

**Exploring and Mapping the
Seabed In and Around the San
Juan Islands**



**Center for Habitat
Studies – MLML**

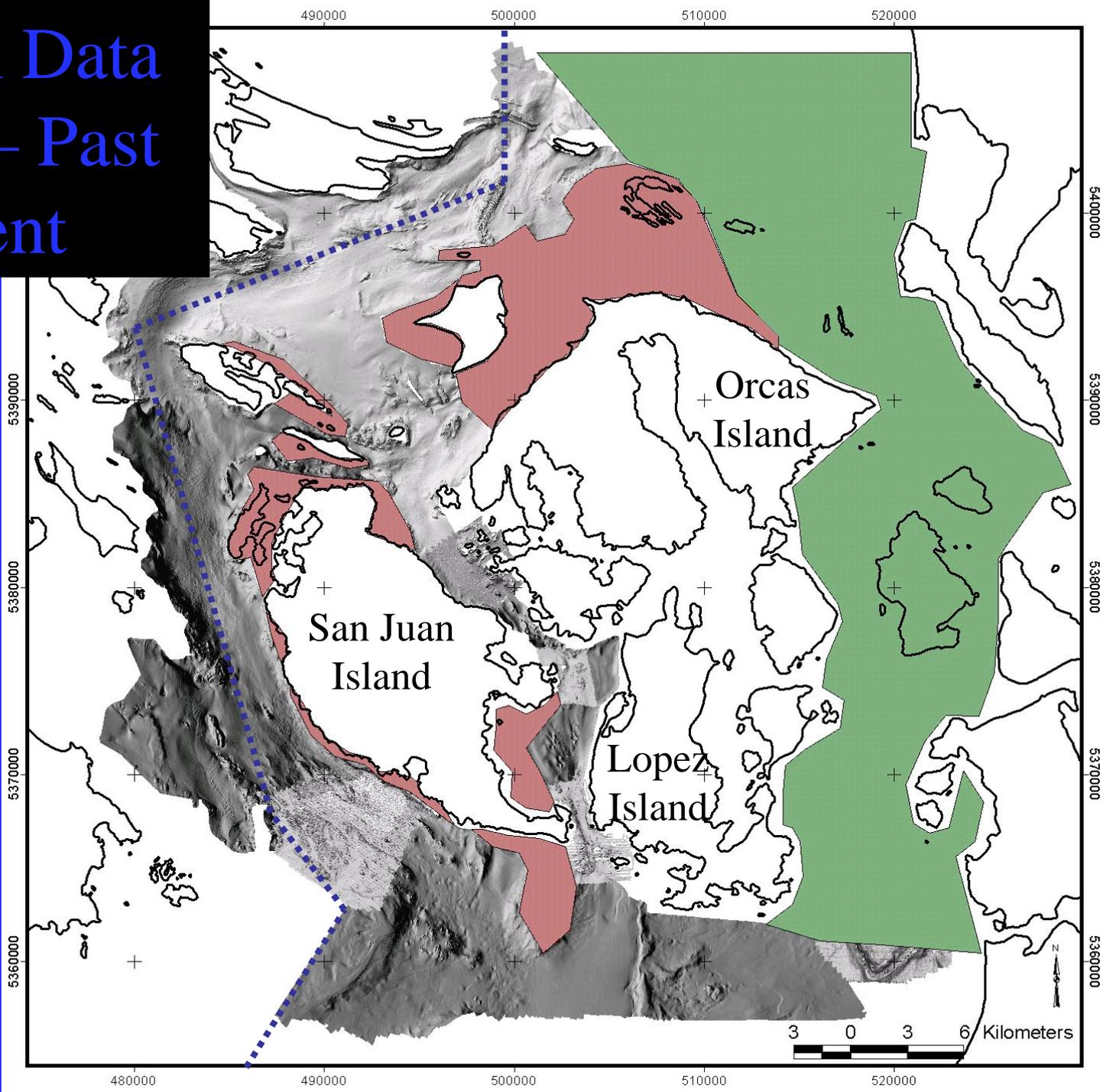
**Canadian Hydrographic
Service**

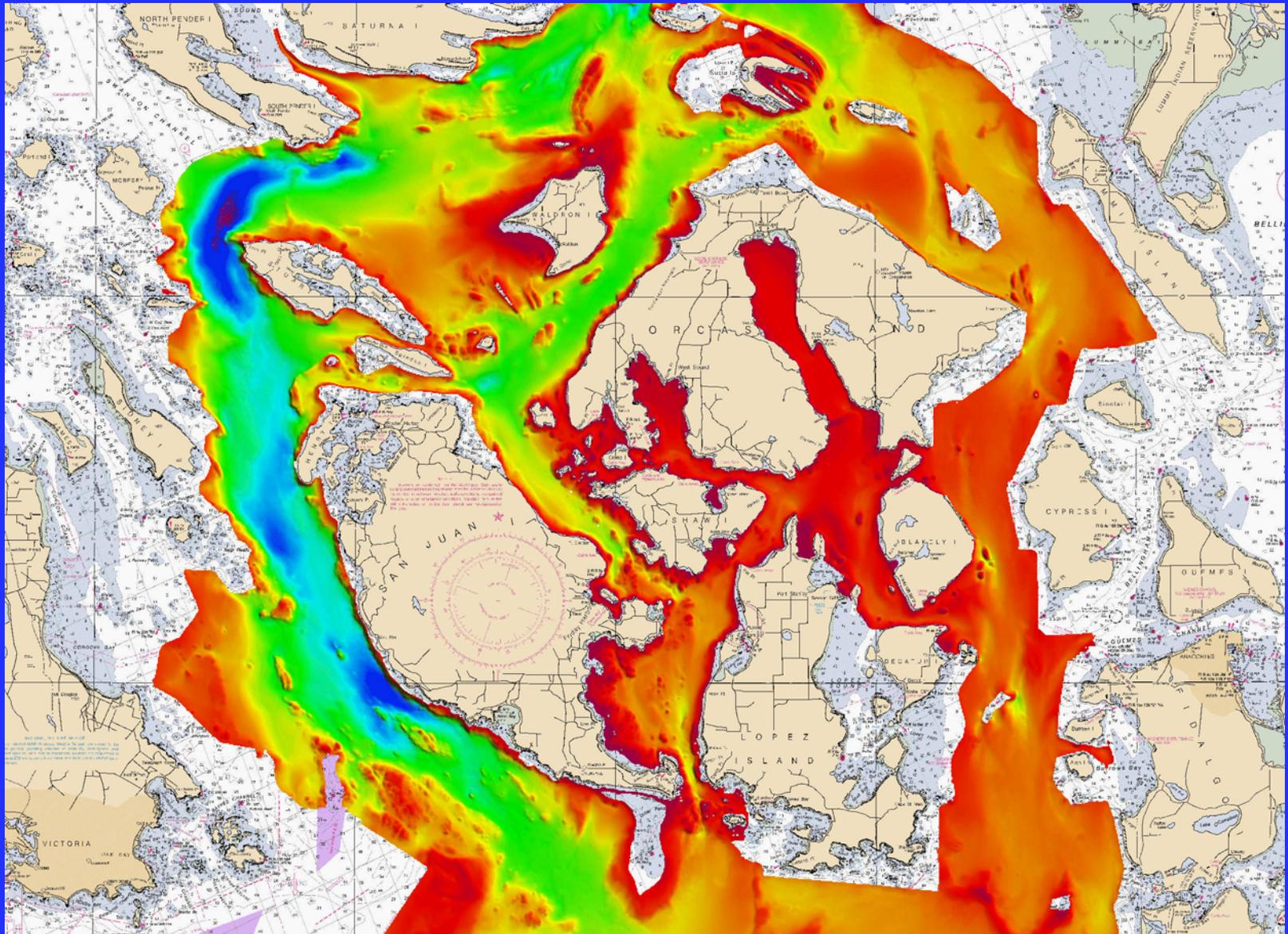
**Geological Survey of
Canada**

Canadian Coast Guard



Multibeam Data Coverage – Past & Present







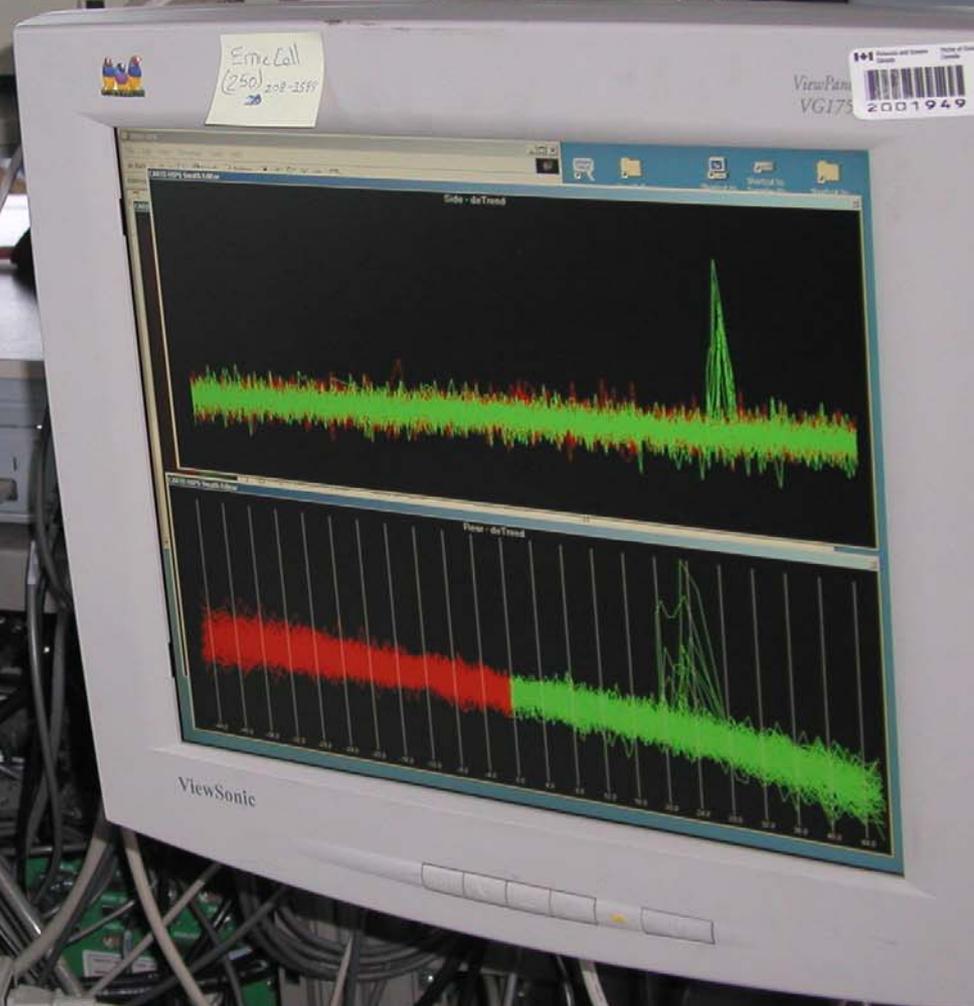
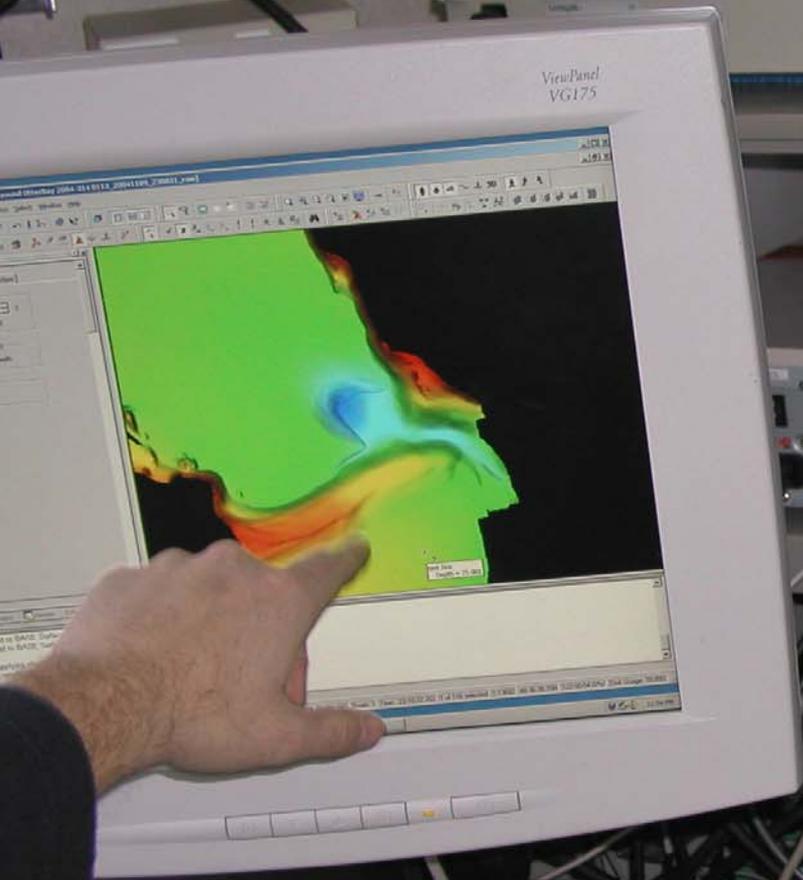


