

Meddelanden från Stockholms universitets
institution för geologiska vetenskaper No 383



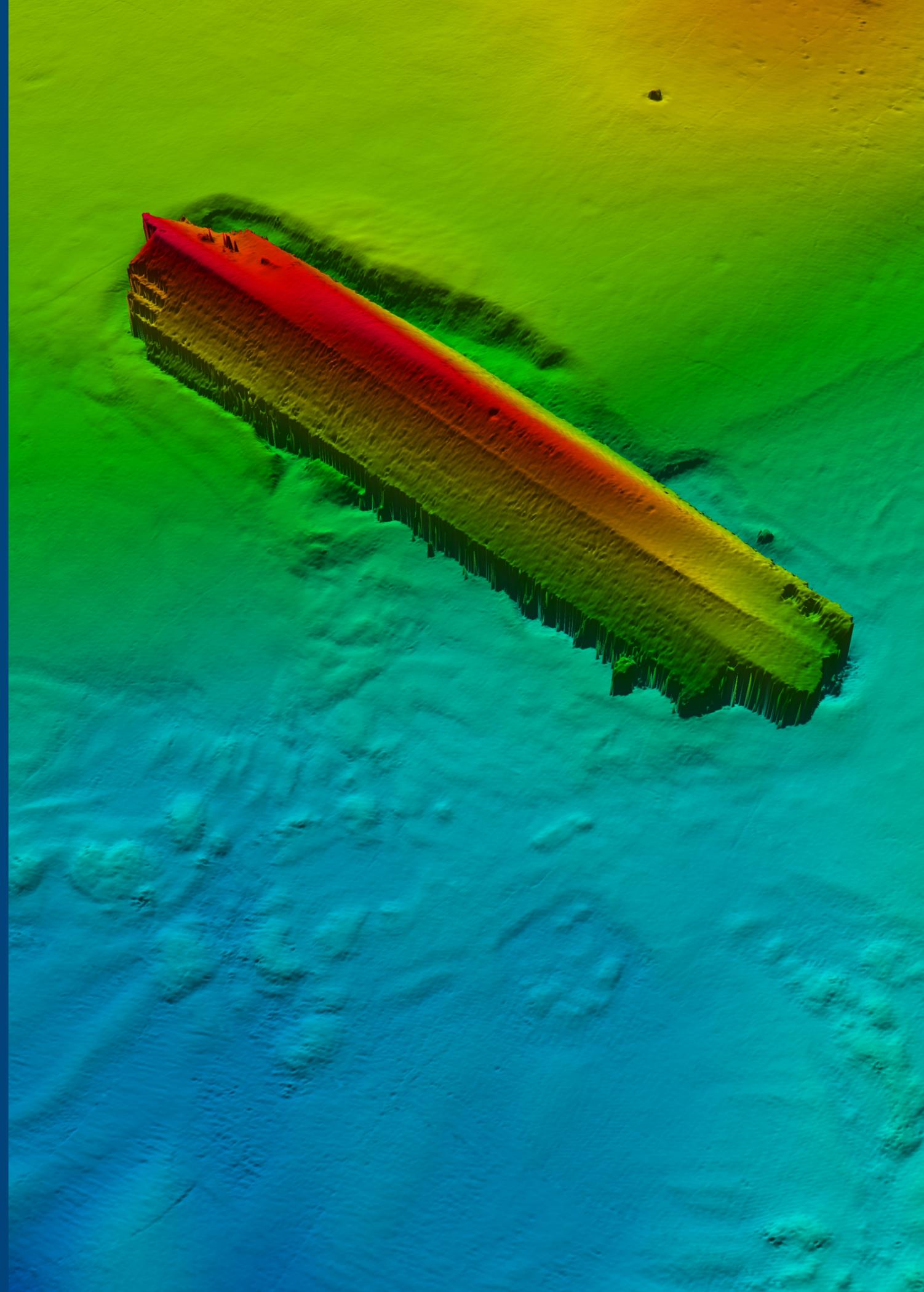
EL21-Estonia

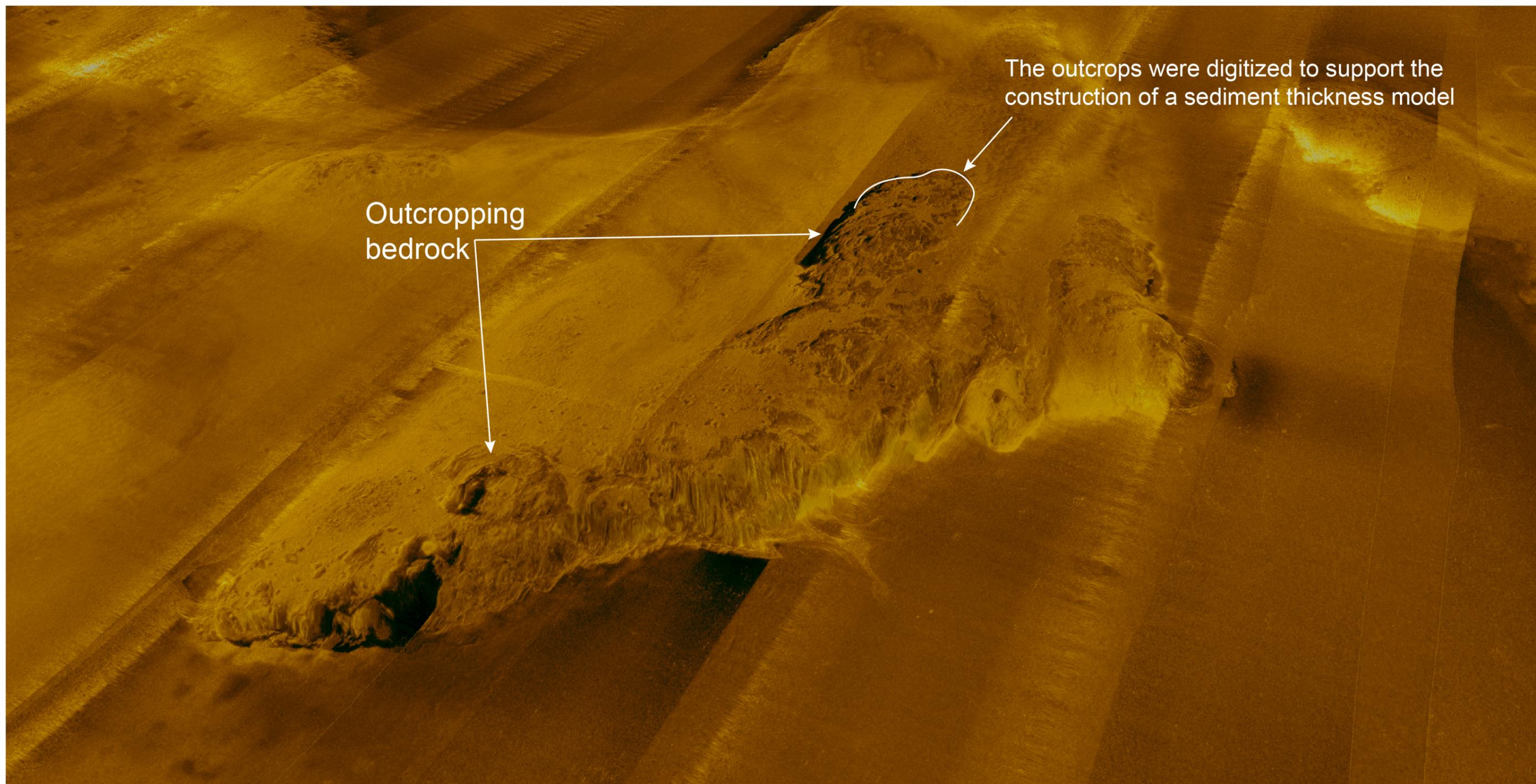
Report of the MS *Estonia* shipwreck site survey with RV *Electra*

Appendix 4: Side-scan sonar

Martin Jakobsson, Christian Stranne, Rickard Fornander, Matt O'Regan, Anton Wagner
and the *EL21-Estonia* Shipboard Party

Stockholm 2021

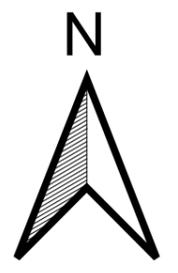




Larger version of Figure M5. Side-scan mosaic draped on the multibeam bathymetry. Outcropping bedrock was clearly identified in the side-scan imagery and digitized in order to constrain the compilation of a gridded sediment thickness model of the area.

