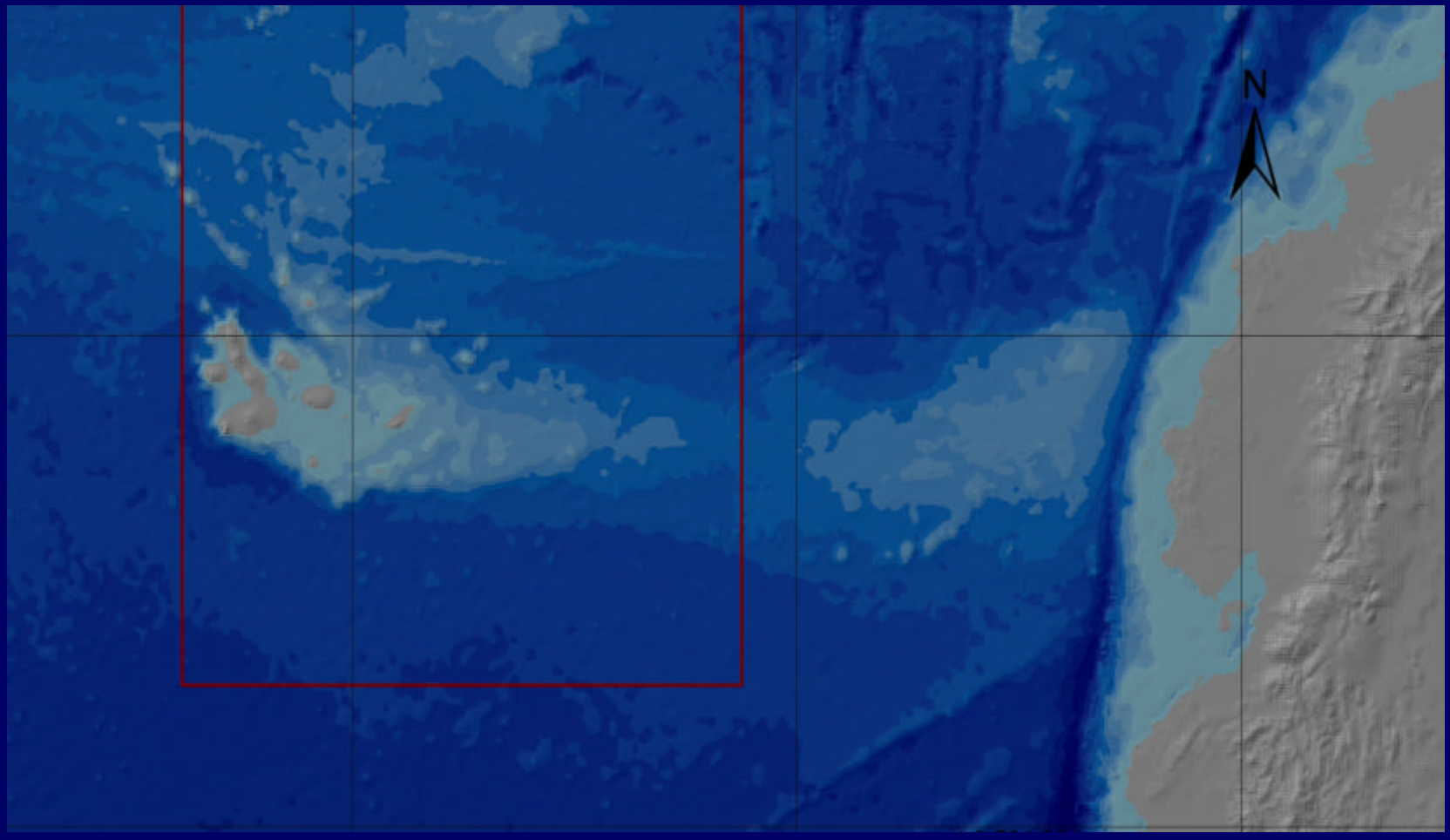
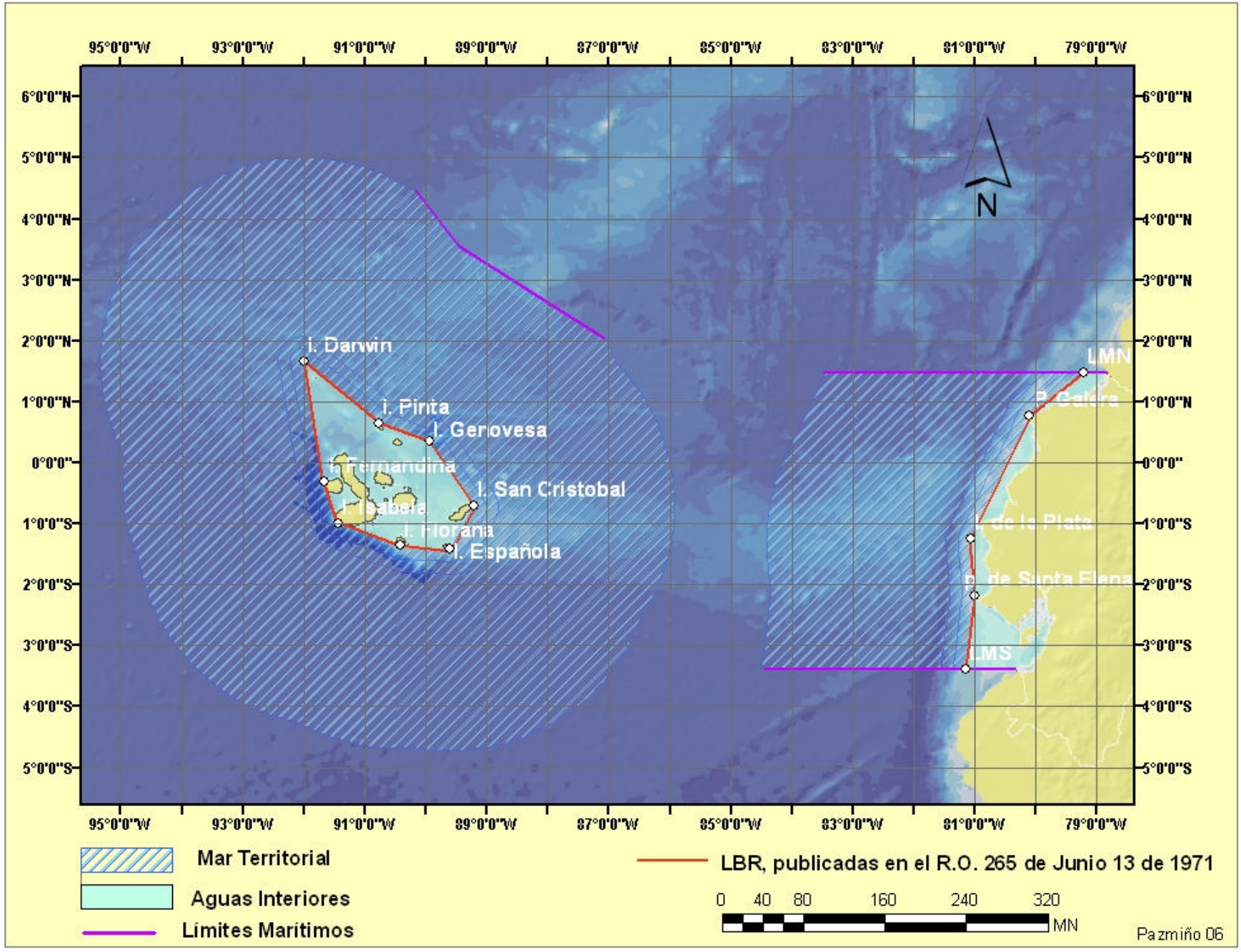
Metodología de integración de datos internacionales para la compilación de cartas batimétricas nacionales



INOCAR (SUBCOMISIÓN TECNICA DE LA CNDM)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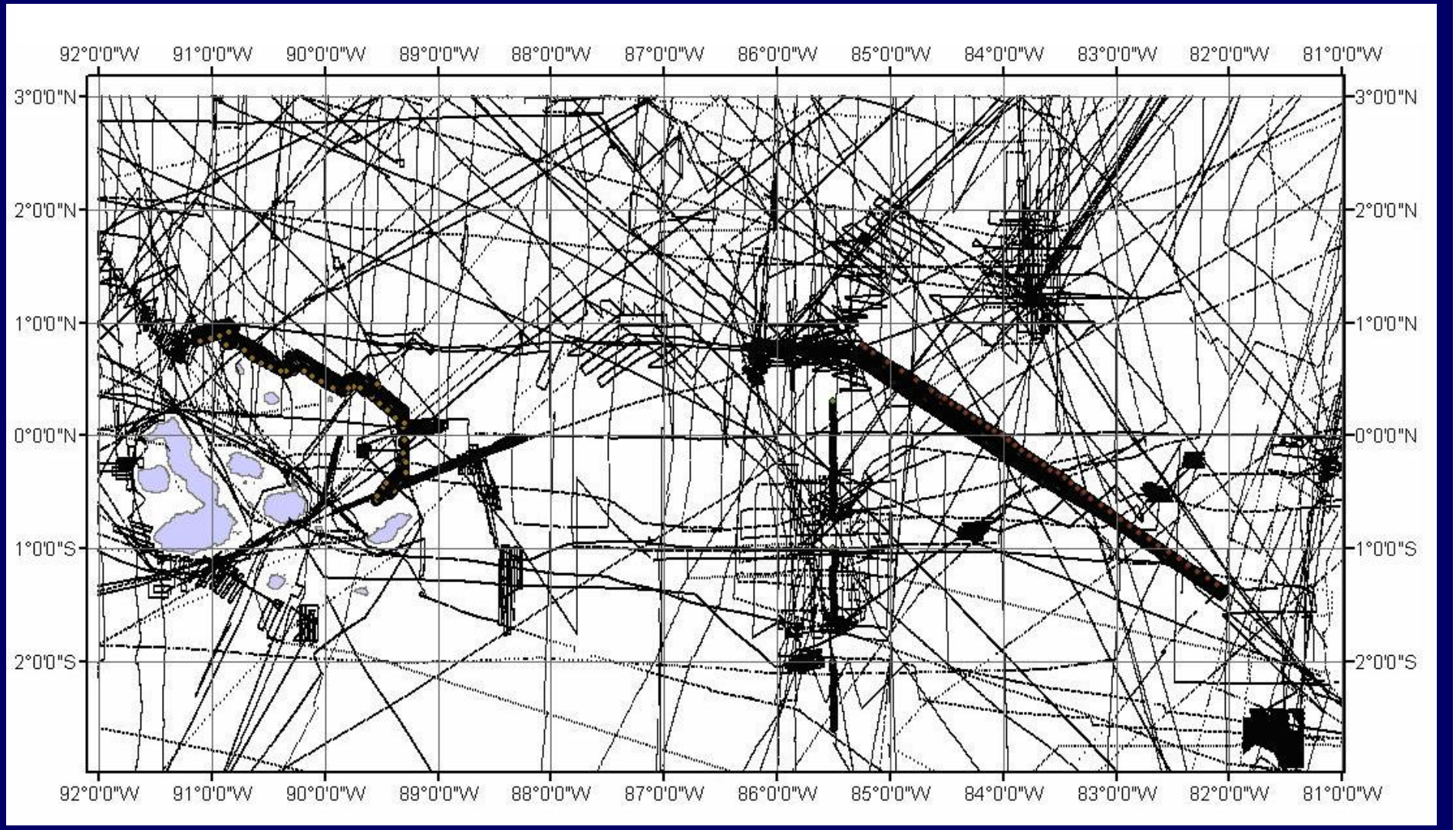
83°0'0"W
81°0'0"W
79°0'0"W
6°0'0"N
5°0'0"N
4°0'0"N
3°0'0"N
2°0'0"N
1°0'0"N
0°0'0"
1°0'0"S
2°0'0"S
3°0'0"S
4°0'0"S
5°0'0"S
N
i. Darwin
i. Pinta
I. Genovesa
i. Fernandina
I. San Cristobal
I. Isabela
I. Floreana
I. Española
LMN
p. Caldera
p. de la Plata
p. de Santa Elena
LMS
Mar Territorial
Aguas Interiores
Límites Marítimos
LBR, publicadas en el R.O. 265 de Junio 13 de 1971
0 40 80 160 240 320
MN
Pazmiño 06

CARTA BATIMETRICA



CARTA BATIMETRICA

Geophysical data summary in nautical miles

LAMONT (LDEO)

NGDC-Num	Survey	Nav	Bath	Mag	Grav	Seismics	ss/ref	dig recs
01010252	C2606	976	976	913	0	0	0	9076
totals	1	976	976	913	0	0	0	9076

NOAA

NGDC-Num	Survey	Nav	Bath	Mag	Grav	Seismics	ss/ref	dig recs
03020150	AMLR92T	387	387	0	0	0	0	1581
totals	1	387	387	0	0	0	0	1581

CARTA BATIMETRICA

Datos de sondeos collectados para la compilacion de carta batimetrica provienen de varias organizaciones entre las mas importantes:
Los datos de sondas del centro nacional de datos geofisicos, Boulder, Colorado.
(NGDC)
GEOMAR Alemania
GZUR Francia
Woods Hole
Columbia University
Oregon state University
SCRIPPS University

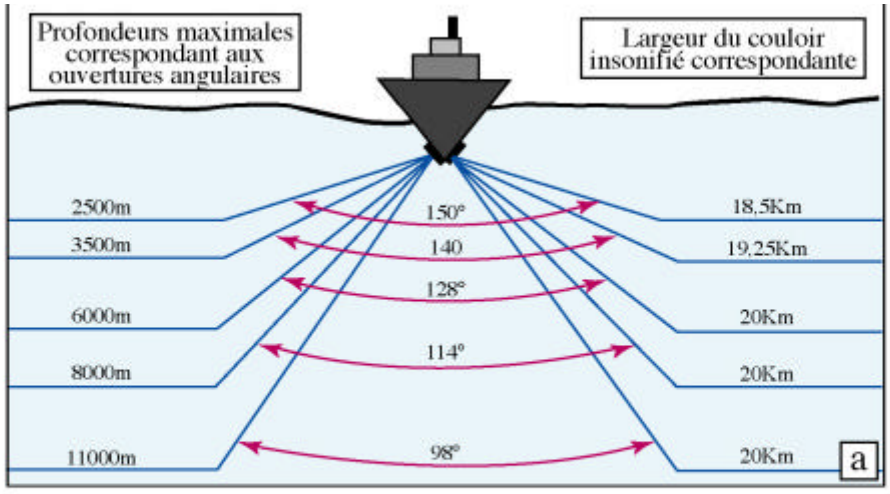
- Tablas de Carter son usada para corregir sondas crudas compensadas por velocidad del sonido regional. Ofreciendo para los datos anteriores al año 1990 correcciones por una estandar velocidad del sonido.

