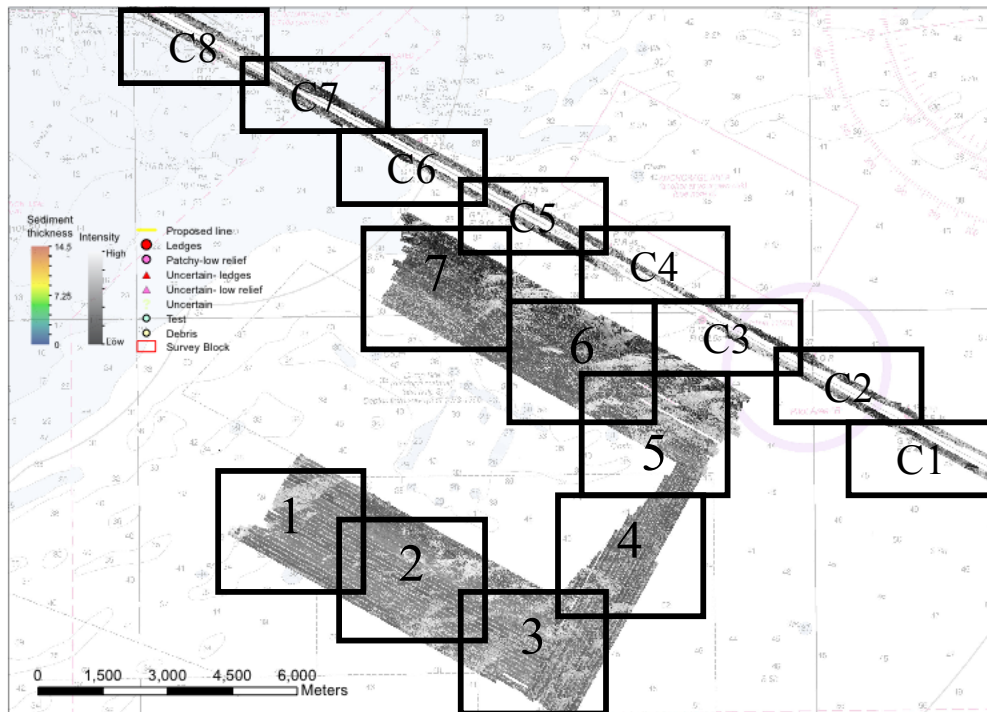


Appendix 2 – Habitat Classification

Appendix 2 demonstrates the full detail of hard bottom evaluation incorporating geophysical data and groundtruthing. All mapping areas included in this appendix can be referenced to the basemap below (figure 20 from the report). All figures are exports from ESRI ArcGIS and each data layer can be found in the digital files accompanying this report.

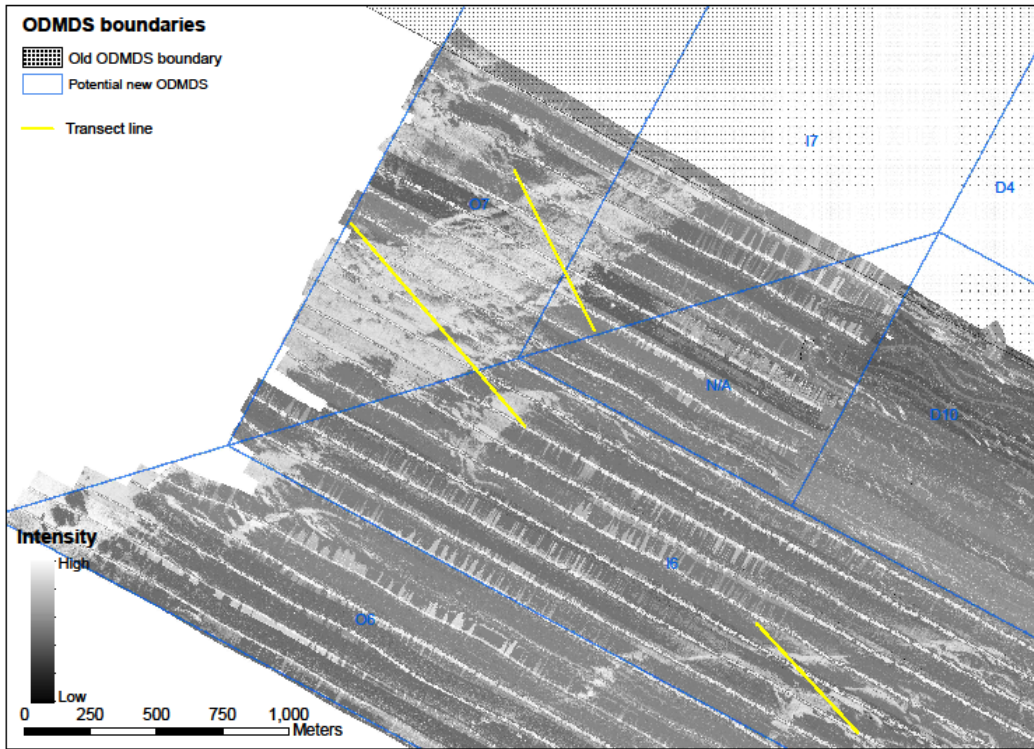
For full text description of habitat mapping, see the main report text, section 3. In brief summary, geophysical data were combined with video groundtruthing to identify areas of known hard bottom habitat, probable hard bottom habitat, and possible hard bottom habitat. These classifications were based on: 1) general interpretation of side scan sonar mosaics (areas of high backscatter intensity), 2) areas of little or no sediment cover based on interpretation of Chirp subbottom profiles (0-1 foot and 1-2 foot contour intervals), 3) cross-checking of mosaic-based interpretations with full resolution (nearly raw) side scan lines, 4) video groundtruthing. All interpretations from each of these data types were created as individual data layers in ArcGIS and overlain together for the final interpretation.

Due to excessive file size, image quality is slightly degraded in this document. Full resolution images can be found in the accompanying digital files.

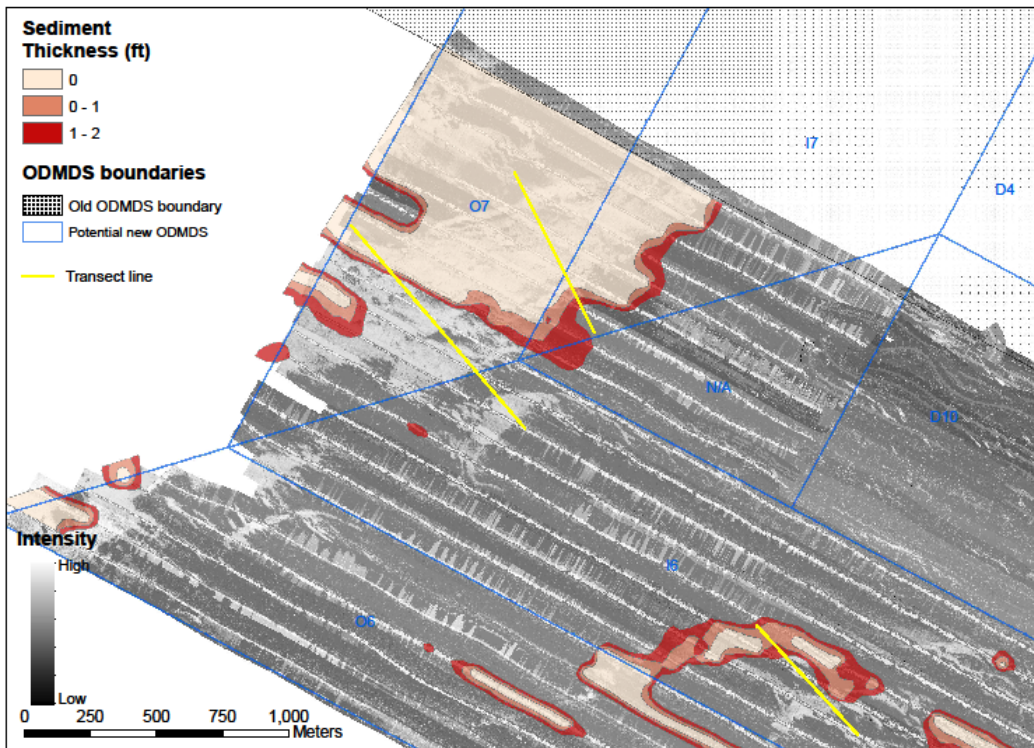


Reference map for habitat analysis in subsequent images. ‘C’ blocks refer to channel areas, numbered blocks refer to ODMDS areas.

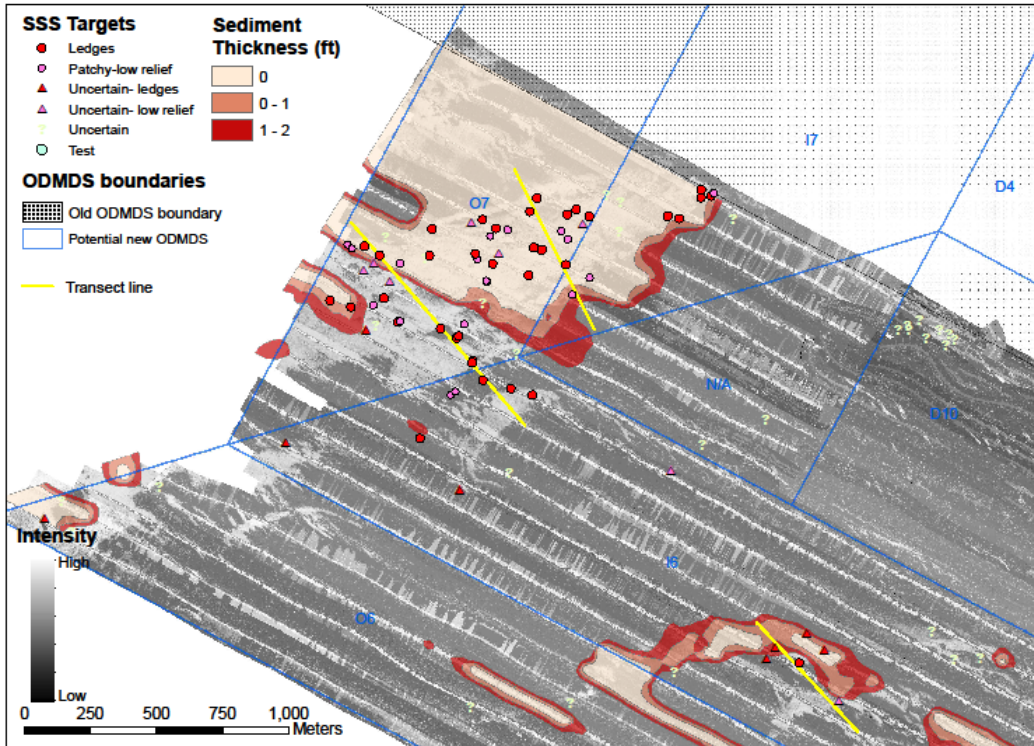
ODMDS AREA 1



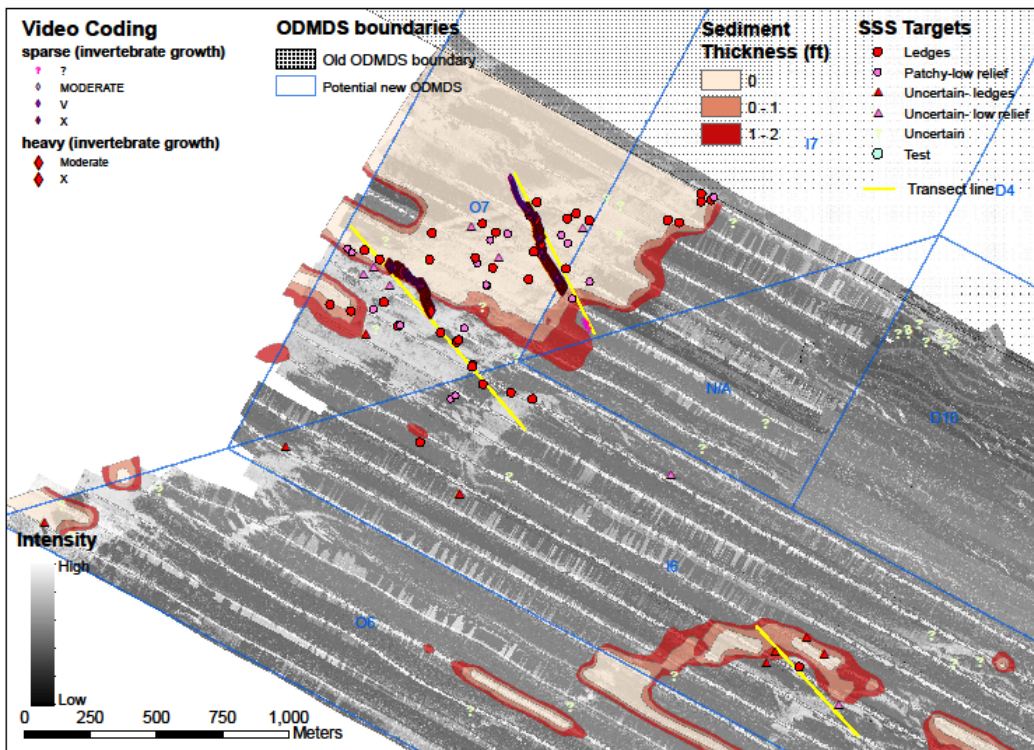
ODMDS AREA 1 Backscatter Mosaic showing video transect lines (yellow)



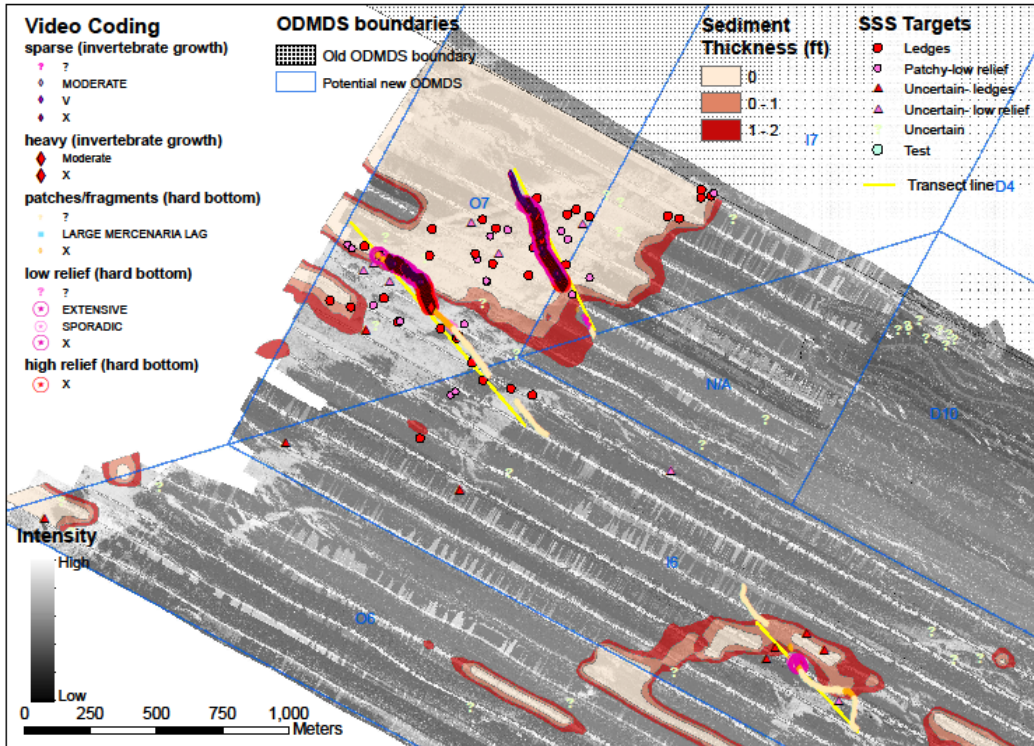
ODMDS AREA 1 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness.



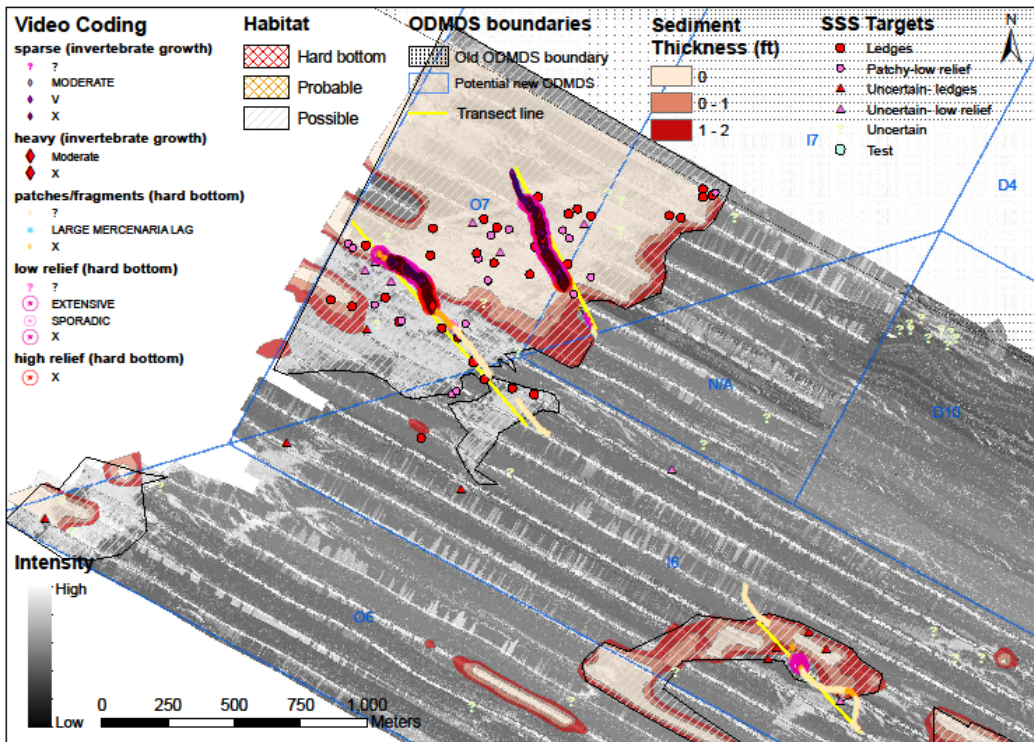
ODMDS AREA 1 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



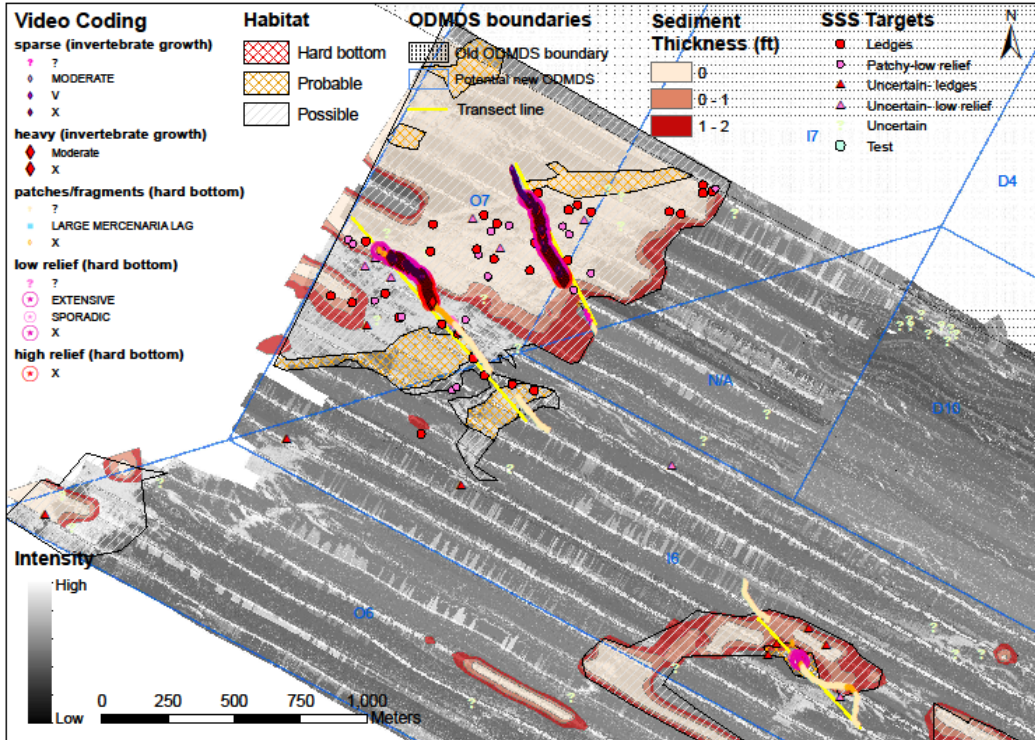
ODMDS AREA 1 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



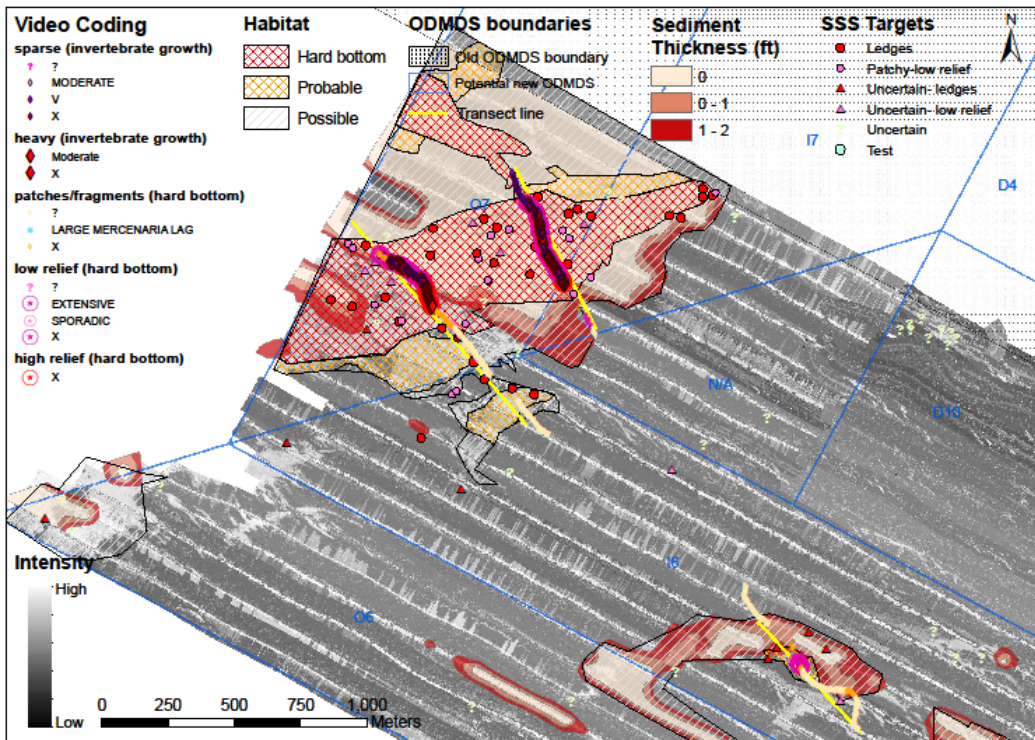
ODMDS AREA 1 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects



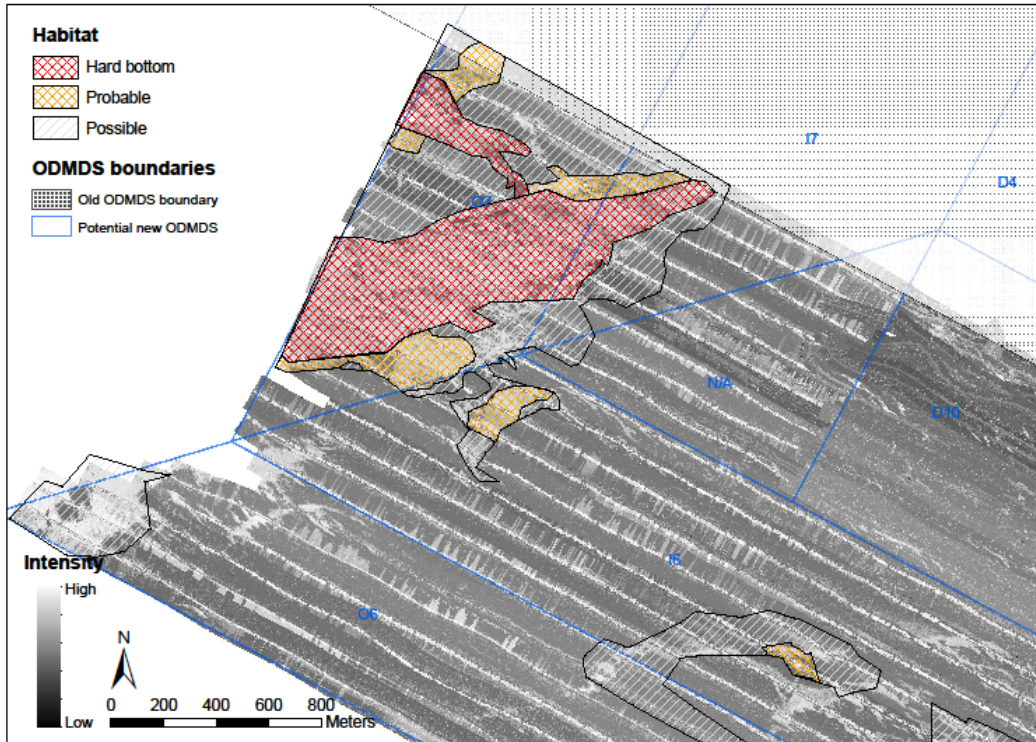
ODMDS AREA 1 Showing composite data layers and Possible Hard Bottom area



ODMDS AREA 1 Showing composite data layers with Possible and Probable Hard Bottom designated areas

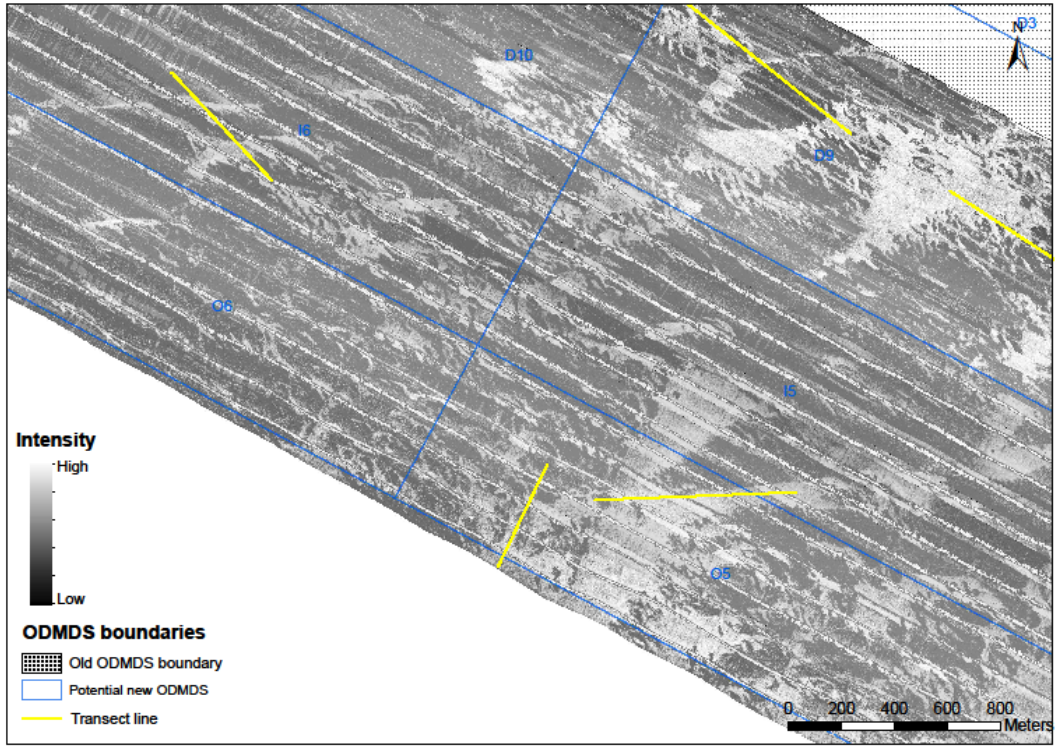


ODMDS AREA 1 Showing composite data layers with Possible, Probable and Hard Bottom designated areas.

