



HYDROGRAPHY IN KSA UNDER THE GCS

by

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VISION

To be a leading hydrographic service in the region meeting the marine Geospatial needs of many stake holders within and outside the Kingdom.



MISSION

- Carryout 3 dimensional hydrographic surveys using state of the art equipment/systems.
- Provide nautical charts and publications with value added products and services.
- Active participation in international, regional and local hydrographic cooperation.
- Seamless database from deep seas to coastal topography.
- Marine Sciences data/information.
- MSDI development integrated to GIC.

GOALS

- Complete 100% coverage surveys in Saudi marine areas within 5 years (2017).
- Complete full ENC/PNC coverage for KSA with 104 ENCs/PNCs and over 150 Base Nautical Charts (BNCs).
- Marine Sciences development with forecasting service by 2014.
- Implement hydrographic/Marine Sciences data management by 2015.
- Vibrant human resources in Hydrography, Marine Cartography, Marine Sciences, Database Management.
- Projects execution on time.



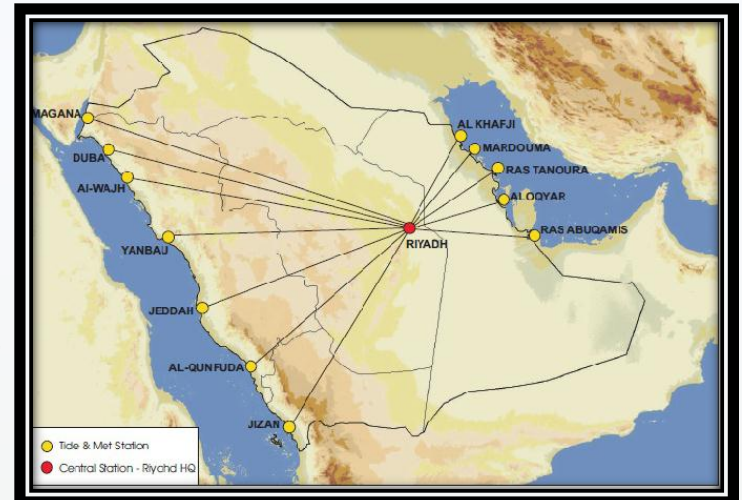
STRATEGY

- Outsourced/contracted turnkey projects.
- Progressive own assets/capacity building.
- Progressive human resources development in required fields.
- Enlisting of experts for solutions.
- After basic training, supervision by expats of trained Saudis till empowered.
- Industry participation.
- International and regional cooperation.



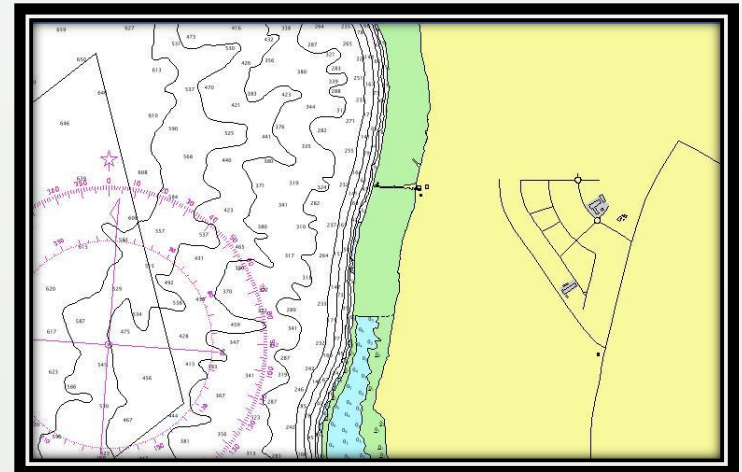
PROJECTS COMPLETED

- 12 stations National Tide Gauge Network with data flow to GCS.
- 3 HSPs covering $>12,000 \text{ km}^2$ in Red Sea (1:25,000).
- Training of 6+8 Cat B marine cartographers for ENC/PNC production & 8+8 Cat B hydrographers.
- Miscellaneous CARIS courses.



