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3DSS Sonar Data Example:
Identification of Objects on the Seafloor

Sonar Model: 3DSS-DX-450
Sonar Mount: Pole mount, over-the-side of 27' launch
Sonar Depth: Approximately 0.75m below surface,
Sonar Control Software: 3DSS-DX Control Application (Ping DSP)
Sonar Display Software: 3DSS-DX 3D Sidescan Display (Ping DSP)
Data Location: Lake Union, Seattle, Washington, USA
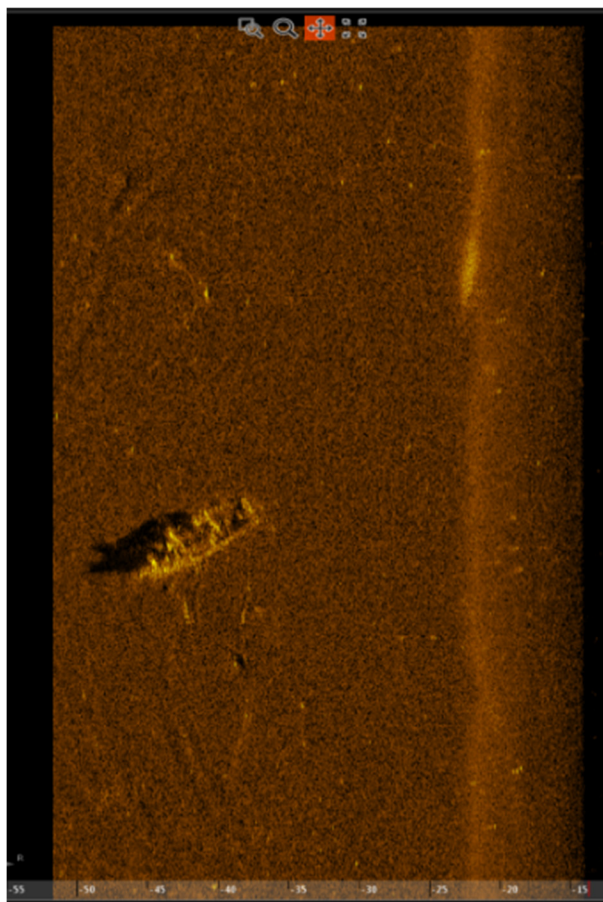Average Water Depth: 15m

Figure 1: 3DSS-DX-450 2D Sidescan image (port only) showing an unidentified curved feature near a small wreck (upper left quadrant).
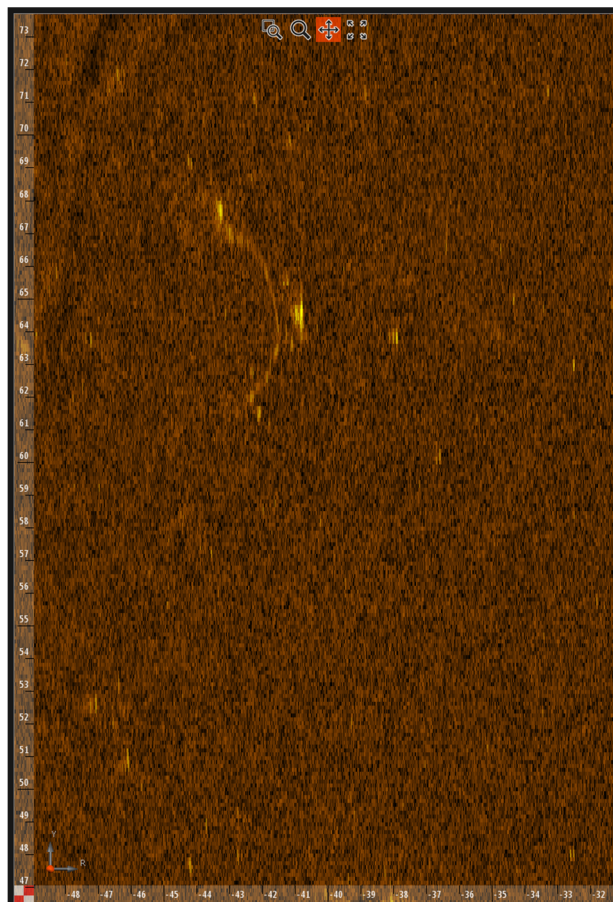

Figure 2: Expanded view of the unidentified curved feature as imaged using 2D Sidescan, not possible to interpret or identify.

Figures 1 & 2 shows s 2D sidescan view (port side only) of a small wreck and an unidentified curved feature at a slant range distance of approximately 45m and approximately 5m in length. This curve may be of interest, however identification of seafloor features and structures can be difficult with 2D sidescan.

