Evaluating the Wreck of the WWII Tanker RFA War Mehtar

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Salvage and Marine Operations (SALMO)
and
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Overview

- SALMO and the UK MOD Wreck Management Programme – Introduction;
- What do we Manage?
- Methodology;
- RFA War Mehtar – Stuart Leather (Waves Group);
- Questions.

SALMO and the UK MOD Wreck Management Programme (WMP) - Introduction

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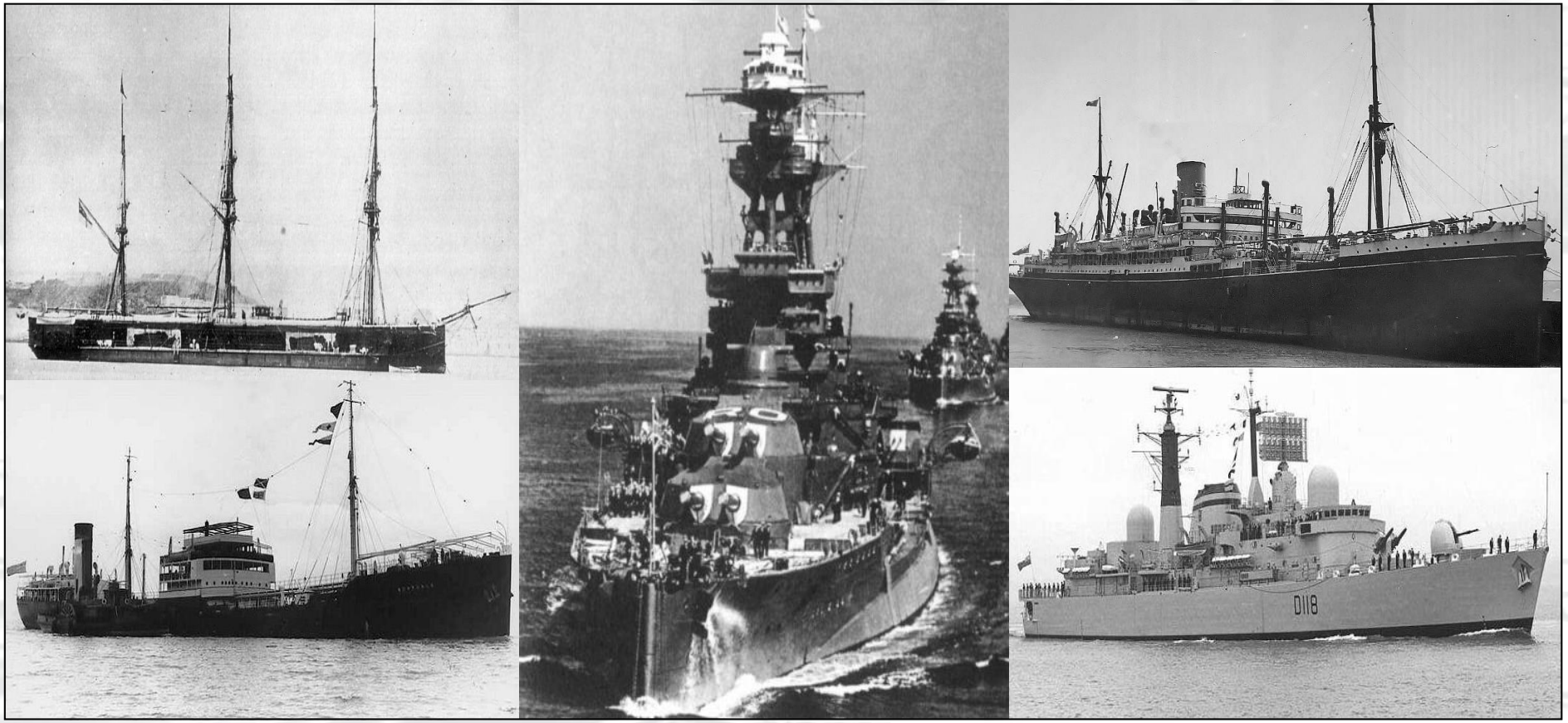
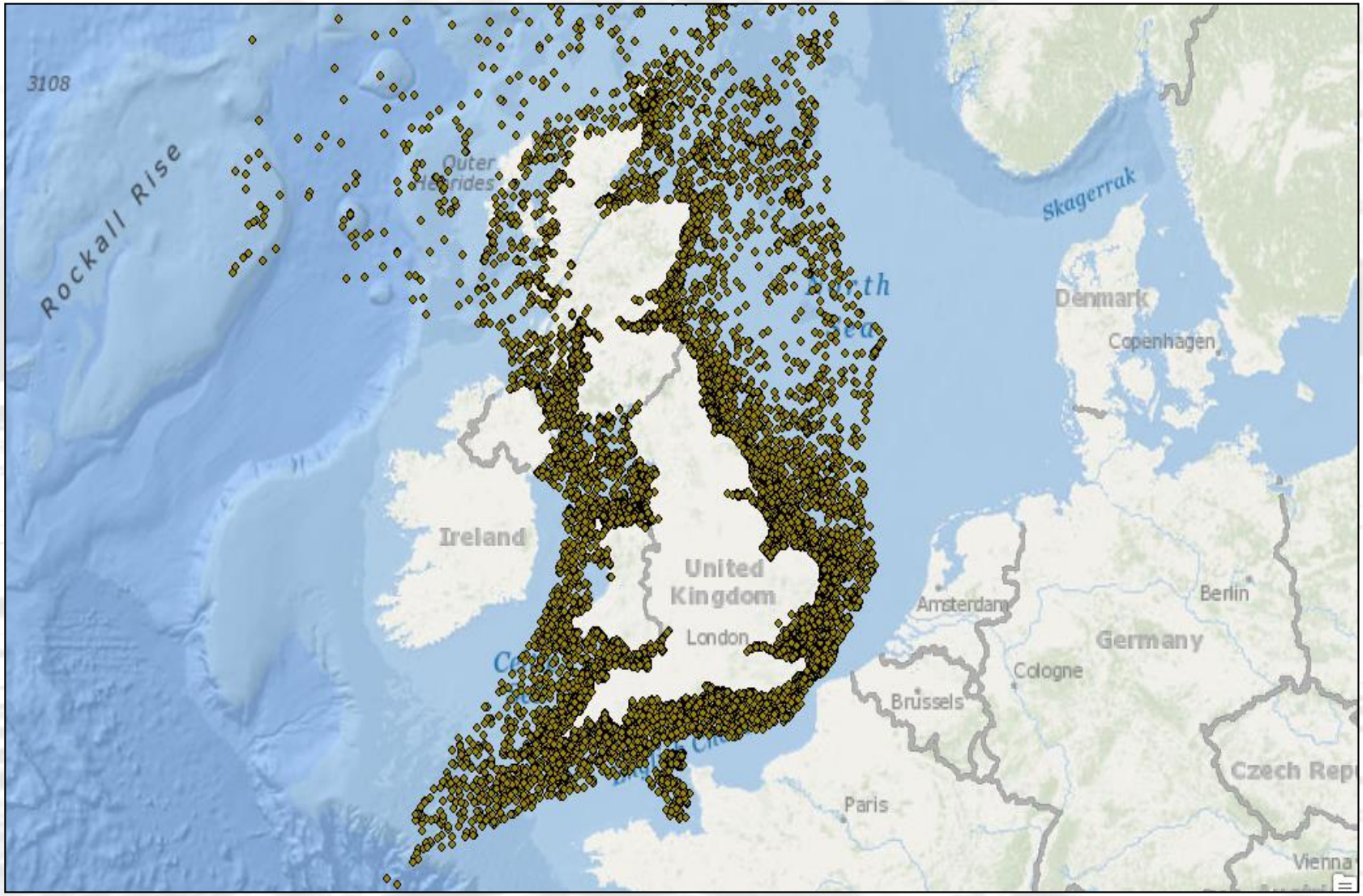
The Ships

