

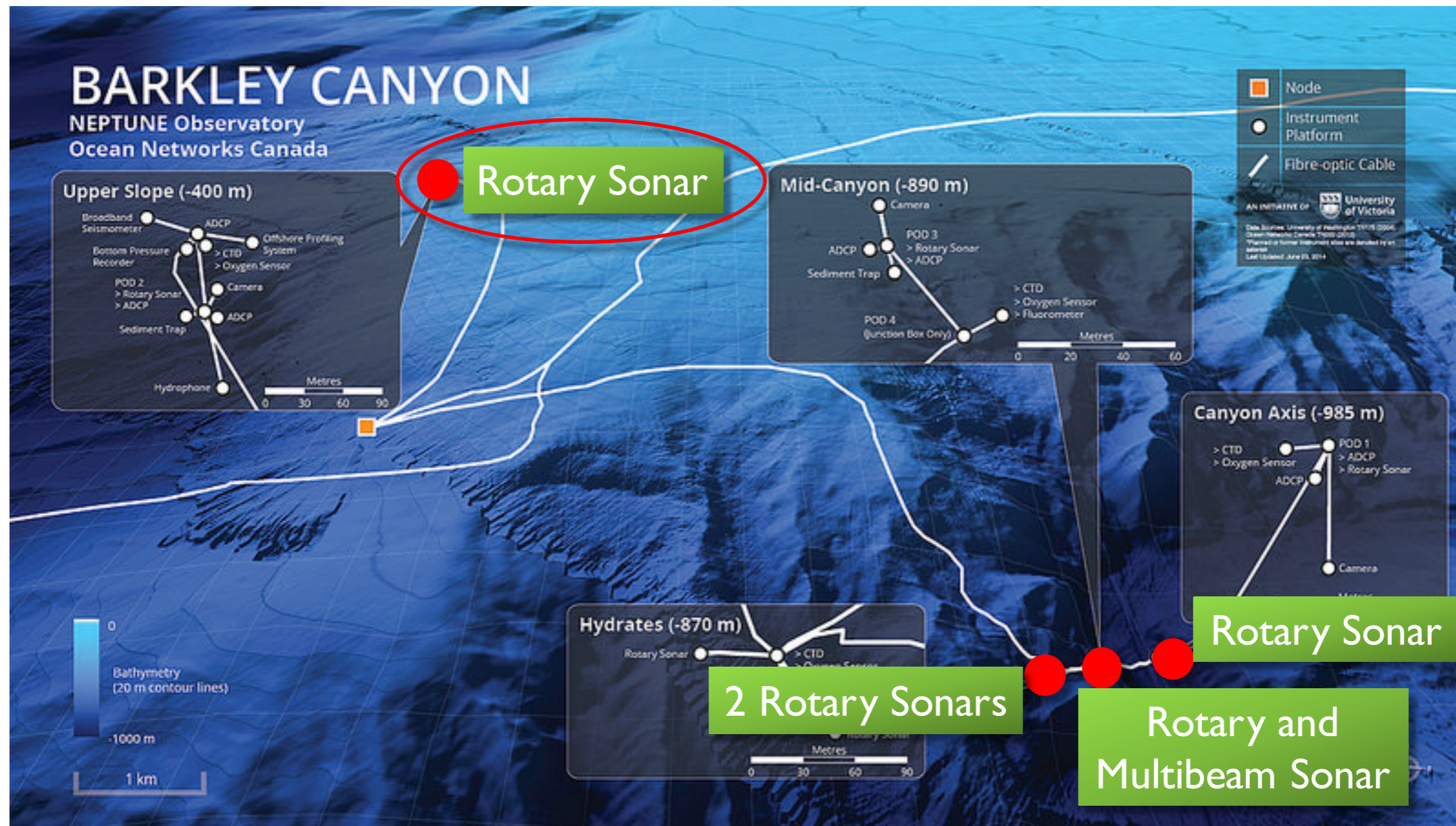
DISCOVER THE OCEAN. UNDERSTAND THE PLANET.

OCEAN
NETWORKS
CANADA
SCIENCE

SONAR SYSTEMS ON THE BARKLEY ARRAY.