21°38.52'E 21°38.88'E 21°39.24'E 21°39.60'E 21°39.96'E 21°40.32'E 21°40.68'E 21°41.04'E 21°41.40'E 21°41.76'E

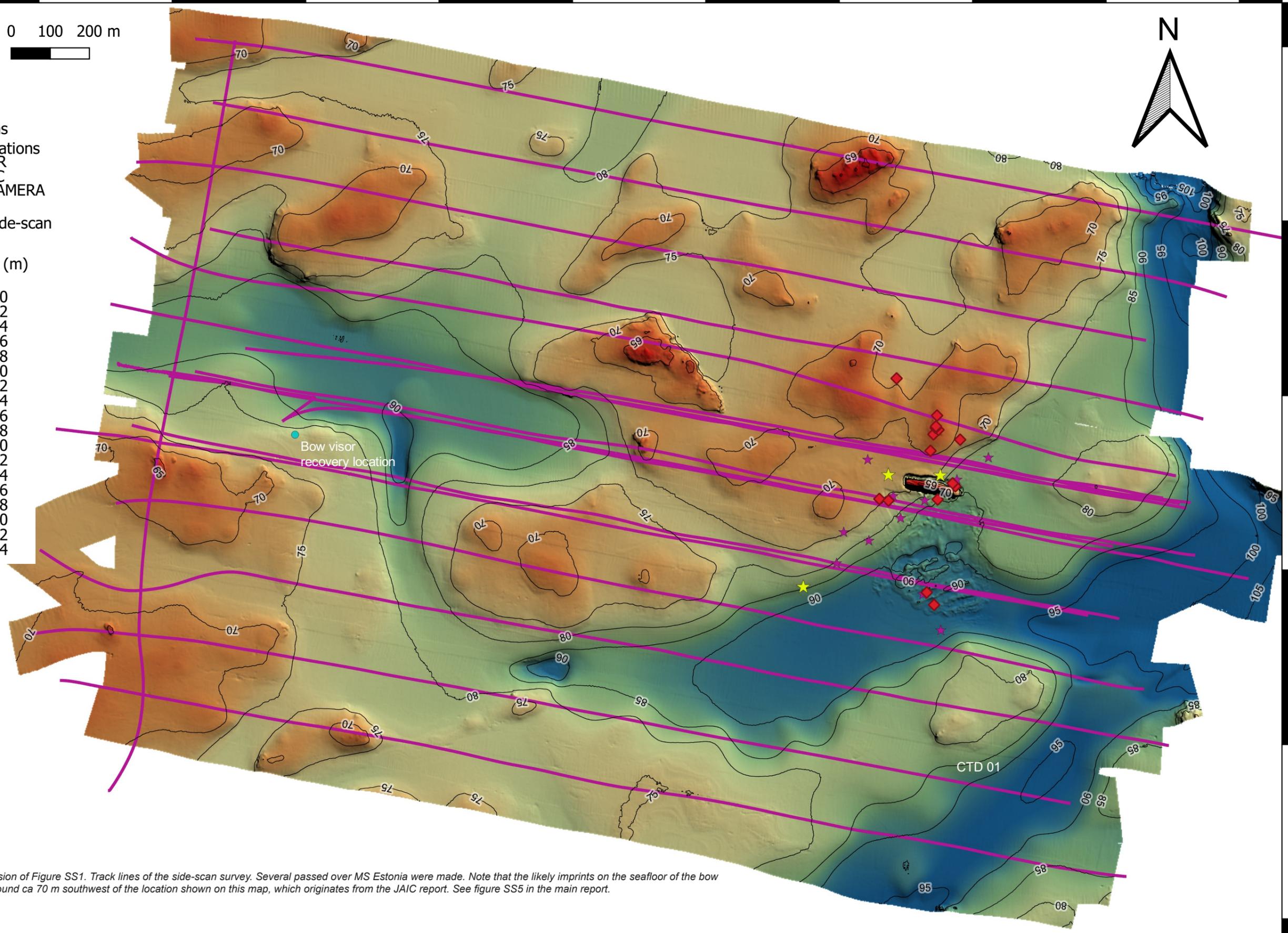
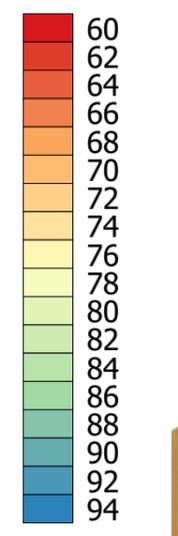
59°23.52'N
59°23.28'N
59°23.04'N
59°22.80'N
59°22.56'N
59°22.32'N



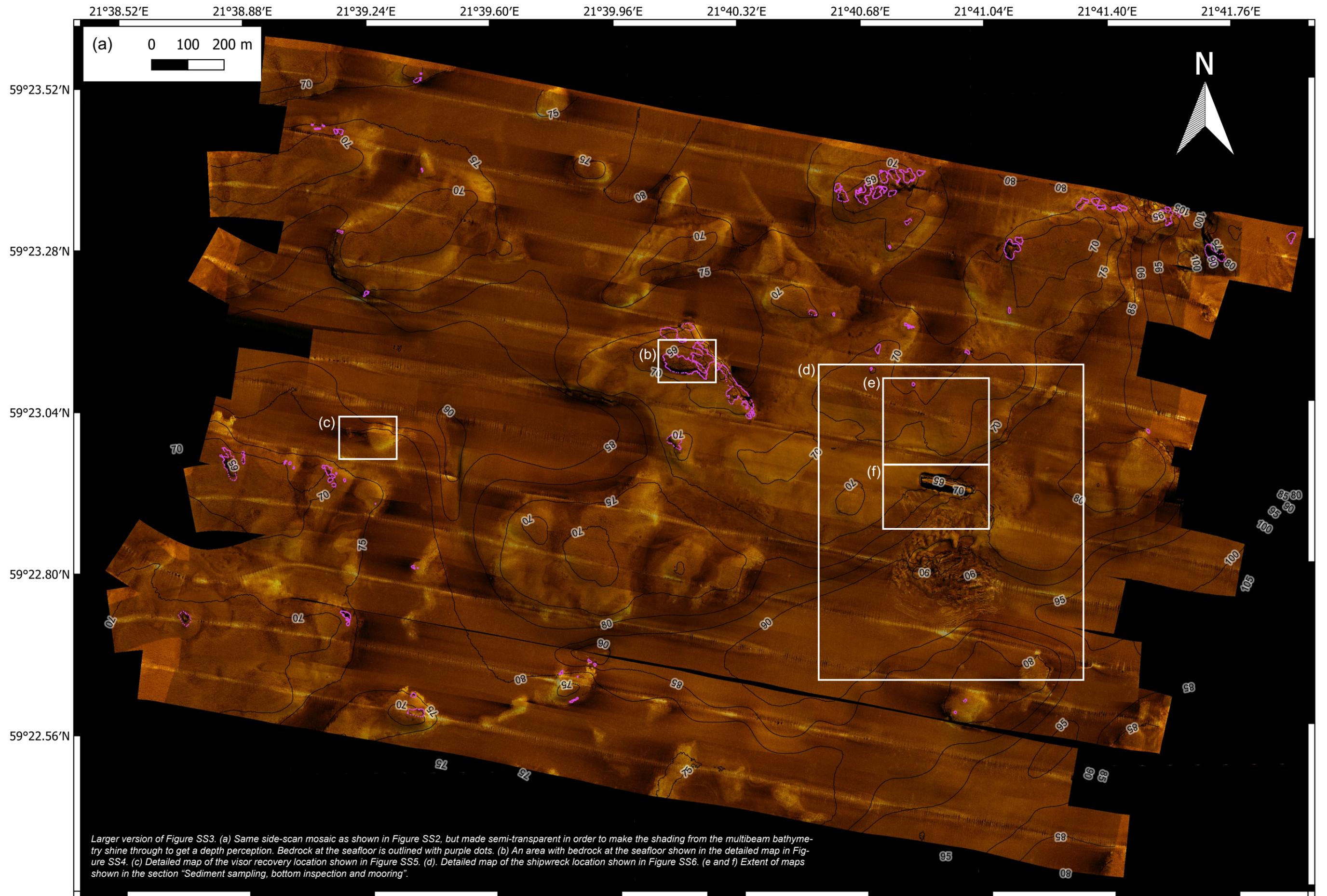
Stations
observations
★ GR
★ PC
◆ CAMERA