CARTA BATIMETRICA

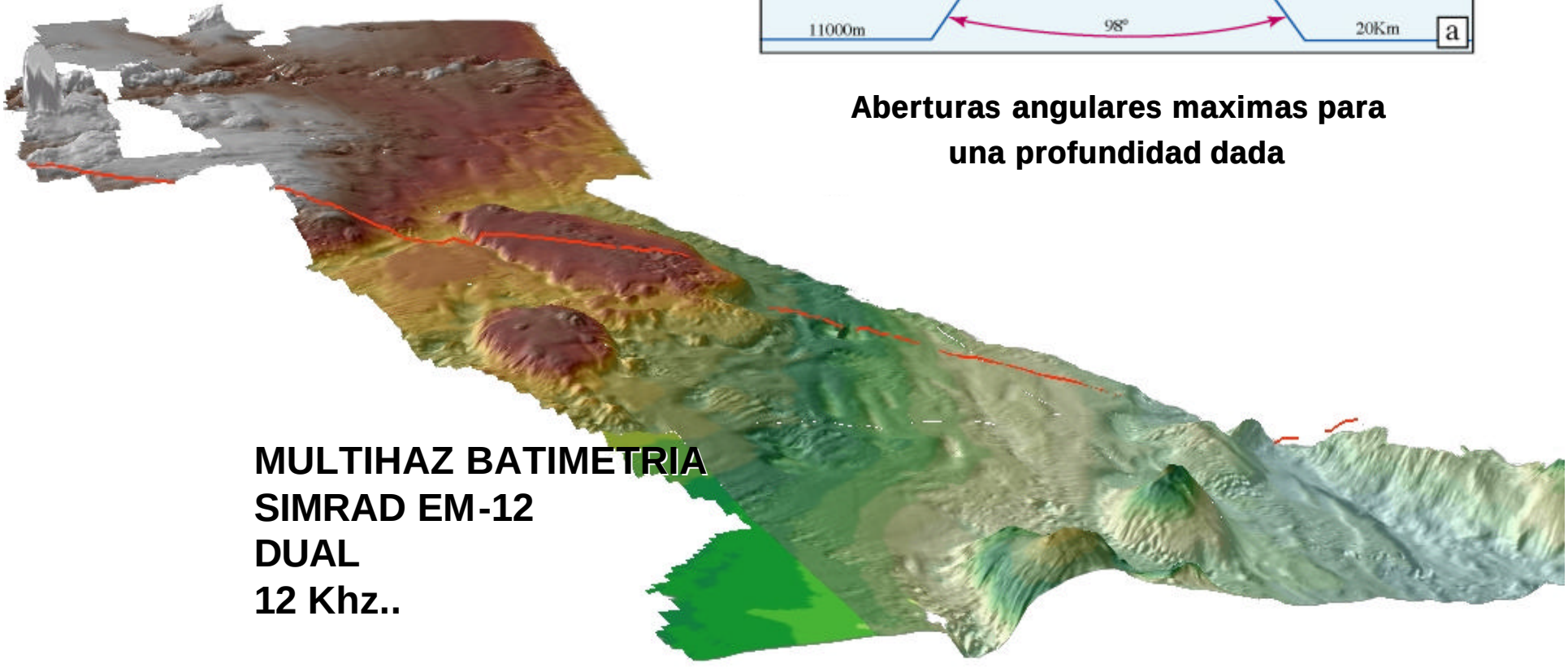
Establecer la metadata
DATUMS
Horizontal Datum
The horizontal datum en nuestro caso el World Geodetic System 1984 (WGS 84).
Vertical Datums
El datum sera en lo posible MLWS.
UNIDADES
PROFUNDIDAD EN METROS.
Tiempo
En la adquisicion del datos relacionada al tiempo universal de coordenadas (UTC)
Sistemas de coordenadas

Latitud y Longitud.
Calidad del dato
Definida en las siguiente categorias:
·Precision: horizontal ,vertical, sondas
· Fuente de informacion (plataforma)

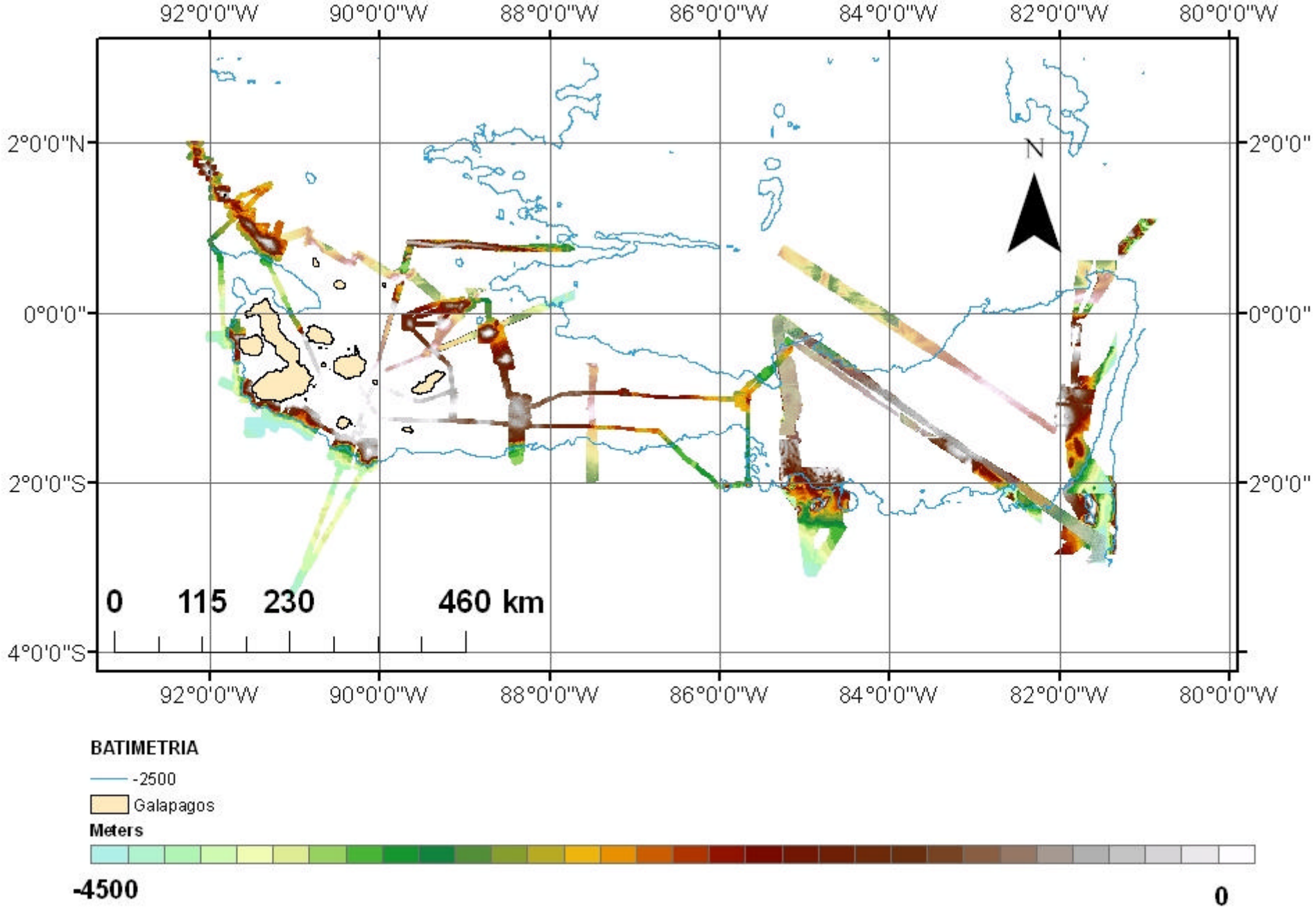
Ejemplo de sonda multihaz Simrad EM12-Dual (Campaña Amadeus)



Aberturas angulares maximas para una profundidad dada

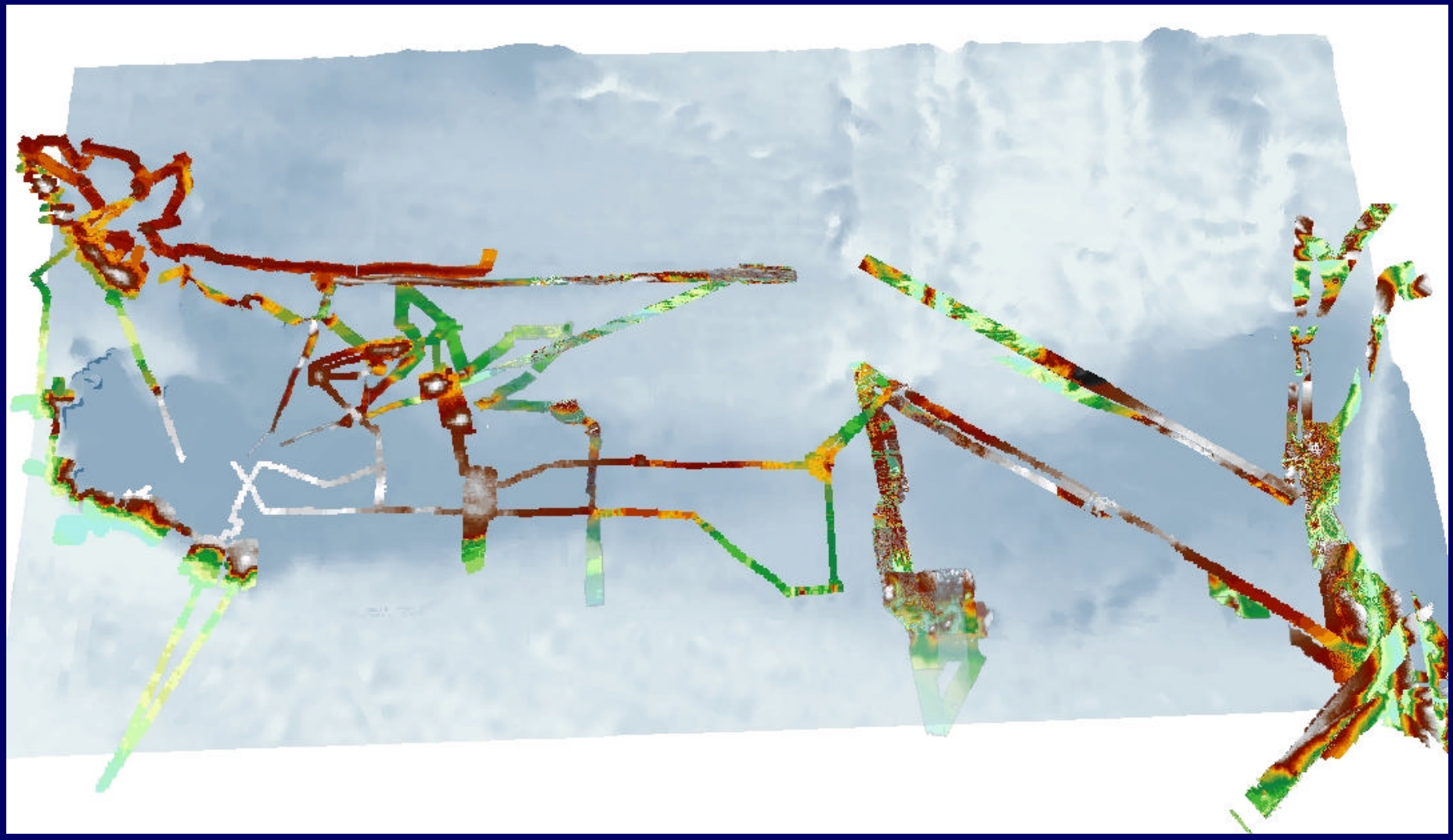


MULTIHAZ BATIMETRIA
SIMRAD EM-12
DUAL
12 Khz..