Canada

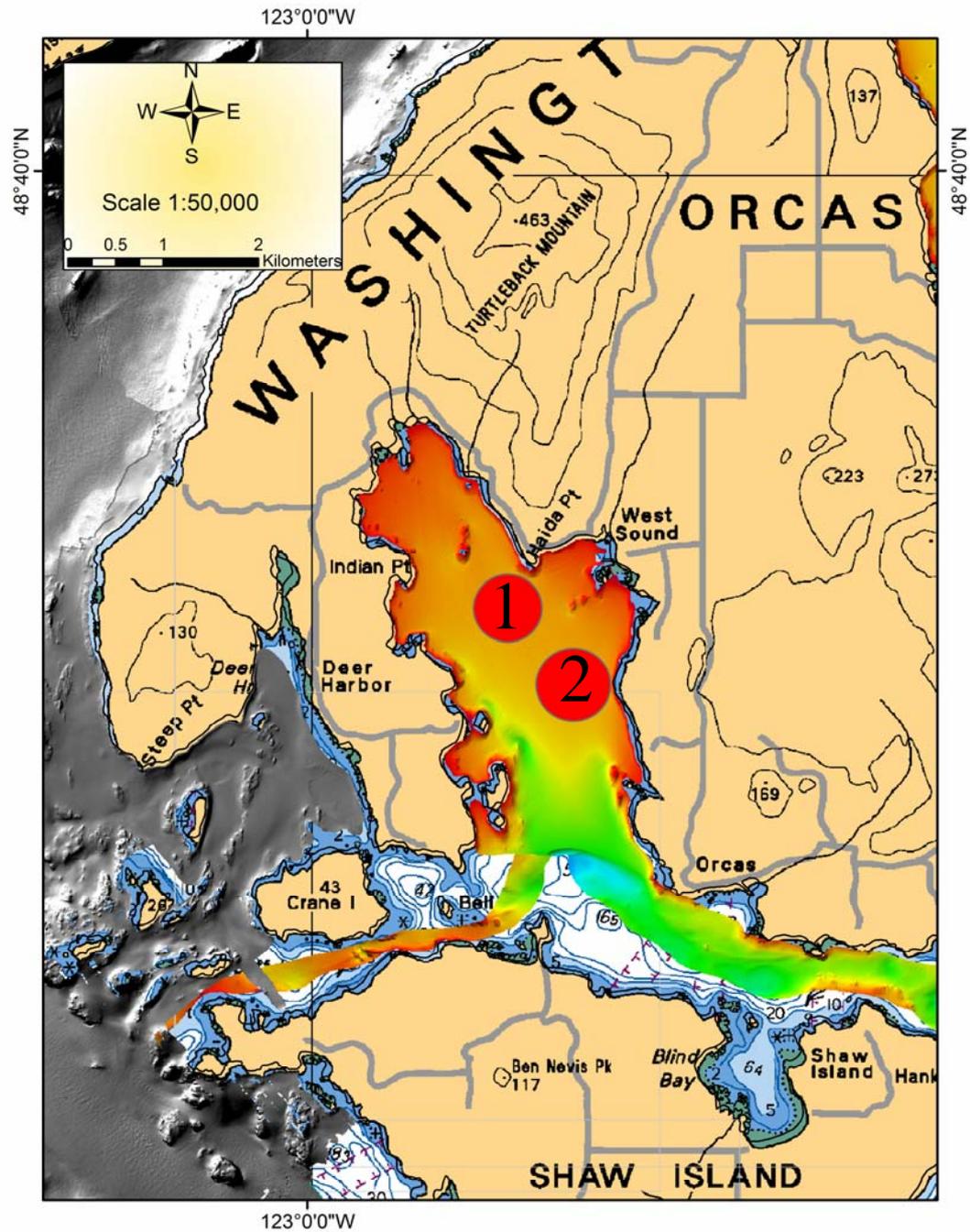


Fisheries and Océanarie
Canada
1.6
1.4
Pêches et Océanographie
Canada

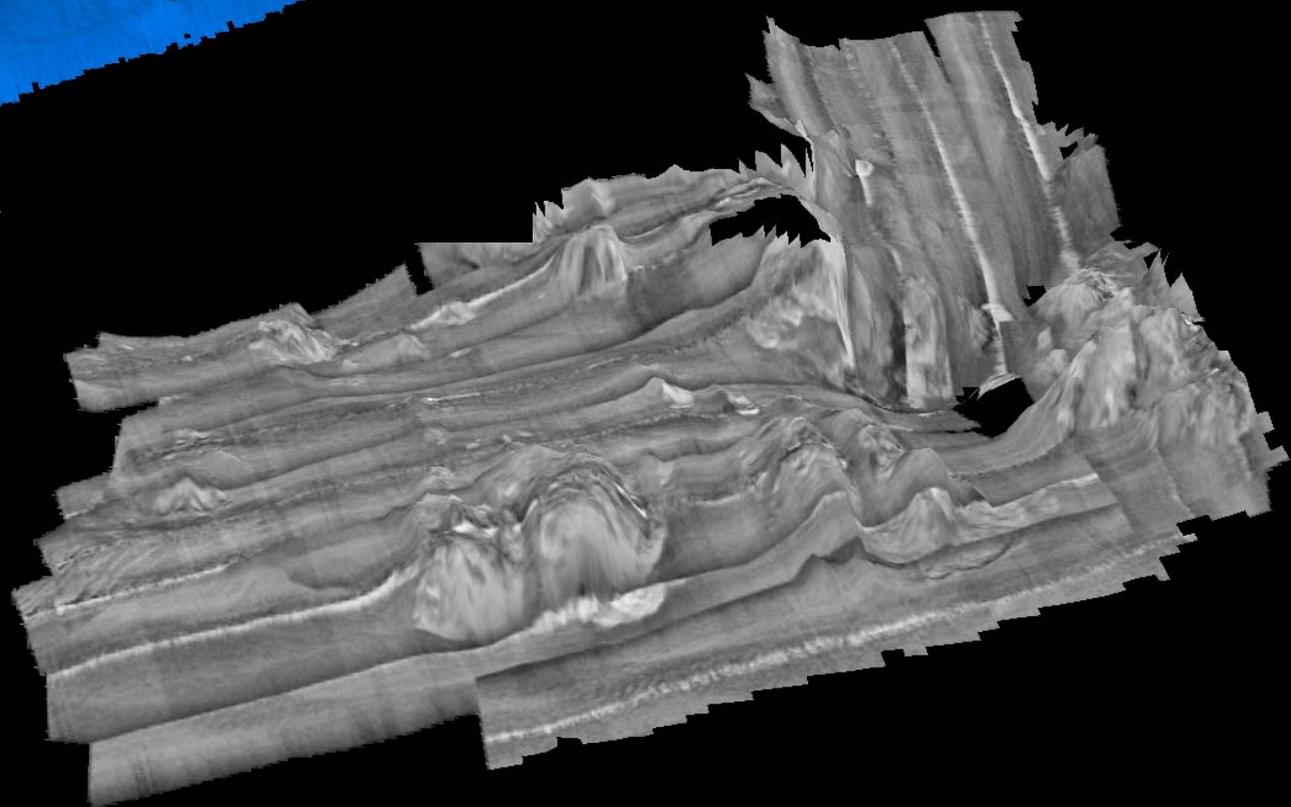
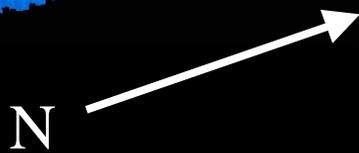
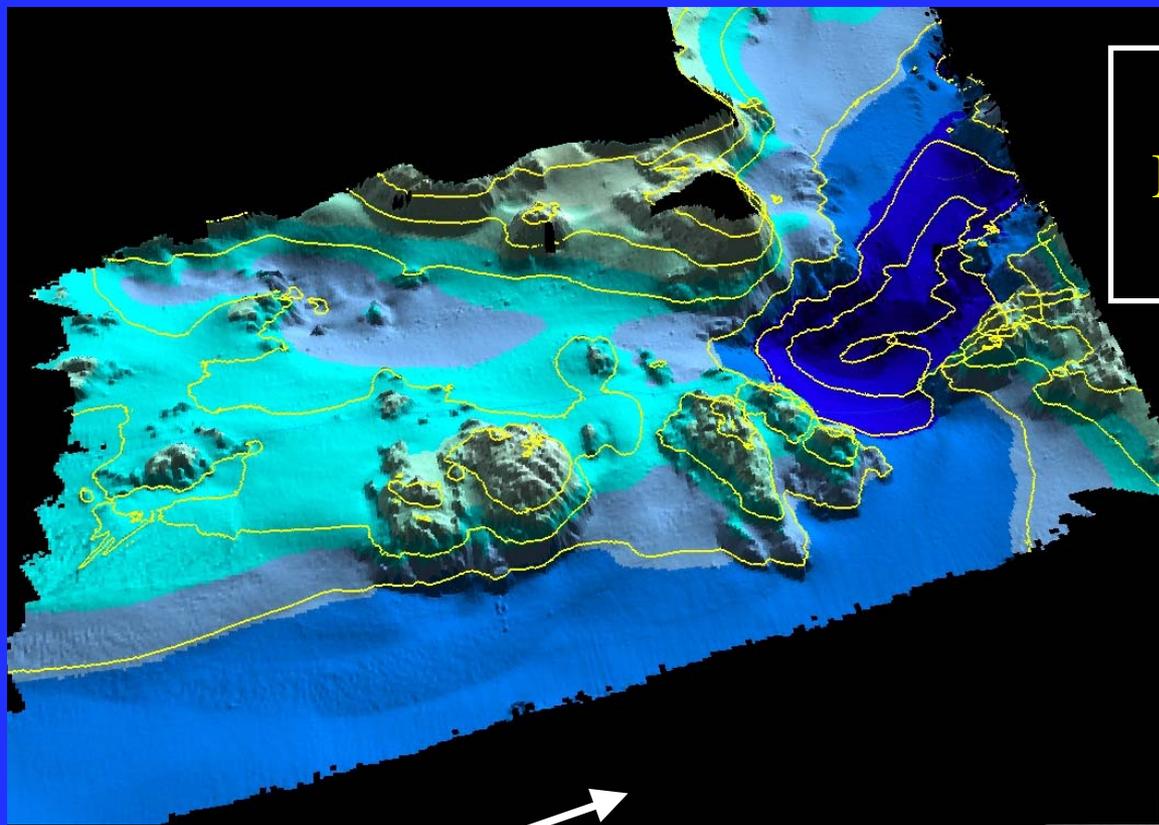
PROTECTOR

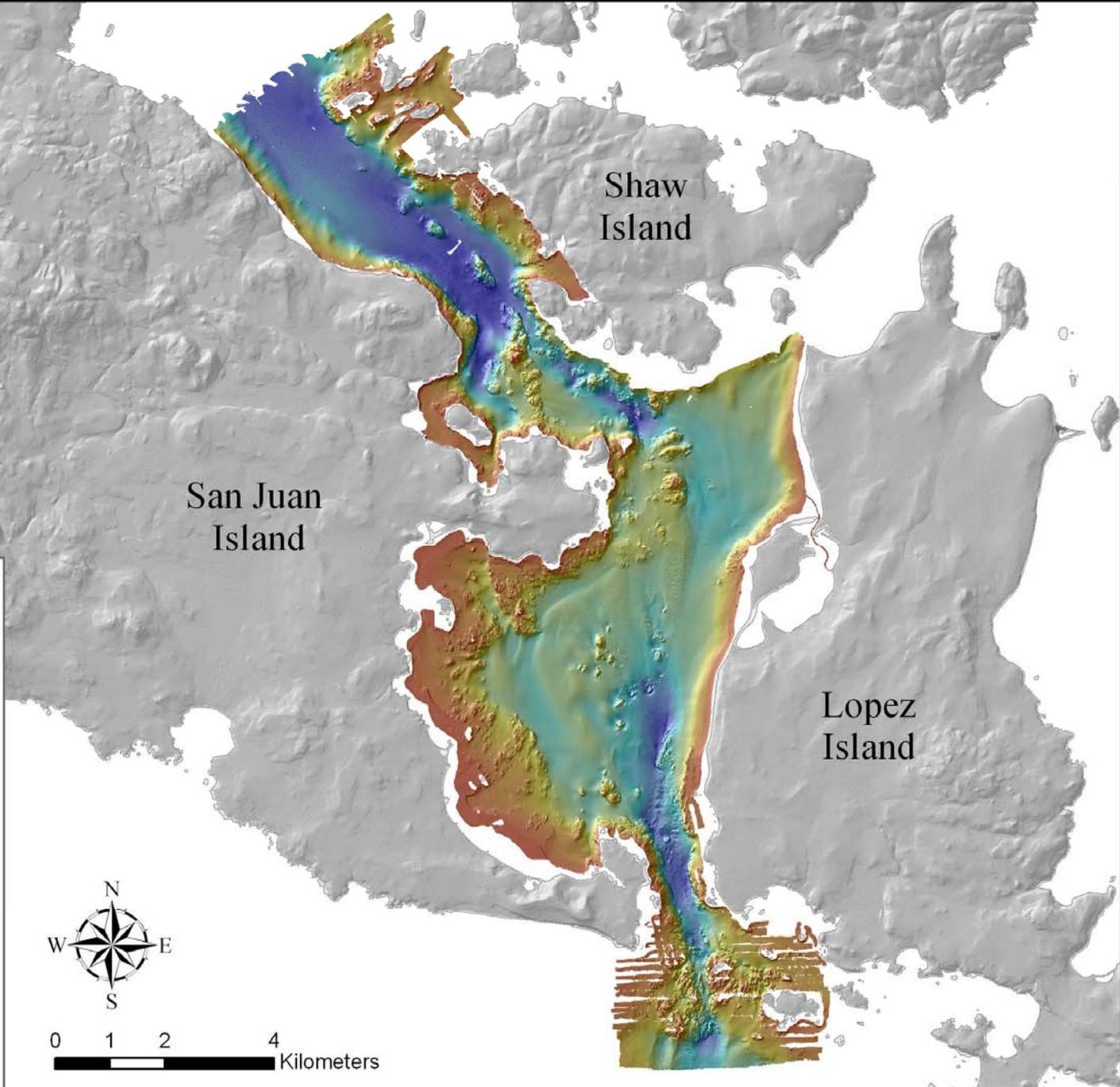
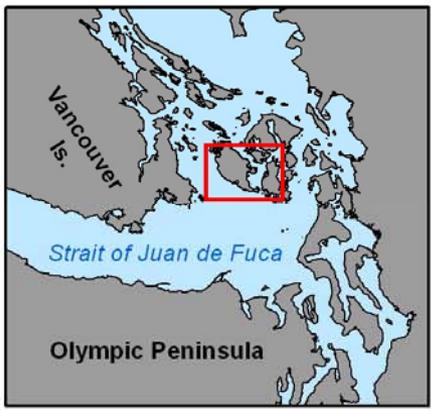


Sediment Sampling



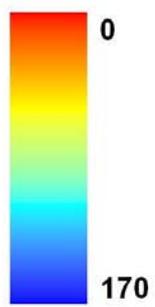
Friday Harbor Processed
Multibeam/Backscatter Data
in 3D