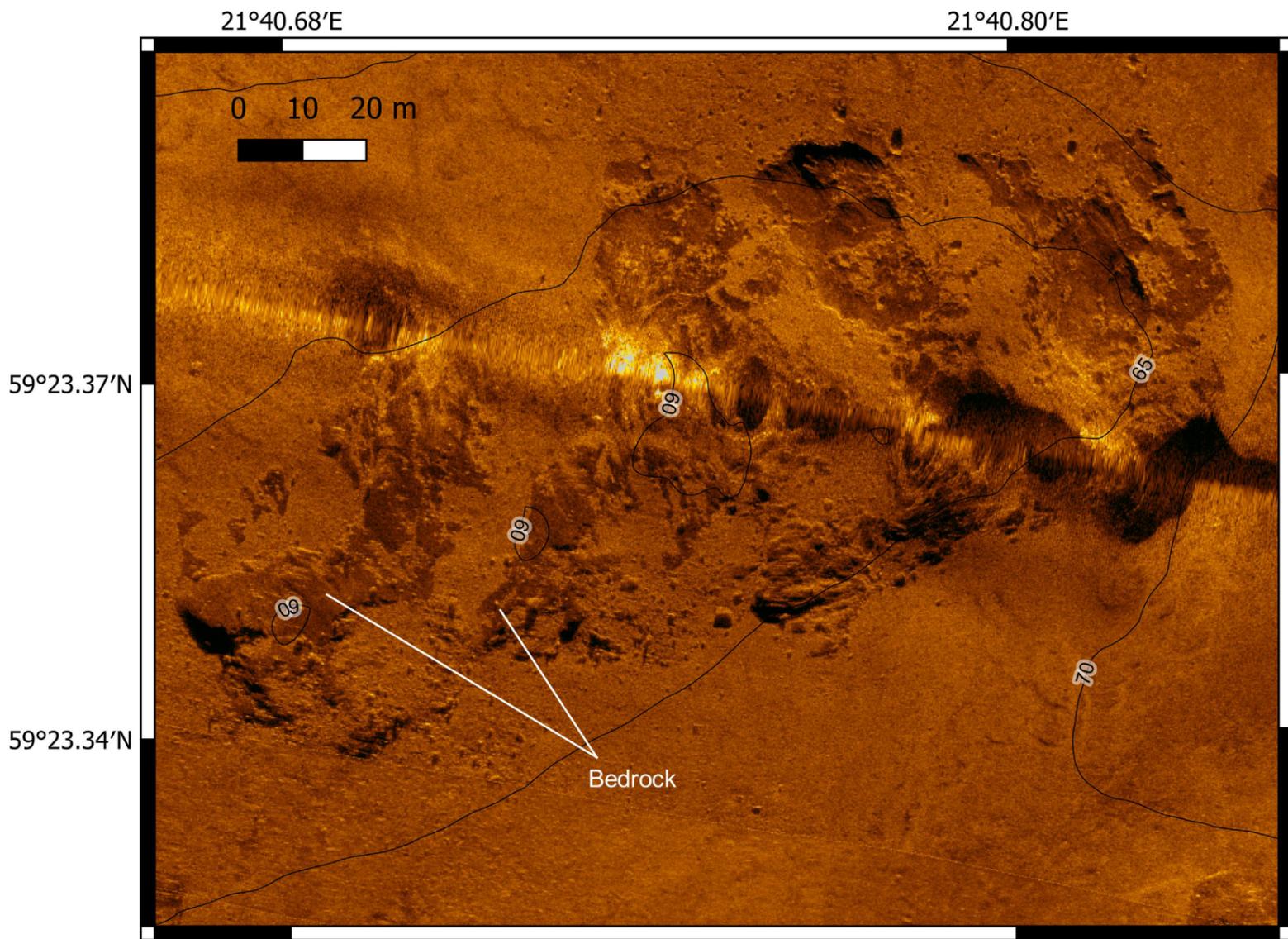
— Side-scan

Depth (m)