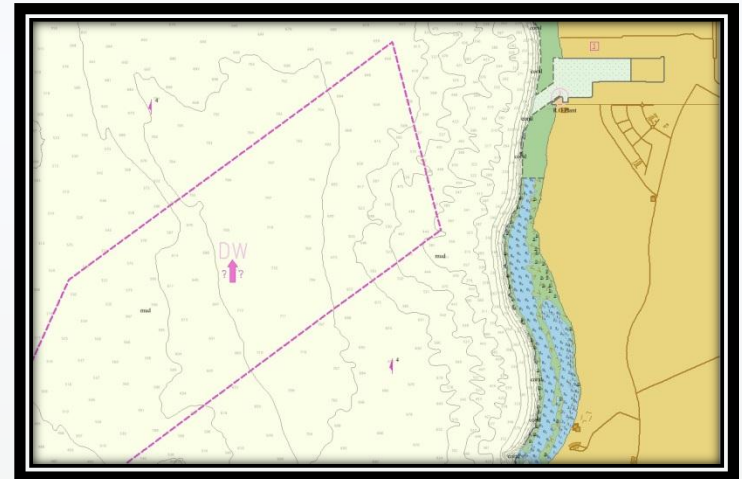
PROJECTS COMPLETED

- Establishment of 'Hydrographic Training Center' at Jeddah with 'Hydrographic Survey Launch' & complete training equipment/systems.
- 7 ENC/PNCs & 8 BNCs completed from HSP 1.
- QC/QA for HSPs 2&3 with training in Sep 2013.
- Hydrography Department information in GCS web portal.



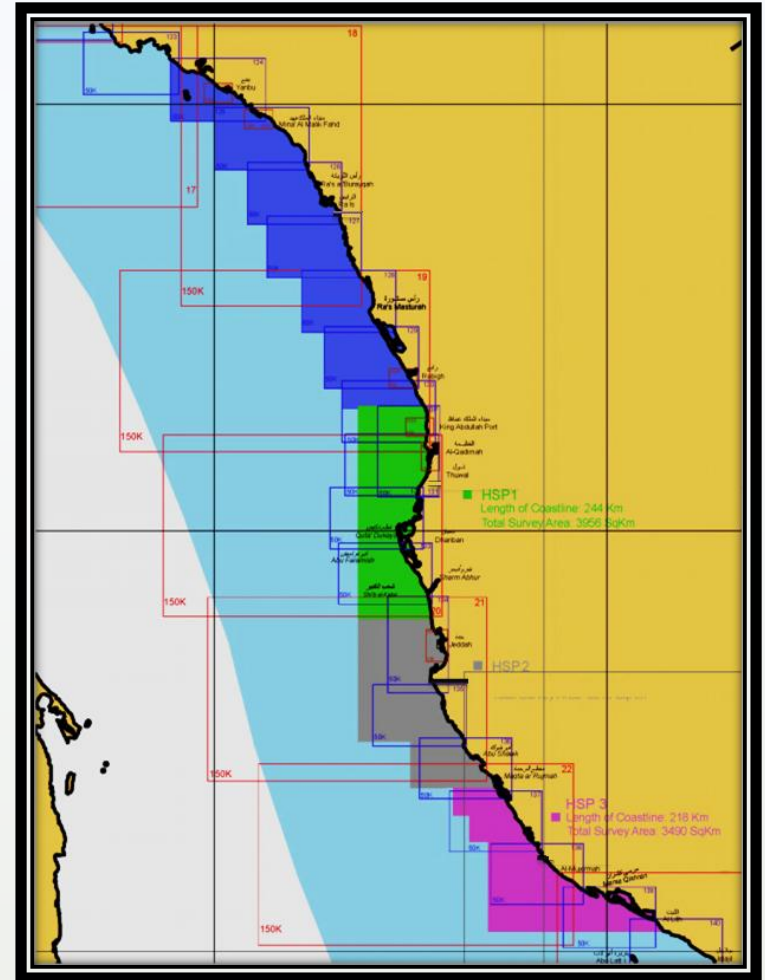
PROJECTS UNDER EXECUTION

- ENC_s/PNC_s/BNC_s FROM HSP_s 2 & 3 (9 + 9 +13).
- HSP4 – 7,800 km² – date of completion feb 2014, ENC – 11/PNC – 11/BNC – 14.
- HSL 2 & 3 with equipment/ systems for operational surveys based at Al-Wajh & Jazan – estimated date of completion feb 2015



PROJECTS UNDER EXECUTION

- Islands/shoreline delineation to cover areas of HSPs 1 to 4 – Oct 2014.
- 11 ENC/PNCs from HSPs 2 & 3 by May 2014.
- GCS QC/QA section with trained manpower.
- First MS data buoy in Red Sea sanctioned for execution by KAUST