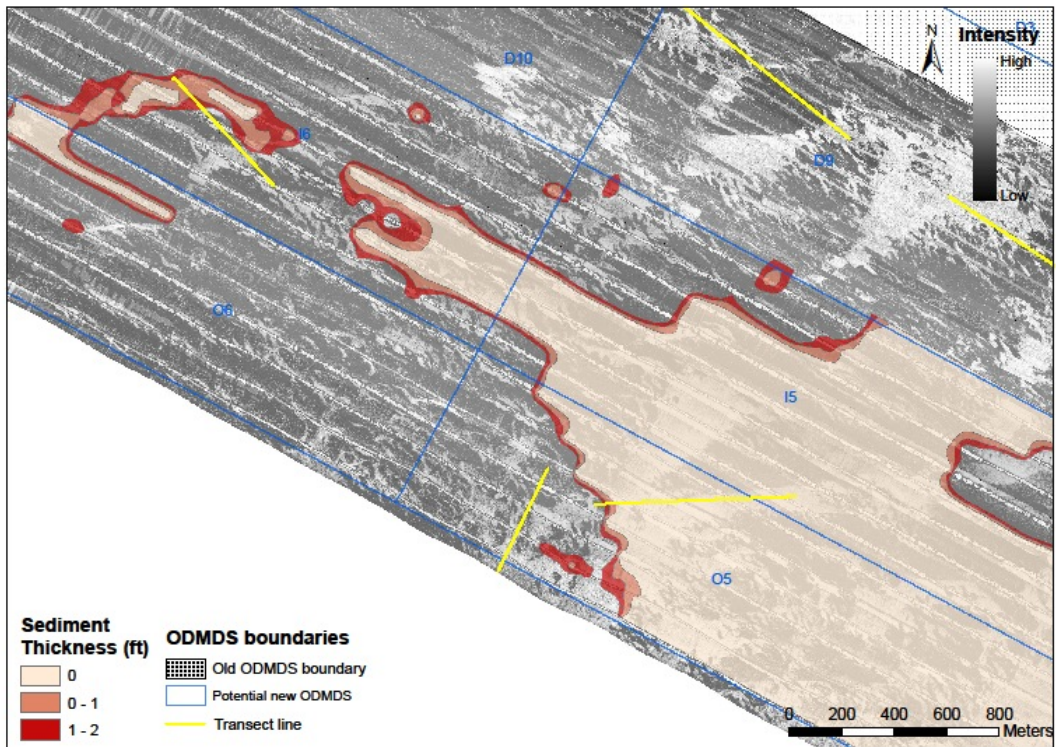


ODMDS AREA 1 Showing Backscatter Mosaic with Possible, Probable and Hard Bottom designated areas

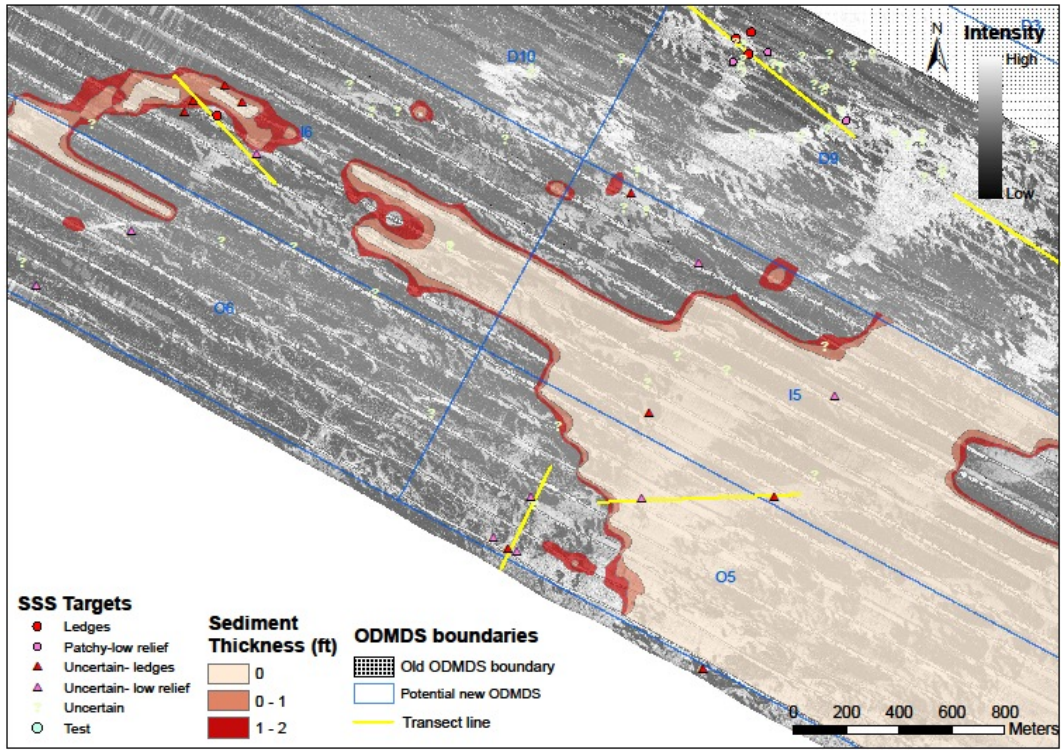
ODMDS AREA 2



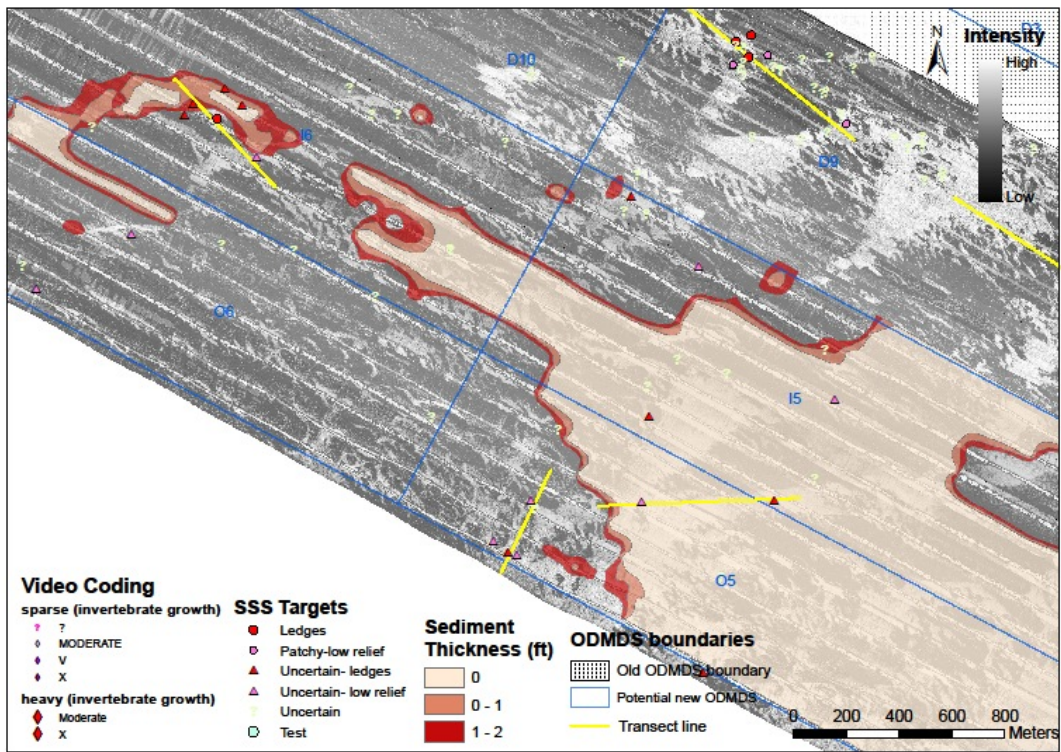
ODMDS AREA 2 Backscatter Mosaic



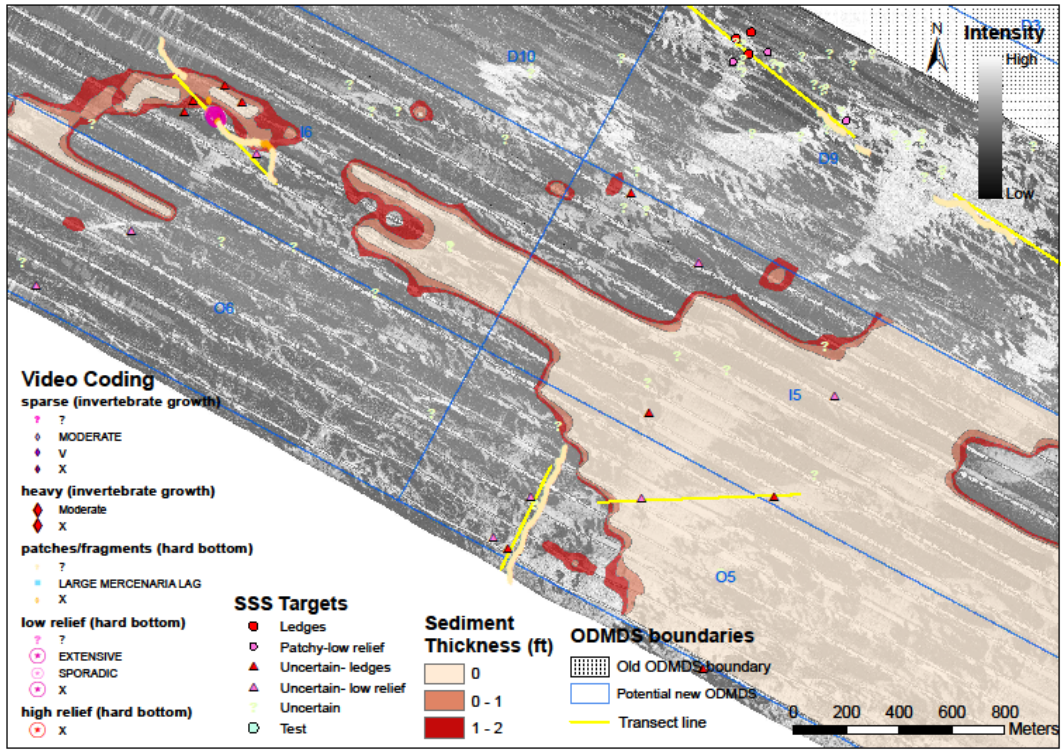
ODMDS AREA 2 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness.



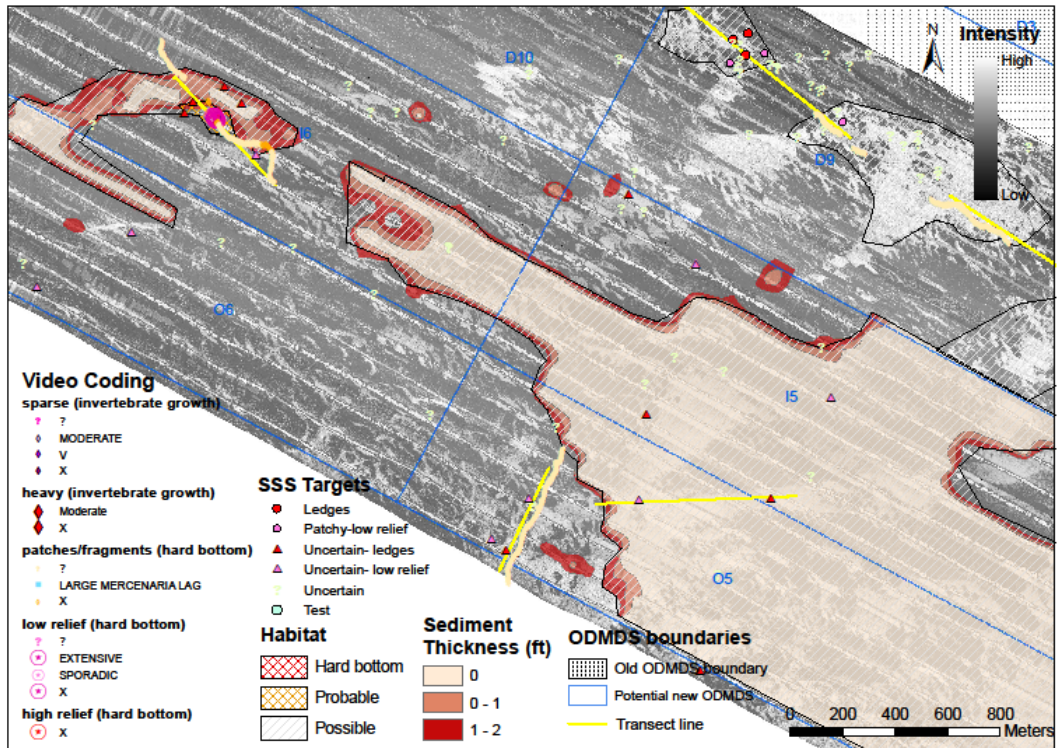
ODMDS AREA 2 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



ODMDS AREA 2 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects

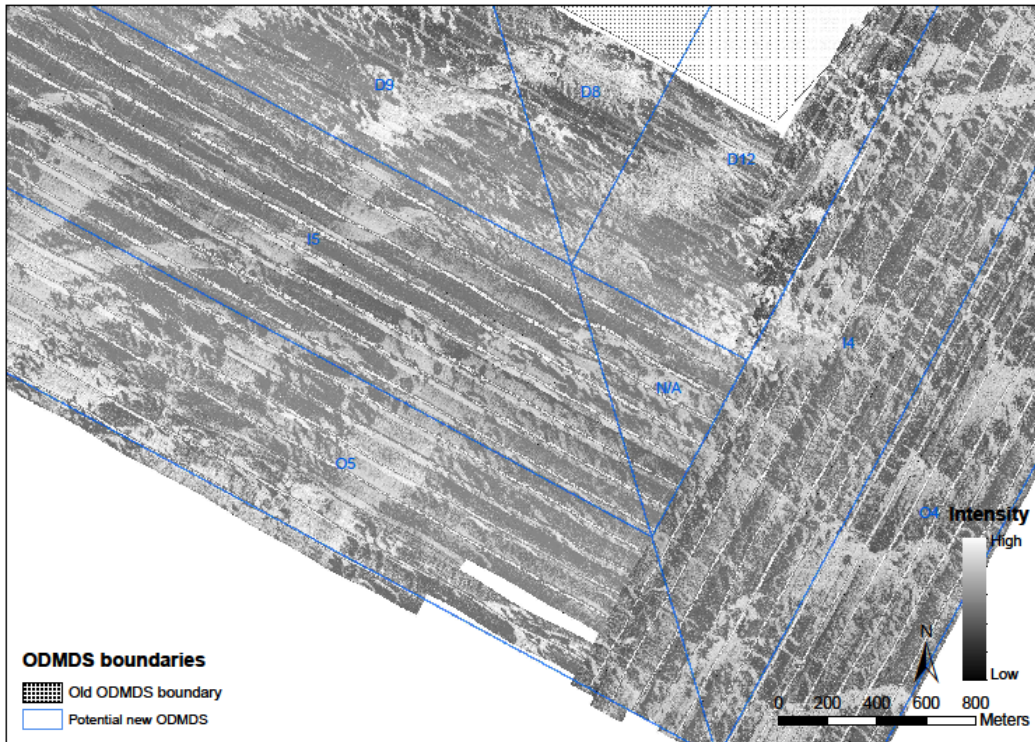


ODMDS AREA 2 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects

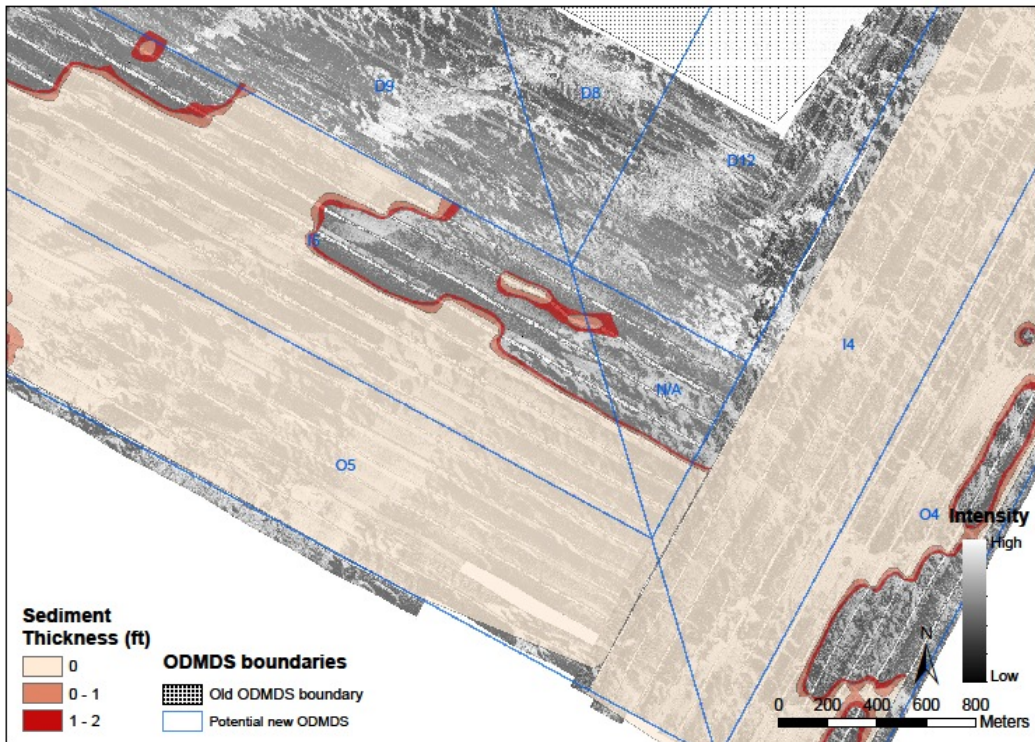


ODMDS AREA 2 Showing composite data layers and Possible Hard Bottom area

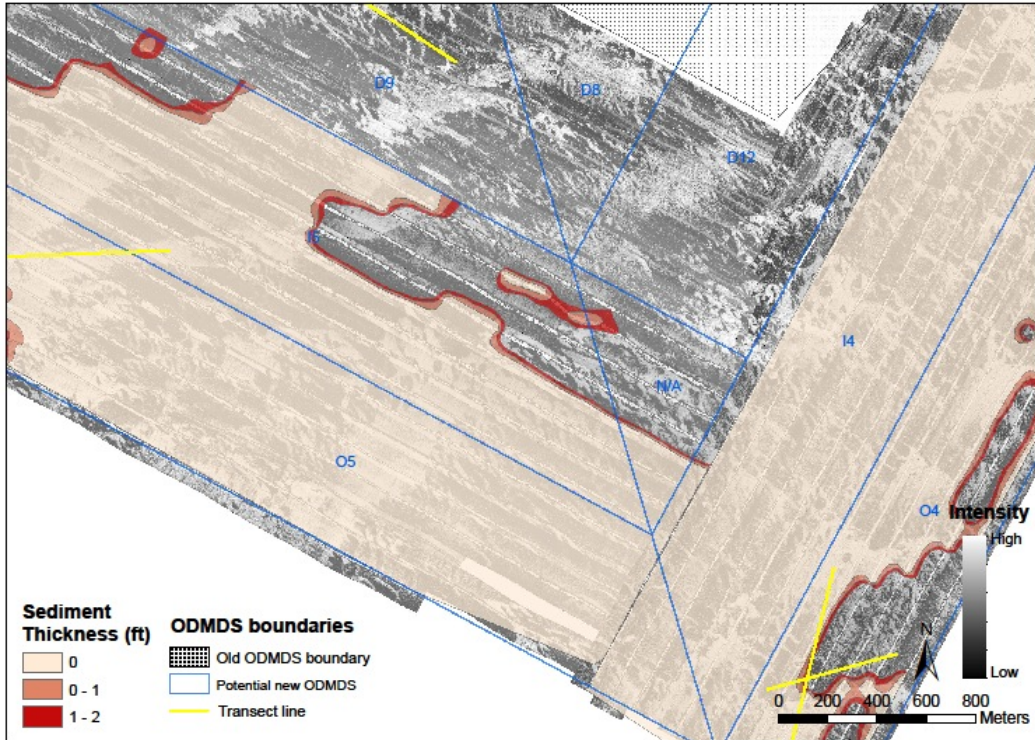
ODMDS AREA 3



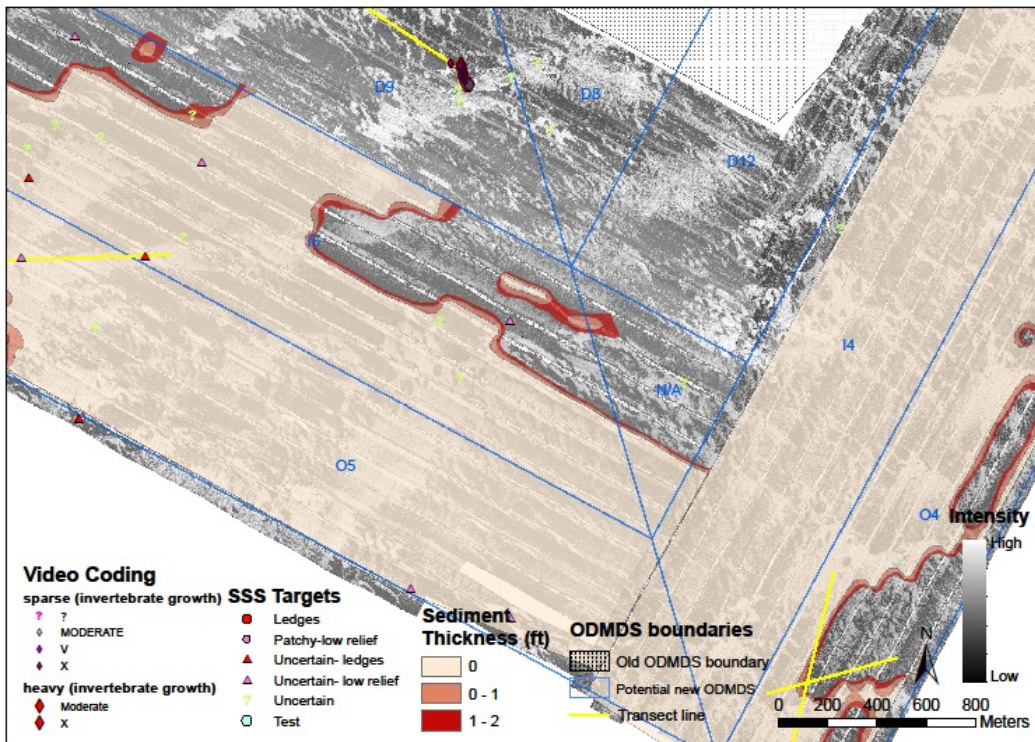
ODMDS AREA 3 Backscatter Mosaic



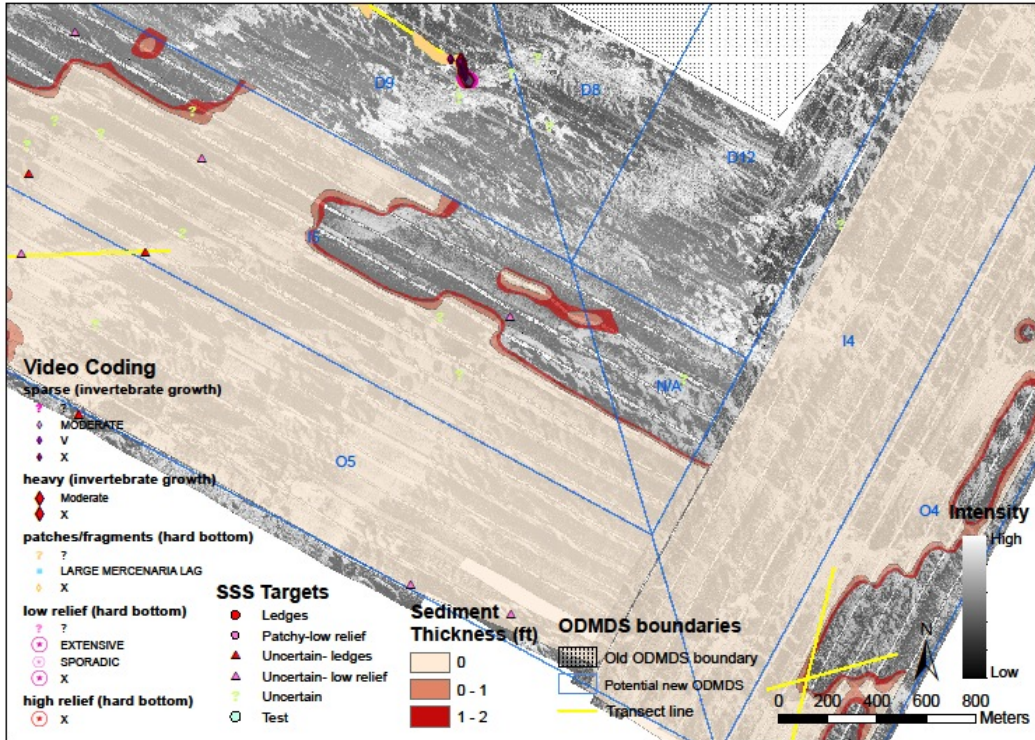
ODMDS AREA 3 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



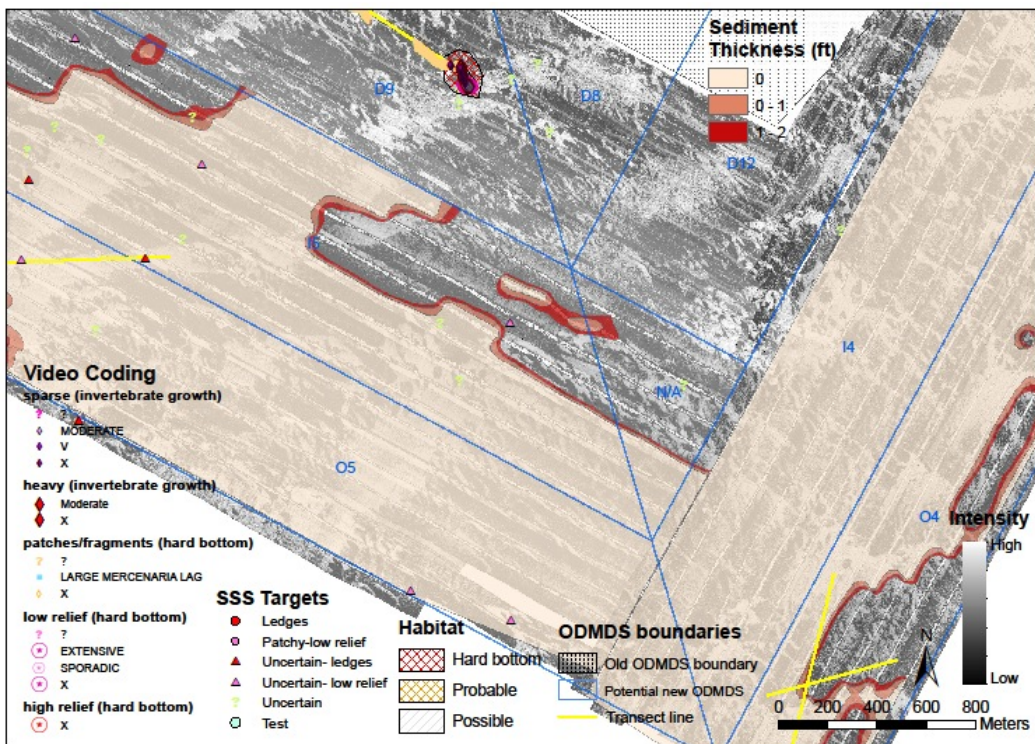
ODMDS AREA 3 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



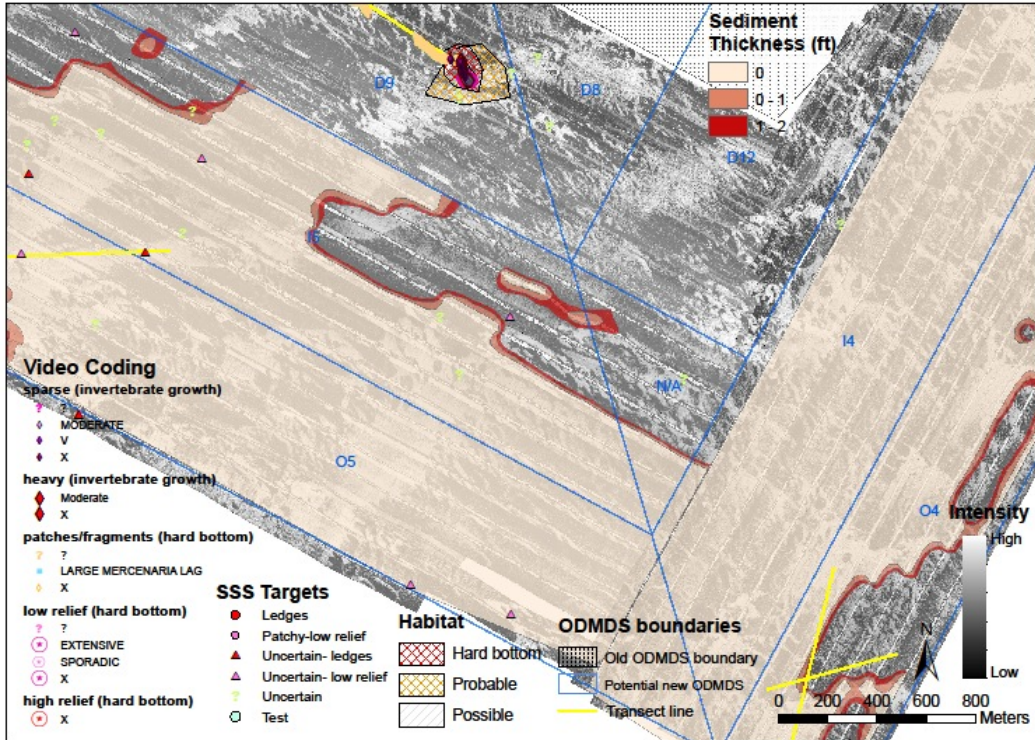
ODMDS AREA 3 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