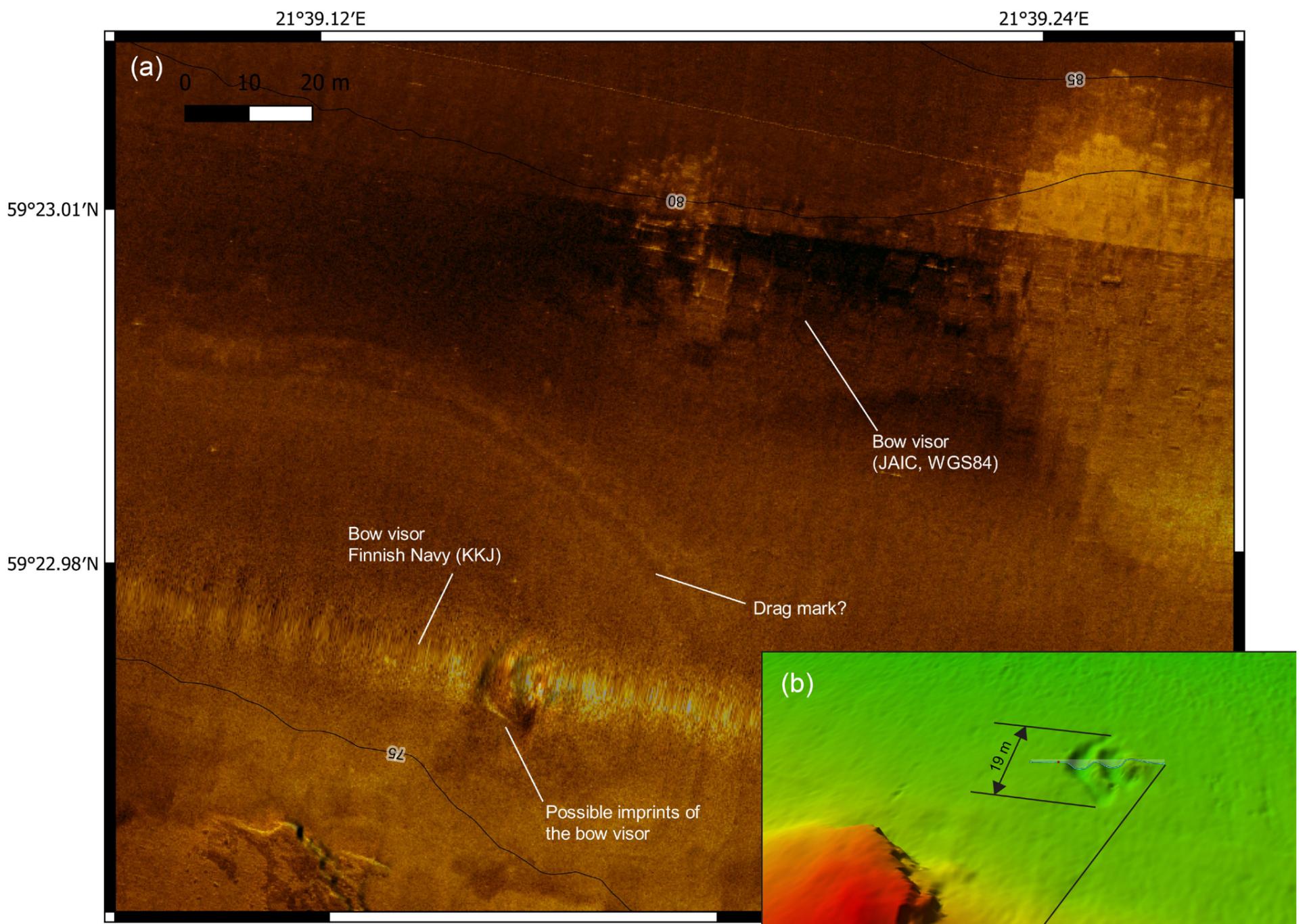


Larger version of Figure SS1. Track lines of the side-scan survey. Several passed over MS Estonia were made. Note that the likely imprints on the seafloor of the bow visor are found ca 70 m southwest of the location shown on this map, which originates from the JAIC report. See figure SS5 in the main report.