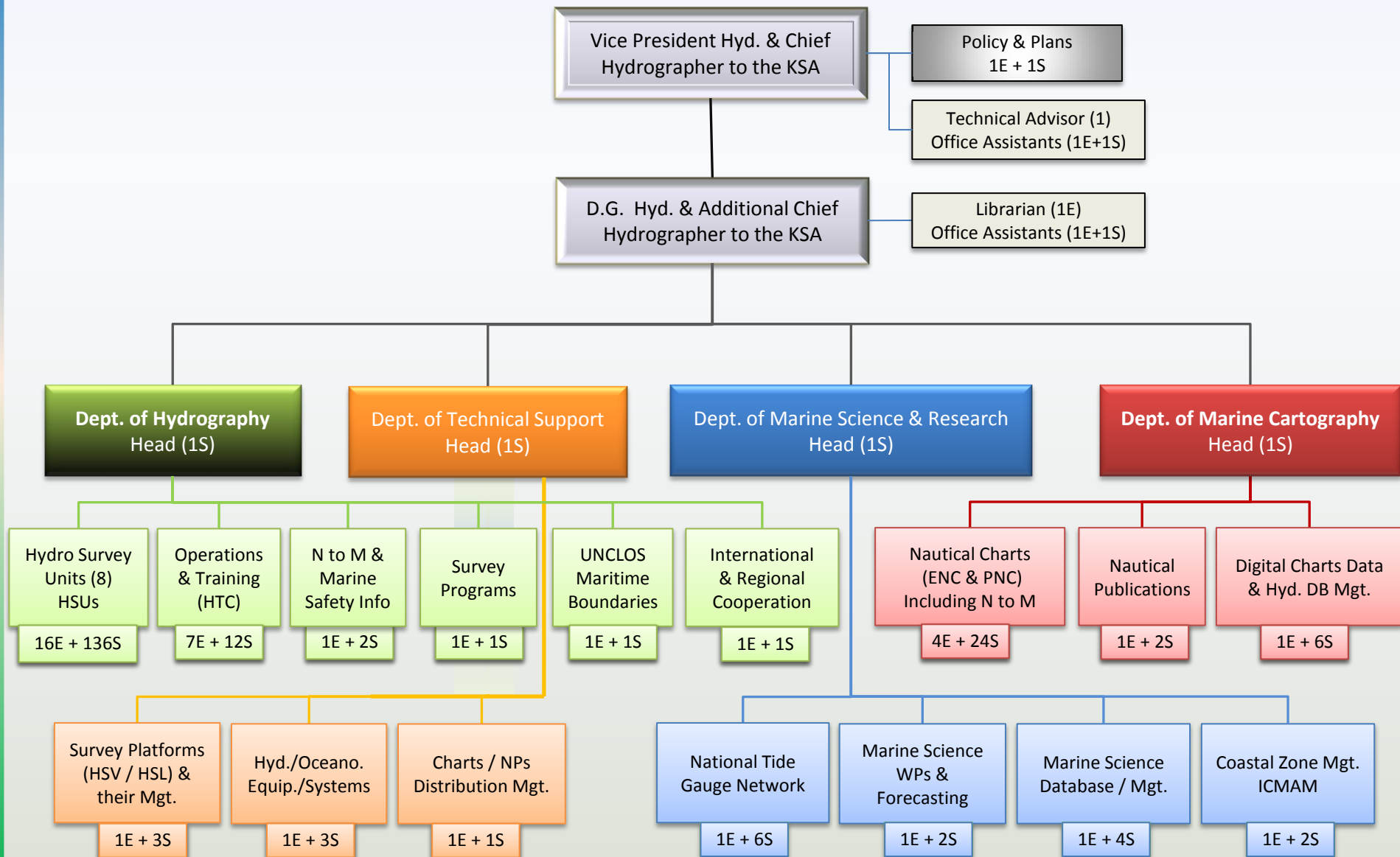
PROJECTS ON ANVIL TILL 2014

- HSPs 5 TO 7 FOR $>25,000$ km² in Red Sea/Arabian Gulf (Planned) (7+7+18).
- Hydrographic & Marine Sciences data management.
- Base Nautical Charts (BNCs) for HSPs 2 to 6 (35)
- Marine Sciences forecasting services.
- HSL with equipment/systems for operational surveys based at Al-Khobar and Duba + HSV 2 for dw surveys
- Aircraft with bathymetry/topography LiDAR & aerial camera.
- Specialized survey equipment/systems for Hydrography/Marine Sciences.
- Marine Sciences data buoys 1 to 3.
- National Tide Gauge Network – Phase 2 (12 stations).
- Islands/shoreline project for HSPs 5 & 6.

UNDER CONSIDERATION

- Distribution arrangements for products (ENC/PNC/BNC) and services.
- Modalities for cooperation with important stakeholders.
- Conduct short courses for GCS states (MBES/MSI/MSDI/GMDSS/Coastal Zone Mgt.).
- Greater role at RSAHC and NIOHC.

