, may have been mountings or settings for deck mounted structures or equipment.

The shape of the hull suggests that *Fauna* was a riverine/estuarine vessel and was not built for deep sea fishing.

Double frames at the bow and stern, the central section of the hull in the area of the wet-well is less heavily built with widely-spaced single frames. The rail and bulwarks on this section have collapsed inwards. Frames in wet-well section failing at joint between floor and 1st futtock and failed at joint between first and second, planking and railing collapsed inwards on top of port side of hull above this joint.

Comparison between its current condition in 2019 and photographs from the SCAPE site visit in 2015 and photographs by David Collin from 2010 show that the remains are deteriorating quickly. The stem post has collapsed between 2015 and 2019, the bow section has sagged forward and much of the forward port side planking and frames have been lost. The two sides of the hull are detaching from the keel and keelson as the metal fittings deteriorate.

Surveyor name: Steve Liscoe, Nic Coombey, Jennifer Roberts, Morag Walker, Robert Burton, Elizabeth Tindal, Ellie Graham

Date of survey: 05/10/2019

Vessel ID: Monreith

Dimensions (m)

Length: 24

Height:

Breadth: 5

Vessel type: Schooner

Propulsion: Sail

Construction: Carvel

Date range: 1876-1900

Visible elements: Bow Midships Stern

Present:

Dimensions:

Frames 18 on port side; 4 aft, 14 double frames at bow <0.75 height
45 on starboard side – almost complete. <1.5 height

5 double frames on s/b side aft of midships,
14 double frames at bow (2nd and 3rd futtocks)

External planks 3 strakes on s/board forward frames, visible at water level, more presumed buried

Internal planks Visible at water level, more presumed buried

Floors Presumed buried

Keel Presumed buried

Keelson Presumed buried

Stem post Yes, base buried 1.3m visible

Stern post Yes, base buried, Fe gudgeon and Fe strap visible

Gudgeons Yes, mounted on stern post

Other visible elements:

Metal capstan with drum, mechanism, mounting and toothed gearing, with timber attached, c.1.5m long near bow, for handling anchor?

Frame spacing 0.2 double frames at bow;
(centre to centre) 0.55 single frames midships

Fastenings Fe

Waterproofing None seen

Toolmarks None seen

Contents None seen

Treatment None seen

Description:

Aligned approximately north-south, with the bow pointing south and the stern to the north. Lower part of hull buried in foreshore sediment, deep sticky mud prevents close survey. Visible as stem

post, stern post, frames (second and third futtocks) and occasional fragments of planking protruding above the water level at low tide, further elements presumed buried.

Recorded as the Monreith, a 64 ton schooner built in Wigtown in 1876, ran aground at Goat Well Bay 11 November 1900 with a cargo of granite kerbstones from Newcastle bound for Kirkcudbright.

Surveyor name: Nic Coombey, Robert Burton, Colin Baxter, Nickie Newsum, Cameron
Newsum & Ellie Graham

Date of survey: 05/10/2019