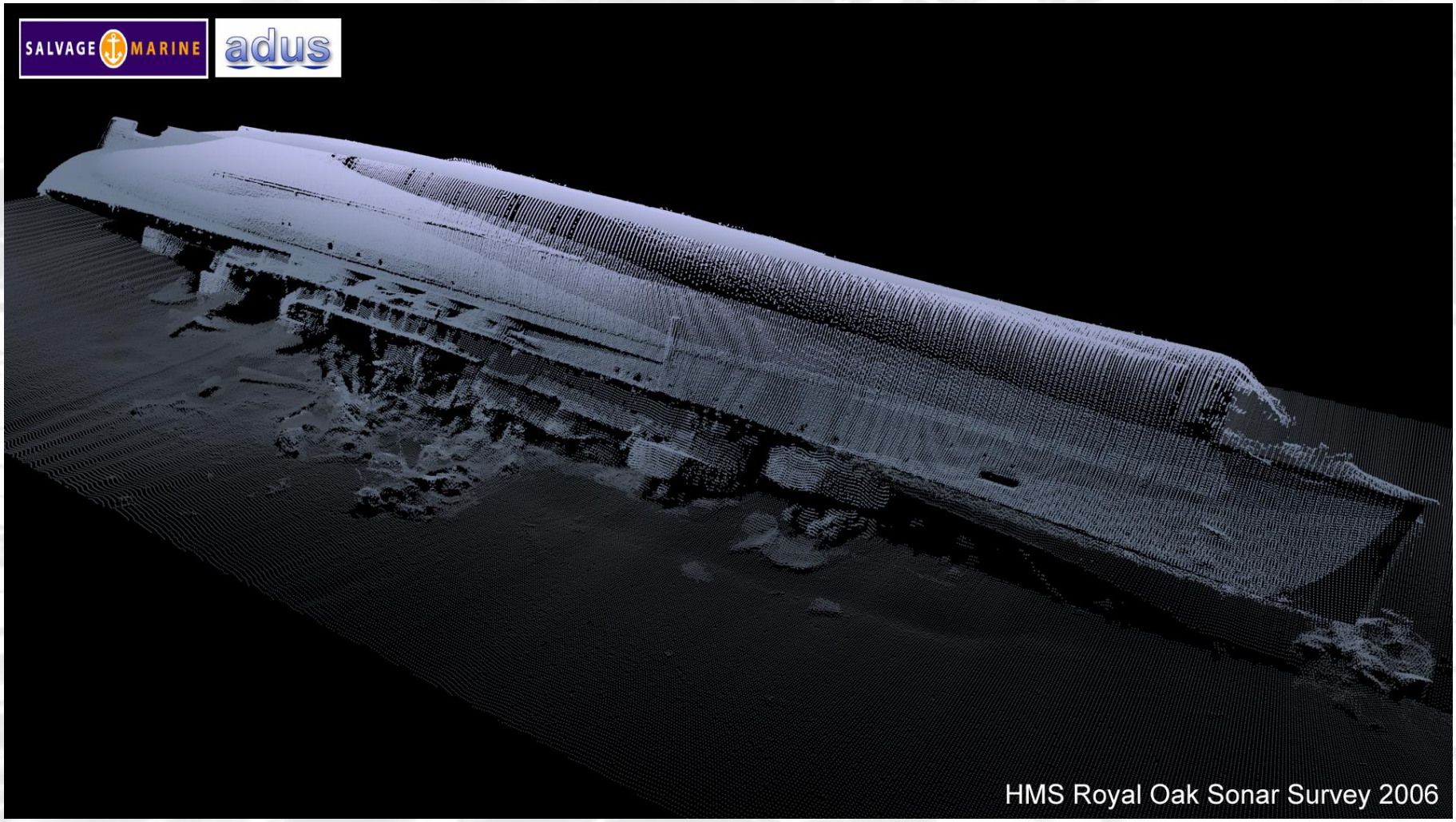


Post 1870 MOD Wrecks

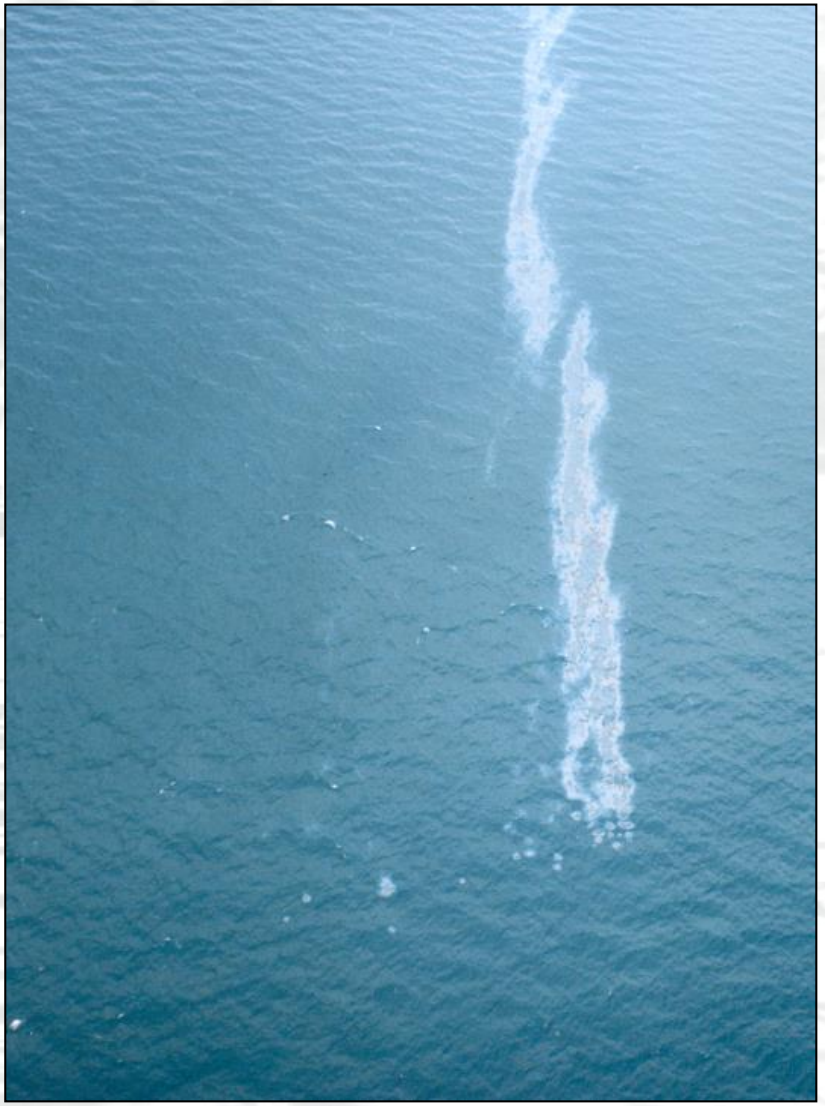


What Do We Manage?

HMS Royal Oak – oil leak

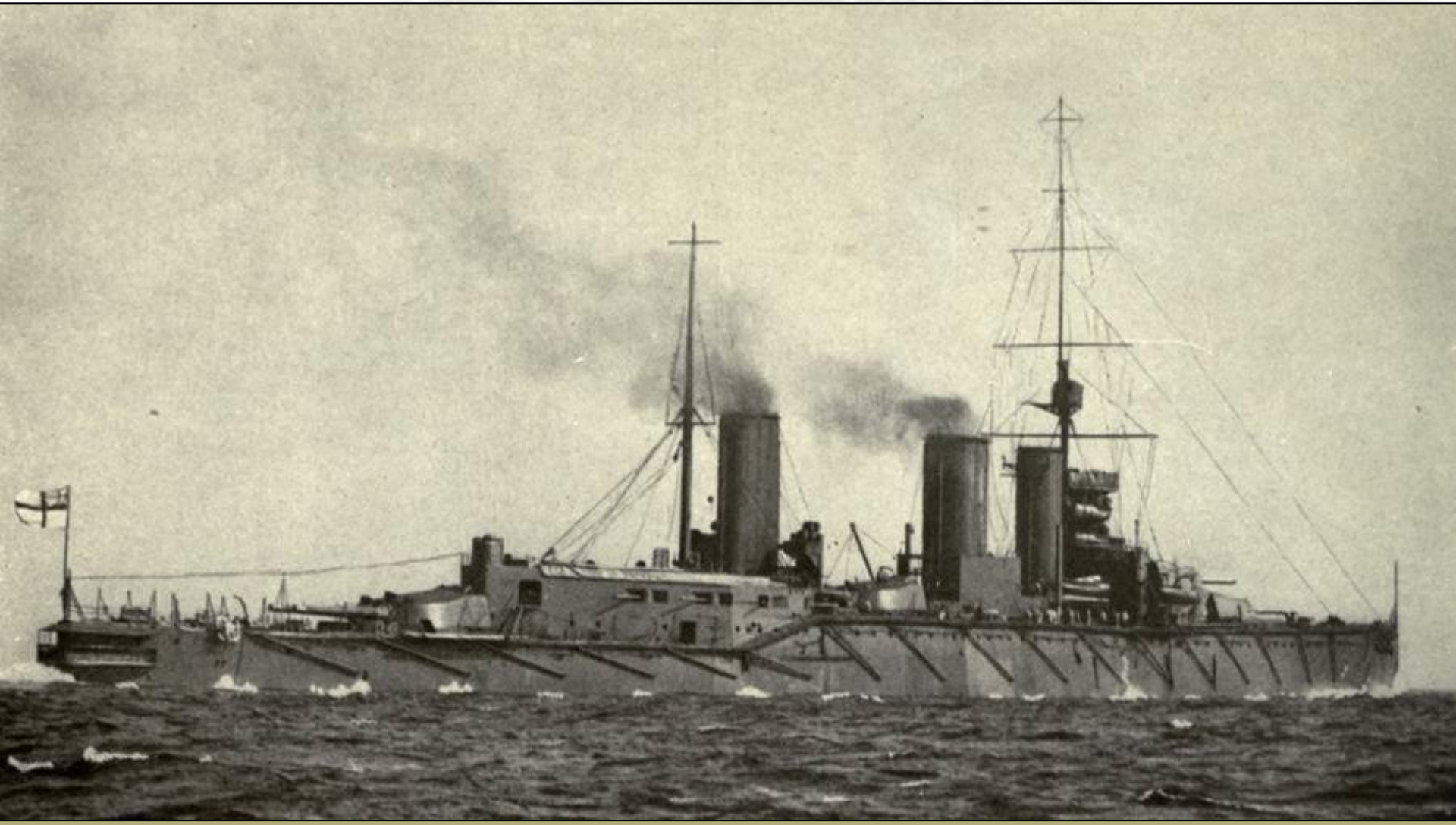


HMS Royal Oak – oil leak



HMS Royal Oak – oil leak

HMS Queen Mary - Ammunition



HMS Queen Mary - Ammunition

Other Hazards

DIVERNET
The Biggest Online Resource for Scuba Divers

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DIVING NEWS

MERCURY THREAT FROM WW2 WRECK

An M-class minesweeper.