Presented by Martin Scherwath | 5 October 2015

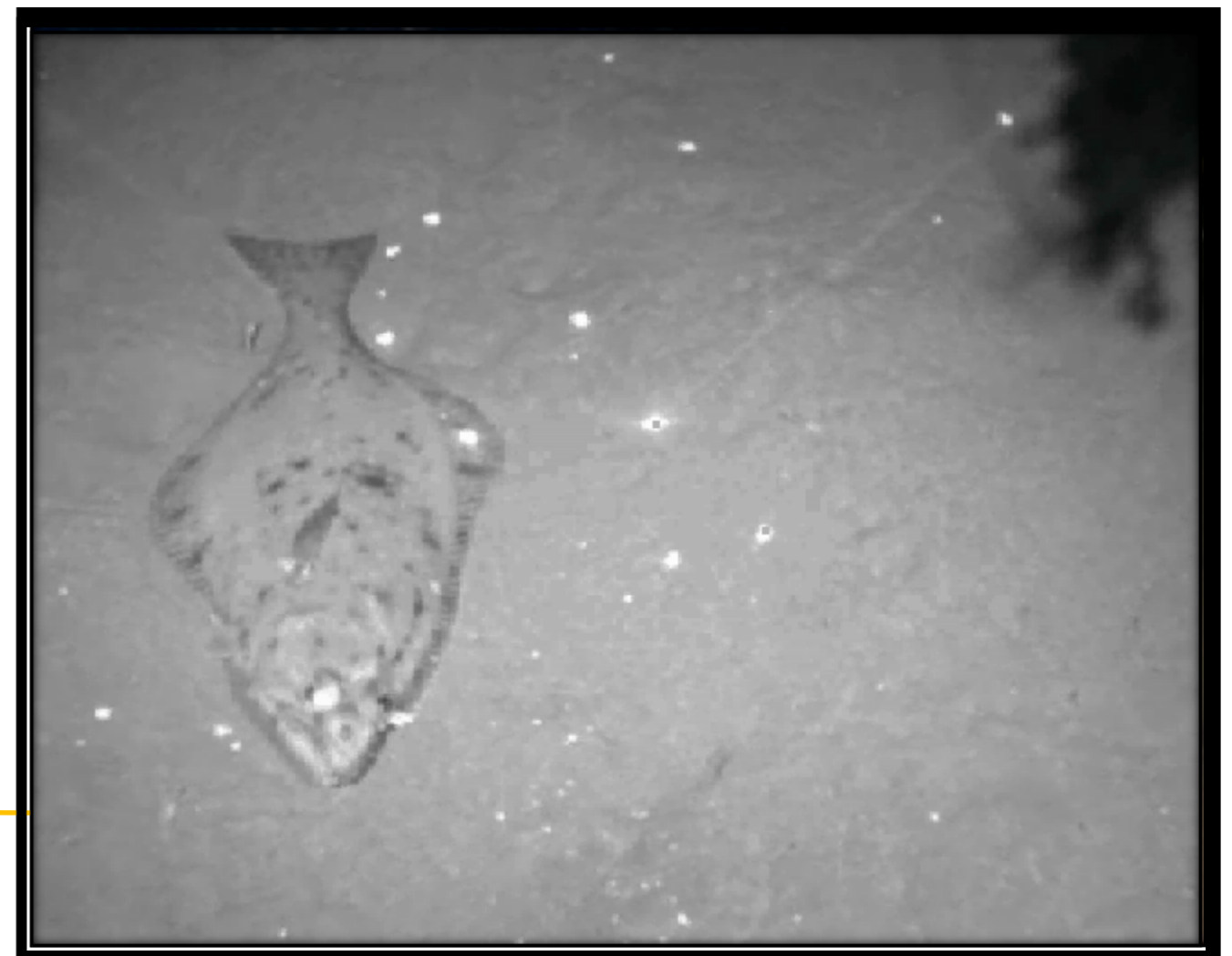
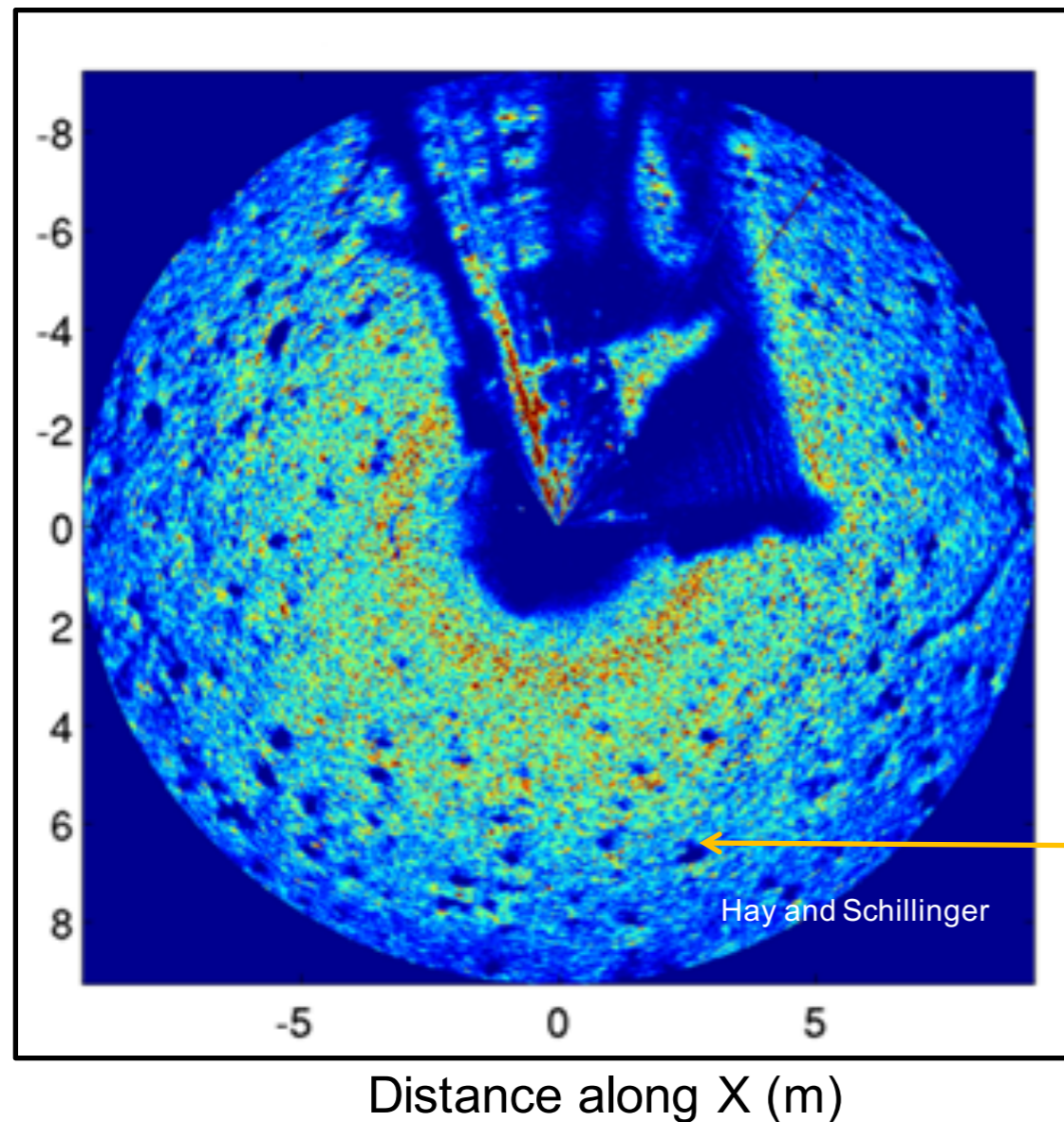
SONAR LOCATIONS



- Rotary Sonars: Kongsberg 675 kHz
- Multibeam Sonar: Imagenex 675 kHz Delta-T (static)

ROTARY SONAR POD2

Rotary Sonar and Video Imagery



- Hay et al. in prep

- Surface Sediment bioturbation (Robert & Juniper, 2012)

ROTARY SONAR POD2

Quantitative Information



Flatfish

- Footprint Area
- Abundance (frequency)
- Surface Sediment bioturbation (Robert & Juniper, 2012)

