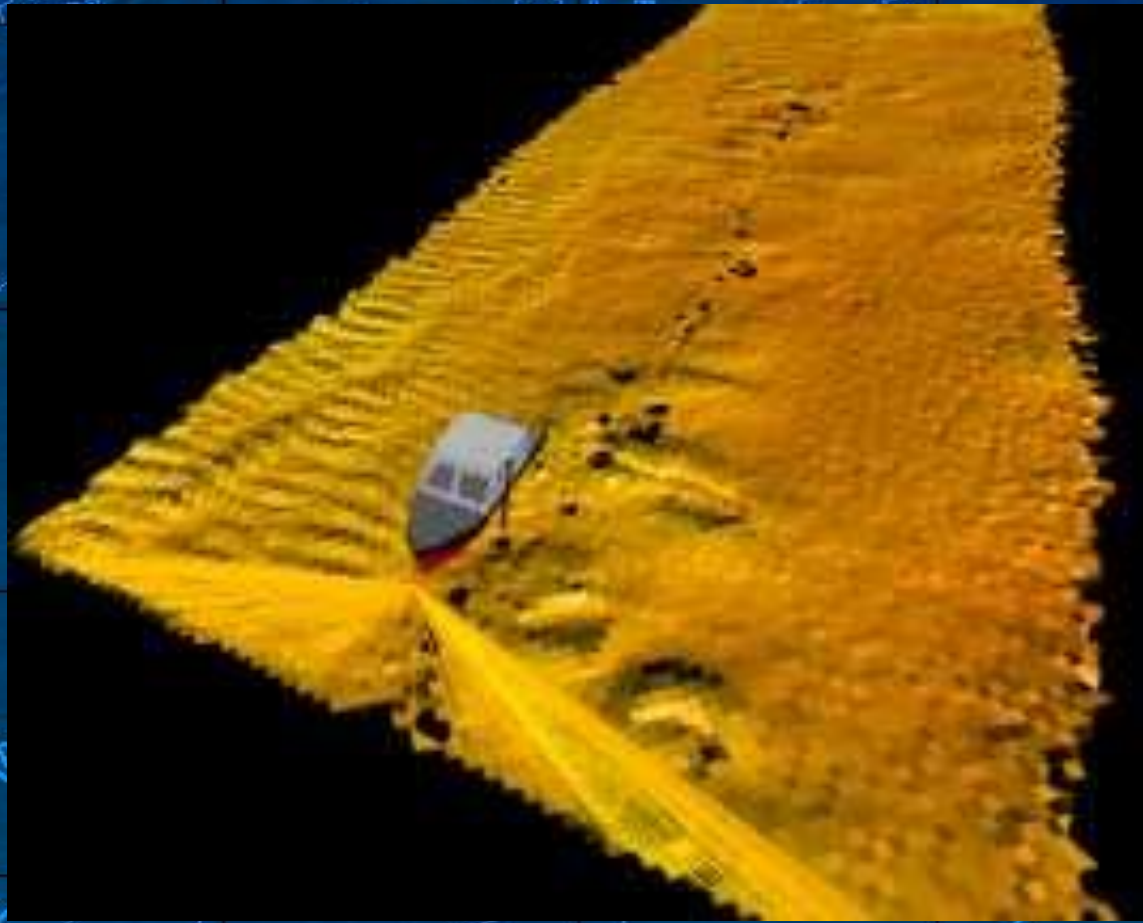
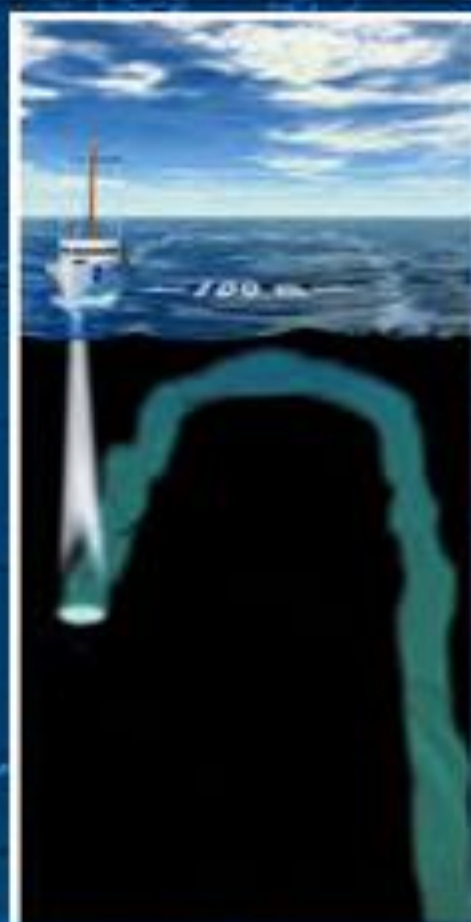


**RELEVAMIENTO DE FONDOS
MARINOS, LACUSTRES Y
FLUVIALES con Sonares**

Sonar Batimétrico por Medición de Fase: Nueva herramienta para determinar la morfología y sedimentología subácea.



Comparación barrido sonda convencional - SBMF



Mapa de recorrido de una batimetría monohaz

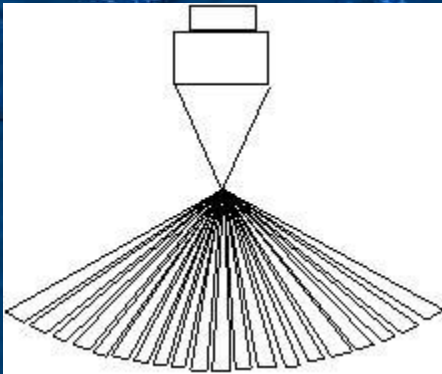


ESPECIFICACIONES TECNICAS DEL EQUIPO GEOSWATH PLUS COMPACT

GeoSwath Plus Compact	125 kHz	250 kHz	500 kHz
Profundidad máxima bajo el transductor	200 m	100 m	50 m
ancho de barrido máximo	780 m	390 m	190 m
Cobertura máxima	hasta 12 veces la profundidad		
Resolución	6 mm	3 mm	1.5 mm
Ancho de los dos haces (Horizontal)	0.85°	0.75°	0.5°
Largo de pulso	De 128 μ S a 896 μ S	DE 64 μ s a 448 μ S	De 32 μ s a 224 μ s
Tasa de refresco máxima	30 veces por segundo (dependiente del alcance)		
Dimensiones del Transductor	390 x 520 x 220 mm	360 x 352 x 150 mm	330 x 109 x 75 mm
Peso del Transductor	24 kg	20 kg	16.8 kg

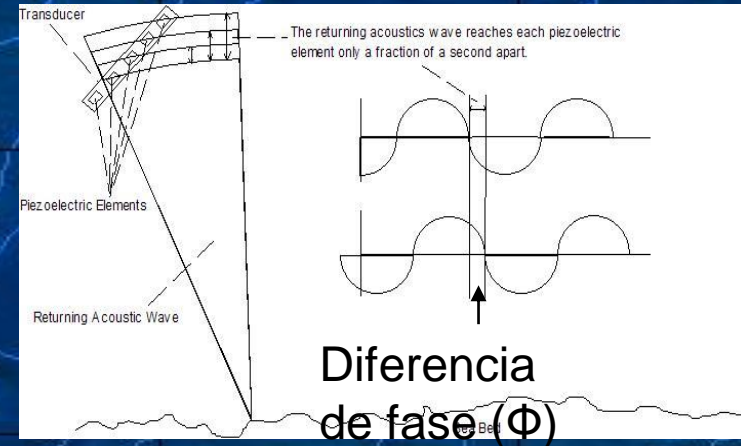
Relevamiento Batimétrico en Fajas

Sonar multihaz

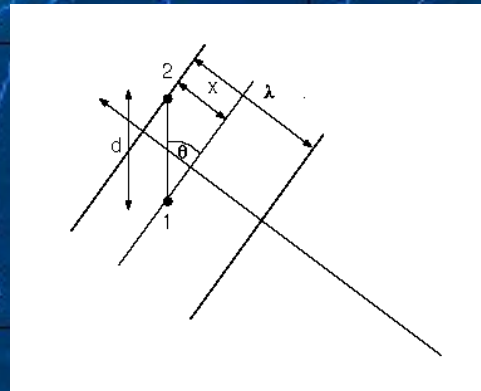


Sistema Batimétrico por Medición de Fase

Sólo 2 transductores. Mide la fase para determinar la dirección del retorno acústico con una resolución de fracción de grado. La distancia es medida por el tiempo que emplea el retorno con precisión centimétrica. La precisión longitudinal depende de la velocidad de la embarcación.

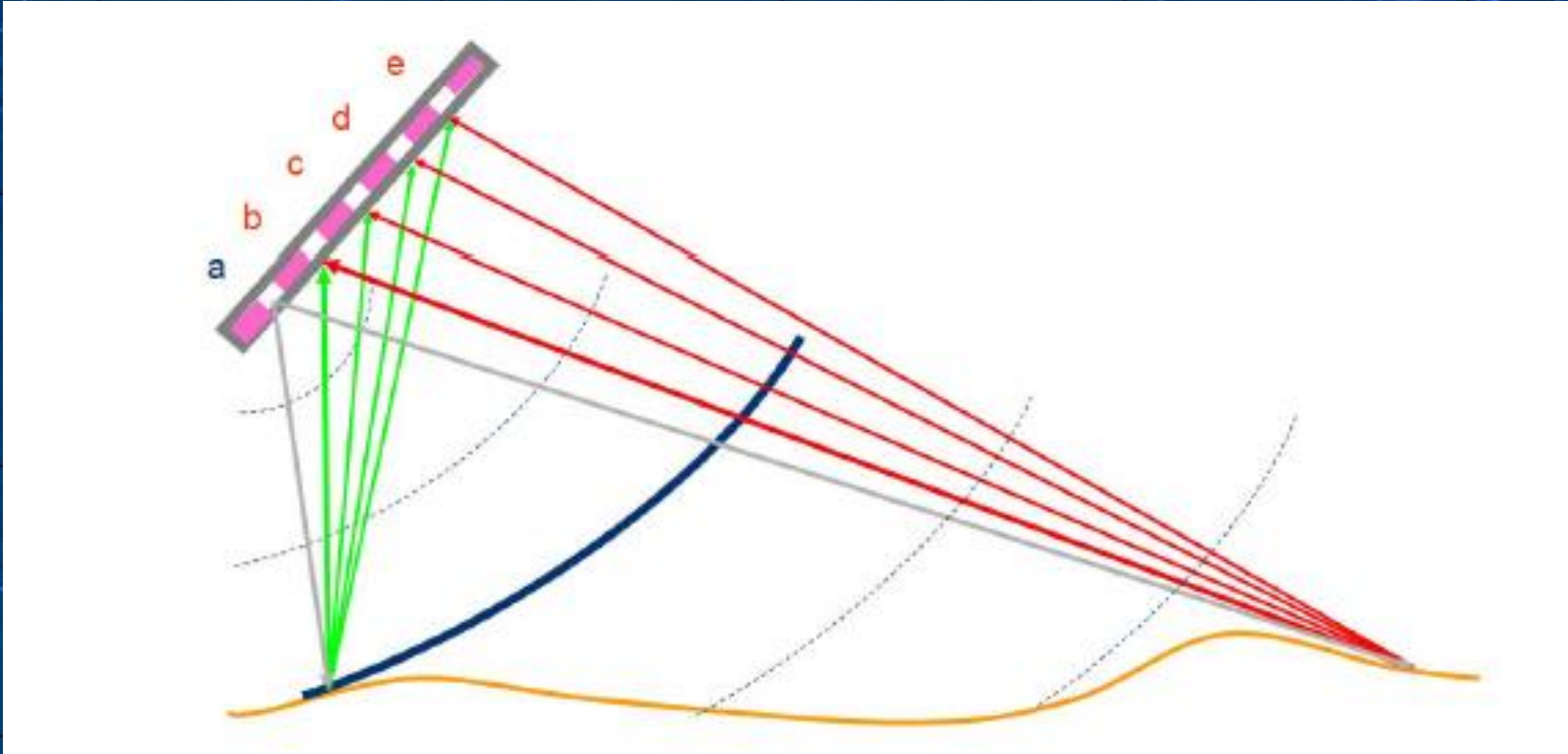


Emplean un gran arreglo de transductores donde la señal que retorna de cada uno se combina electrónicamente para incrementar la sensibilidad en las direcciones deseadas (haces)



La batimetría se determina mediante la diferencia de fase de la onda acústica retrodispersada, midiéndola entre varios elementos piezoeléctricos que están dentro de mismo transductor que generó el impulso.

Esta diferencia de fase (Φ) se iguala a las mediciones angulares (θ):
$$\theta = \sin^{-1} (\Phi \lambda / 2\pi d)$$



Elementos que conforman el sistema

Unidad de
Procesamiento



Posicionamiento (DGPS)

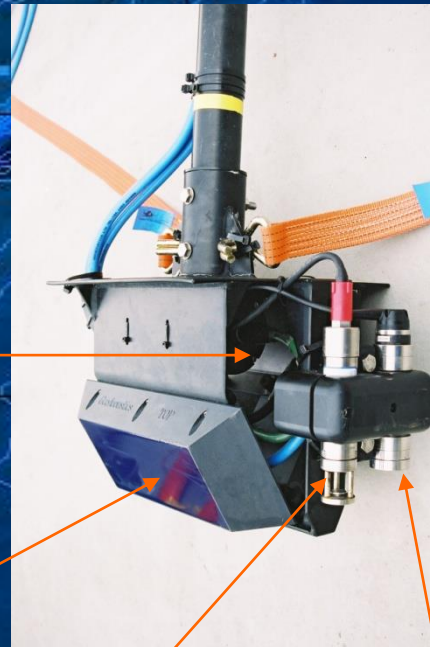


Girocompás

Sensor de
Movimiento



Transductor

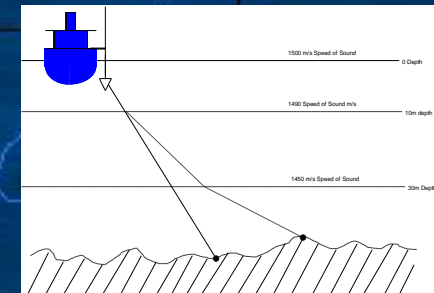


Velocidad
del Sonido

Mini sonda
ecográfica



Perfilador de
Velocidad de Sonido
(PVS)