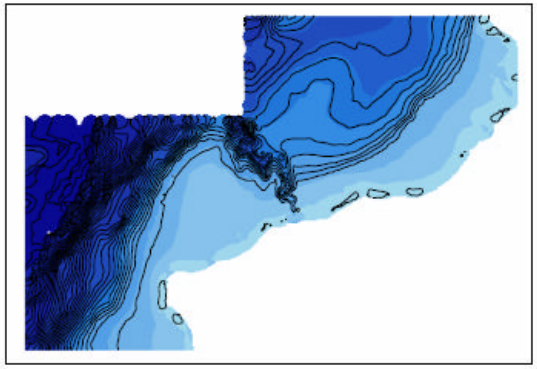


COMPILACION DE BATIMETRIA MULTIHAZ PARA ELABORACION DE CARTAS BATIMETRICAS

CARTA BATIMETRICA



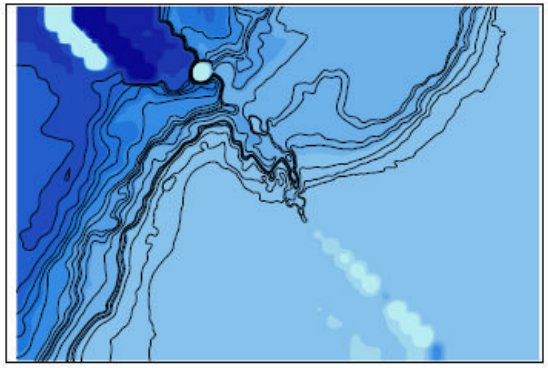
Metodología de interpolación



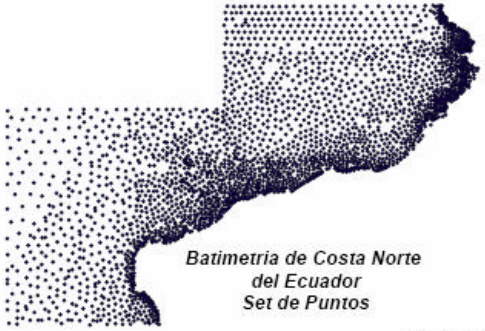
Interpolacion Krigging

Krigging
<VALUE>
- -11.24059582
- -11.24059581 - 4.156426127
- 4.156426128 - 50.34749196
- 50.34749197 - 111.9355797
- 111.9355798 - 404.4789967
- 404.4789968 - 589.24326
- 589.2432601 - 727.8164575
- 727.8164576 - 835.5956111
- 835.5956112 - 1,174.330094
- 1,174.330095 - 2,175.13652
- 2,175.136521 - 3,576.265517
- 3,576.265518 - 3,915

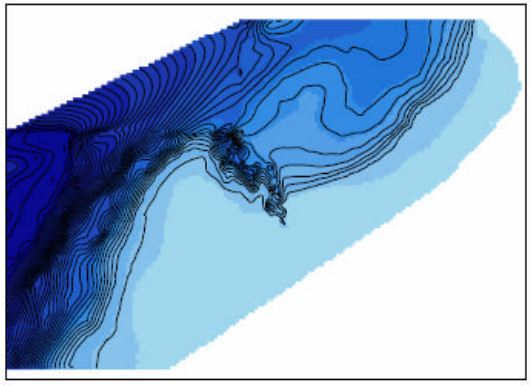
spline
<VALUE>
- -93,096.23438 - -960.8313419
- -960.8313418 - -278.346875
- -278.3468749 - 404.1375919
- 404.137592 - 1,086.622059
- 1,086.62206 - 1,769.106526
- 1,769.106527 - 2,451.590993
- 2,451.590994 - 3,134.07546
- 3,134.075461 - 3,816.559926
- 3,816.559927 - 5,864.013327
- 5,864.013328 - 11,323.88906
- 11,323.88907 - 19,513.70267
- 19,513.70268 - 80,937.30469



Interpolacion Spline



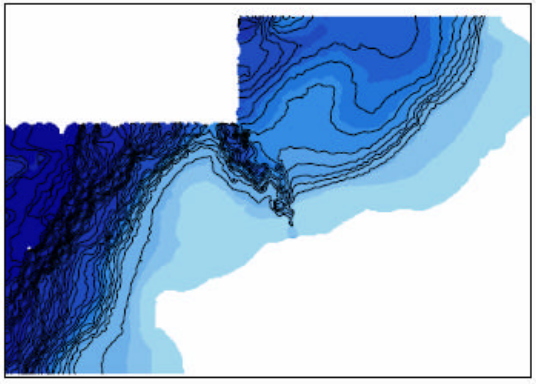
Batimetria de Costa Norte
del Ecuador
Set de Puntos



Interpolacion VecinoNatural

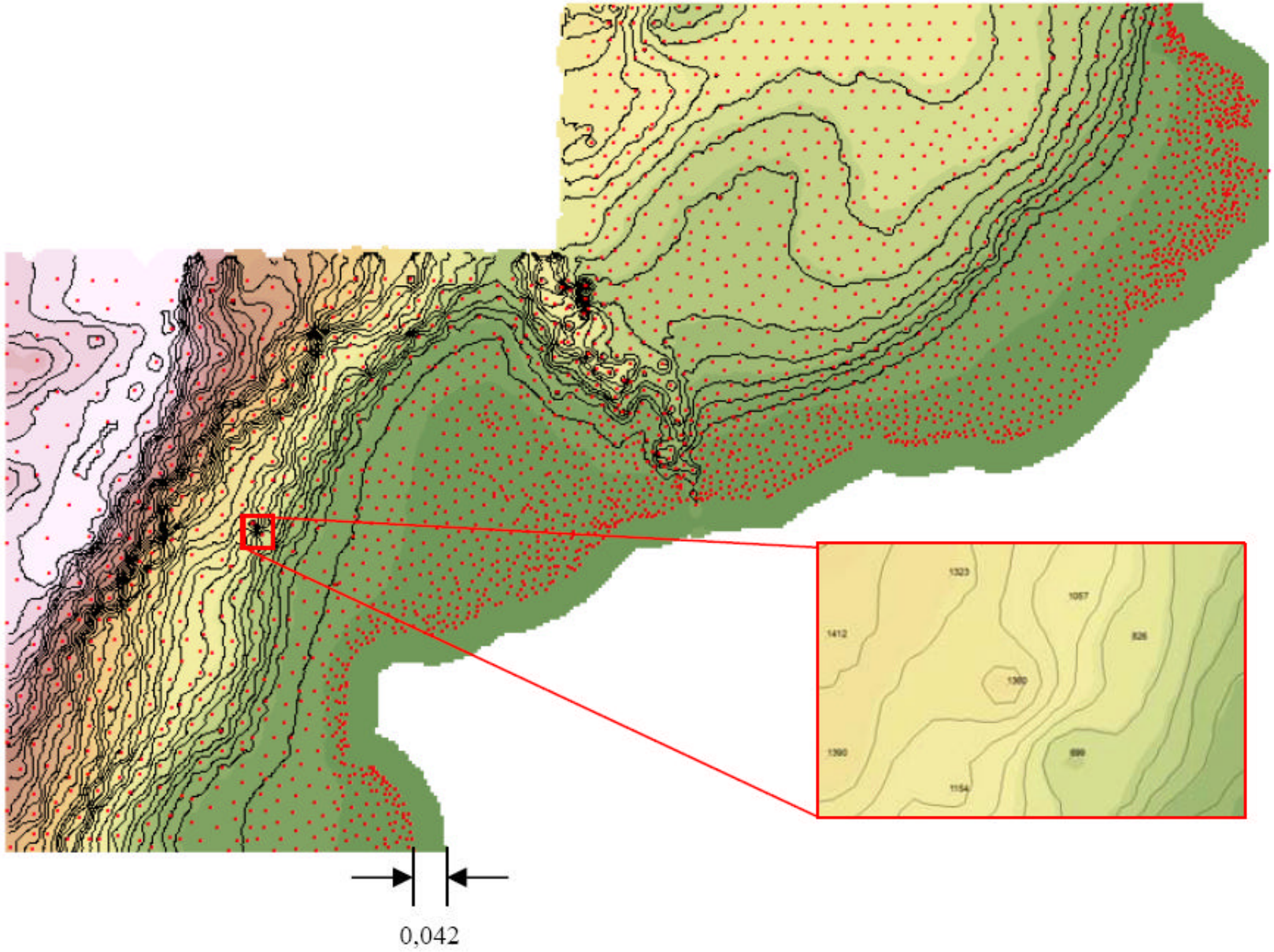
NatNeigh
<VALUE>
- 0.120388344
- 0.120388344 - 46.04951544
- 46.04951545 - 107.2883516
- 107.2883517 - 398.1728232
- 398.1728233 - 581.8893316
- 581.8893316 - 719.6767128
- 719.6767129 - 842.1543851
- 842.1543852 - 1,178.967984
- 1,178.967985 - 1,714.8078
- 1,714.807801 - 2,480.293251
- 2,480.293252 - 3,521.353466
- 3,521.353467 - 3,904.096191

InverDistWght
<VALUE>
- 0.100000002
- 0.100000002 - 30.80509804
- 30.80509805 - 76.8627451
- 76.86274511 - 230.3882353
- 230.3882354 - 506.7341176
- 506.7341177 - 629.5545098
- 629.5545099 - 752.374902
- 752.3749021 - 859.8427451
- 859.8427452 - 1,228.303922
- 1,228.303923 - 2,272.277255
- 2,272.277256 - 3,607.94902
- 3,607.949021 - 3,915