ROTARY SONAR POD2

Quantitative Information

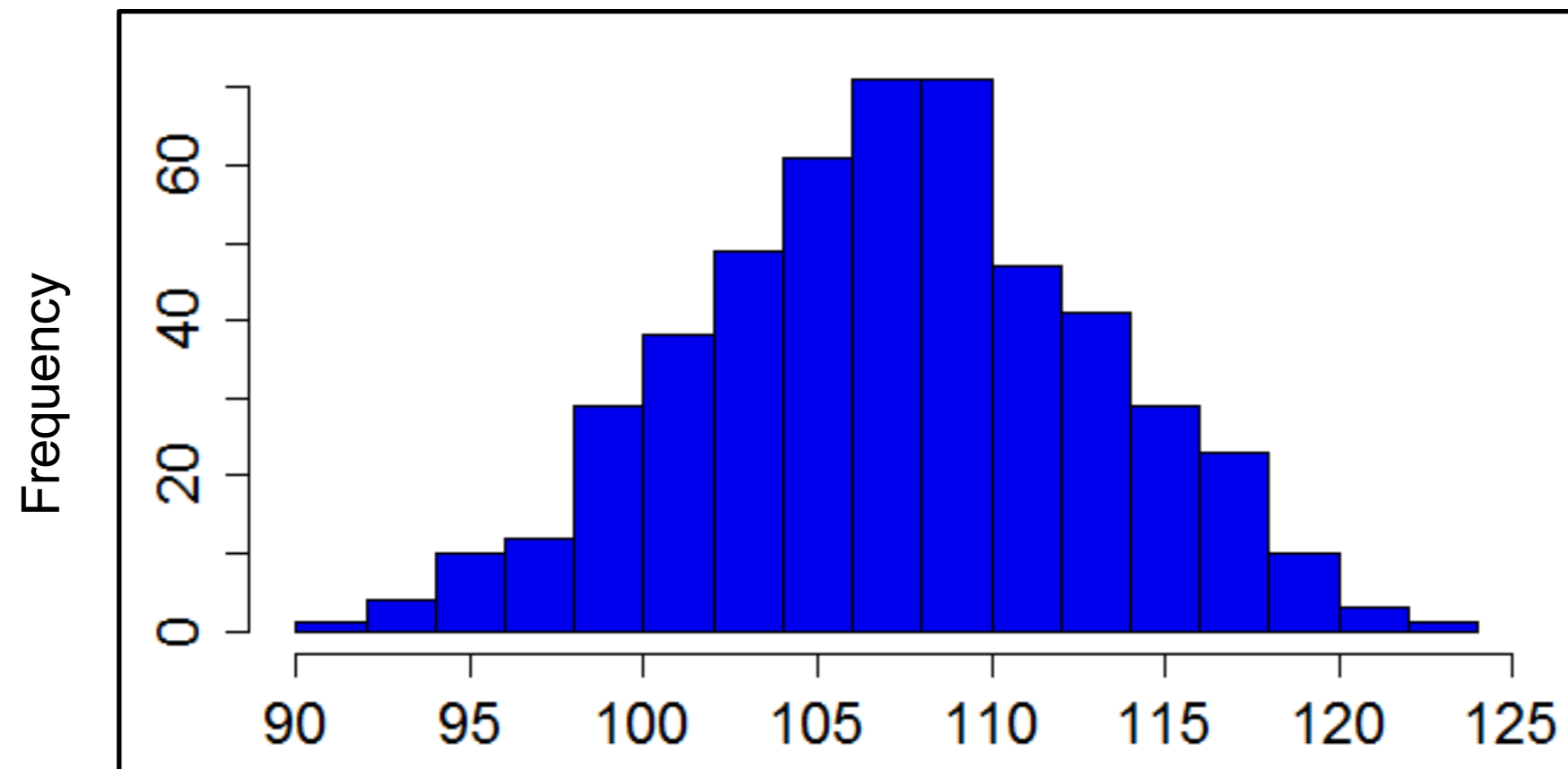


Sea Urchins

- Width of organisms
- Path length -> Speed
- Abundance
- Surface Sediment bioturbation (Robert & Juniper, 2012)

ROTARY SONAR POD2

Bayesian Model Output



Number of days required to turnover the 8.8m² study area

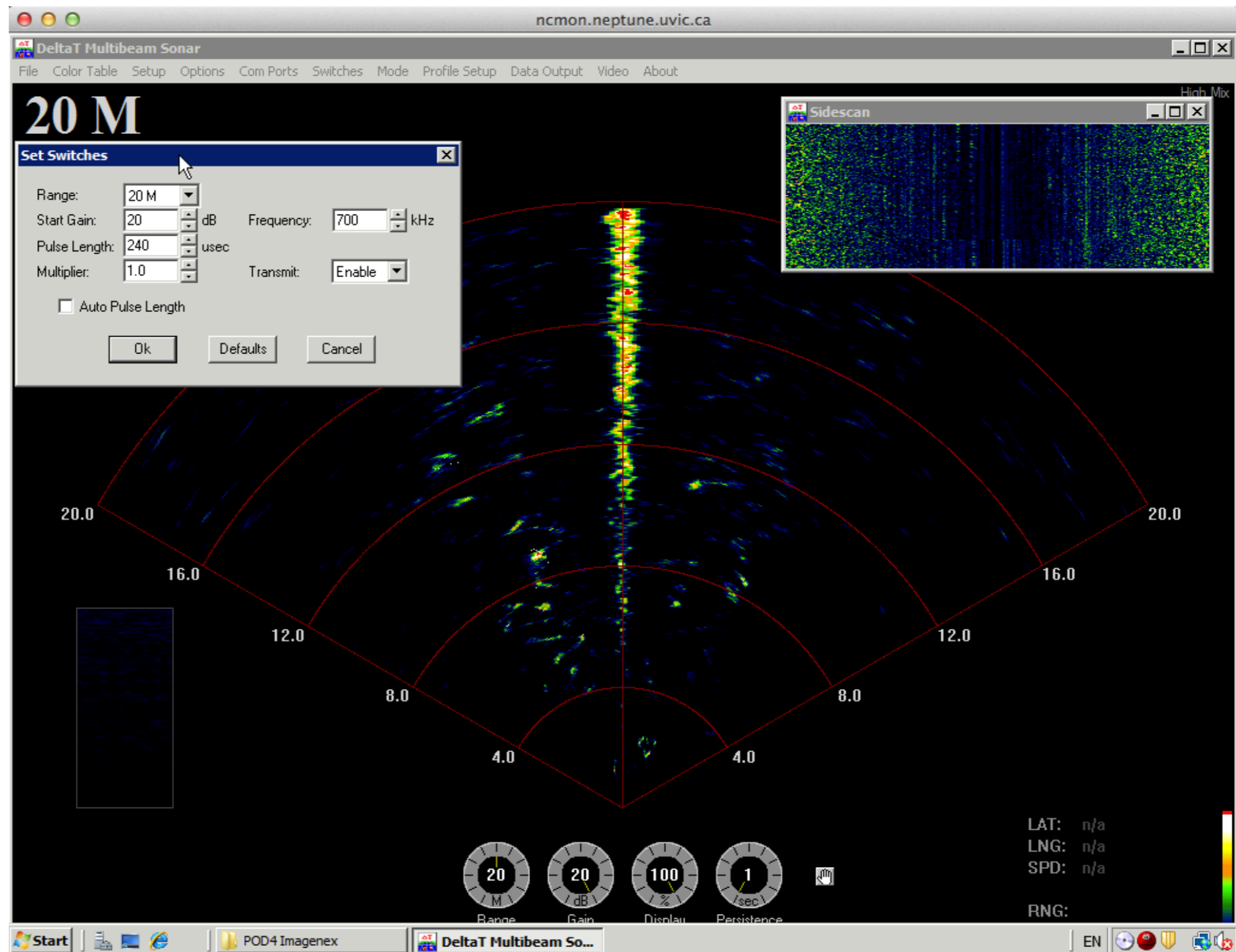
Sea Urchins + Flatfish

- Robert & Juniper 2012 MEPS

MULTIBEAM SONAR IN MID CANYON

Characteristics:

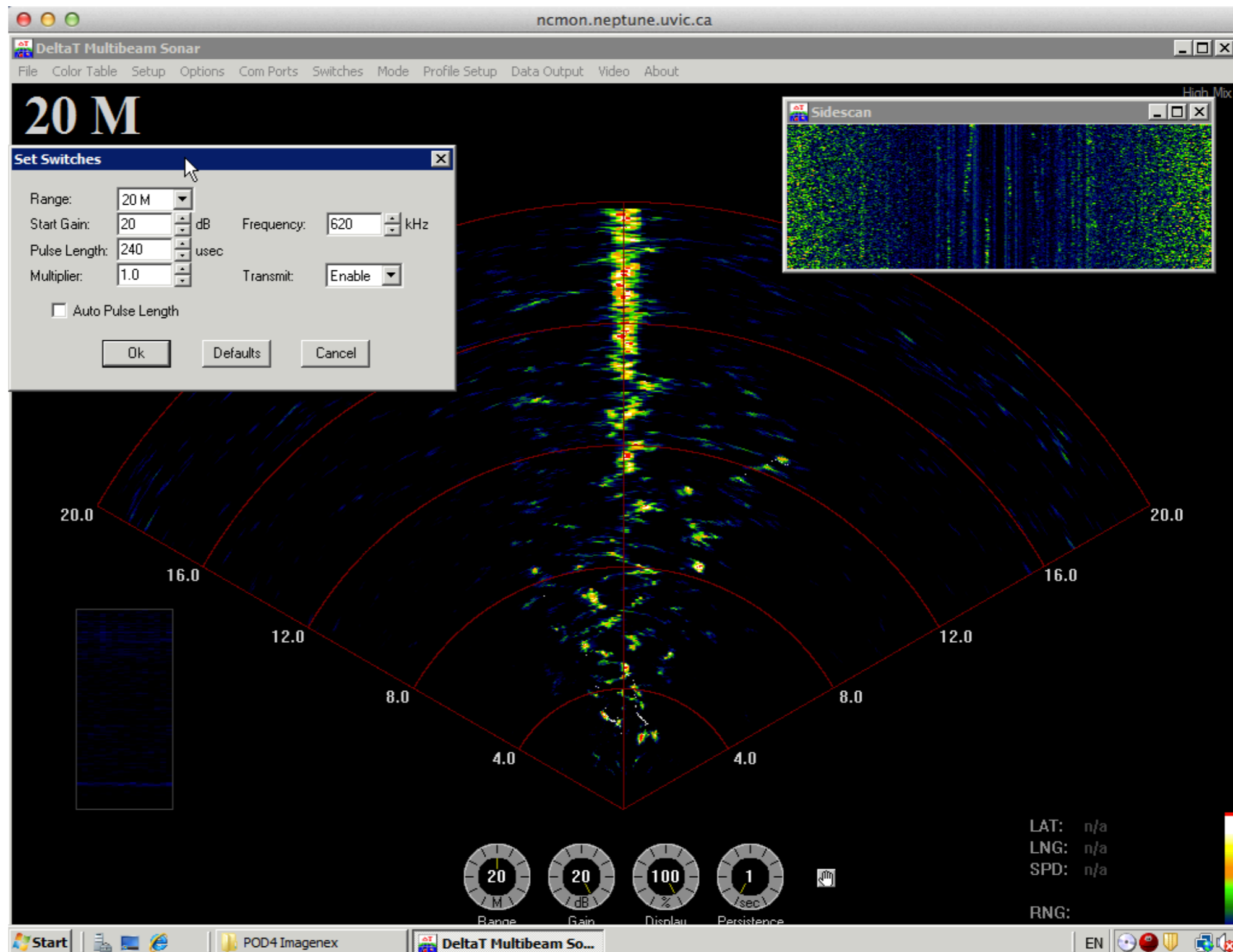
- 120 degree opening fan bottom parall.
- +/- 15 degree beam width
- Ran for 1 year 2012-2013
- Strong noise on central channels (likely from power converter)
- Best run at 700 kHz