20 November 2019

Scuba divers in Jersey have reported seeing mercury leaking out of the World War Two shipwreck of the German minesweeper M-343.

They recently observed large pools of the liquid metal collecting on the deck of the vessel – it had previously been seen only inside the wreck, according to a report in the Jersey Evening Post.

Most mercury gets into the ocean through rain and run-off, but once in

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Jersey Evening Post

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Divers report mercury leaking from 1944 shipwreck

News | Published: Nov 18, 2019

DIVERS have been asked to collect samples of mercury thought to be leaking from the wreck of a minesweeper that sank near the Minquiers during the Second World War amid concerns it could affect local fish stocks.

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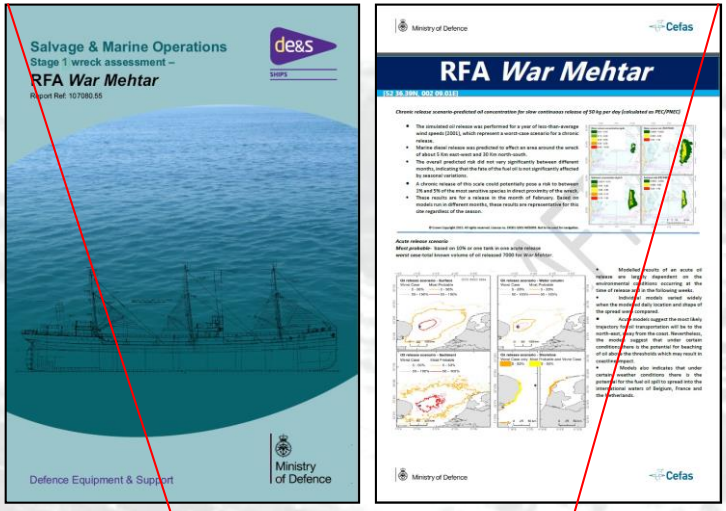
Other Hazards