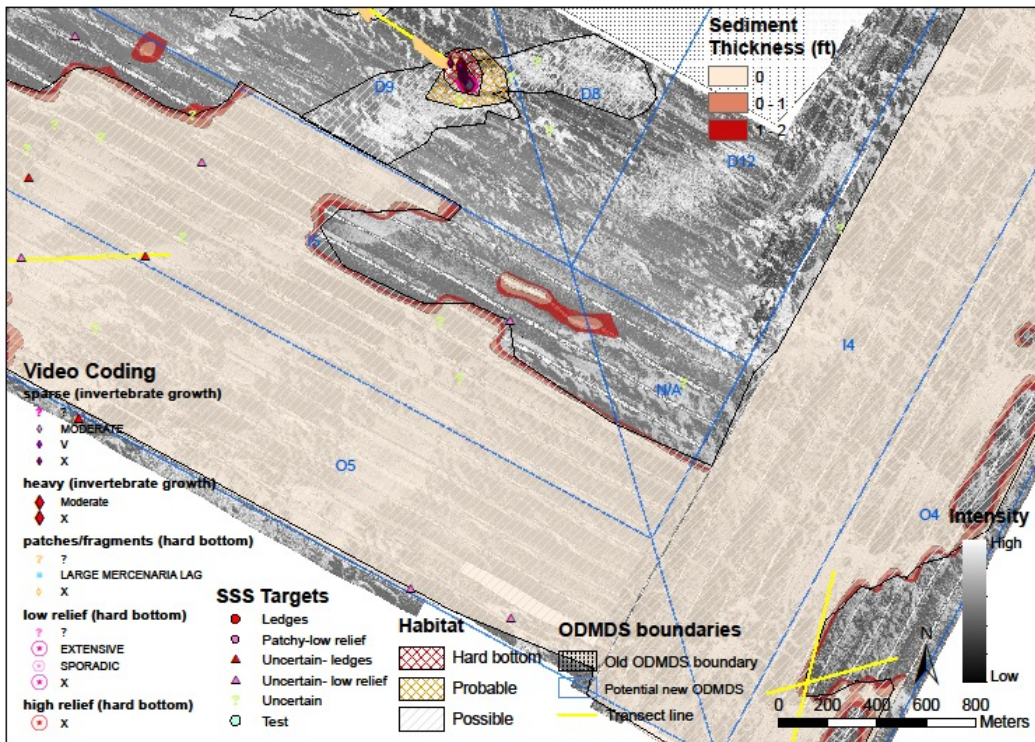
ODMDS AREA 3 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects



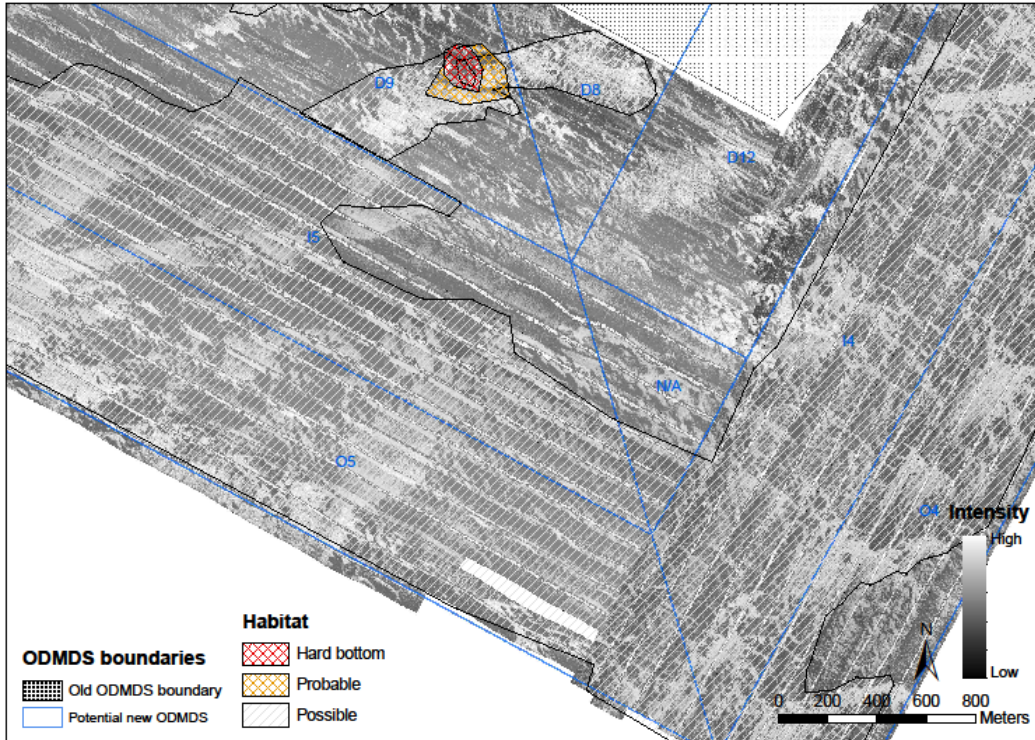
ODMDS AREA 3 Showing composite data layers and P Hard Bottom area



ODMDS AREA 3 Showing composite data layers with Probable and Hard Bottom designated areas

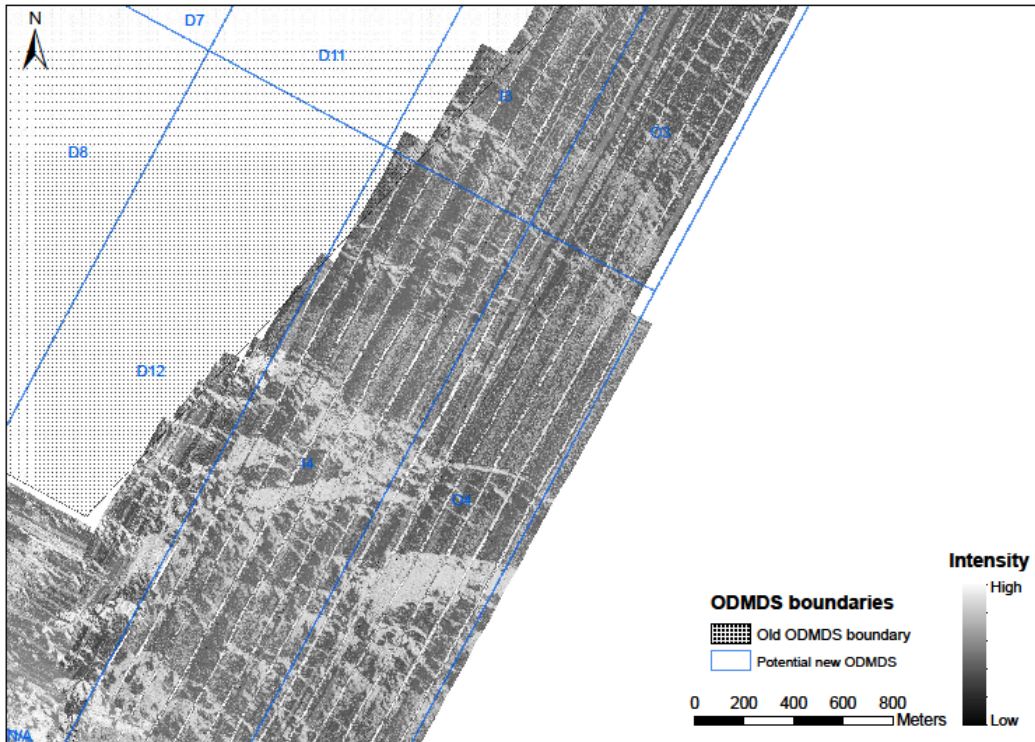


ODMDS AREA 3 Showing composite data layers with Possible, Probable and Hard Bottom designated areas

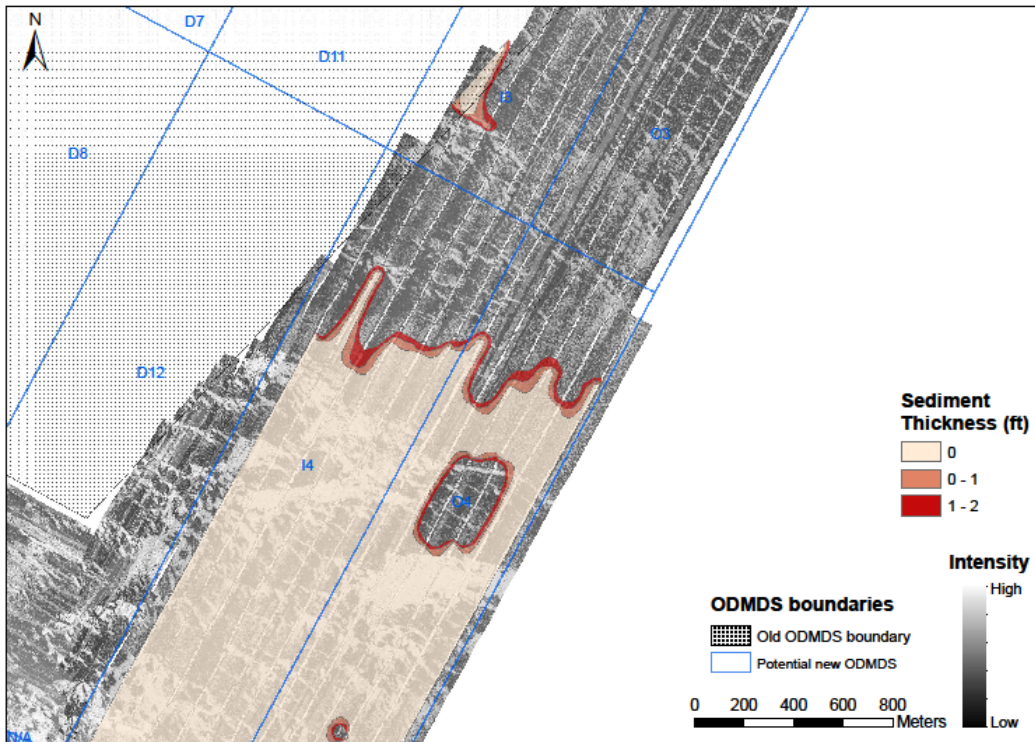


ODMDS AREA 3 Showing composite data layers with Possible, Probable and Hard Bottom designated areas

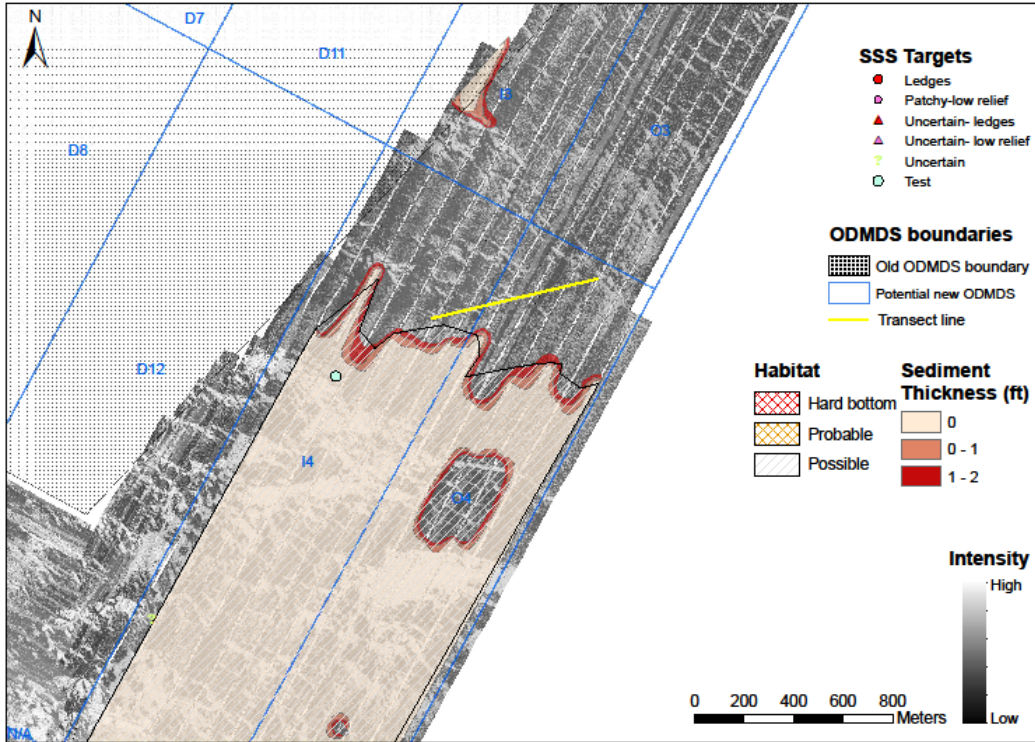
ODMDS AREA 4



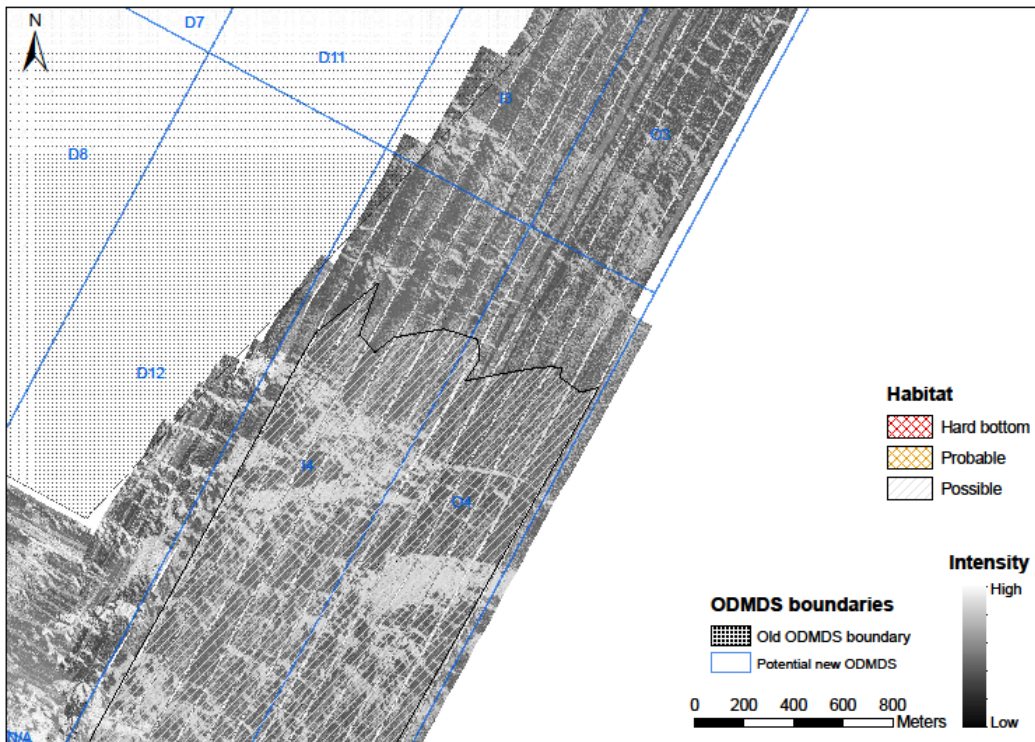
ODMDS AREA 4 Backscatter Mosaic



ODMDS AREA 4 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness

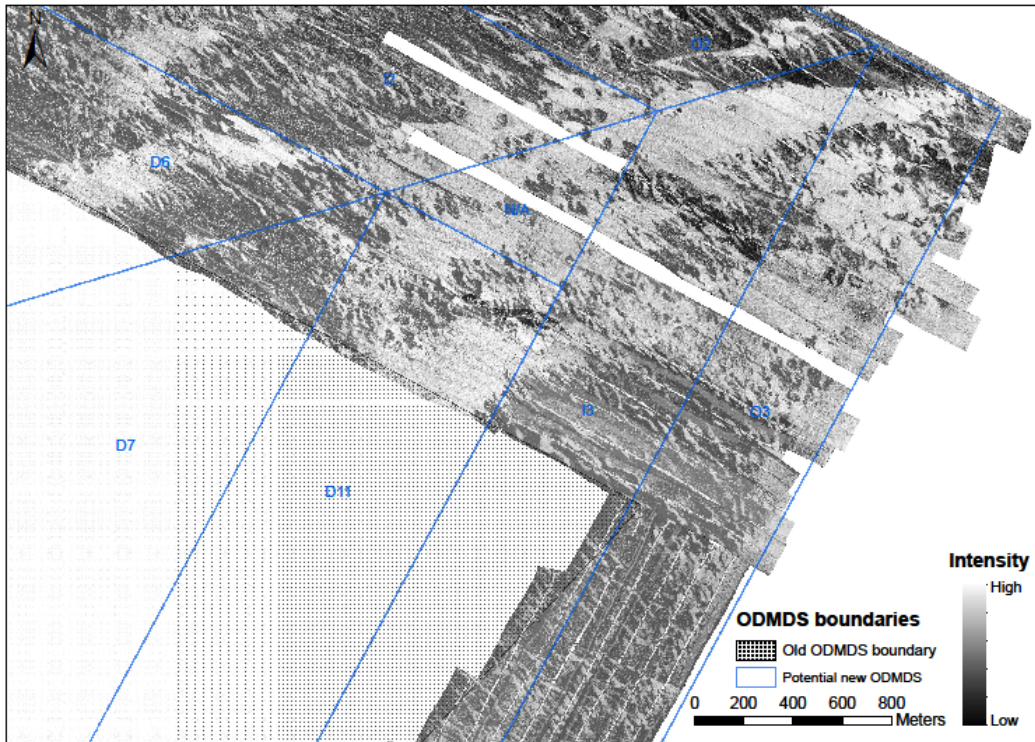


ODMDS AREA 4 Showing composite data layers with Possible, Probable and Hard Bottom designated areas

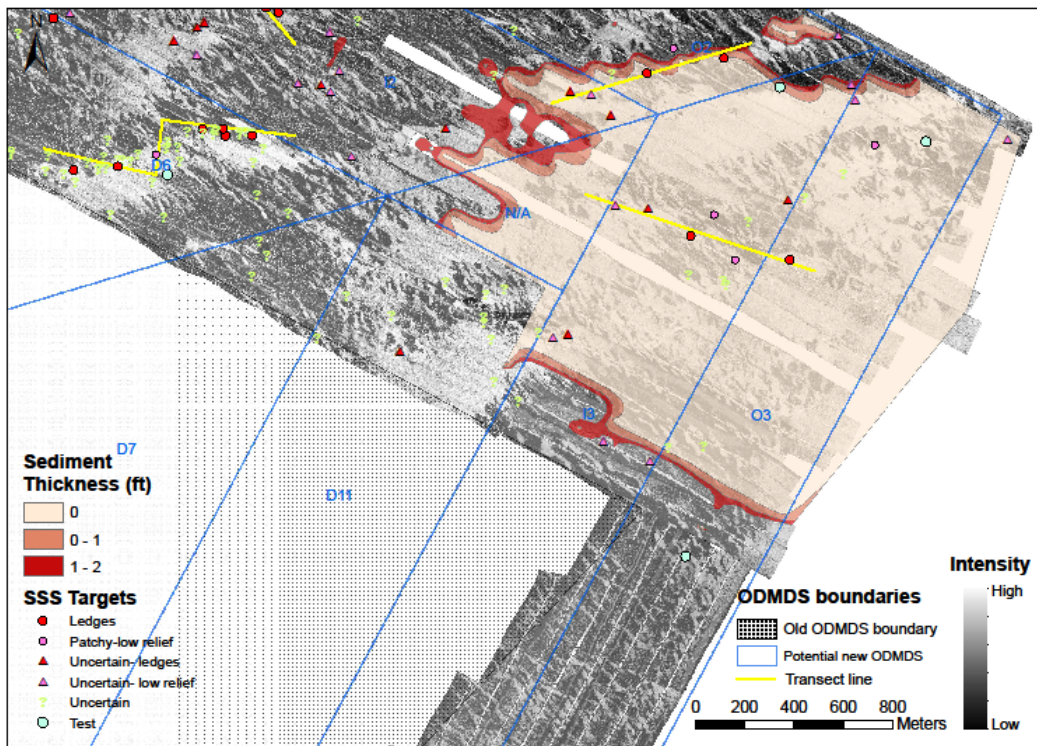


ODMDS AREA 4 Showing composite data layers with Possible, Probable and Hard Bottom designated areas

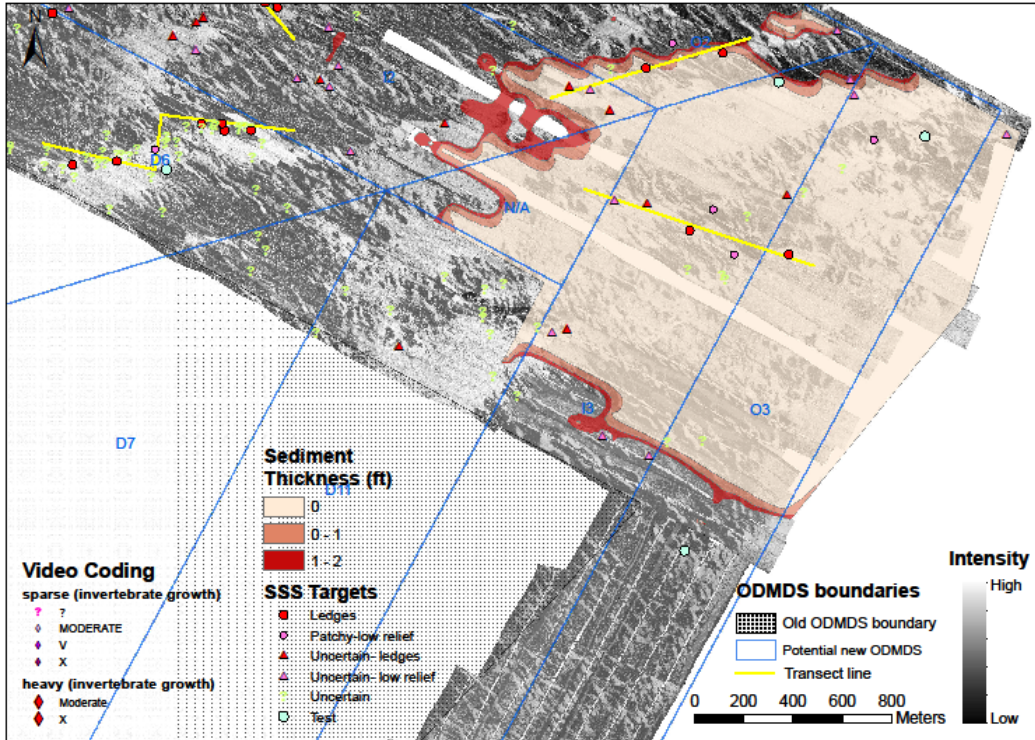
ODMDS AREA 5



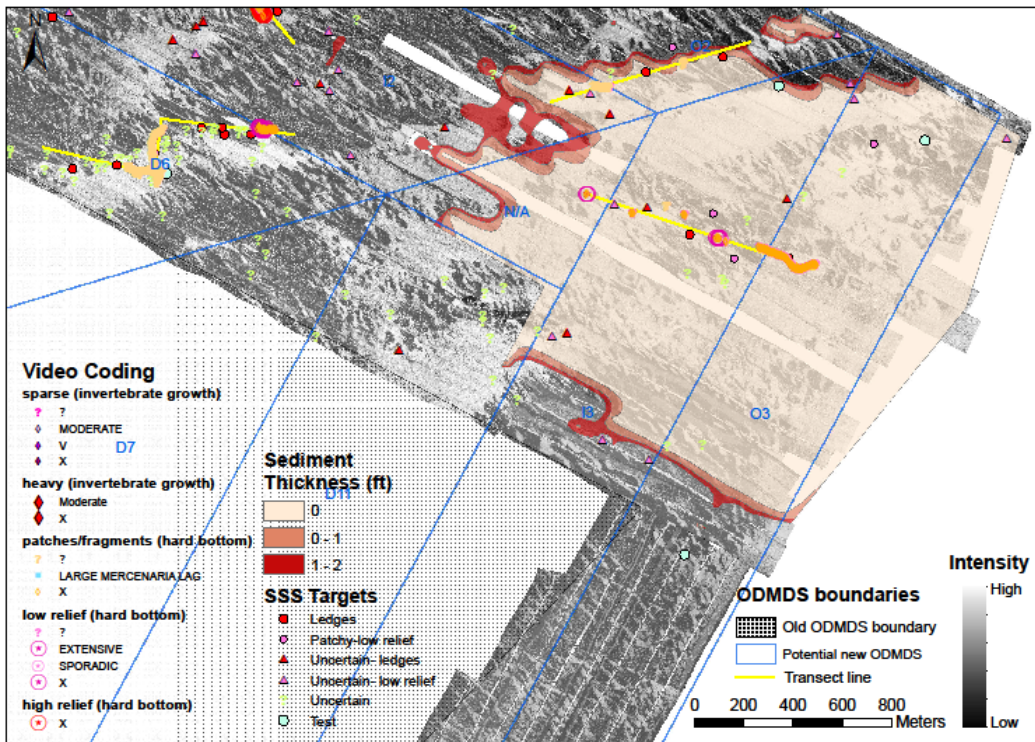
ODMDS AREA 5 Backscatter Mosaic



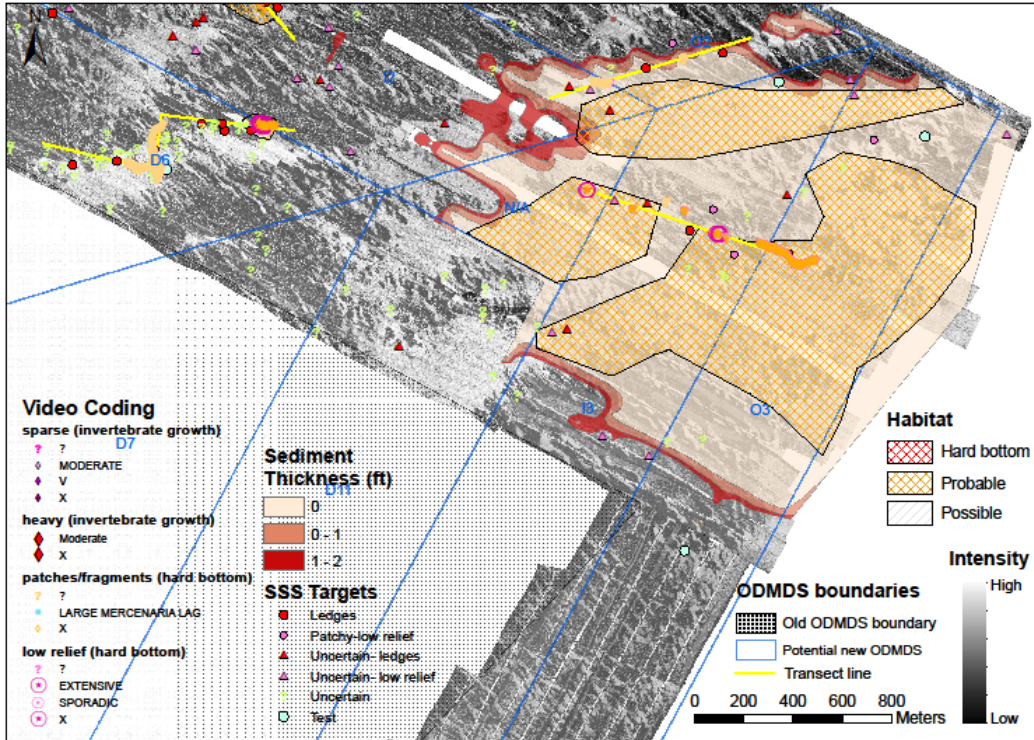
ODMDS AREA 5 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