Operando el sistema





CORMORAN

© GAMESA ALUCAR 1999

PREFECTURA

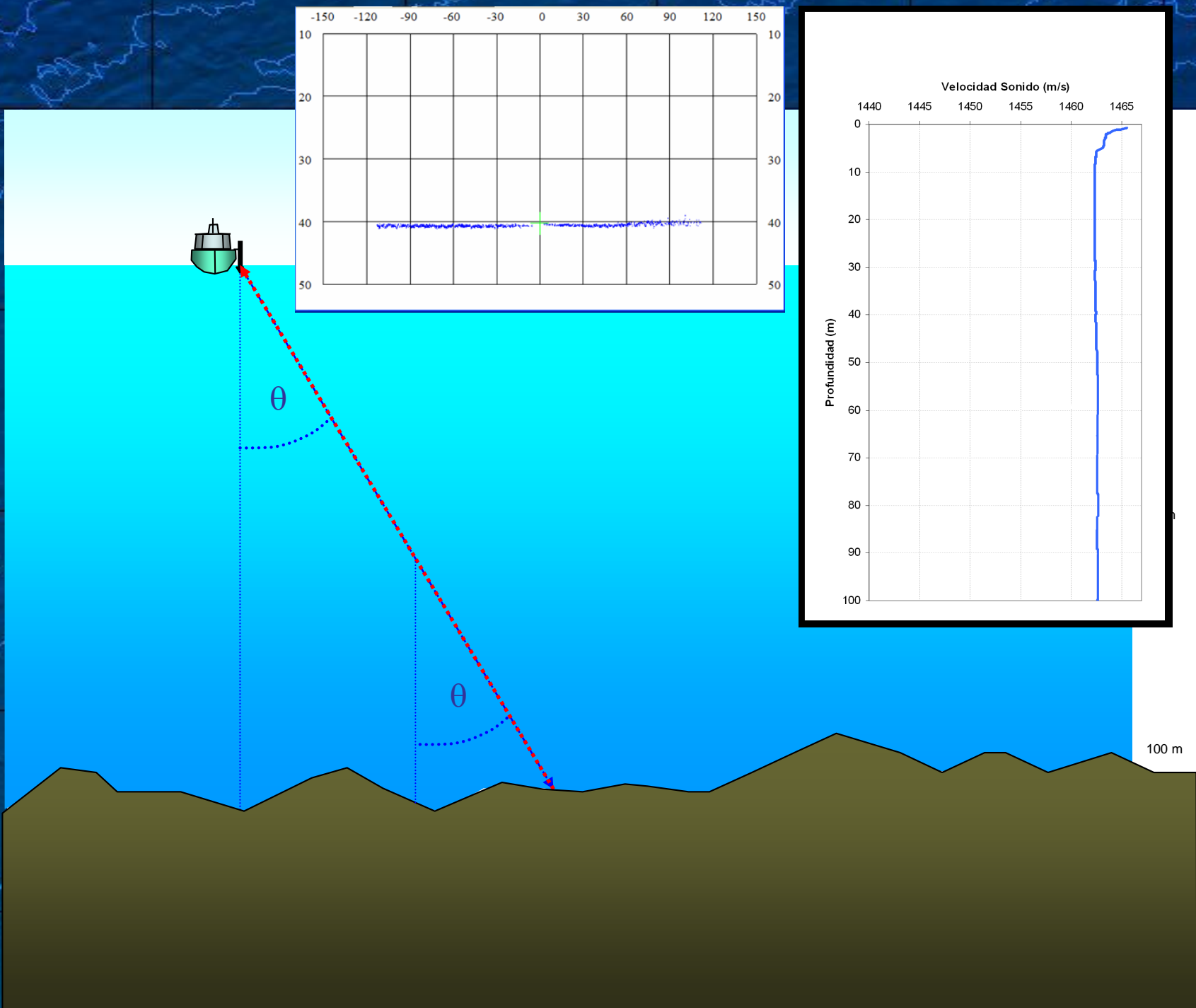
GC 137

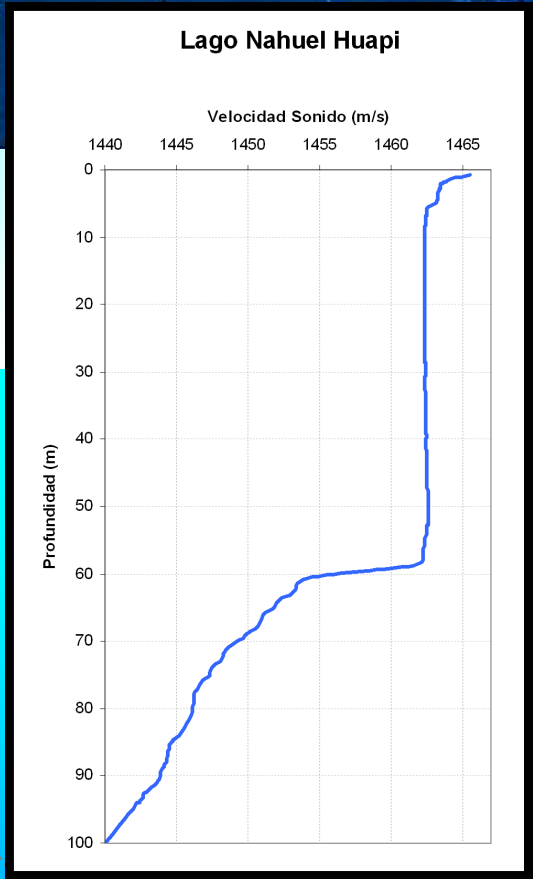
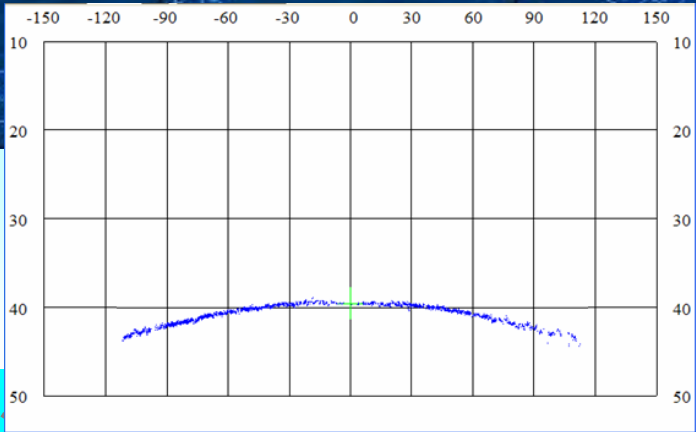
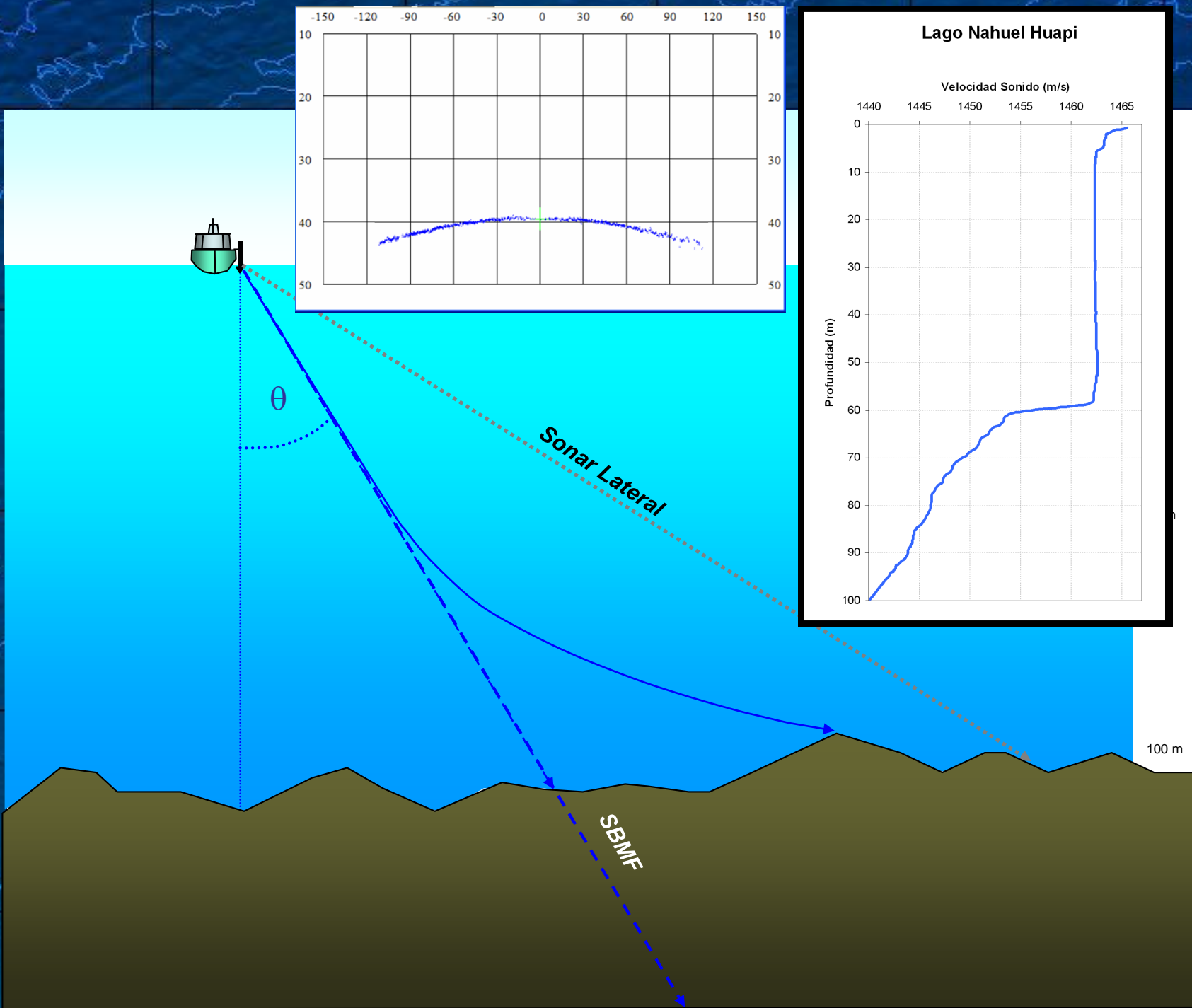
BRUNO



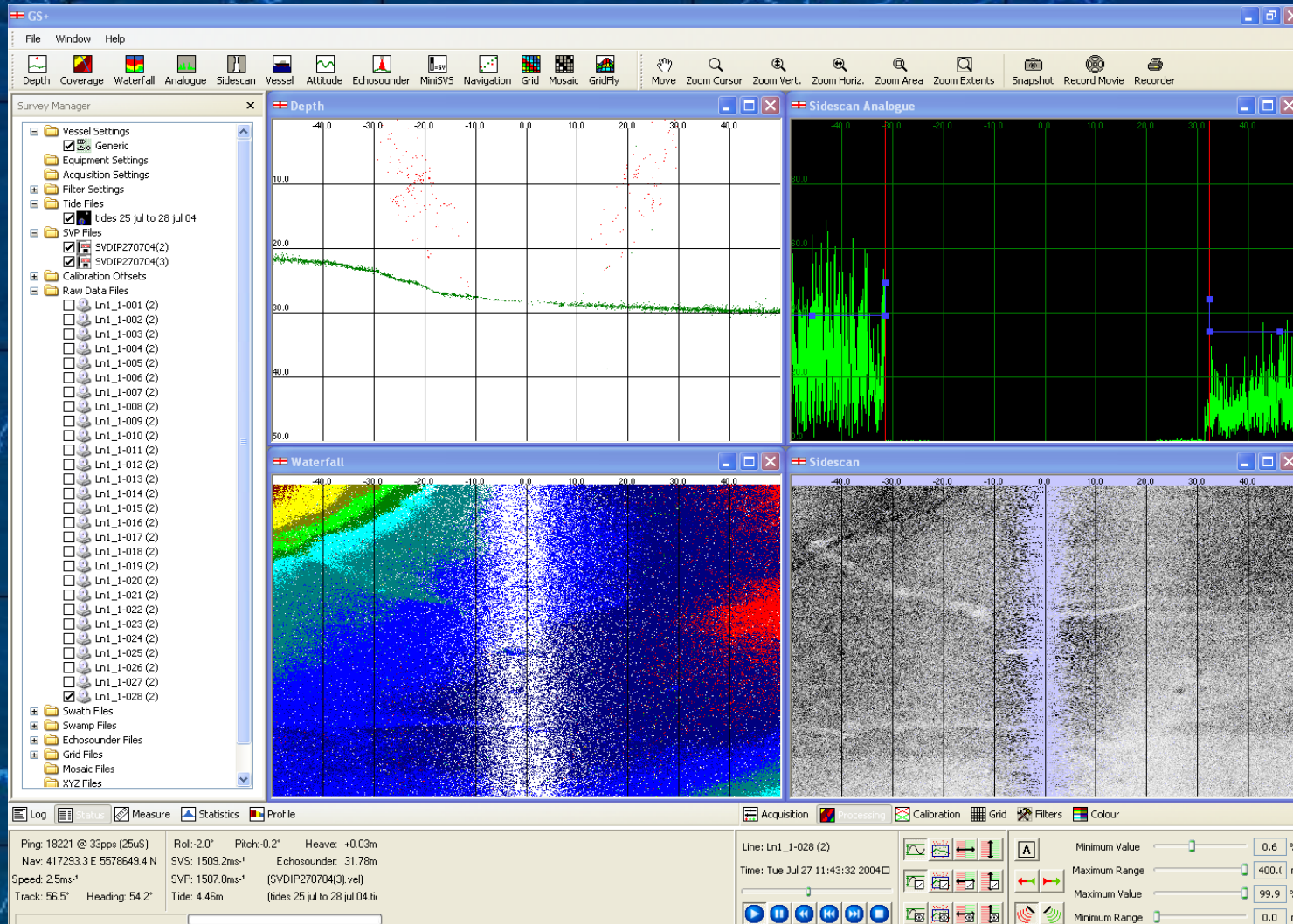
Programando el perfilador de sonido



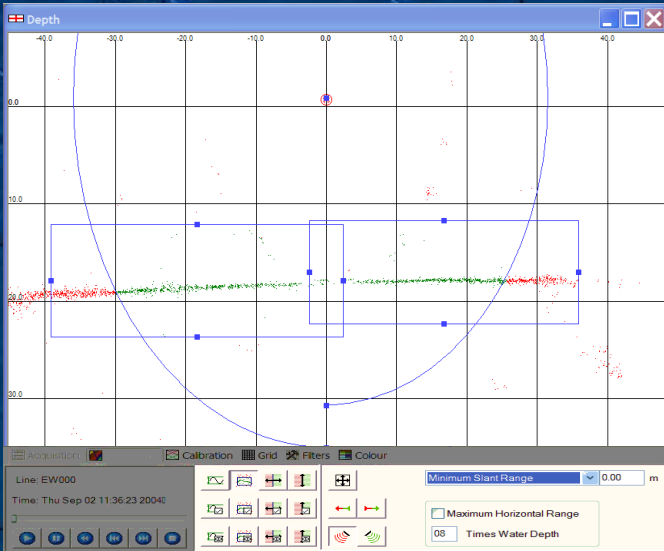




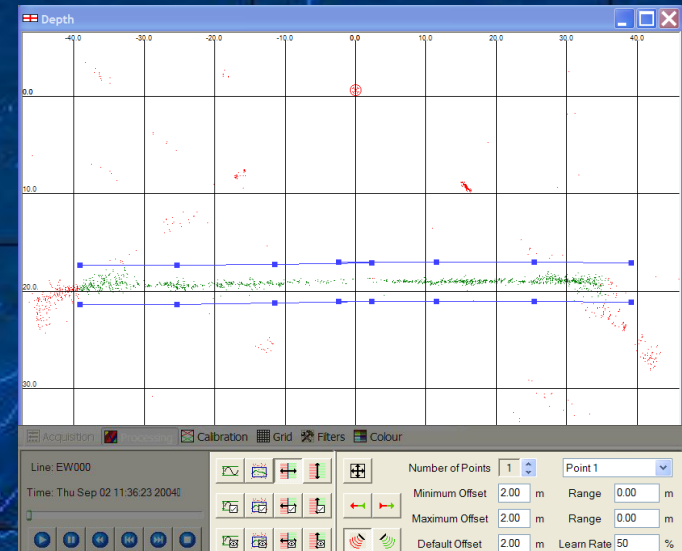
El sistema mide la posición x, y, z y la intensidad de la señal retrodispersada, actuando entonces también como Sonar de Barrido Lateral