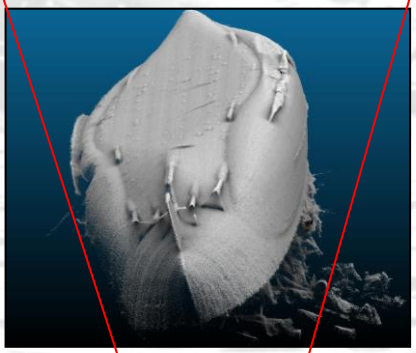
M-343 – Channel Islands

Methodology

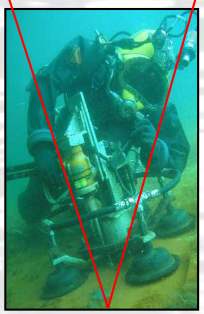
Methodology



Stage One – H-DBA / E-DBA

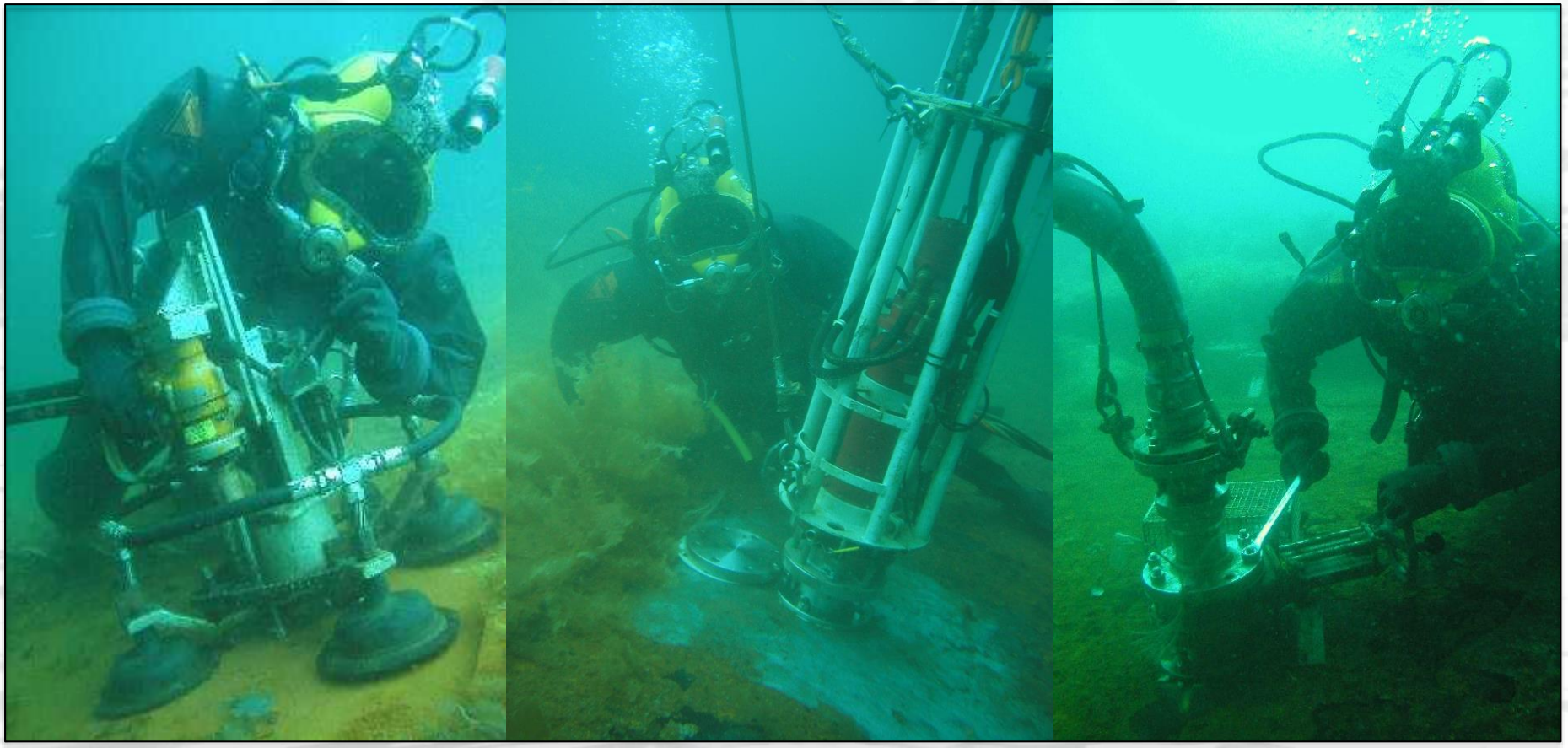


Stage Two – On Site Survey



Stage Three – Intervention

Stage Three - Intervention



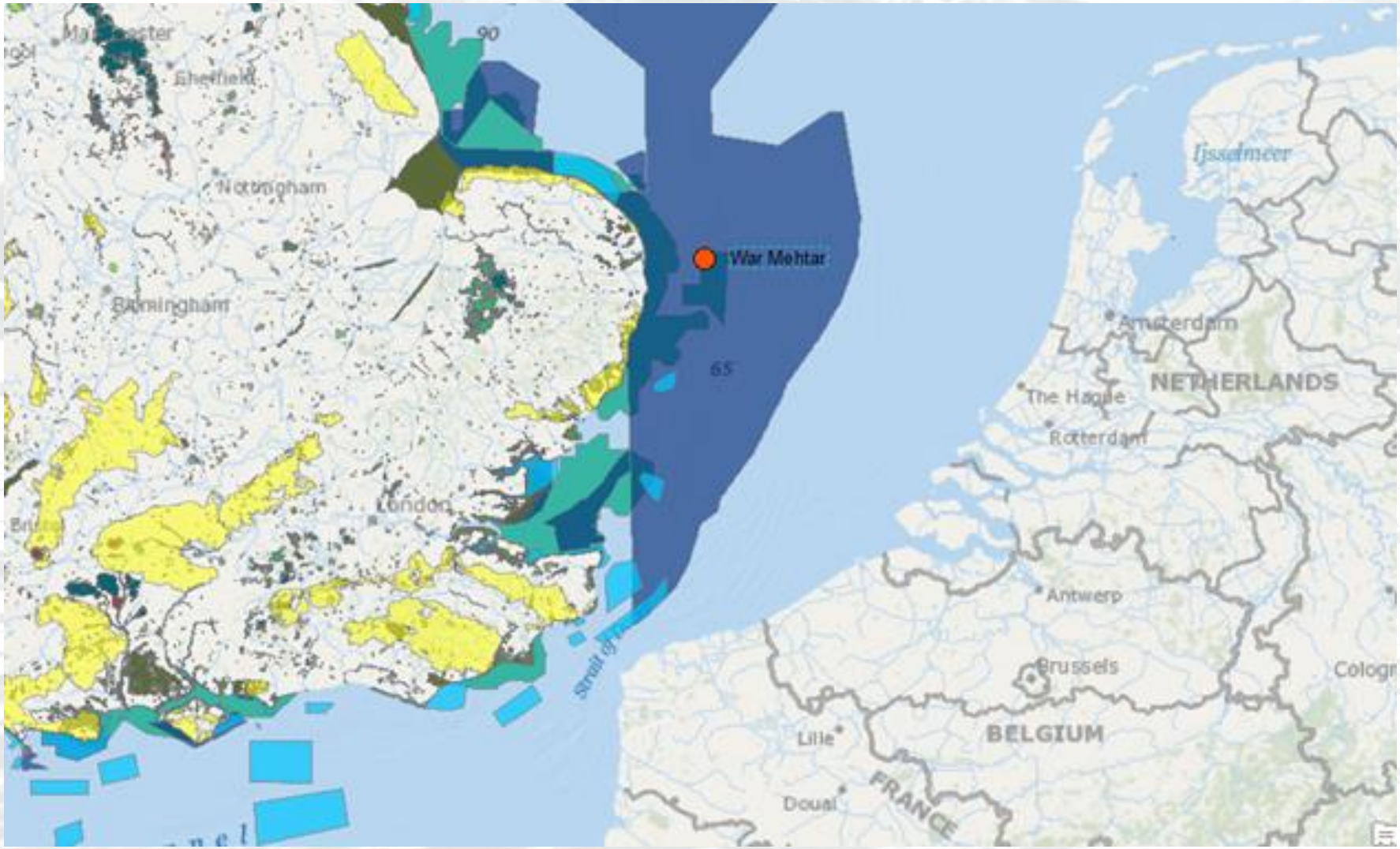
Stage Three - Intervention

Stage Three - Intervention

RFA War Mehtar

RFA *War Mehtar*

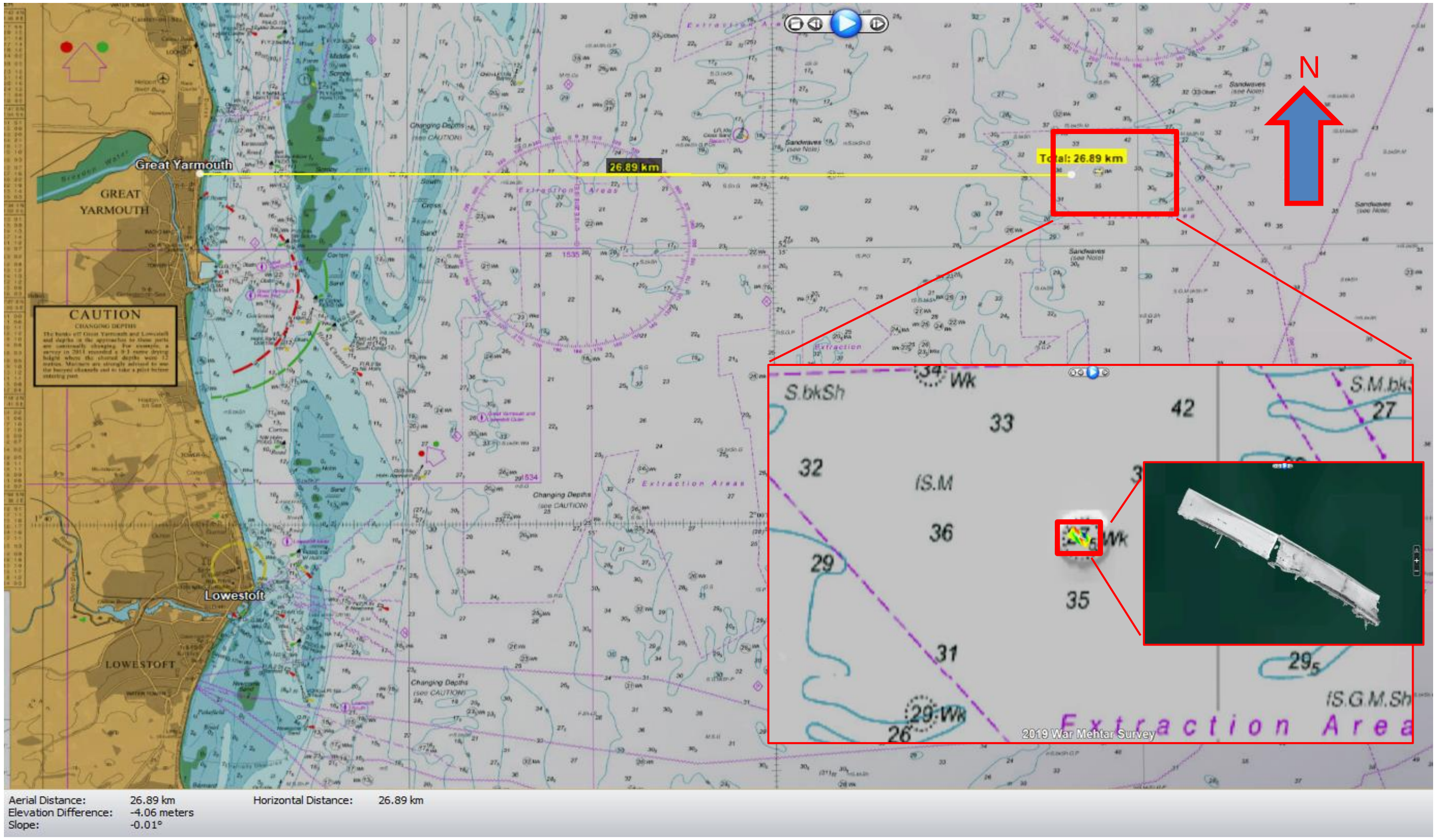
RFA War Mehtar



RFA War Mehtar

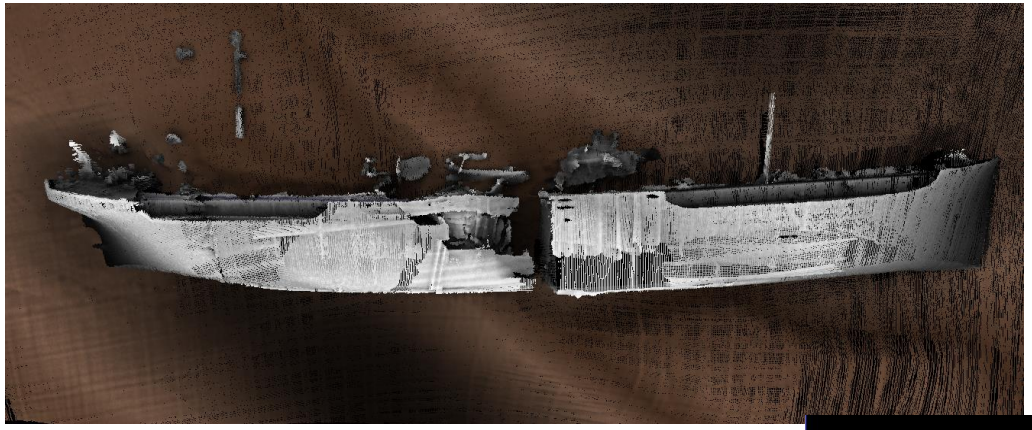
RFA War Mehtar

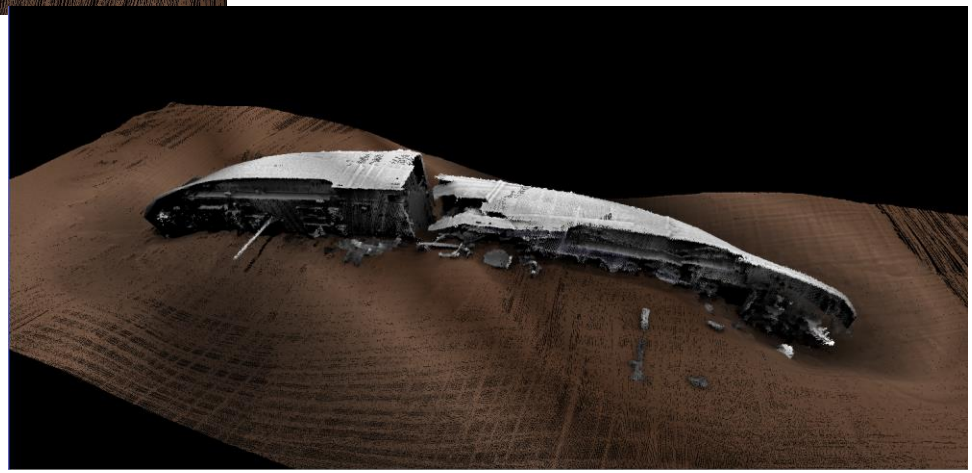
War Mehtar


N
Great Yarmouth
GREAT YARMOUTH
Lowestoft
LOWESTOFT
CAUTION
26.89 km
Total: 26.89 km
S.bkSh
Wk
33
42
S.M.bk
27
32
IS.M
36
29
35
