מיפוי ומפות ימיות בישראל

רשמיו של פועל בכור המהפכה הטכנולוגית

רוני שדה
האגף למיפוי ימי
המרכז למיפוי ישראל

Survey of Israel המרכז למיפוי ישראל

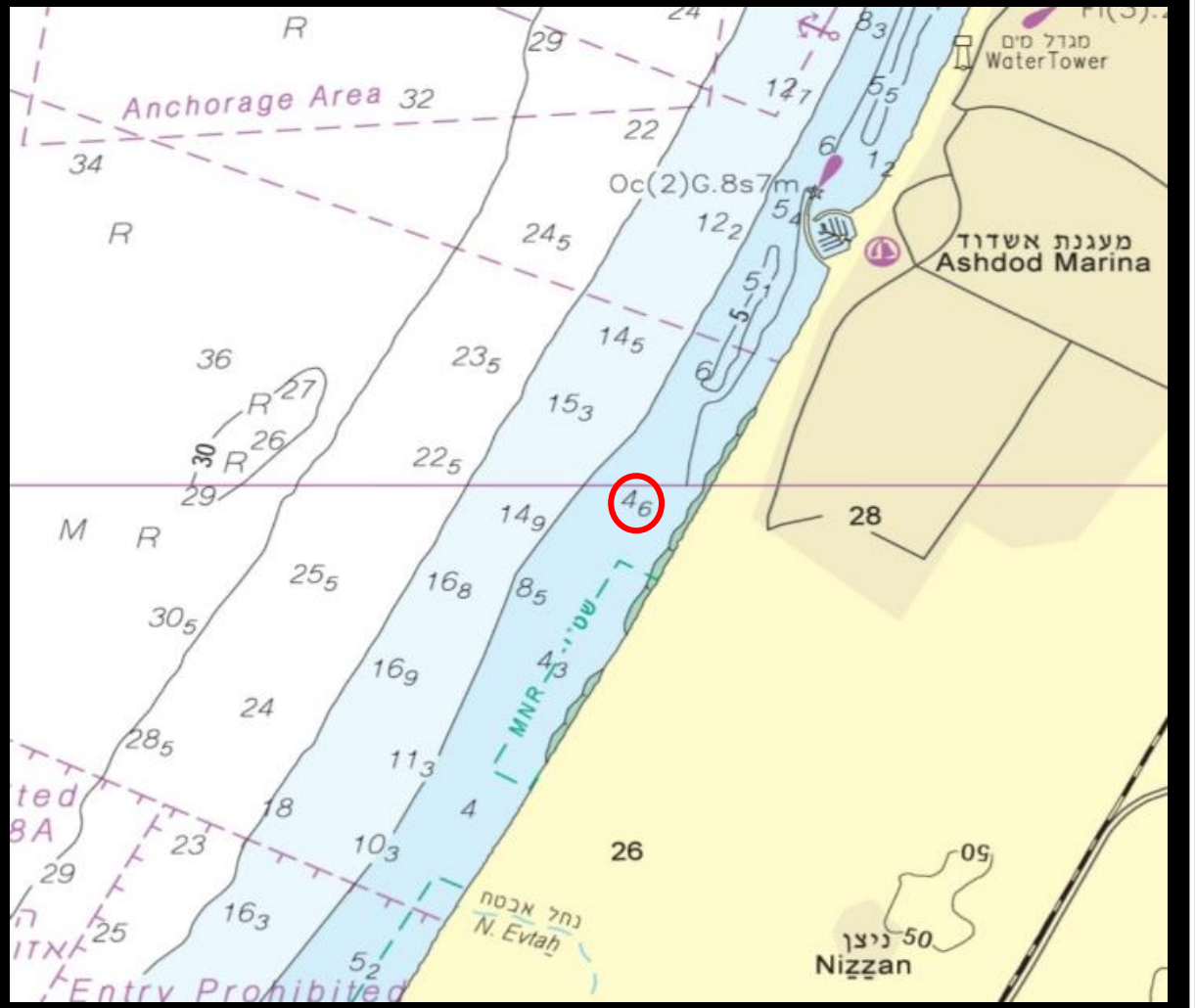
פעילויות ליבה
האגף למיפוי ימי

ניהול ועדכון רציף של סדרת ENCs
(מפות אלקטרוניות)
בכיסוי מלא עד לגבול המים הכלכליים

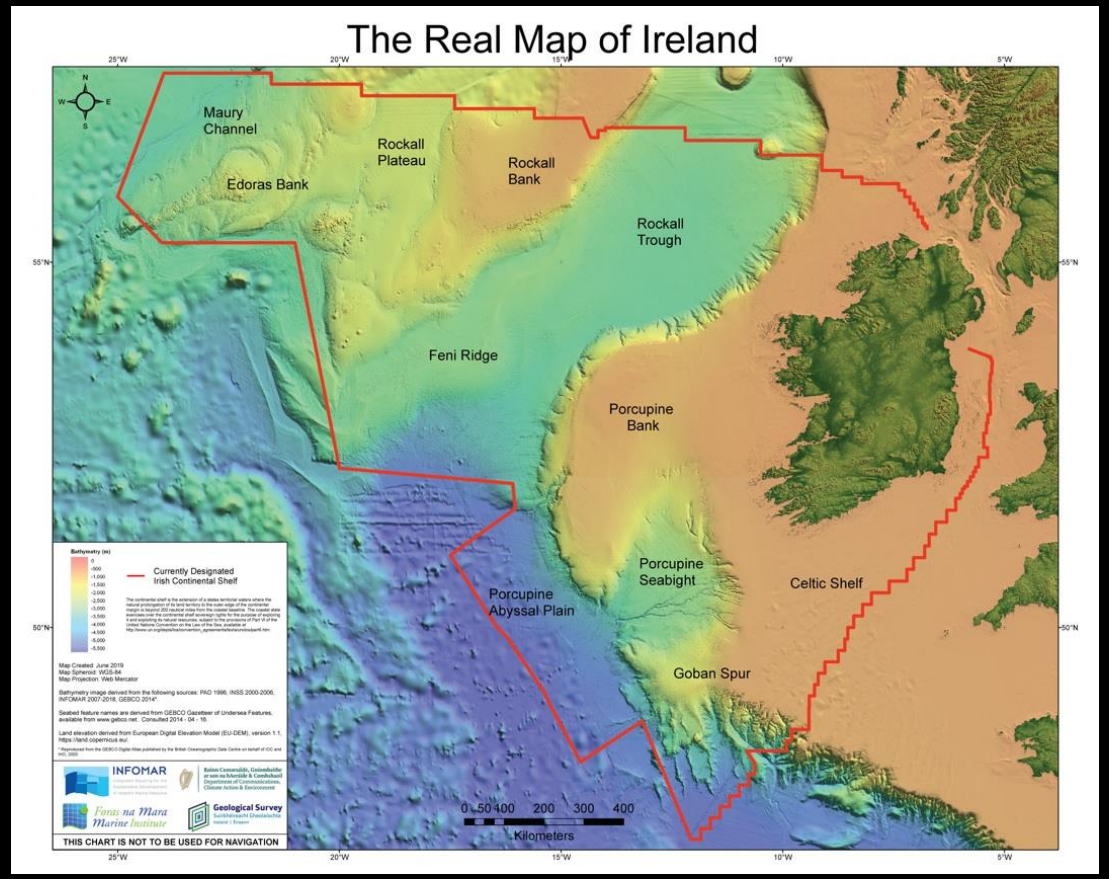
ניהול ועדכון רציף של סדרת CHARTS
(מפות רסטר/תצוגת נייר) בכיסוי מלא

ניהול, שימור ועדכון רציף של מאגר נתונים ימיים
NIS

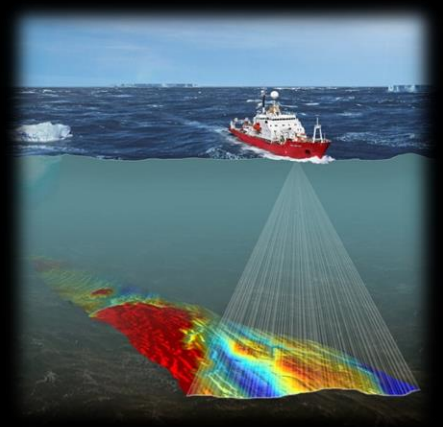
הקמה, קידום וחיזוק שיתופי פעולה עם קשת רחבה
של גורמים ממשלתיים, גופים מקצועיים והציבור

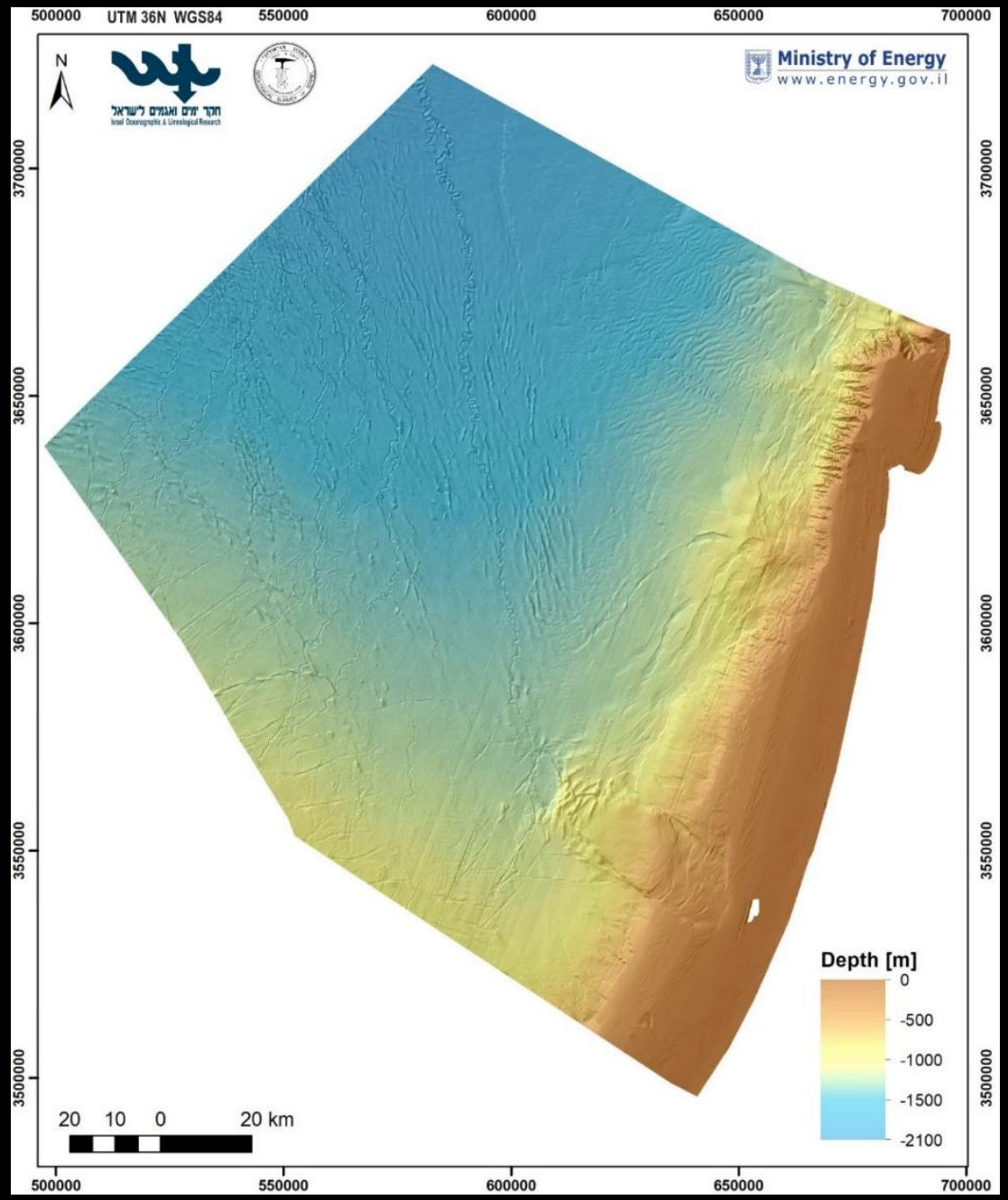


"While for a 1,000 TEU containership, the average draft is 8.3 meters, these figures reach 16 meters for ships above 14,000 TEU. Smaller ships classes are associated with larger variation in draft since they have several design specifications..." **source: transportgeography.org**



“The Real Map of Ireland“
The phrase is a statement established to highlight that the map of Ireland land area also includes their marine resource.