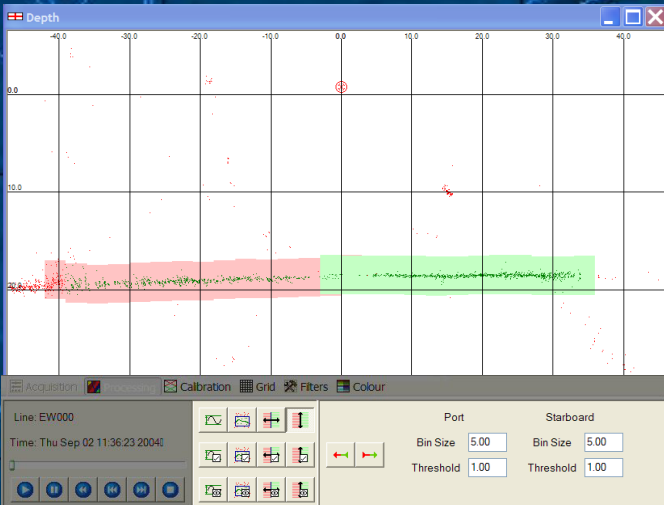
Procesamiento: Filtrado de Datos



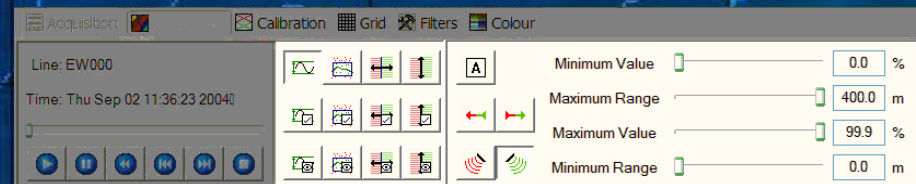
Filtrado por límites



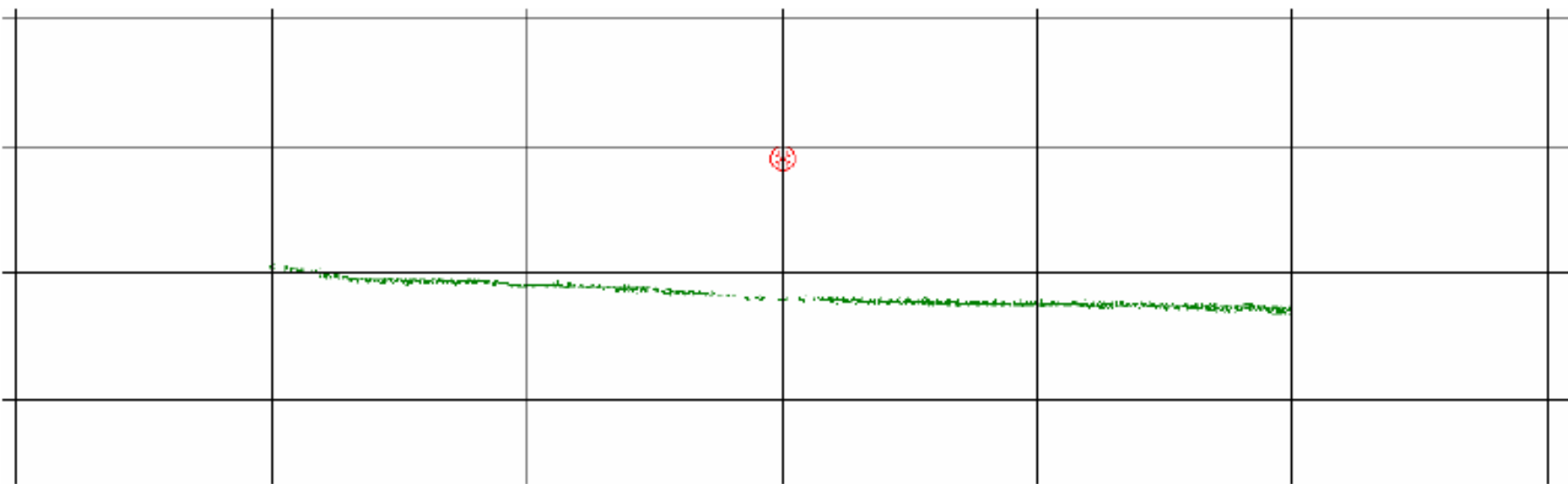
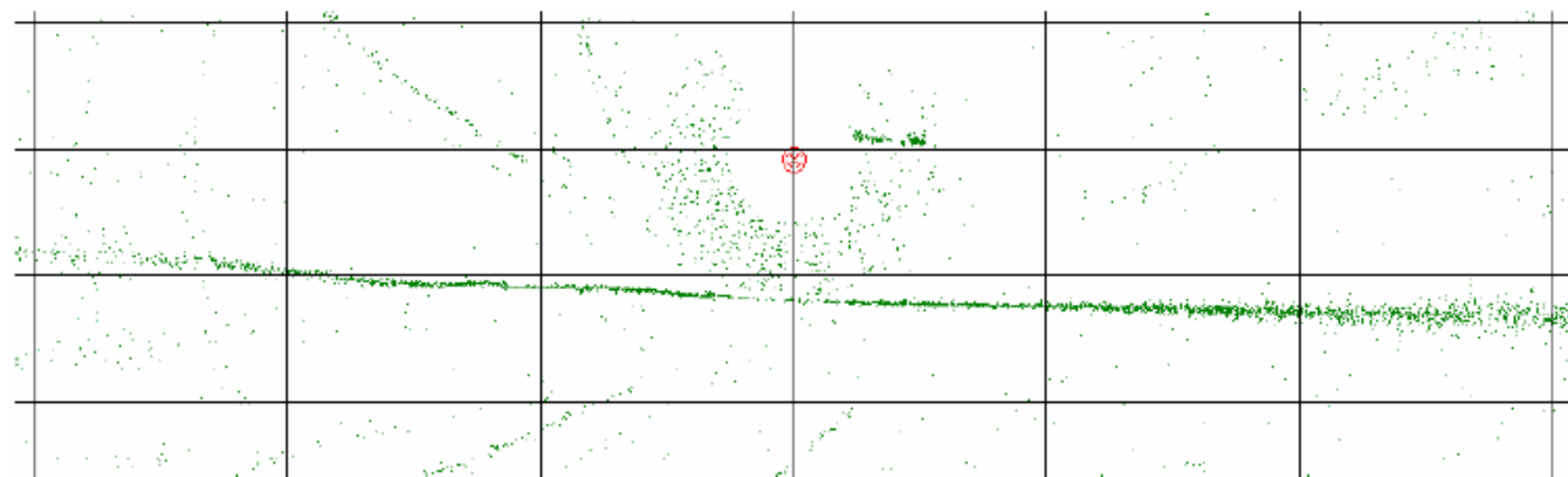
Filtrado Transversal



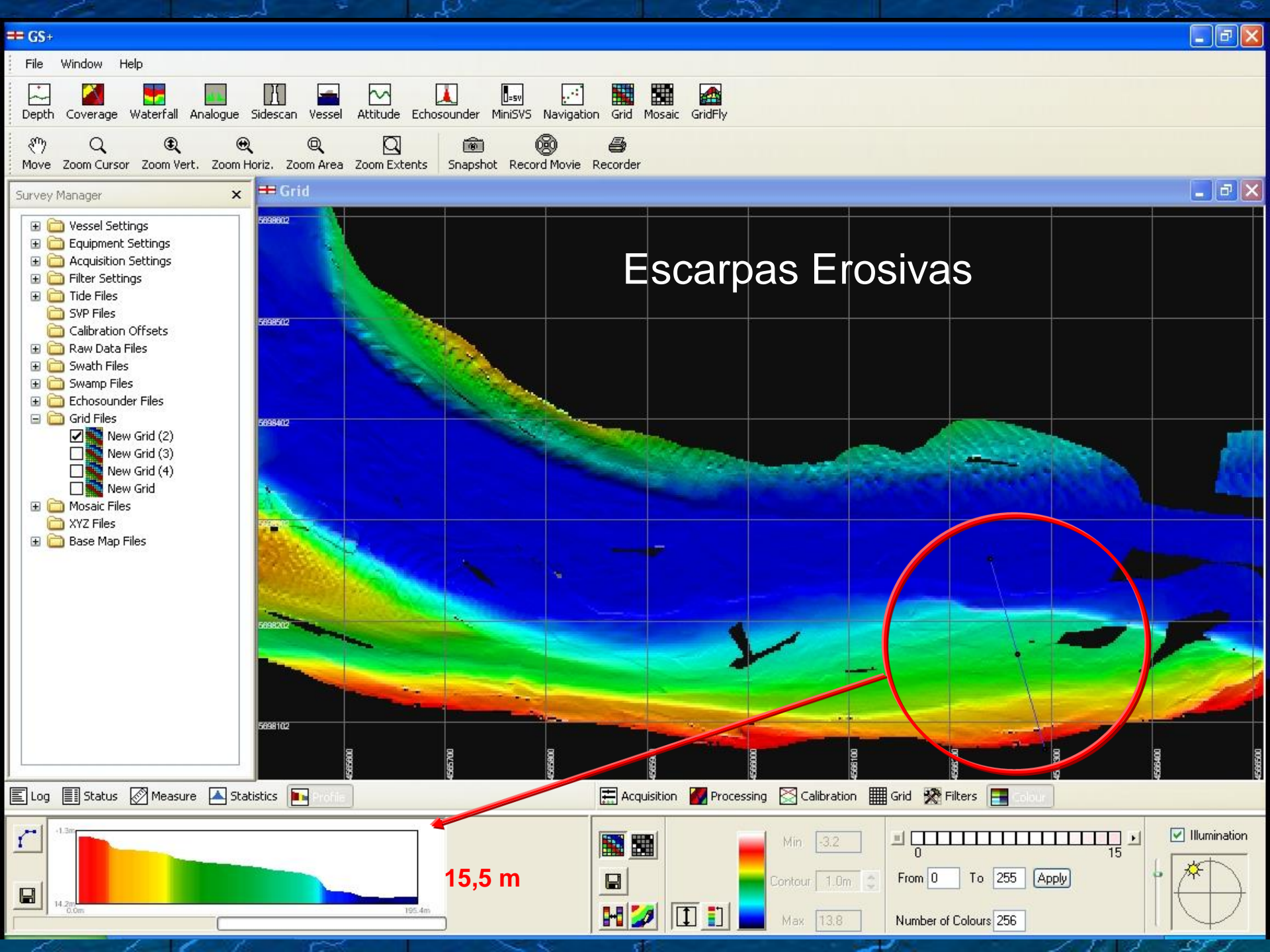
Filtrado Longitudinal



Filtro de Amplitud



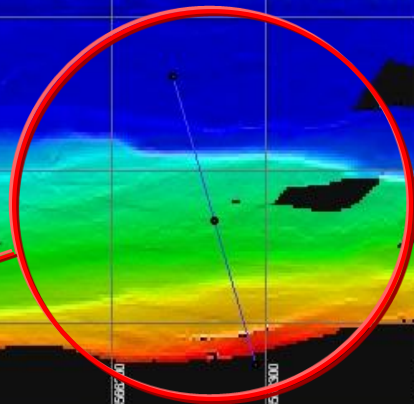
Unfiltered and filtered raw data



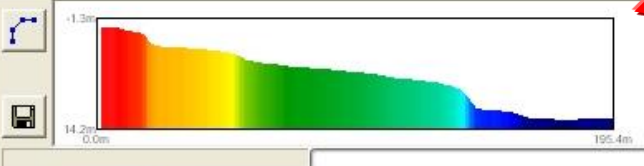
Survey Manager

- Vessel Settings
- Equipment Settings
- Acquisition Settings
- Filter Settings
- Tide Files
- SVP Files
- Calibration Offsets
- Raw Data Files
- Swath Files
- Swamp Files
- Echosounder Files
- Grid Files
 - New Grid (2)
 - New Grid (3)
 - New Grid (4)
 - New Grid
- Mosaic Files
- XYZ Files
- Base Map Files

Escarpas Erosivas



15,5 m



Acquisition Processing Calibration Grid Filters Colour

Min: -3.2
Contour: 1.0m
Max: 13.8

From 0 To 255
Number of Colours: 256

Illumination

File Window Help

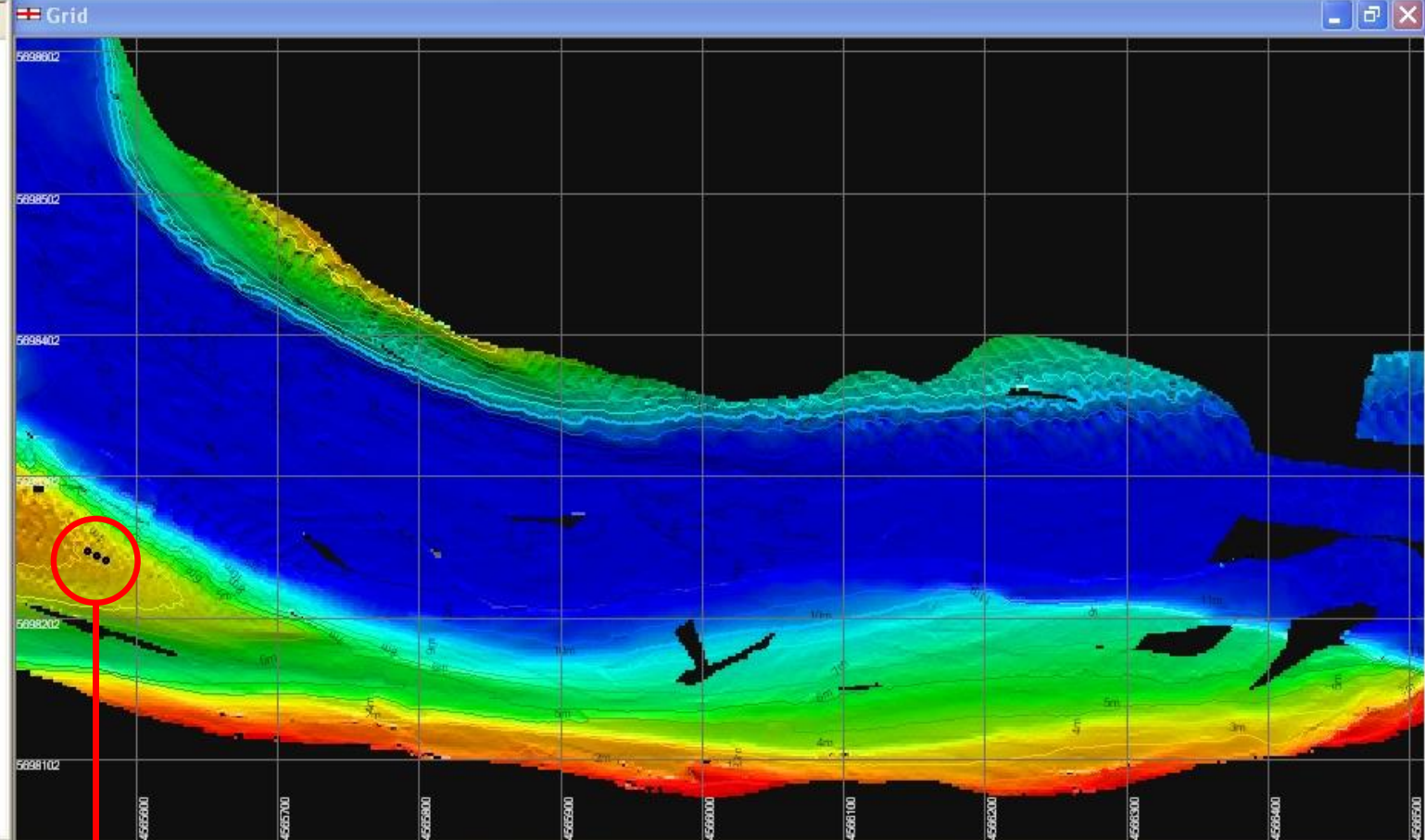
Depth Coverage Waterfall Analogue Sidescan Vessel Attitude Echosounder MiniSVS Navigation Grid Mosaic GridFly