31
29₅
29 Wk
26
IS.G.M.Sh
Extraction Area
2019 War Mehtar Survey
Aerial Distance: 26.89 km
Elevation Difference: -4.06 meters
Slope: -0.01°
Horizontal Distance: 26.89 km

First surveyed 2014

2014 Results





2019

Initially just a survey but grew into a salvage assessment

2019 Salvage Assessment

- **Aim** was to quantify oil remaining within the cargo tanks of the wreck and Assess the best method of extraction

- **Method** acquire high resolution multibeam data to assess condition followed by neutron backscatter (NBS) measurements to ascertain oil volumes. - - the multibeam will inform the NBS sampling regime.

2019 Survey

Equipment Spread

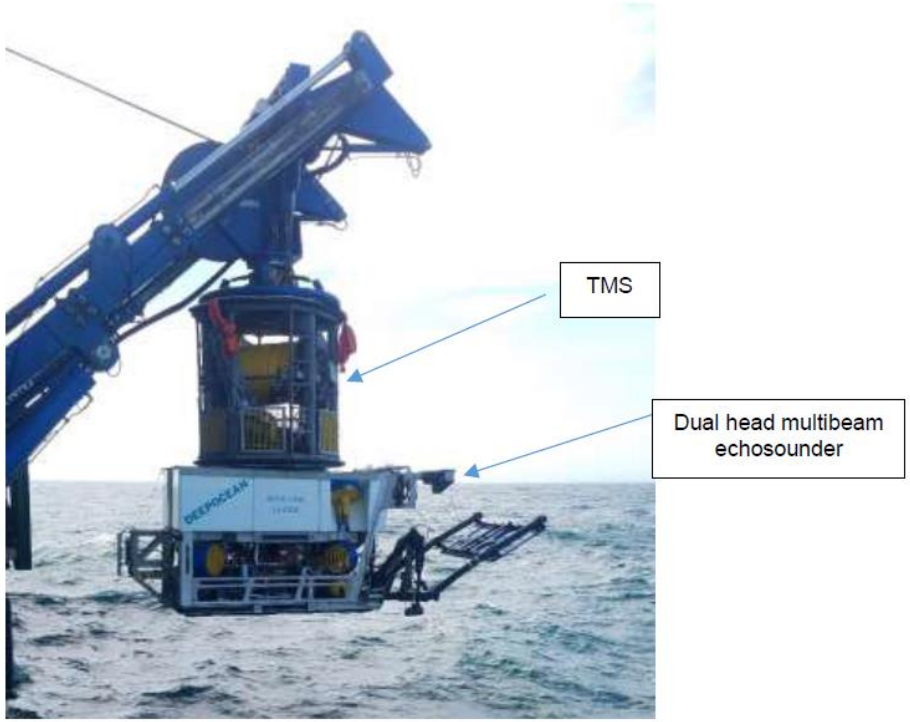
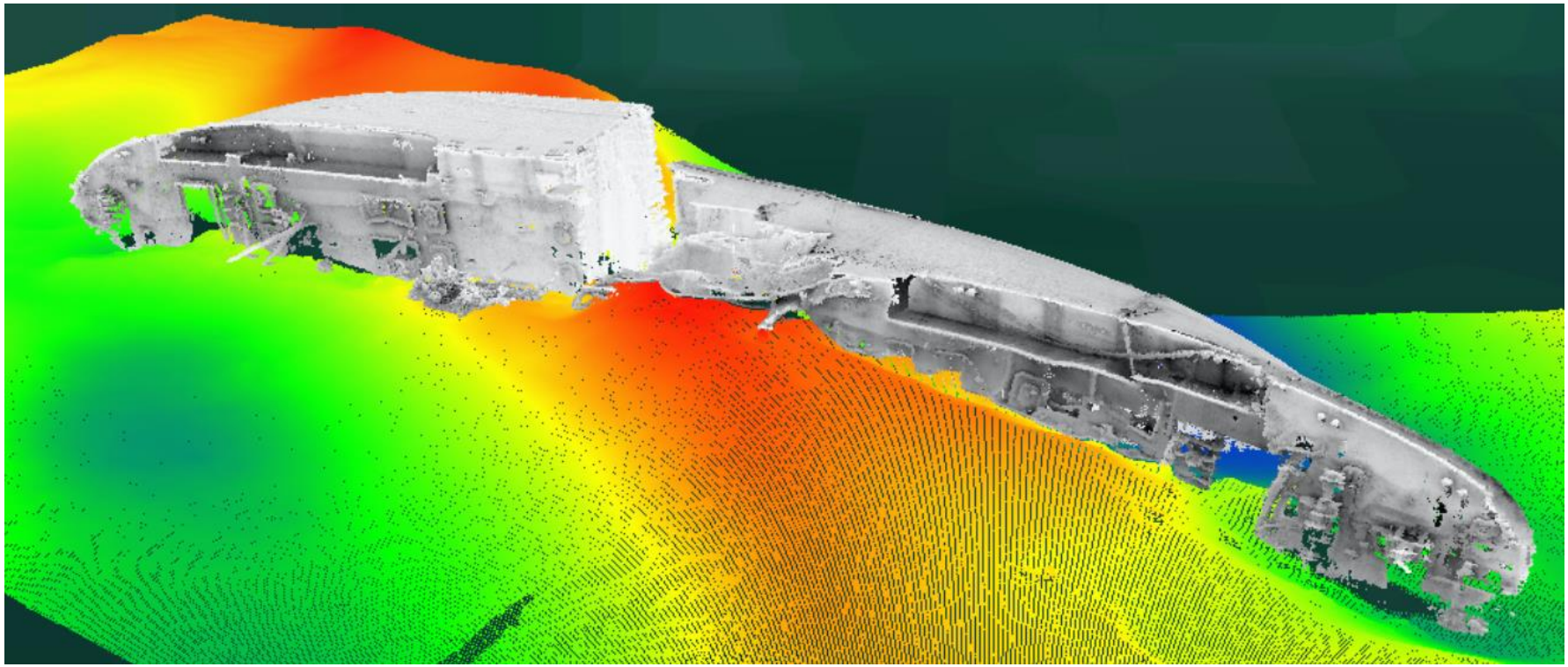