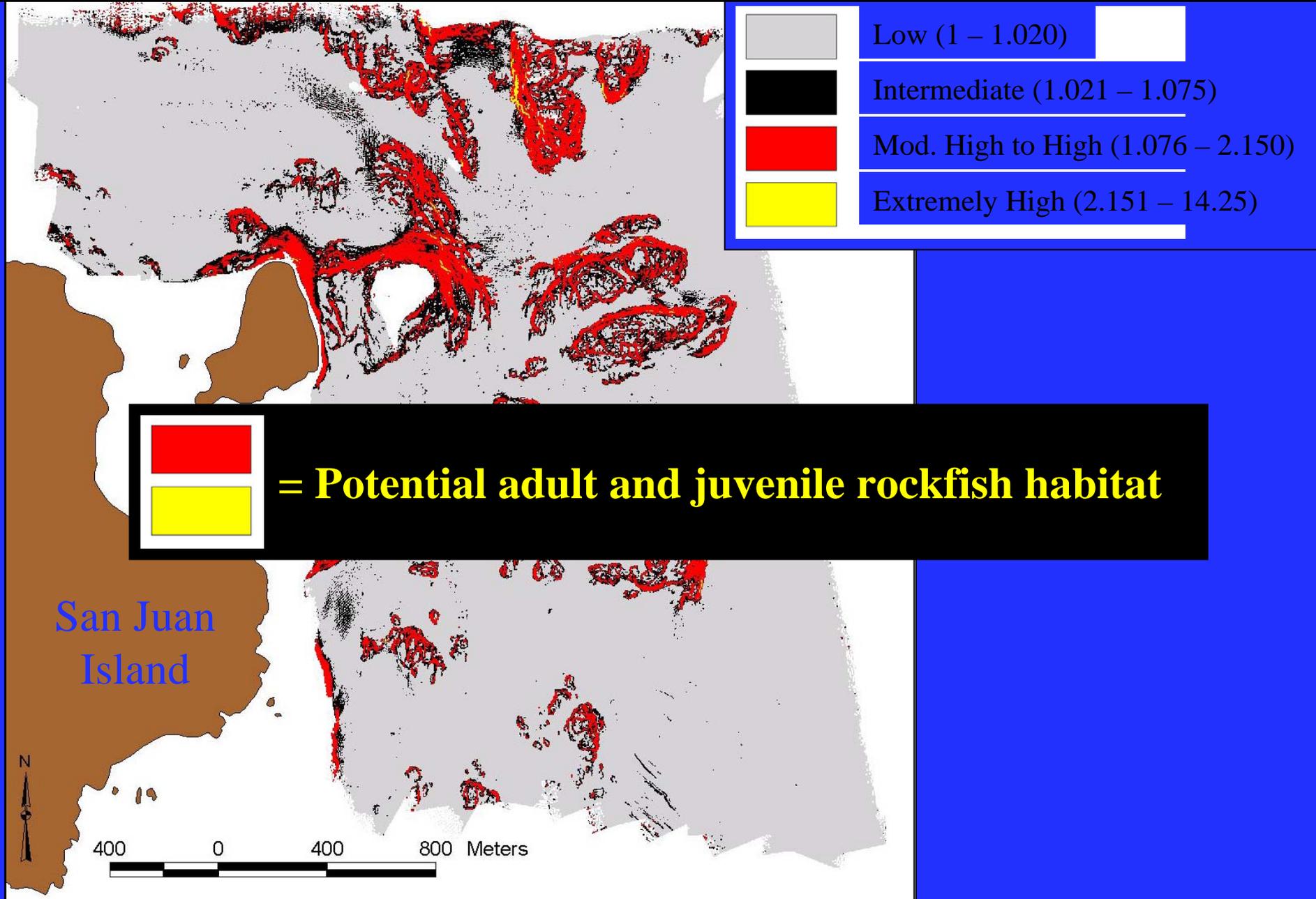


San Juan Channel Hillshaded Bathymetry

Depth in meters

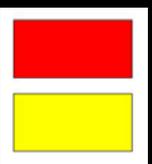


Turn Island Seafloor Complexity



Validating Computerized Identification of Potential Rockfish Habitat

*Work in Progress



= Potential adult and juvenile rockfish habitat



= Rockfish identified from ROV video

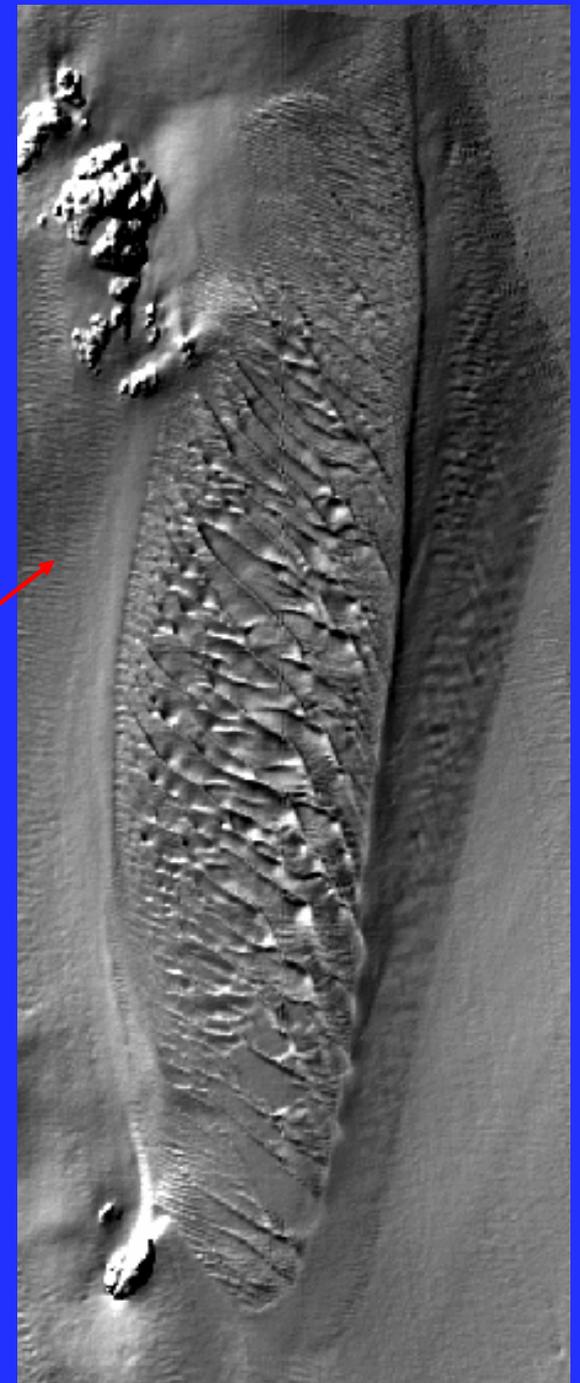
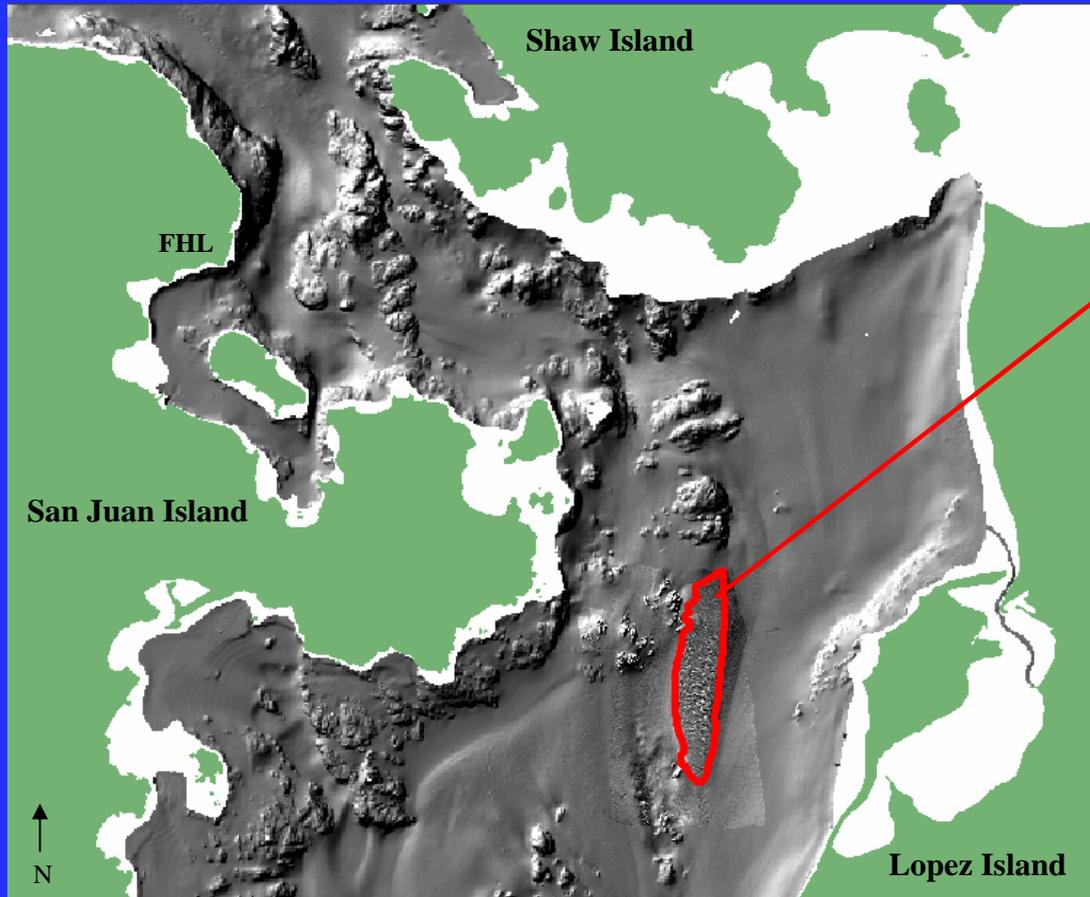