GCS Hydrography Department, Organizational Structure (2012-2016)



HUMAN RESOURCES DEVELOPMENT

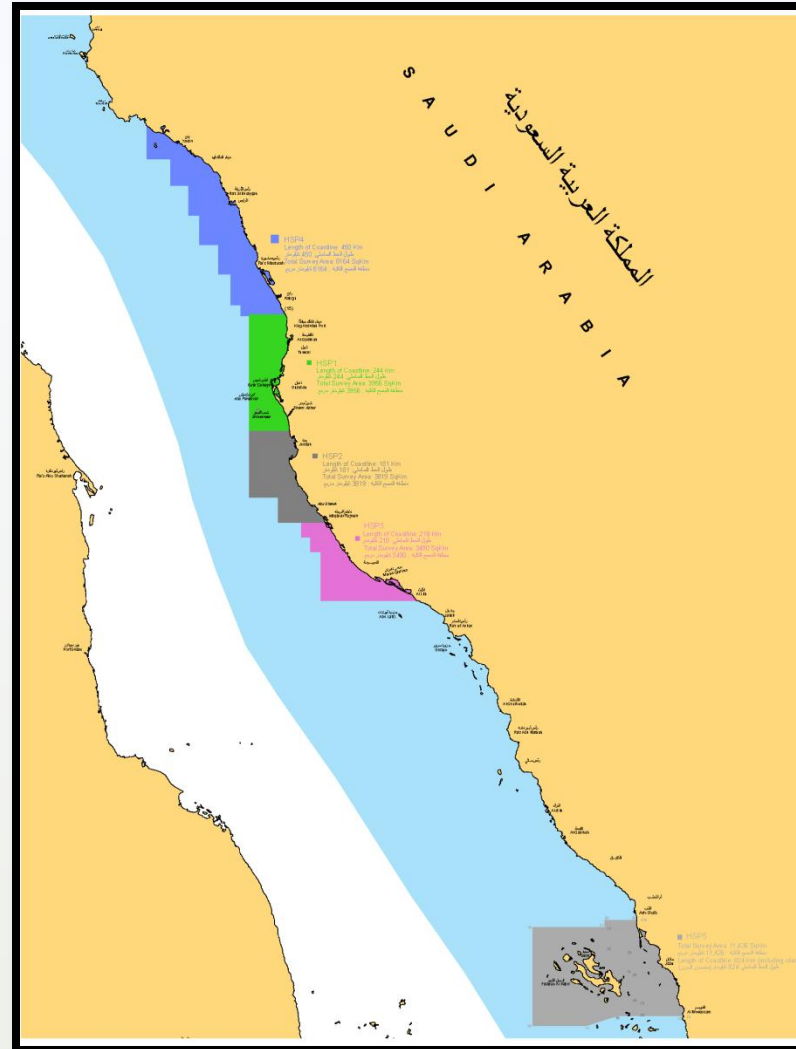
- Careful consideration by management.
- Formal training in Hydrography, Marine Cartography, Marine Sciences, Database Management, Information Technology.
- Standards – recruitment to assessment ?
- Participation – IHO meetings & conferences.
- On job training built into projects.
- Performance oriented assessment.
- Progressive intake versus plan schemes.
- Empowerment of Saudis under guidance of foreign experts & with documentation.



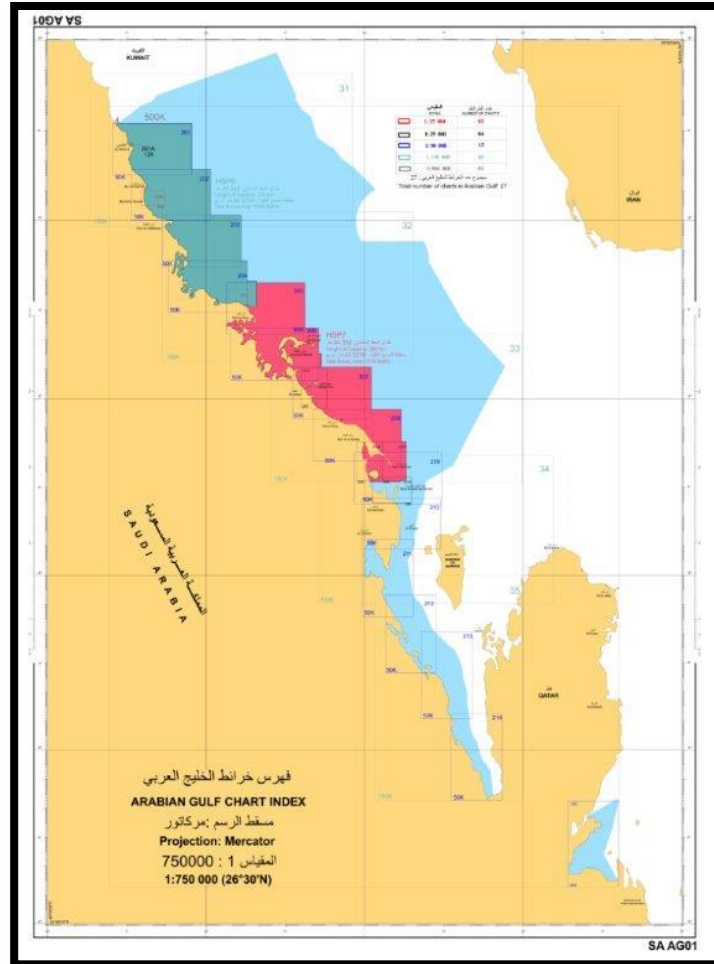
CONCLUSION

- Well started on many fronts of a National Hydrographic Office.
- Momentum since becoming official representative at the IHO since Jan 2012.
- Well considered approach to development of a credible hydrographic office.
- Open to cooperation from industry and other national organizations.
- Aim – regional leader in hydrography.