Figure 3: Shilling UHD 200 WROV

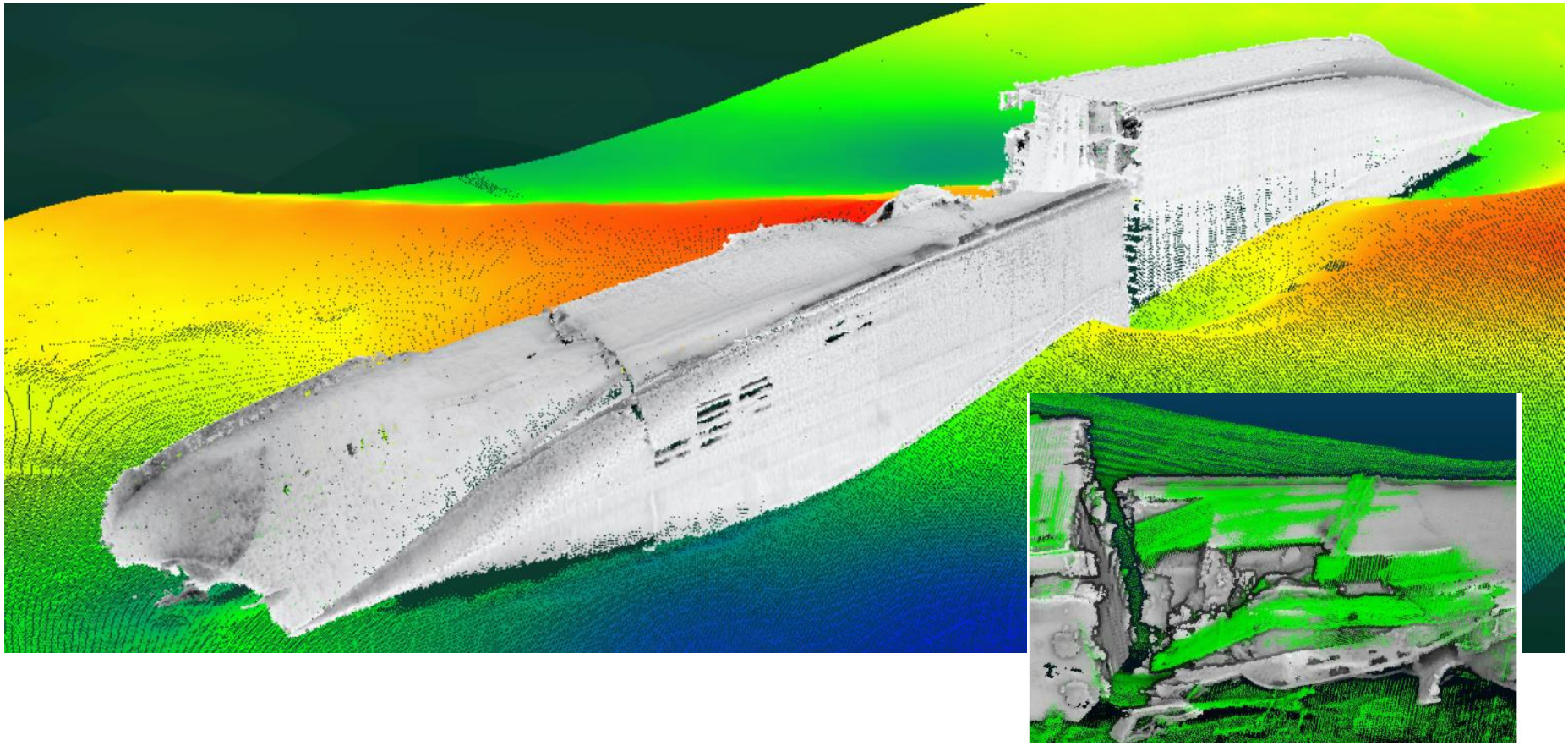
Multibeam Survey

- Total coverage of wreck
- Dense point cloud
- Dual head 7125, positioned using INS and USBL

2019 multibeam data

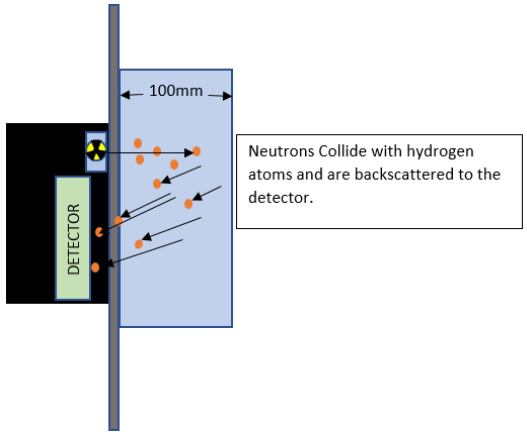


2019 Multibeam data (inset overlay of 2014 and 2019)

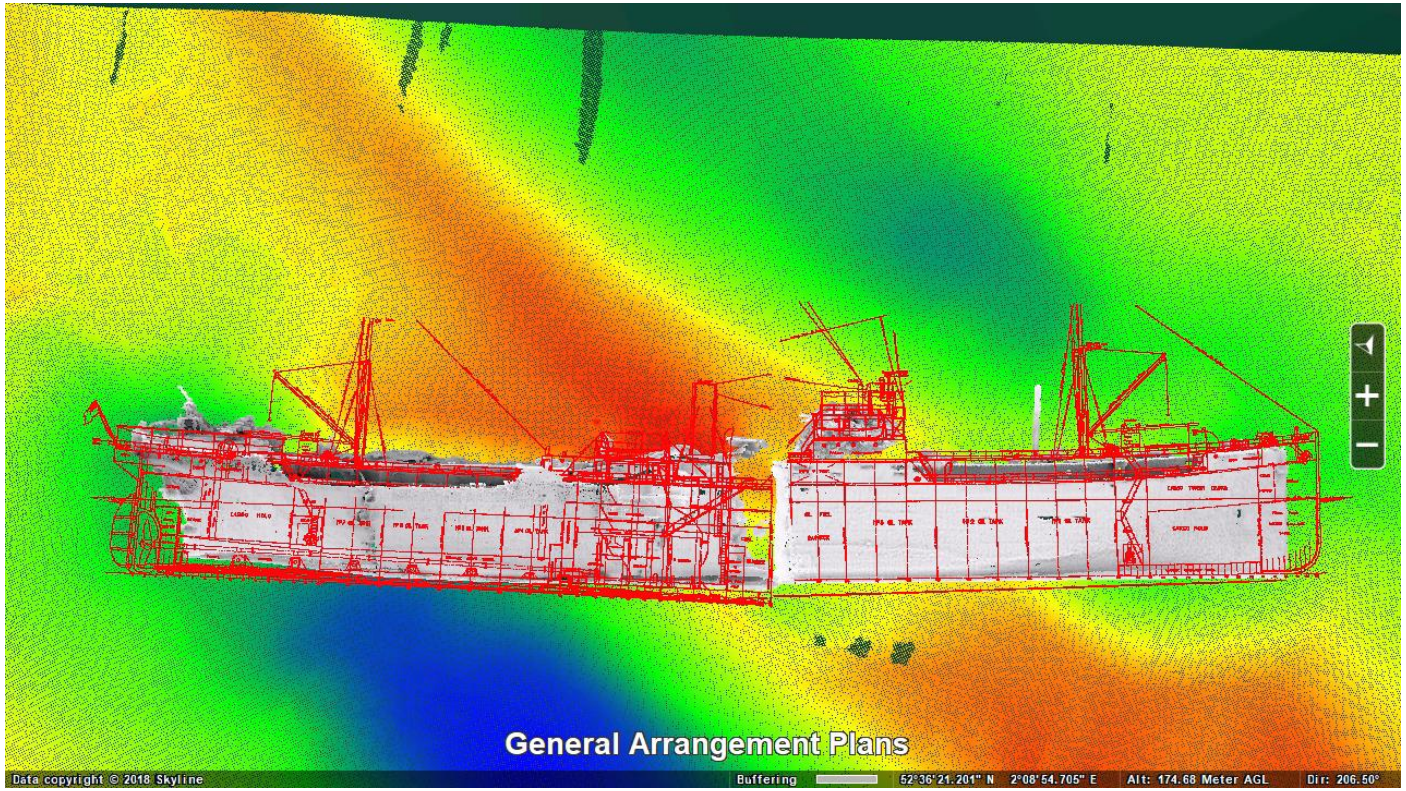


NBS sampling plan

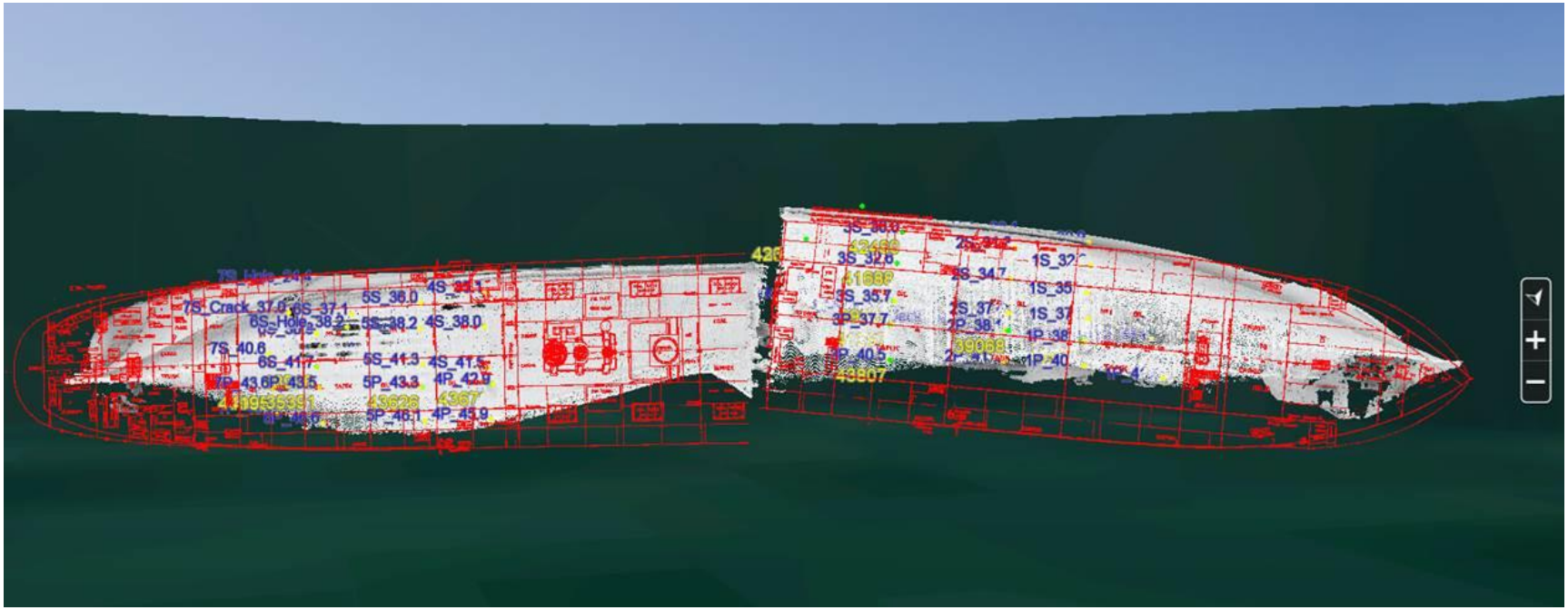
- Assess multibeam data
- Comparison with GA Plans to establish location of cargo tanks and their condition
- Derive sampling regime
- Prioritise sampling locations