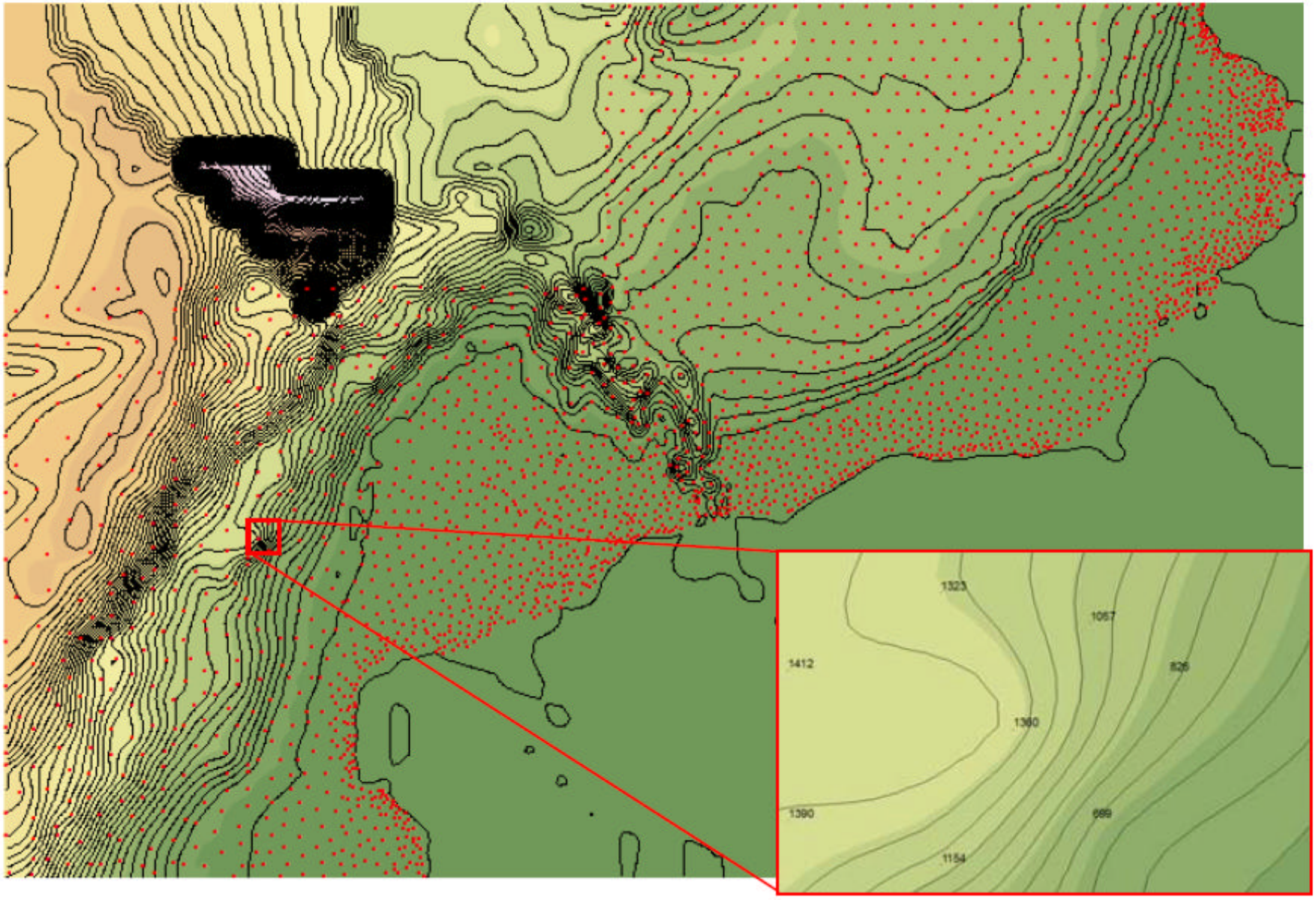


Interpolacion IDW

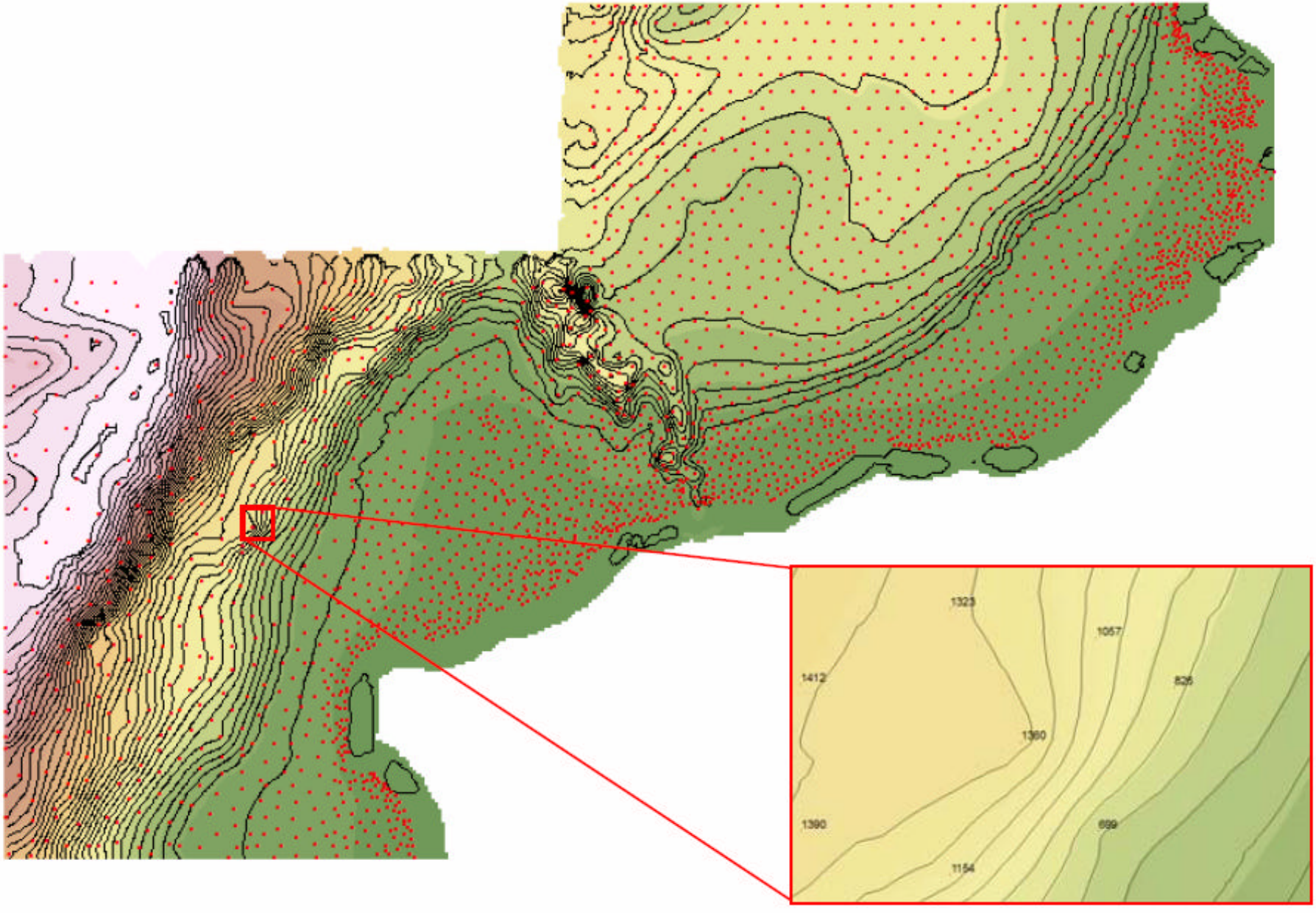
METODO INVERSE DISTANCE WEIGHTED



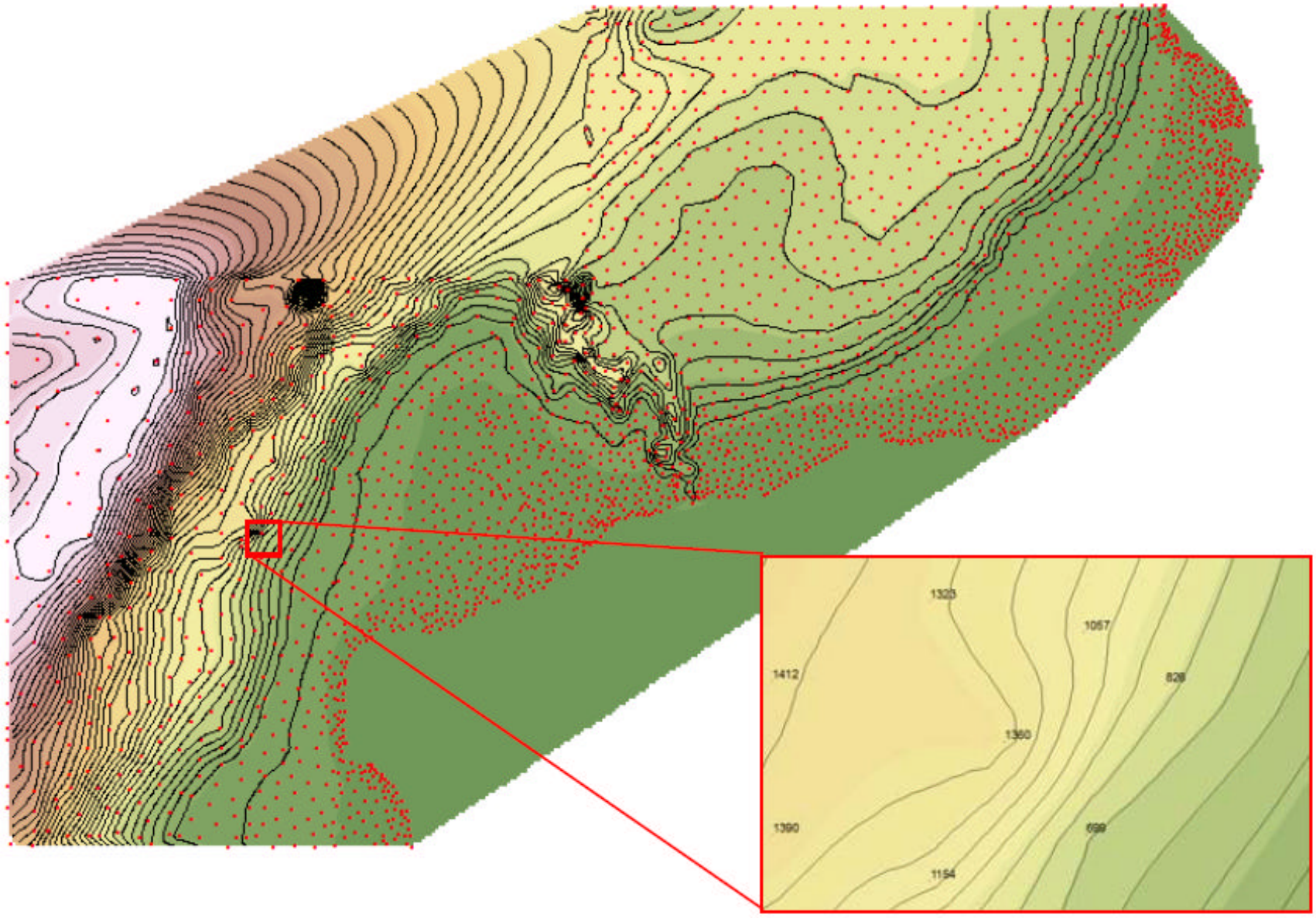
METODO SPLINE



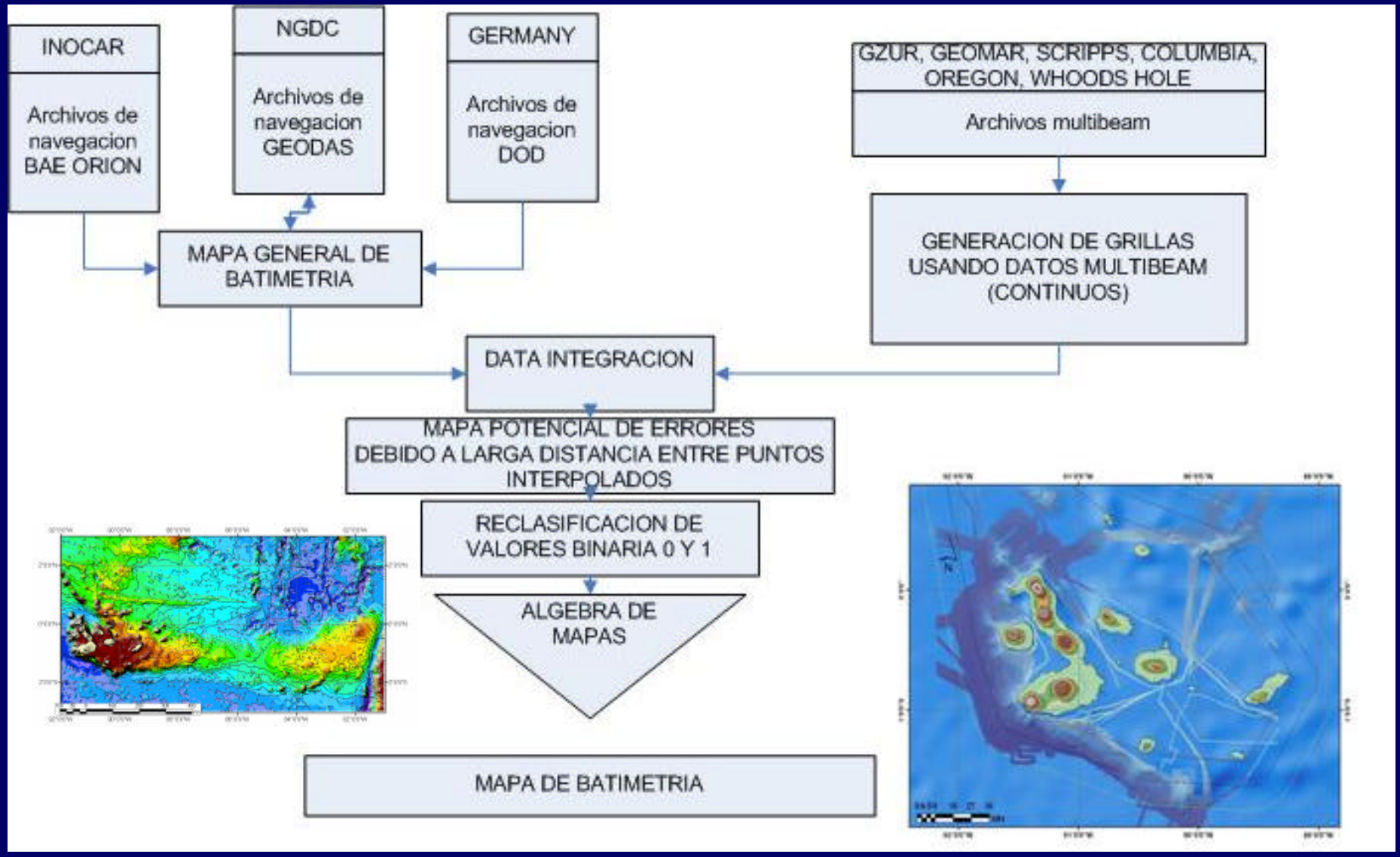
METODO KRIGING



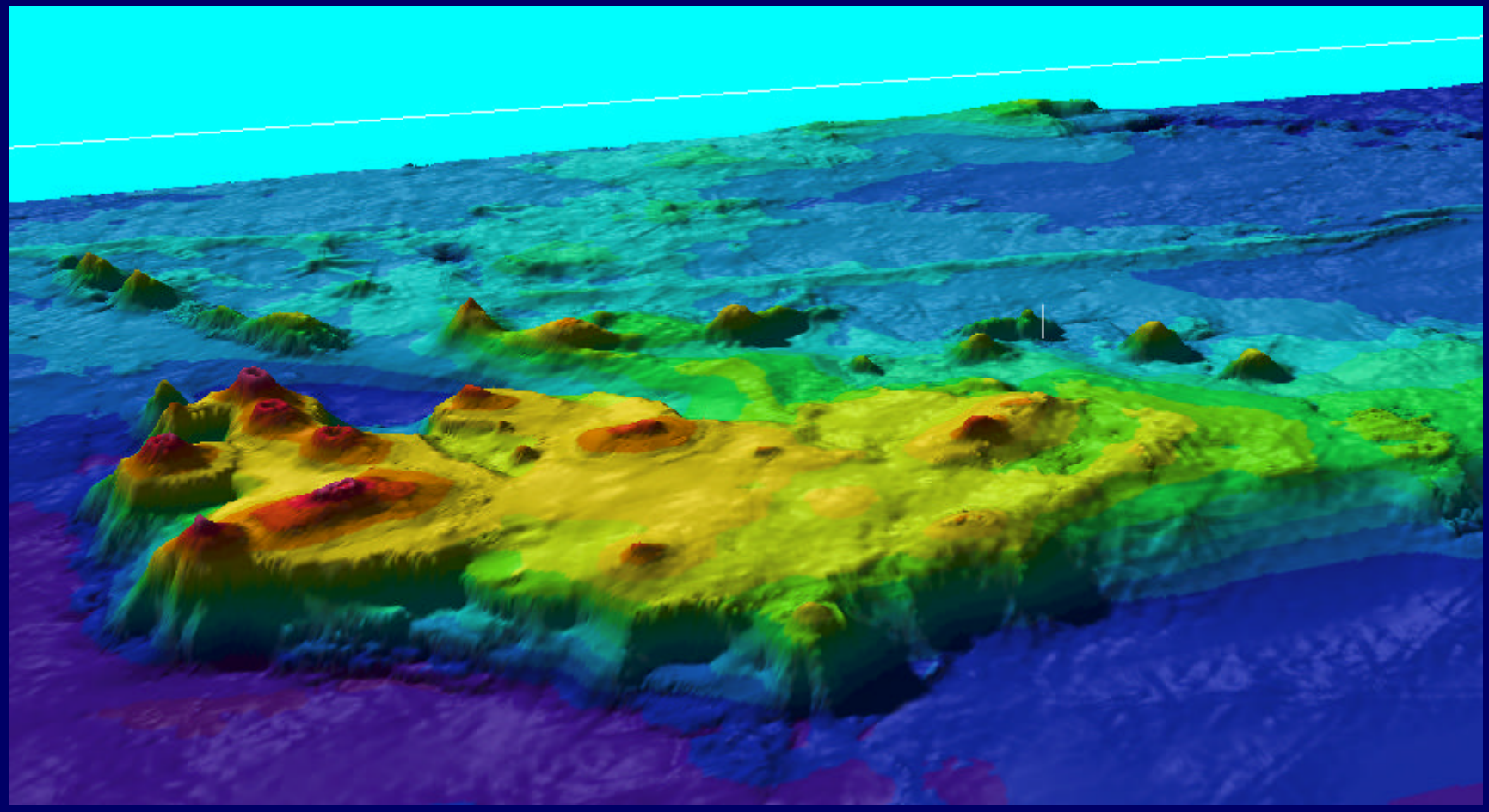
METODO NATURAL NEIGHBORS



INTEGRACION Y GENERACION DE MAPAS

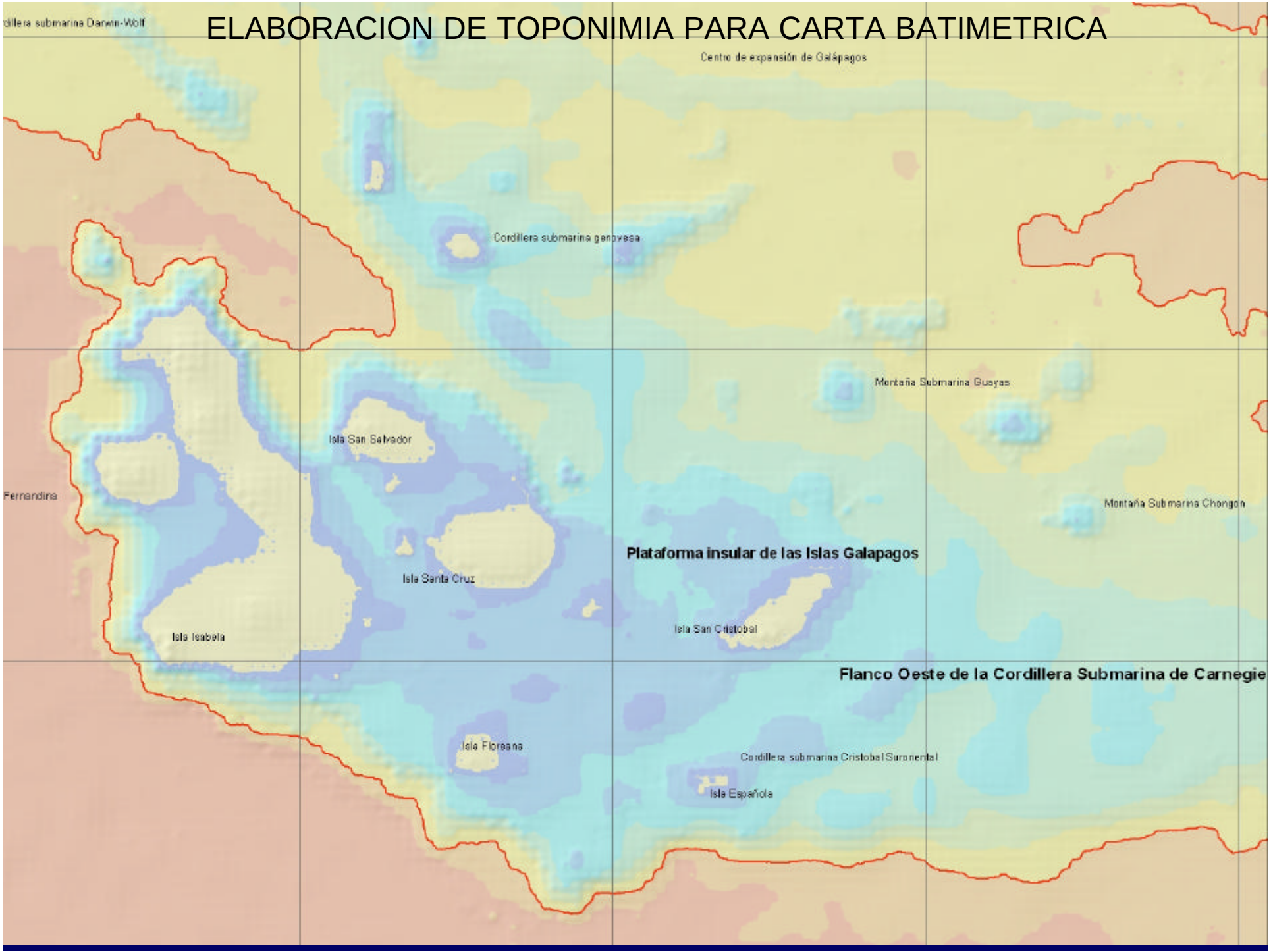


2) MAPEO SUBMARINO