HMS VernonBay of Acre – Admiralty Chart #1585 from 1998
Source: UKHO charts archive, Taunton, UK

HMS Spartan

HMS Vernon

HMS Firefly

HMS Endeavour

רוזן, ב. 1992. מיפויו של חוף ארץ ישראל על ידי הצי הבריטי. קתדרה, 64, 78-59.

צביאלי, ד, רוזן, ב, גלילי, א. 2009. המיפוי ההידרוגרפי של מפרץ חיפה על ידי האדמיראליות הבריטית בשנים 1832 - 1931. אופקים בגיאוגרפיה,73, 142 - 166.

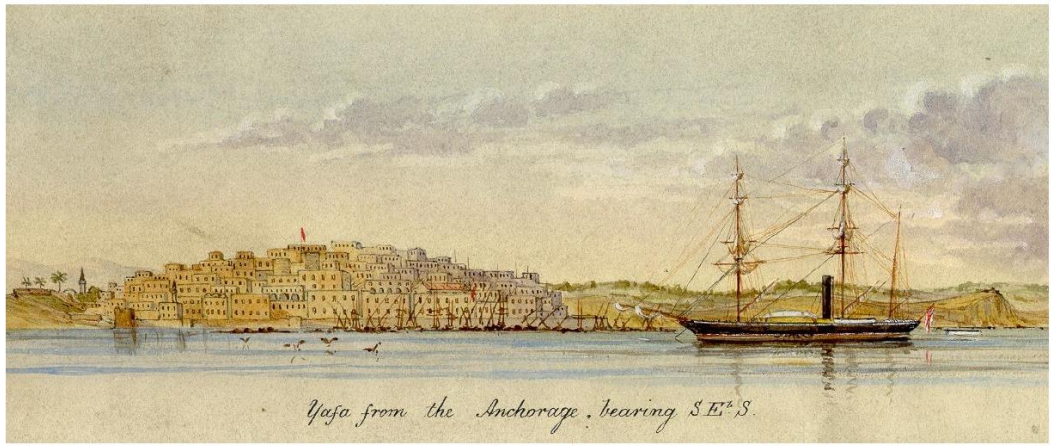
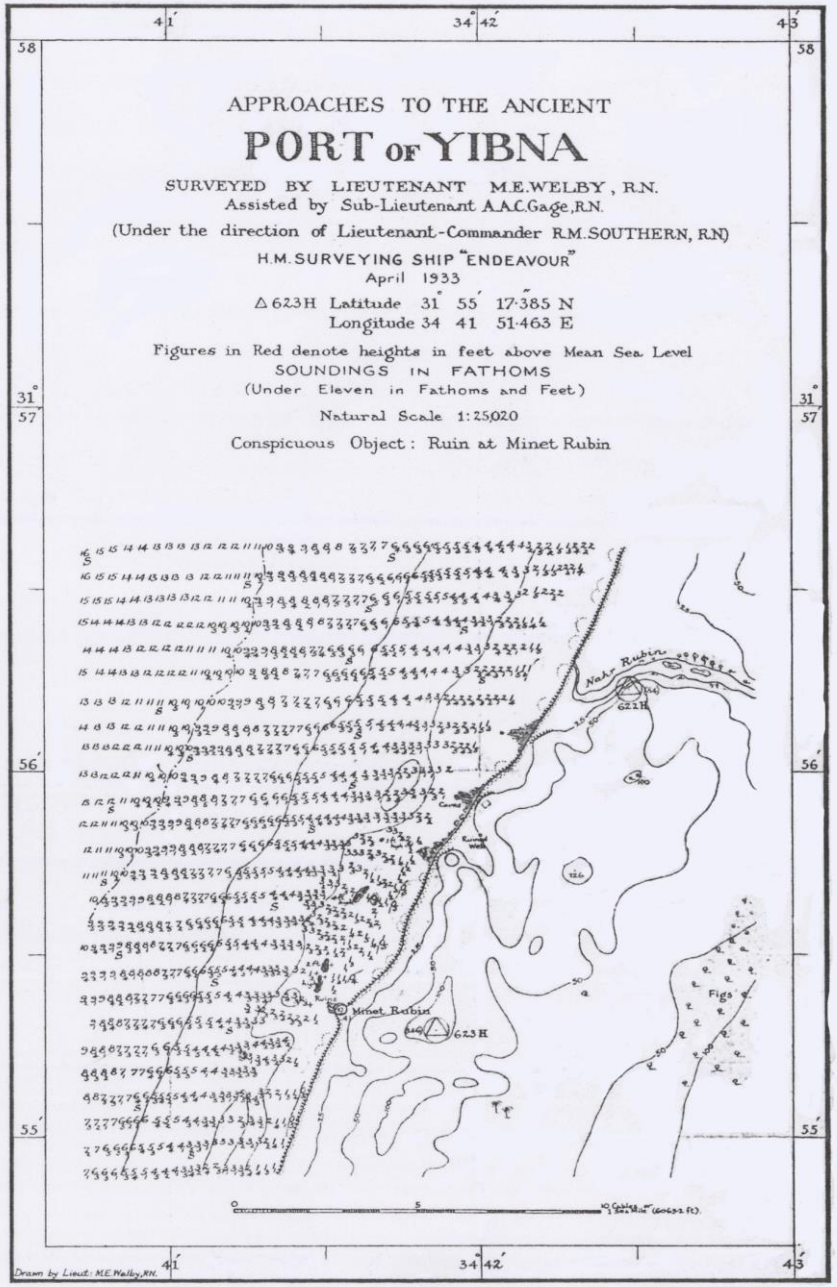
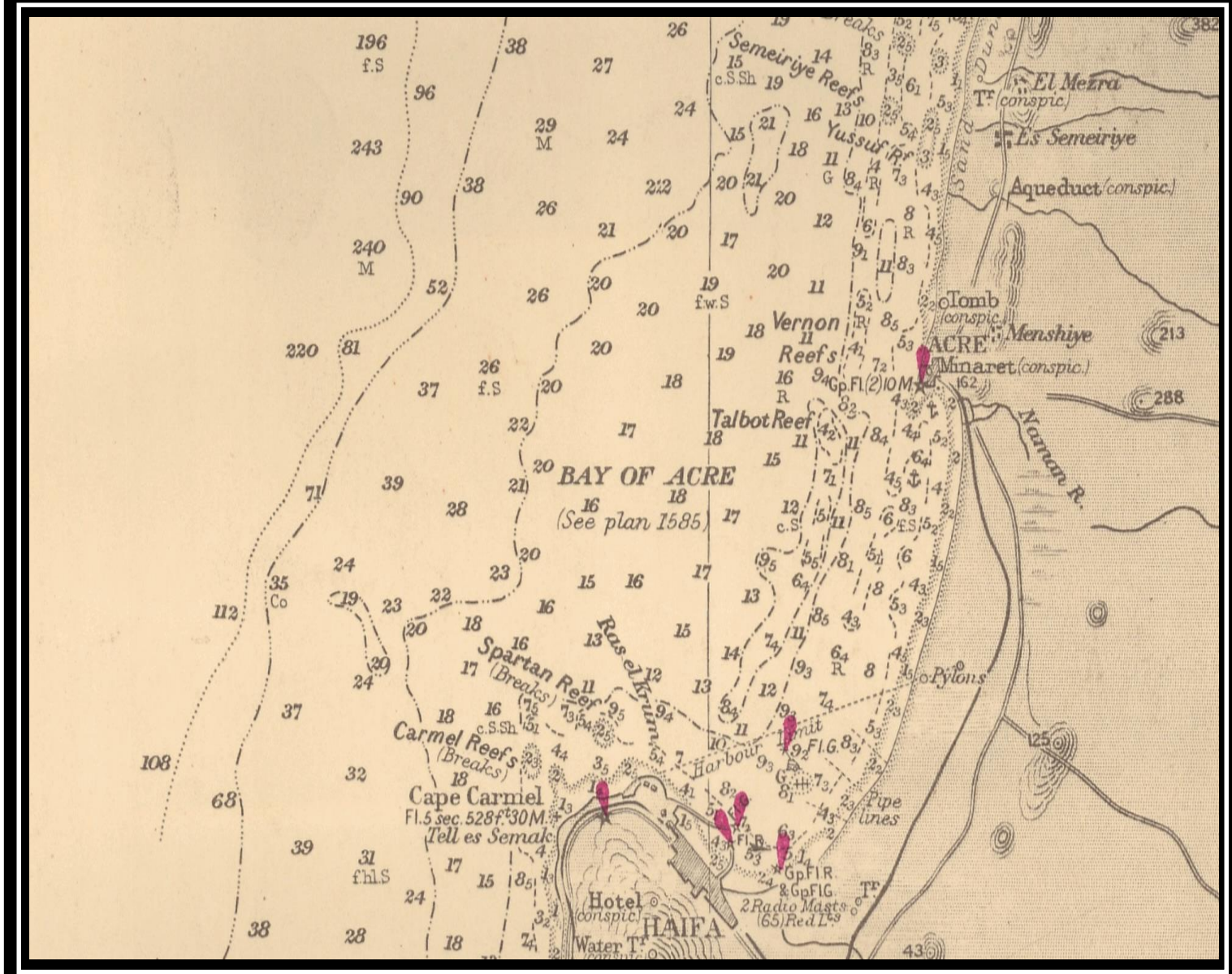
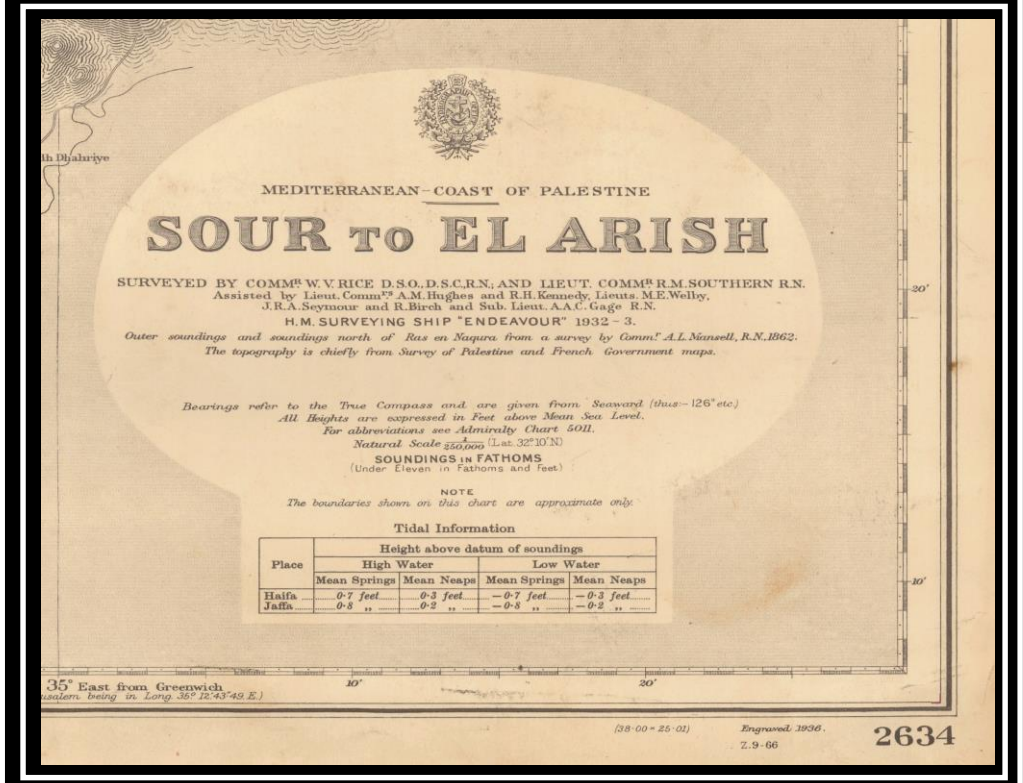


Illustration 16: Yaffa by Commander Mansell R.N., 1862 (U.K.H.O., D5889)




Semeiriye Reefs
Yussuf Rr
El Mezra
(conspic.)
Es Semeiriye
Aqueduct (conspic.)
Tomb
(conspic.)
Menshiye
ACRE
Minaret (conspic.)
Vernon
Reefs
Talbot Reef
BAY OF ACRE
(See plan 1585)
Naman R.
Pylons
Spartan Reef
(Breaks)
Ras el Krum
Carmel Reefs
(Breaks)
Cape Carmel
Fl.5 sec. 528 ft. 30 M.
Tell es Semak
Harbour
Pipe lines
2 Radio Masts
(65) Red Lts
Hotel
(conspic.)
HAIFA
Water Tr.