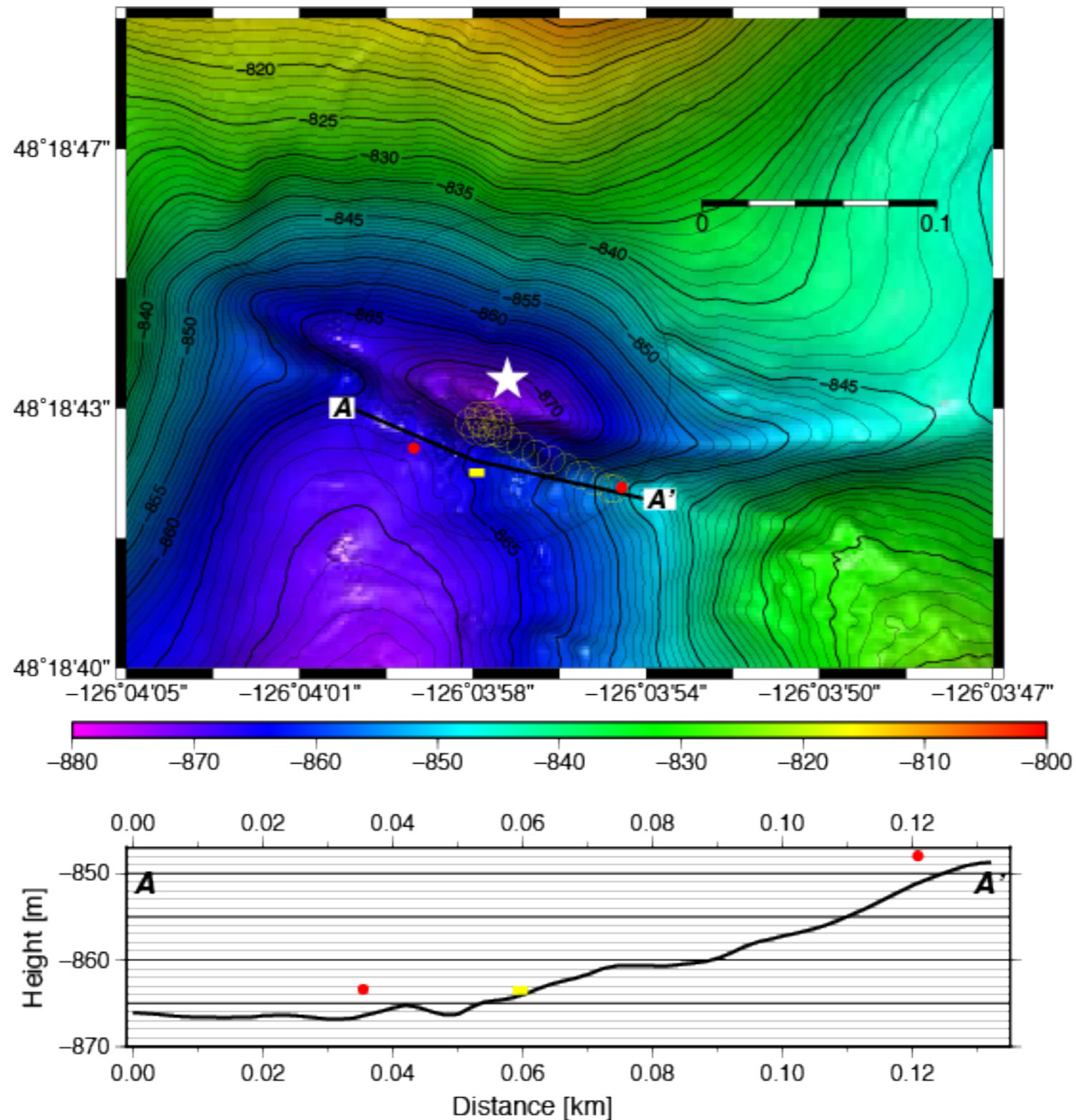
MULTIBEAM SONAR IN MID CANYON

Characteristics:

- Detects fish well, good tracking in sidescan view (top right)
- Could be co-located and synced with camera (e.g. 10 min before, 10 min during, and 10 min after cam-schedule (6 h per day))