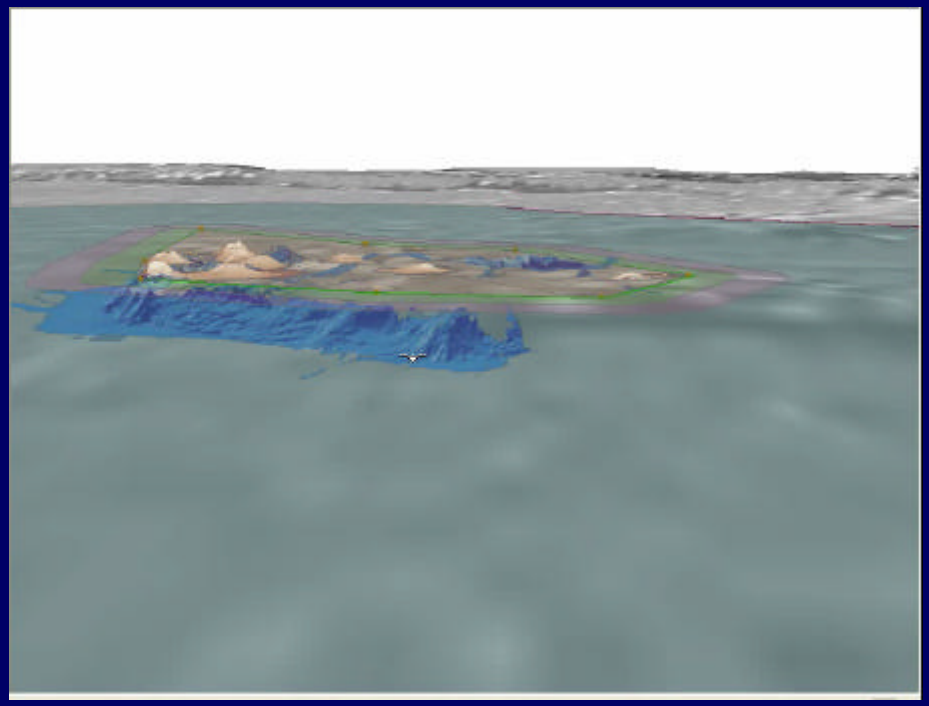


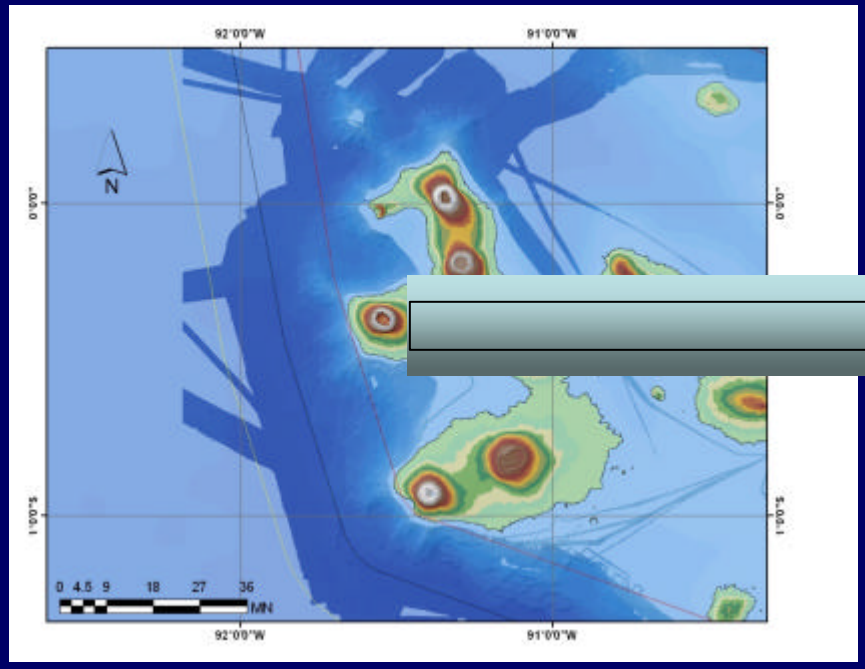
MORFOLOGIA Y ESTRUCTURAS SUBMARINAS

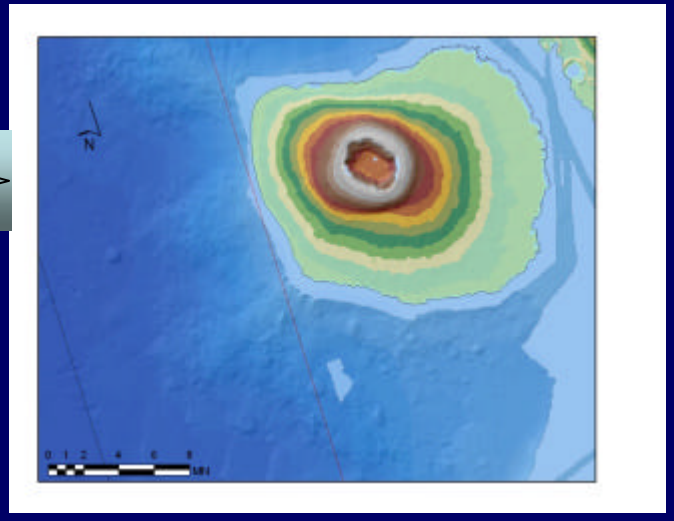
ELABORACION DE TOPONIMIA PARA CARTA BATIMETRICA

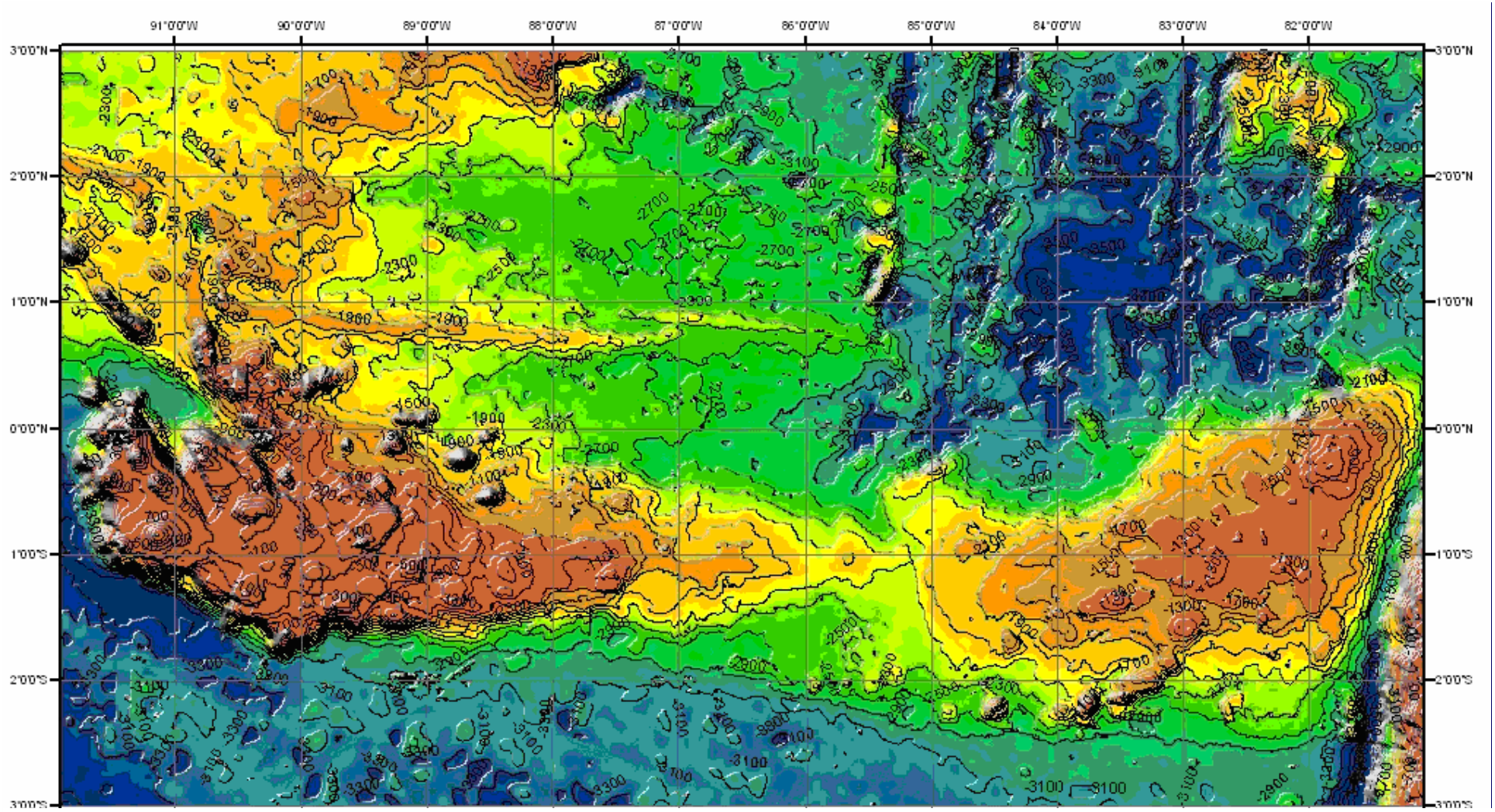


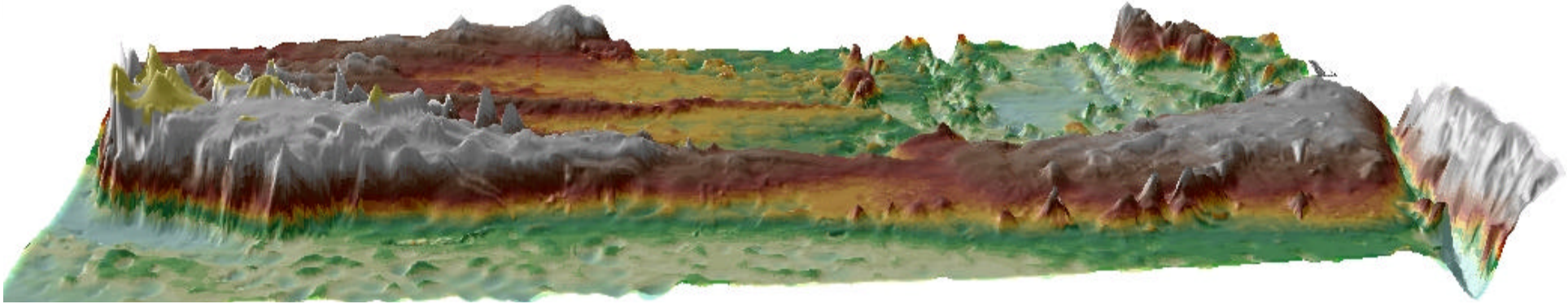
PLATAFORMA INSULAR DE GALAPAGOS VOLCANICA ORIGEN EL PUNTO CALIENTE DE LAS GALAPAGOS Y LA INTERACCION DE LA DORSAL OCEANICA