MEDITERRANEAN-COAST OF PALESTINE
SOUR TO EL ARISH
SURVEYED BY COMMDR W. V. RICE D.S.O., D.S.C., R.N., AND LIEUT. COMMDR R.M. SOUTHERN R.N.
Assisted by Lieut. Comms A.M. Hughes and R.H. Kennedy, Lieuts. M.E. Welby, J.R.A. Seymour and R. Birch and Sub. Lieut. A.A.C. Gage R.N.
H.M. SURVEYING SHIP "ENDEAVOUR" 1932 - 3.
Outer soundings and soundings north of Ras en Naqura from a survey by Comm.r A.L. Mansell, R.N., 1862.
The topography is chiefly from Survey of Palestine and French Government maps.
Bearings refer to the True Compass and are given from Seaward (thus:- 126° etc.)
All Heights are expressed in Feet above Mean Sea Level.
For abbreviations see Admiralty Chart 5011.
Natural Scale 1/250,000 (Lat. 32°10'N)
SOUNDINGS IN FATHOMS
(Under Eleven in Fathoms and Feet)
NOTE
The boundaries shown on this chart are approximate only.
Tidal Information
Place
Height above datum of soundings
High Water
Low Water
Mean Springs
Mean Neaps
Mean Springs
Mean Neaps
Haifa 0·7 feet 0·3 feet − 0·7 feet − 0·3 feet
Jaffa 0·8 " 0·2 " − 0·8 " − 0·2 "
35° East from Greenwich
(38·00 = 25·01)
Engraved 1936.
Z.9-66
2634

Ministry of Transportation

Survey of Israel

Marine Charts 1972

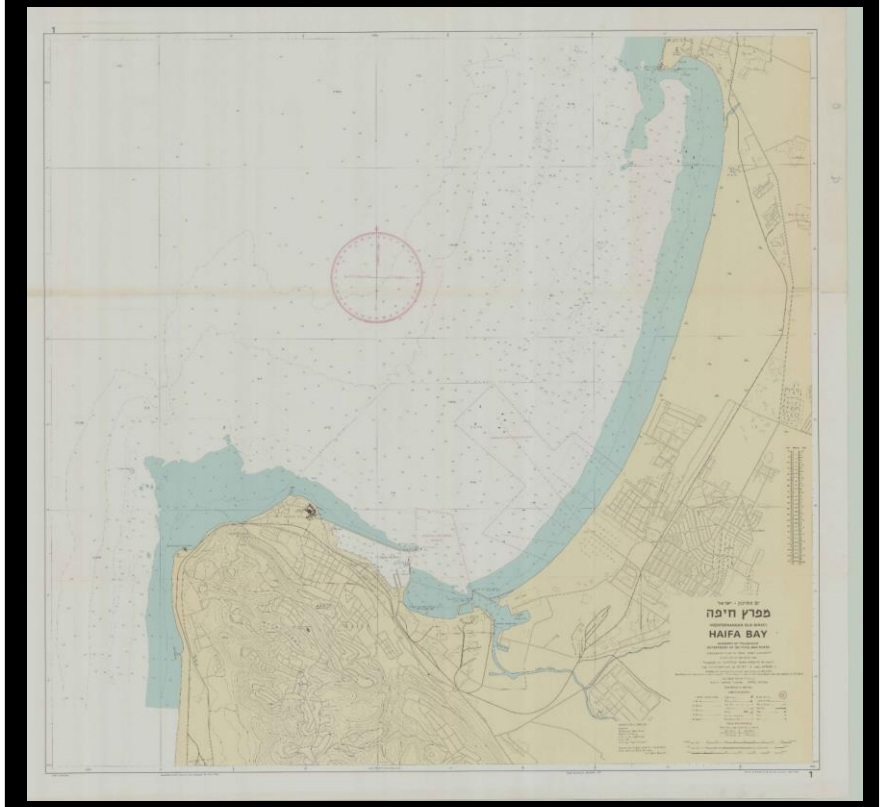


Chart 1 Haifa Bay @1:20,000

Chart 2 Ashdod Port @1:20,000

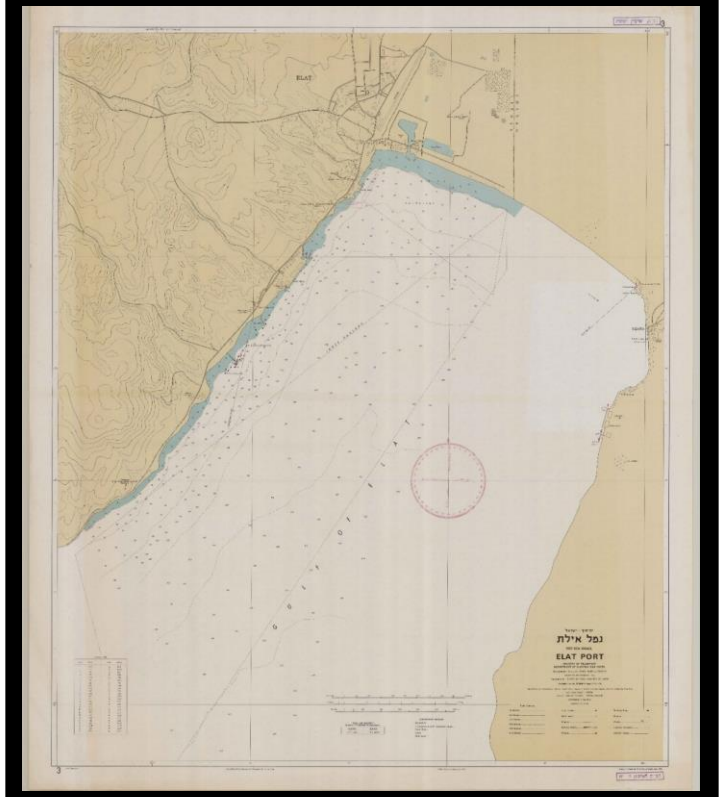
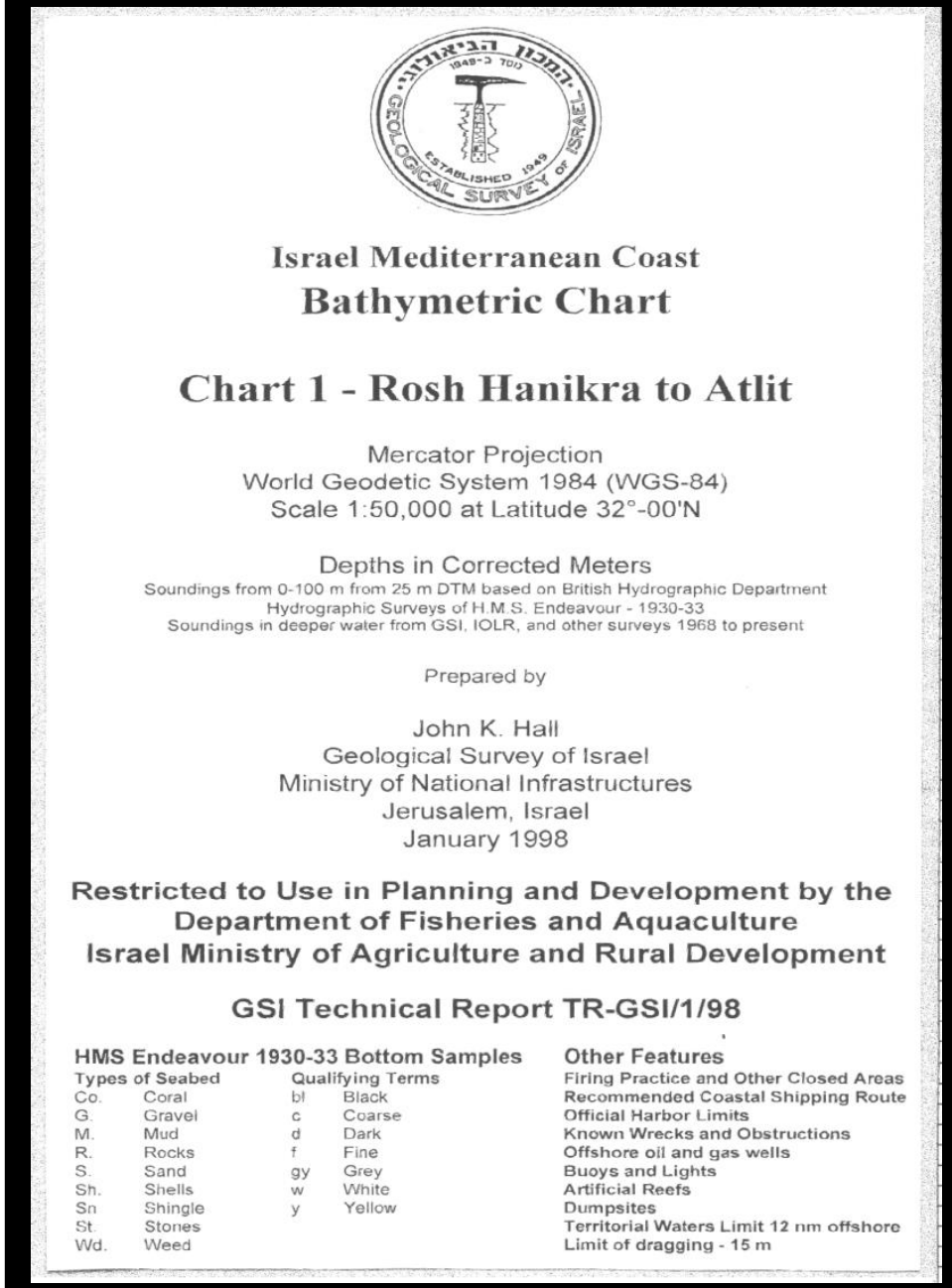


Chart 3 Eilat Port @1:12,500



Israel Mediterranean Coast
Bathymetric Chart

Chart 1 - Rosh Hanikra to Atlit

Mercator Projection
World Geodetic System 1984 (WGS-84)
Scale 1:50,000 at Latitude 32°-00'N

Depths in Corrected Meters
Soundings from 0-100 m from 25 m DTM based on British Hydrographic Department Hydrographic Surveys of H.M.S. Endeavour - 1930-33
Soundings in deeper water from GSI, IOLR, and other surveys 1968 to present

Prepared by

John K. Hall
Geological Survey of Israel
Ministry of National Infrastructures
Jerusalem, Israel
January 1998

Restricted to Use in Planning and Development by the Department of Fisheries and Aquaculture
Israel Ministry of Agriculture and Rural Development