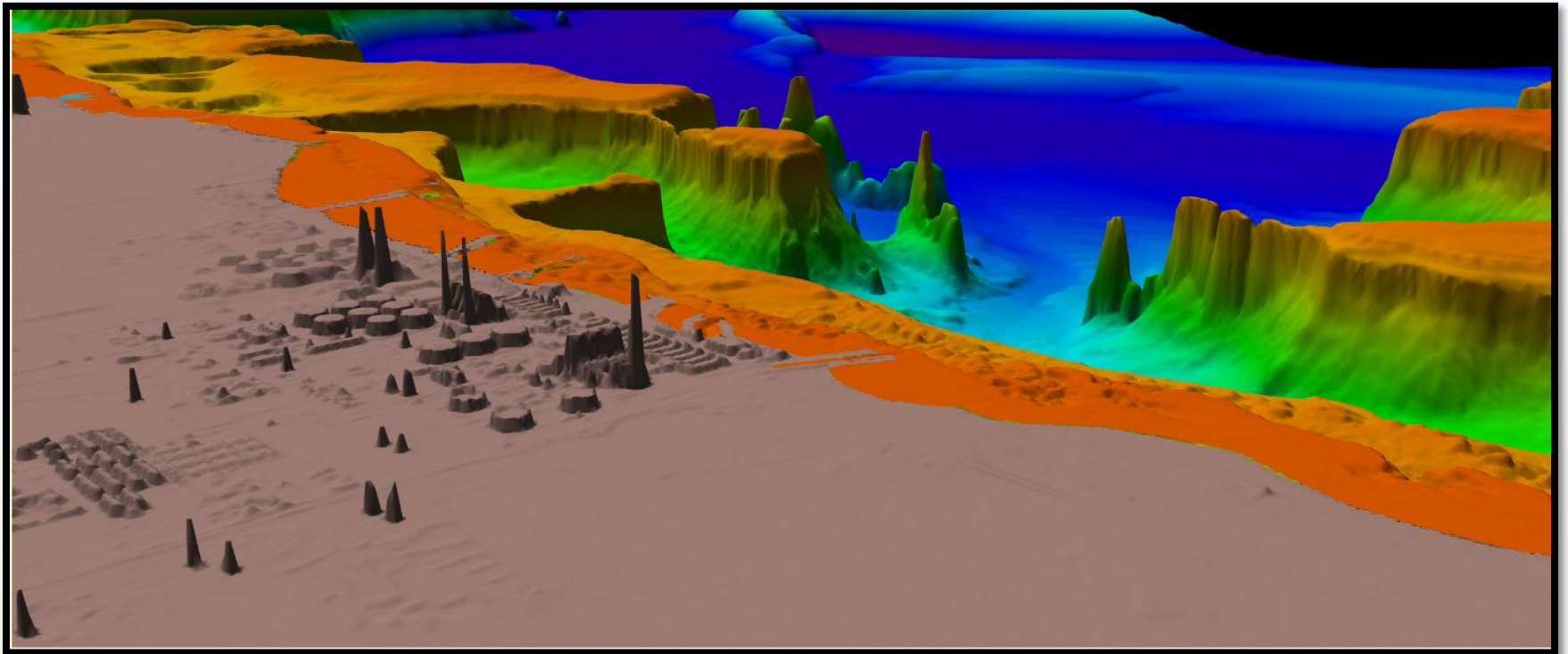
HSPs (1 TO 5) Coverage in Red Sea



HSPs 6 & 7 IN ARABIAN GULF