Sampling scheme



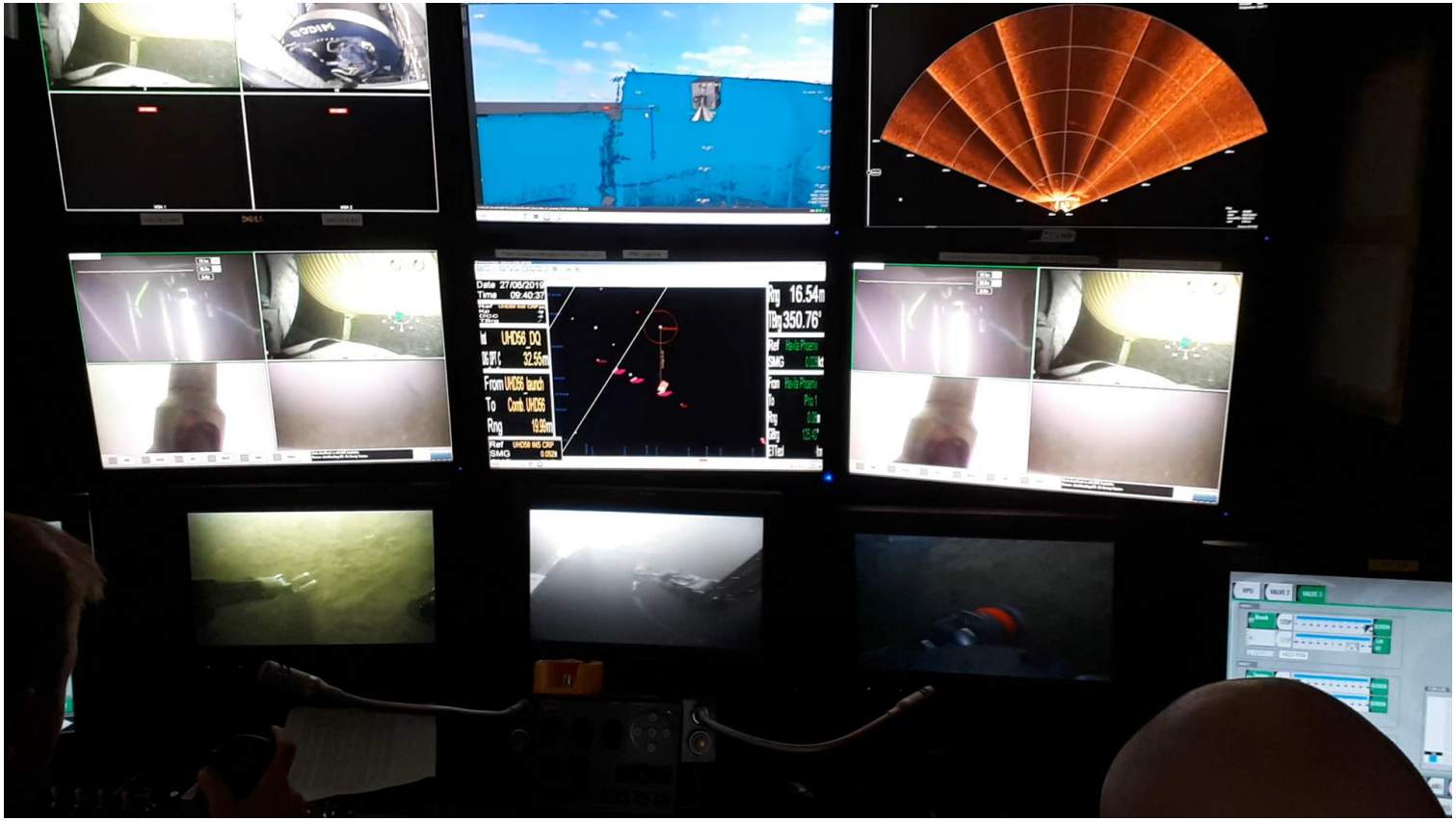
NBS sampling points and results

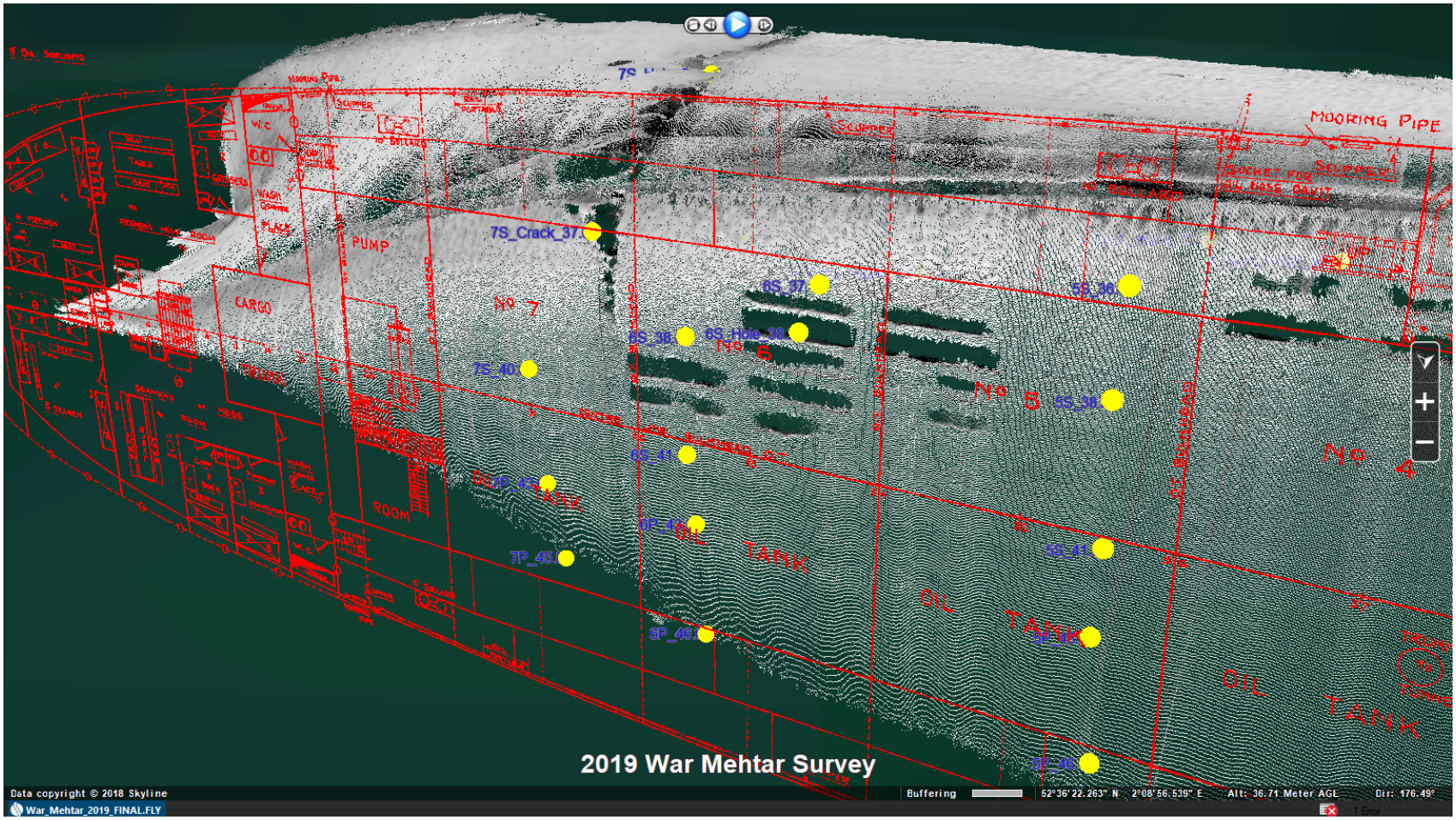


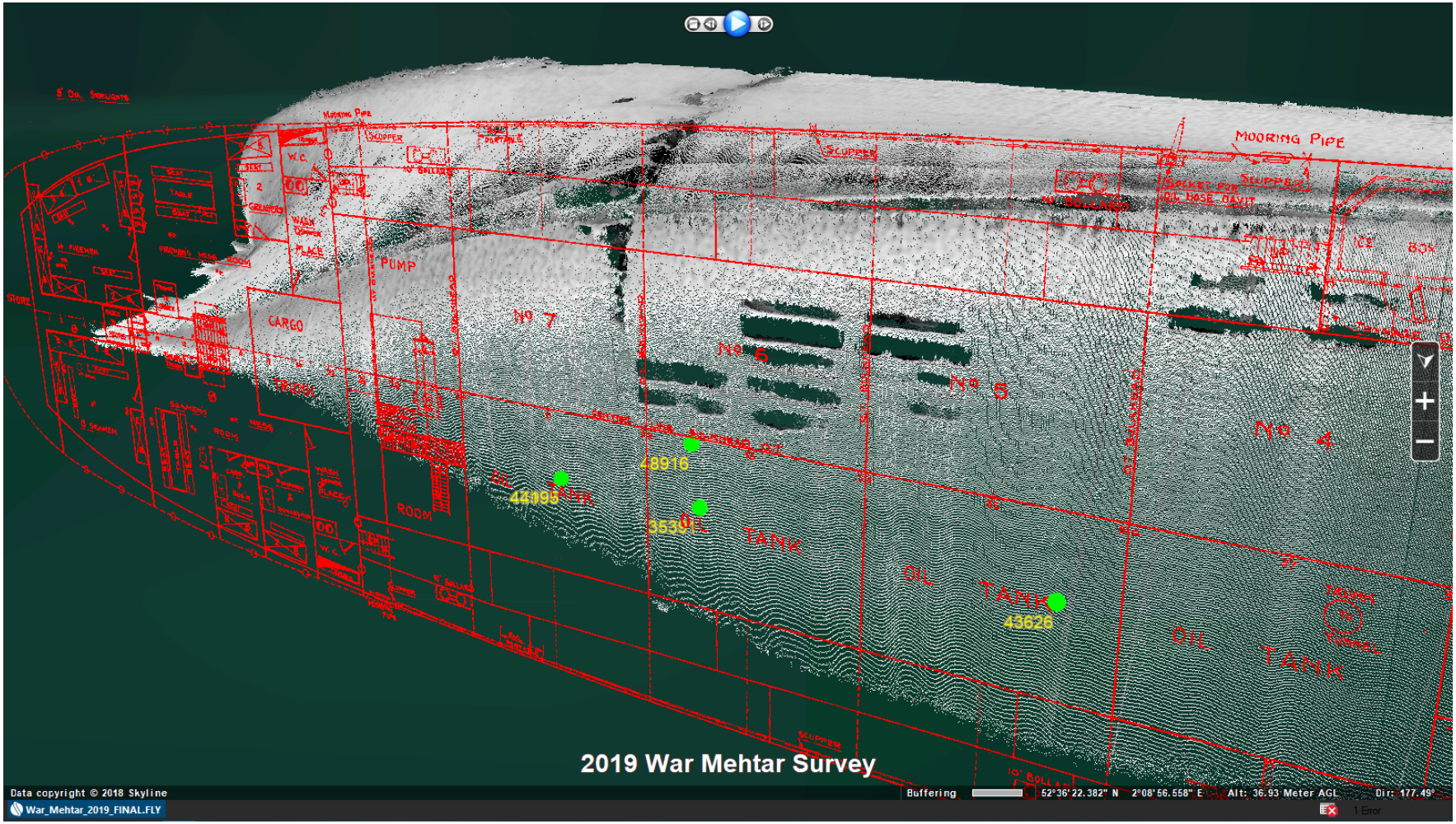
NBS sampling

Task plan

- Cleaning
- Sampling

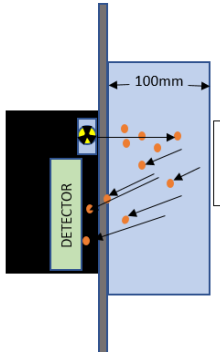



MOORING PIPE
SCUPPER
7S_Crack_37
PUMP
CARGO
No 7
No 6
No 5
No 4
OIL TANK
OIL TANK
OIL TANK
ROOM
2019 War Mehtar Survey
Data copyright © 2018 Skyline
War_Mehtar_2019_FINAL.FLY
Buffering
52°36'22.263" N 2°08'56.539" E
Alt: 36.71 Meter AGL
Dir: 176.49°

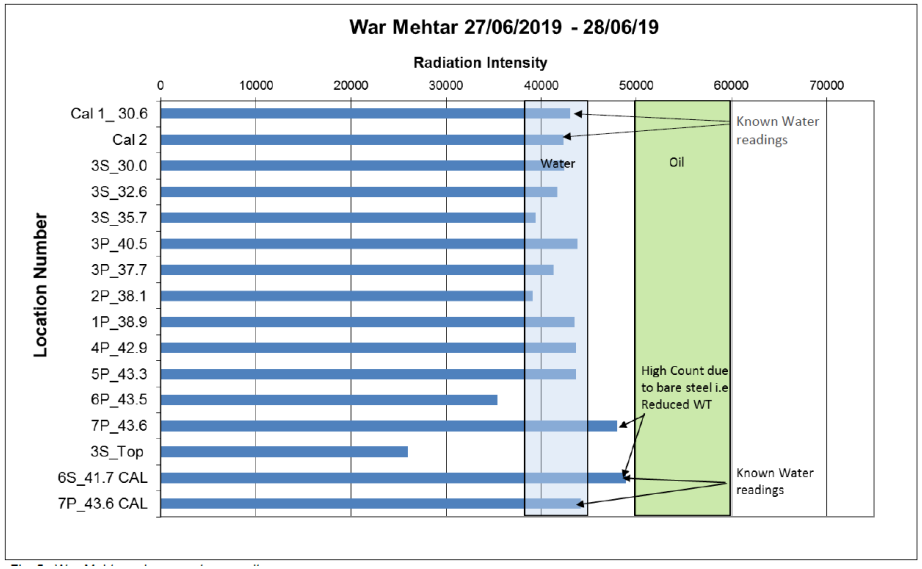

MOORING PIPE
PUMP
CARGO
No 7
No 6
No 5
No 4
OIL TANK
OIL TANK
OIL TANK
48916
44099
43626
2019 War Mehtar Survey
Data copyright © 2018 Skyline
War_Mehtar_2019_FINAL.FLY
Buffering
52°36'22.382" N 2°08'56.558" E
Alt: 36.93 Meter AGL
Dir: 177.49°

Results

Location	Count	Date / time	Status	Depth (m)	X	Y	Z
Cal 1_ 30.6	43028	27/06/2019 07:22	Water	30.6	442337.7	5828792	30.61
Cal 2	42300	27/06/2019 18:40	Water	30.6	442337.7	5828792	30.61
3S_30.0	42480	27/06/2019 19:19	Water	30.0	442330.7	5828796	30.038248
3S_32.6	41688	27/06/2019 19:28	Water	32.6	442331.2	5828796	32.608242
3S_35.7	39384	27/06/2019 19:32	Water	35.7	442331.5	5828796	35.728245