GSI Technical Report TR-GSI/1/98

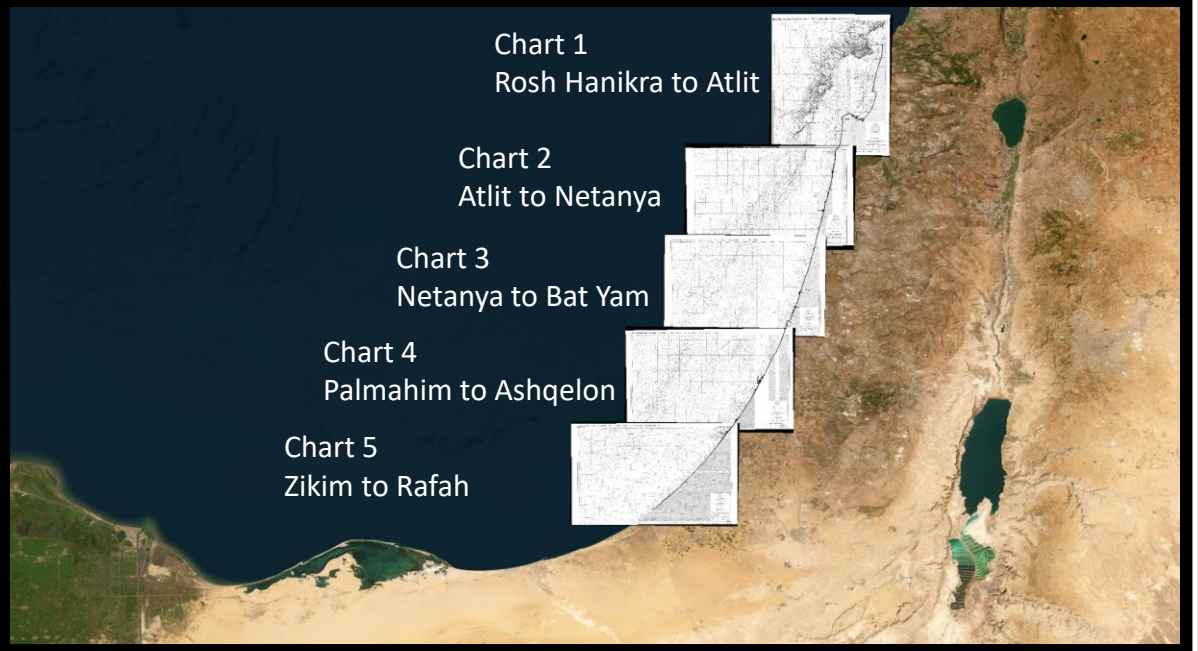
HMS Endeavour 1930-33 Bottom Samples

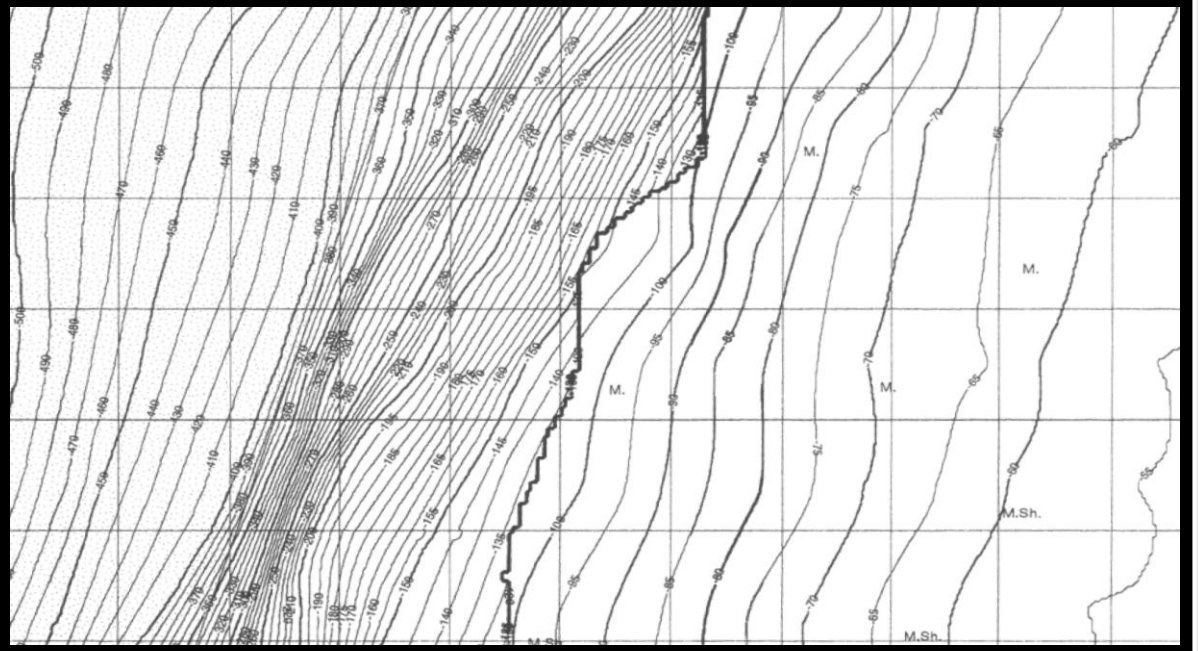
Types of Seabed		Qualifying Terms	
Co.	Coral	bl	Black
G.	Gravel	c	Coarse
M.	Mud	d	Dark
R.	Rocks	f	Fine
S.	Sand	gy	Grey
Sh.	Shells	w	White
Sn	Shingle	y	Yellow
St.	Stones		
Wd.	Weed		

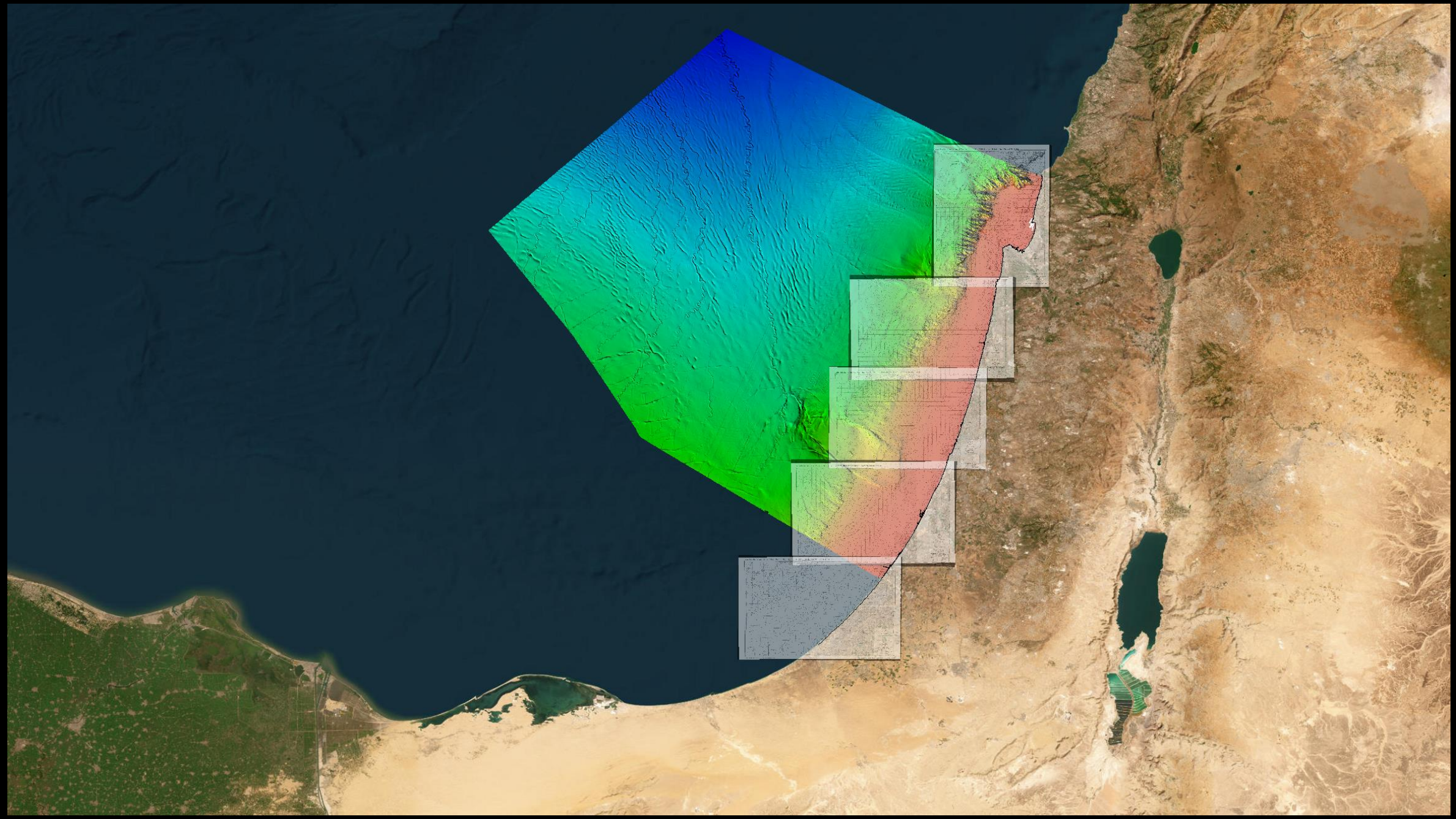
Other Features
Firing Practice and Other Closed Areas
Recommended Coastal Shipping Route
Official Harbor Limits
Known Wrecks and Obstructions
Offshore oil and gas wells
Buoys and Lights
Artificial Reefs
Dumpsites
Territorial Waters Limit 12 nm offshore
Limit of dragging - 15 m