Pequeñas Dunas

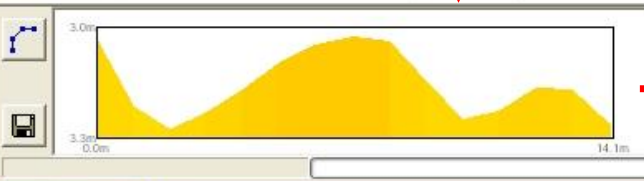
Move Zoom Cursor Zoom Vert. Zoom Horiz. Zoom Area Zoom Extents Snapshot Record Movie Recorder

Survey Manager □ ×

- ⊕ Vessel Settings
- ⊕ Equipment Settings
- ⊕ Acquisition Settings
- ⊕ Filter Settings
- ⊕ Tide Files
- ⊕ SVP Files
- ⊕ Calibration Offsets
- ⊕ Raw Data Files
- ⊕ Swath Files
- ⊕ Swamp Files
- ⊕ Echosounder Files
- ⊕ Grid Files
 - New Grid (2)
 - New Grid (3)
 - New Grid (4)
 - New Grid
- ⊕ Mosaic Files
- ⊕ XYZ Files
- ⊕ Base Map Files

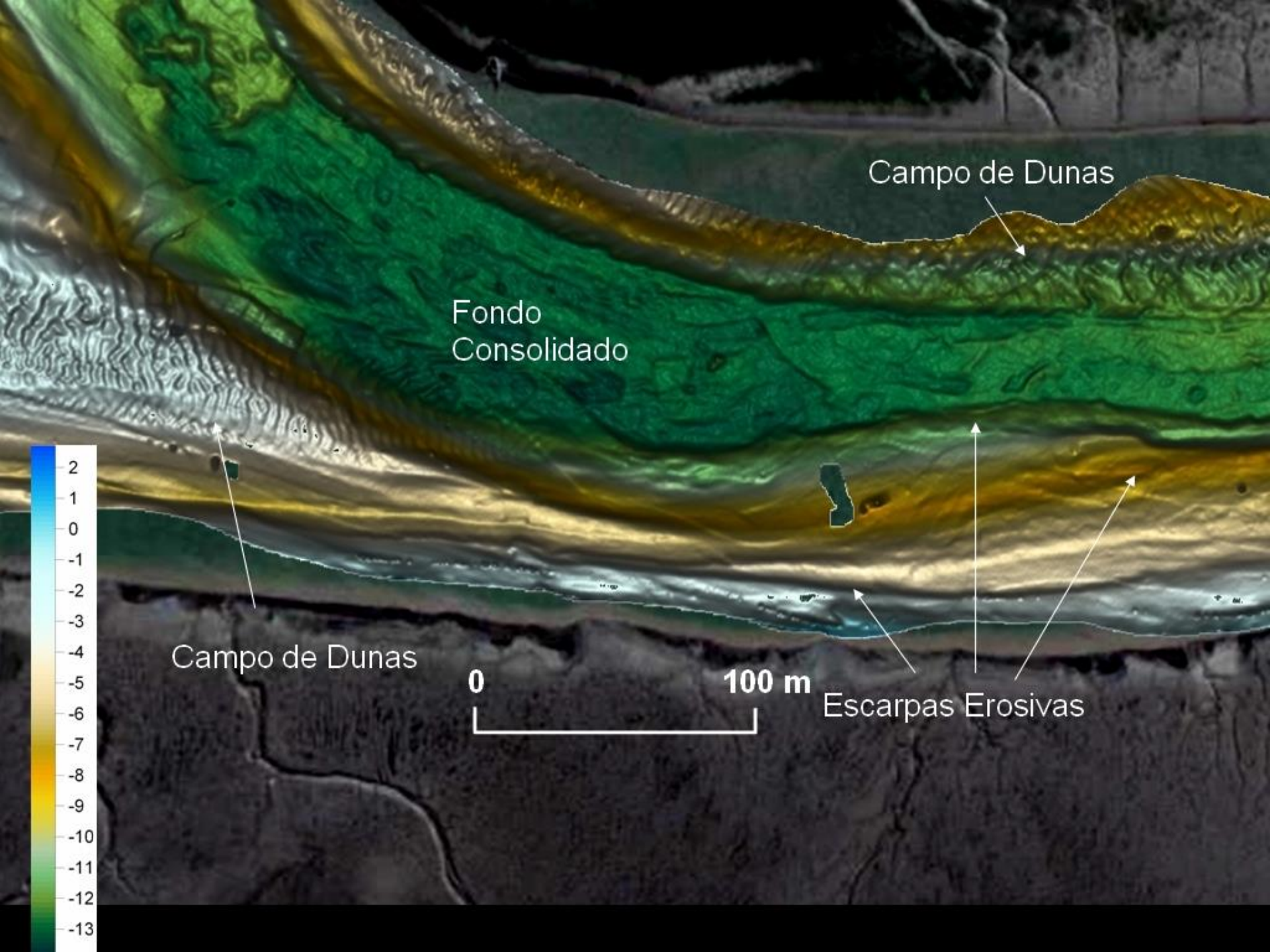


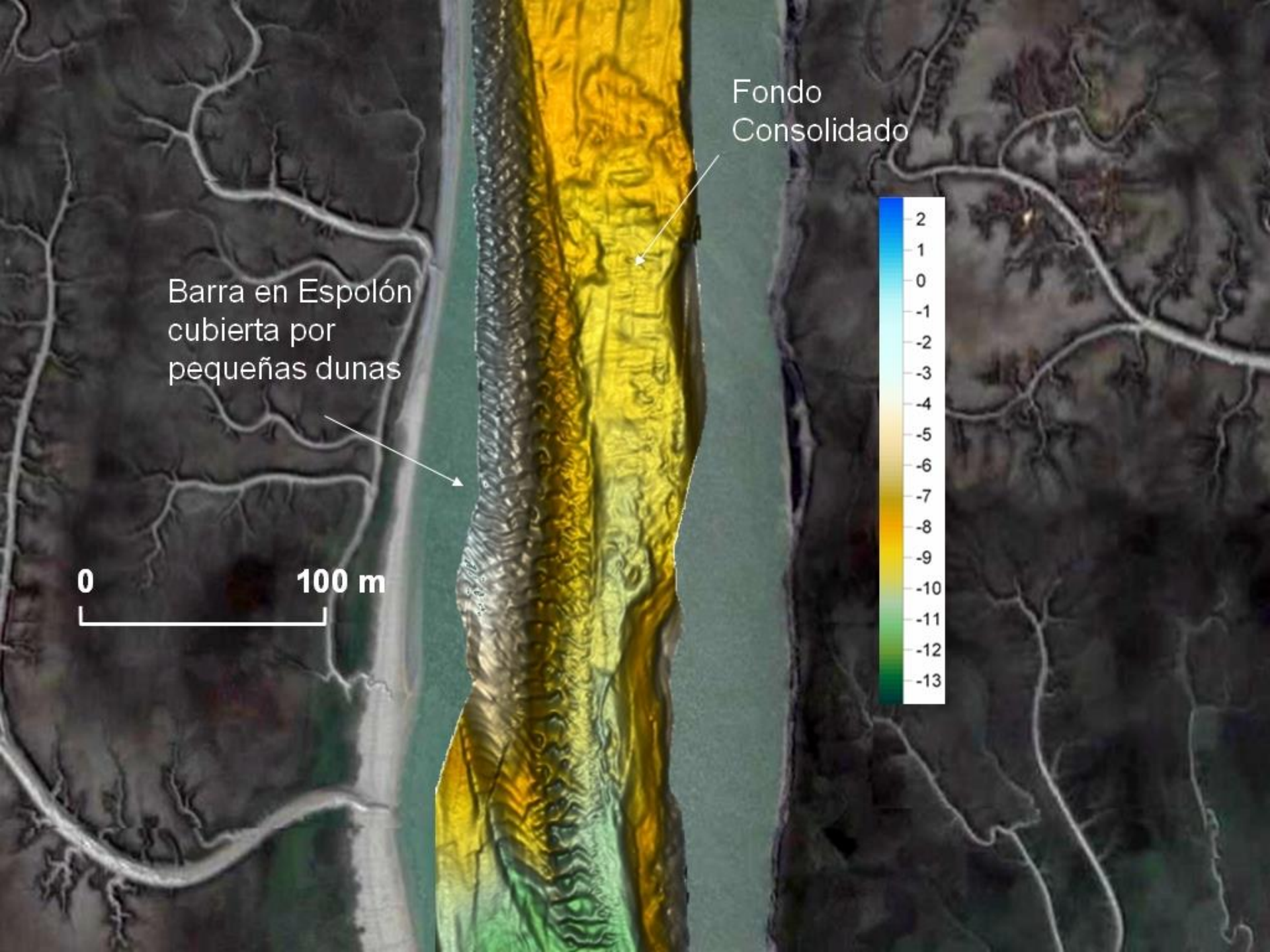
Log Status Measure Statistics Profile Acquisition Processing Calibration Grid Filters Colour



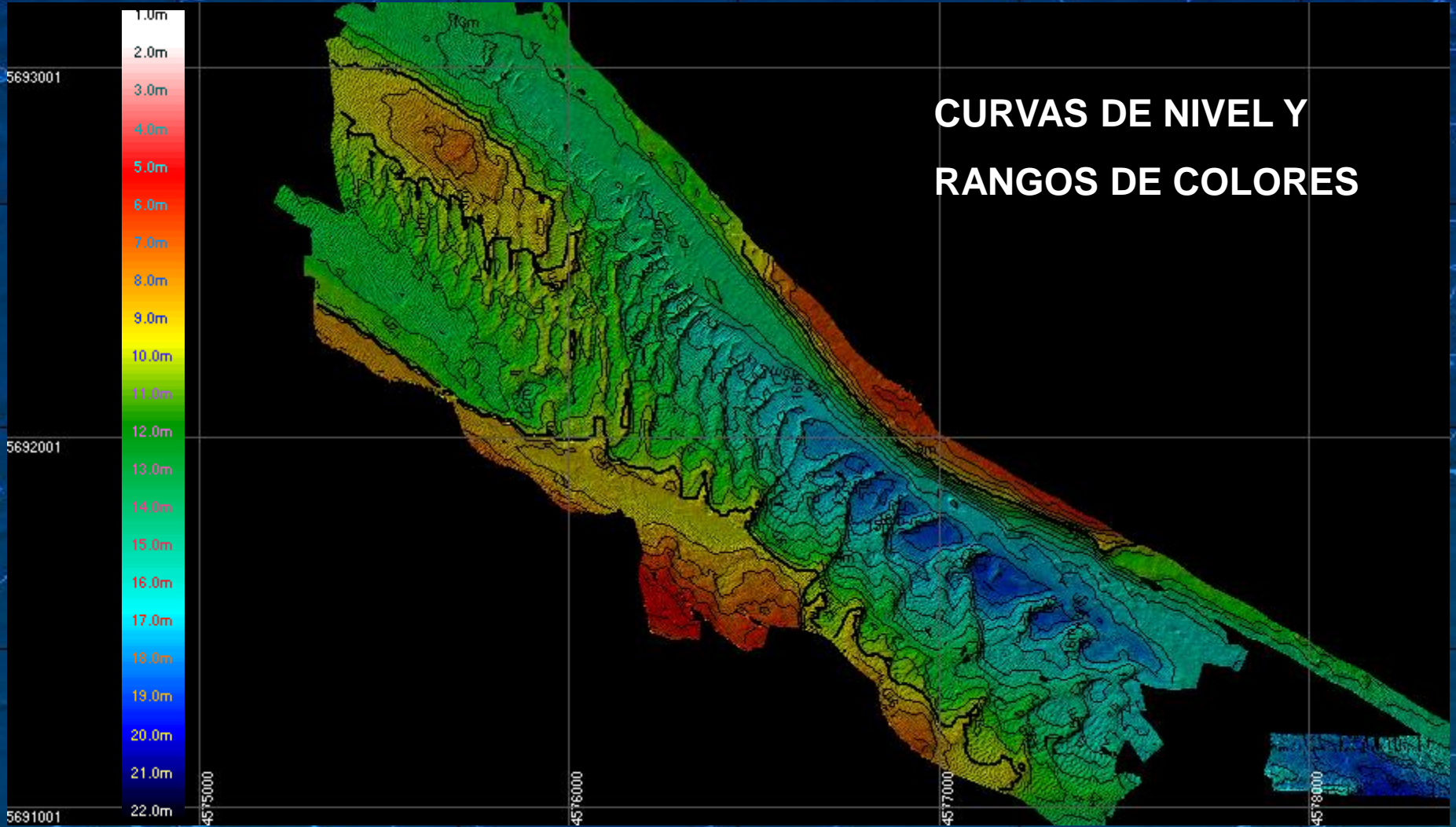
→ 12 cm

Color calibration controls including a color bar, Min (-3.2), Max (13.8), Contour (1.0m), and Number of Colours (256). Includes an Illumination checkbox and a sun icon.