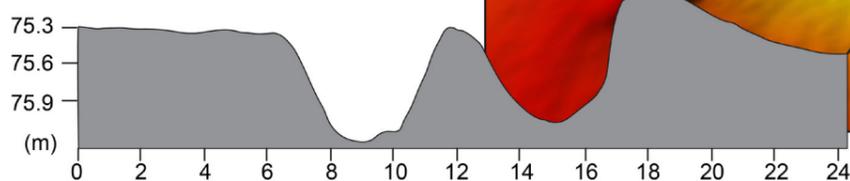


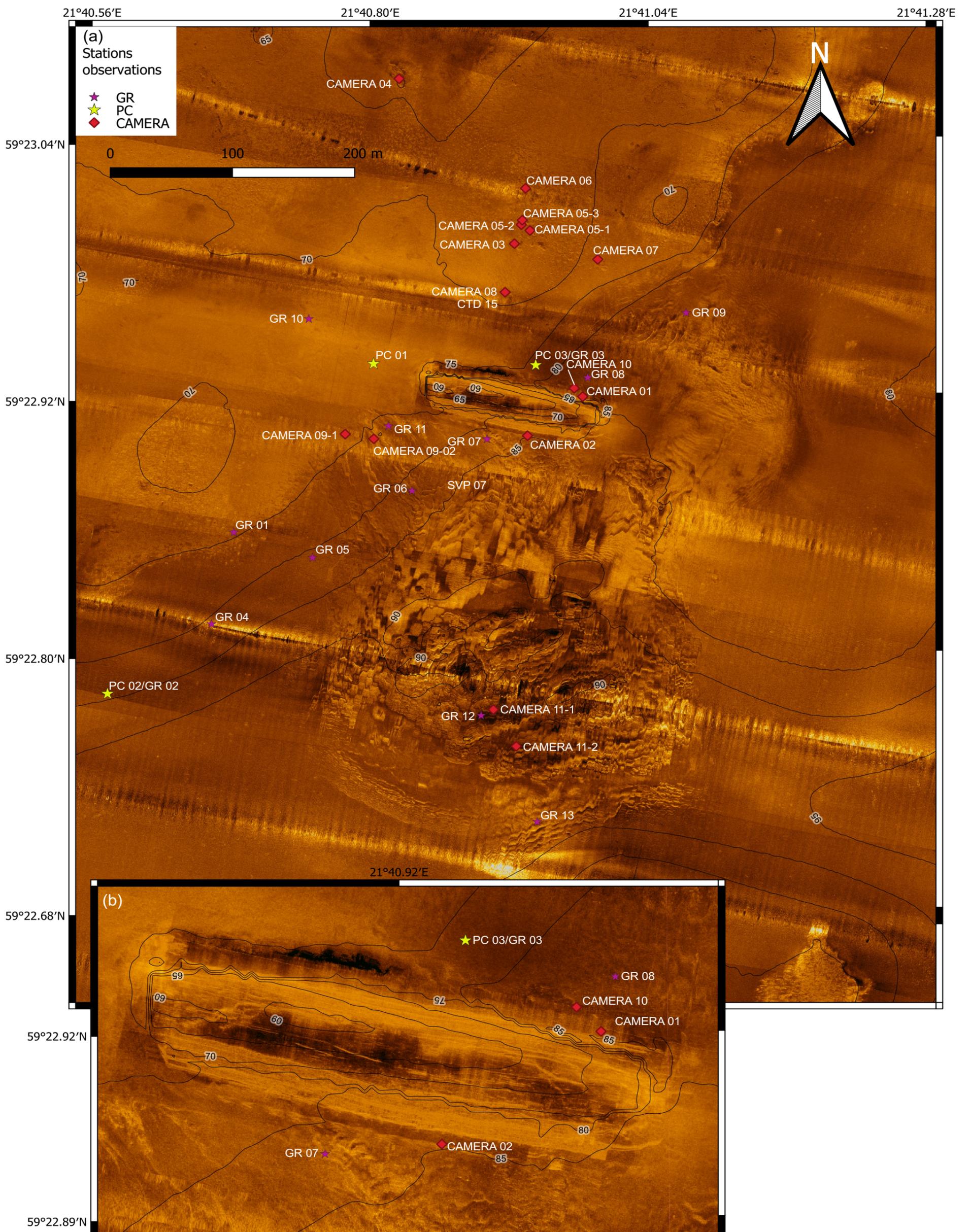


Larger version of Figure SS4. Side-scan mosaic of an area with bedrock at the seafloor. The map location is shown in Figure SS3.