Geological Survey of Israel
Bathymetric Charts

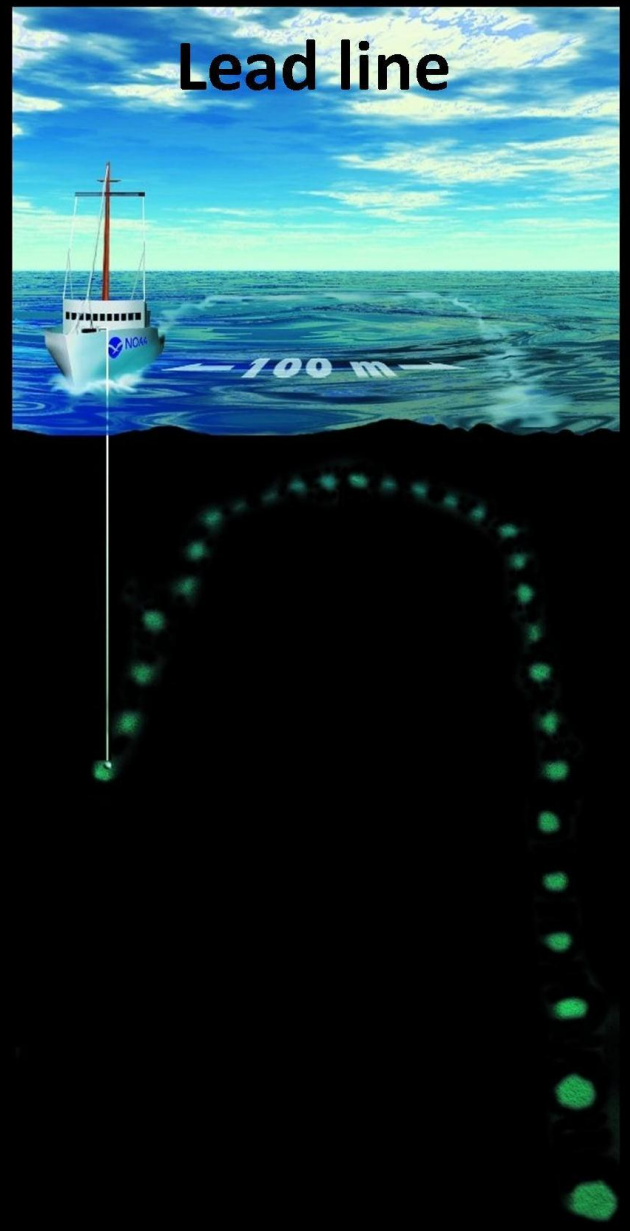
@1:50,000
John K. Hall
1998

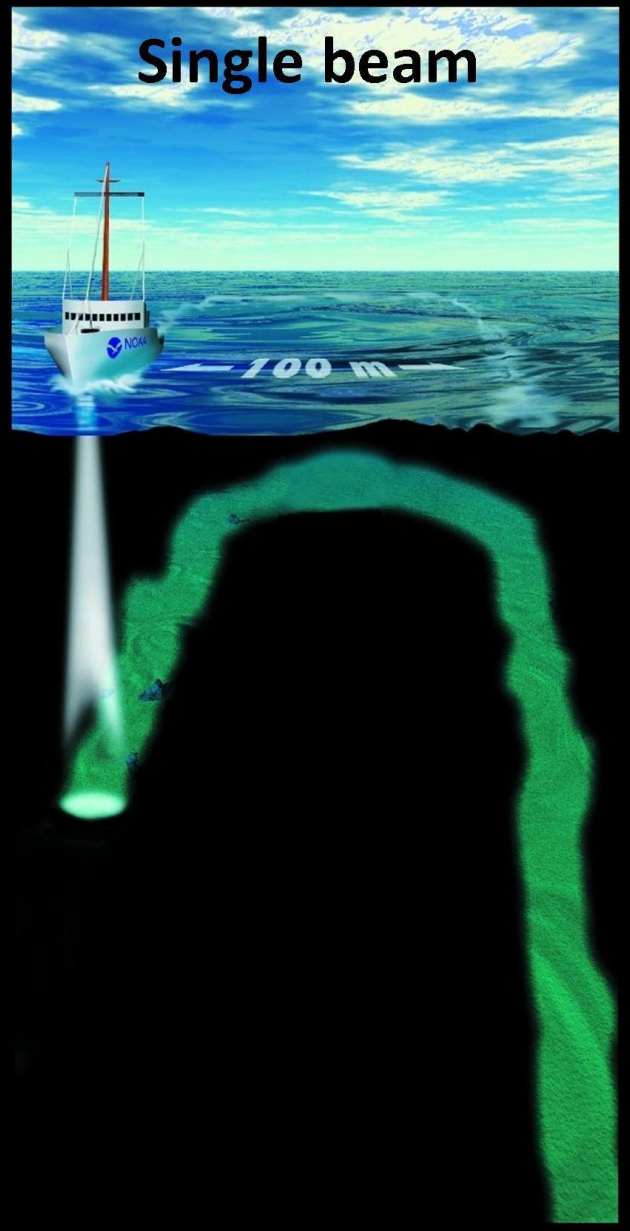


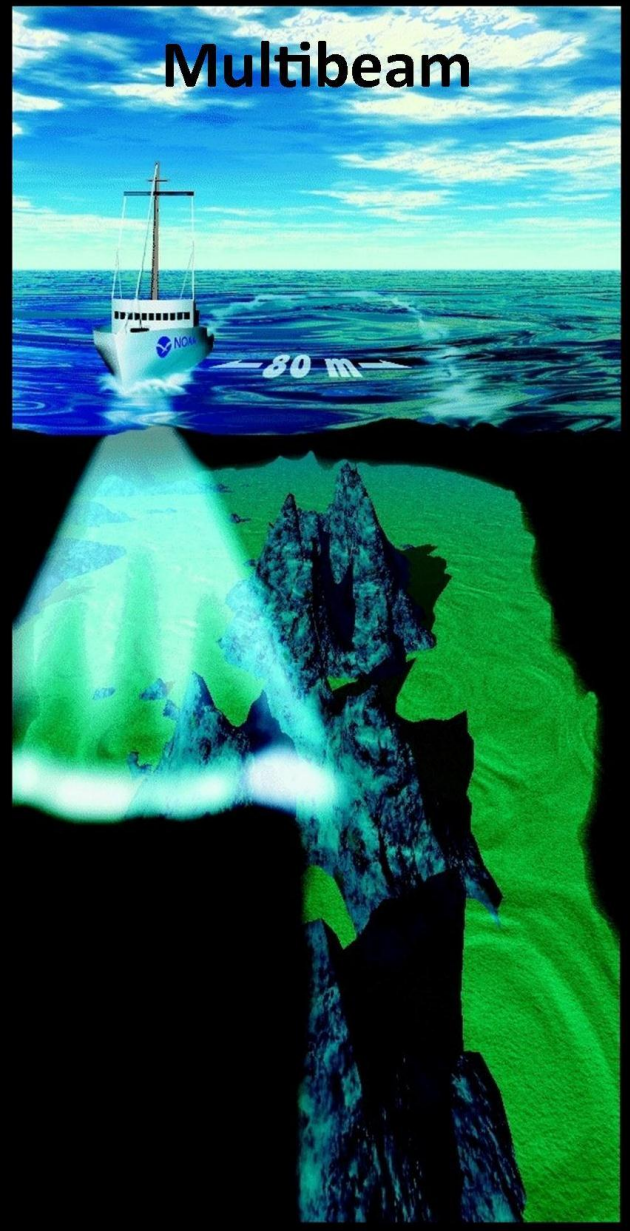


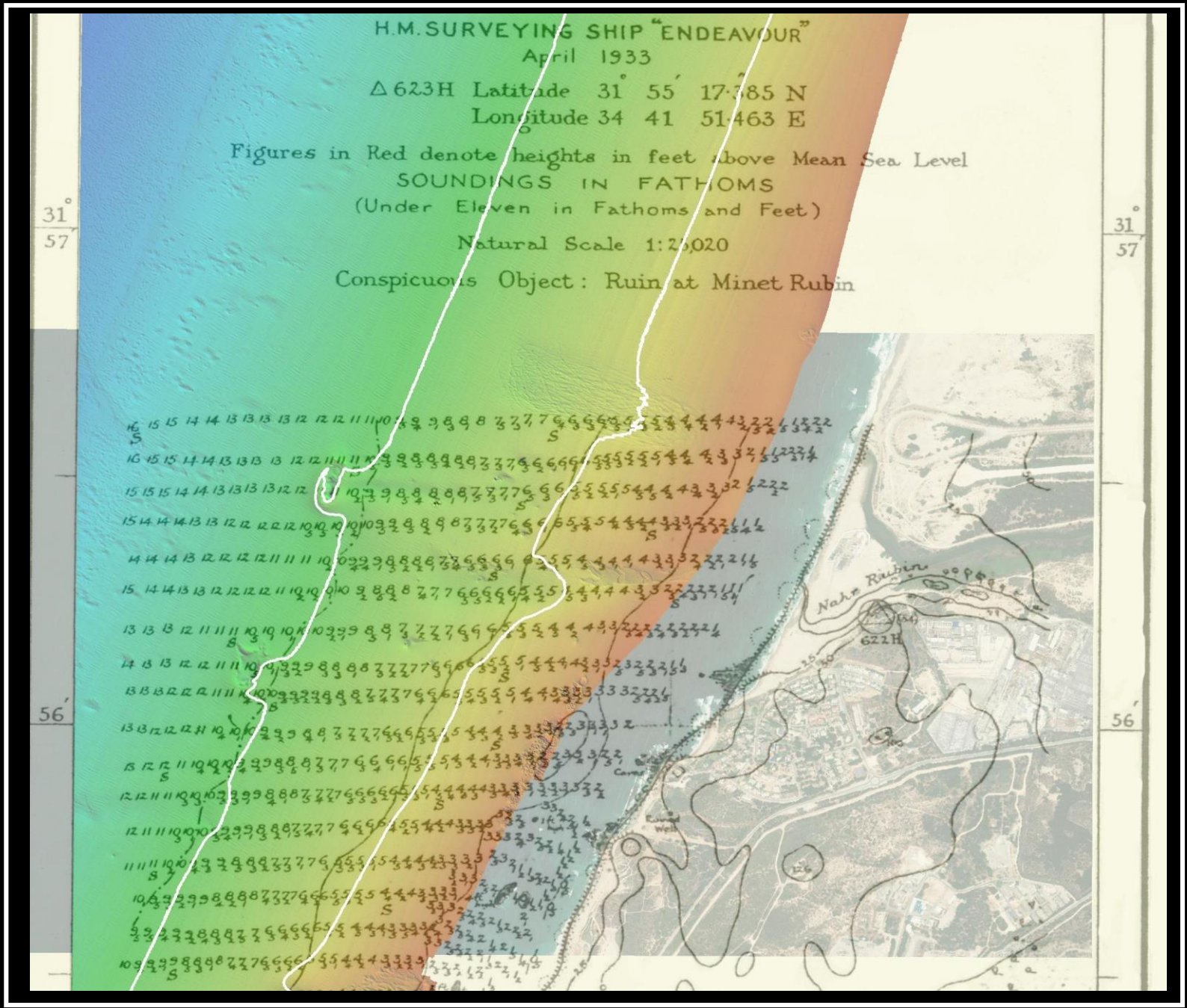


חישה מרחוק Remote Sensing









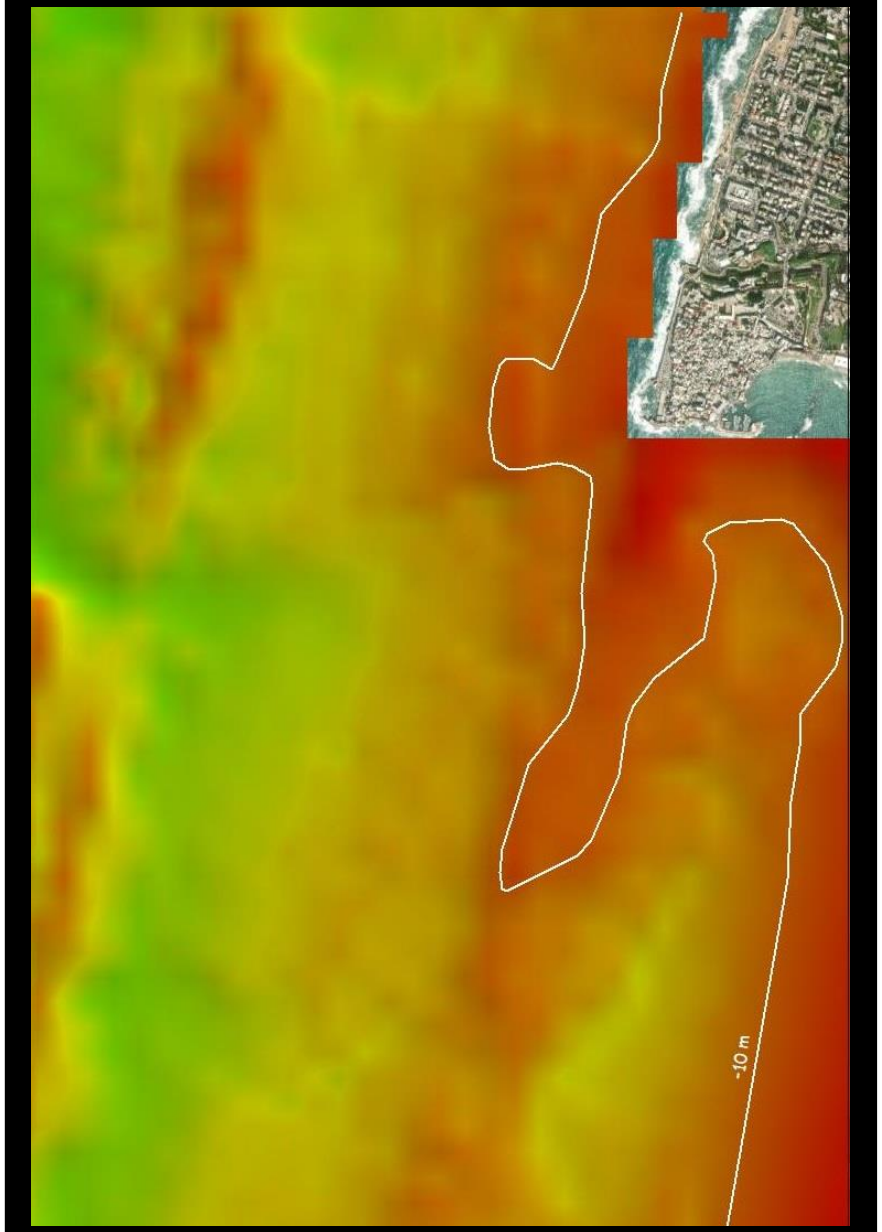
Port of Yibna

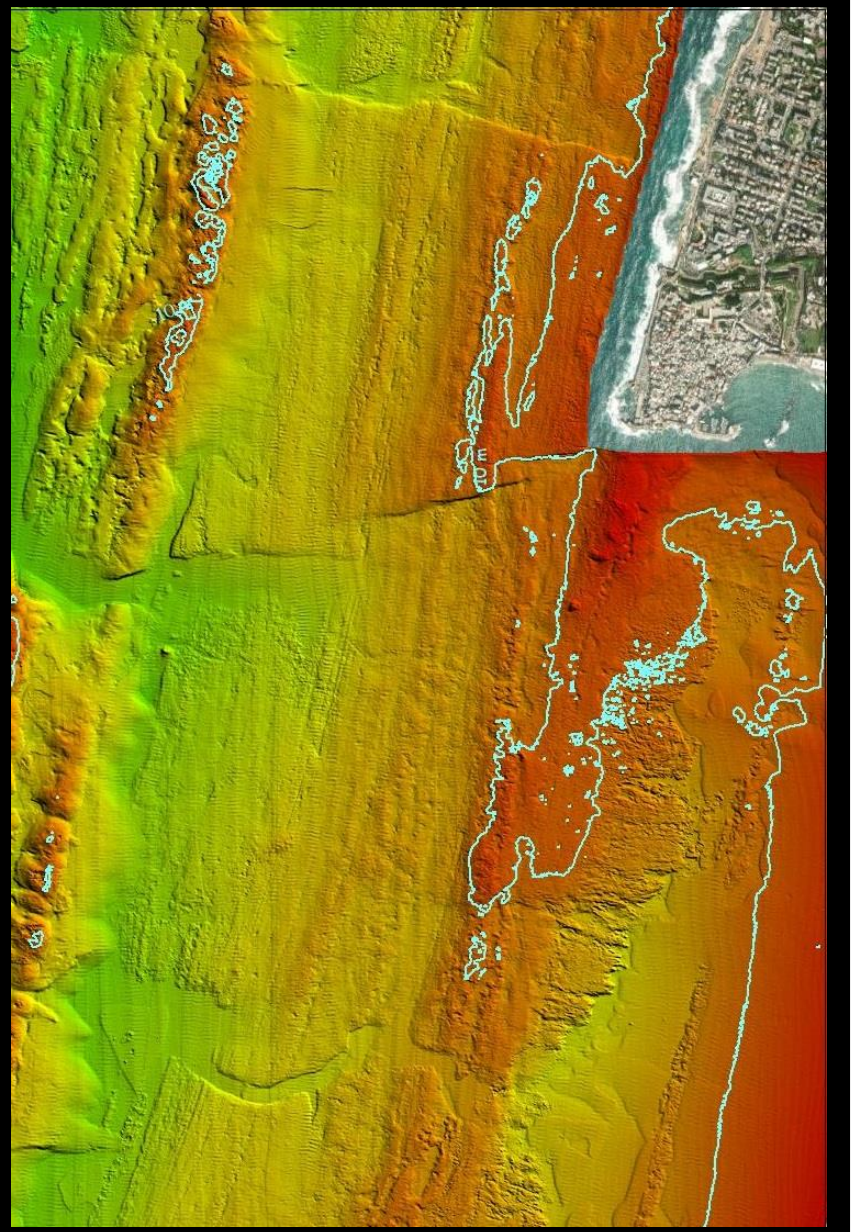
1933 (UKHO) Vs. 2015 MBES
Sonar Coverage @ 1m grid Spacing