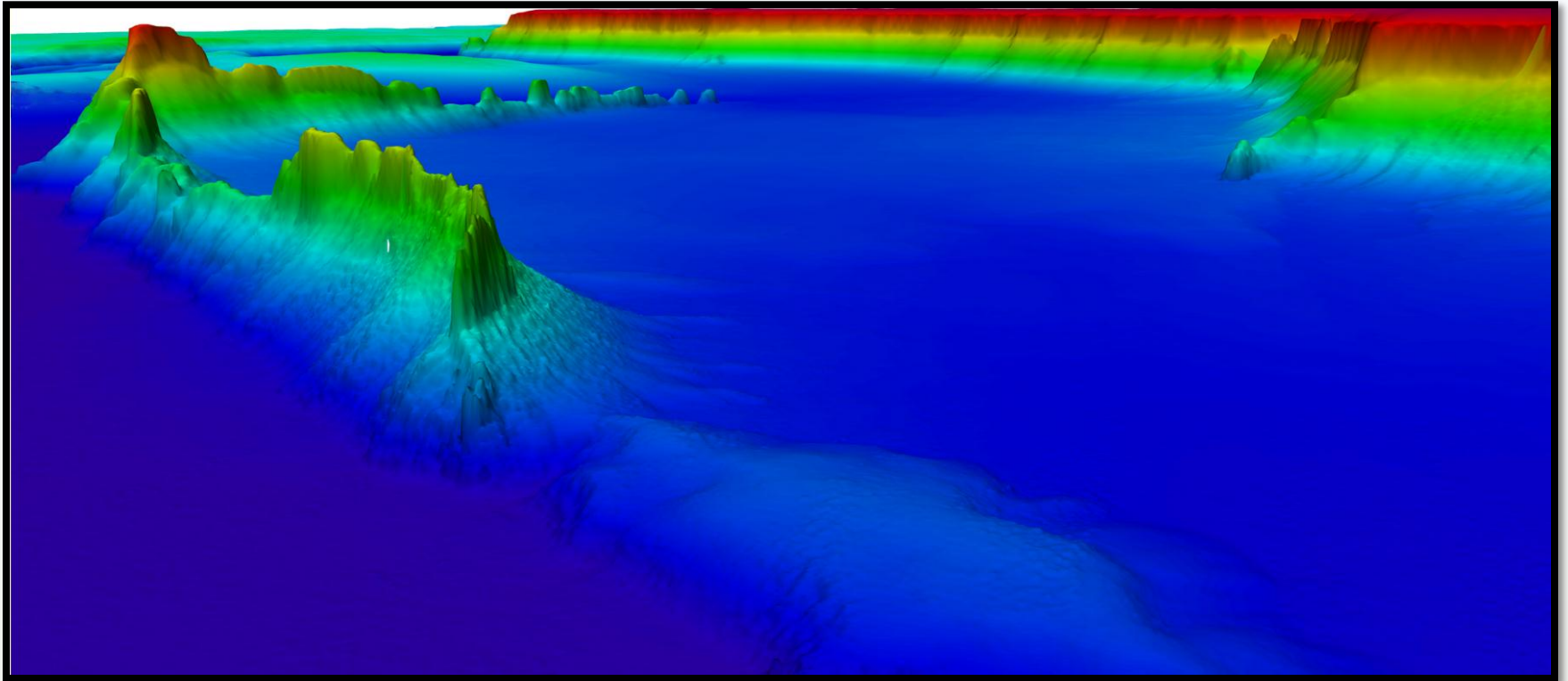


Images From Red Sea Hydrographic Surveys



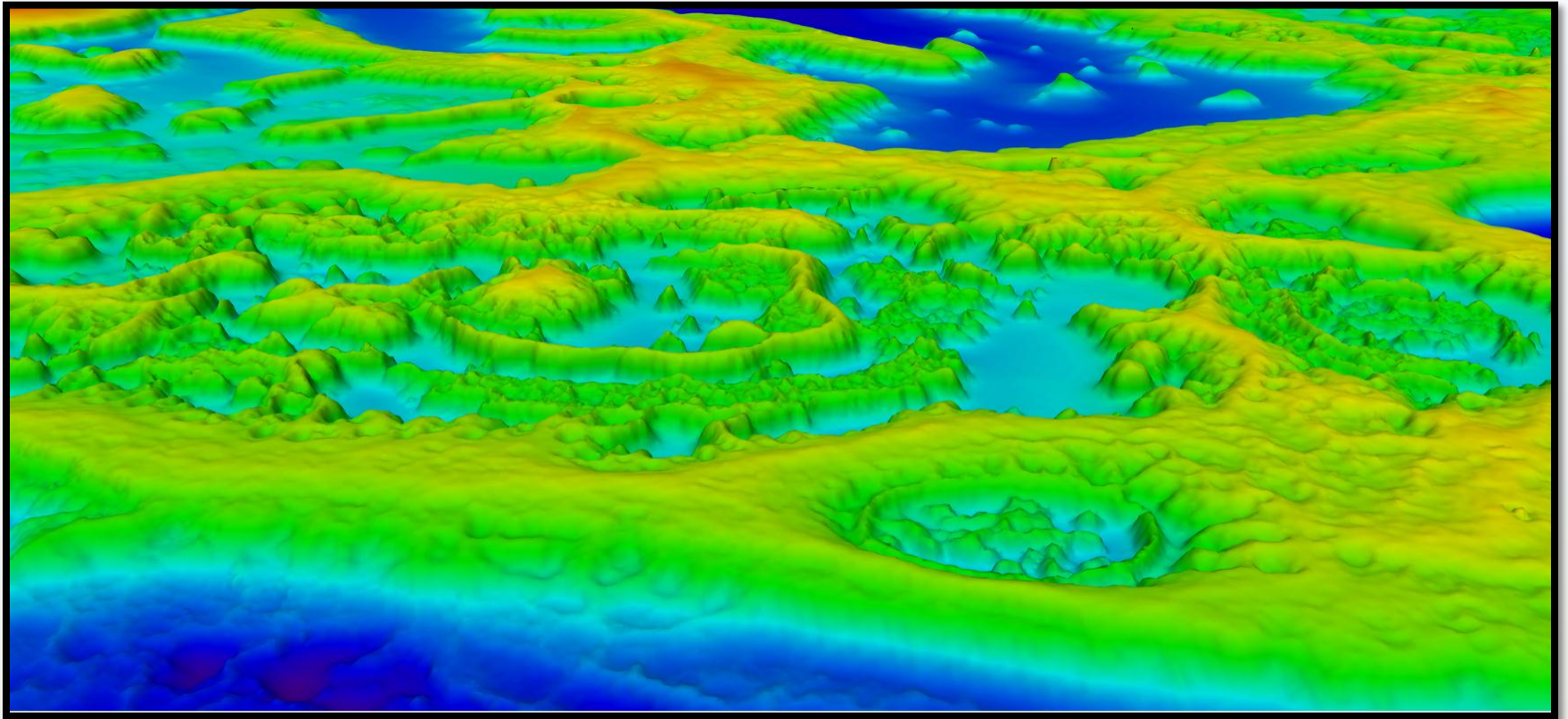