CURVAS DE NIVEL Y RANGOS DE COLORES



CURVAS DE NIVEL



5693001

5692001

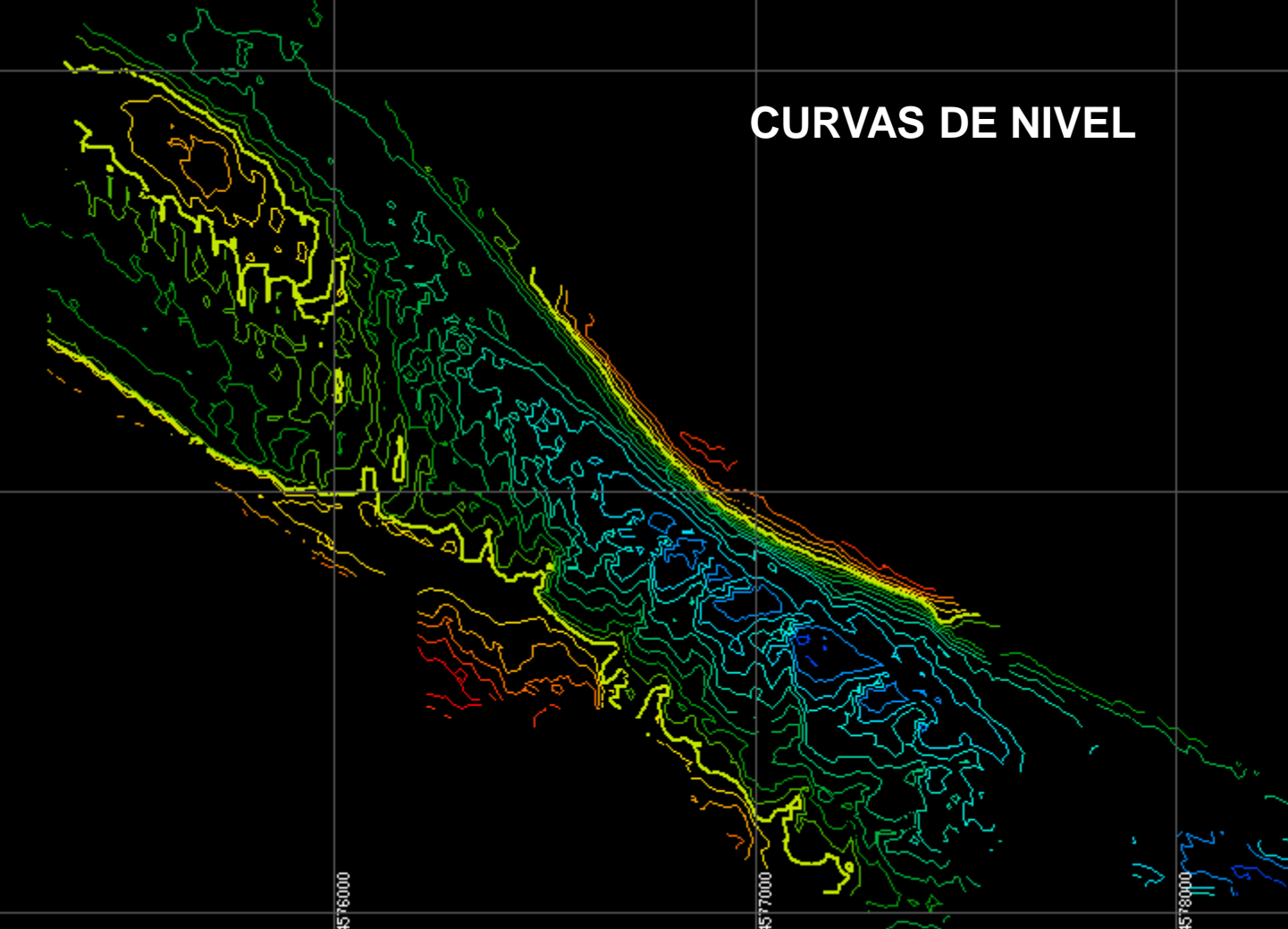
5691001

4575000

4576000

4577000

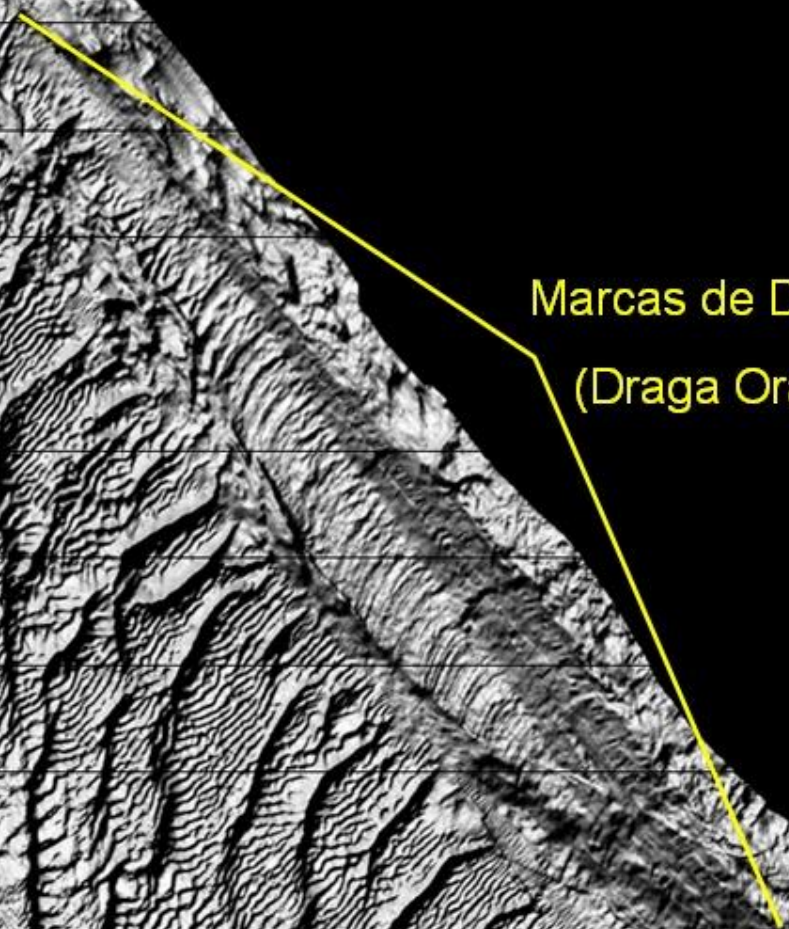
4578000



Par N° 23



Marcas de Dragado
(Draga Orange)

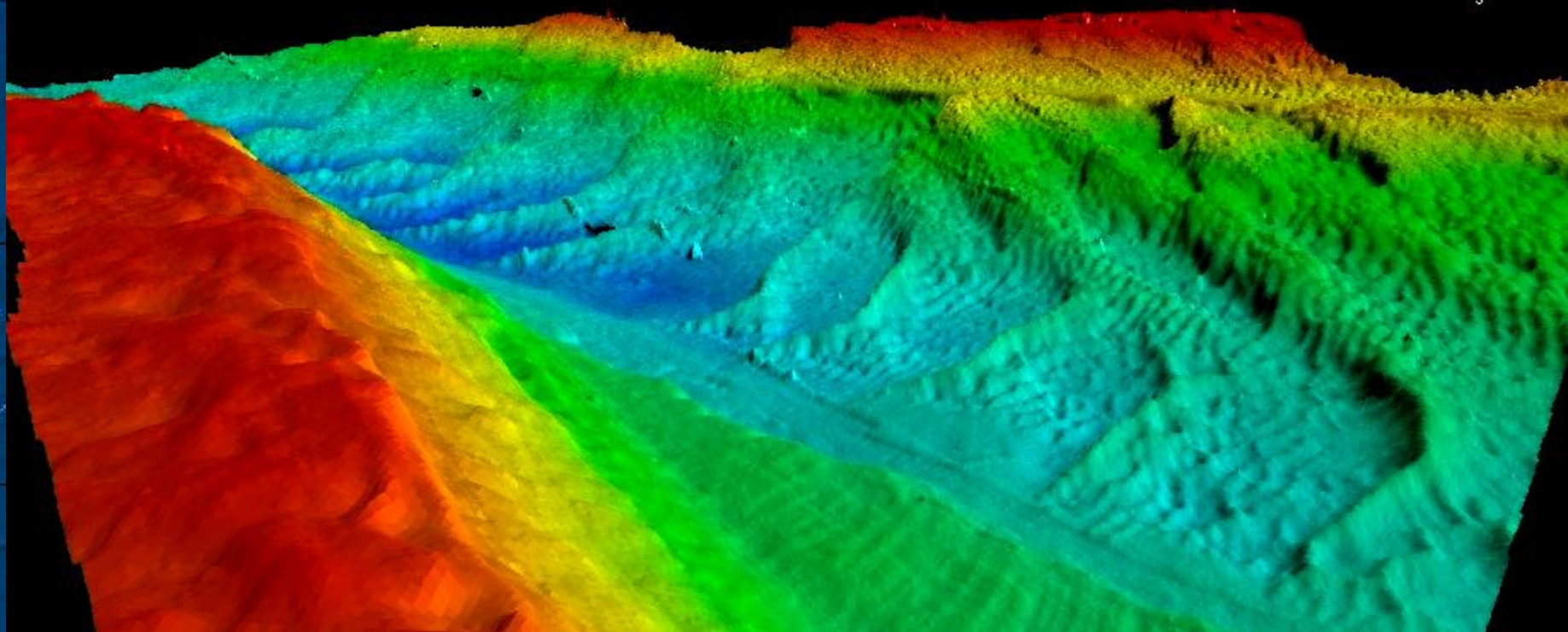


Par N° 22



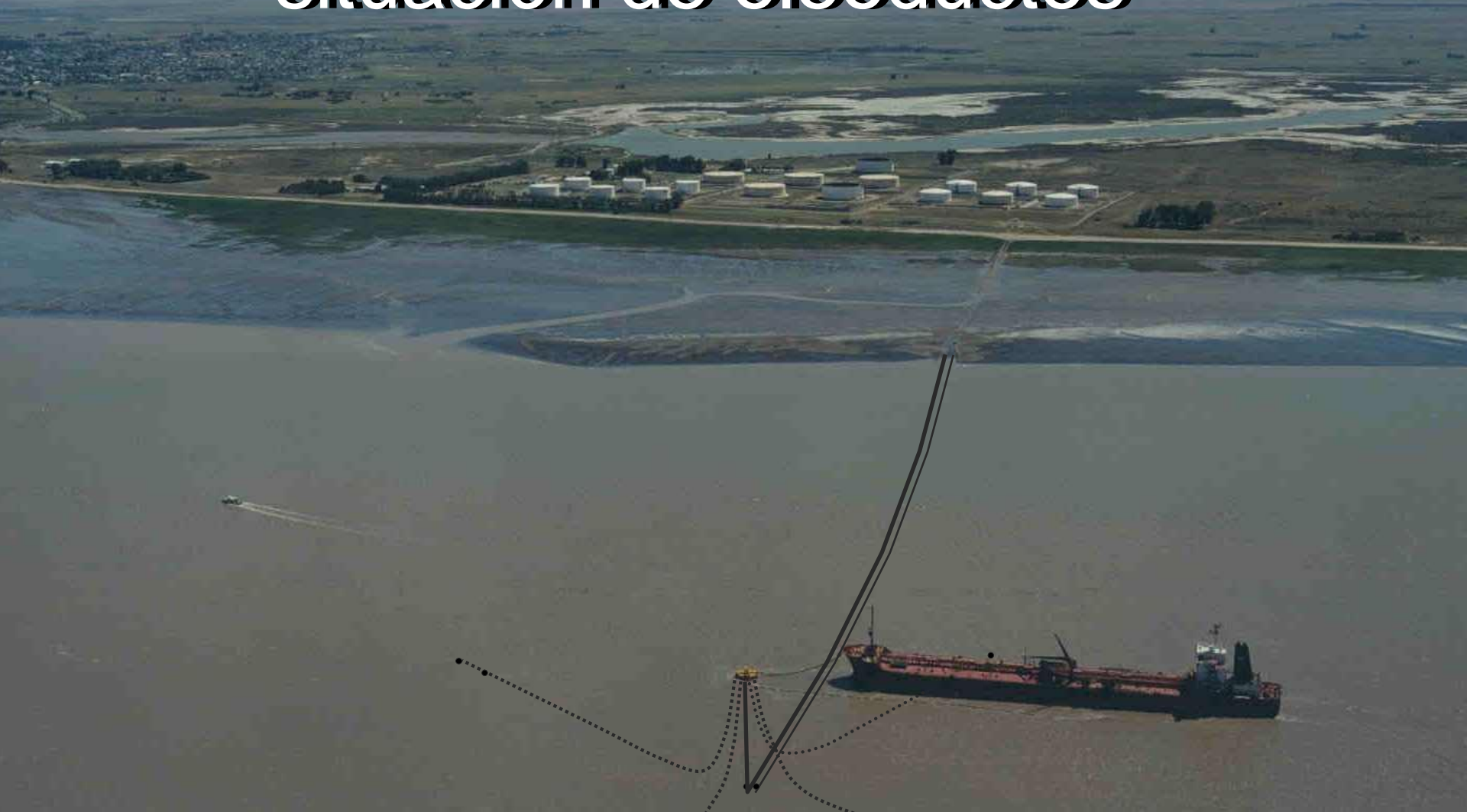
View Position: (X) 4576607.4m (Y) 5692402.2m (Z) 0.0m
Roll: 0.0°
Pitch: -17.0°
Heading: 178.7°
Speed: 0.0ms⁻¹
Vertical X: 9

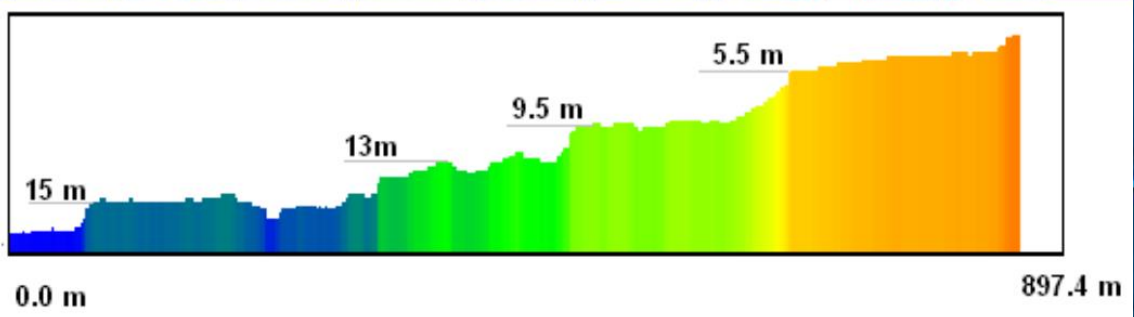
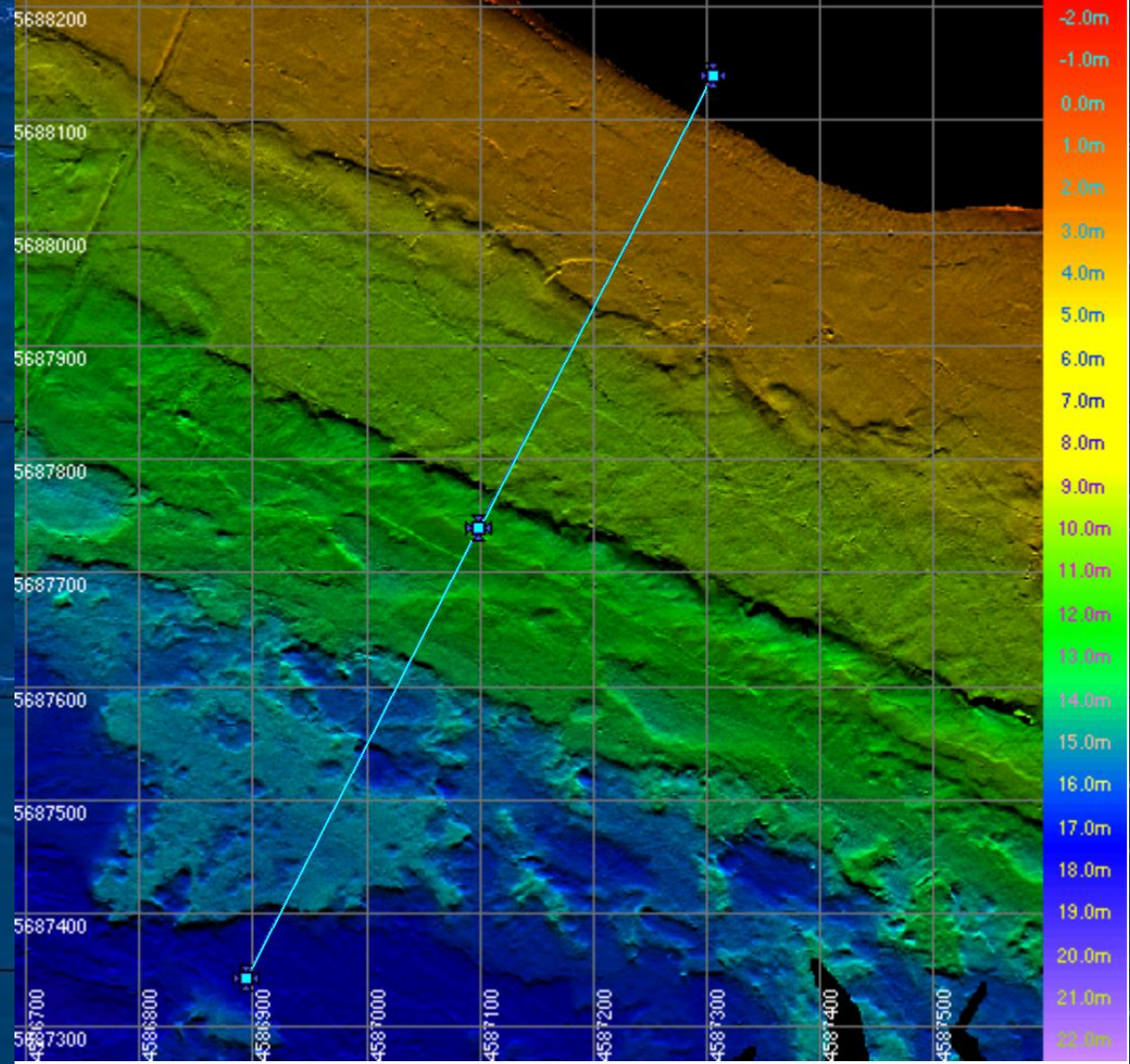
PERSPECTIVA 3D