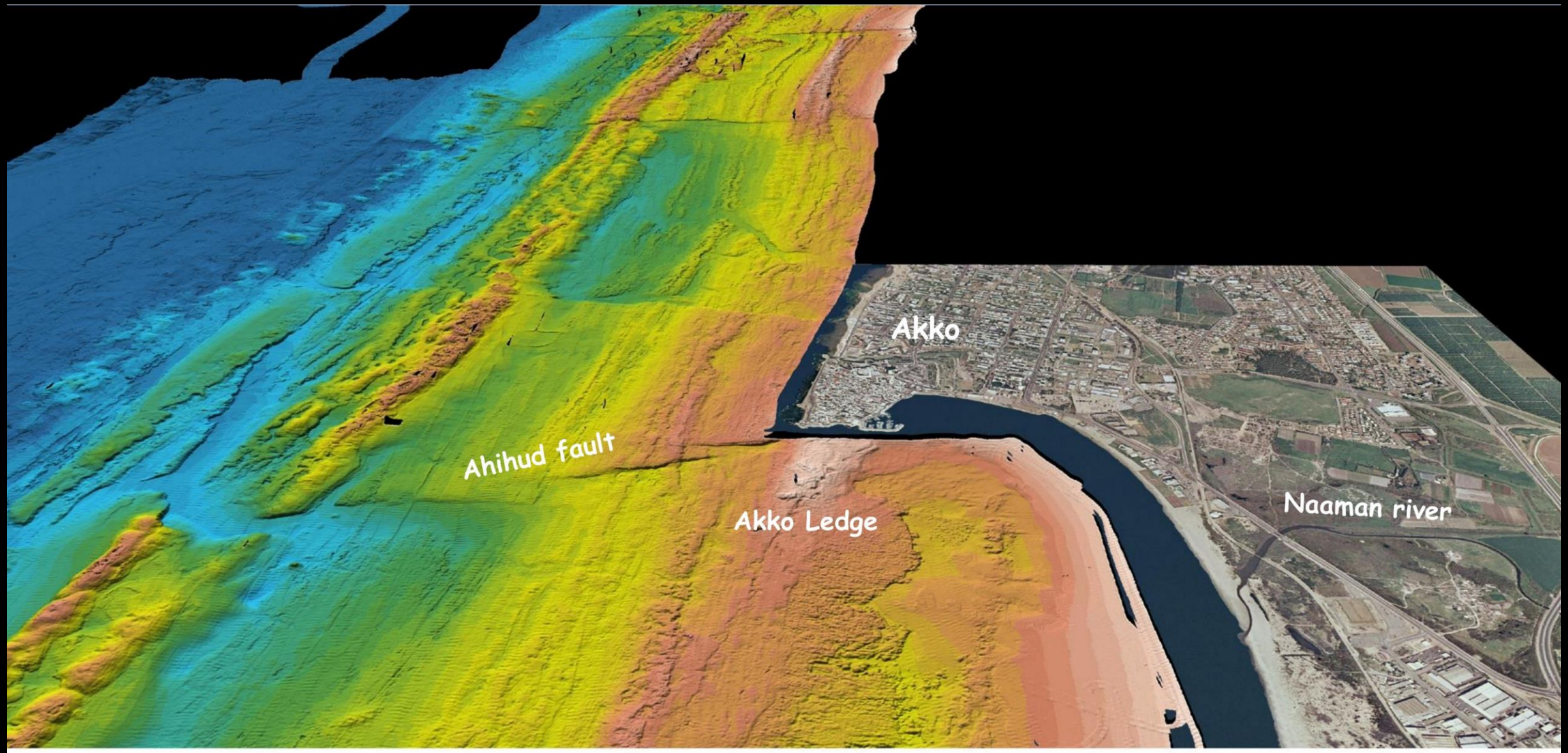
The Evolution of Resolution

Bay of Haifa (Akko)

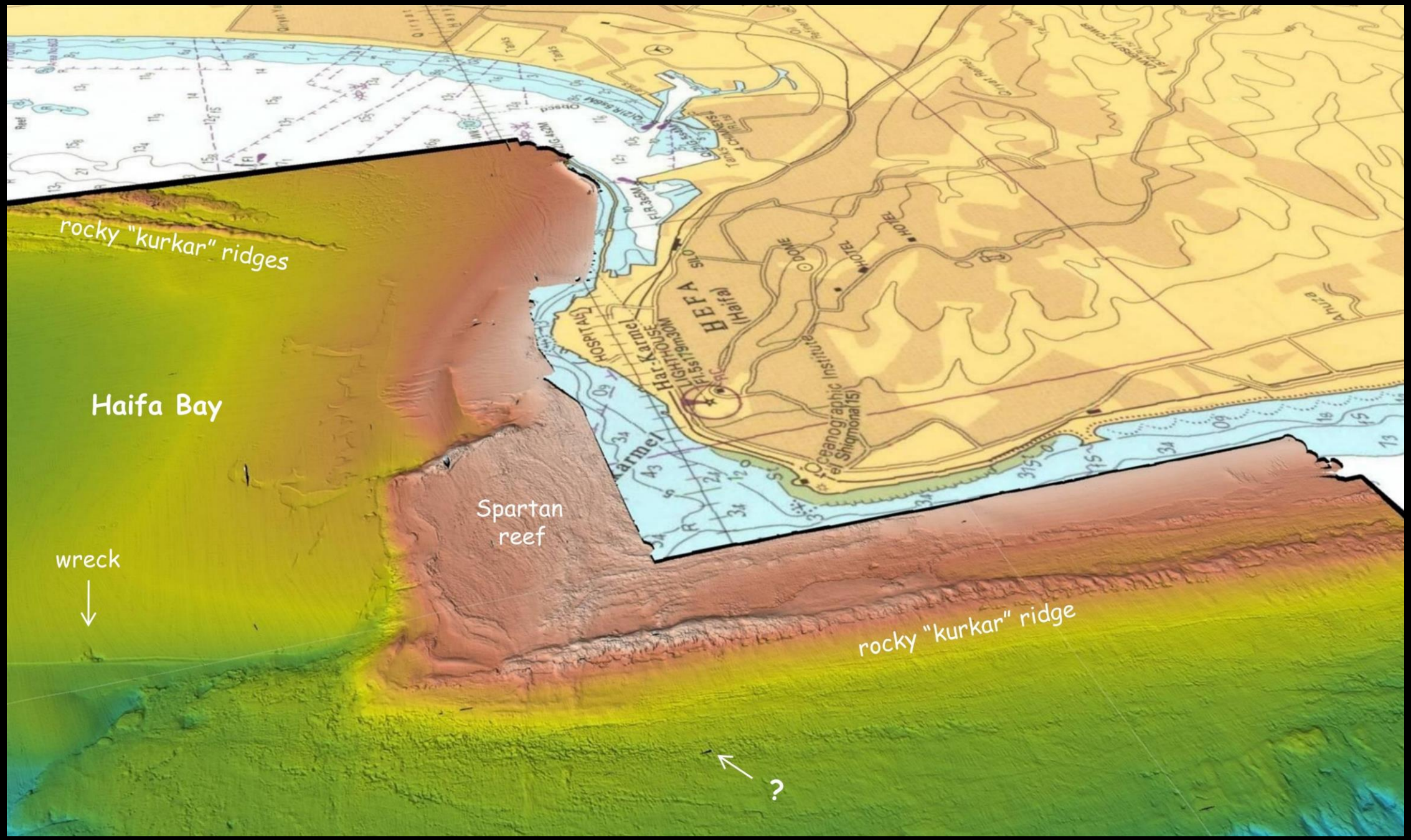
100m Vs. 2.5m Grid Spacing





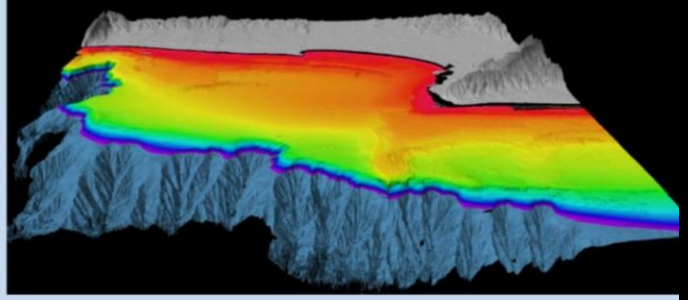


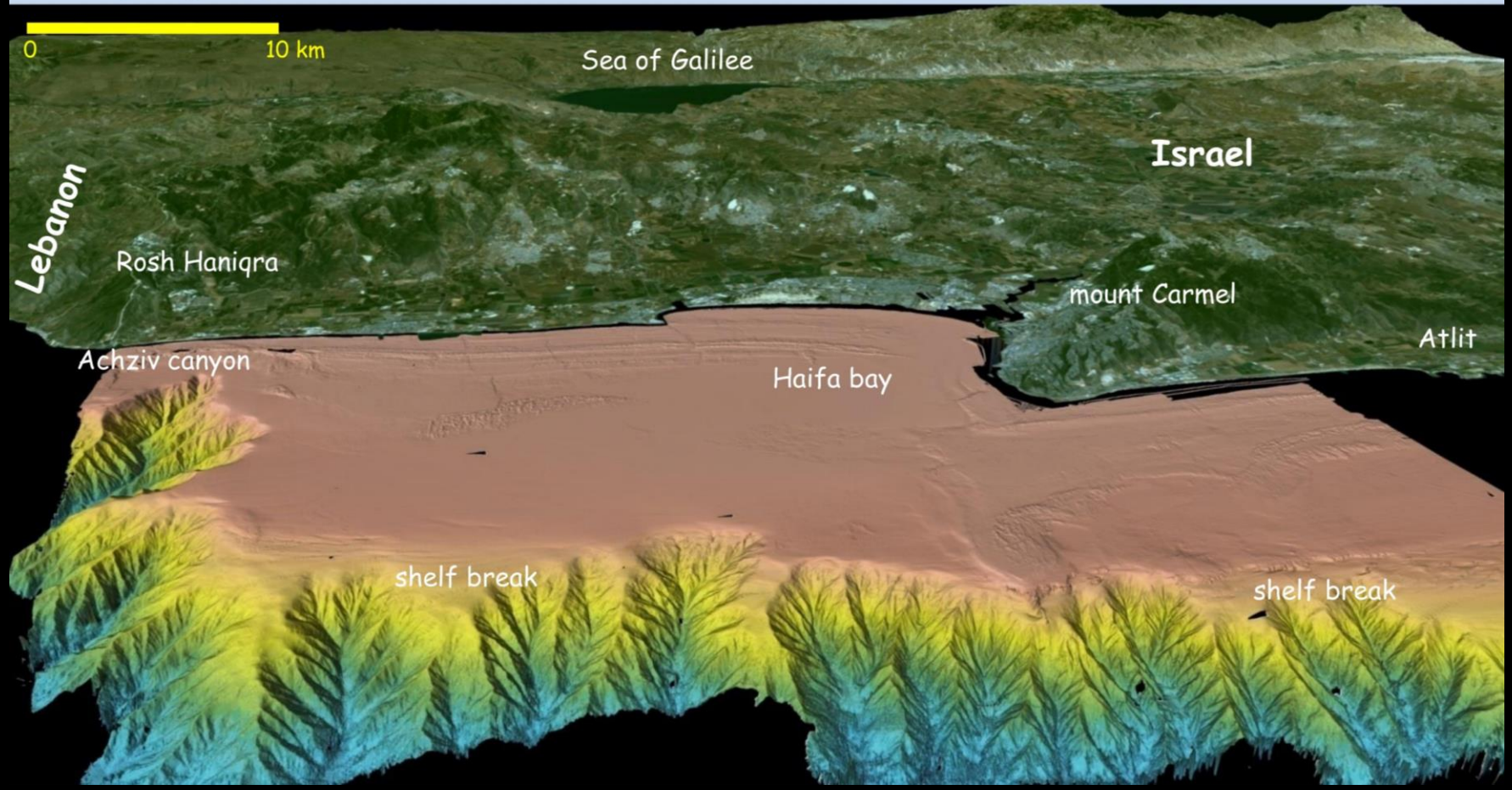
IVS Fledermaus perspective of the ridges in the Akko area. Note the Ahihud Fault extension continuing west just south of the Old City of Akko. Note the apparently filled channels (of the Na'aman River?) and the three fault extensions farther to the north, and the vertical displacements of the central block between the four faults shown here. Also of note are the sharp eastern flanks of the ridges.