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Figure 3 shows a 3D Sidescan image, viewed from directly overhead, of the same region. The 3D Sidescan view is geometrically correct and shows that, in this overhead view, the unidentified feature has the opposite curvature from the 2D sidescan view in Figure 1. Figure 3 also shows that 3D Sidescan images preserve the resolution and detail achieved using 2D Sidescan. This capability allows for full resolution imaging while also allowing for true representation of the imaged surface and intuitive user manipulation of the data.
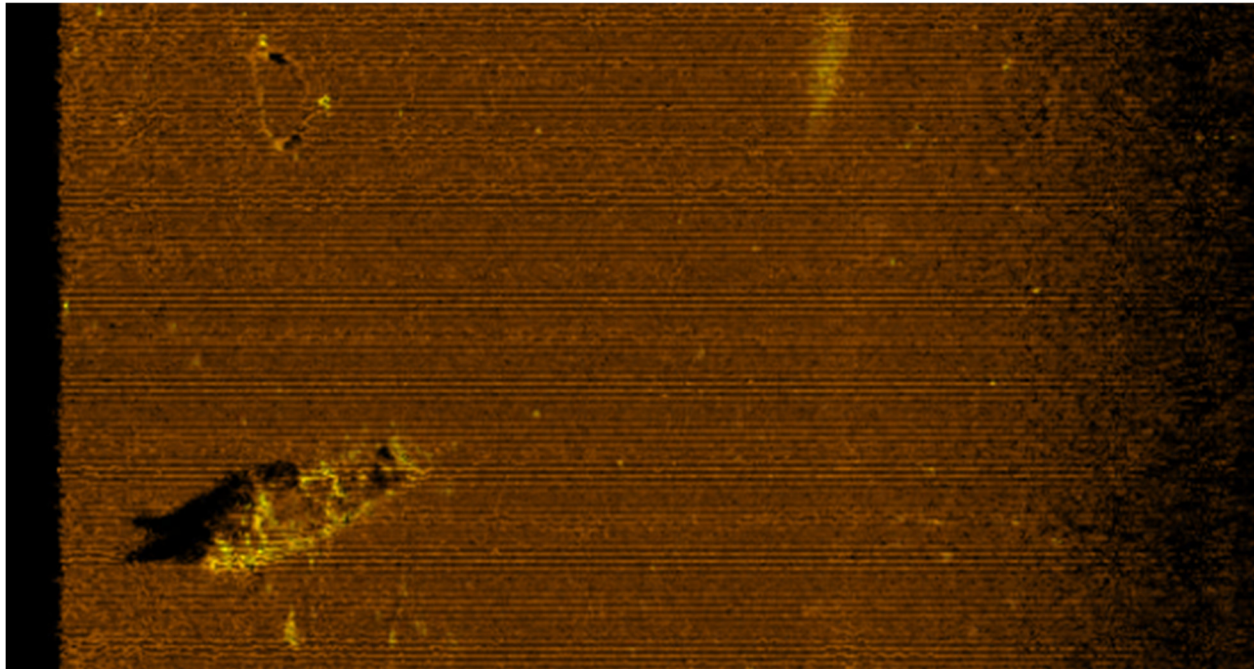

Figure 1: 3DSS-DX-450 geometrically correct 3D Sidescan image viewed from overhead. The curvature of the unidentified feature is opposite to 2D sidescan.
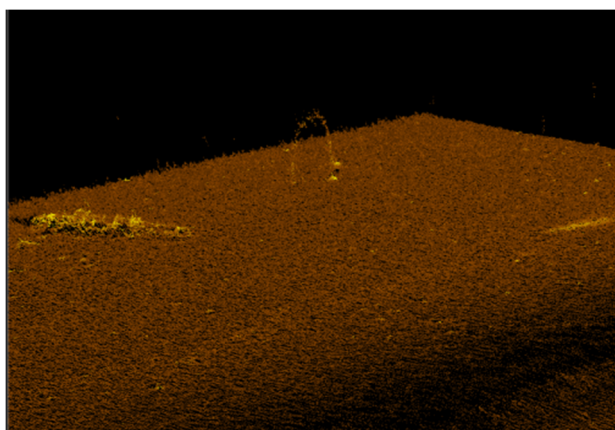

Figure 2: Rotated view of the 3D Sidescan backscatter image showing the vertical component of the curved feature.
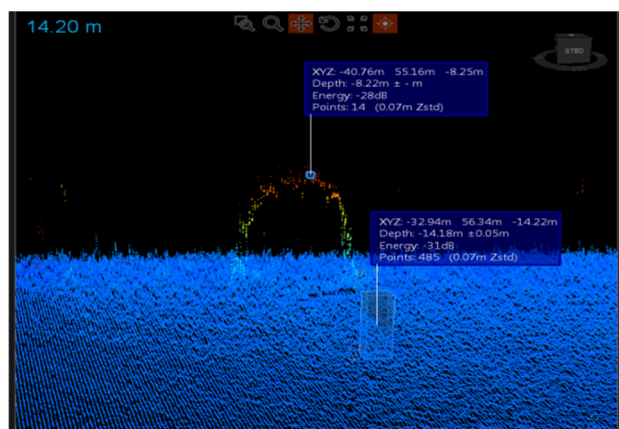

Figure 3: Another 3D Sidescan view of the curved feature colourized by depth and annotated with depth measurements.

Figures 4 & 5 show two different rotated views of the 3D Sidescan image colourized by backscatter intensity in Figure 4 and by depth in Figure 5. The unidentified feature is identified as a length of bouyant rope anchored at both ends creating an arch above the lake bed.