ROTARY SONARS IN WALLYLAND

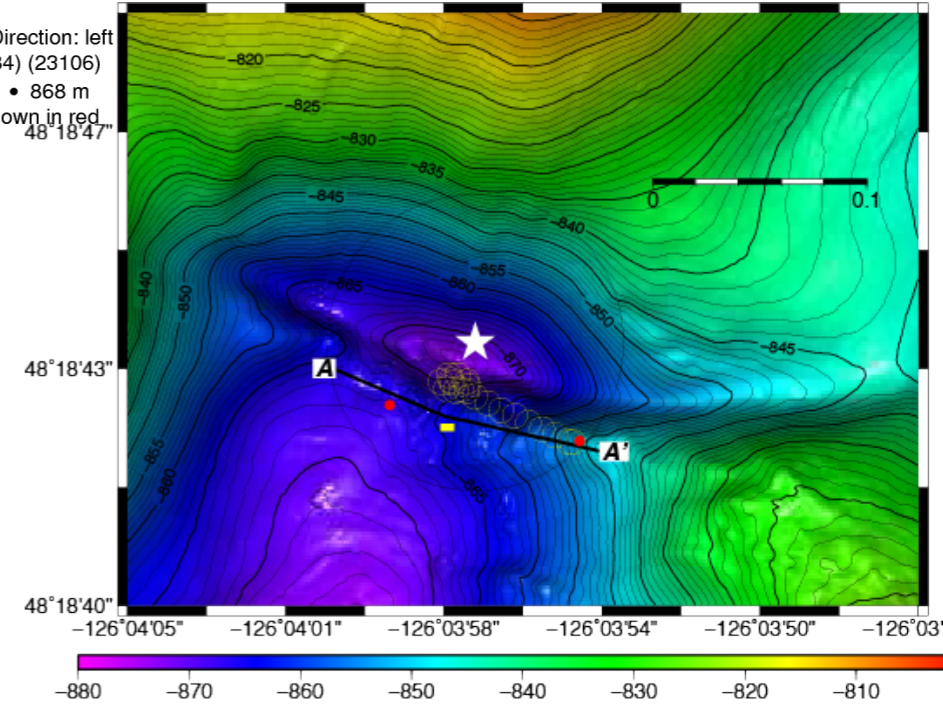
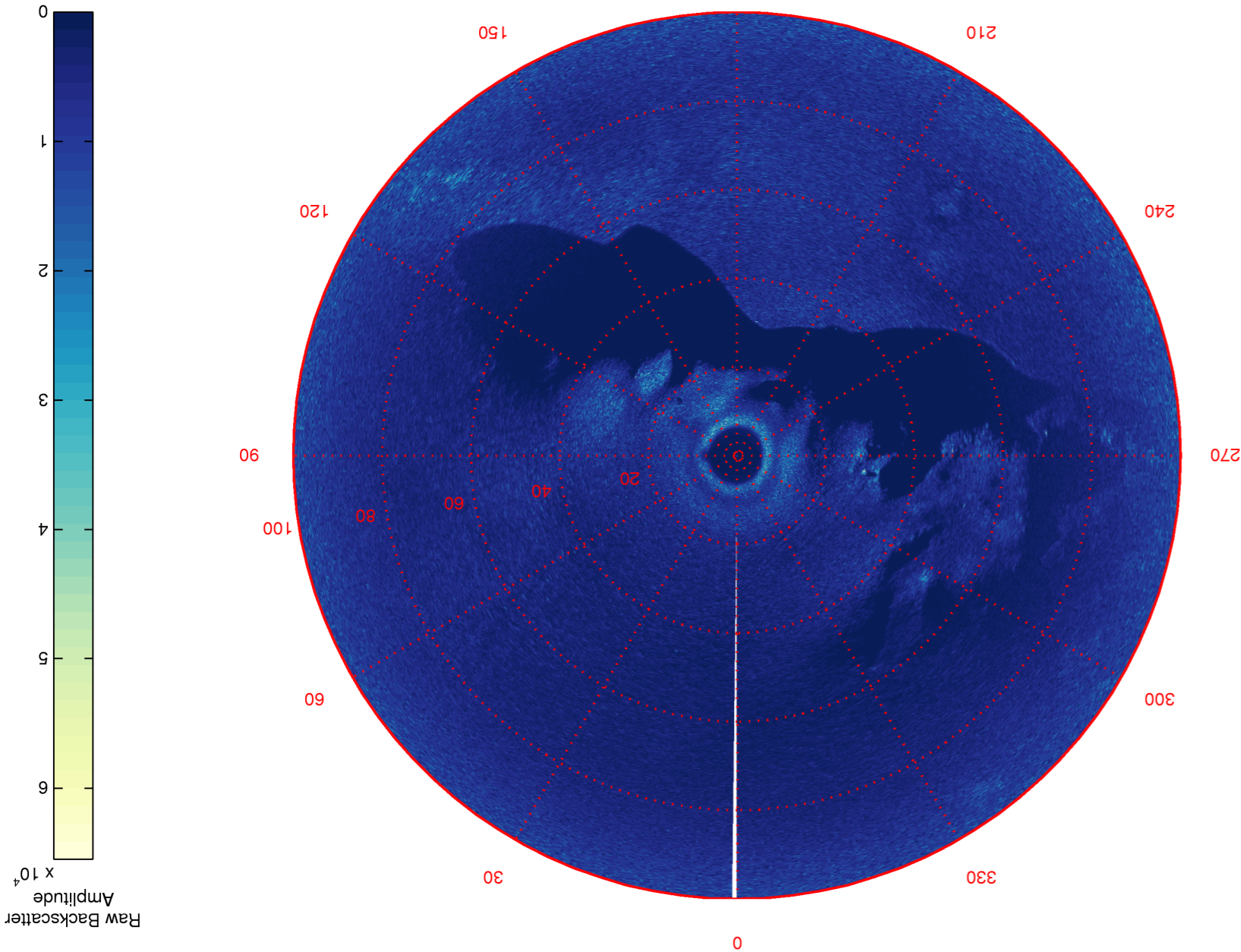


ROTARY SONARS IN WALLYLAND

OCEAN NETWORKS CANADA

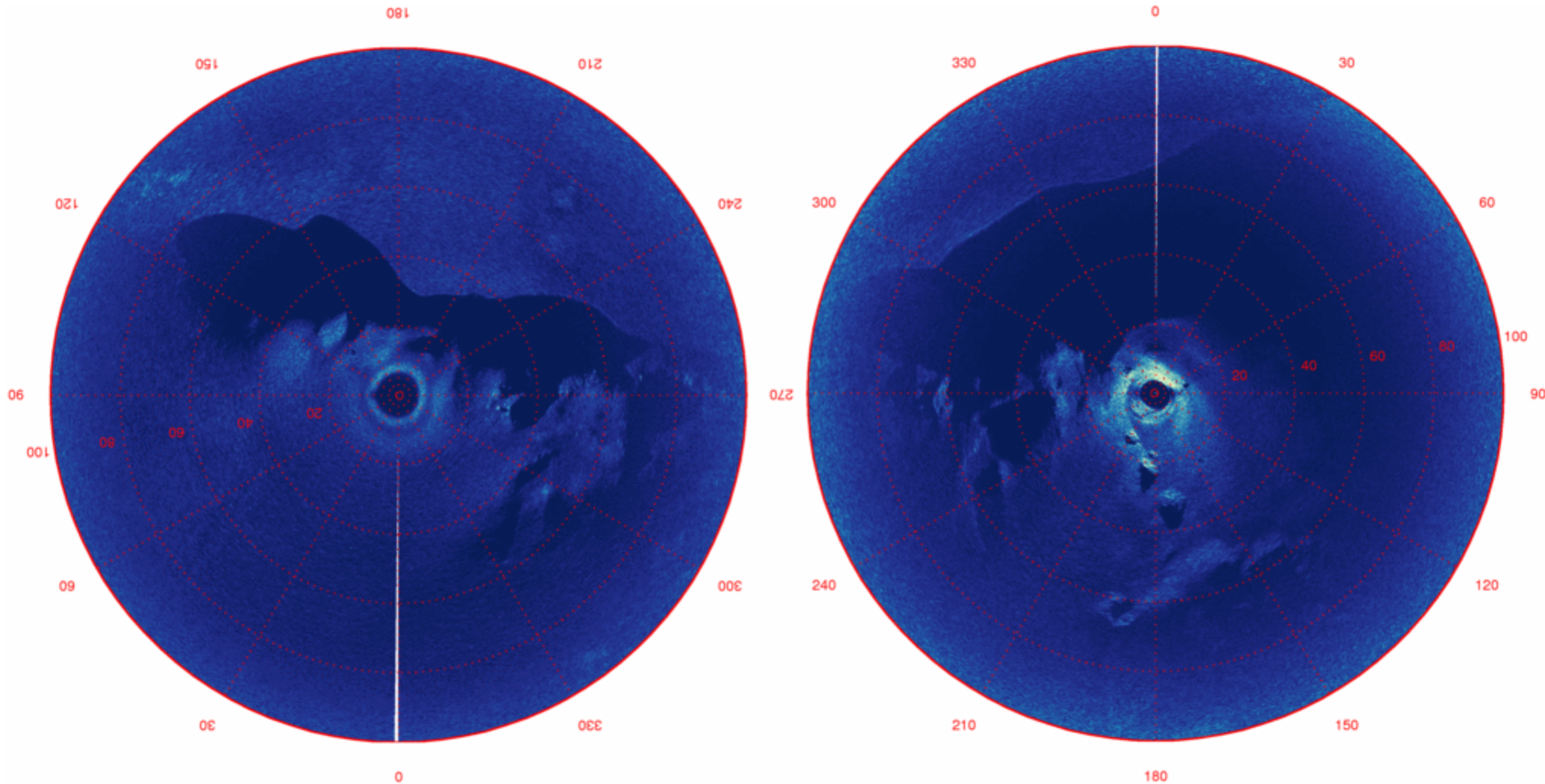
Full sweep 1 of 2, started: 09-Jan-2015 08:00:03, ended: 09-Jan-2015 08:06:44 • Direction: left
Kongsberg Mesotech Rotary Sonar 1171 (1206084) (23106)
Barkley Canyon • 48.3121° N • 126.0662° W • 868 m
Heading (degrees true), range (in meters) shown in red