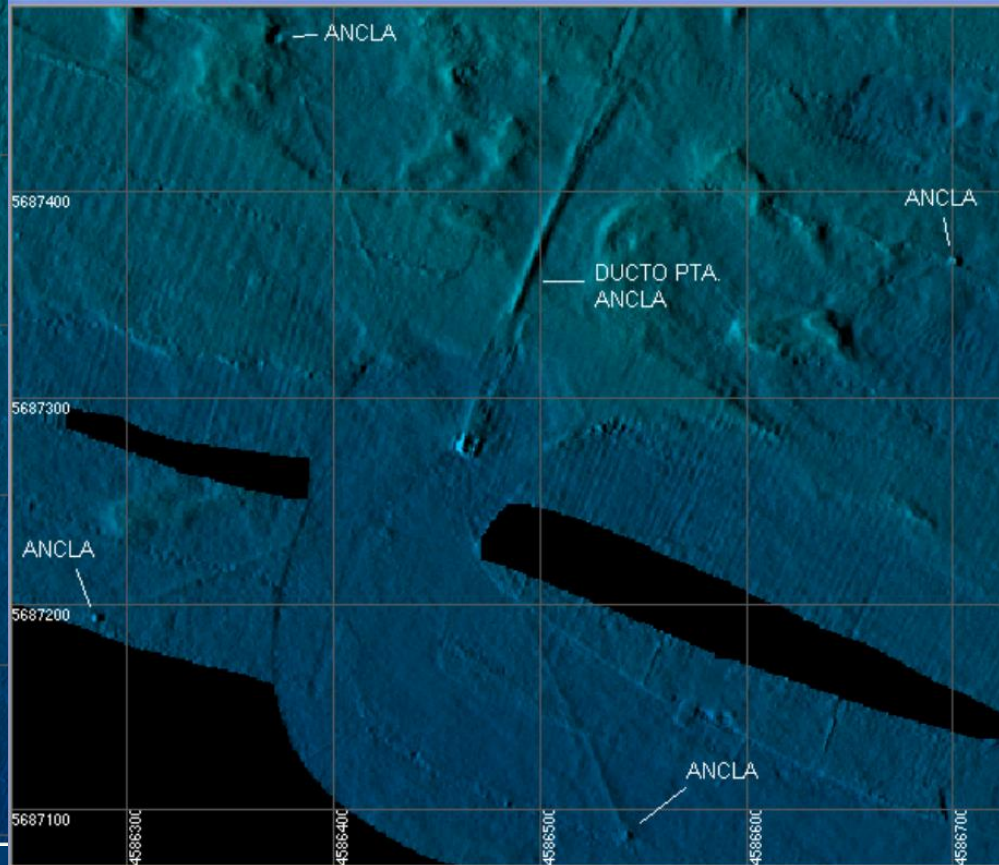
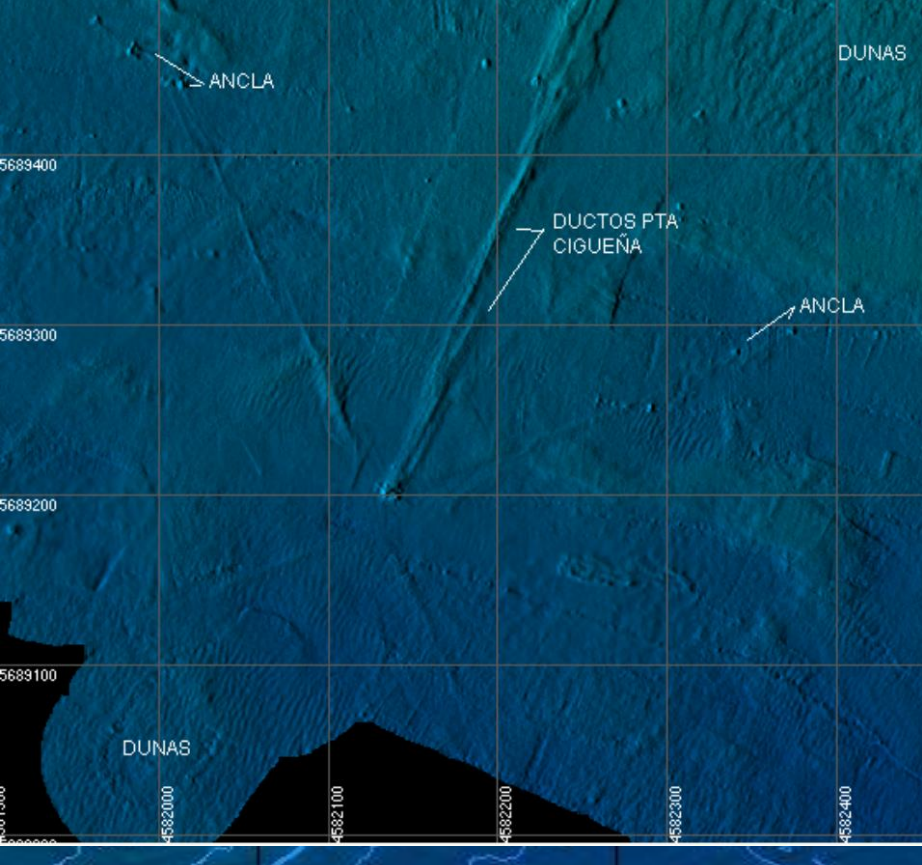
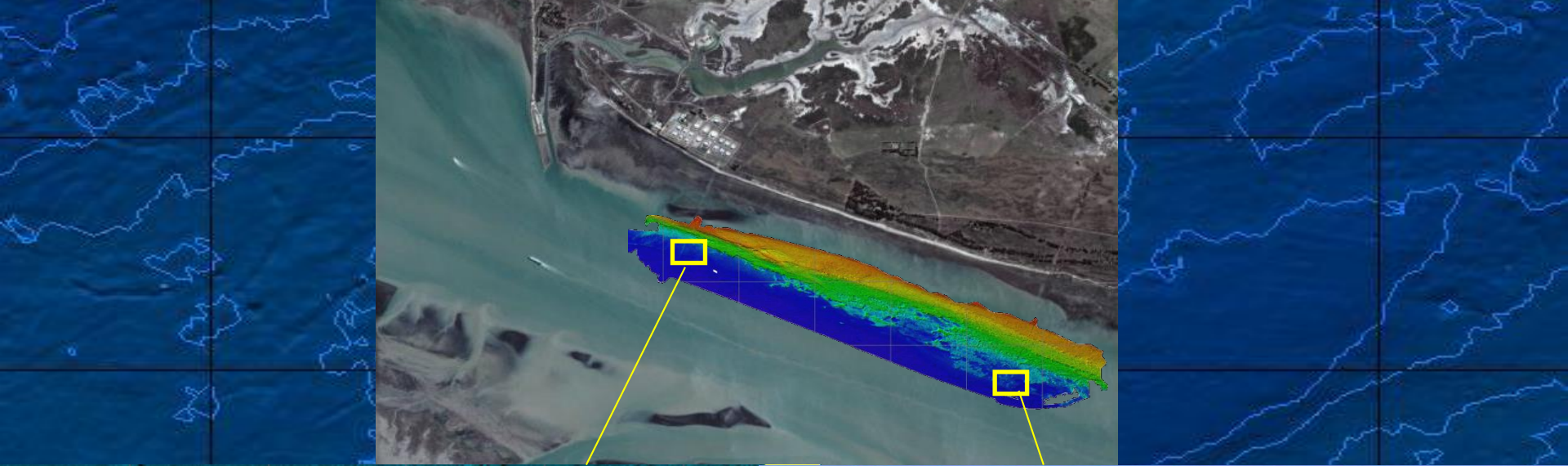


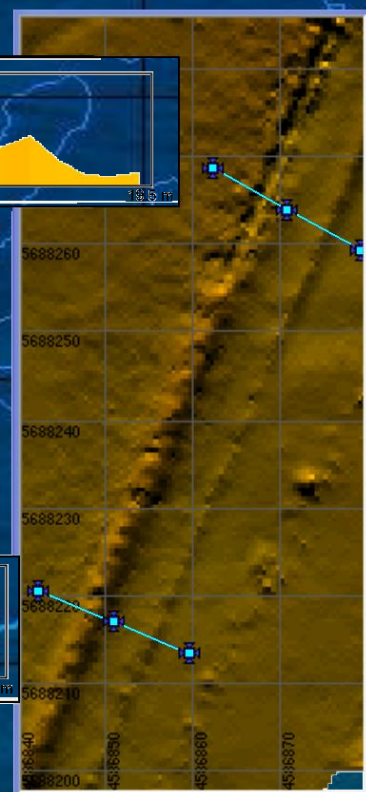
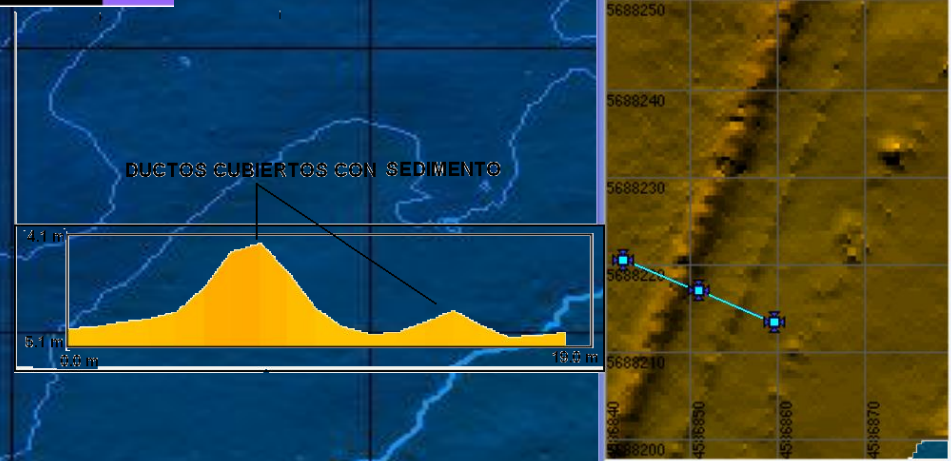
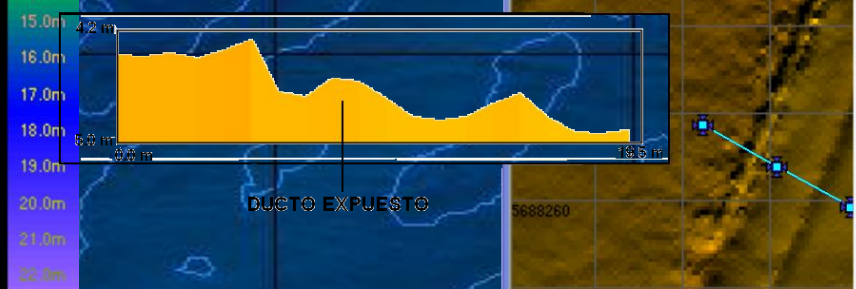
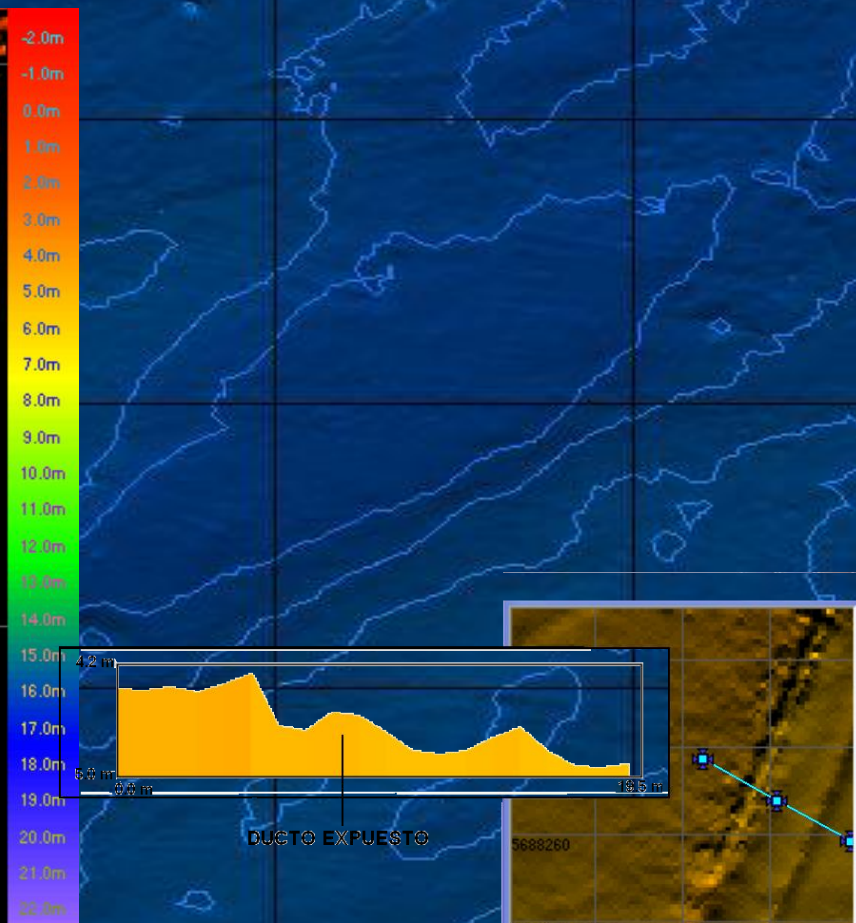
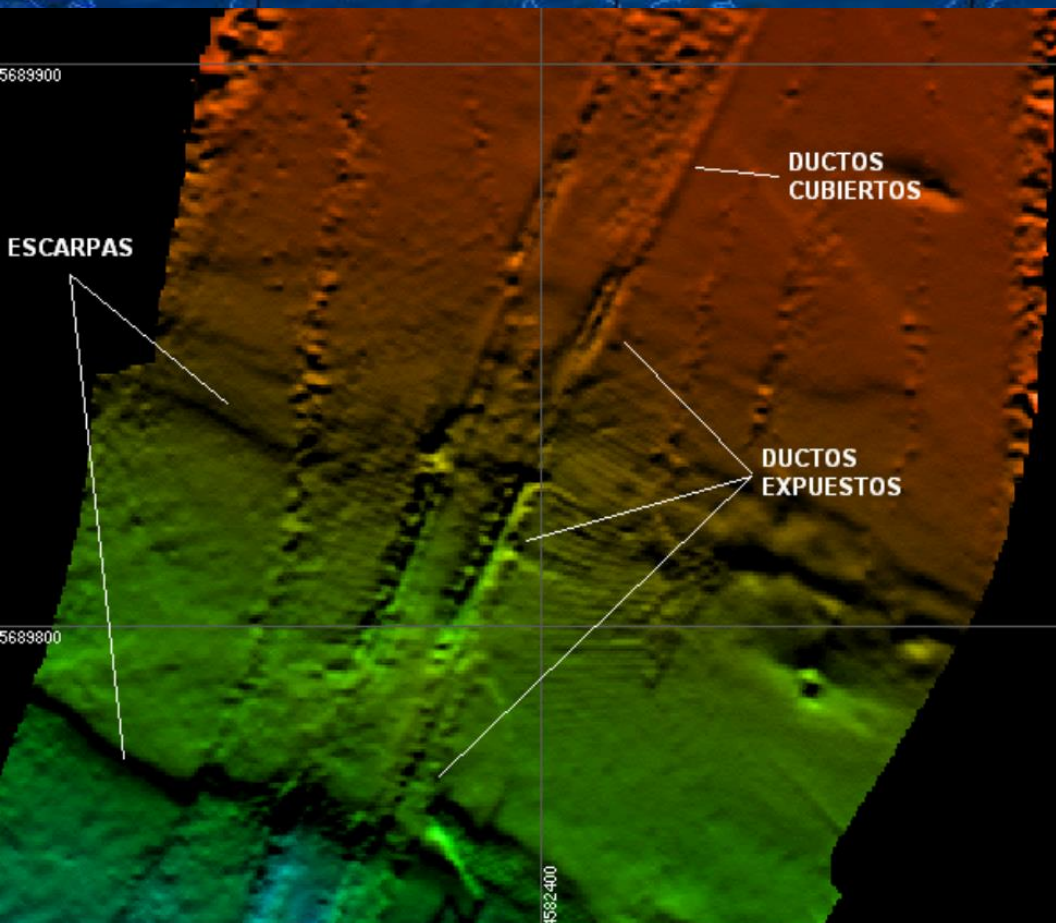
OILTANKING