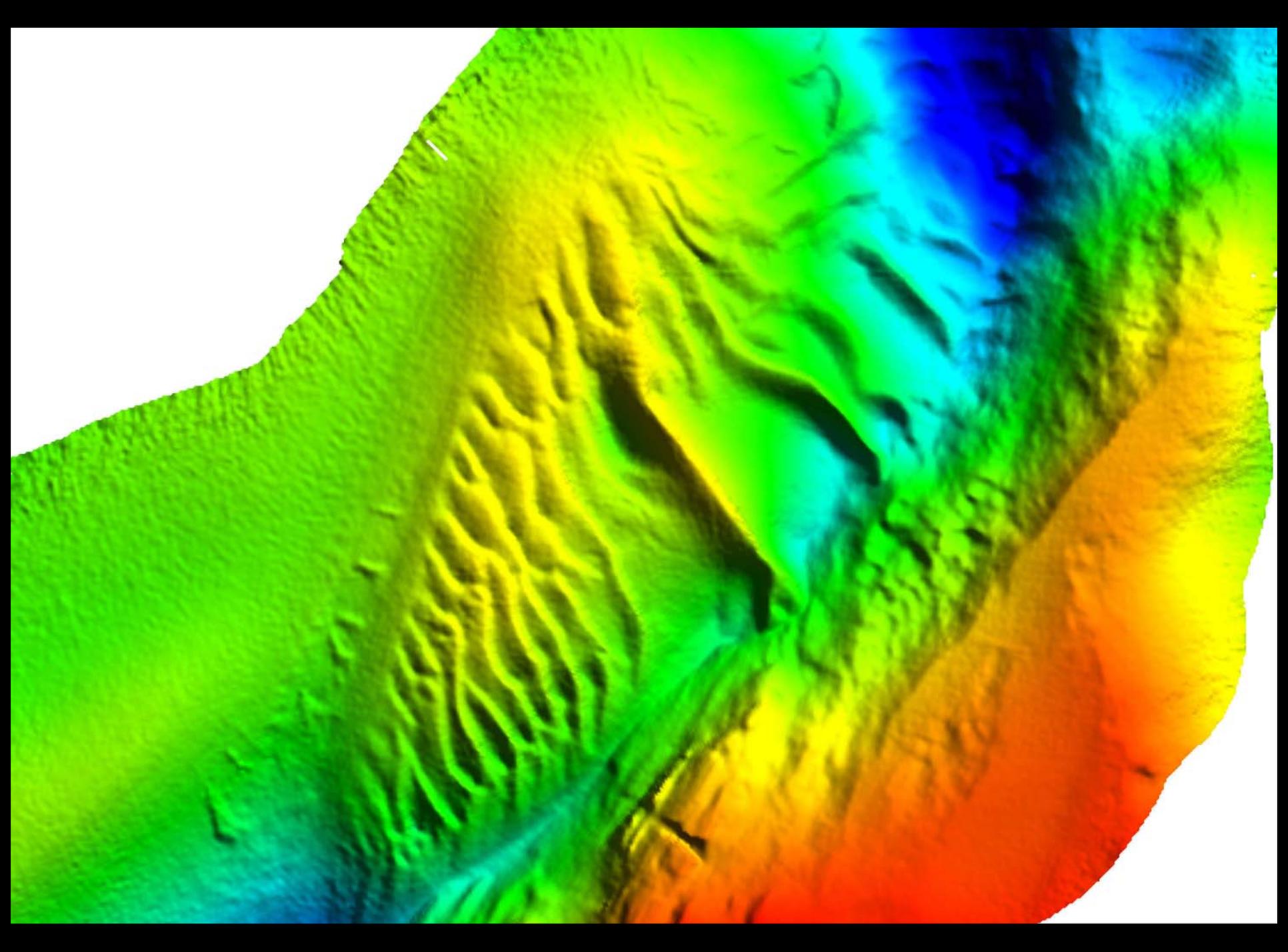
= ROV transect

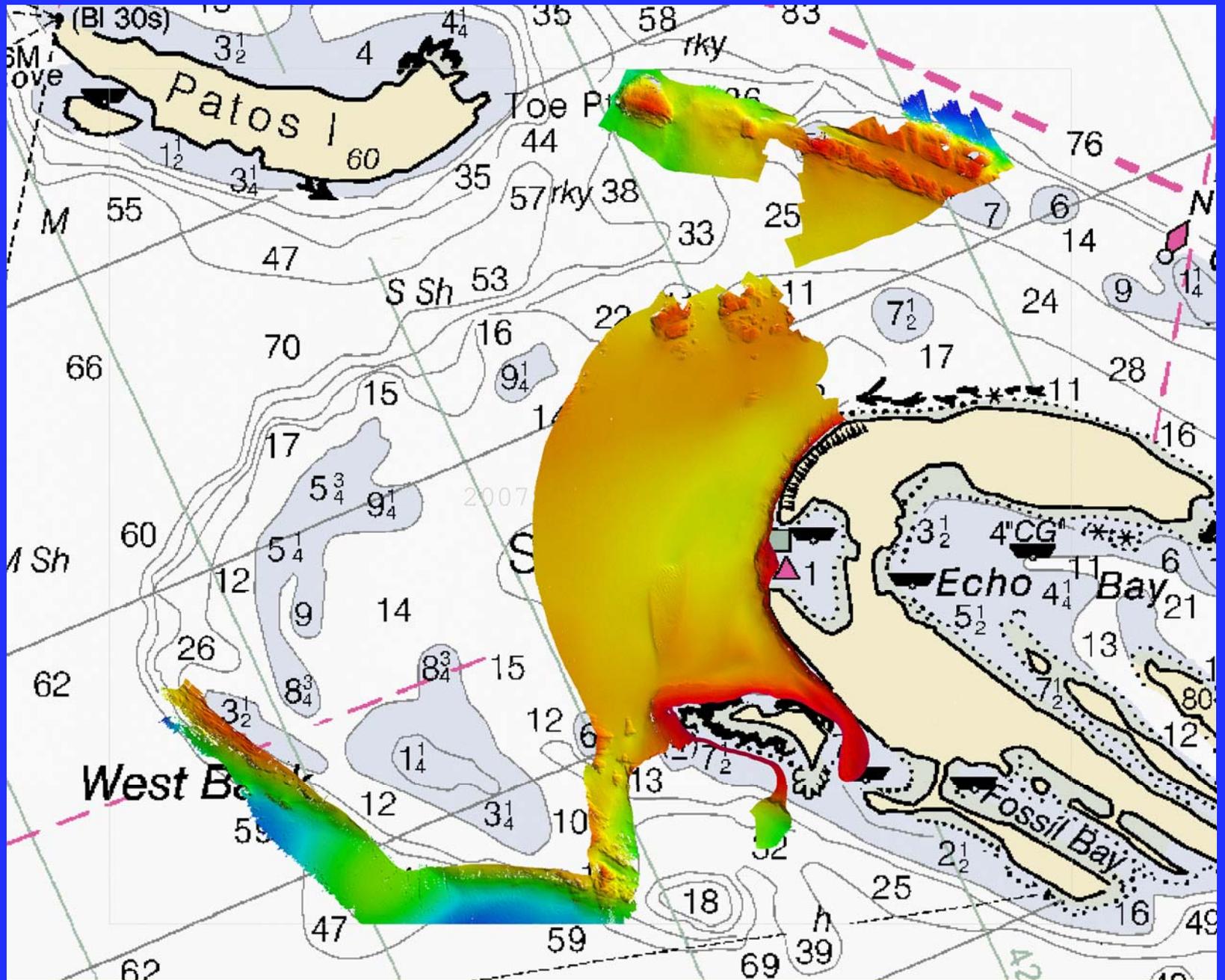
50 0 50 100 Meters

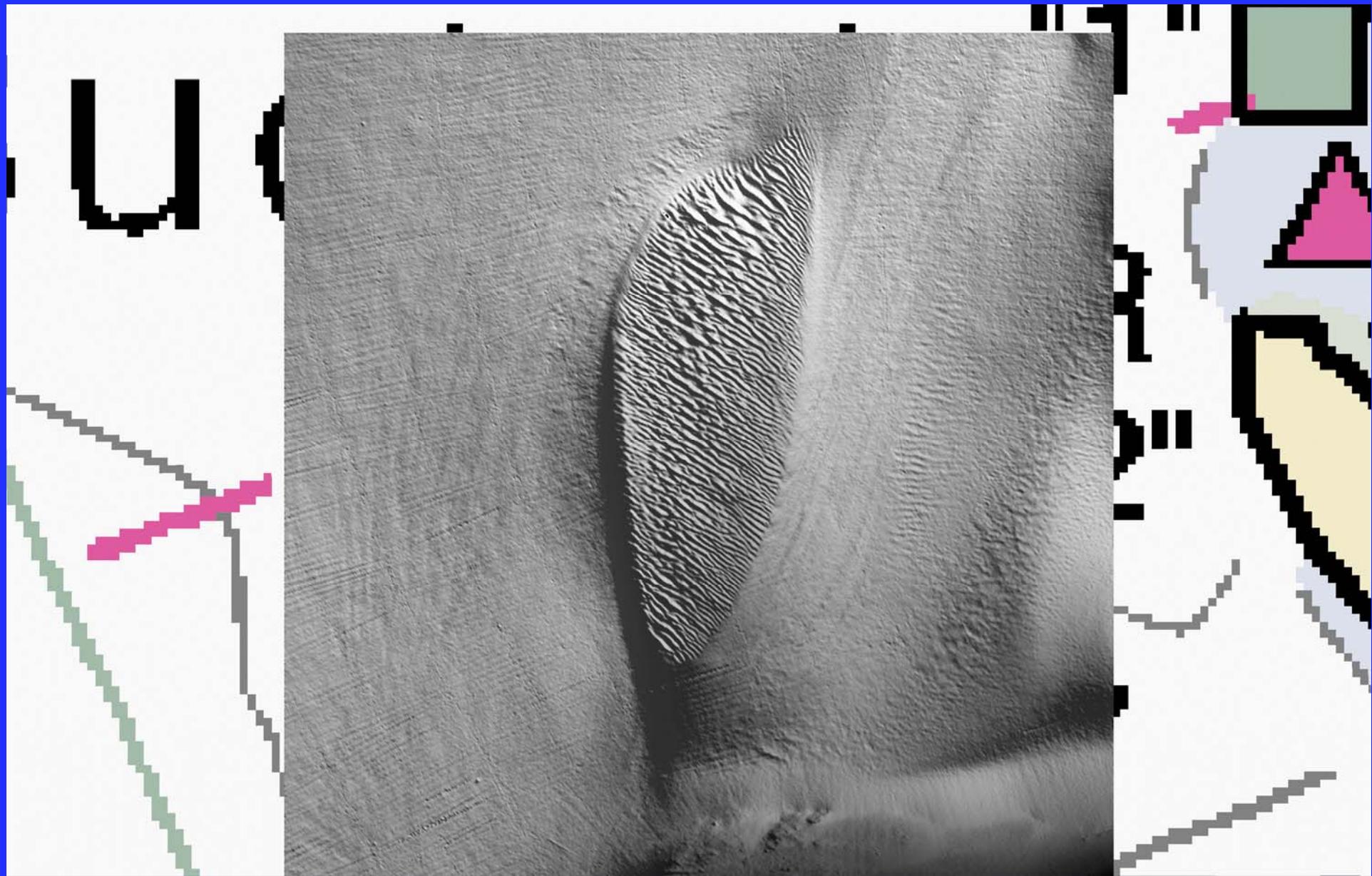


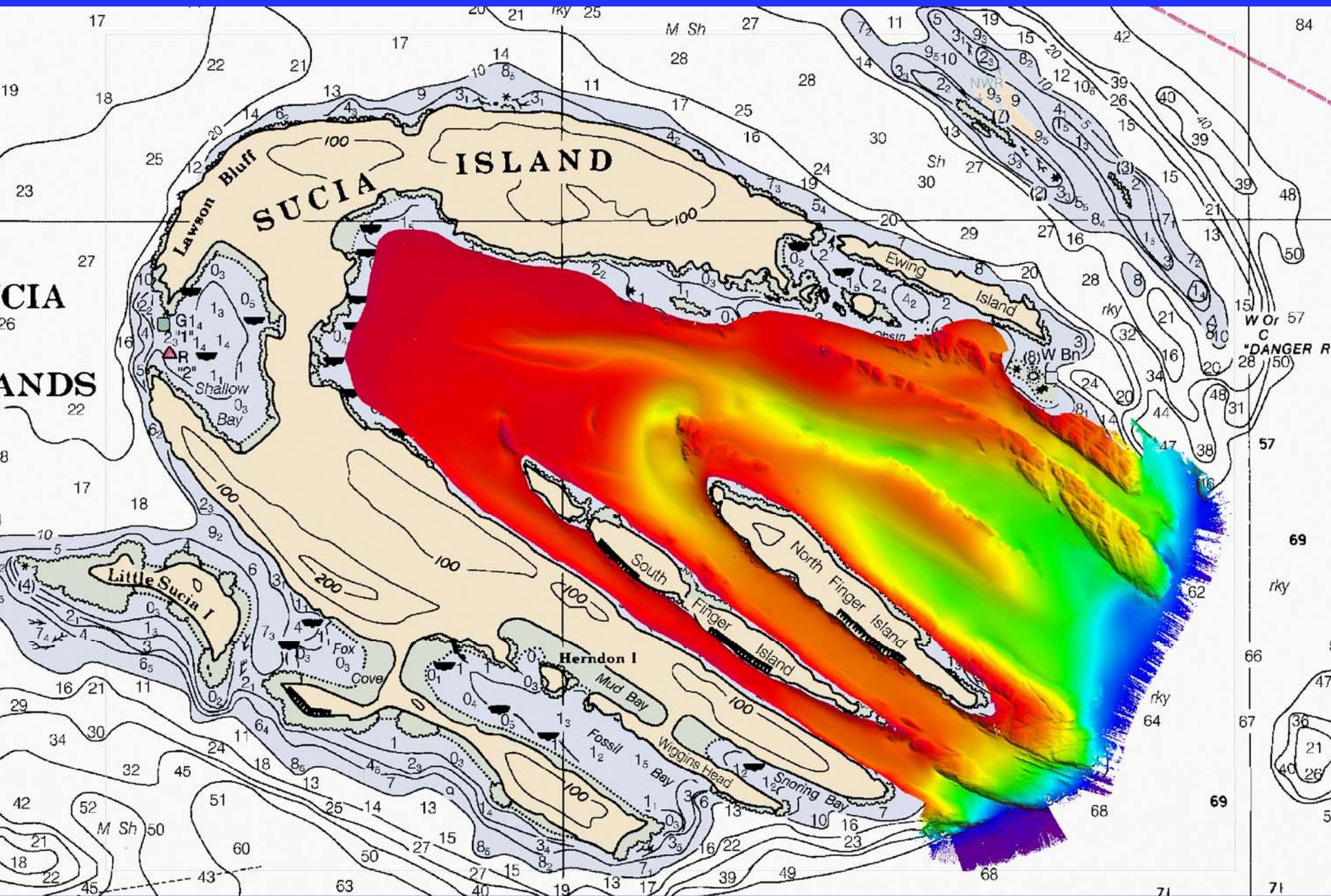
Sandwave Field