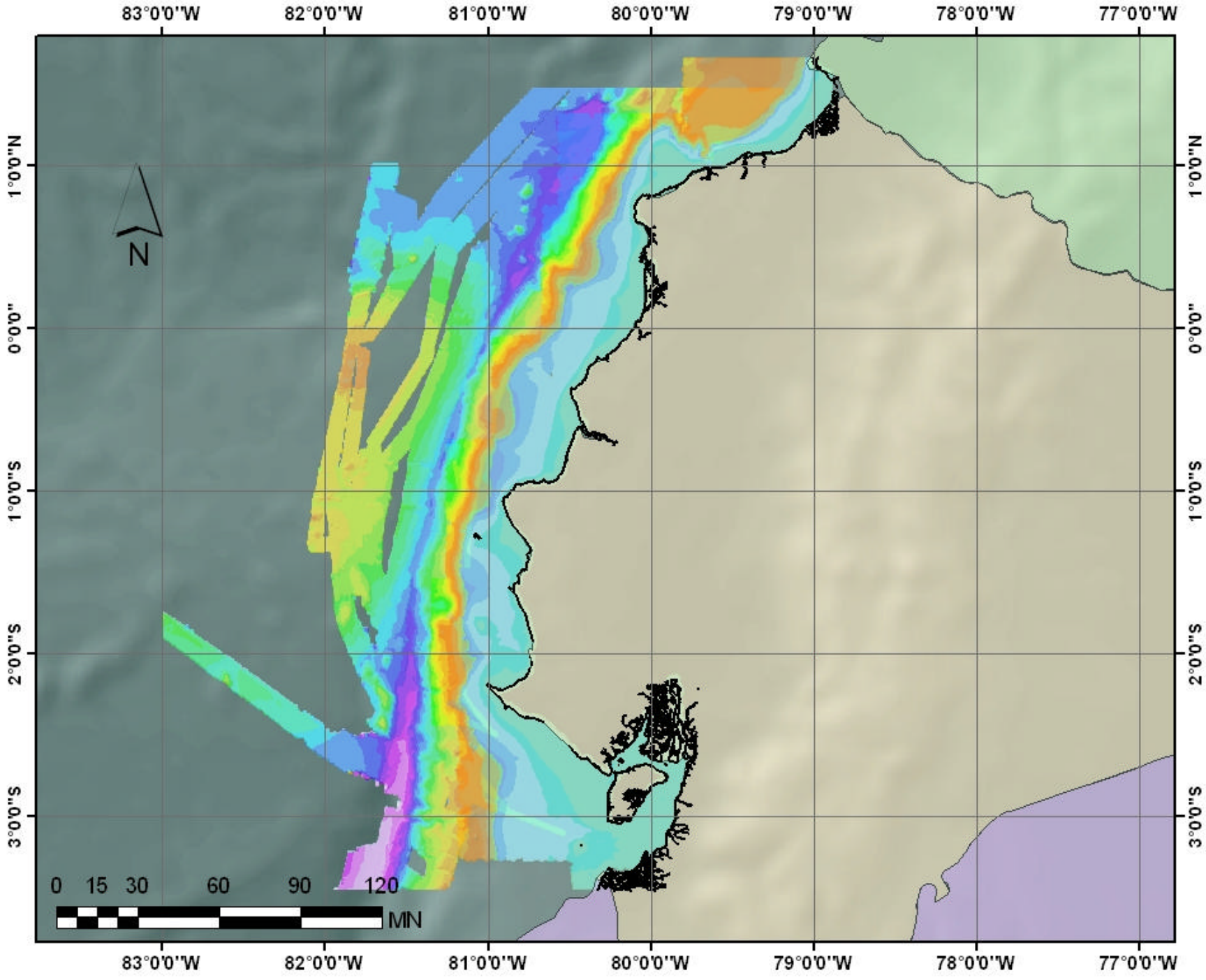


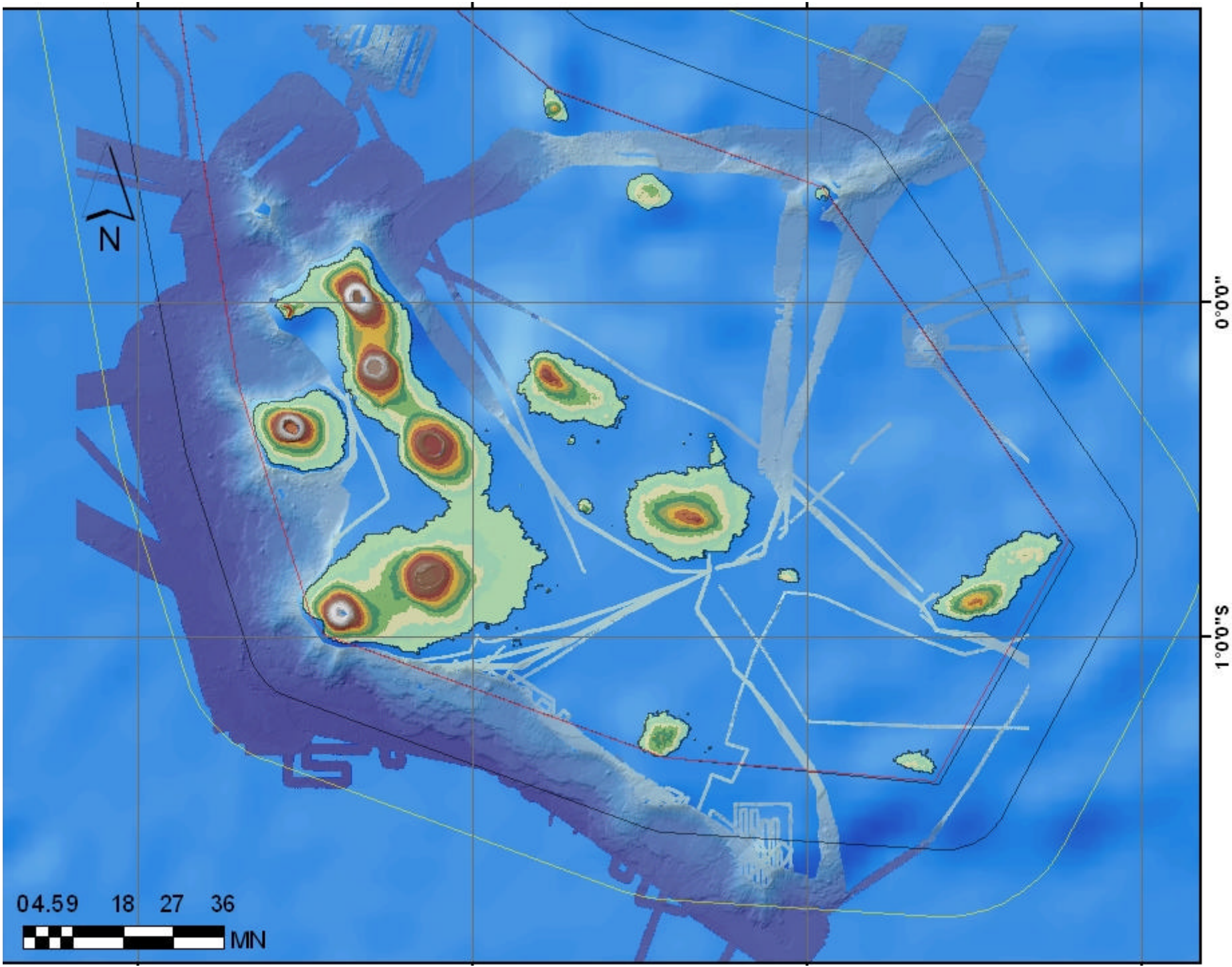


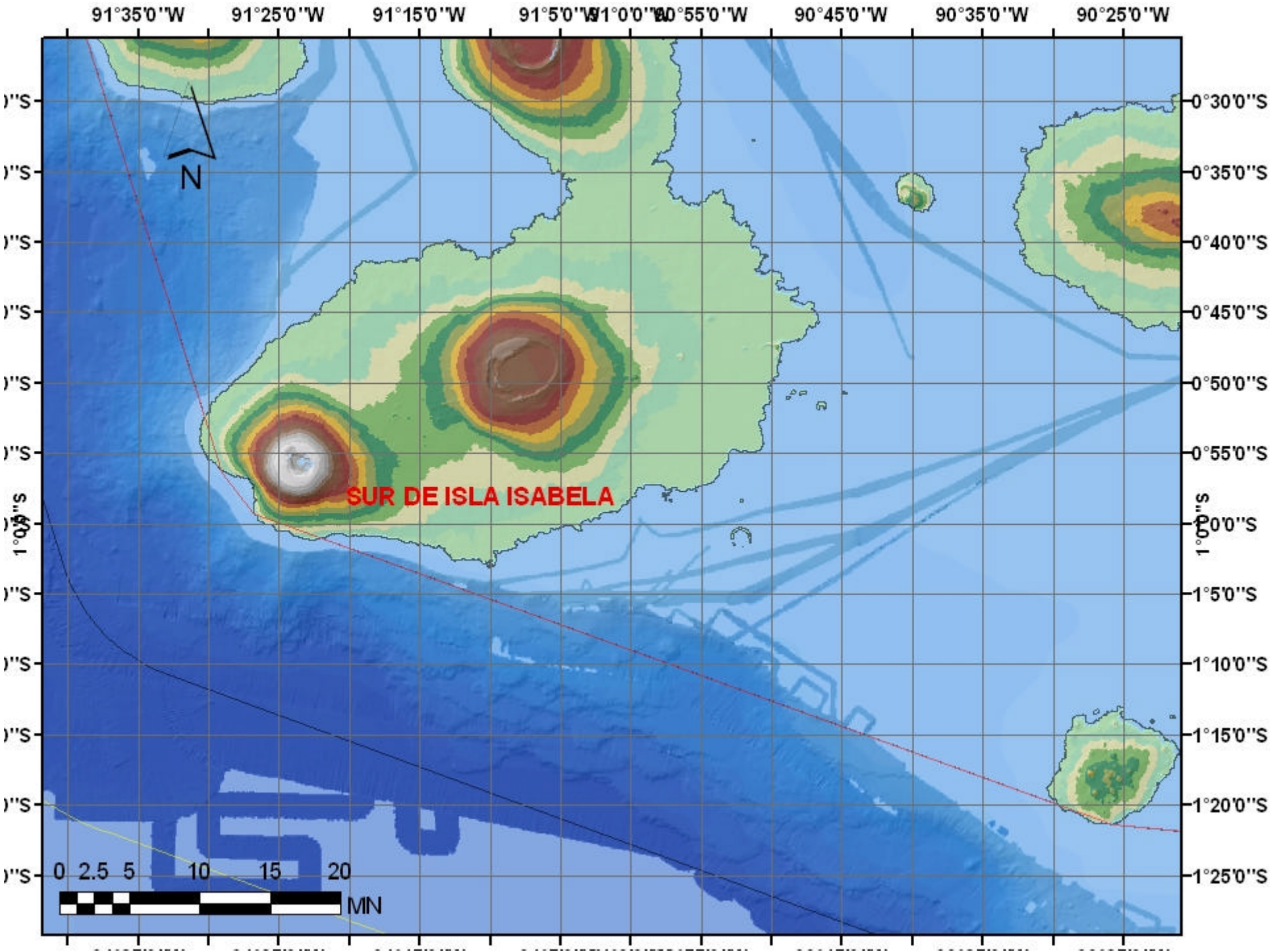



91°0'0"W
90°0'0"W
89°0'0"W
88°0'0"W
87°0'0"W
86°0'0"W
85°0'0"W
84°0'0"W
83°0'0"W
82°0'0"W
3°0'0"N
2°0'0"N
1°0'0"N
0°0'0"N
1°0'0"S
2°0'0"S
3°0'0"S




83°0'0"W
82°0'0"W
81°0'0"W
80°0'0"W
79°0'0"W
78°0'0"W
77°0'0"W
1°0'0"N
0°0'0"
1°0'0"S
2°0'0"S
3°0'0"S
N
0 15 30 60 90 120
MN