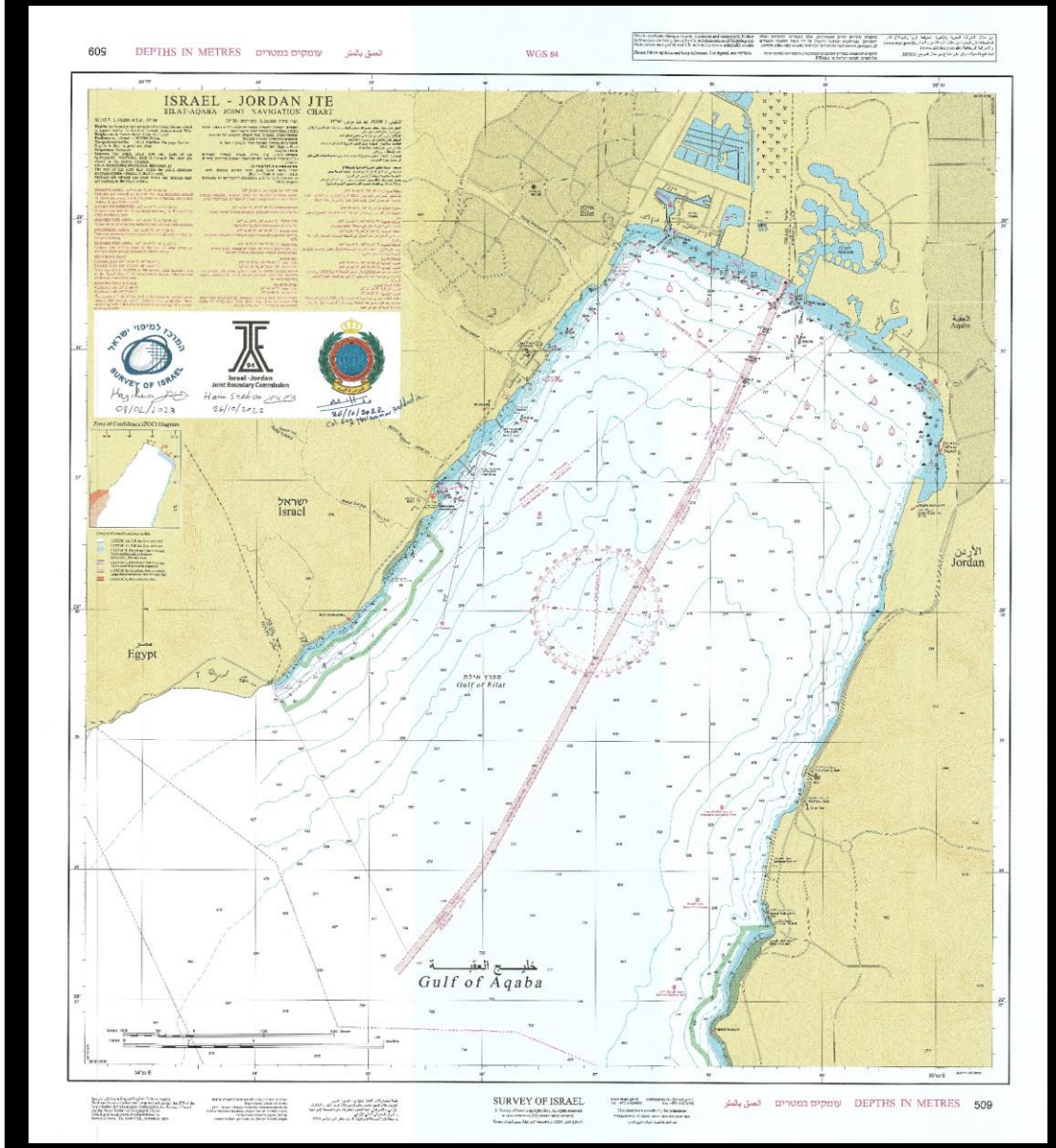

rocky "kurkar" ridges
Haifa Bay
wreck
Spartan reef
rocky "kurkar" ridge
?
HOSPITAL
Hof-Karmel
LIGHTHOUSE
HEFA
Haifa
HOTEL
Oceanographic Institute
el Shiqmona 15)

Northern Israel – Perspective view

shaded relief bathymetry as determined by a multibeam sonar.
The edge of the continental shelf break is at a depth of 180 m.
vertical exaggeration is 4x, and illumination from the northwest at 315°.
The distance across the image at the bottom is 40 km. The land is based on the 4 m DTM of the Survey of Israel.
The grid spacing on the shelf is 5 m.



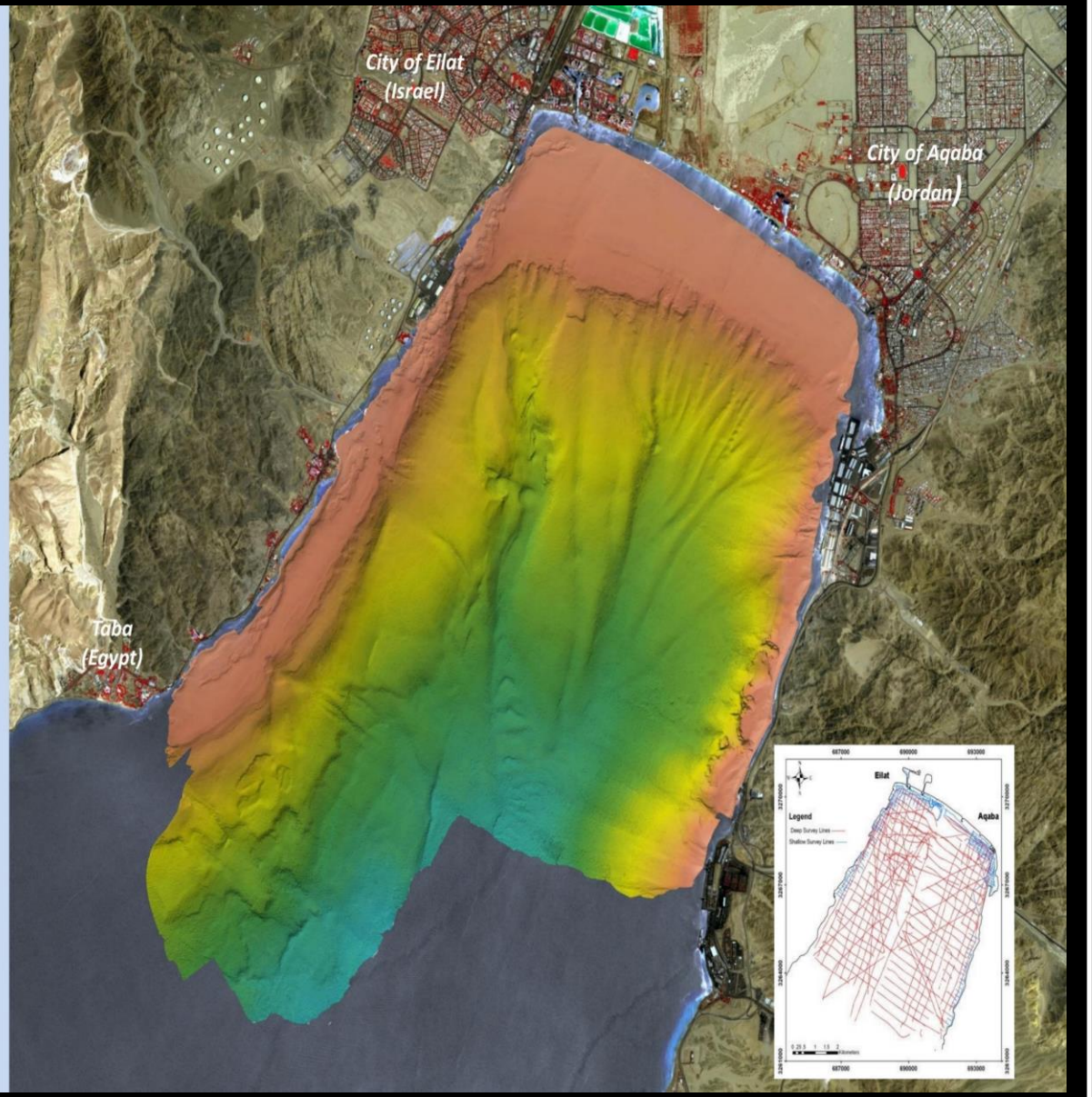


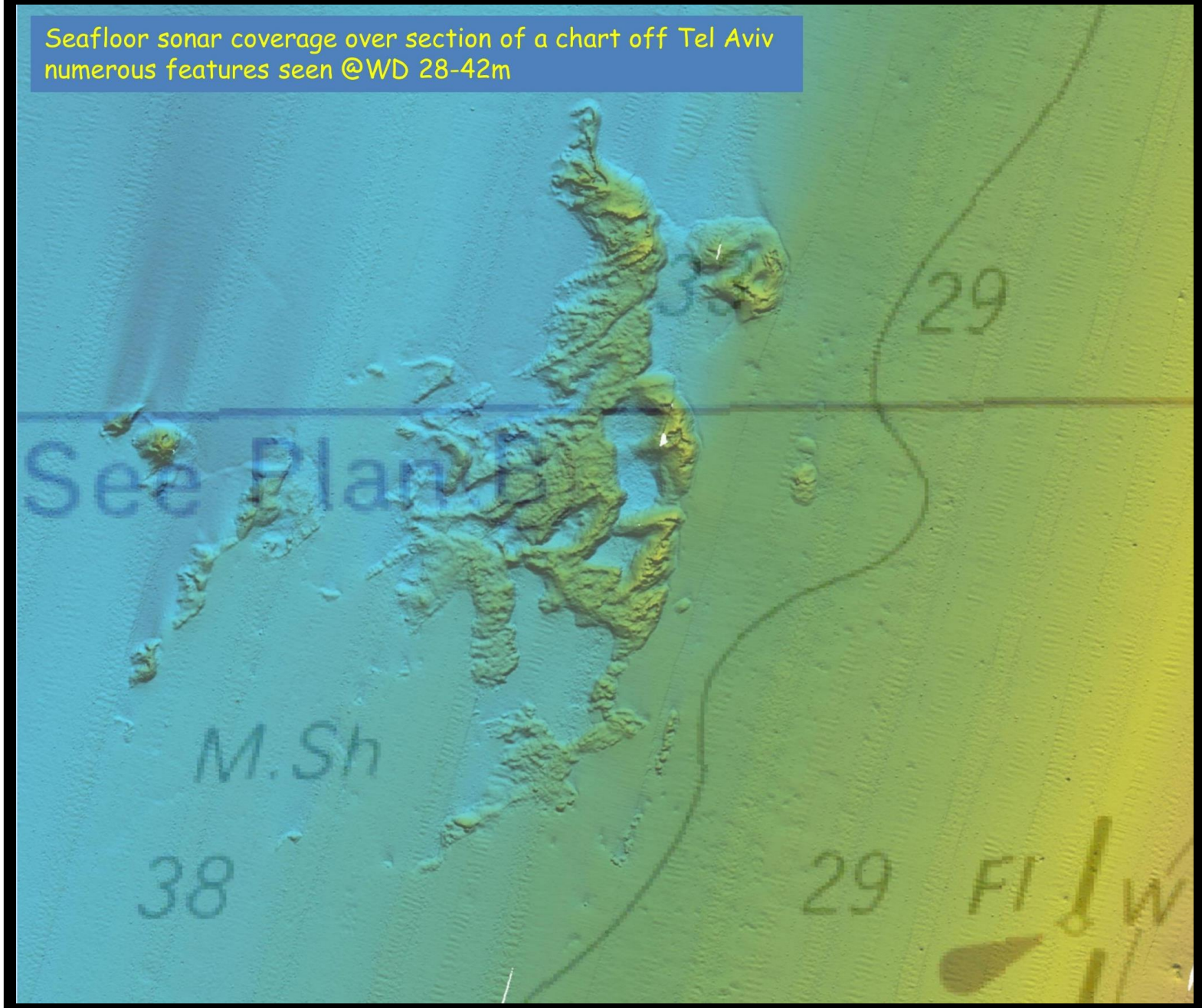


Results

Sea:
Color coded Shaded relief bathymetry Based on 6m resolution DTM

Land:
SPOT 5 Satellie image 2.5m pixel resolution July 2006 Using two sets of DTMs the 25m of Israel and the 90m SRTM-3