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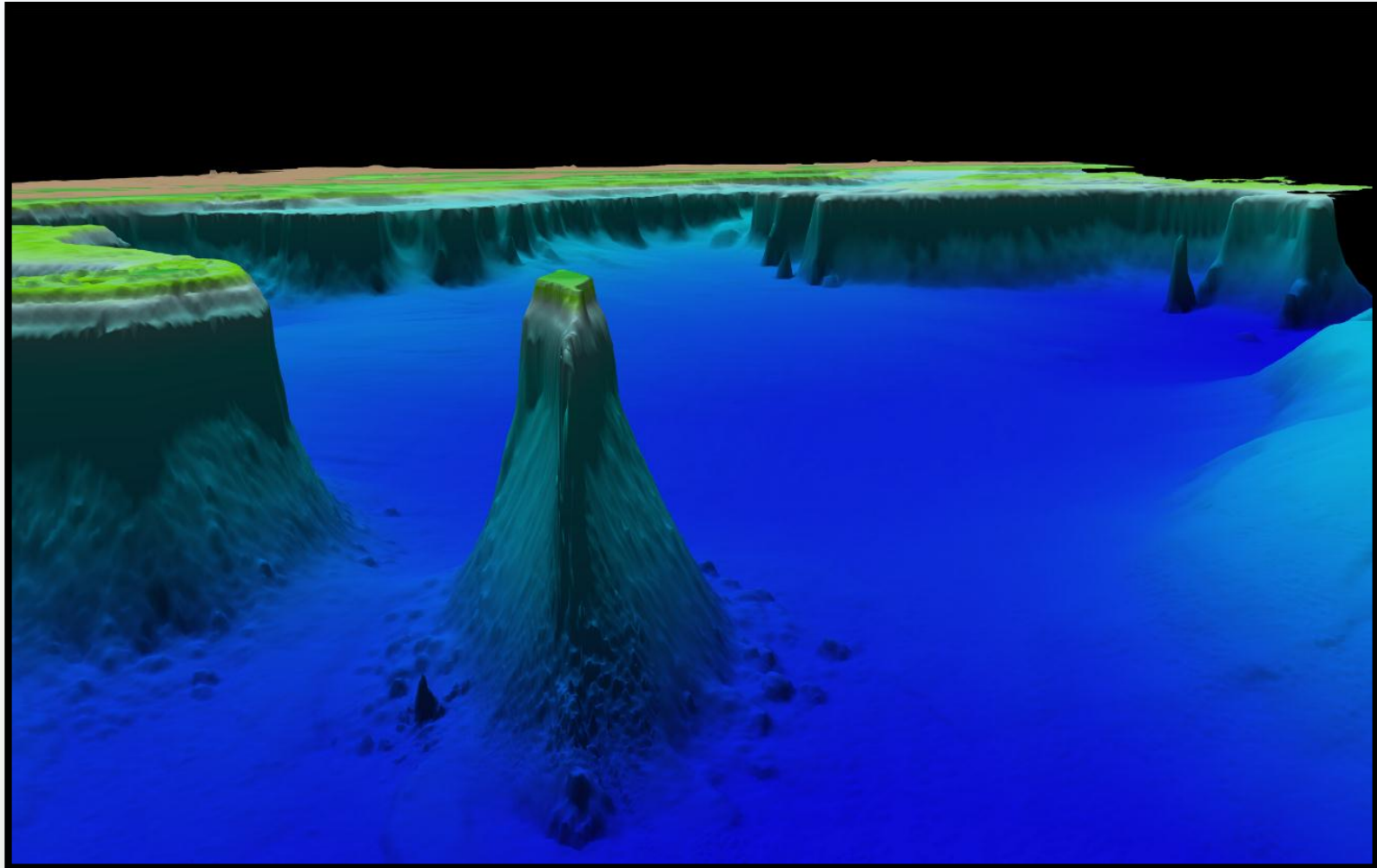
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