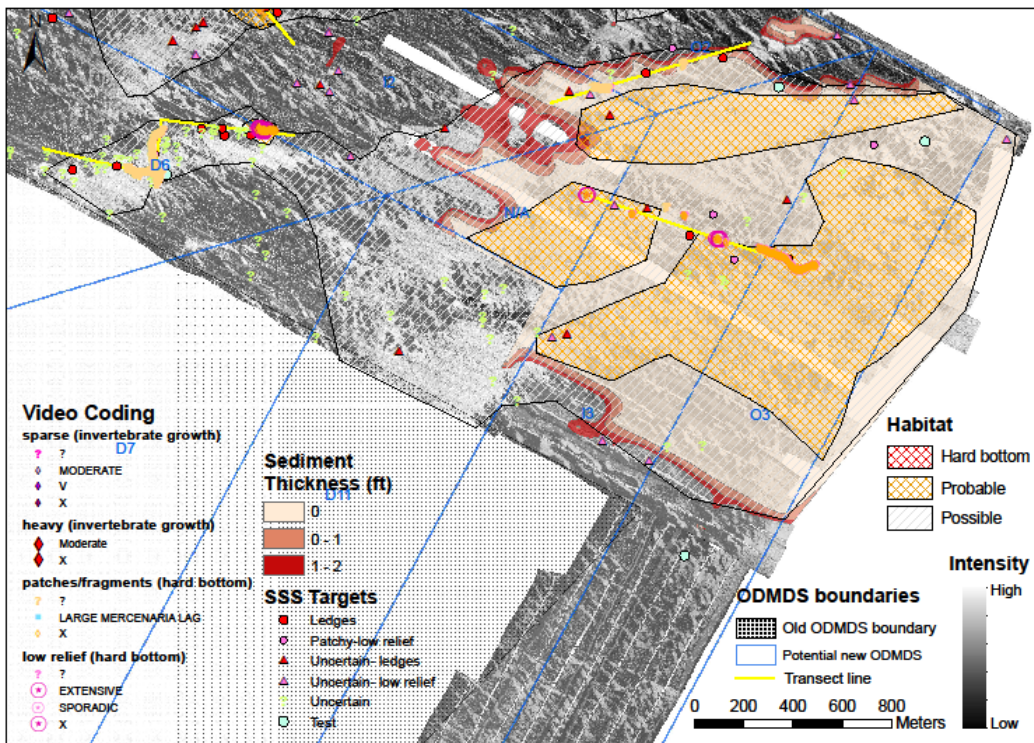
ODMDS AREA 5 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



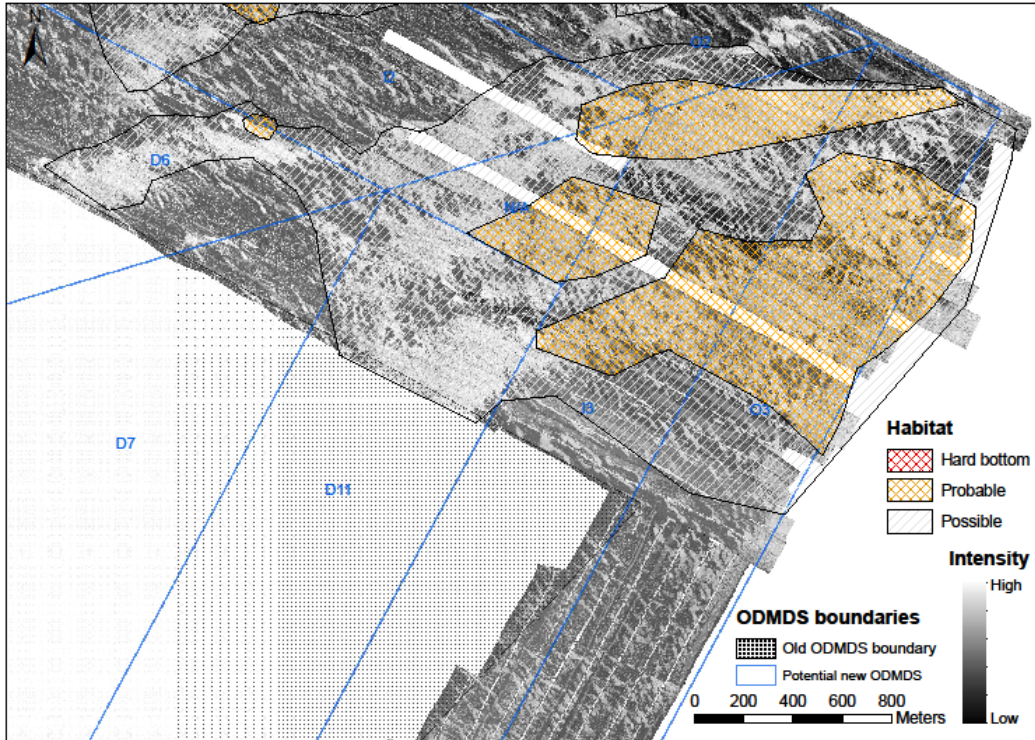
ODMDS AREA 5 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects



ODMDS AREA 5 Showing composite data layers and Hard Bottom and Probable Hard Bottom areas

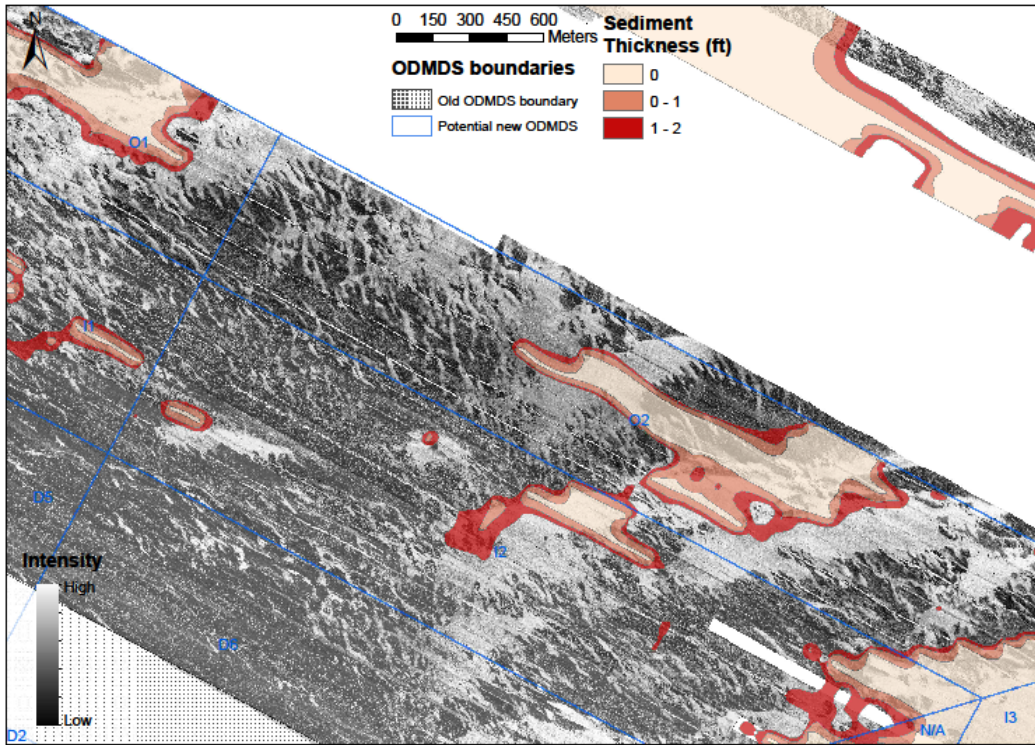


ODMDS AREA 5 Showing composite data layers and Hard Bottom, Probable and Hard Bottom areas

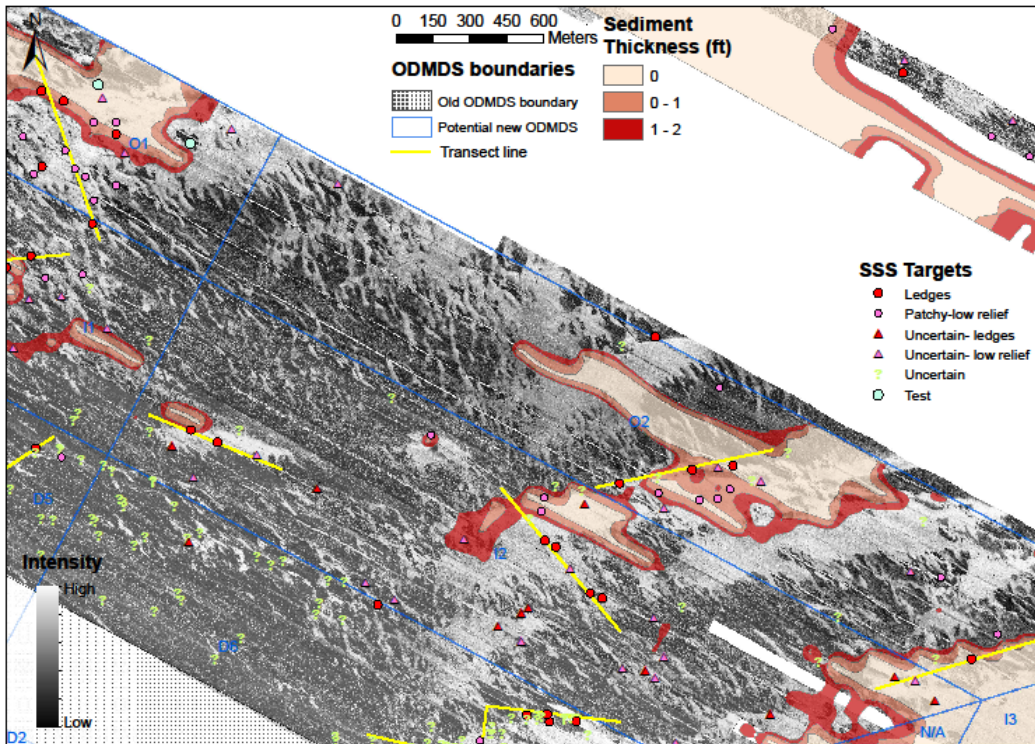


ODMDS AREA 5 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

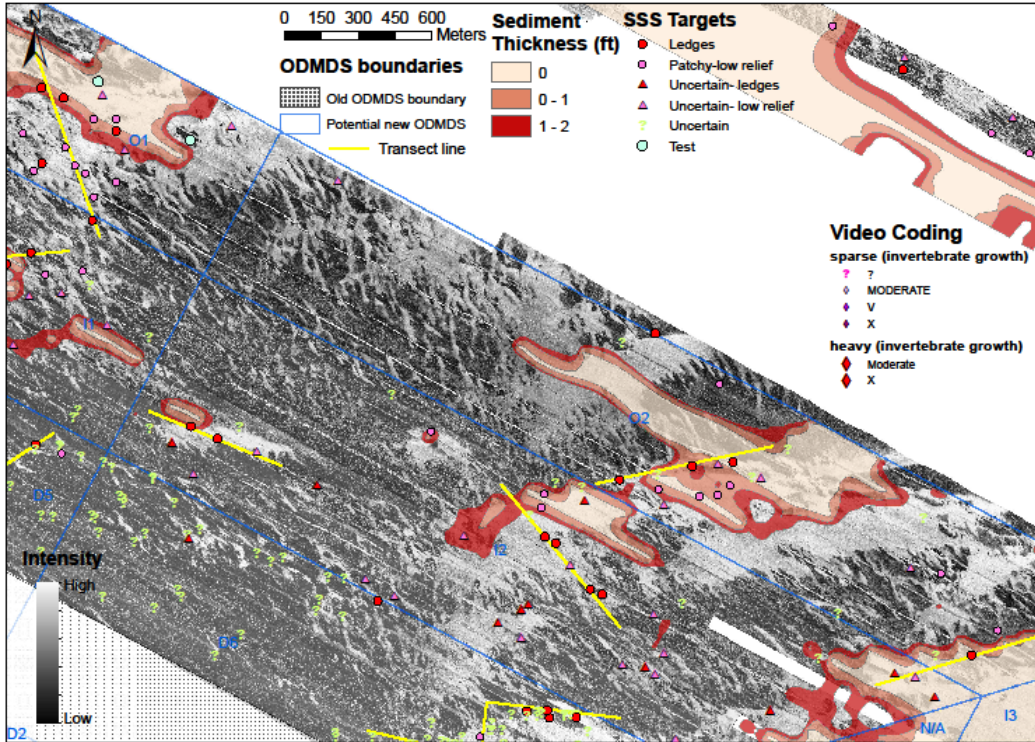
ODMDS AREA 6



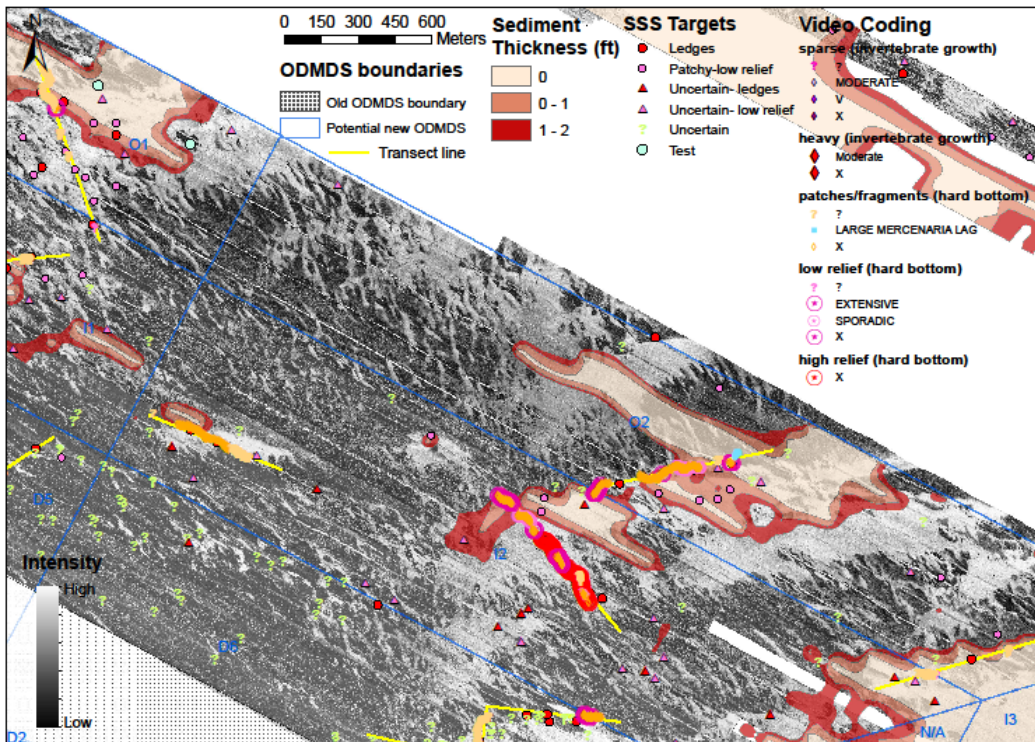
ODMDS AREA 6 Showing backscatter mosaic and areas of limited surficial sediment



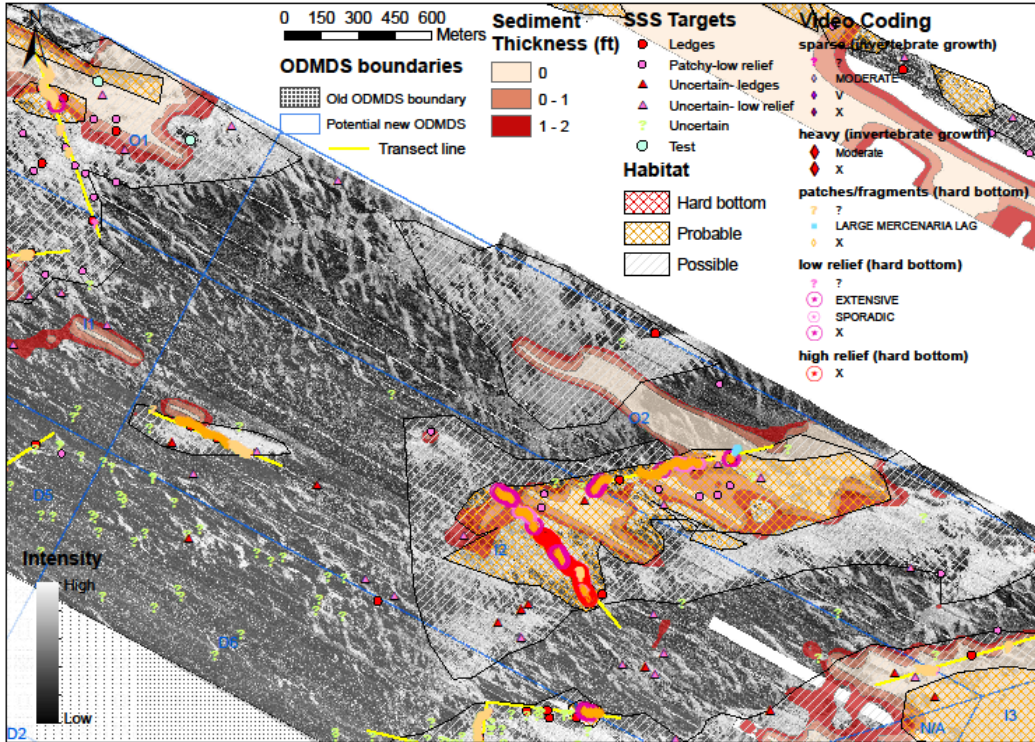
ODMDS AREA 6 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



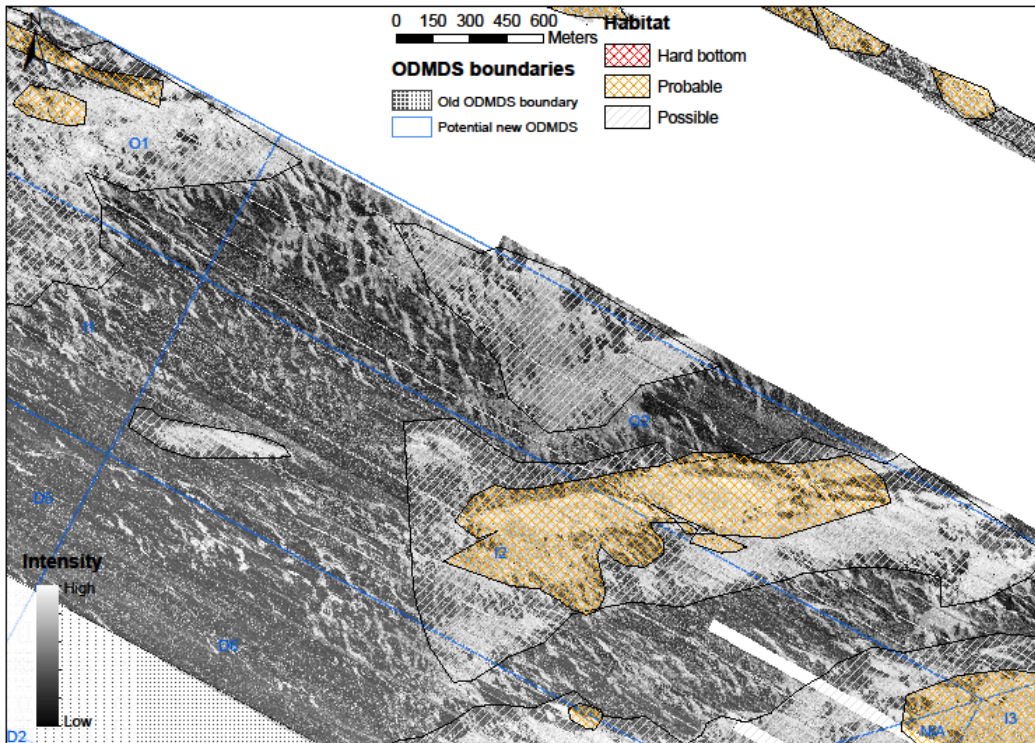
ODMDS AREA 6 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



ODMDS AREA 6 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects

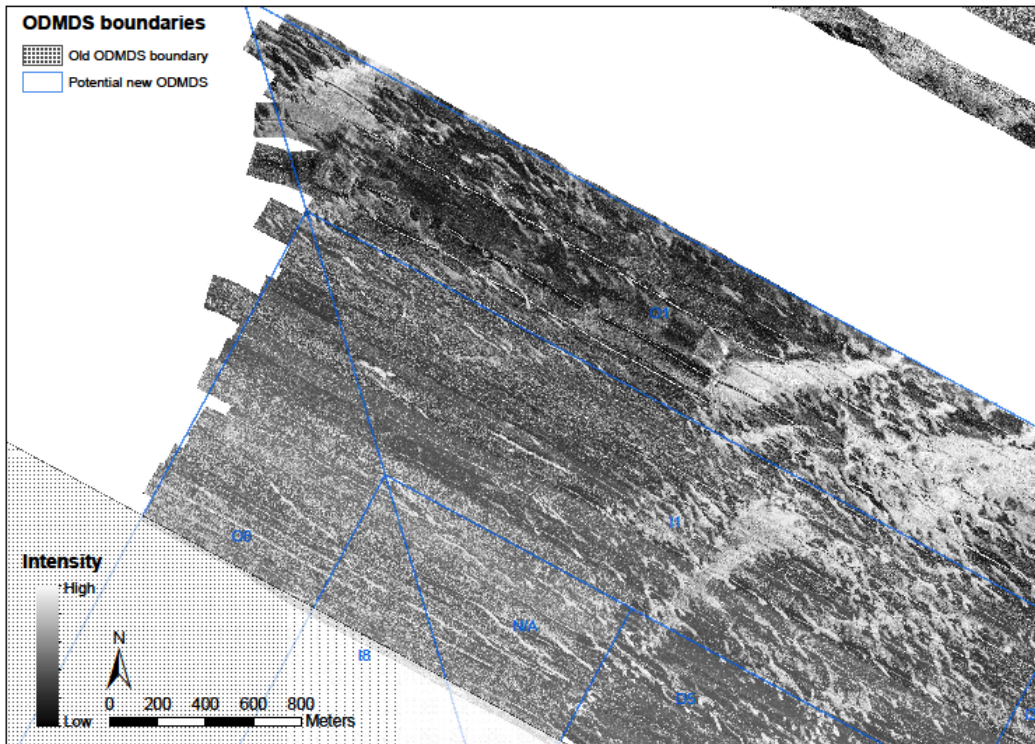


ODMDS AREA 6 Showing composite data layers and Possible, Probable and Hard Bottom areas

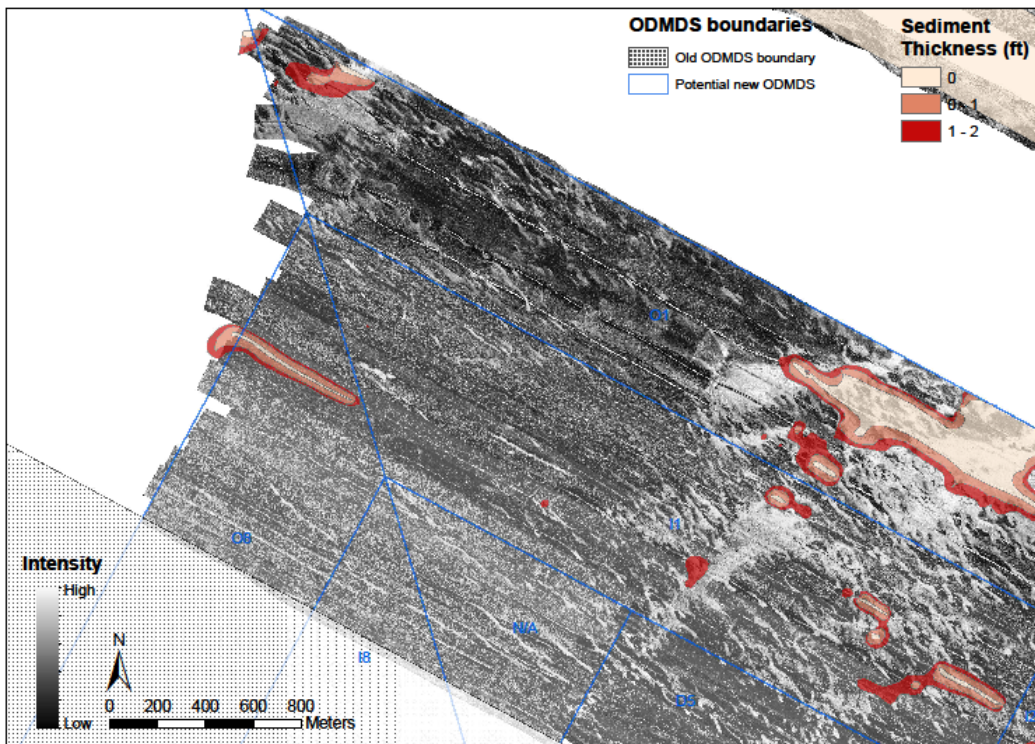


ODMDS AREA 6 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

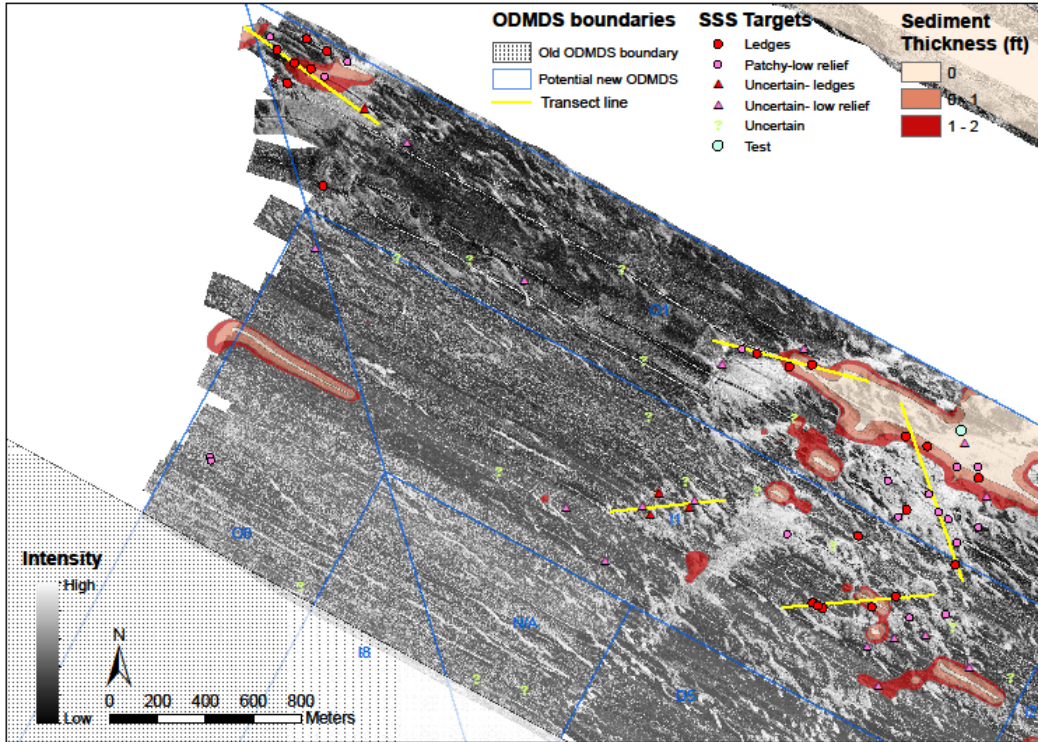
ODMDS AREA 7



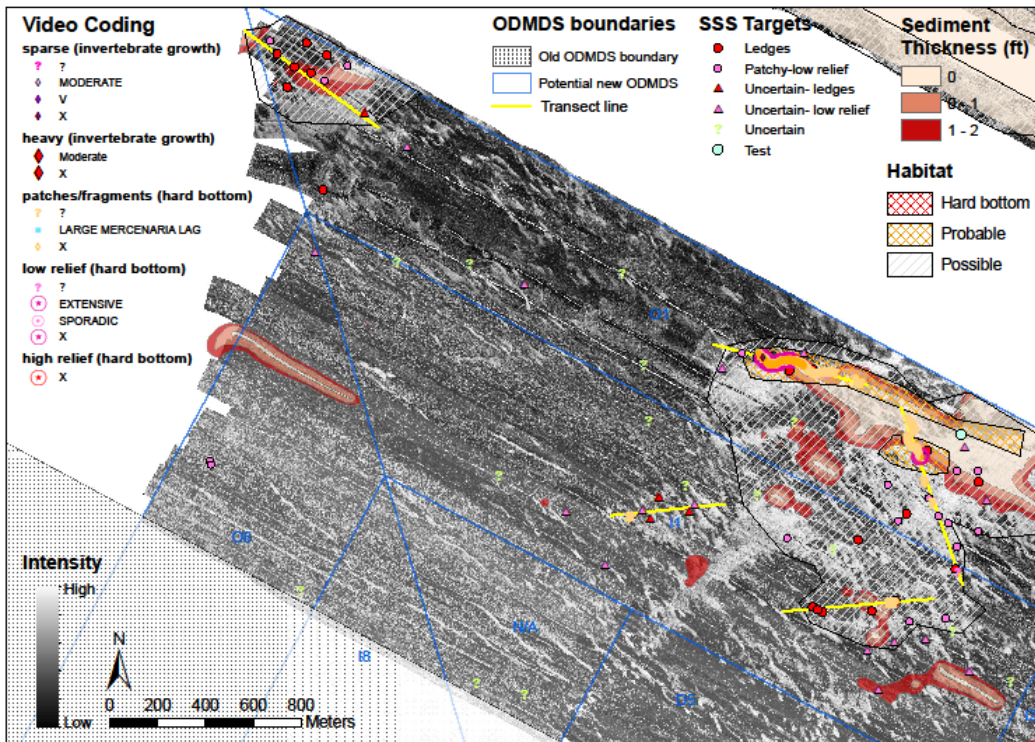
ODMDS AREA 7 Showing backscatter mosaic and areas of limited surficial sediment