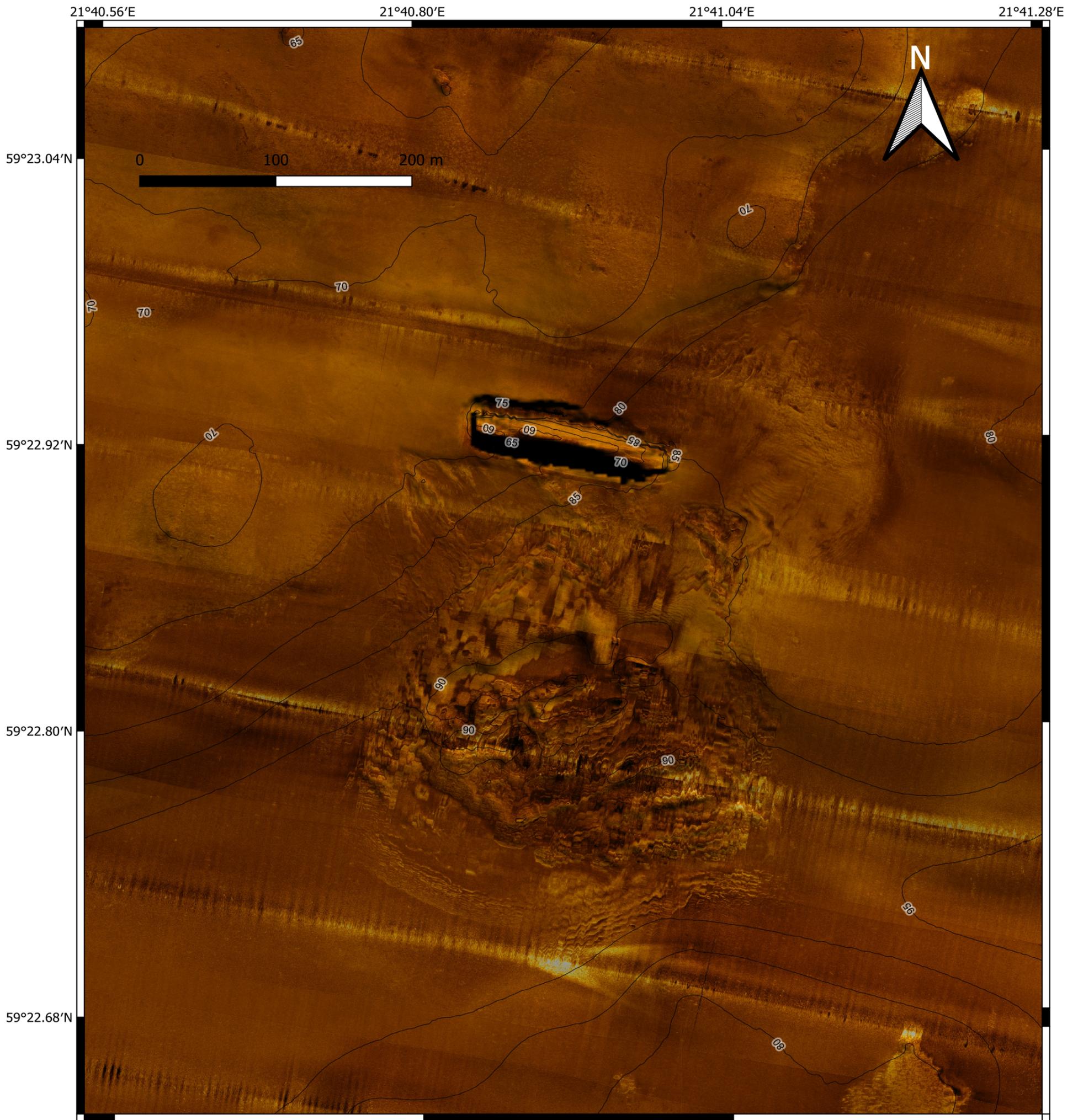


Larger version of Figure SS5. (a) Side-scan mosaic of the area where the bow visor was recovered according to the final report by JAIC (position referenced to the WGS84 datum) and the position given by the Finnish Navy reported in the Finnish KKJ datum, here converted to WGS84. The Finnish location is situated close to a feature on the seafloor that may constitute an imprint of the bow visor. The map location is shown in Figure SS3. (b) Multibeam bathymetry of the possible imprint of the bow visor.