3P_40.5	43807	27/06/2019 19:50	Water	40.5	442332.2	5828797	40.518246
3P_37.7	41287	27/06/2019 19:38	Water	37.7	442331.8	5828796	37.658245
2P_38.1	39068	28/06/2019 09:40	Water	38.1	442323.5	5828801	38.078243
1P_38.9	43533	28/06/2019 10:05	Water	38.9	442317.9	5828803	38.898243
4P_42.9	43679	28/06/2019 09:12	Water	42.9	442362.3	5828781	42.918243
5P_43.3	43626	28/06/2019 09:06	Water	43.3	442367.9	5828778	43.318245
6P_43.5	35391	28/06/2019 08:53	Water				
7P_43.6	47957	28/06/2019 09:20	Water				
3S_Top	26004	28/06/2019 09:47	Water				
6S_41.7 CAL	48916	28/06/2019 14:47	Water				
7P_43.6 CAL	44195	28/06/2019 14:55	Water				



Neutrons Collide with hydrogen atoms and are backscattered to the detector.



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2019 Conclusion

- Multibeam showed breaches in all tanks except tank 3
- NBS measurements didn't record any oil
- Some structural collapse specifically in the midships section since 2014 survey
- Plate beginning to collapse from frames

2019 Conclusions (continued)

Why reports of leakages

- **Slick reports are very low volume**
- **Oil and lubes still in engine compartment and associated pipework etc**
- **Is the sediment saturated?**

Questions?