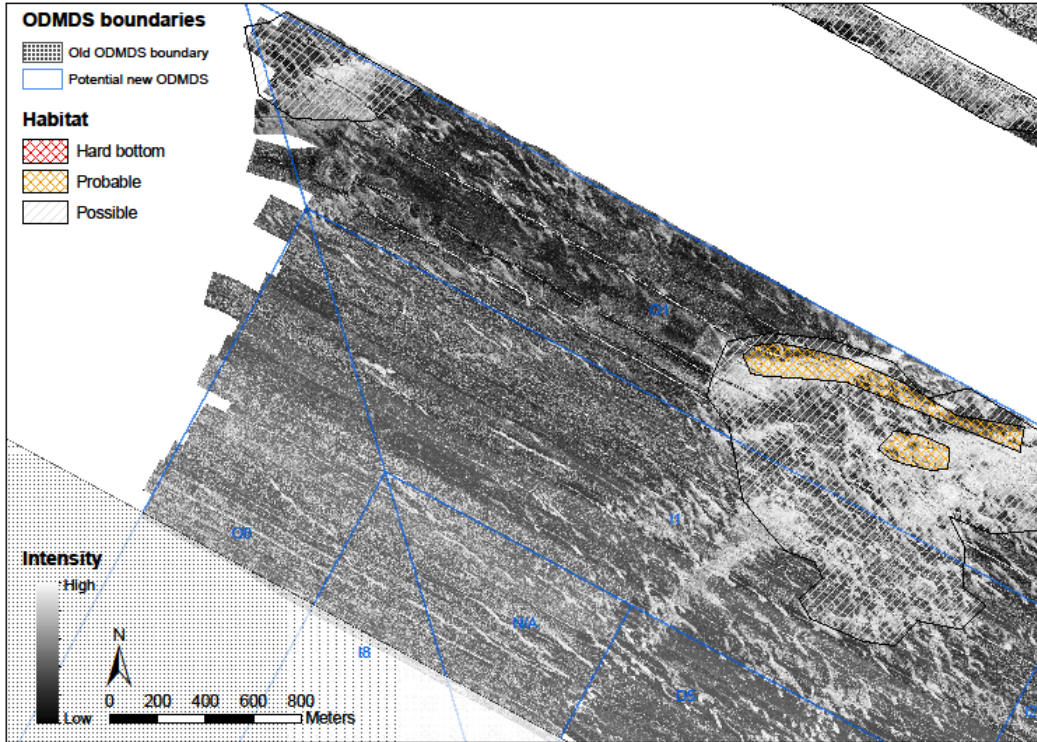
ODMDS AREA 7 Showing backscatter mosaic and areas of limited surficial sediment



ODMDS AREA 6 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records

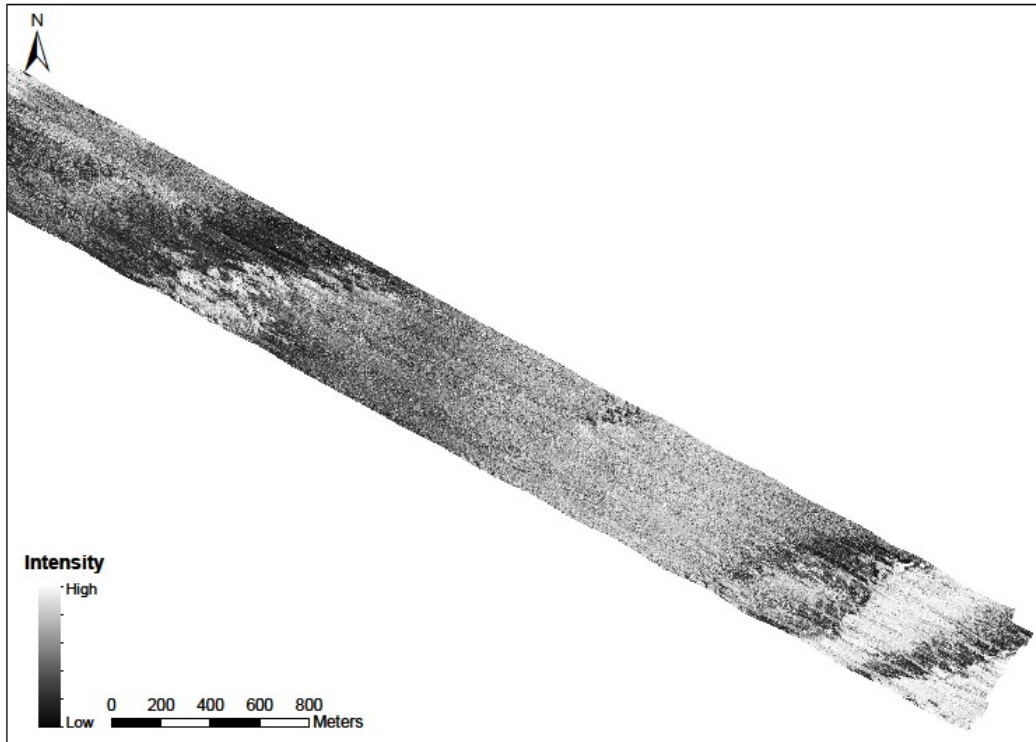


ODMDS AREA 7 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects and Hard Bottom, Probable and Hard Bottom areas

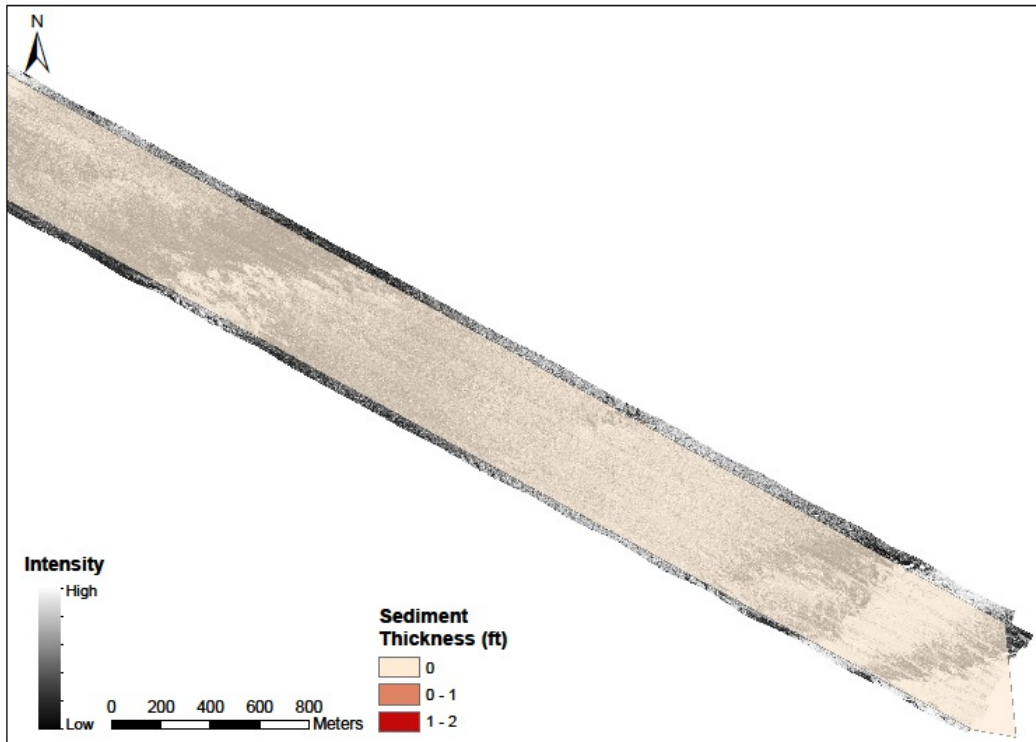


ODMDS AREA 7 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

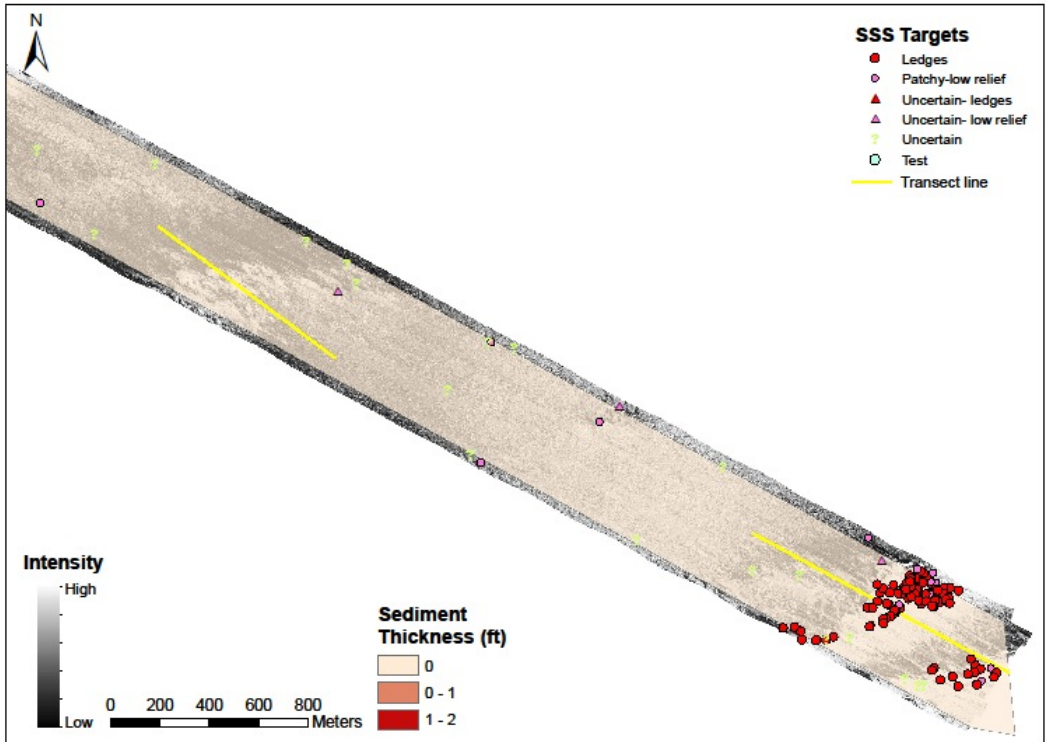
CHANNEL AREA 1



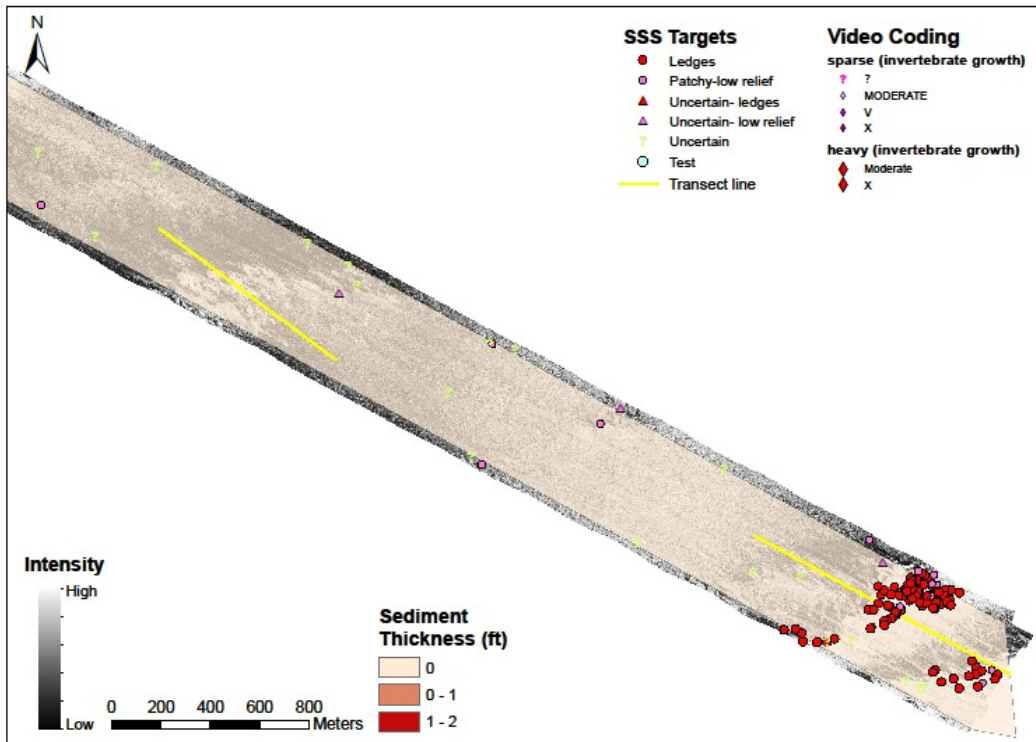
CHANNEL AREA 1 Backscatter Mosaic



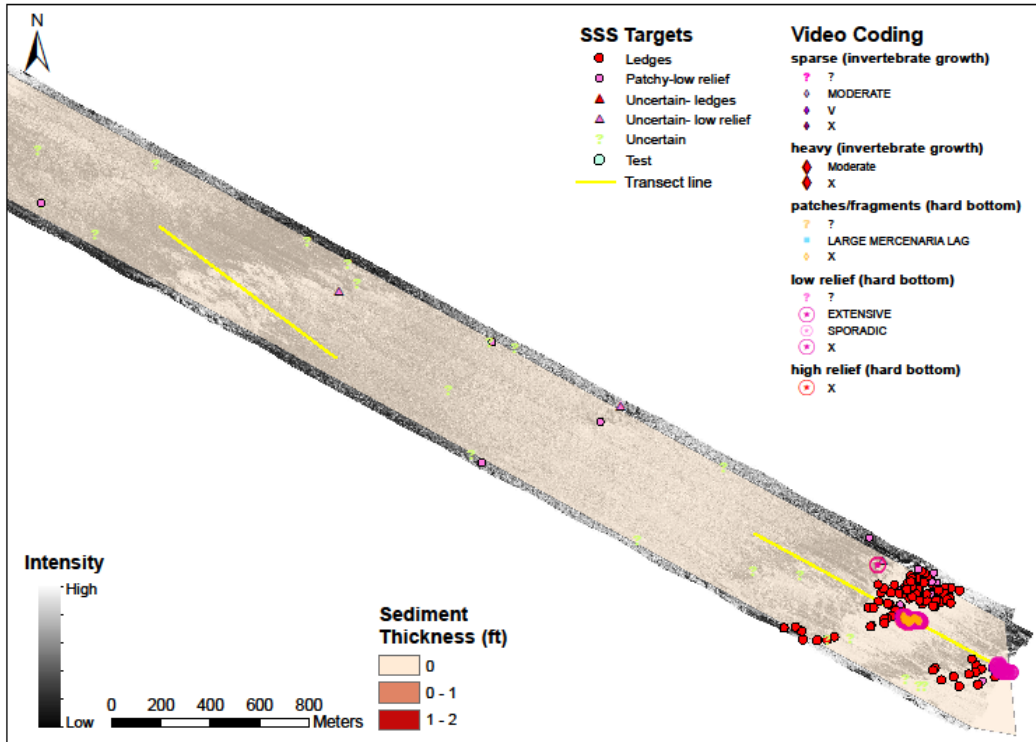
CHANNEL AREA 1 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



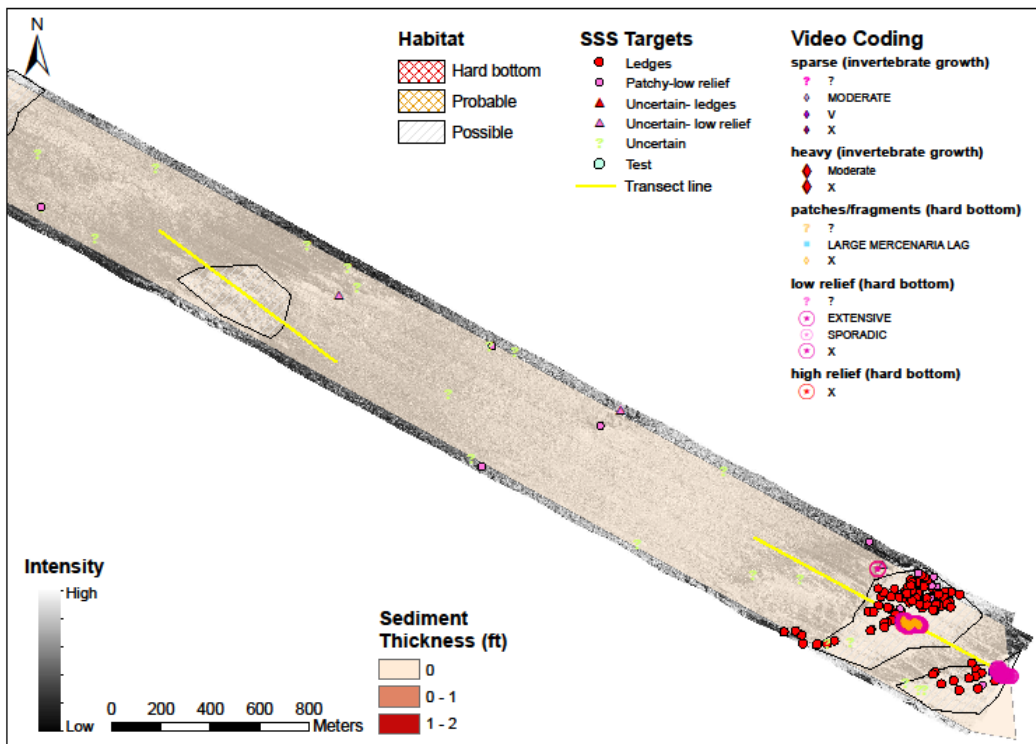
CHANNEL AREA 1 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



CHANNEL AREA 1 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects

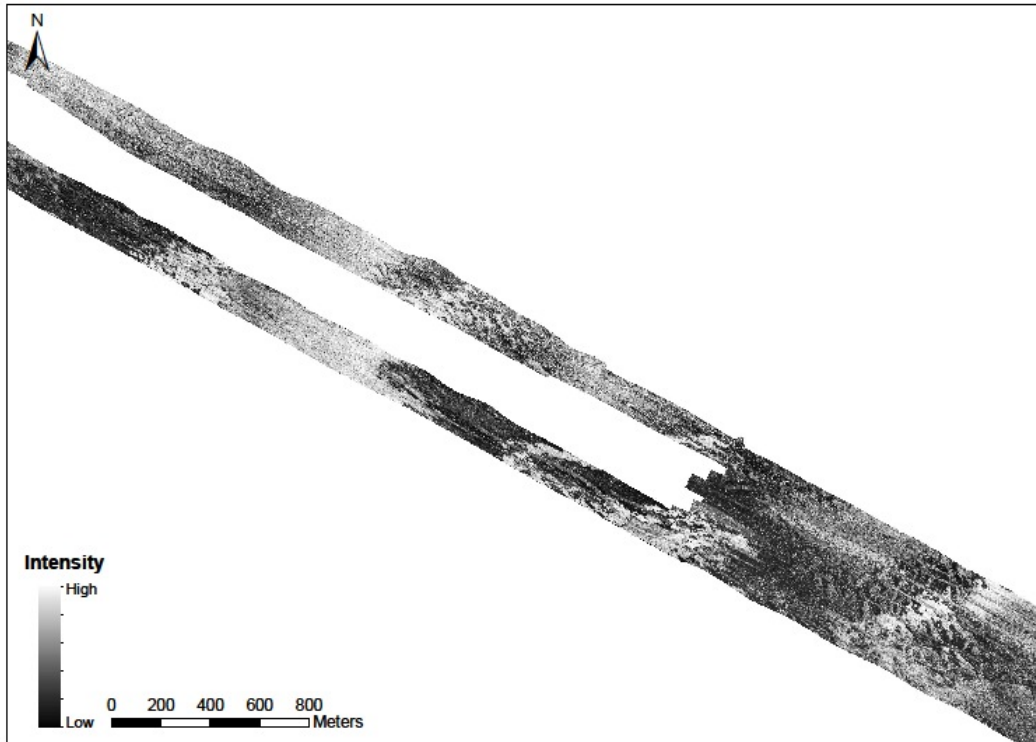


CHANNEL AREA 1 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects

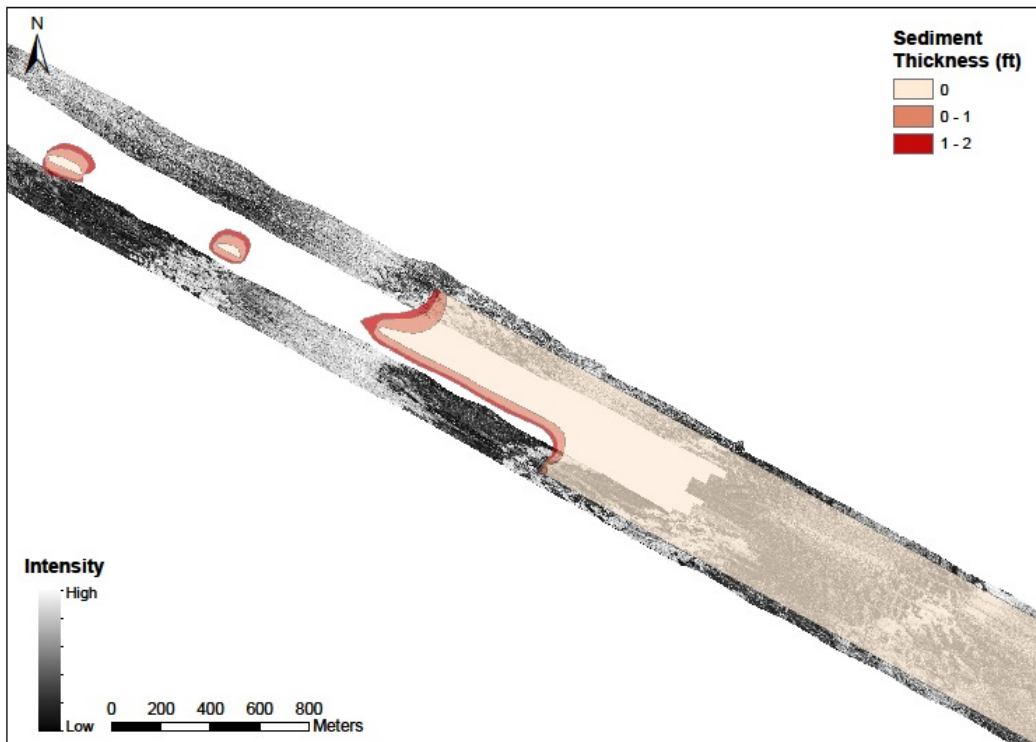


CHANNEL AREA 1 Showing composite data layers and Possible, Probable and Hard Bottom areas

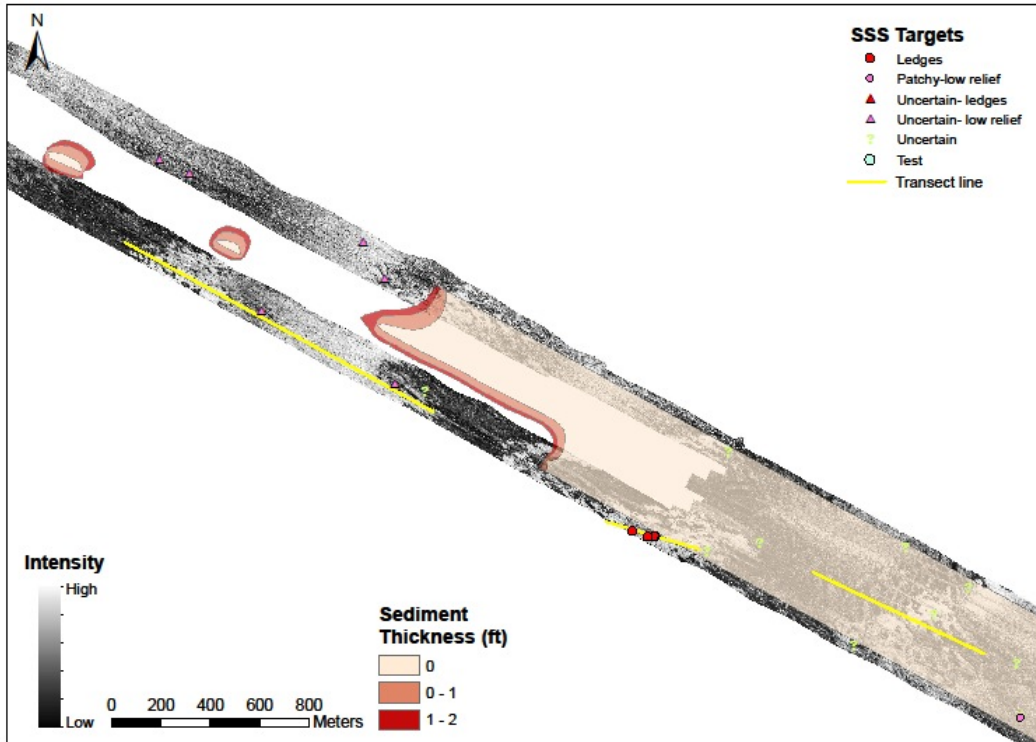
CHANNEL AREA 2



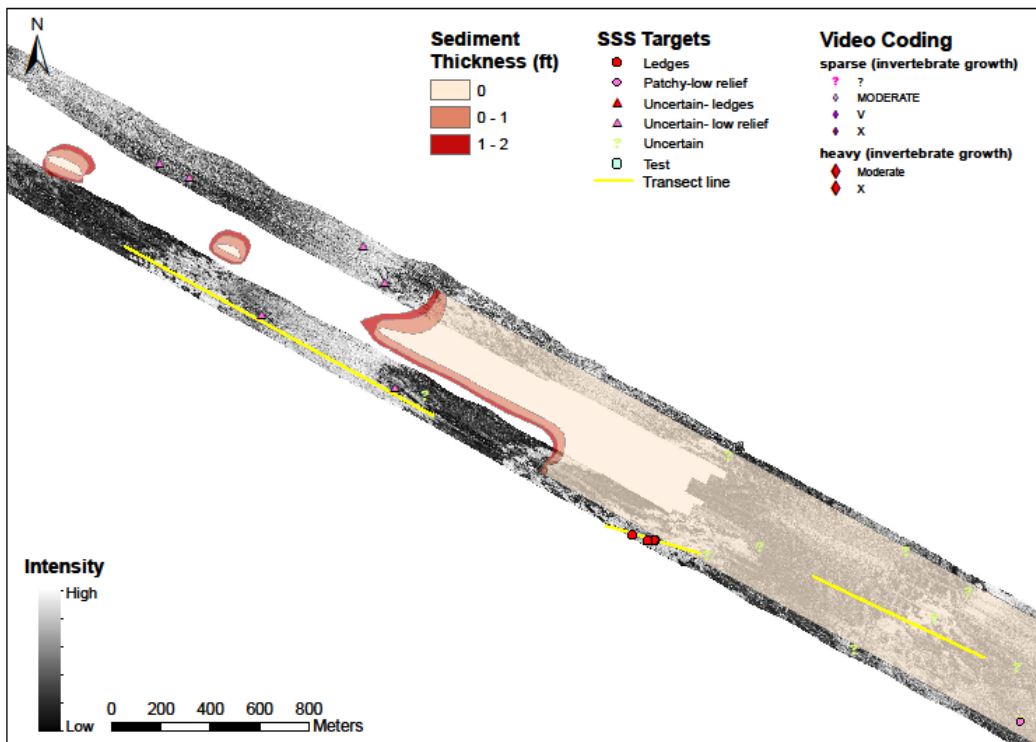
CHANNEL AREA 2 Backscatter Mosaic



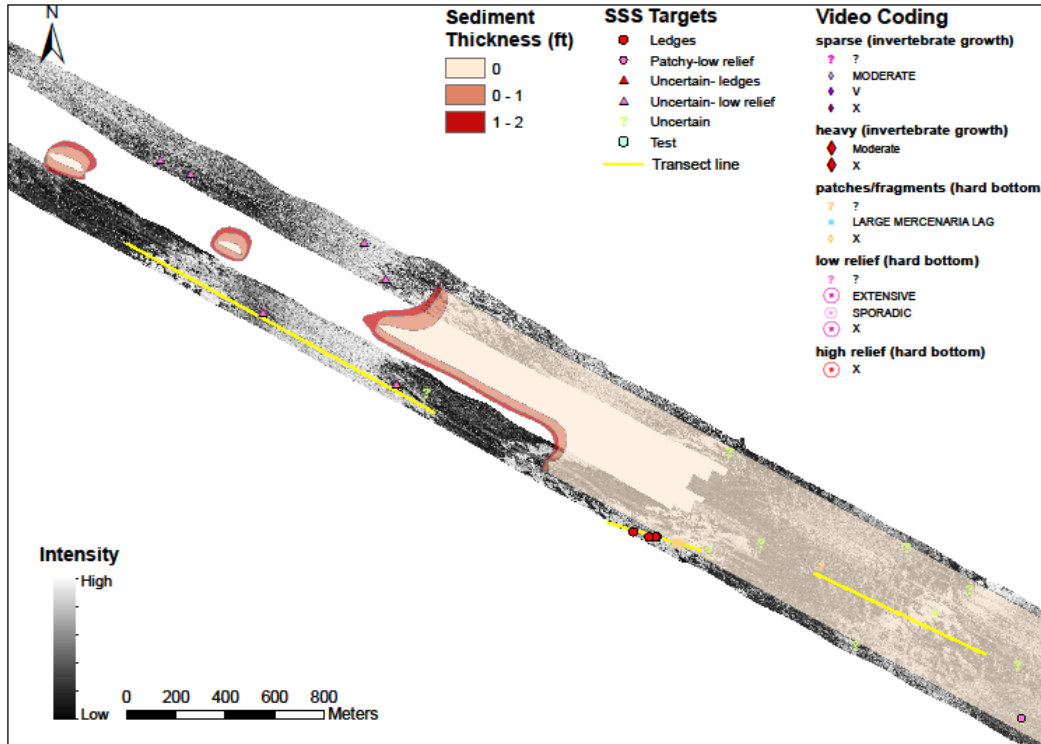
CHANNEL AREA 2 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