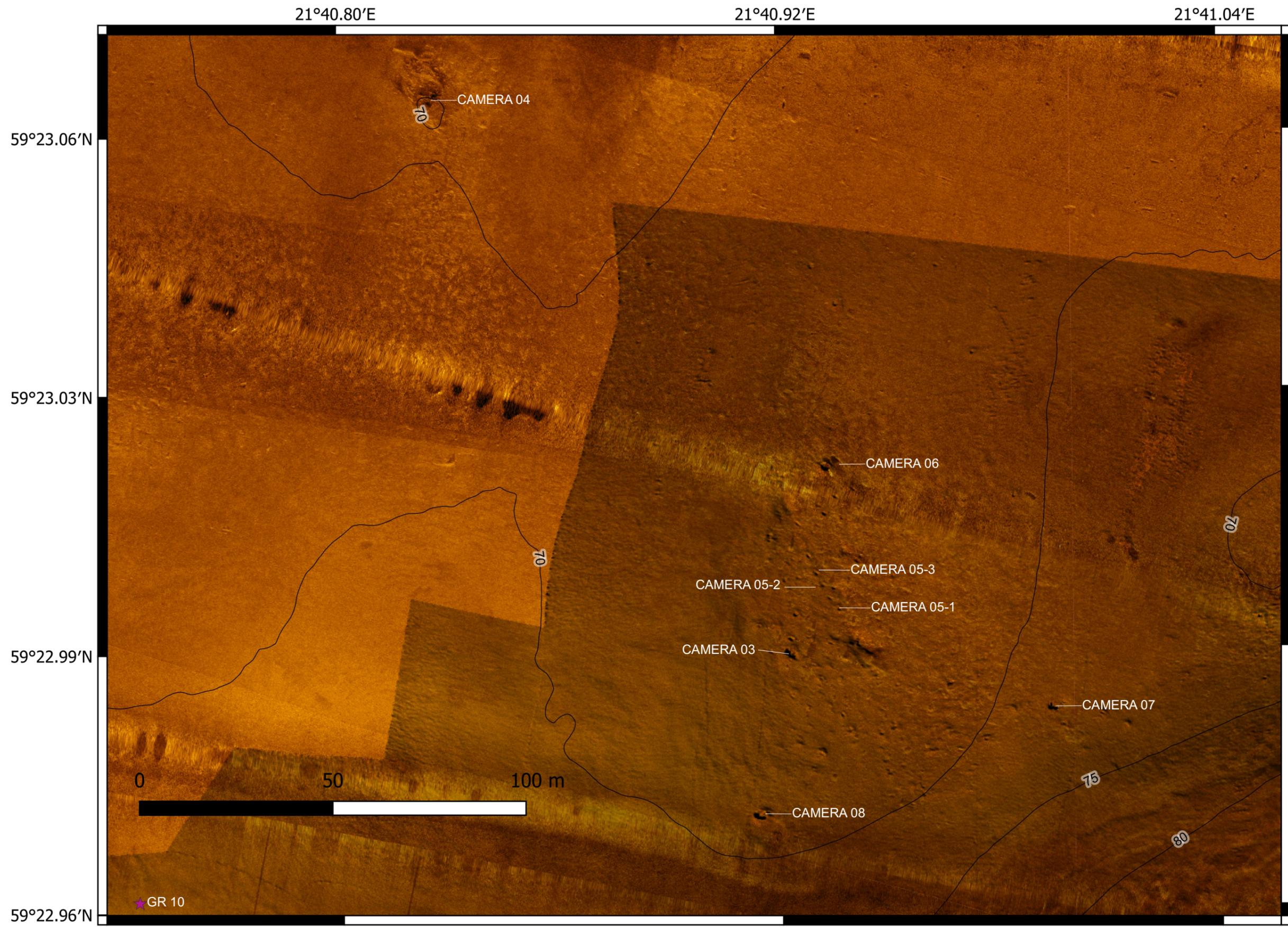




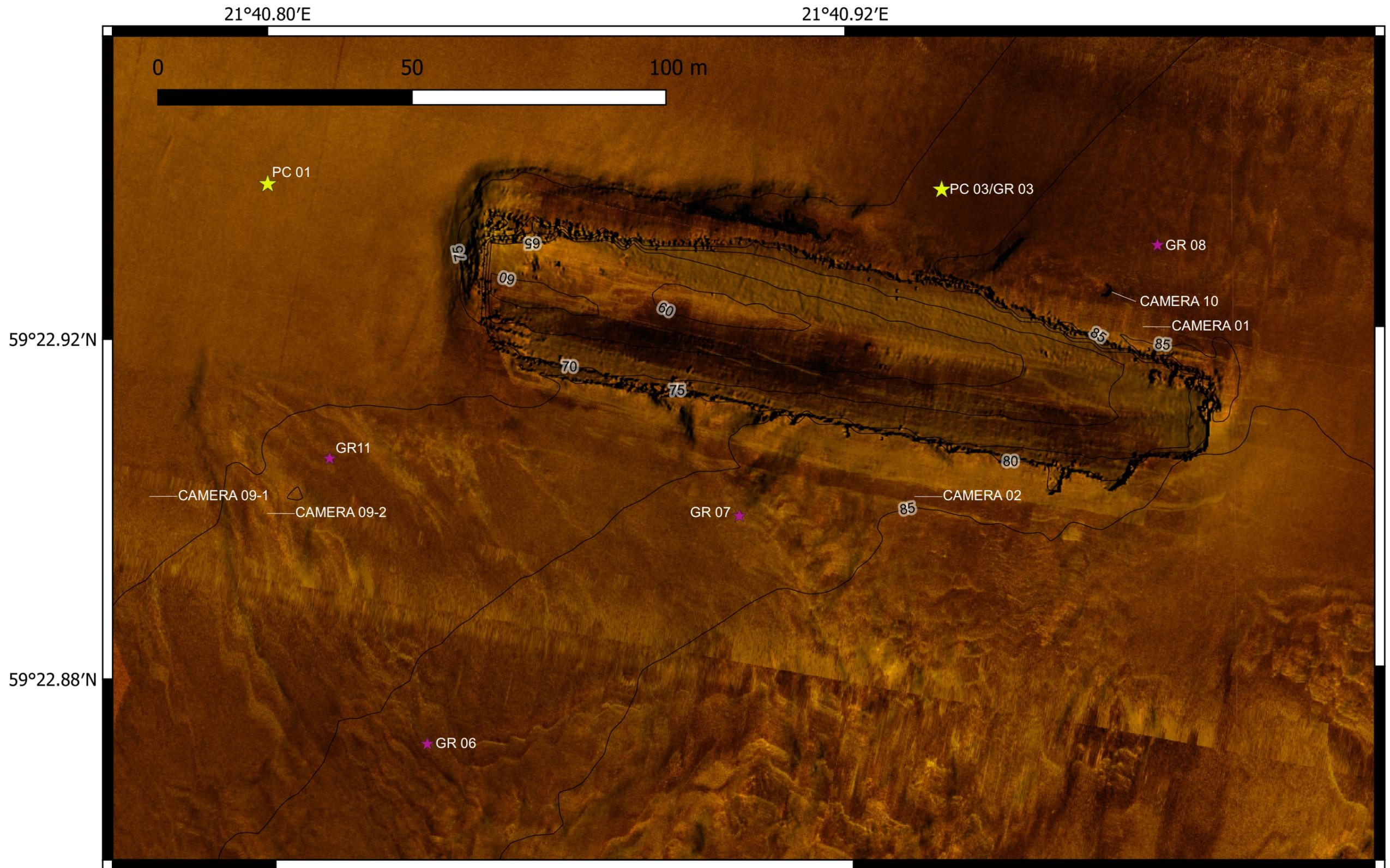
Larger version of Figure SS6. (a) Side-scan mosaic shipwreck site. Artifacts from tow-fish movements are seen as stripes in some lines. (b) Close up on MS Estonia.



Larger version of Figure SS7. Side-scan mosaic of shipwreck site made semi transparent in order to get a depth perception from the shading of the underlying multibeam bathymetry.



Larger version of Figure SBI17. Side-scan mosaic of the area north of MS Estonia showing the locations of bottom observations with GoPro camera.



Side-scan mosaic of the area nearby MS Estonia. The multibeam bathymetry is used to shade the side-scan imagery for a better depth perception. (Not shown in the main report).