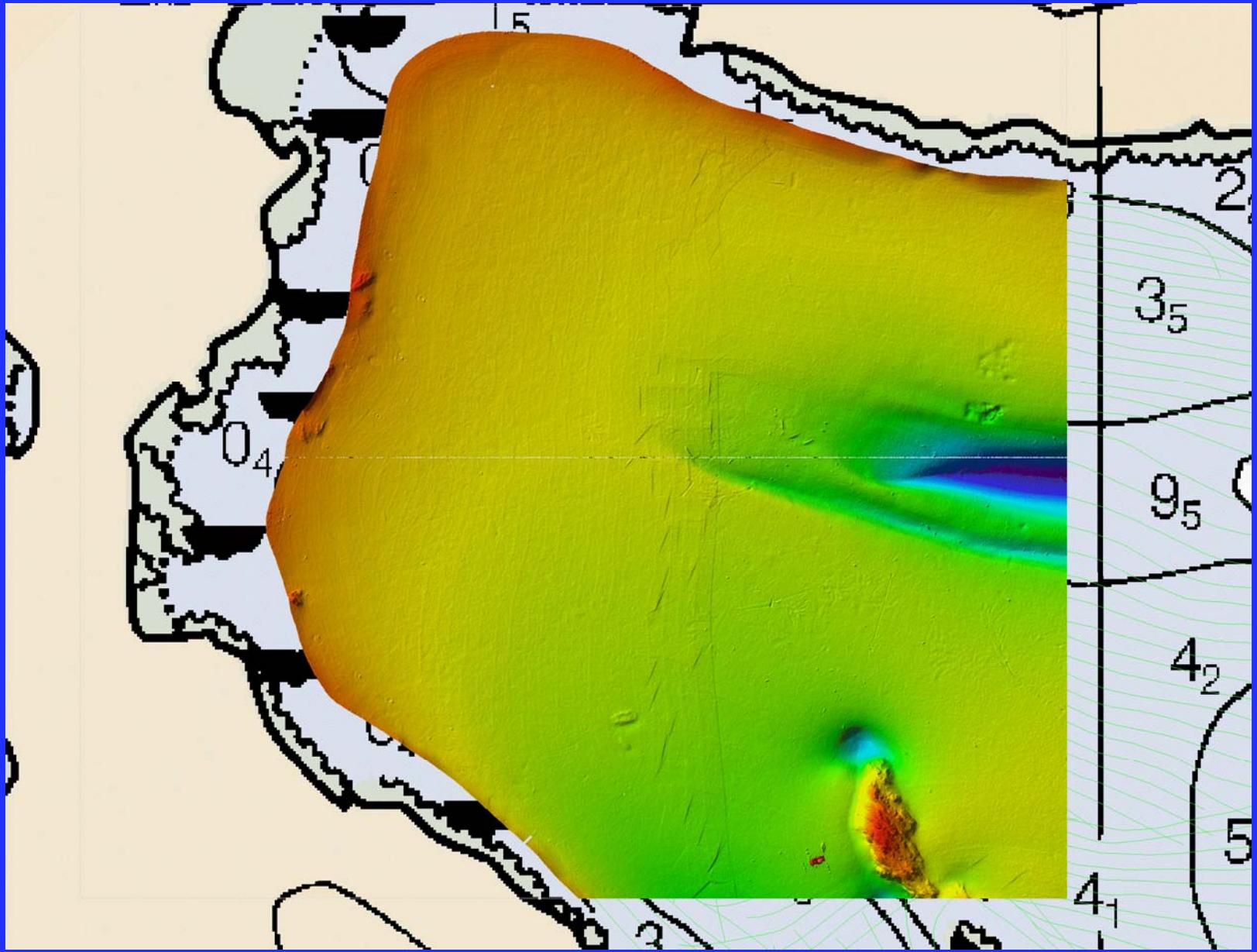


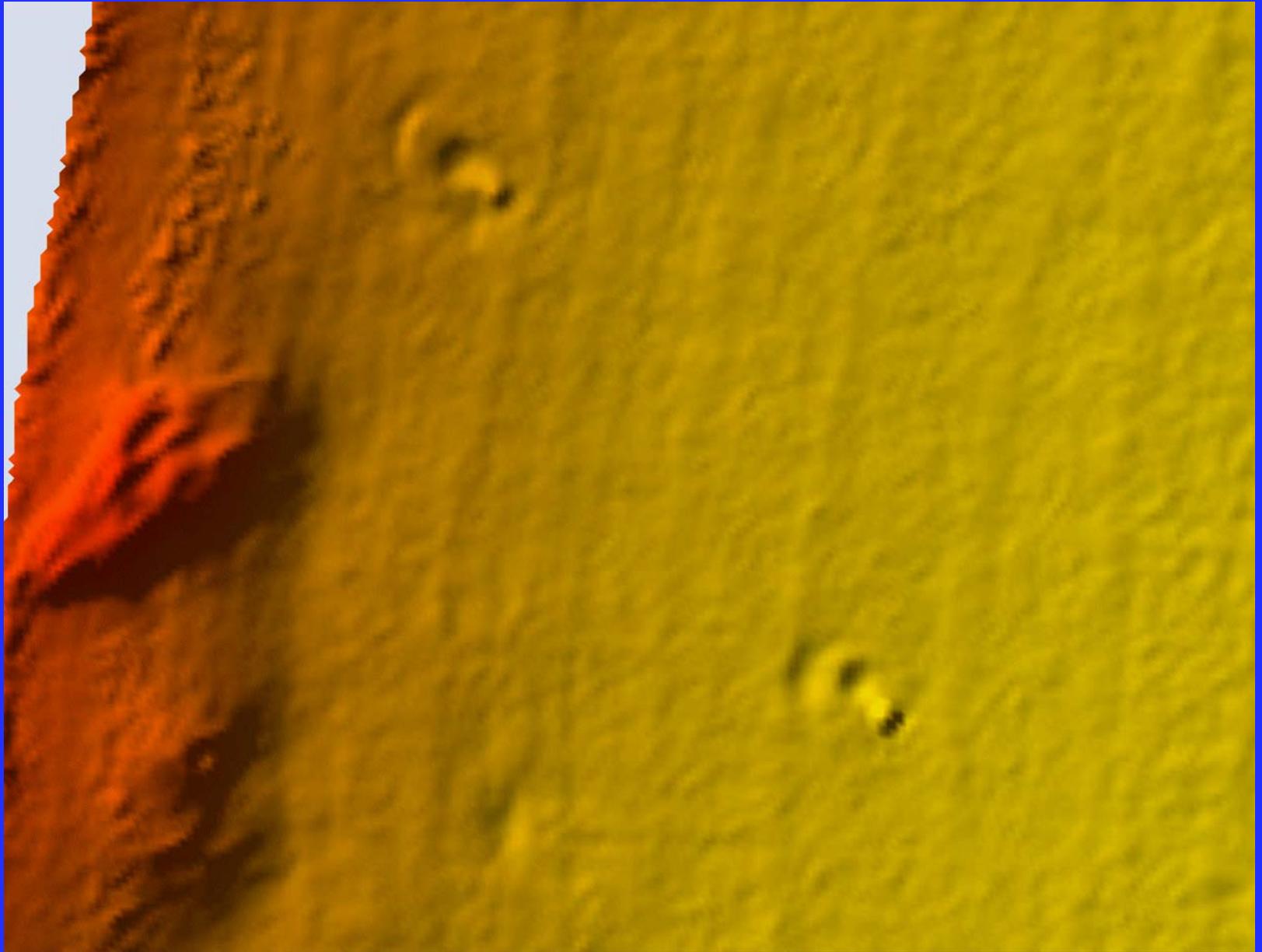


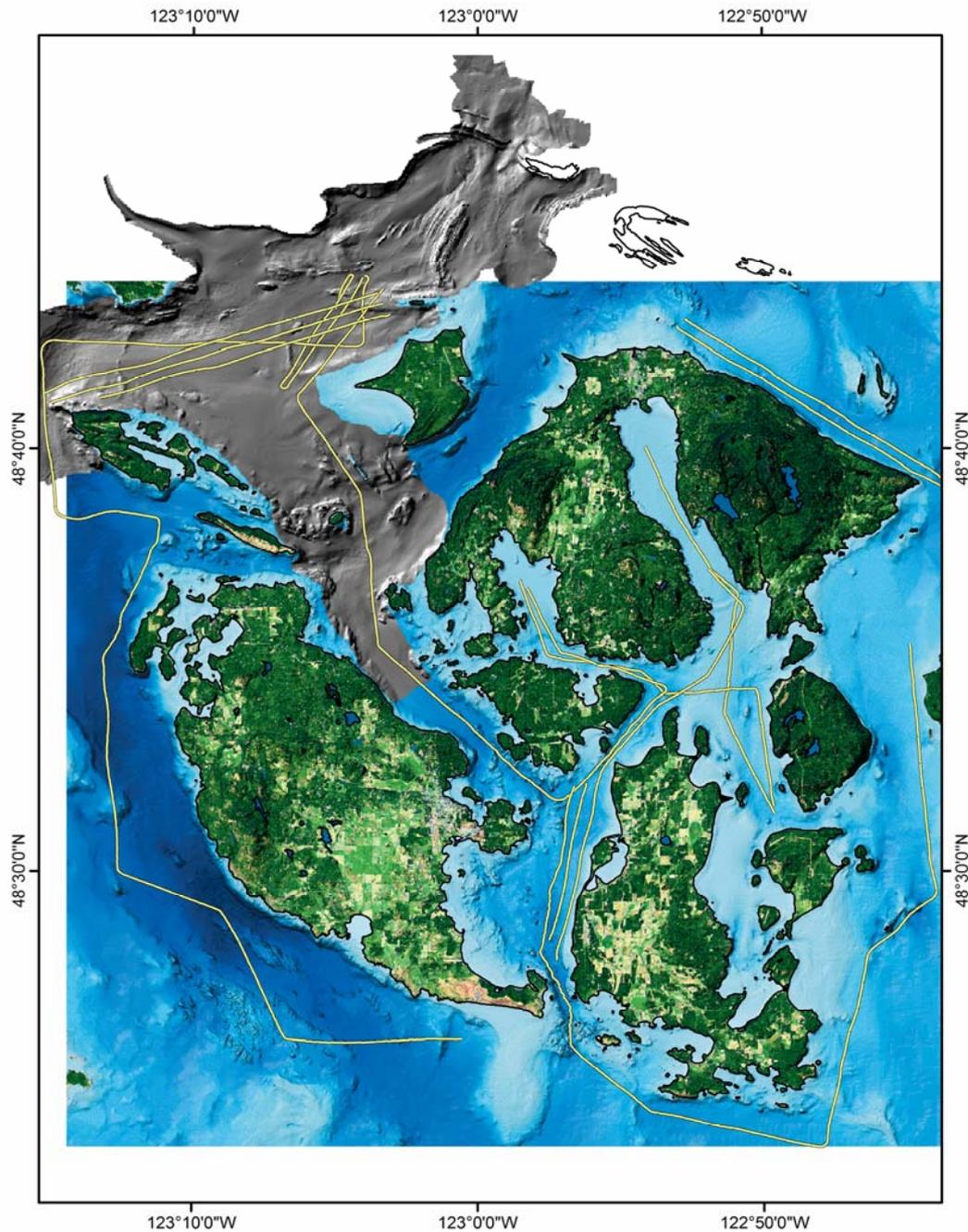








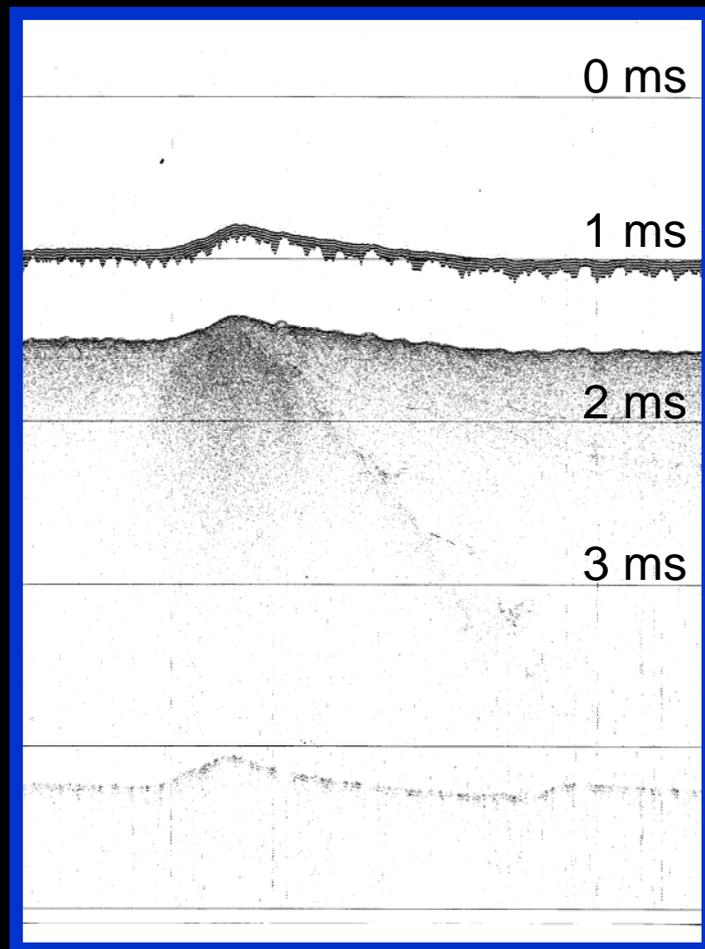
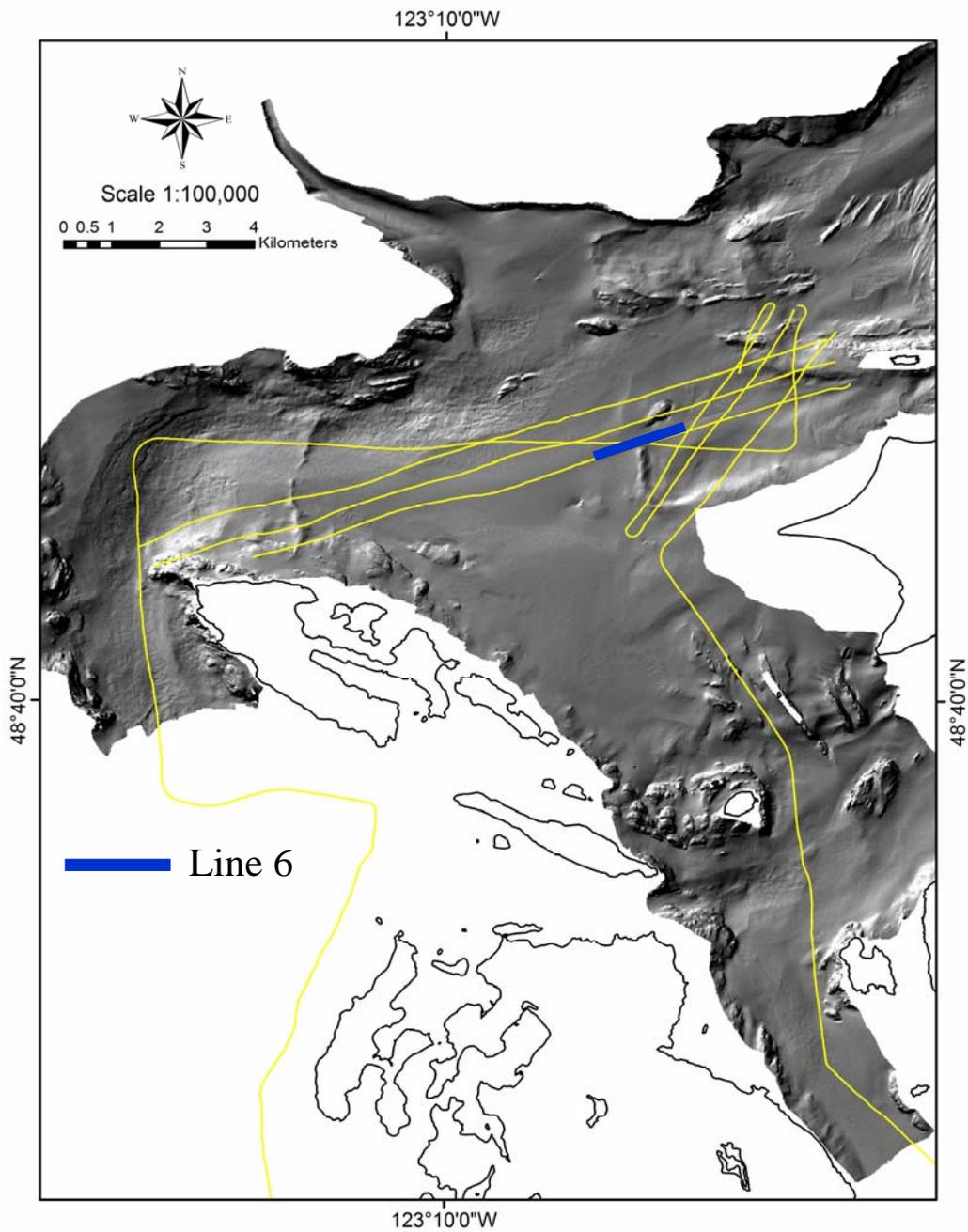