N
0°0'0"
1°0'0"S
04.59 18 27 36
MN


91°35'0"W
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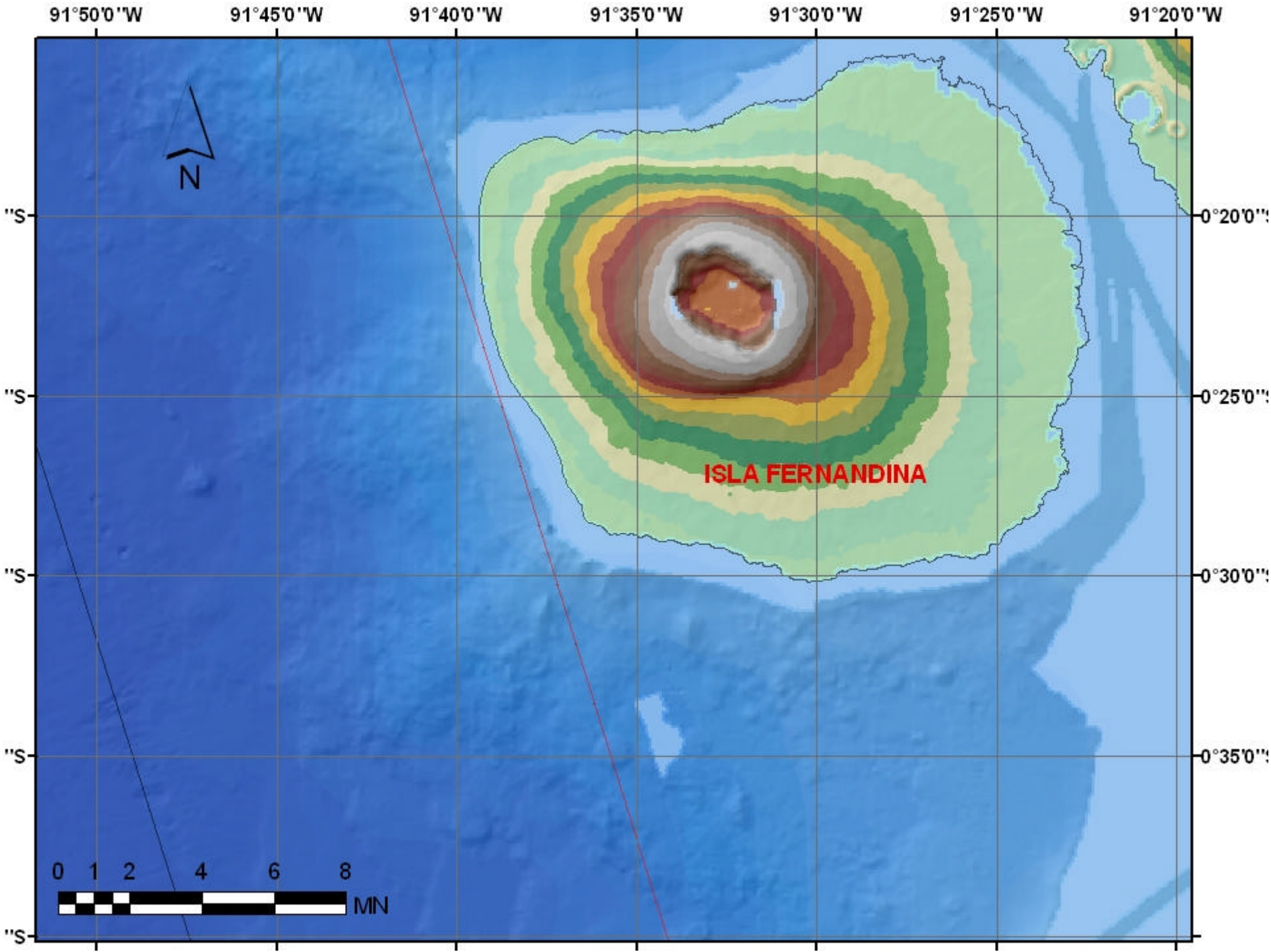
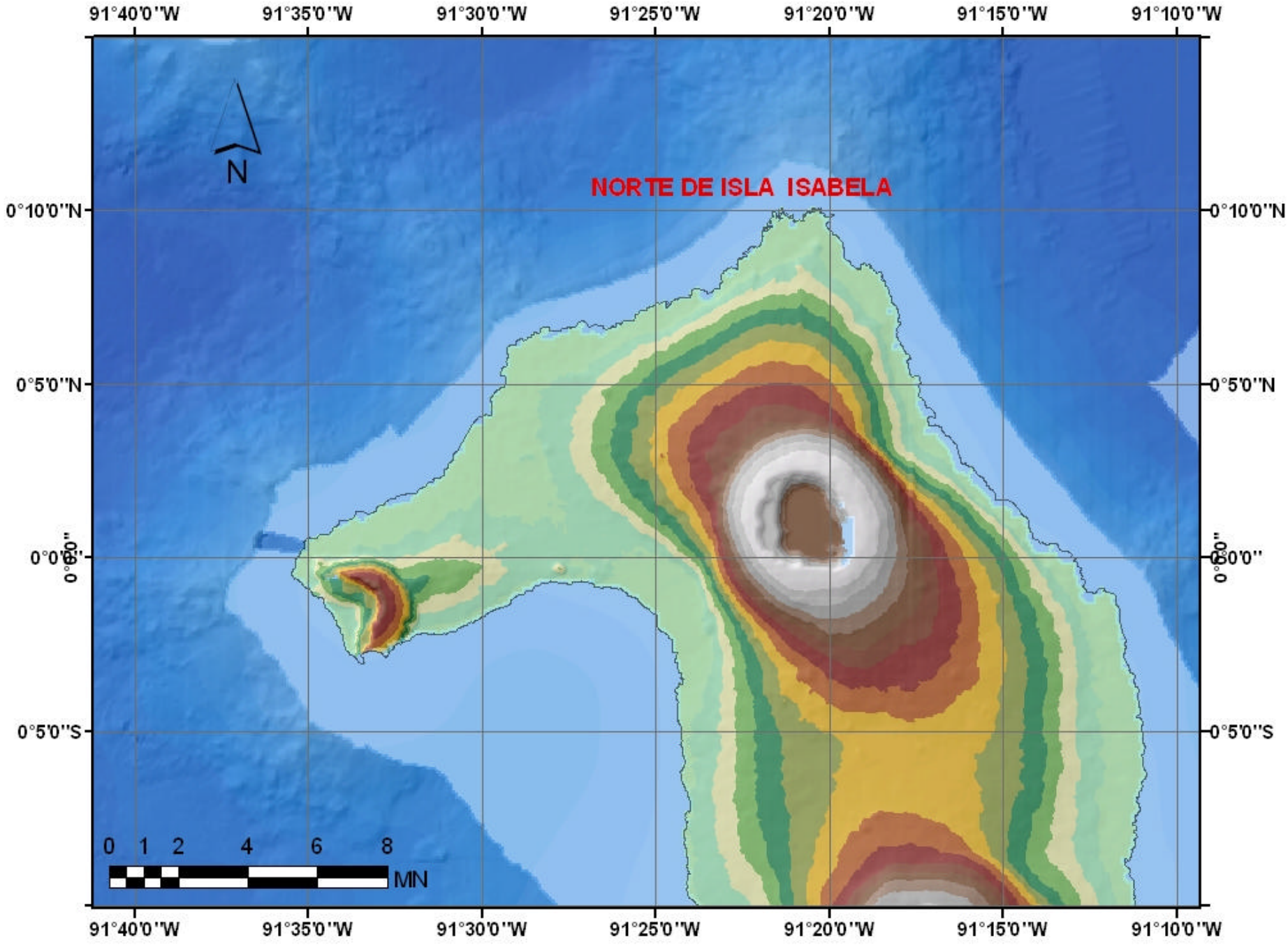
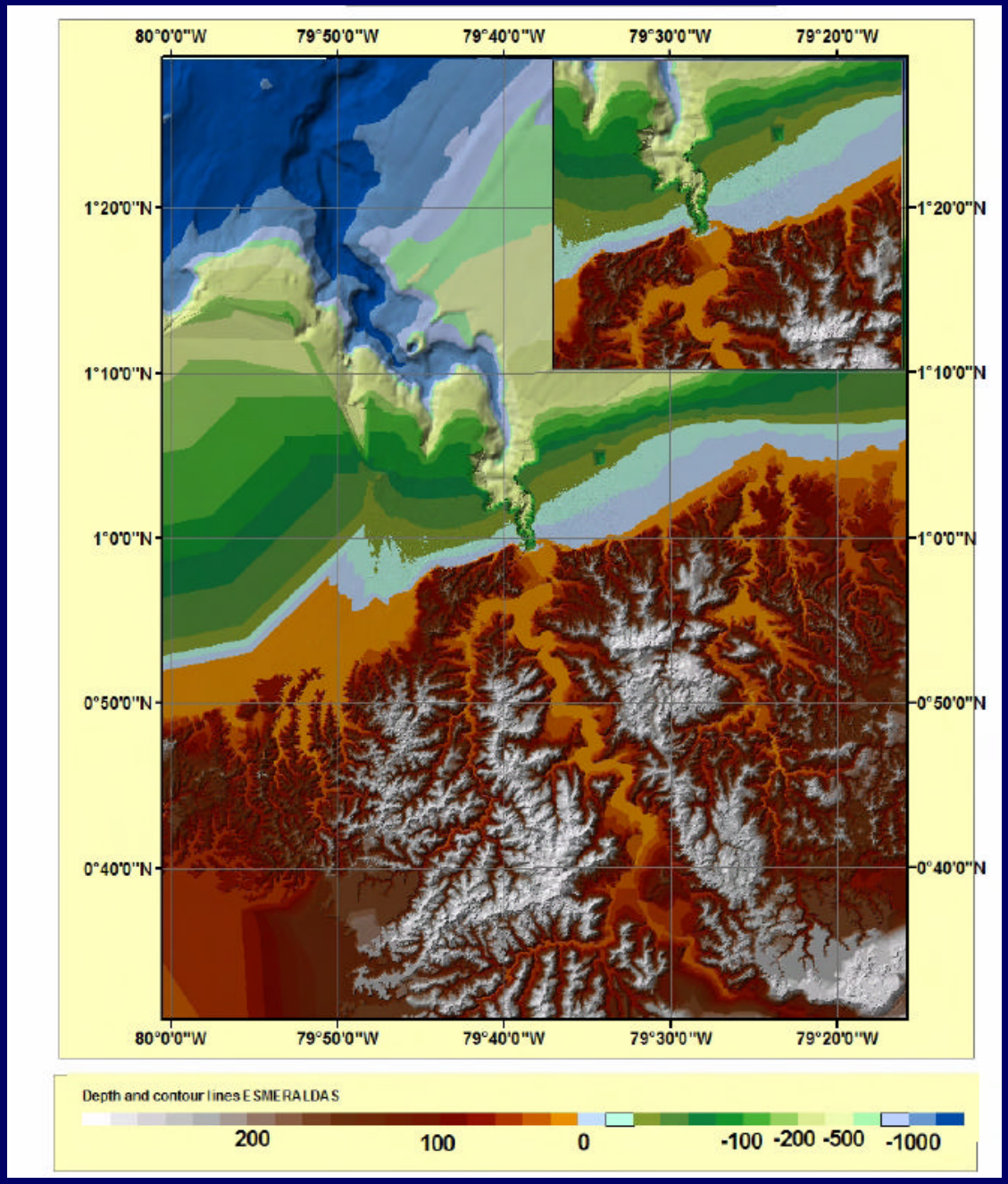
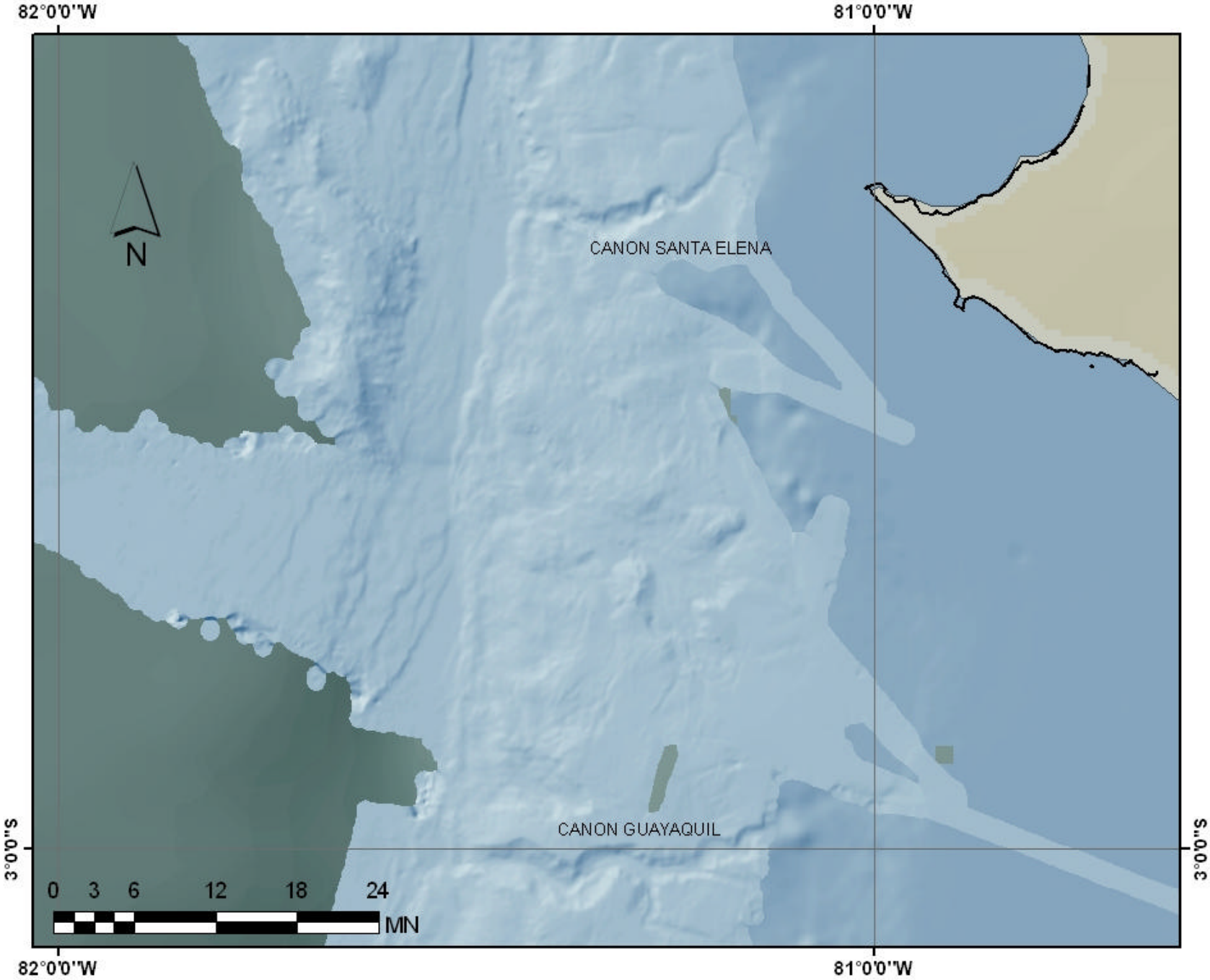
90°45'0"W
90°35'0"W
90°25'0"W
0°30'0"S
0°35'0"S
0°40'0"S
0°45'0"S
0°50'0"S
0°55'0"S
1°0'0"S
1°5'0"S
1°10'0"S
1°15'0"S
1°20'0"S
1°25'0"S
N
SUR DE ISLA ISABELA
0 2.5 5 10 15 20
MN