Plot generated 22-Jan-2015 21:18:41 UTC

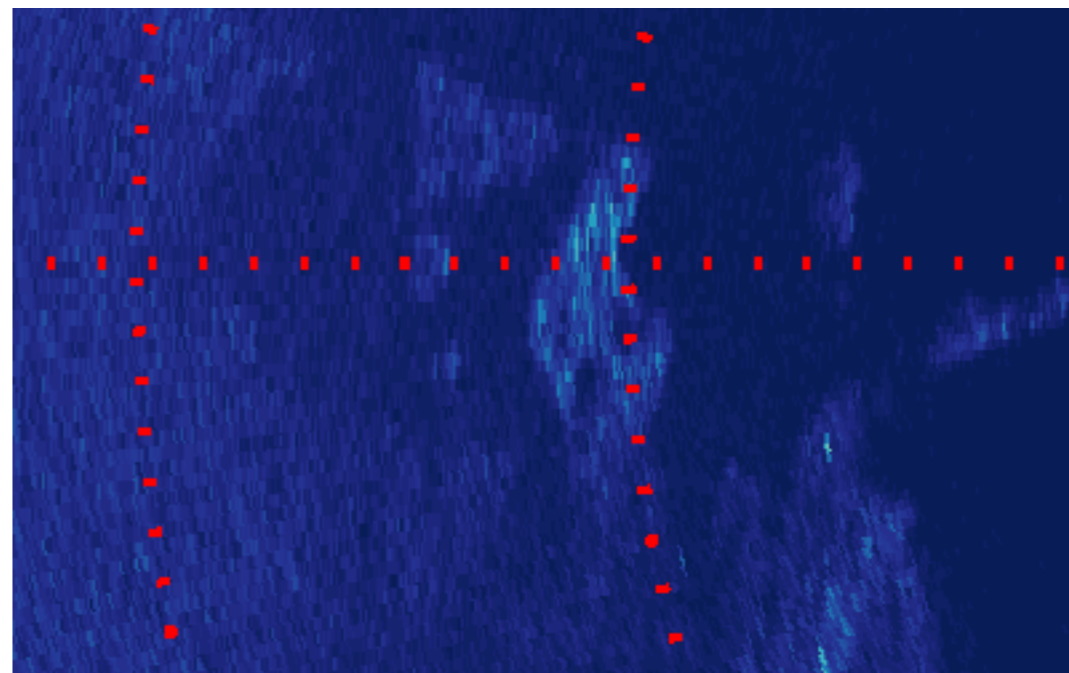
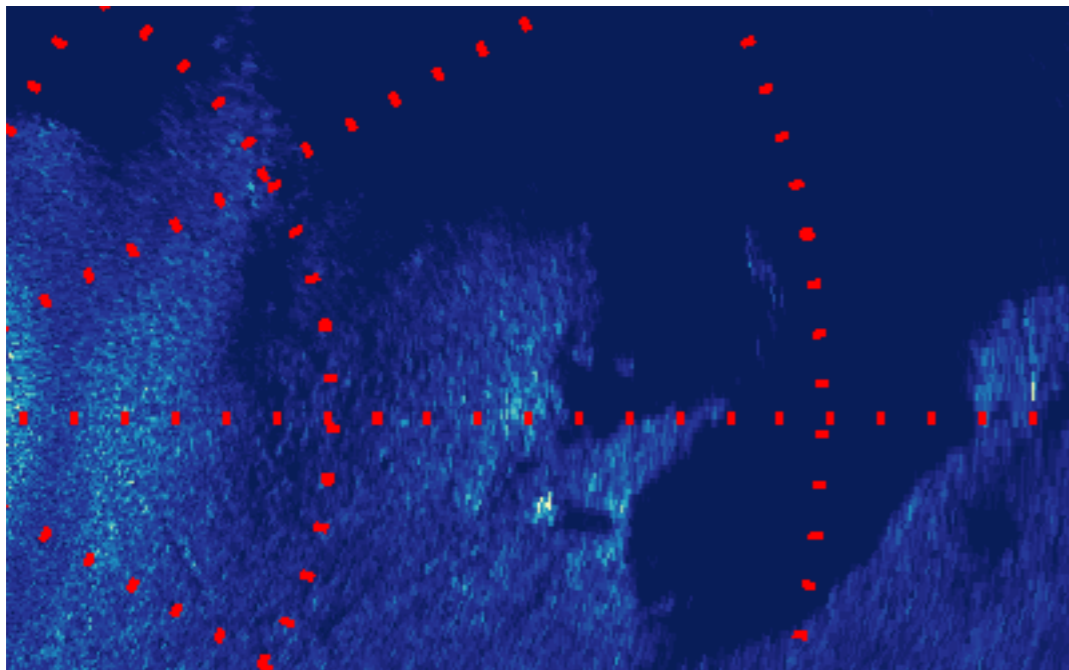