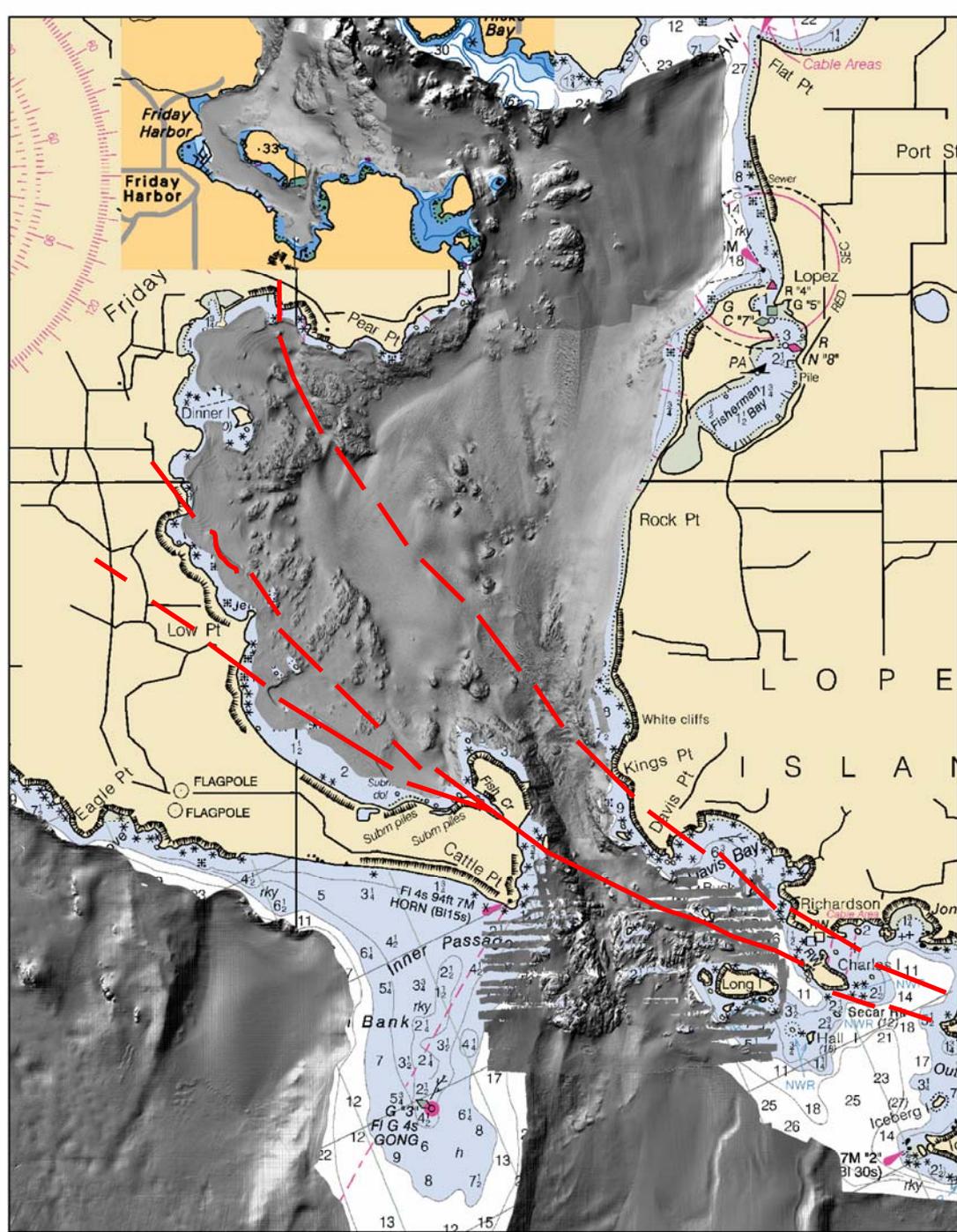
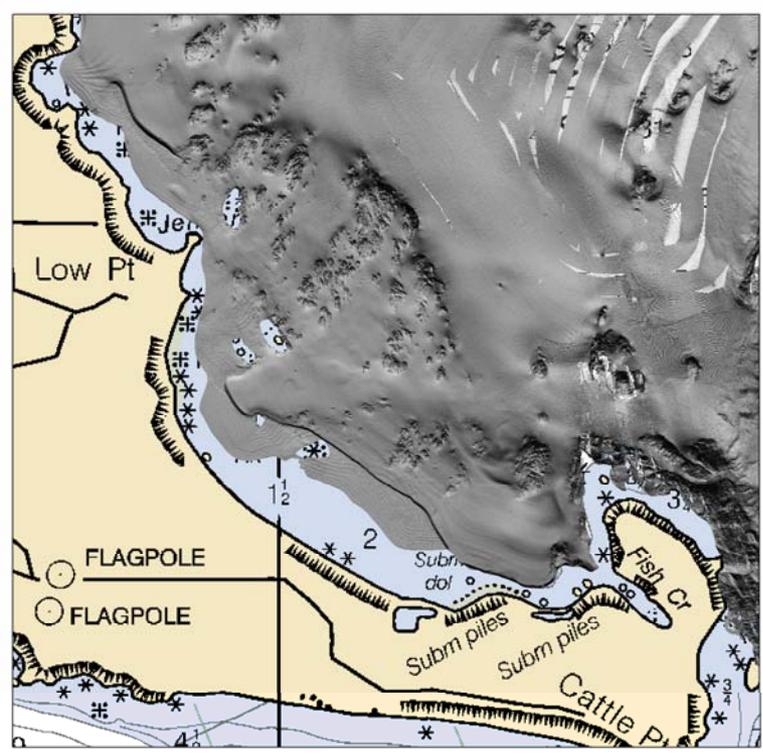