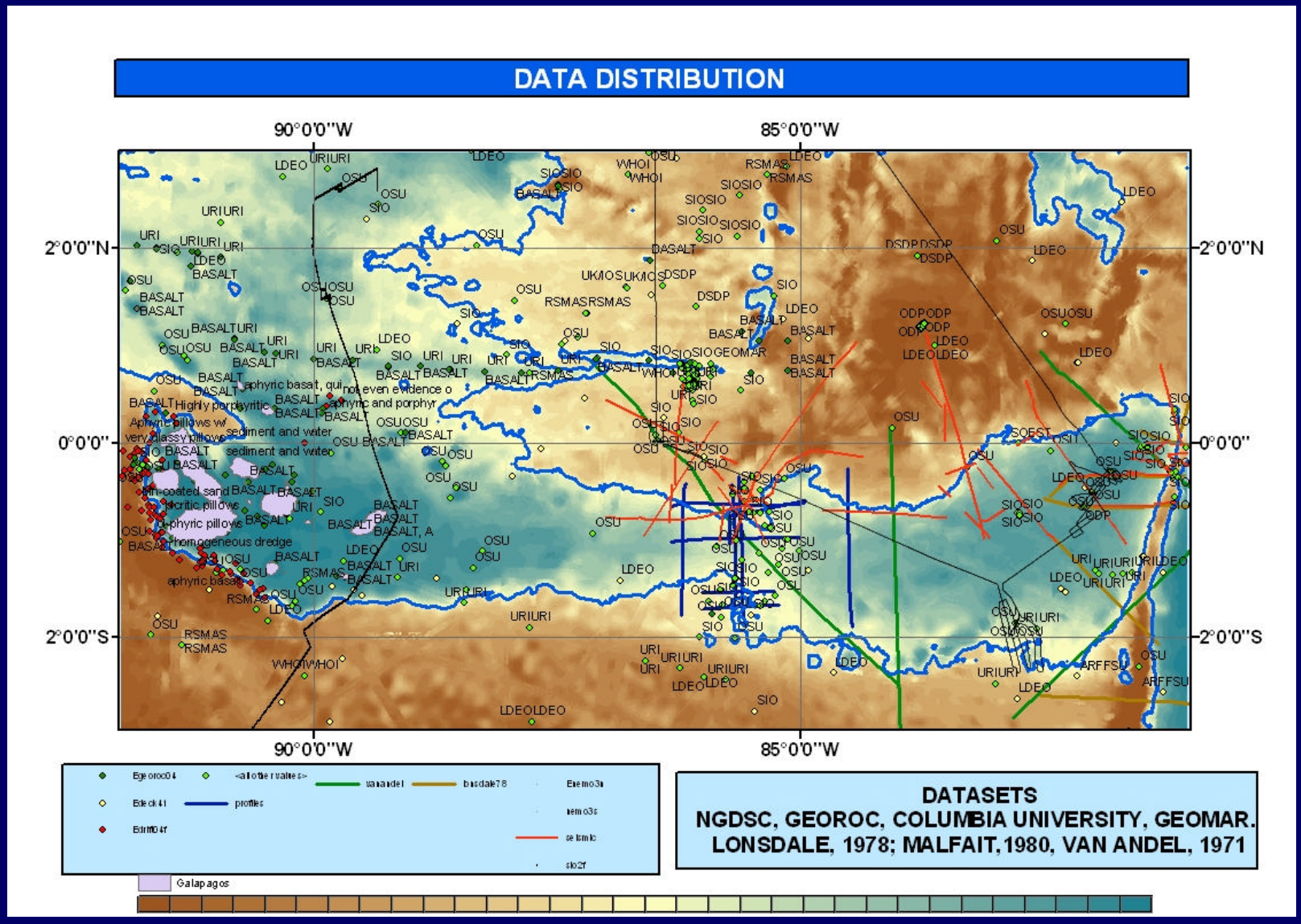

91°50'0"W
91°45'0"W
91°40'0"W
91°35'0"W
91°30'0"W
91°25'0"W
91°20'0"W
N
ISLA FERNANDINA
0 1 2 4 6 8
MN

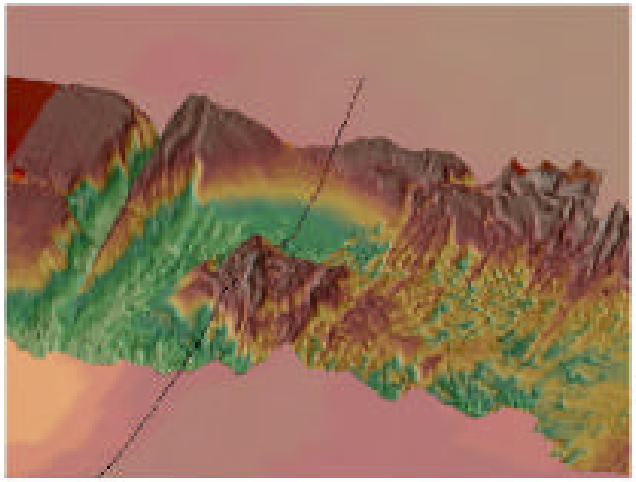

NORTE DE ISLA ISABELA
N
91°40'0"W
91°35'0"W
91°30'0"W
91°25'0"W
91°20'0"W
91°15'0"W
91°10'0"W
0°10'0"N
0°5'0"N
0°0'0"
0°5'0"S
0 1 2 4 6 8
MN

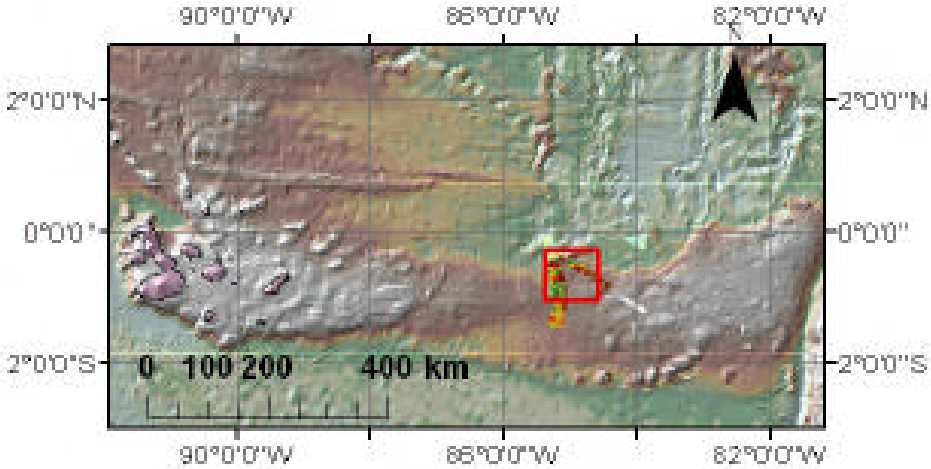

80°0'0"W
79°50'0"W
79°40'0"W
79°30'0"W
79°20'0"W
1°20'0"N
1°10'0"N
1°0'0"N
0°50'0"N
0°40'0"N
Depth and contour lines ESMERALDAS
200
100
0
-100
-200
-500
-1000

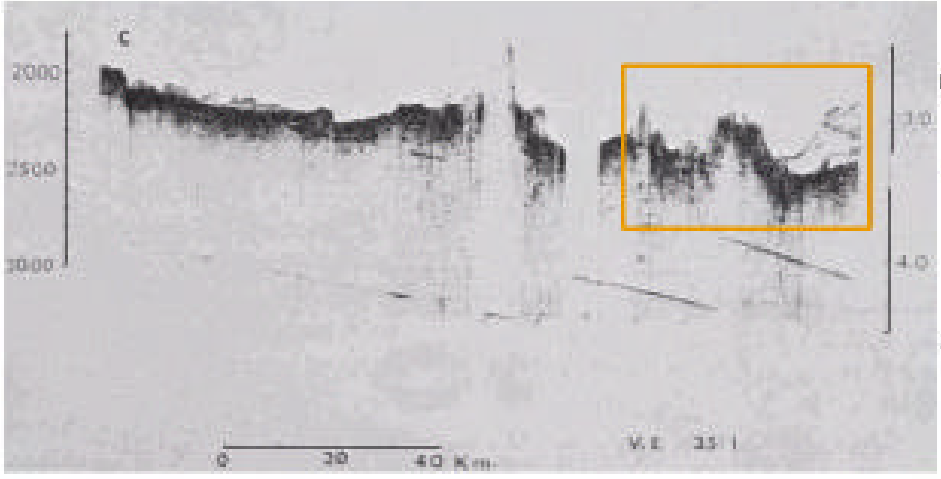

82°0'0"W
81°0'0"W
N
CANON SANTA ELENA
CANON GUAYAQUIL
3°0'0"S
0 3 6 12 18 24
MN

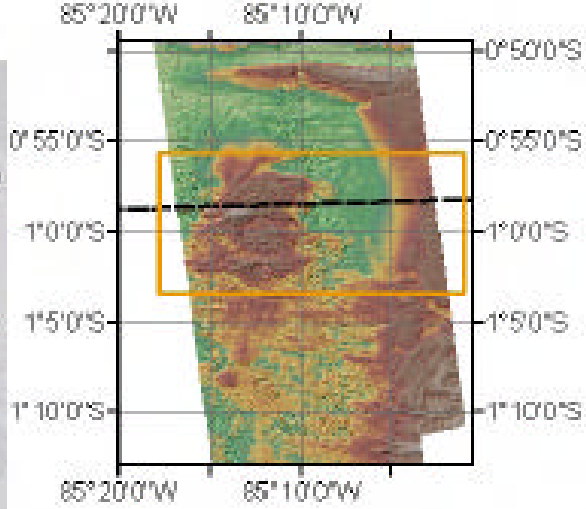
Recopilación de datos para preliminar evaluación



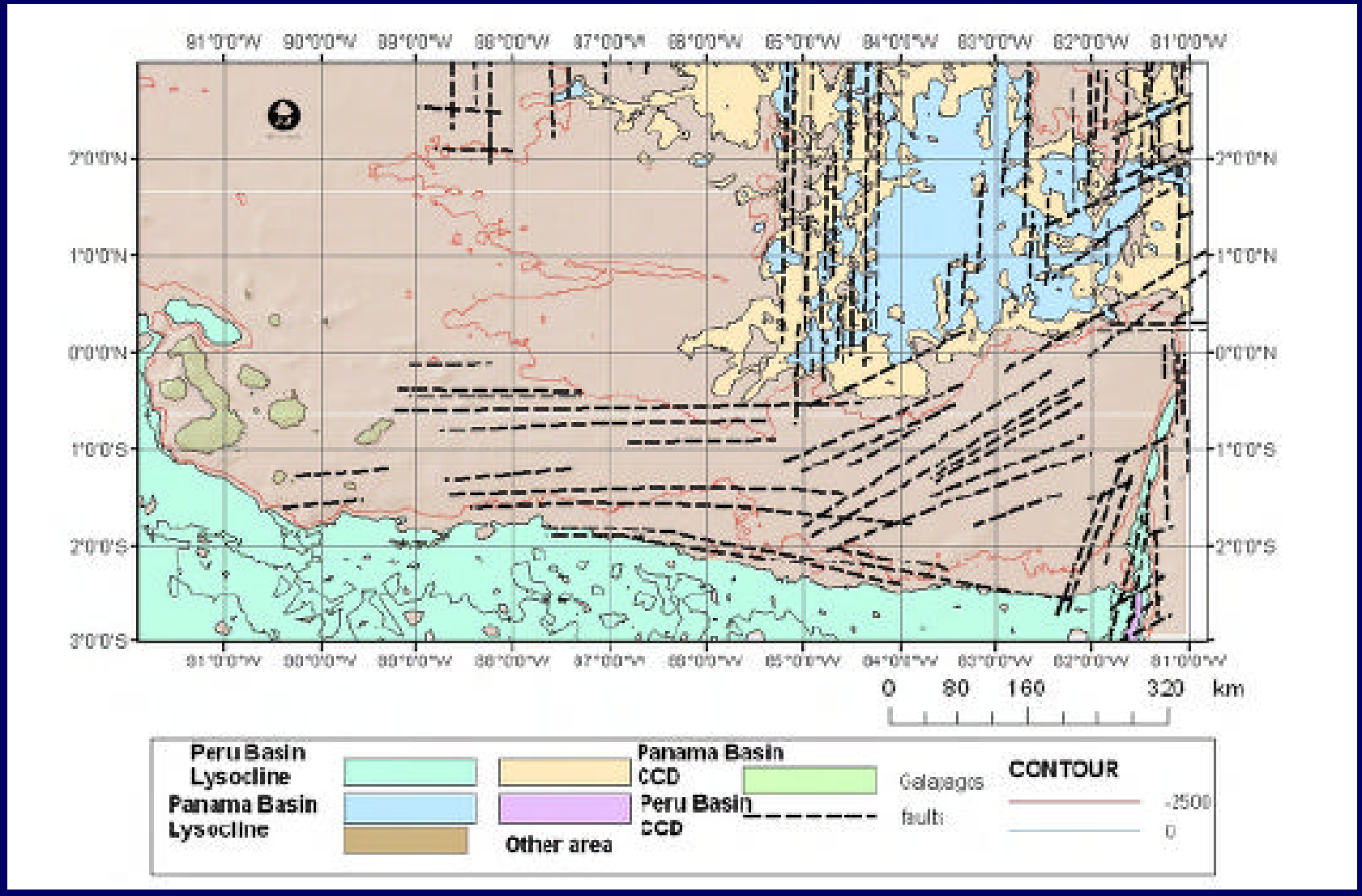








EVIDENCIAS DE FLUJO DE CORRIENTE PROFUNDA ACTIVA



IDENTIFICACION DE FALLAS BASADA EN GEOMORFOLOGIA EXISTENTE Y AREAS DE DISOLUCION DE CARBONATO

GRACIAS