Estabilidad del Fondo Marino y situación de oleoductos



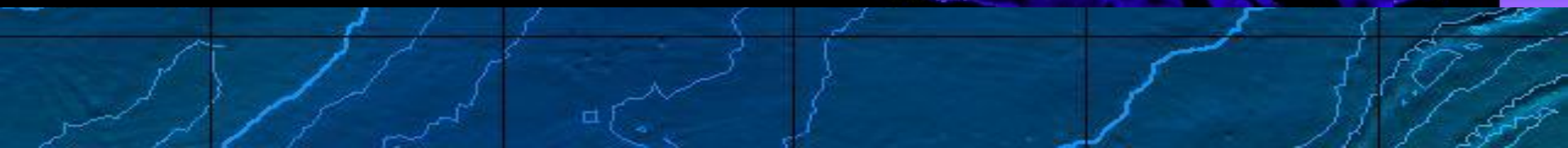
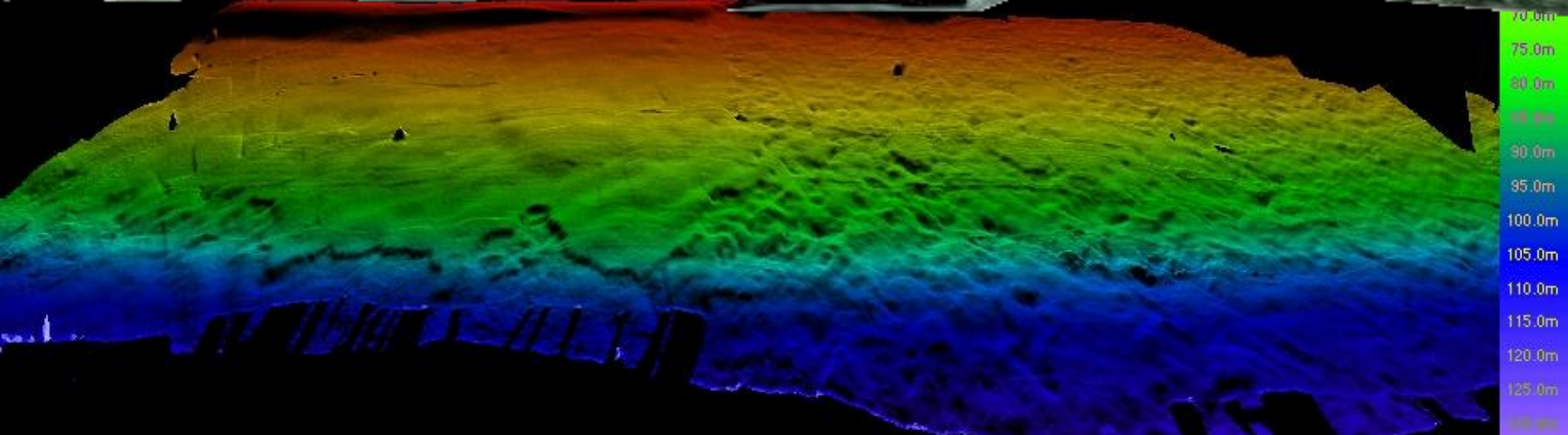




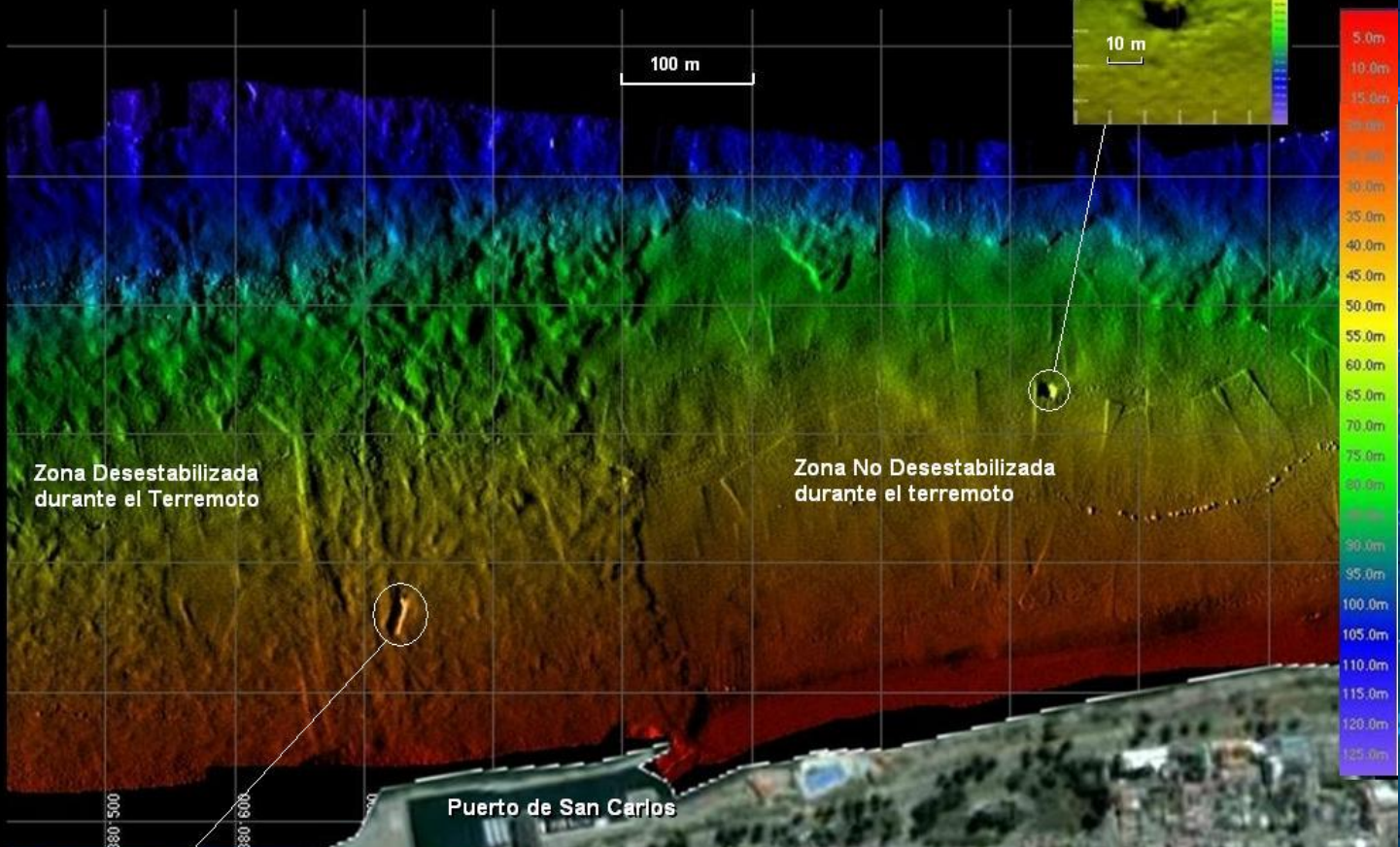




View Position: [X] 3801985.6m [Y] 5414648.6m [Z] 94.1m
Roll: 0.0° [0.0]
Pitch: 0.0° [0.0°]
Heading: 143.1° (176.1°)
Speed: 0.0ms⁻¹
Vertical X: 3



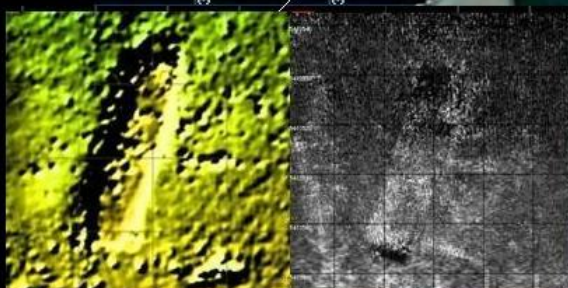
Bloque Errante (Roca Glaciar)



Zona Desestabilizada durante el Terremoto

Zona No Desestabilizada durante el terremoto

Puerto de San Carlos



Batimetría SBF

Textura (Sonar Lateral SBF)

Restos del Antiguo Muelle de Madera a 35 m de profundidad

Puerto San Carlos luego del Tsunami generado por el terremoto de 1960



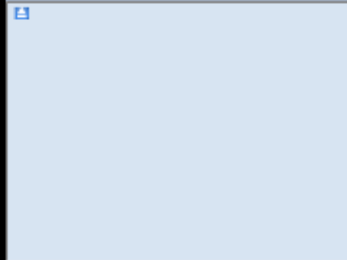
Relevamiento en Moconá



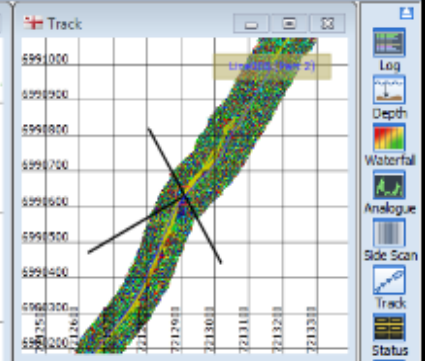
Acquisition Processing Replay Grid Mosaic Colour Tools

Profile Measure Flag Snapshot Record Movie Auto Arrange Auto Select Auto Select Settings Load Layout Save Layout Move Zoom Cursor Zoom Vert. Zoom Horiz. Zoom Area Zoom Extents Displays

Utility Capture Layout View



- Survey Manager
- Line004 (Part 1)
 - Line004 (Part 2)
 - Line004 (Part 3)
 - Line004 (Part 4)
 - Line004 (Part 5)
 - Line004 (Part 6)
 - Line004
 - Line005 (Part 1)
 - Line005 (Part 2)
 - Line005 (Part 3)
 - Line005 (Part 4)
 - Line005 (Part 5)
 - Line005
 - Line007 (Part 1)
 - Line007 (Part 2)
 - Line007
 - Line008 (Part 1)
 - Line008 (Part 2)
 - Line008 (Part 3)
 - Line008 (Part 4)
 - Line008 (Part 5)
 - Line008 (Part 6)
 - Line008 (Part 7)
 - Line008
- Swath Files
Swamp Files
Echosounder Files



- Log
- Depth
- Waterfall
- Analogue
- Side Scan
- Track
- Status
- Vessel
- Altitude
- SVS
- Echo
- Aux
- Grid
- Mosaic