Boundary Pass

Seismic lines

Huntec® DTS
(2 to 500 kHz)
sub-bottom profiler

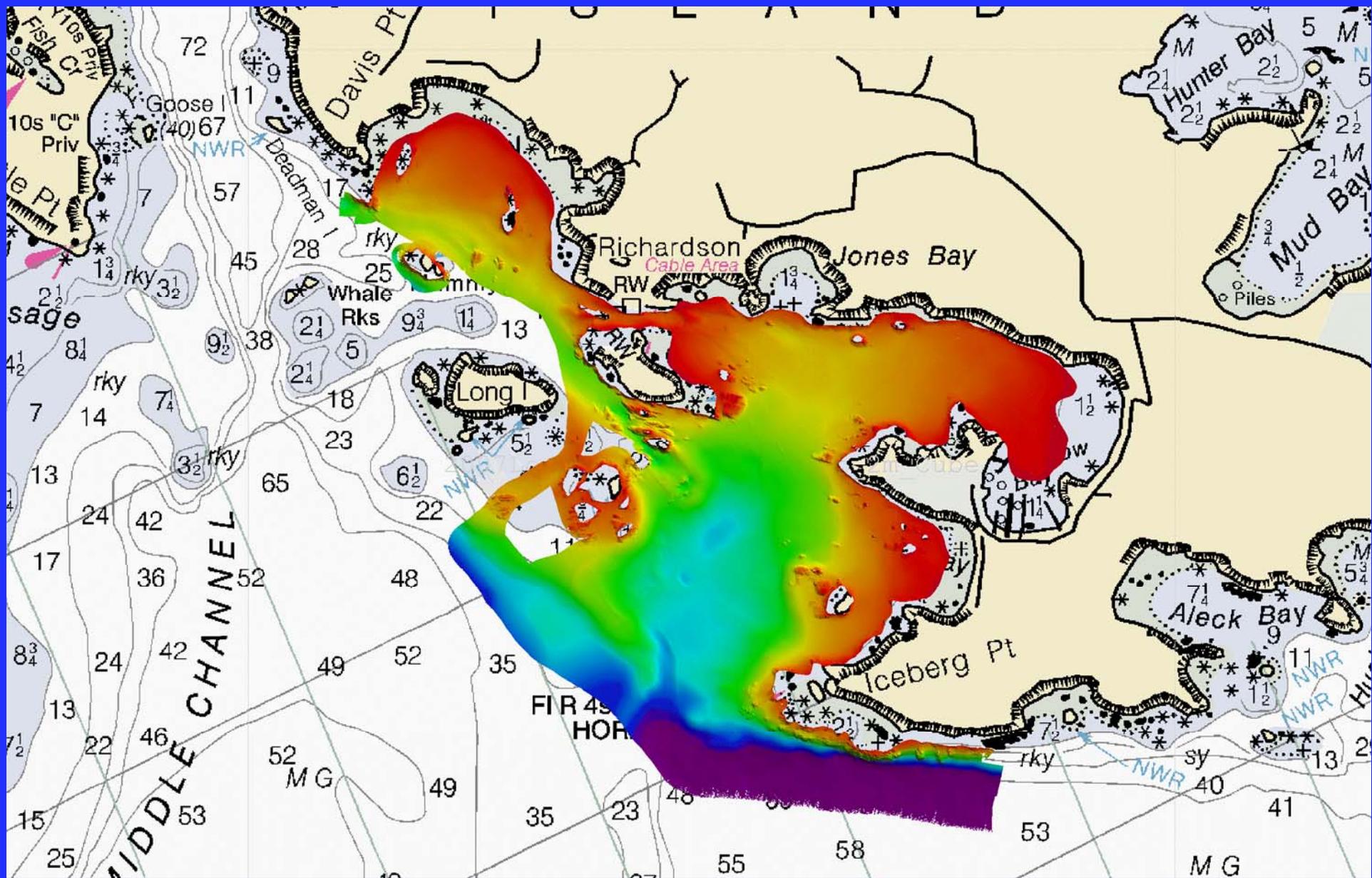


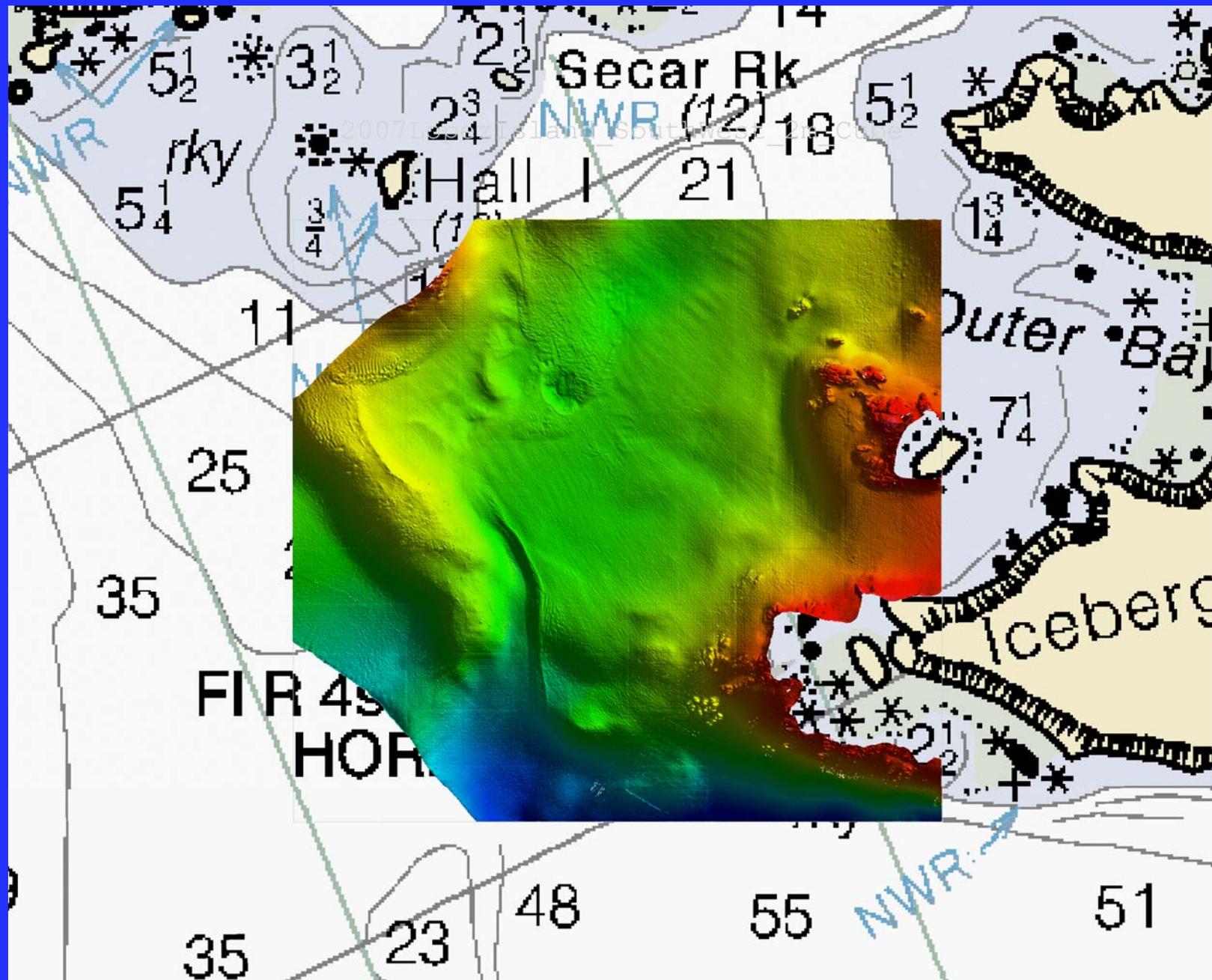


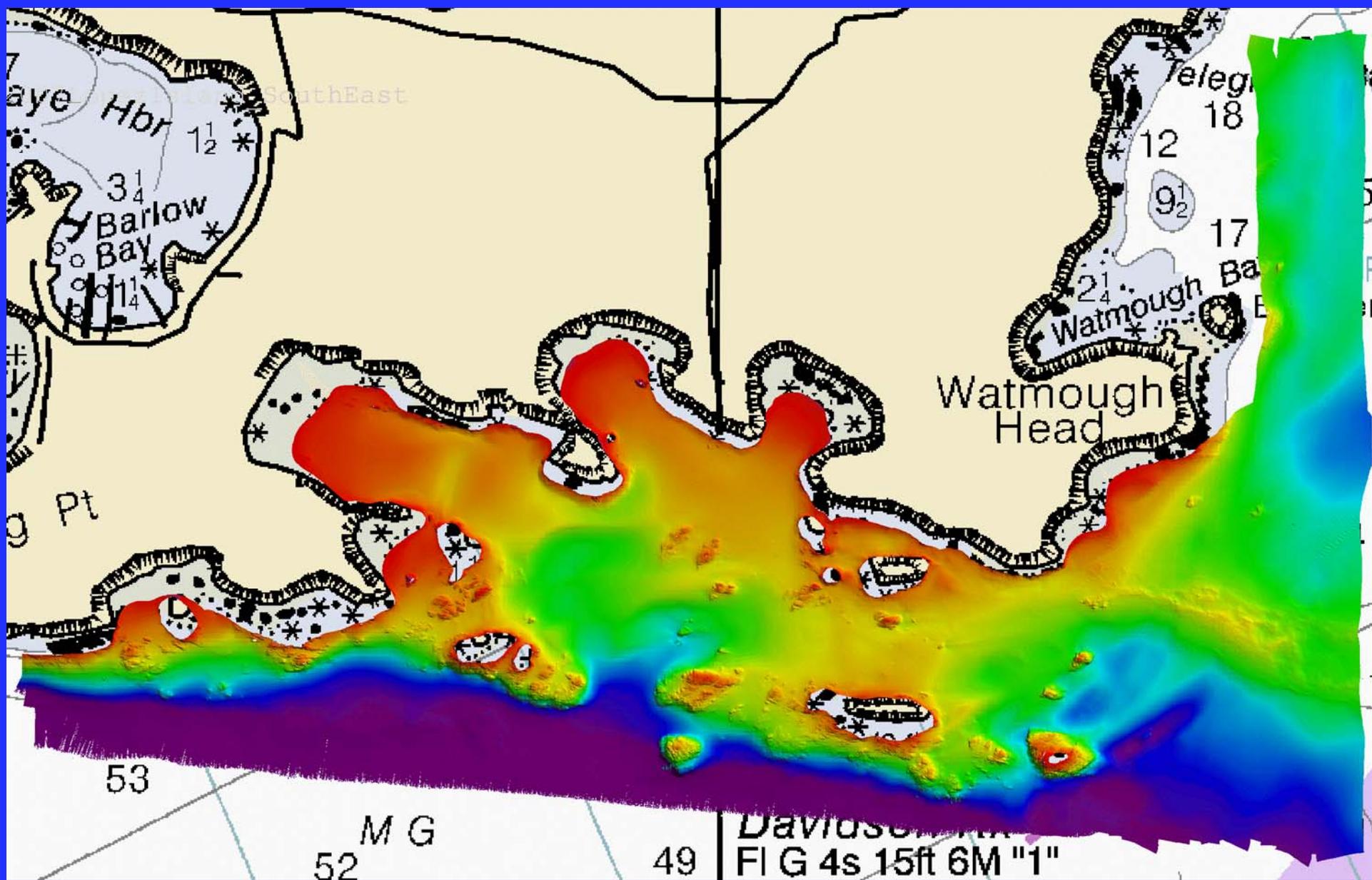
Griffin Bay

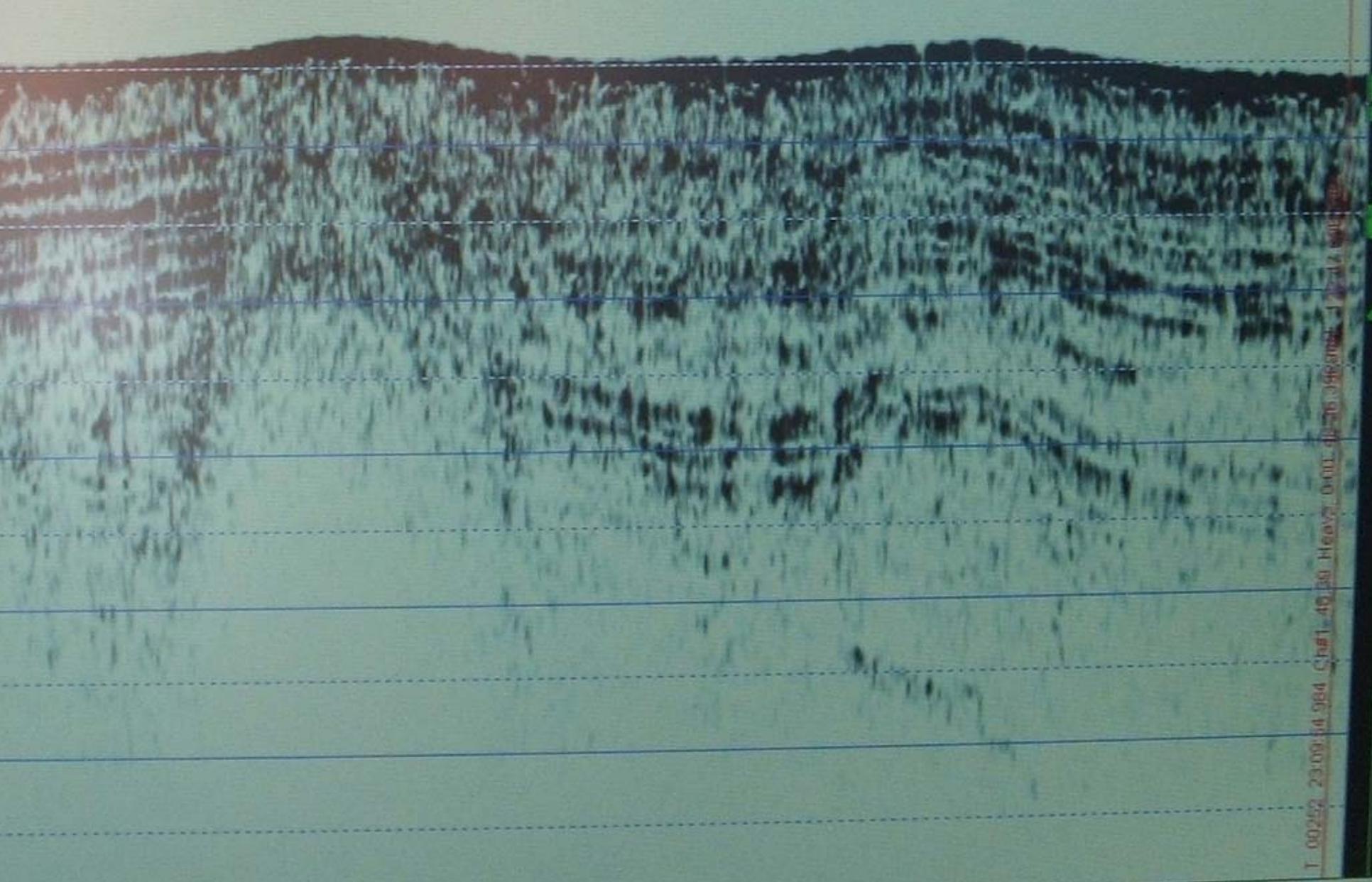
Possible fault
scarps





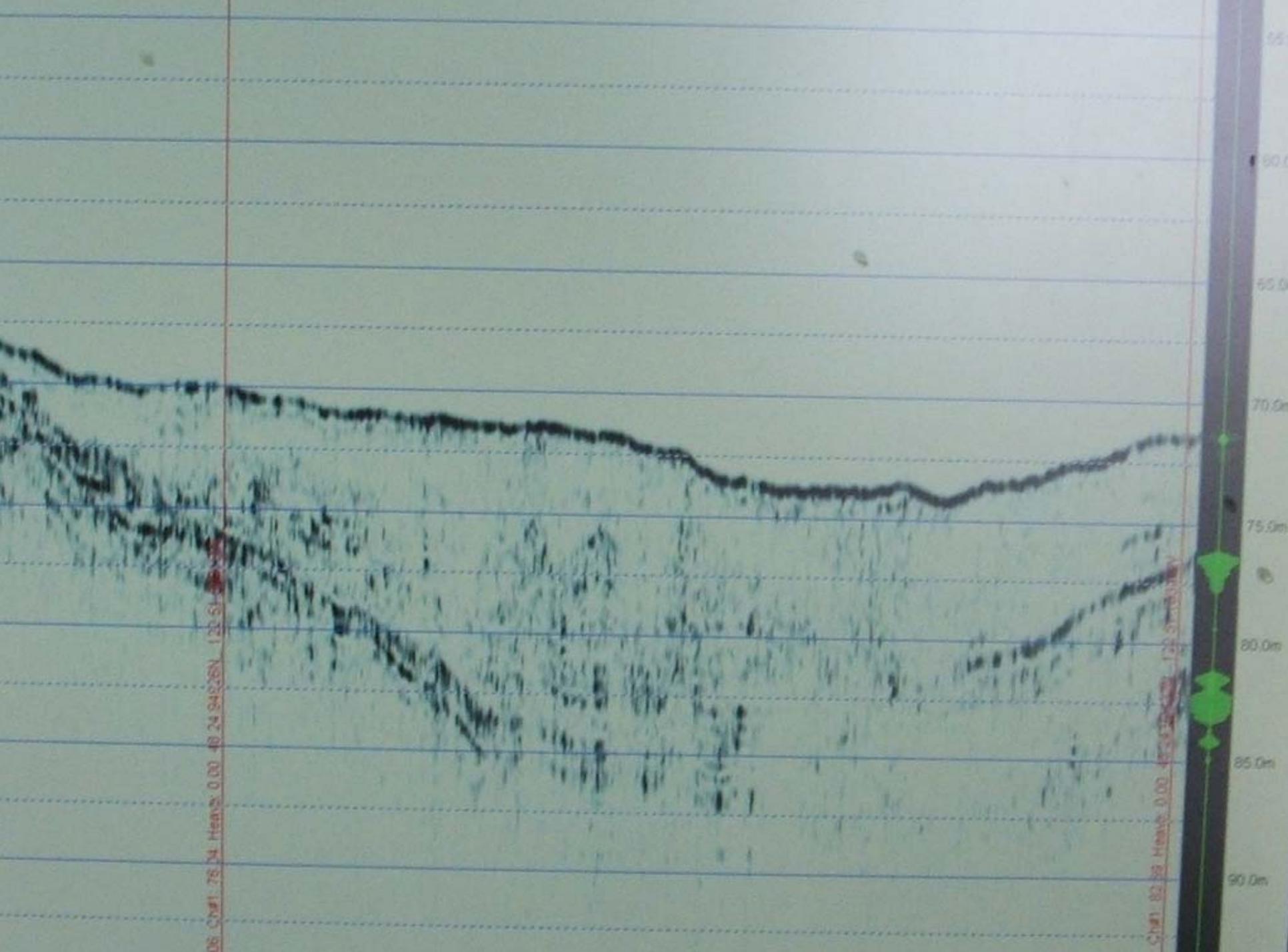




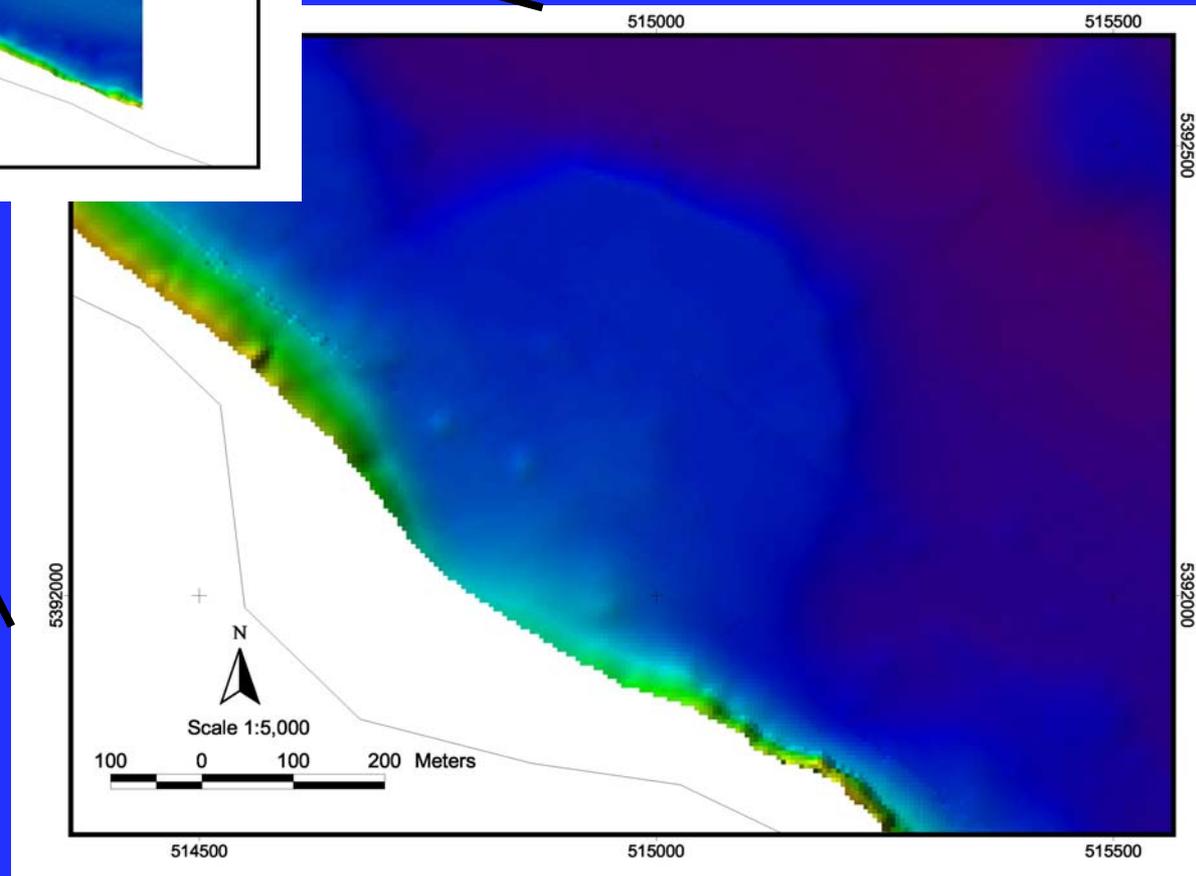
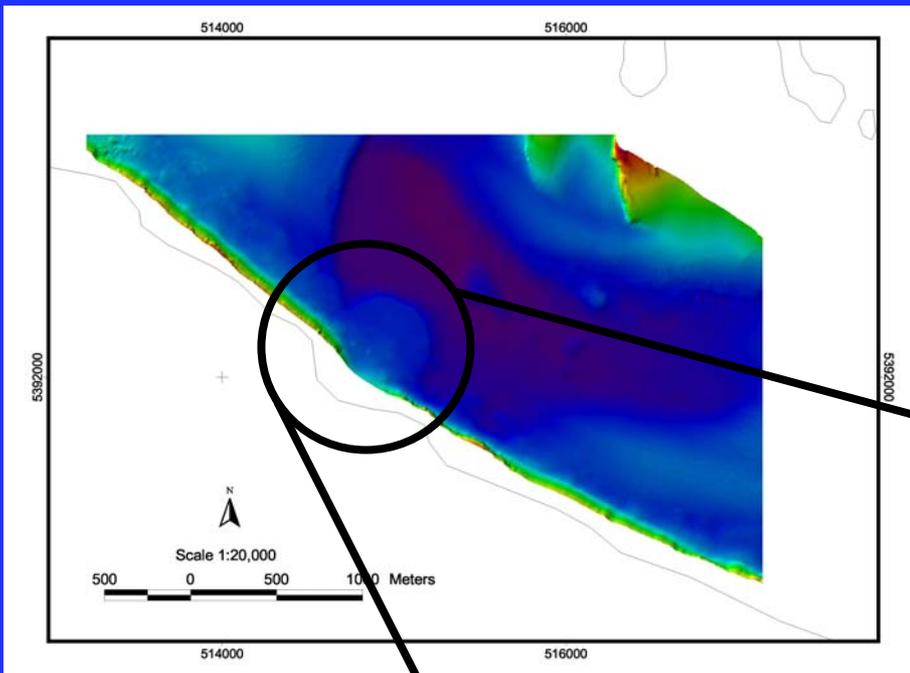