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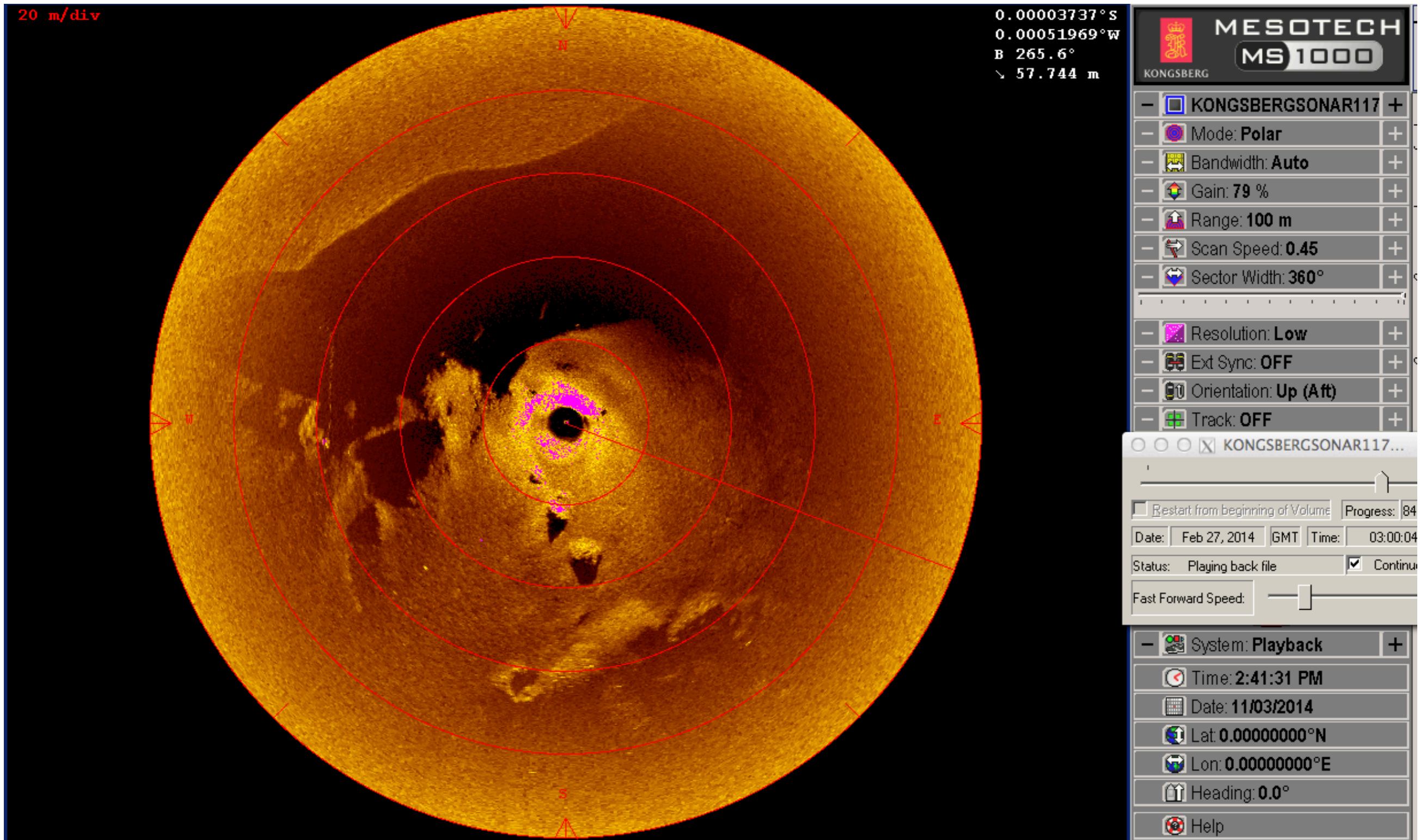
ROTARY SONARS IN WALLYLAND