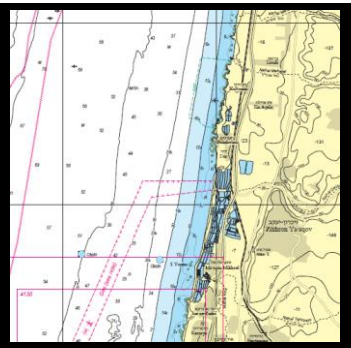


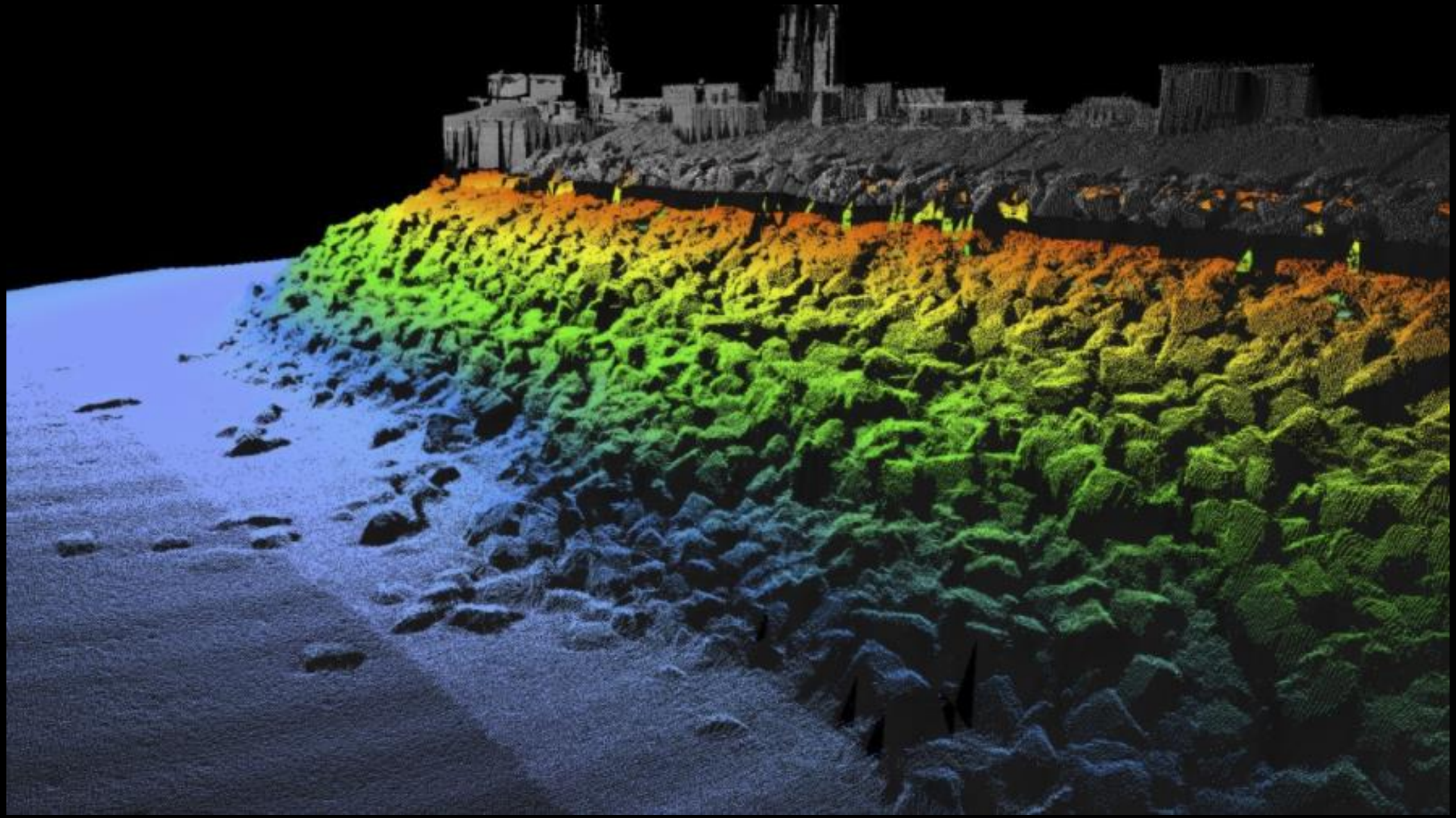


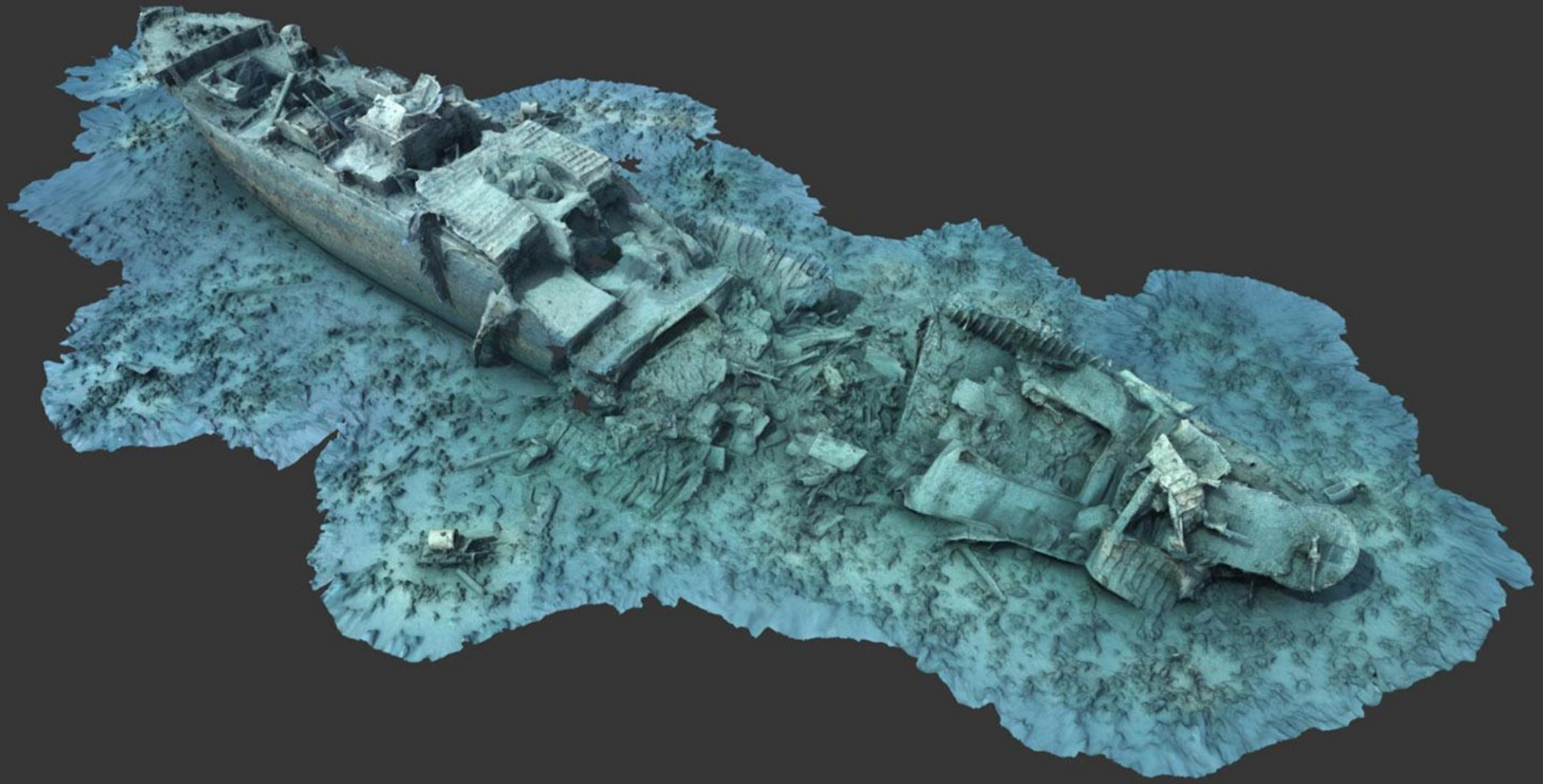
Survey of Israel ENC index — המרכז למיפוי ישראל אינדקס ENC

ENC Title	כותרת המפה	קנ"מ Scale	מספר מפה ENC #
Mediterranean Sea - Israel	הים התיכון - ישראל	1 : 350,000	I1200011
Rosh HaNikra To Keysaria	ראש הנקרה - קיסריה	1 : 90,000	I1300211
Kesarya To Palmachim	קיסריה - פלמחים	1 : 90,000	I1300221
Palmachin To Gaza	פלמחים - אשקלון	1 : 90,000	I1300231
Route to Hefa (Haifa)	נתיב הפלגה לחיפה	1 : 90,000	I1300250
Route to Ashdod and Ashkelon	נתיב הפלגה לאשדוד ואשקלון	1 : 90,000	I1300260
Mifrats Hefa (Haifa Bay)	מפרץ חיפה	1 : 22,000	I1400305
Hadera Port	נמל חדרה	1 : 22,000	I1400311
Hadera LNG Port	נמל חדרה גט"ץ	1 : 22,000	I1400312
Tel-Aviv Yafo	תל-אביב יפו	1 : 22,000	I1400313
Ashdod	אשדוד	1 : 22,000	I1400323
Ashkelon	אשקלון	1 : 22,000	I1400325
Rosh HaNikra North-West	ראש הנקרה צפון מערב	1 : 22,000	I1400350
Rosh HaNikra	ראש הנקרה	1 : 22,000	I1400351
Rosh HaNikra West	ראש הנקרה מערב	1 : 22,000	I1400352
Haifa West	חיפה מערב	1 : 22,000	I1400353
Atlit	עתלית	1 : 22,000	I1400354
Atlit West	עתלית מערב	1 : 22,000	I1400355
Hadera West	חדרה מערב	1 : 22,000	I1400360
Netanya	נתניה	1 : 22,000	I1400361
Netanya West	נתניה מערב	1 : 22,000	I1400362
Tel-Aviv Yafo West	תל-אביב יפו מערב	1 : 22,000	I1400363
Palmahim	פלמחים	1 : 22,000	I1400371
Palmahim West	פלמחים מערב	1 : 22,000	I1400372
Ashdod West	אשדוד מערב	1 : 22,000	I1400373
Nizzanim	ניצנים	1 : 22,000	I1400374
Ashkelon West	אשקלון מערב	1 : 22,000	I1400375
Mifrats Elat (Gulf Of Eilat)	מפרץ אילת	1 : 22,000	I1400501
Haifa Port Harbour	נמל חיפה	1 : 12,000	I150305A
Ashdod Port	נמל אשדוד	1 : 12,000	I150323A
Ashdod Marina	מעגנת אשדוד	1 : 12,000	I150323B
Herzzliya Marina	מעגנת הרצליה	1 : 12,000	I1504135
Port of Eilat	נמל אילת	1 : 12,000	I150500A
Kishon Harbour	נמל קישון	1 : 4,000	I160305B
Akko Port	נמל עכו	1 : 4,000	I160305C
Tel-Aviv Marina	מעגנת תל-אביב	1 : 4,000	I160313A
Yafo (Jaffa) Port	נמל יפו	1 : 4,000	I160313B
Ashkelon Port	נמל אשקלון	1 : 4,000	I160325A
Ashkelon Marina	מעגנת אשקלון	1 : 4,000	I160325B
Eilat Marina	מעגנת אילת	1 : 4,000	I160500B
Herzzliya Marina Harbour	מעגנת הרצליה	1 : 4,000	I164135A

October 2022 אוקטובר







"הים הגדול הזה נחשב לתחום המערבי של ארצנו. זוהי טעות נפסדת שעלינו לעקור משורשה. מבחינה יישובית, כלכלית ופוליטית, יש לראות בים התיכון לא את גבולה אלא את המשכה של ארצנו...
האפשרויות הכלכליות והיישוביות הצפונות בחובה של ארצנו מקומן לא רק ביבשה אלא גם בים."

דוד בן גוריון
מתוך "לקראת הים"
1932