T: 00252 23:09:14.984 Ch#1: 40.330 Heavy: 0.001 01-26-1983msk 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

REC: BA 48 26.39900N 122 47.69623W No Recorder 23:09 19-Oct-2007 OS: Win

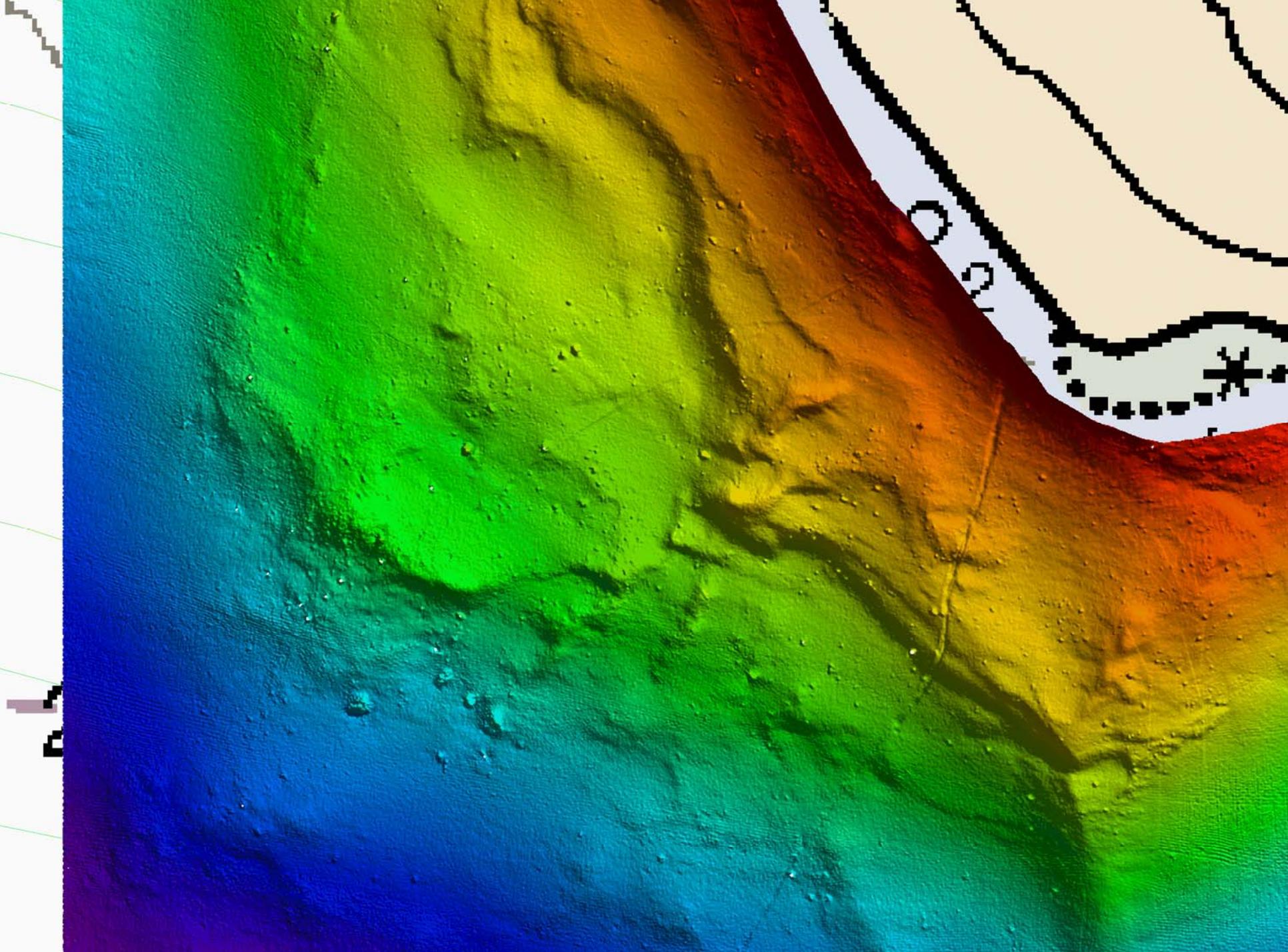


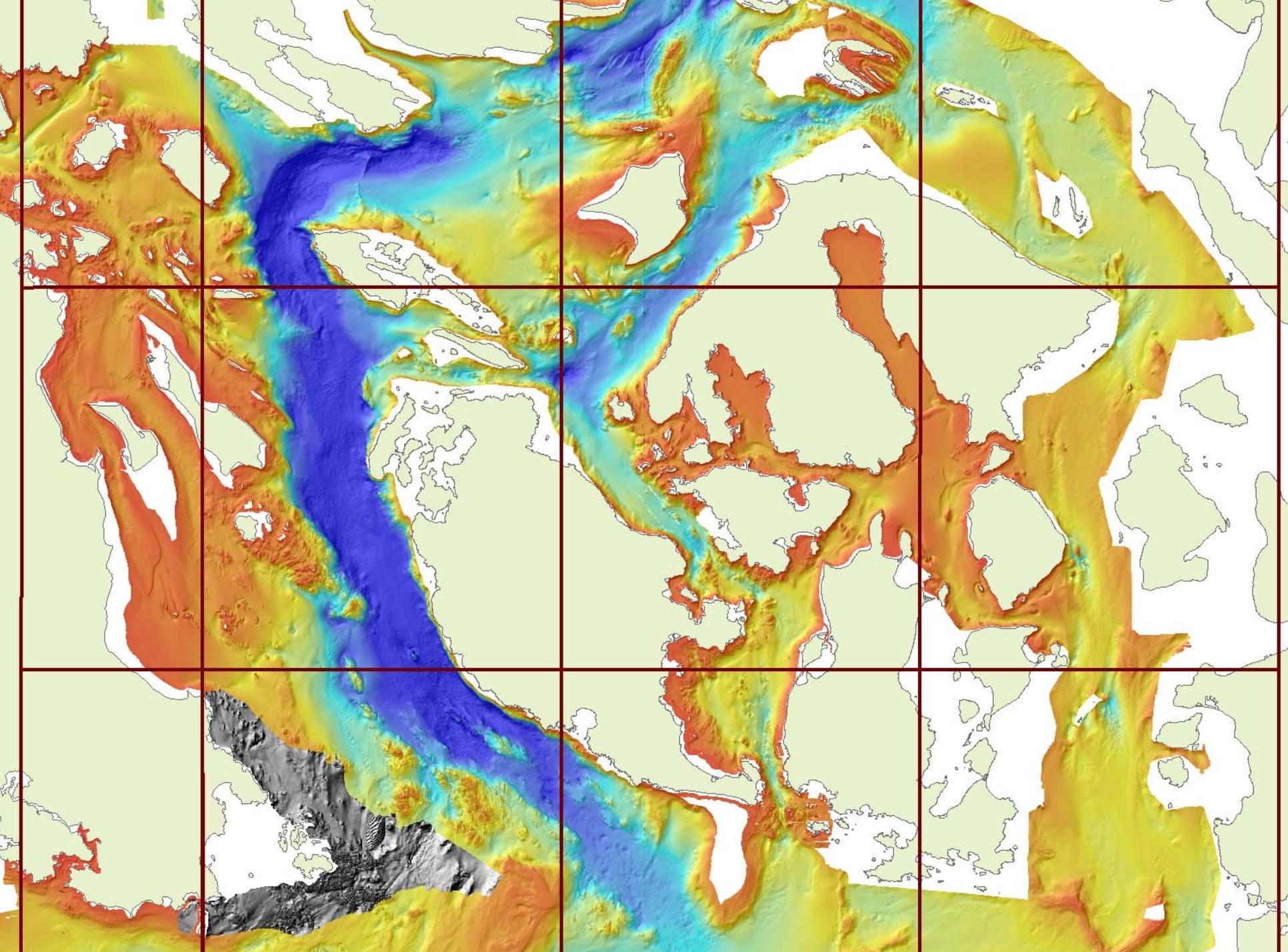
NE Orcas Island Submarine Landslide

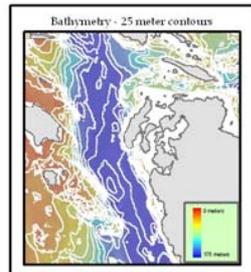
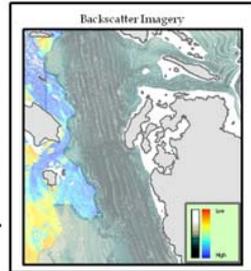
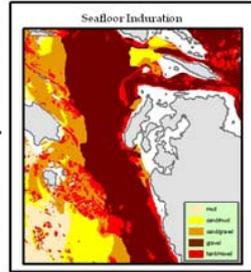
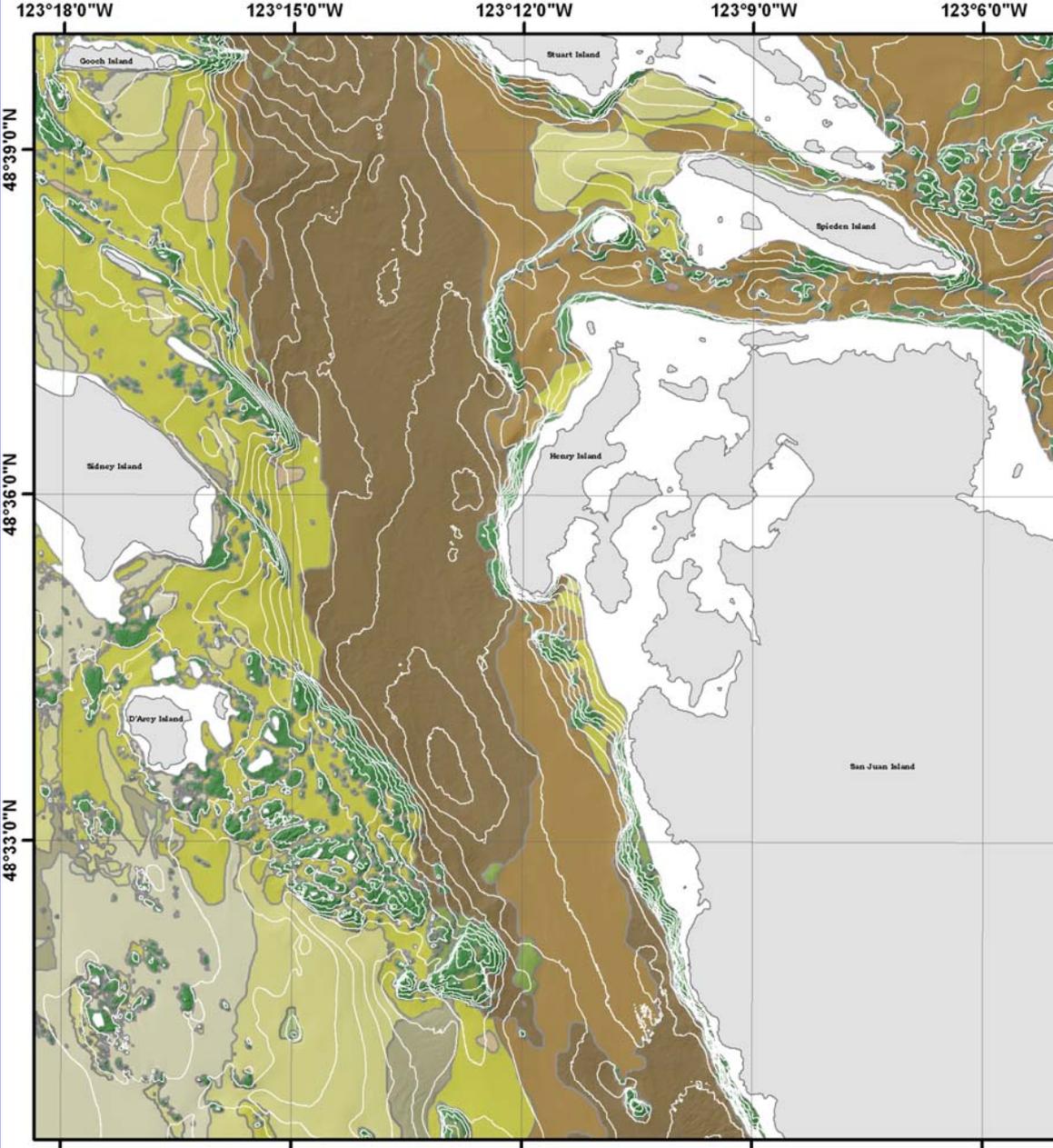


~500 m x 600 m,
95 m water depth









Key to Benthic Habitat Map

Projection: UTM Zone 10
Datum: NAD 83
Scale: 1:20,000

Habitat Types

SBM/LN	Shoreline and sediment (mud)
SBM/SN	Sediment (mud)
SBM/MLN	Shoreline and sediment (mud, sand)
SBM/MSN	Sediment (mud, sand)
SBM/SLN	Sediment (silt/clay)
SBM/WLN	Shoreline and sediment (sand/mud)
SBM/WSN	Sand (gravel)
SBM/SLN	Shoreline and sediment (sand, gravel)
SBM/SLN	Sediment (sand, gravel)
SBM/SLN	Shoreline and sediment (gravel)
SBM/SLN	Sediment (gravel)
SBM/SLN	Shoreline and sediment (gravel)
SBM/SLN	Sediment (gravel)
SBM/SLN	Shoreline and sediment (bedrock)
SBM/SLN	Bedrock
SBM/SLN	Shoreline and sediment



Benthic Habitats of the San Juan Islands

Sheet 4 of 12

Produced and interpreted by Green, H.G., Deiter, B., Endris, C., Lopes, H., Murai, L. and Erkey, M. of the Center for Habitat Studies, Moss Landing Marine Laboratories

Interpretations done at 1:10,000 scale using bathymetric data gridded at 5 meters and backscatter gridded at 1 meter. These data were acquired between 1999 and 2006 by the Canadian Hydrographic Service (Stores EM3002 and Sounding EM3000) and the Seafloor Mapping Lab of California State University Monterey Bay (Faxon 8075). Sediment Characteristics are based on sediment samples and PCP values collected by the Center for Habitat Studies and University of Washington's Friday Harbor Laboratories, as well as data from the seSIBED database compiled by the USGS.