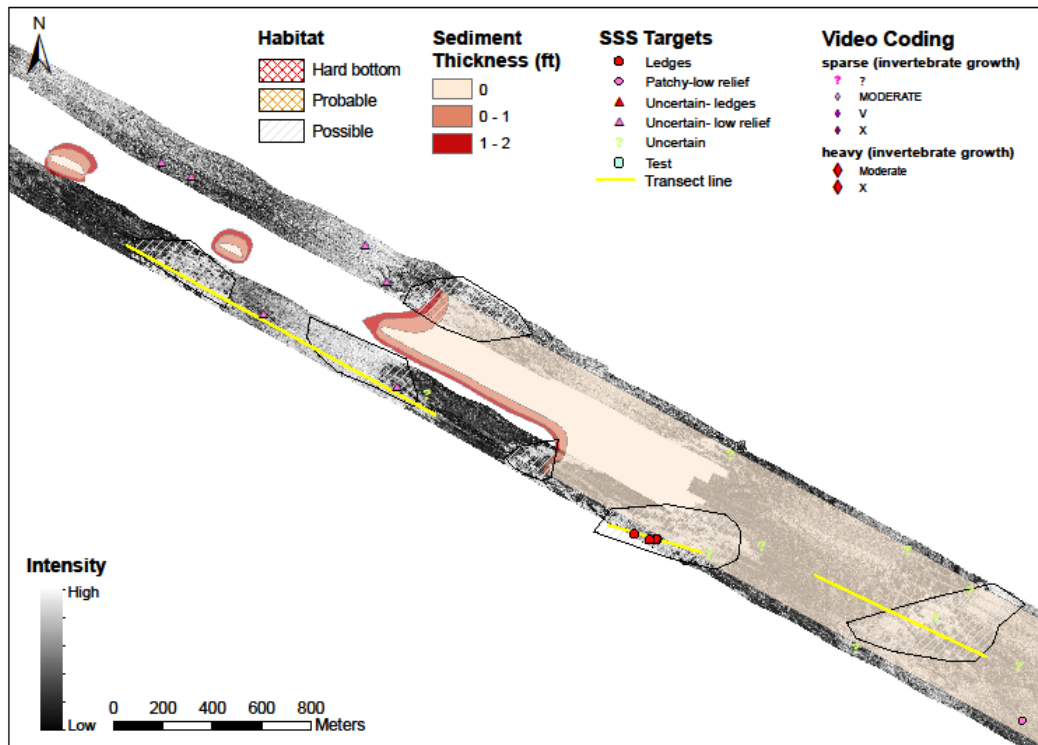
CHANNEL AREA 2 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



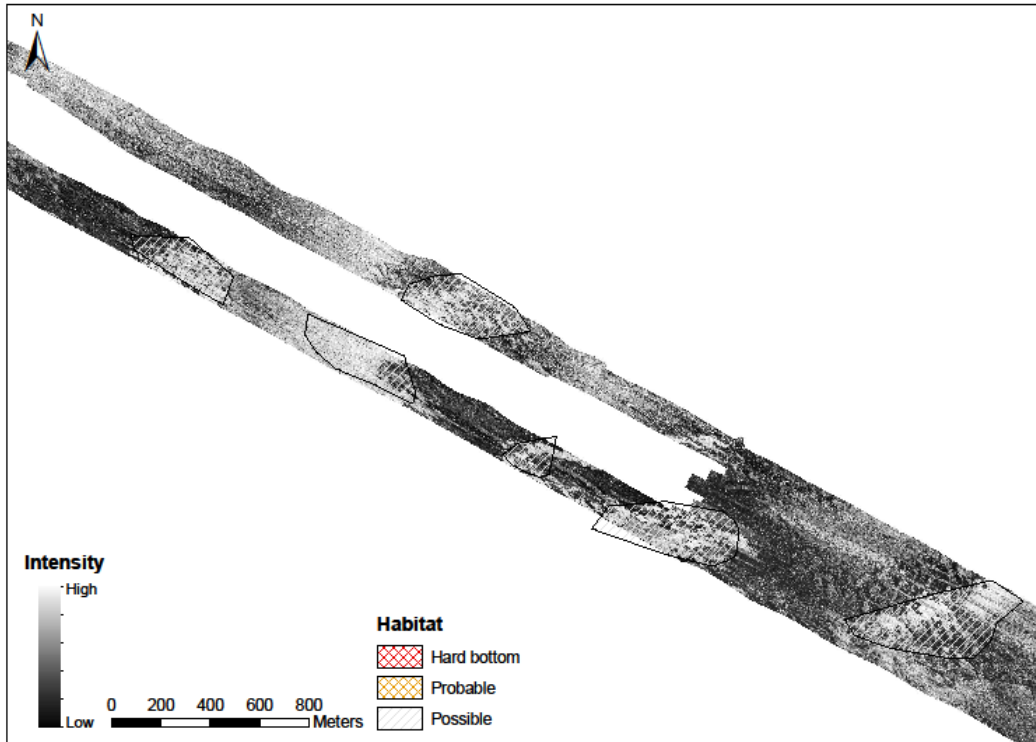
CHANNEL AREA 2 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



CHANNEL AREA 2 Showing composite data layers and Possible, Probable and Hard Bottom areas

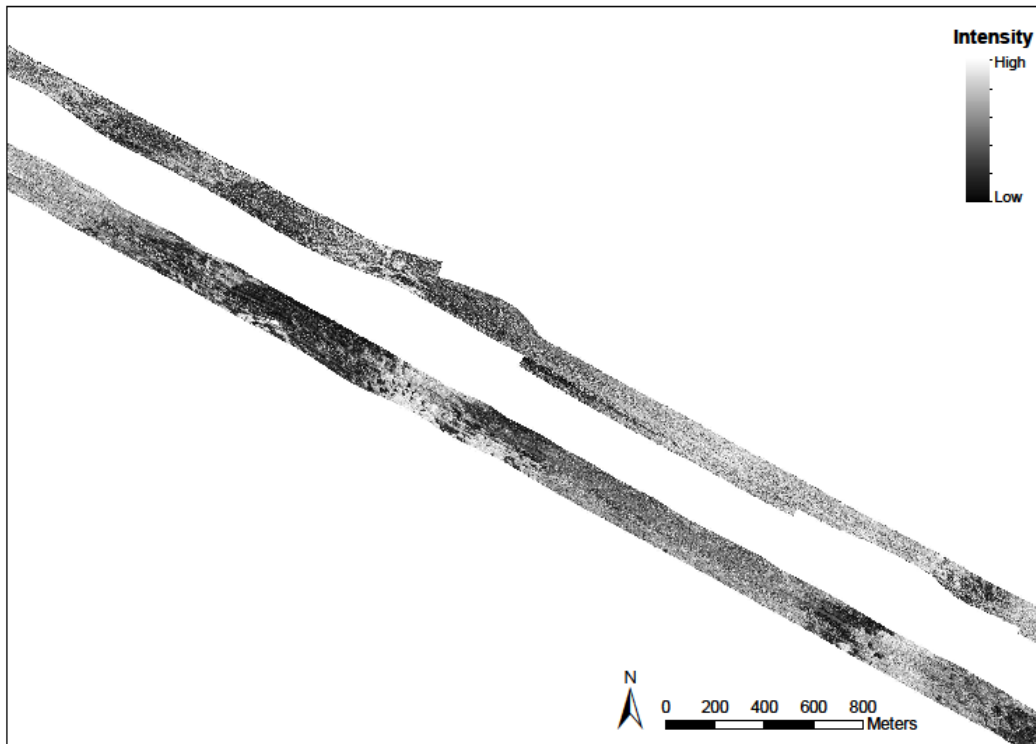


CHANNEL AREA 2 Showing composite data layers and Possible, Probable and Hard Bottom areas

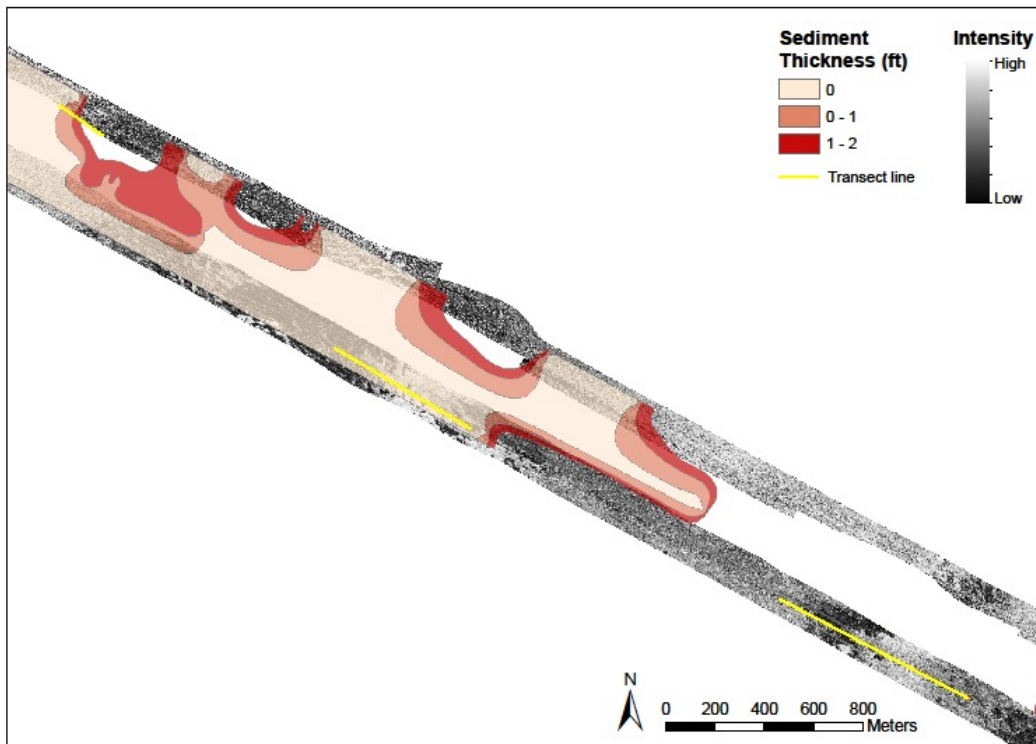


CHANNEL AREA 2 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

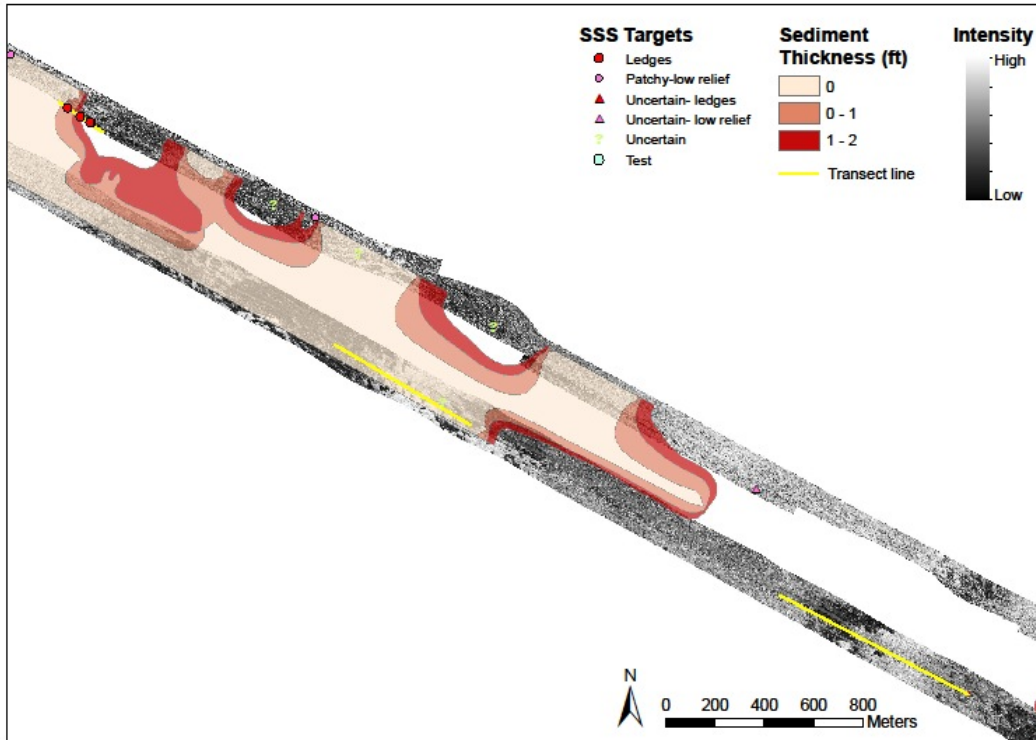
CHANNEL AREA 3



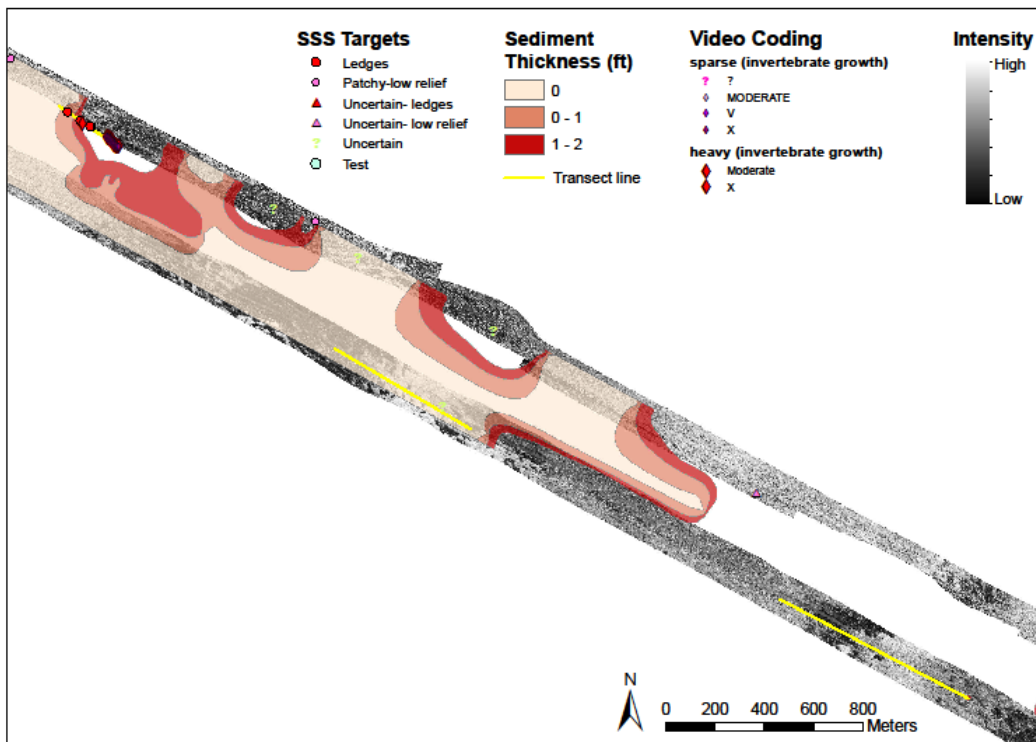
CHANNEL AREA 3 Backscatter Mosaic



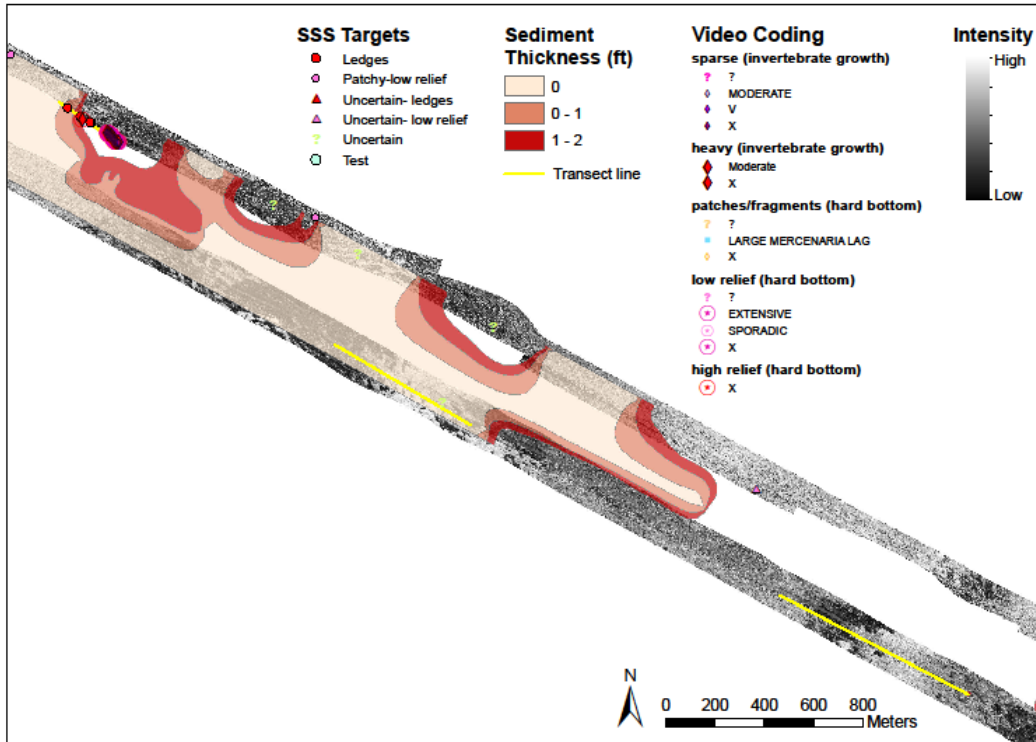
CHANNEL AREA 3 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



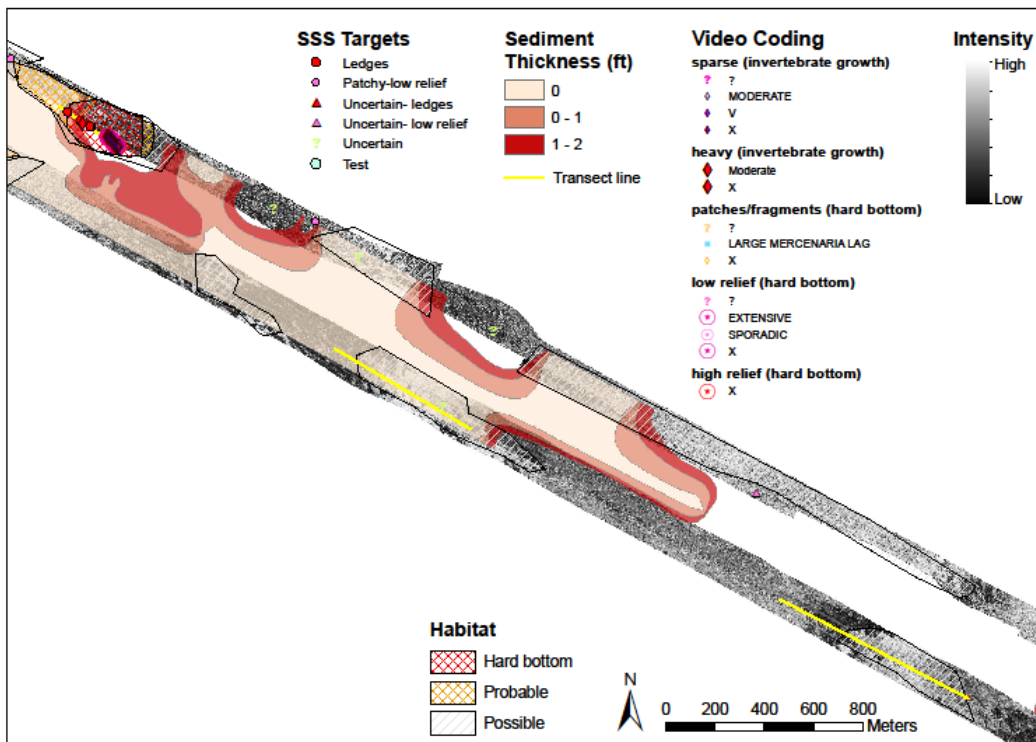
CHANNEL AREA 3 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



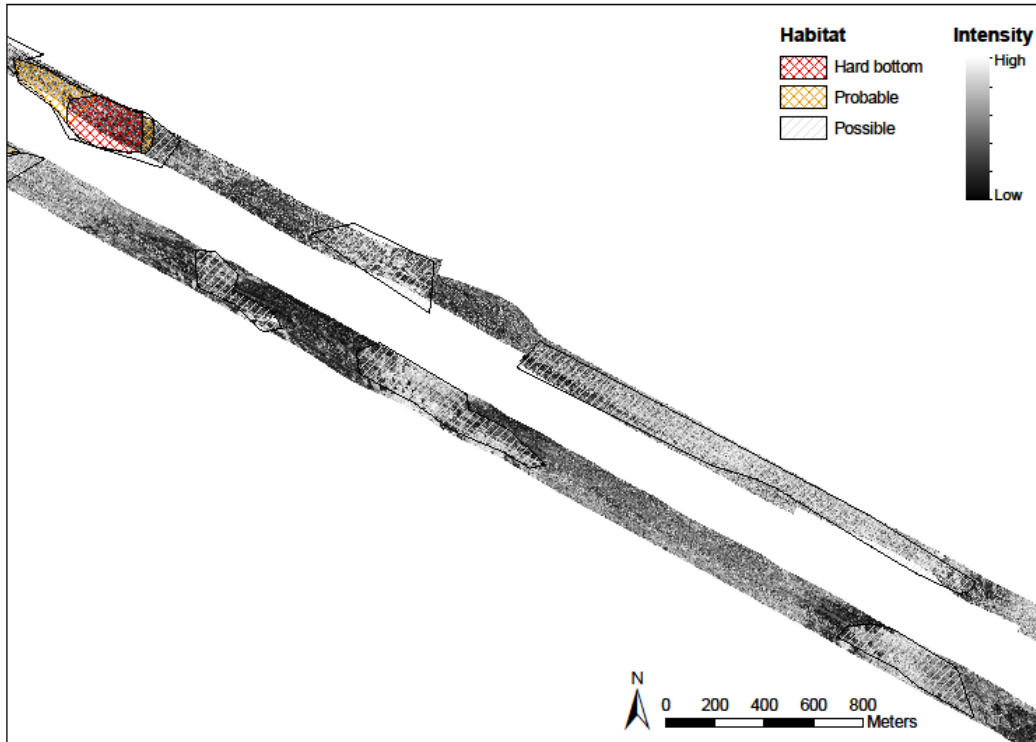
CHANNEL AREA 3 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



CHANNEL AREA 3 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects

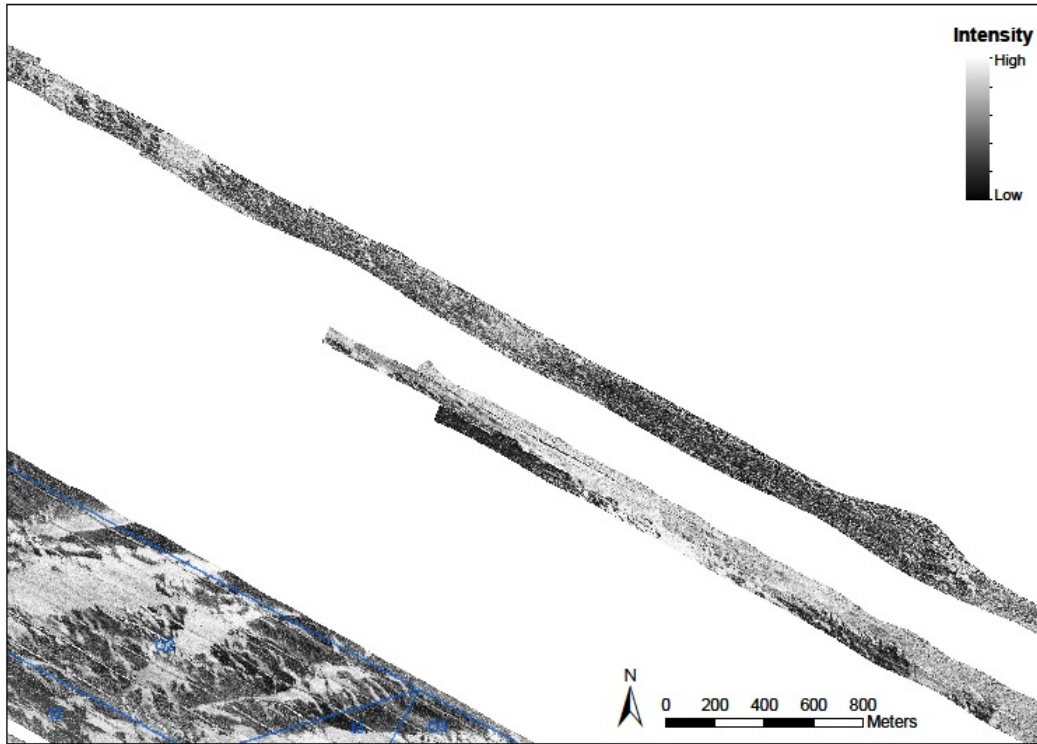


CHANNEL AREA 3 Showing composite data layers and Possible, Probable and Hard Bottom areas