PULSAR



KONGSBERG



July 2015

HIGH RESOLUTION SIDE SCAN SONAR

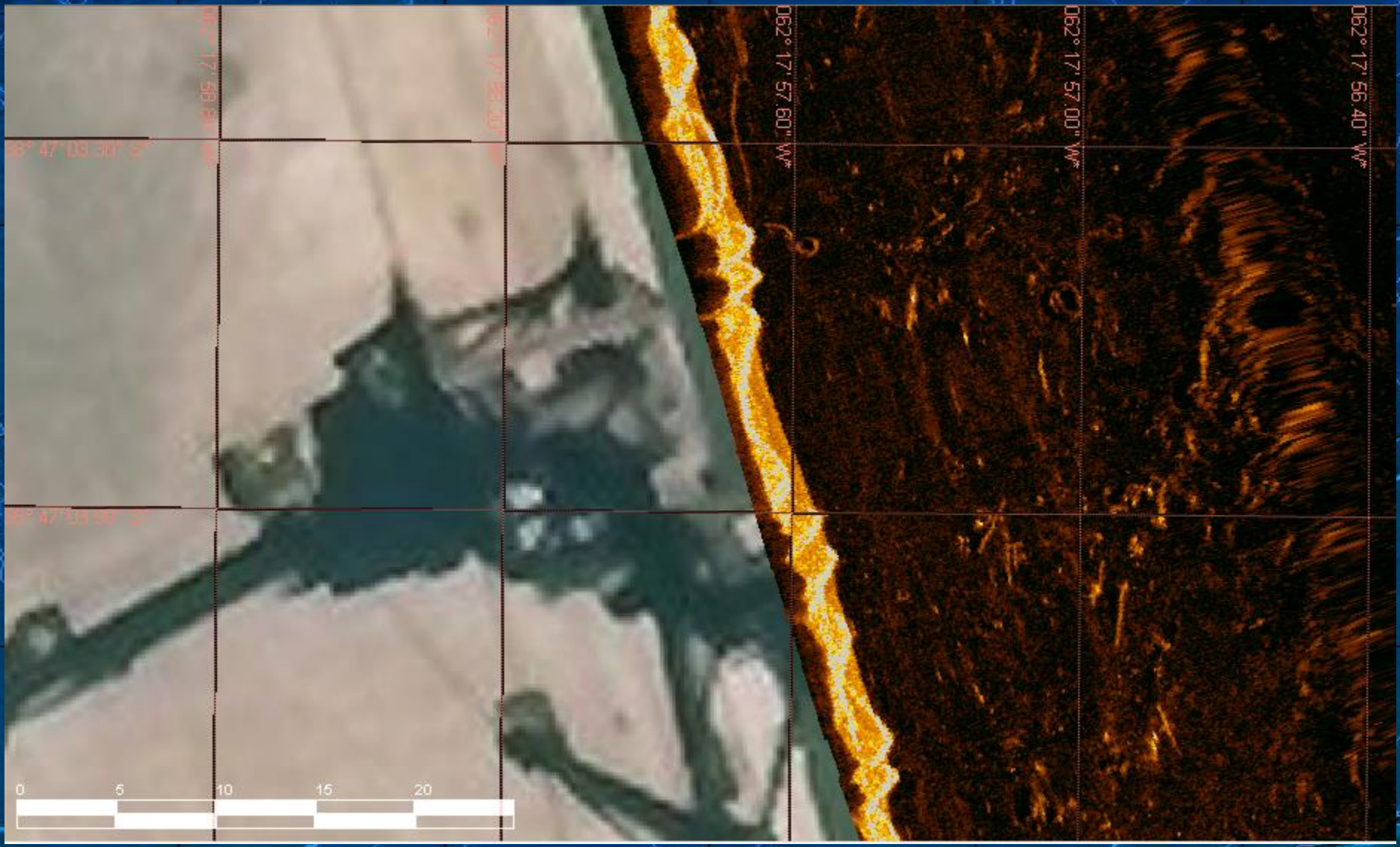




Image © 2019 Maxar Technologies

Google earth

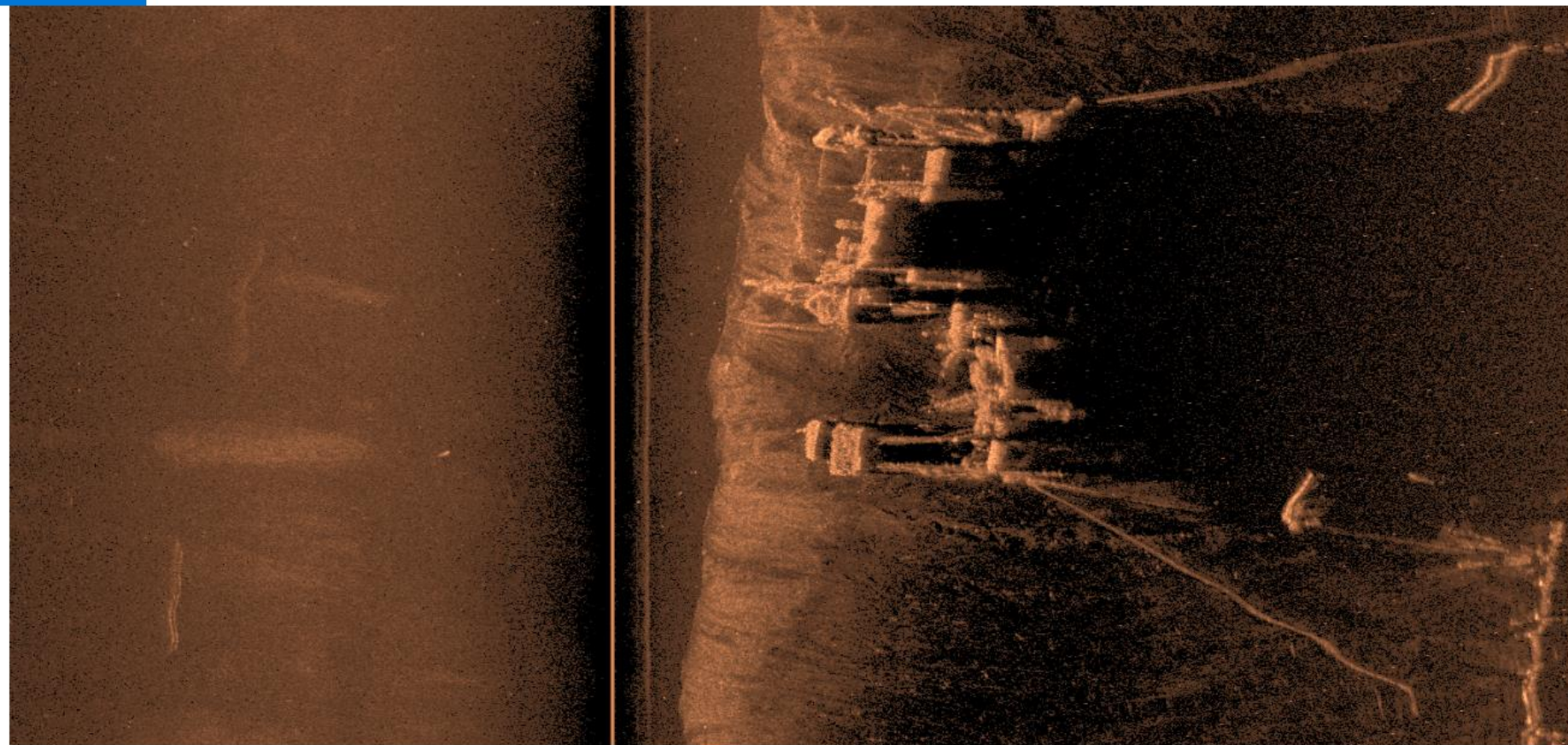
Ver todas las fotos

+ Agregar a...



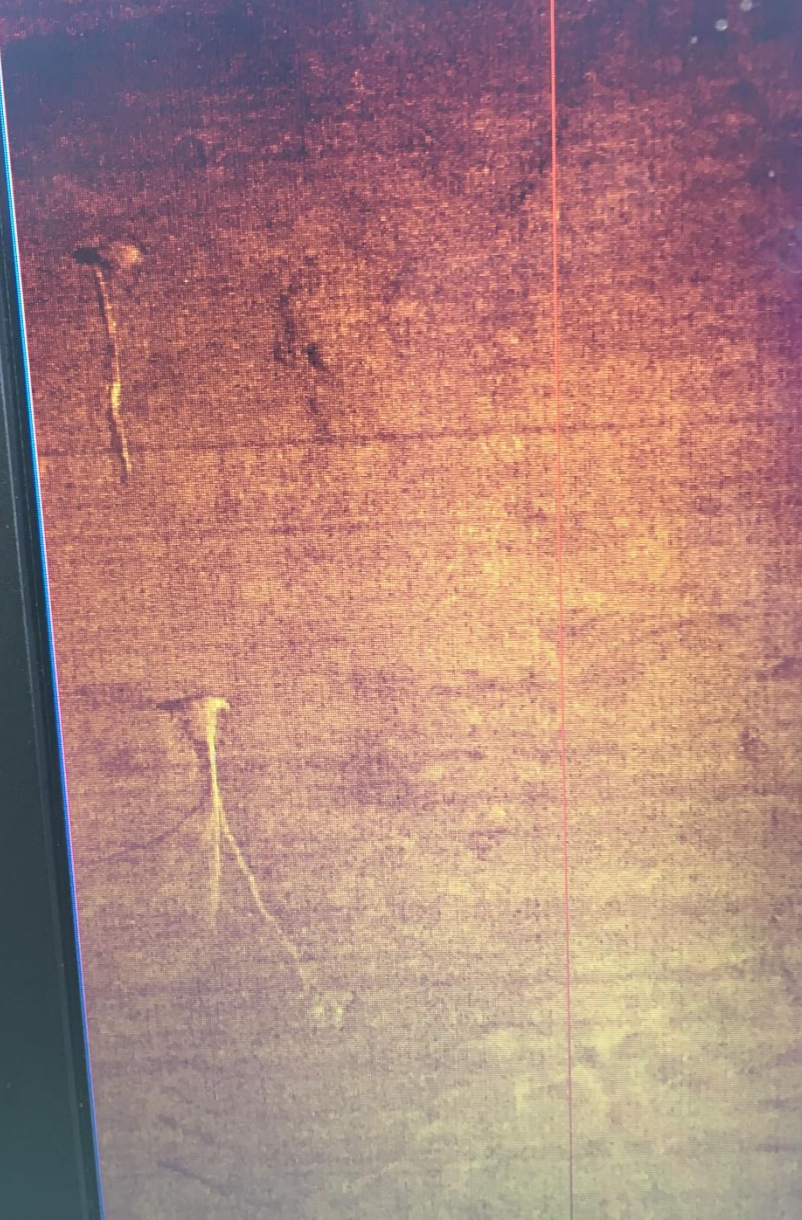
✂ Editar y crear ▾

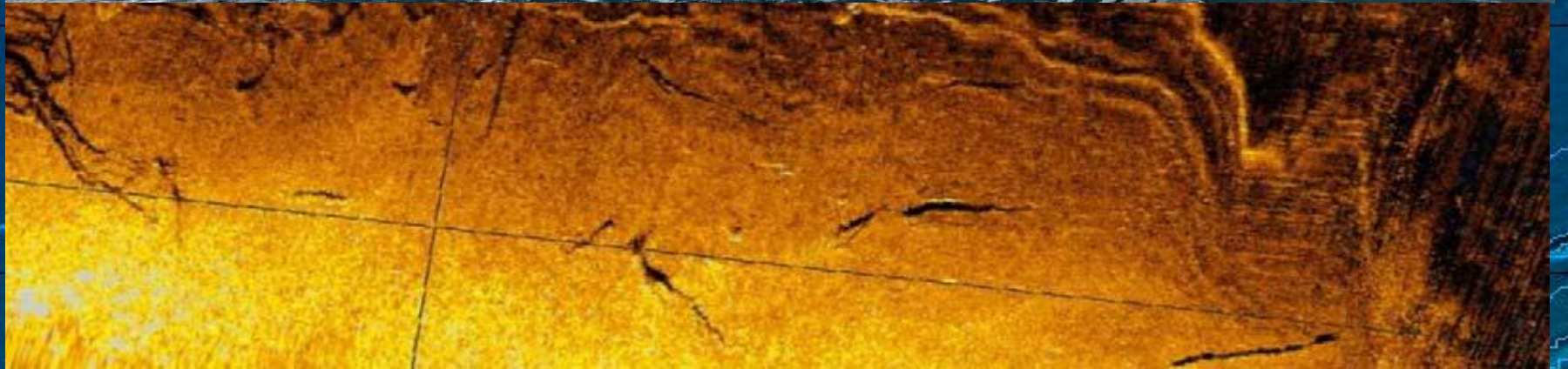
🔗 Compartir





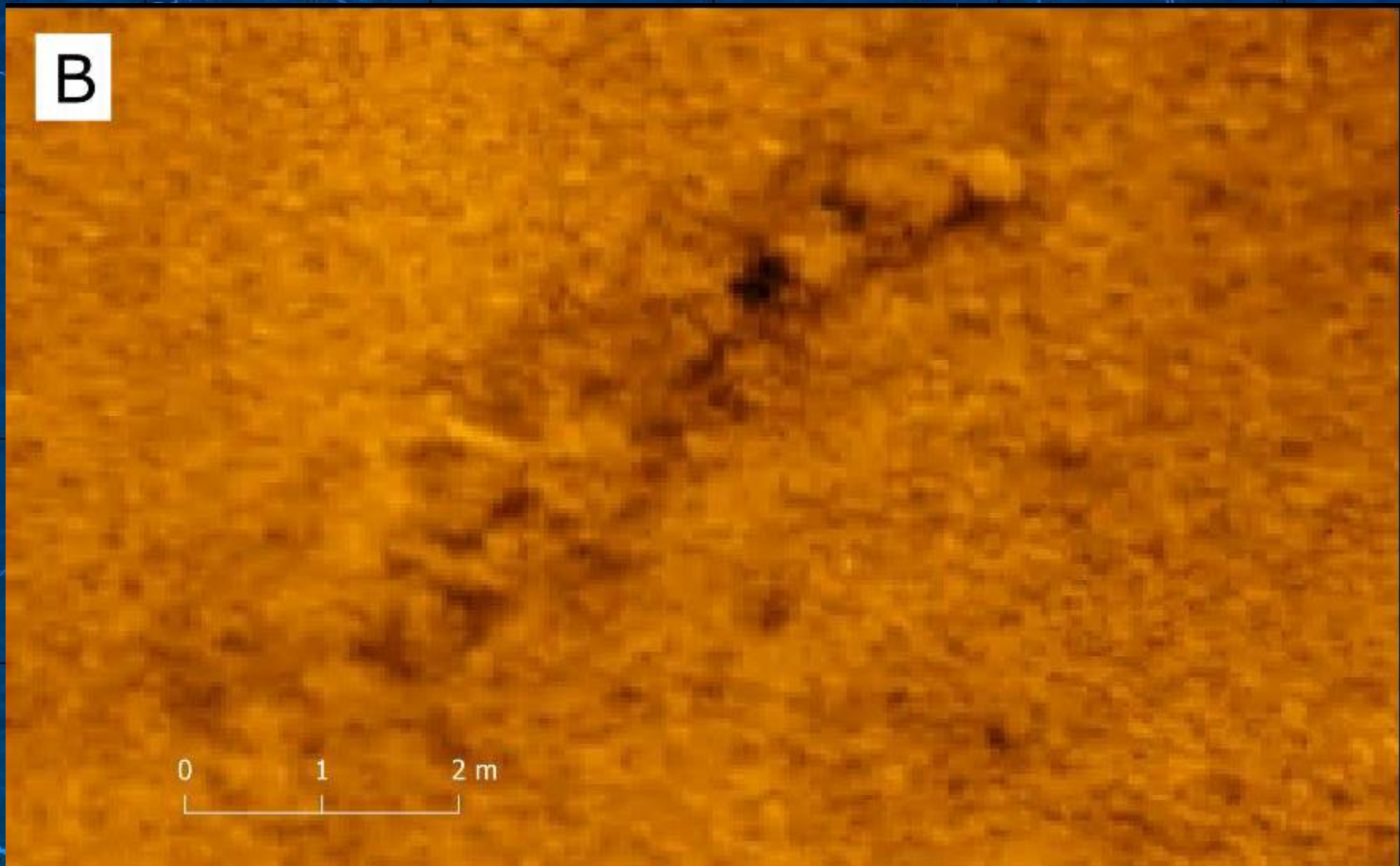
20 m/div Head #1





B

0 1 2 m

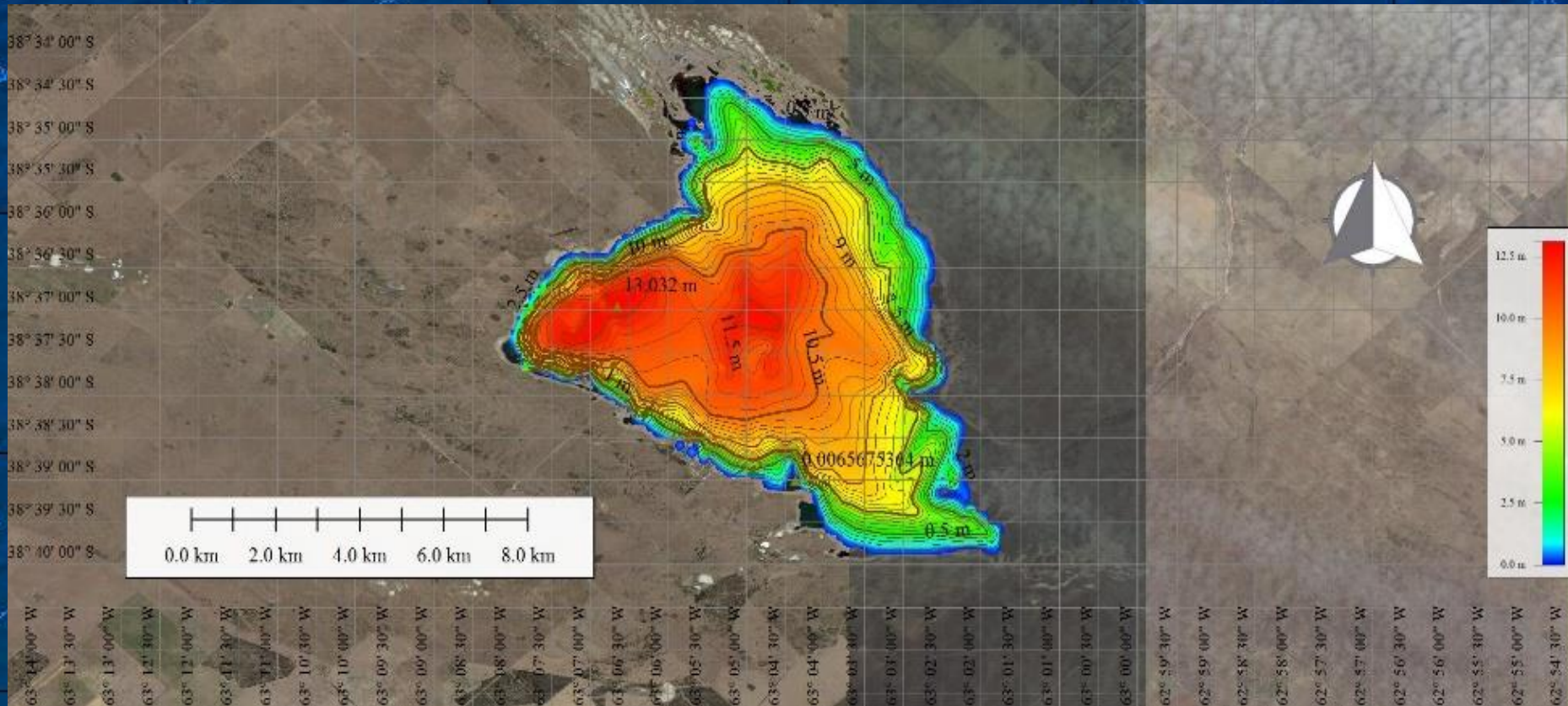


B



0 1 2 m

Laguna Chasicó



A topographic map of a region, likely in the Iberian Peninsula, shown in shades of blue. The map features contour lines indicating elevation and a grid of latitude and longitude lines. The text is centered over the map.

**Muchas gracias
por su atención**