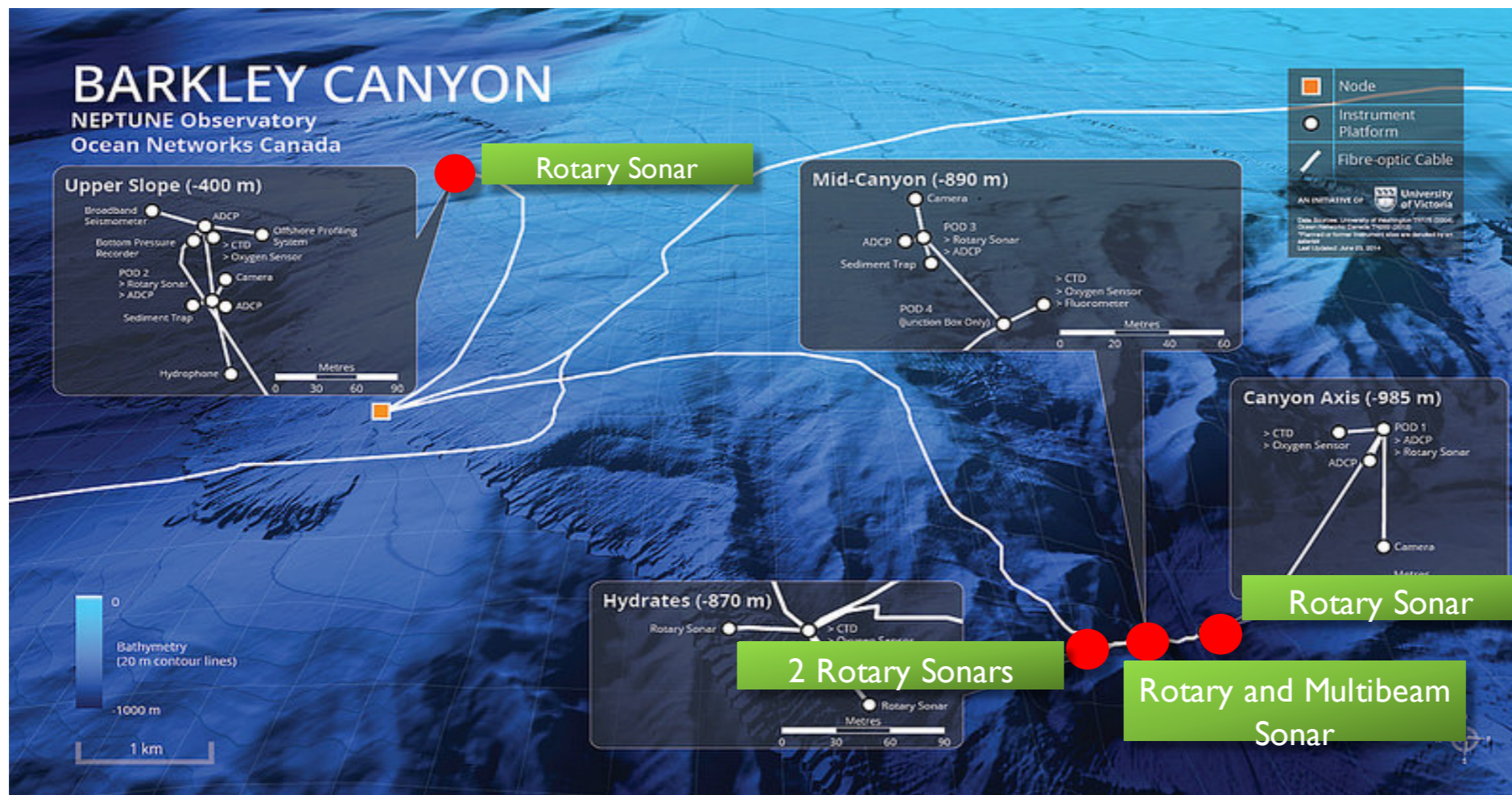
ROTARY SONARS IN WALLYLAND



ROTARY SONARS IN WALLYLAND



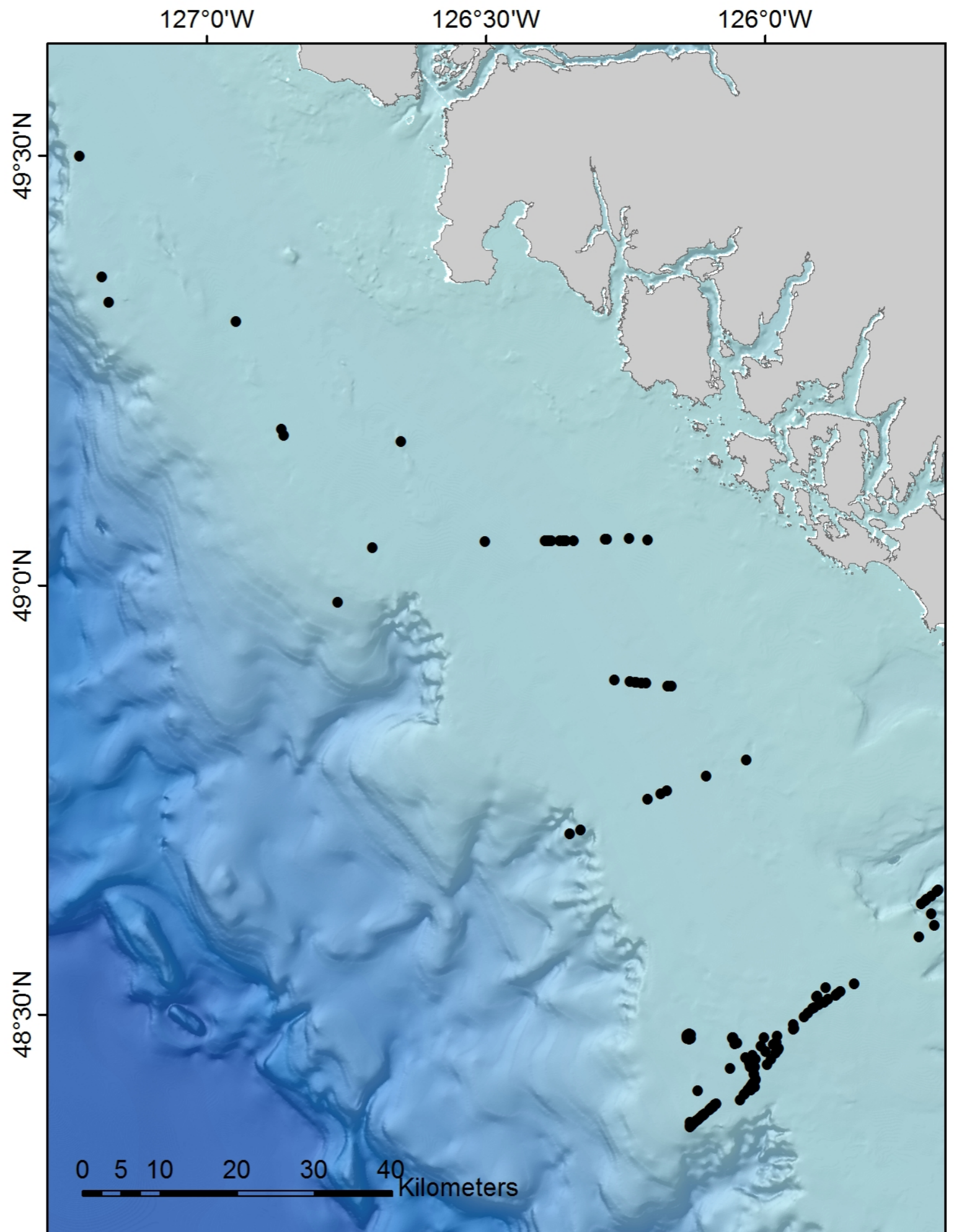
FINAL REMARKS



- Rotary Kongsberg Sonars at PODs useful for bioturbation studies – anything else?
- Rotary Sonars at Wallyland useful for tracking Wally, but long-term hydrate mound changes and tracking of gas and oil bubbles not seen (yet)
- Multibeam Imagenex Sonar not useful for seafloor imaging but useful for monitoring fish abundance while camera lights are off

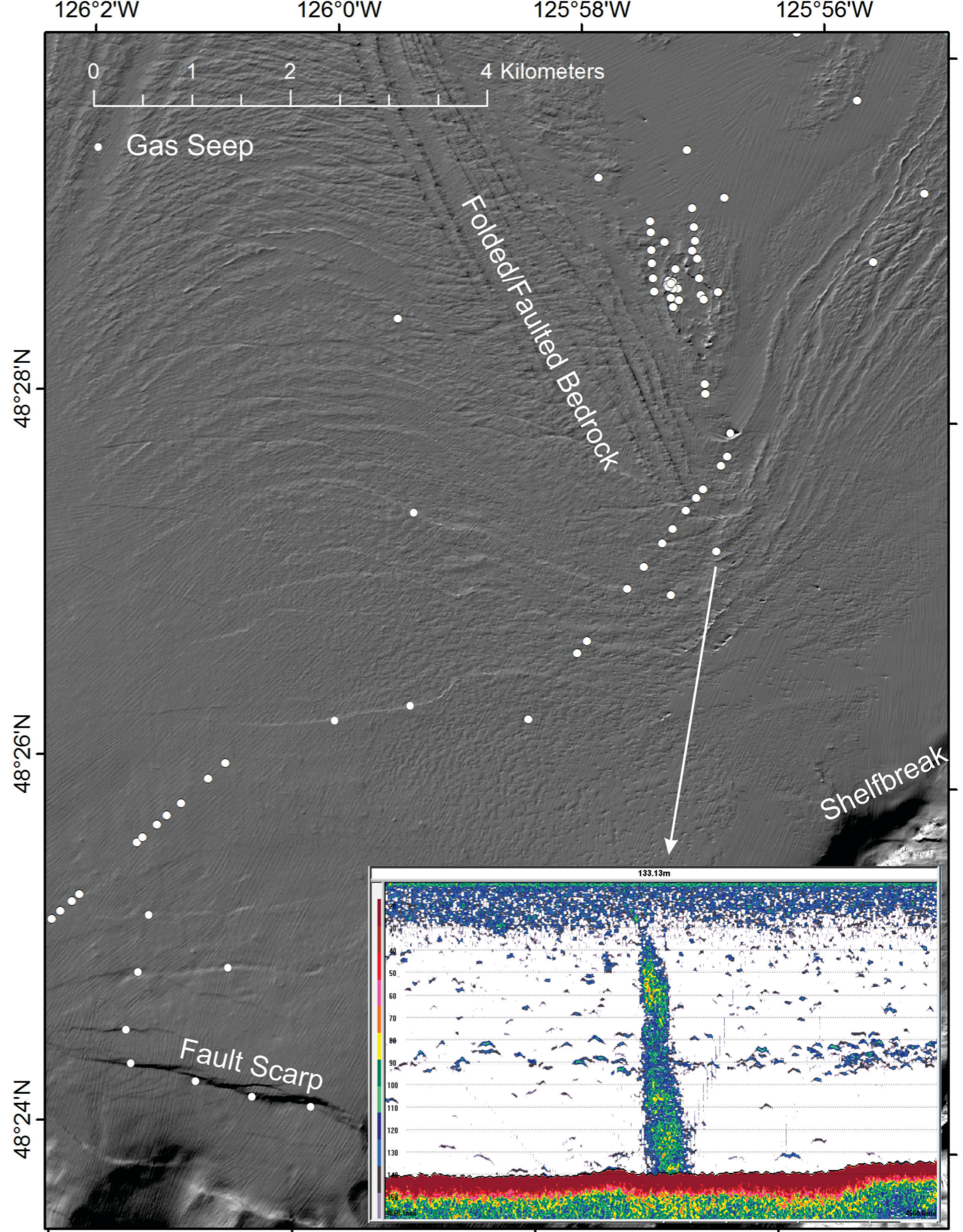
Add-ons for Gwyn Lintern,
NRCan

Gas Vents on the Continental Shelf



Add-ons for Gwyn Lintern,
NRCan

Gas Vents on the Continental Shelf



Add-ons for Gwyn Lintern, NRCan

**Fault Scarp
and potential
Future Plain**
visible on
bathymetry and
underlying
seismic section