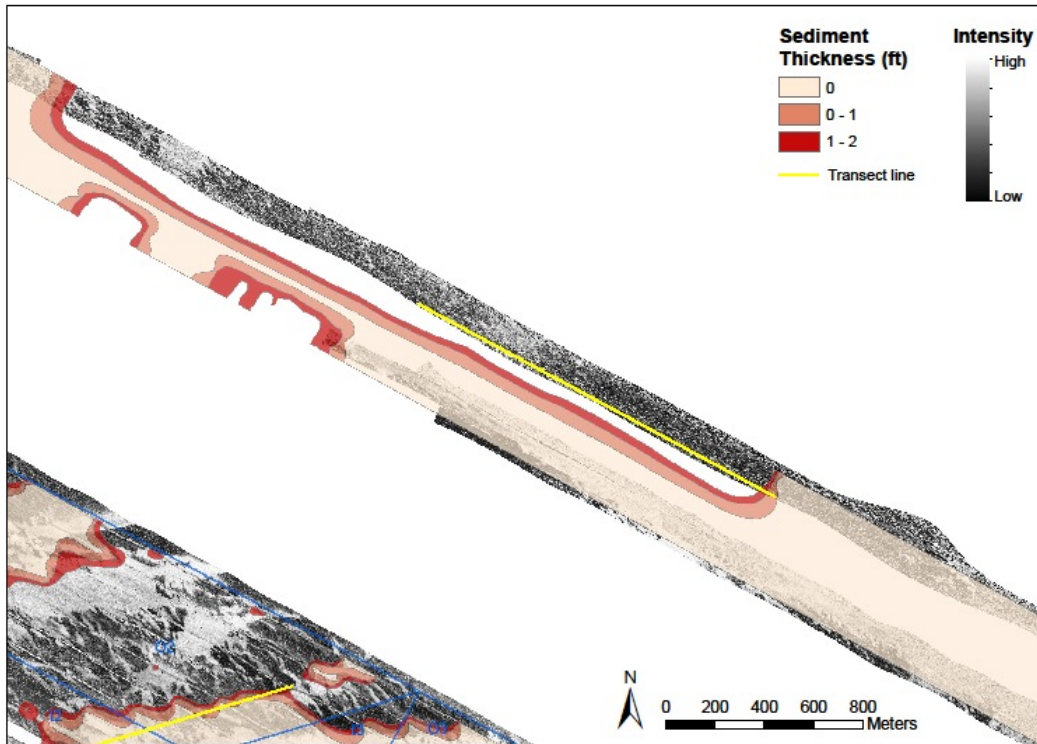


CHANNEL AREA 3 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

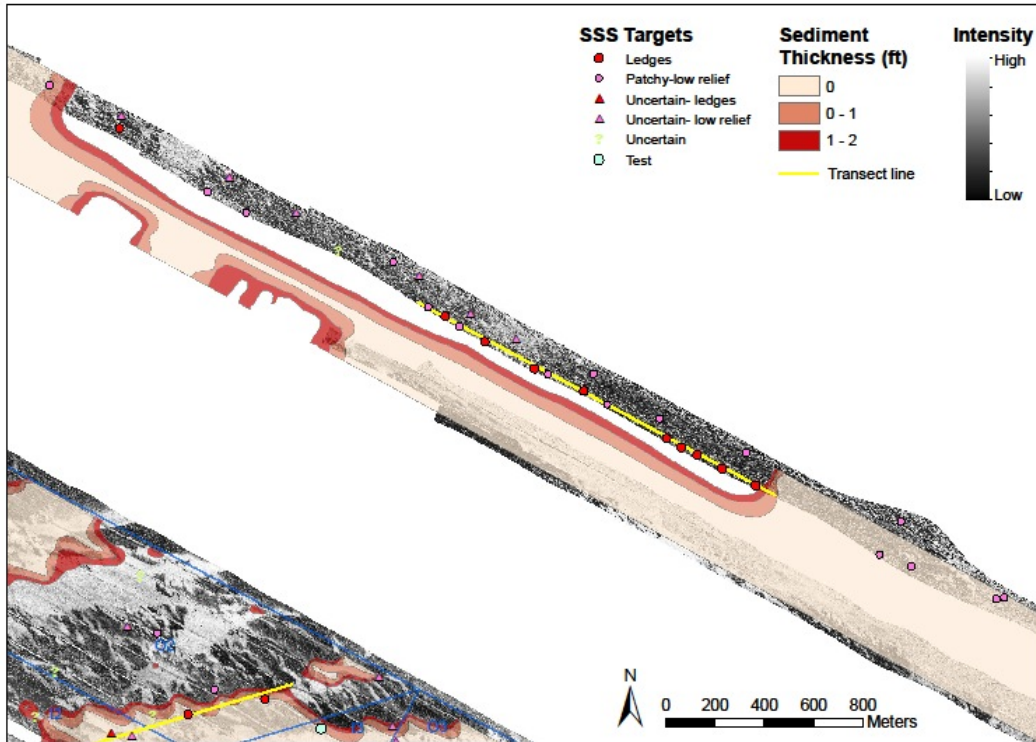
CHANNEL AREA 4



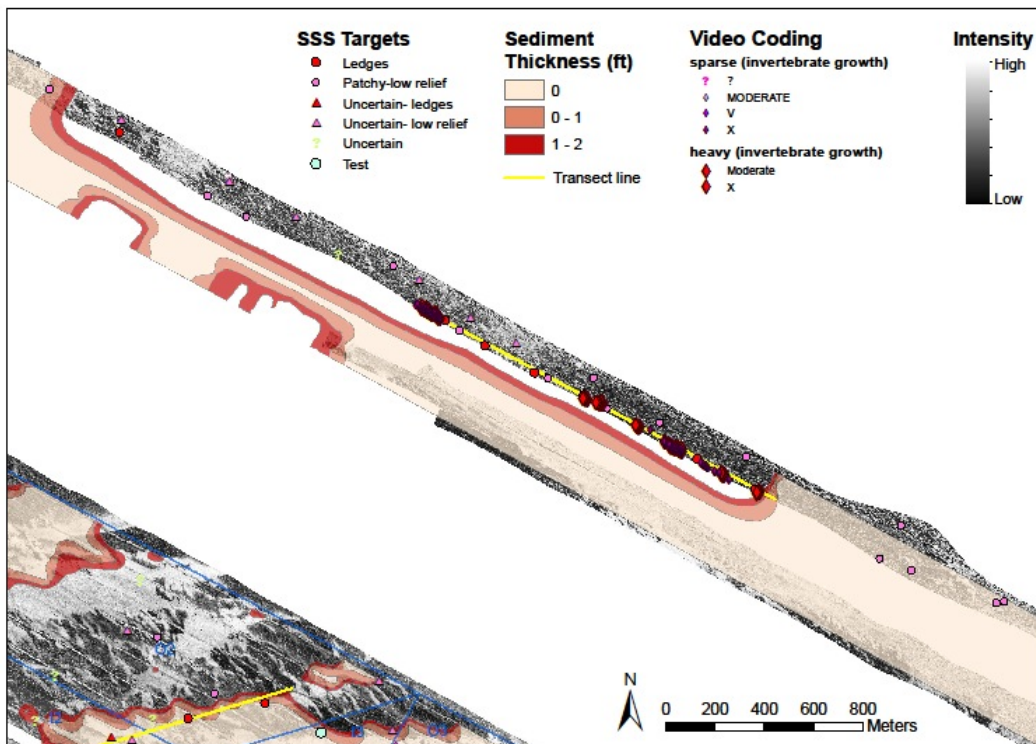
CHANNEL AREA 4 Backscatter Mosaic



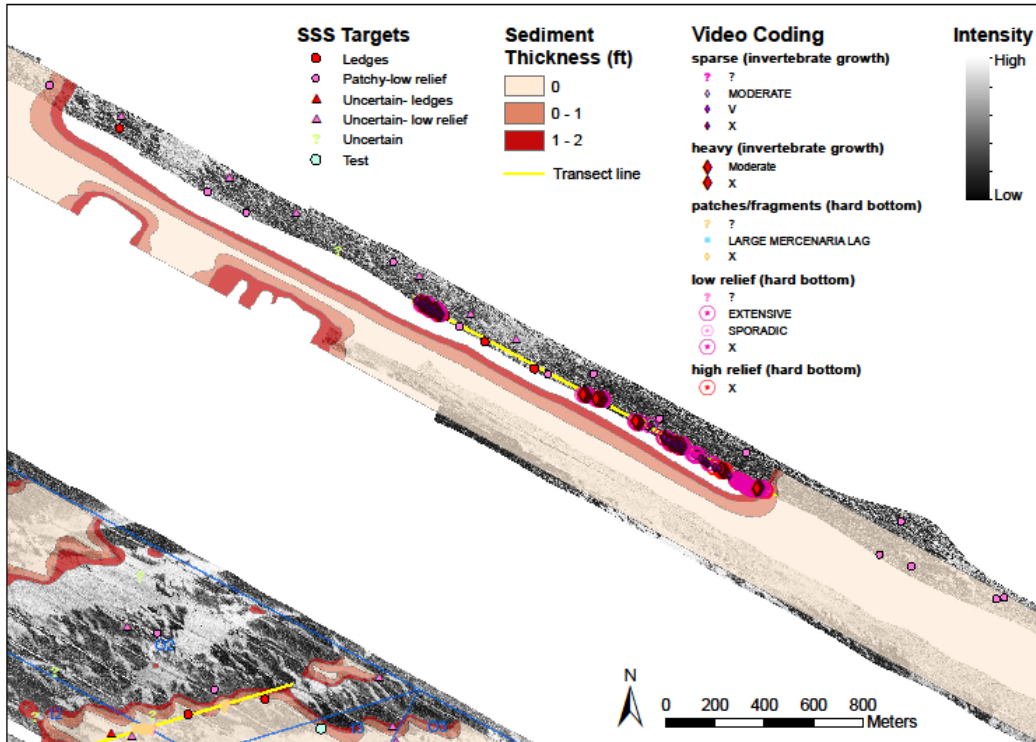
CHANNEL AREA 4 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



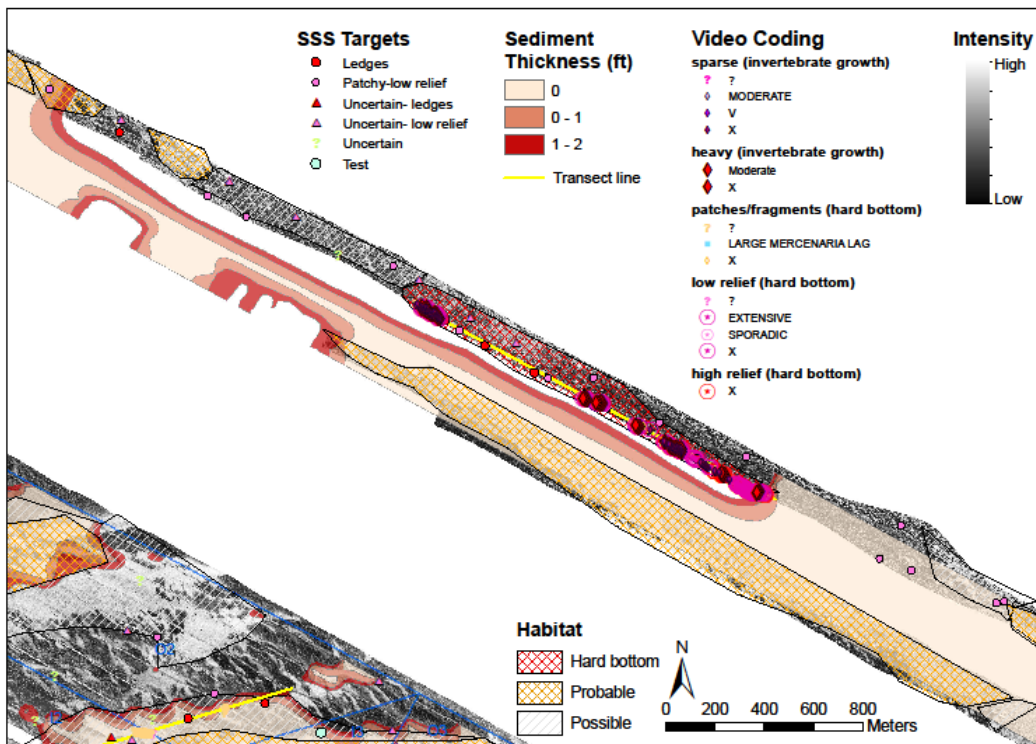
CHANNEL AREA 4 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



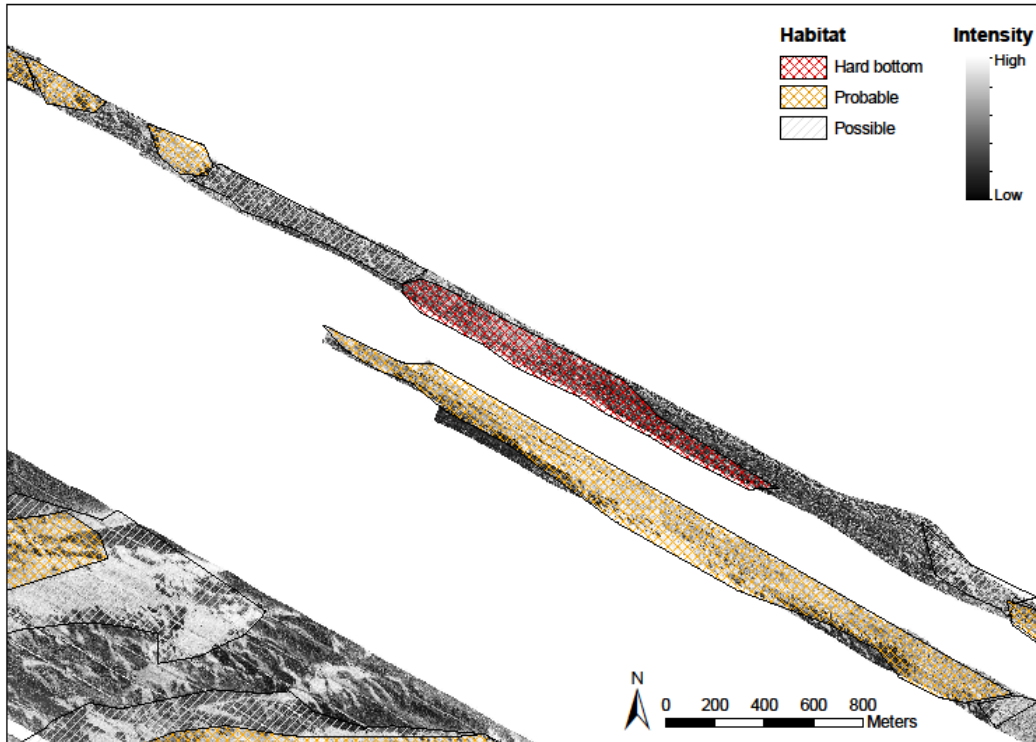
CHANNEL AREA 4 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



CHANNEL AREA 4 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects

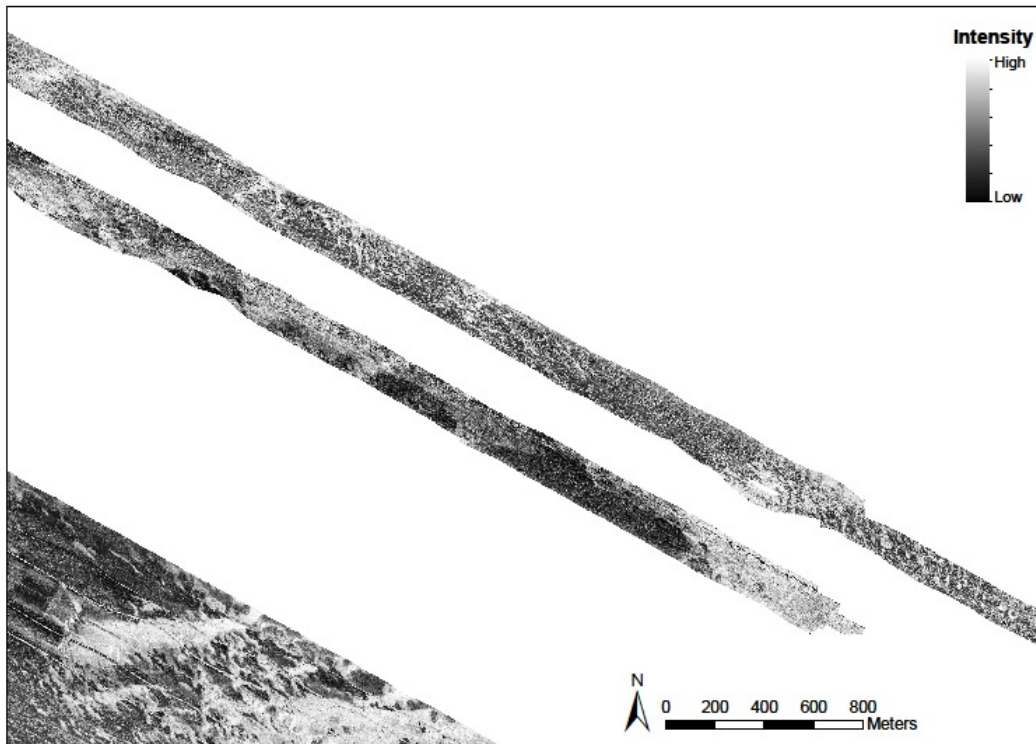


CHANNEL AREA 4 Showing composite data layers and Possible, Probable and Hard Bottom areas

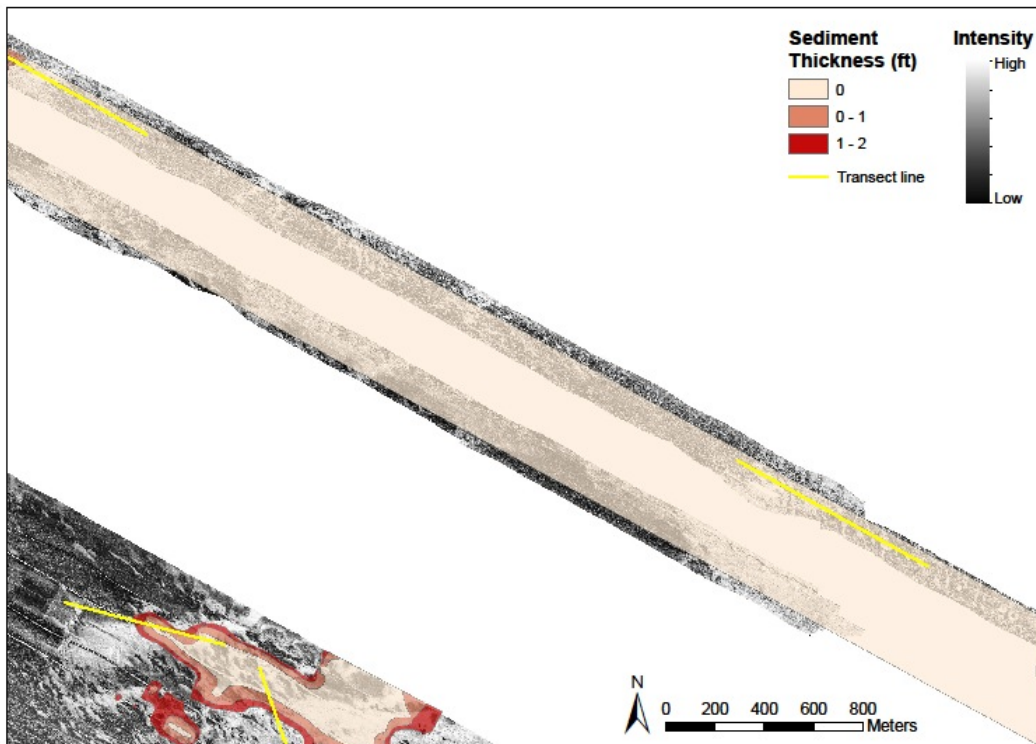


CHANNEL AREA 4 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

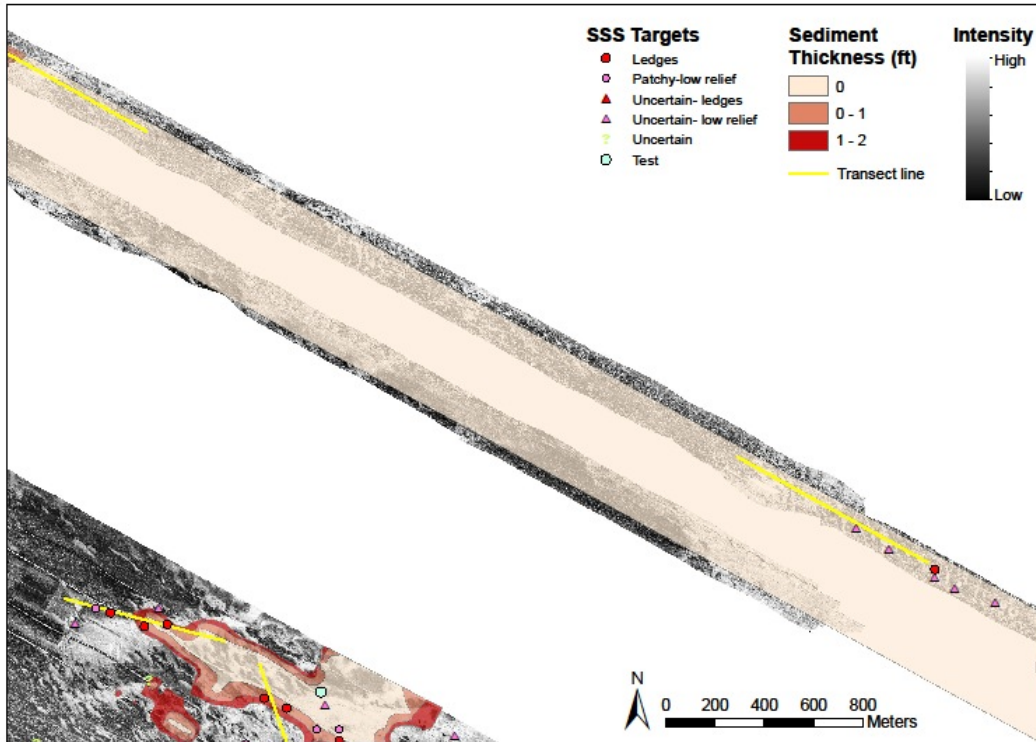
CHANNEL AREA 5



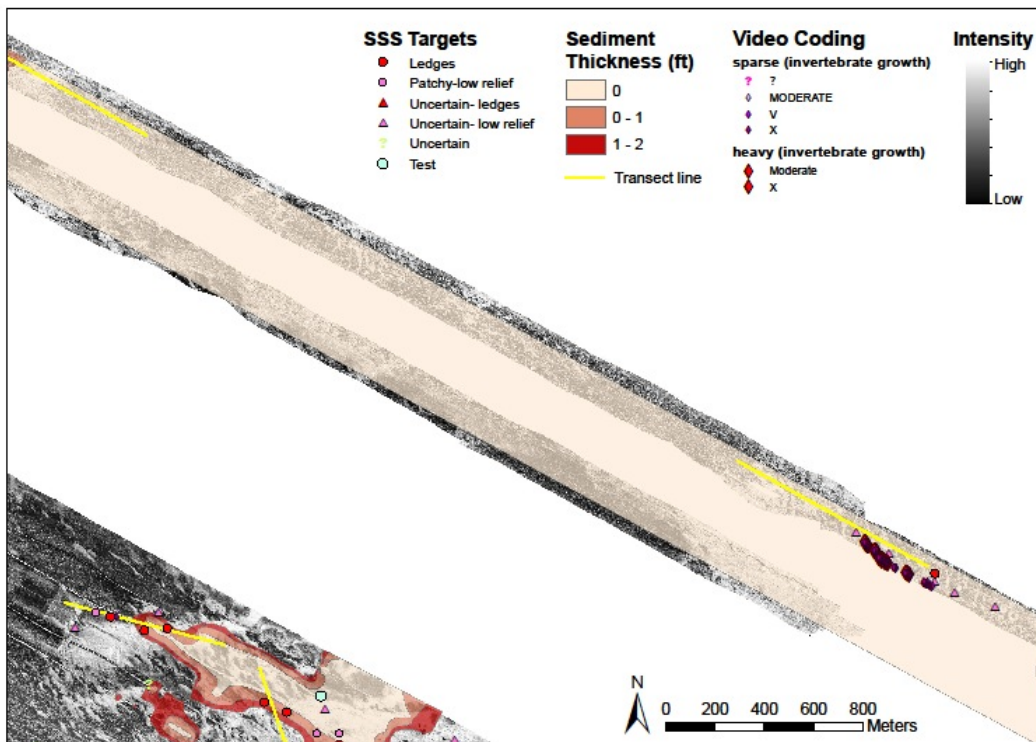
CHANNEL AREA 5 Backscatter Mosaic



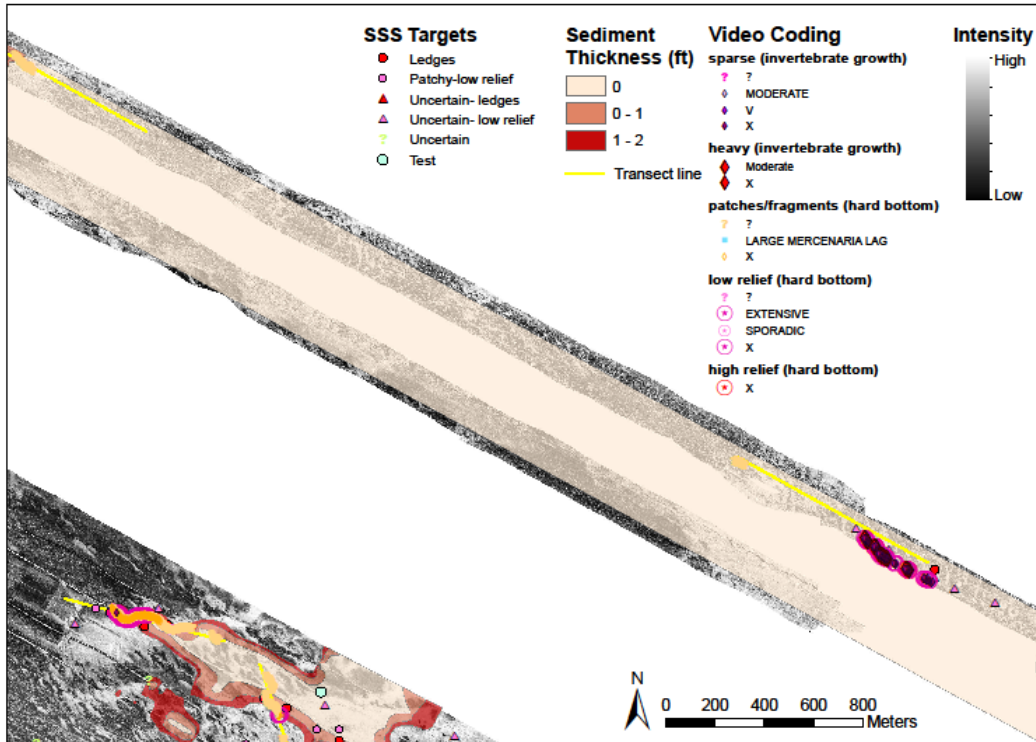
CHANNEL AREA 5 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



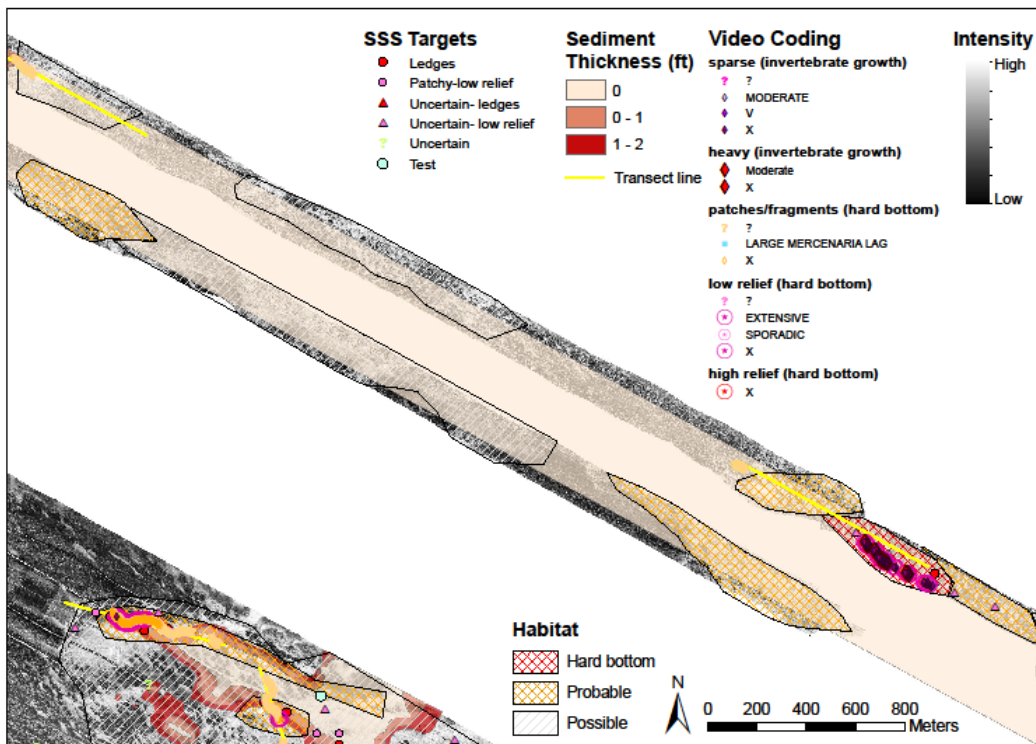
CHANNEL AREA 5 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records



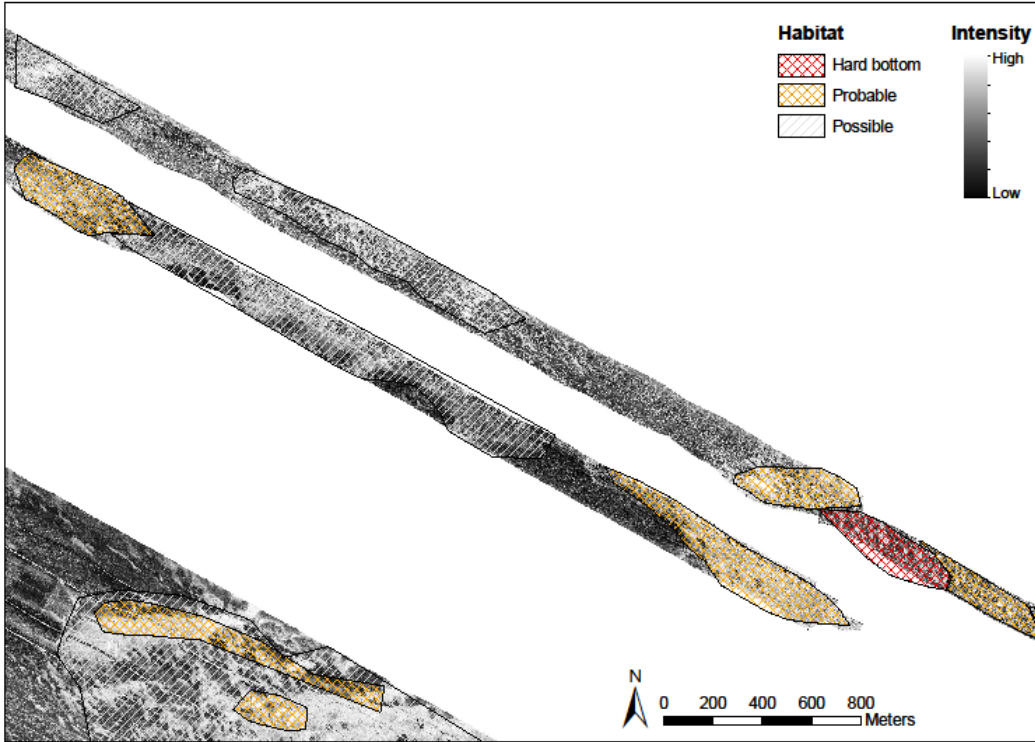
CHANNEL AREA 5 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates on video transects



CHANNEL AREA 5 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records and areas showing hard bottom invertebrates and outcrops on video transects

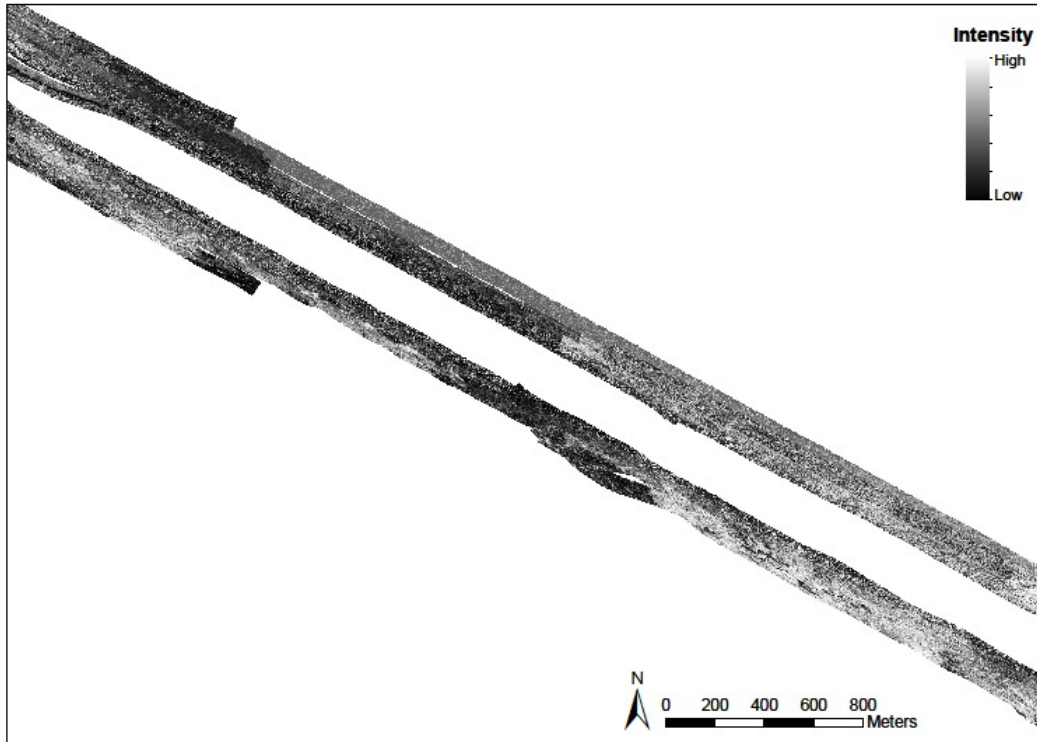


CHANNEL AREA 5 Showing composite data layers and Possible, Probable and Hard Bottom areas

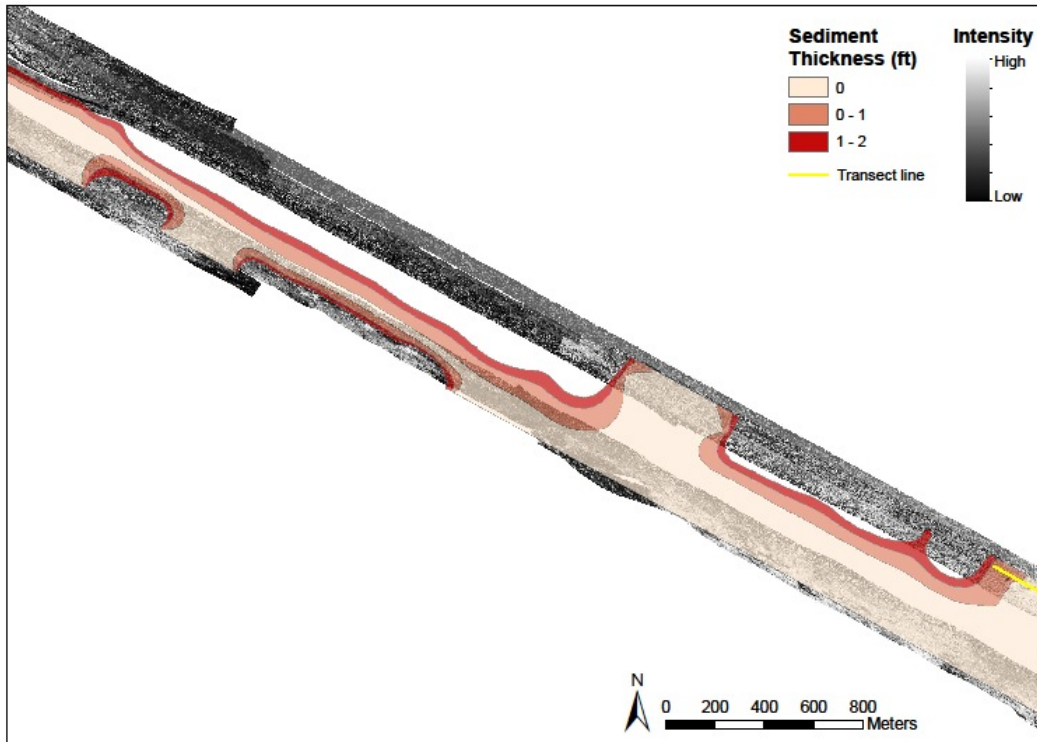


CHANNEL AREA 5 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

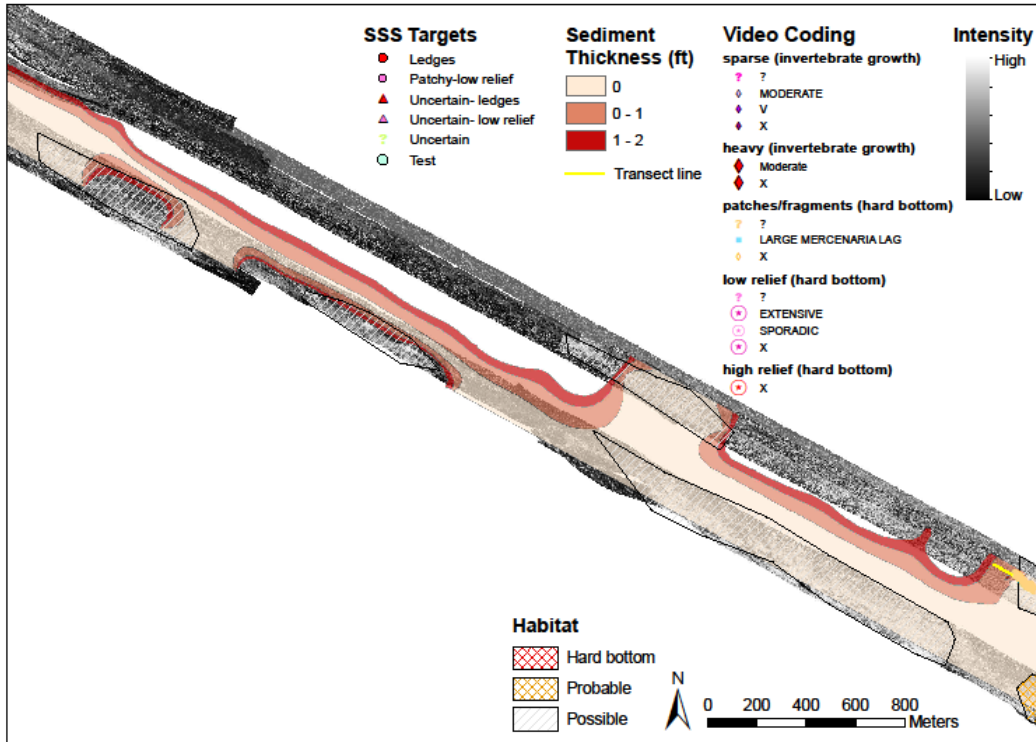
CHANNEL AREA 6



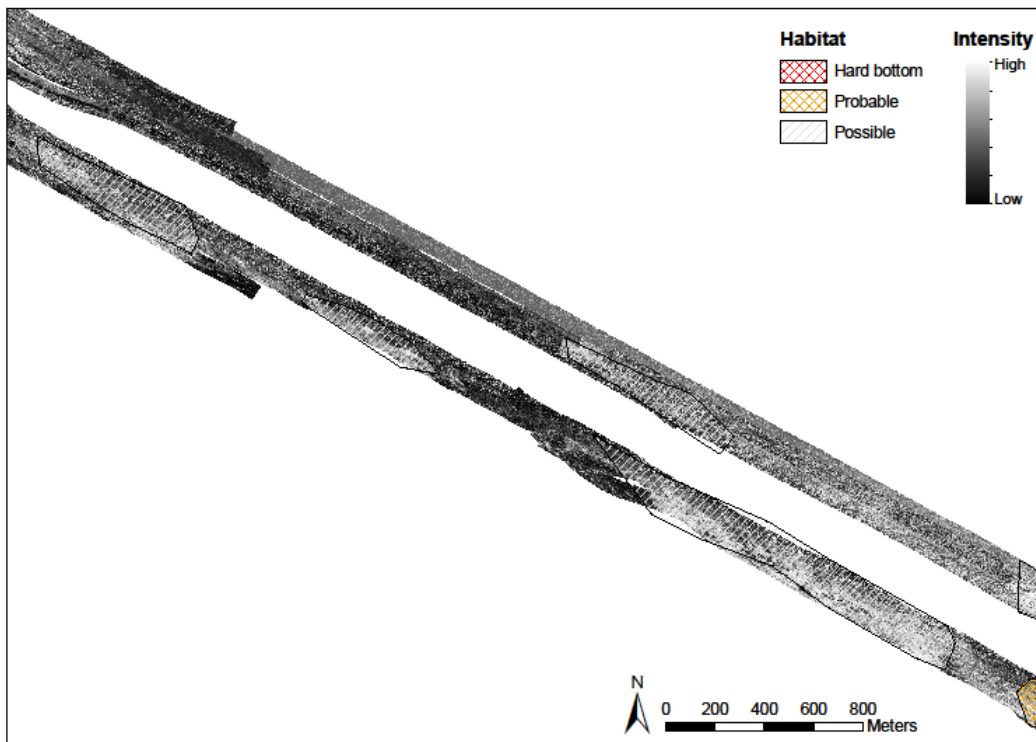
CHANNEL AREA 6 Backscatter Mosaic



CHANNEL AREA 6 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness

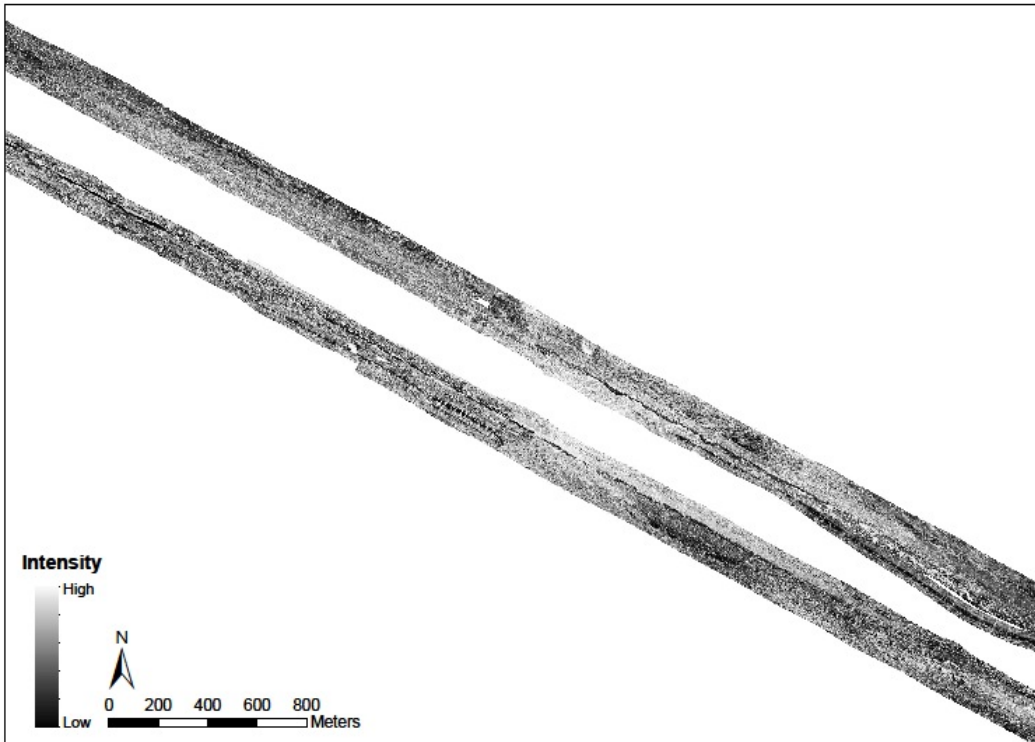


CHANNEL AREA 6 Showing composite data layers and Possible, Probable and Hard Bottom areas

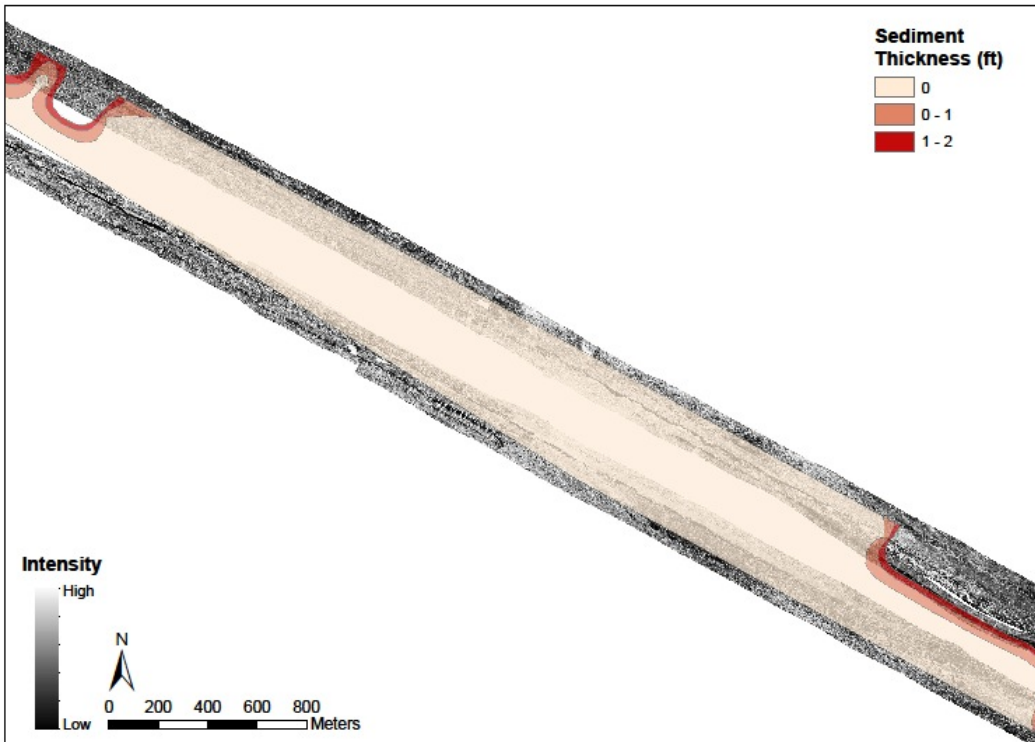


CHANNEL AREA 6 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

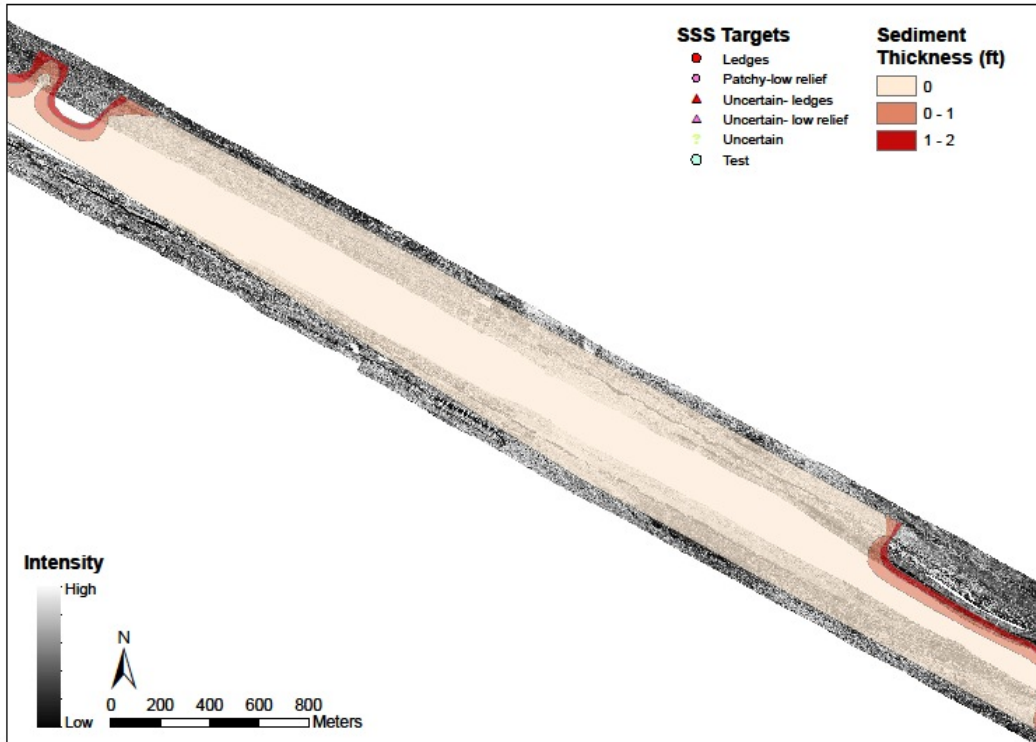
CHANNEL AREA 7



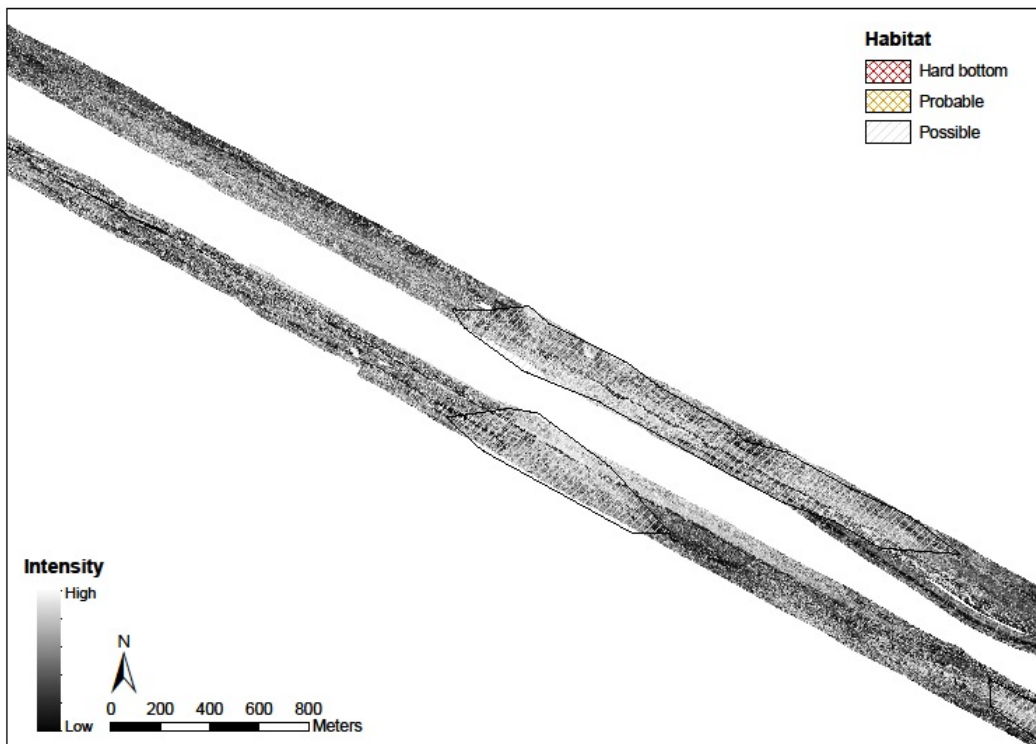
CHANNEL AREA 7 Backscatter Mosaic



CHANNEL AREA 7 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness

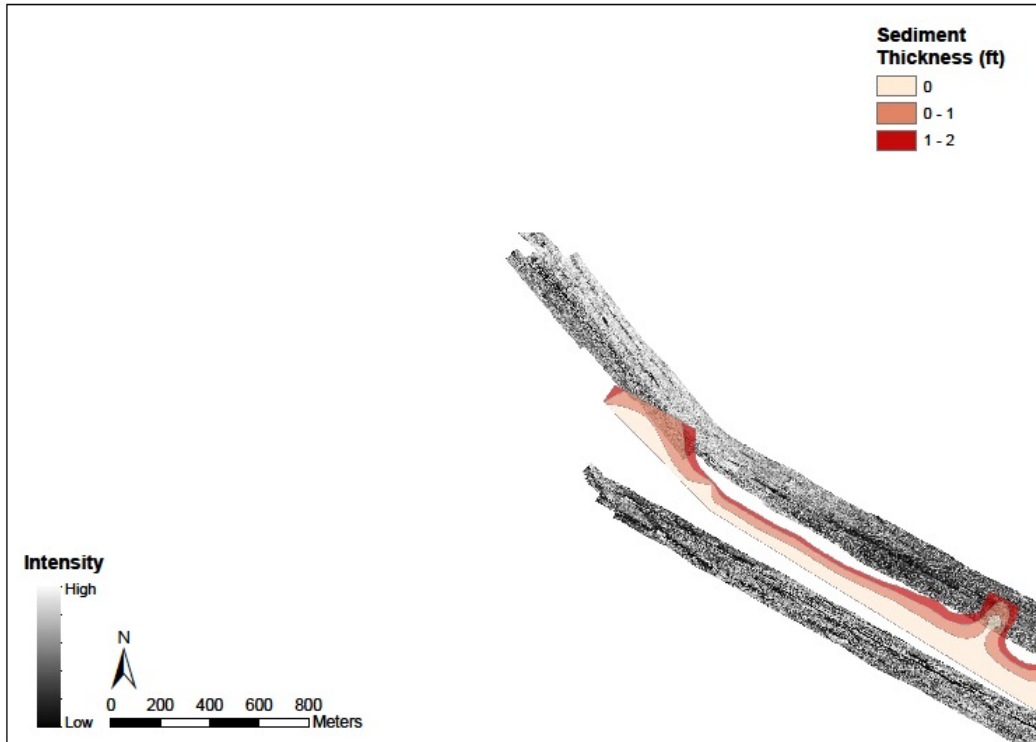


CHANNEL AREA 7 Showing backscatter mosaic, areas of limited surficial sediment, and hard bottom habitat targets selected from high resolution side scan records

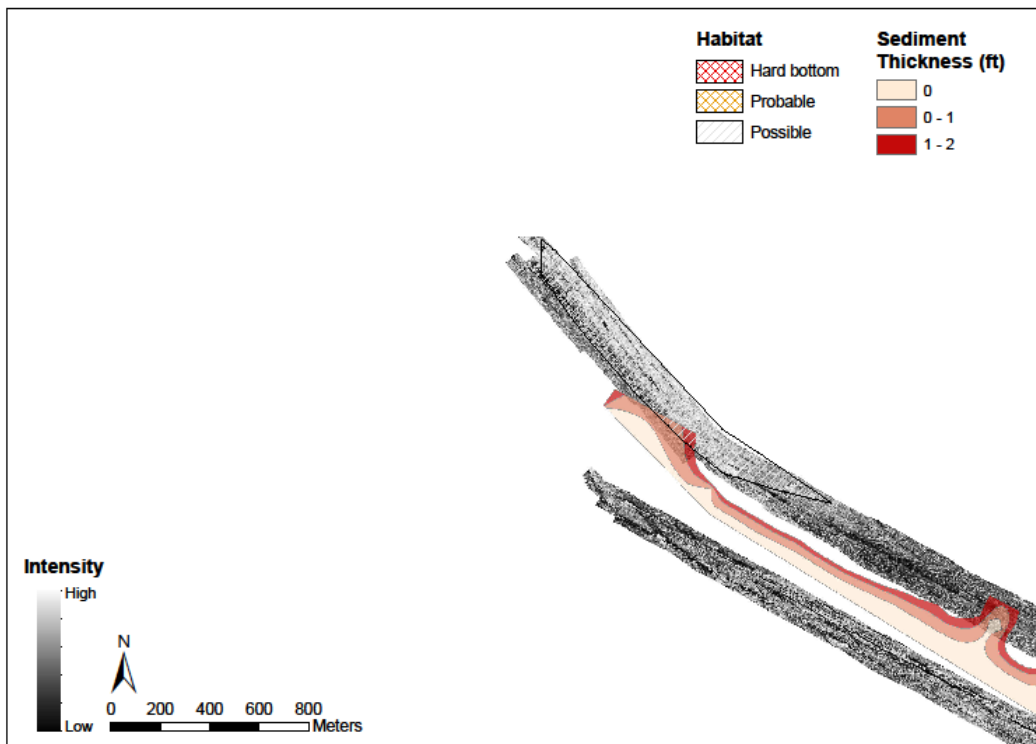


CHANNEL AREA 7 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas

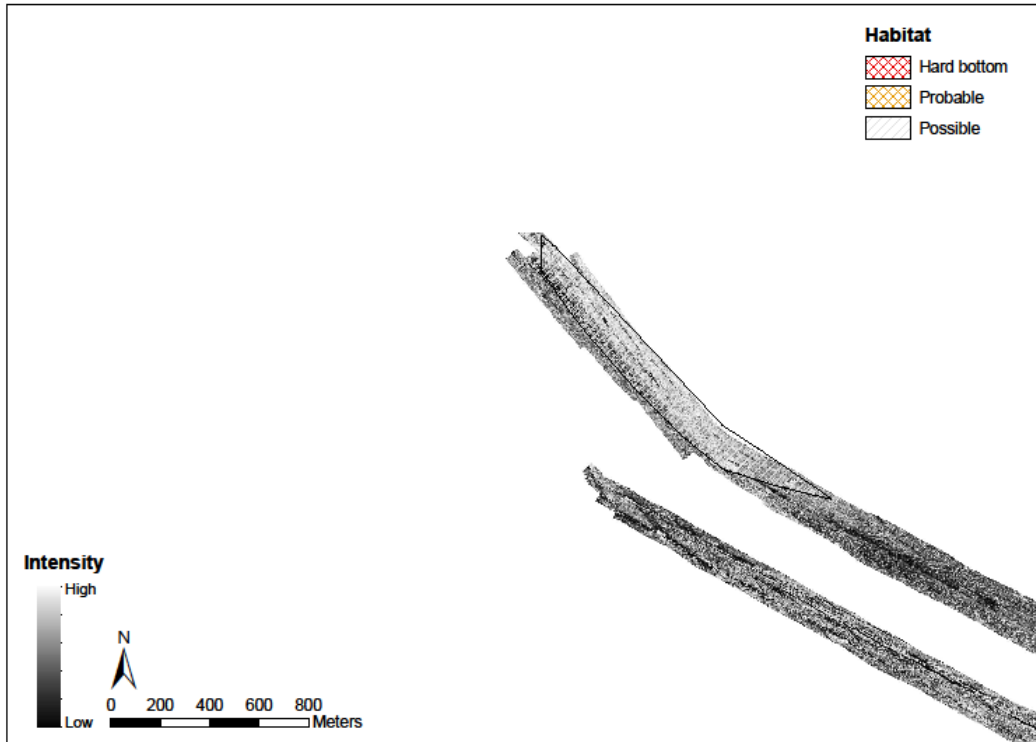
CHANNEL AREA 8



CHANNEL AREA 8 Showing Scan Sonar Mosaic and areas of 0, 0-1 ft and 1-2 ft of surficial sediment thickness



CHANNEL AREA 8 Showing backscatter mosaic and Possible, Probable and Hard Bottom areas



CHANNEL AREA 8 Backscatter mosaic with Possible, Probable and Hard Bottom designated areas