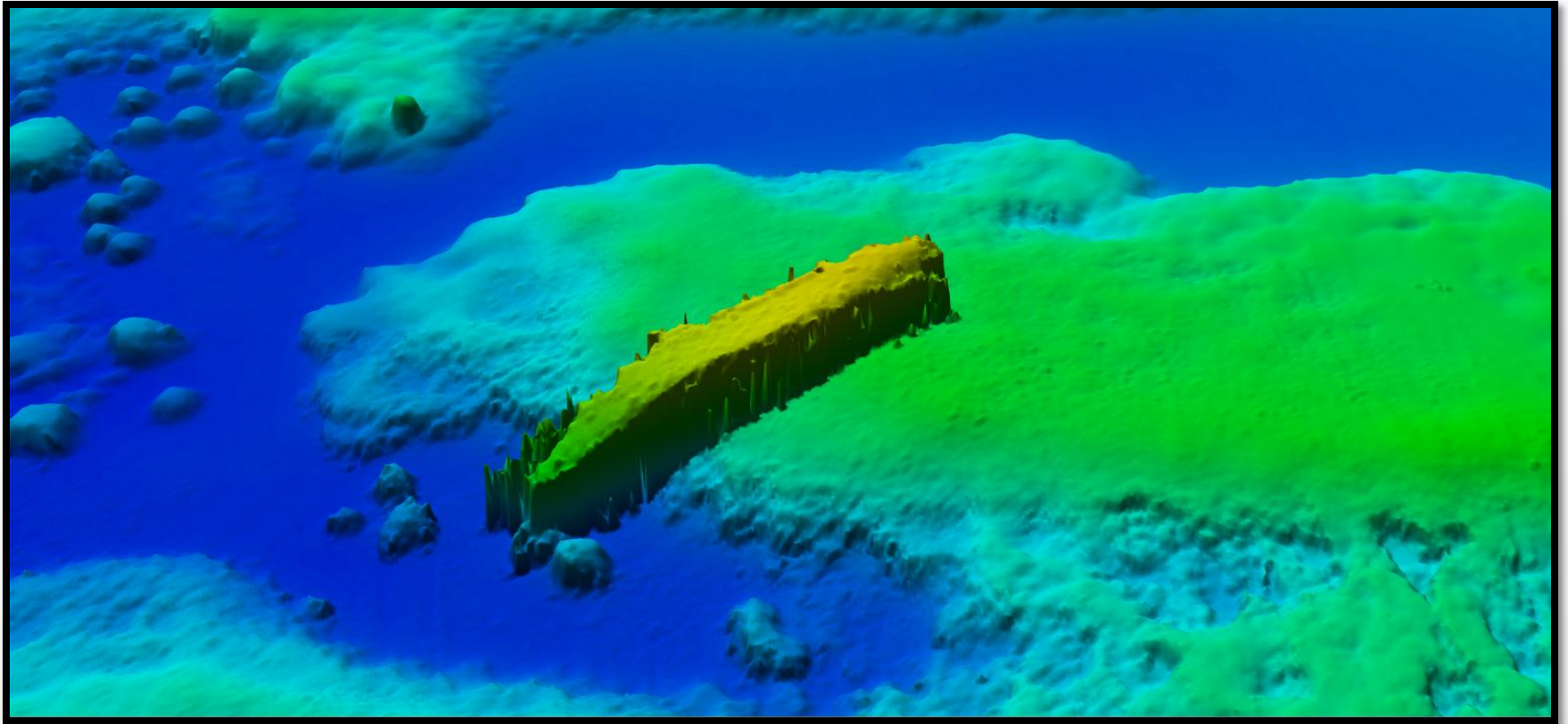
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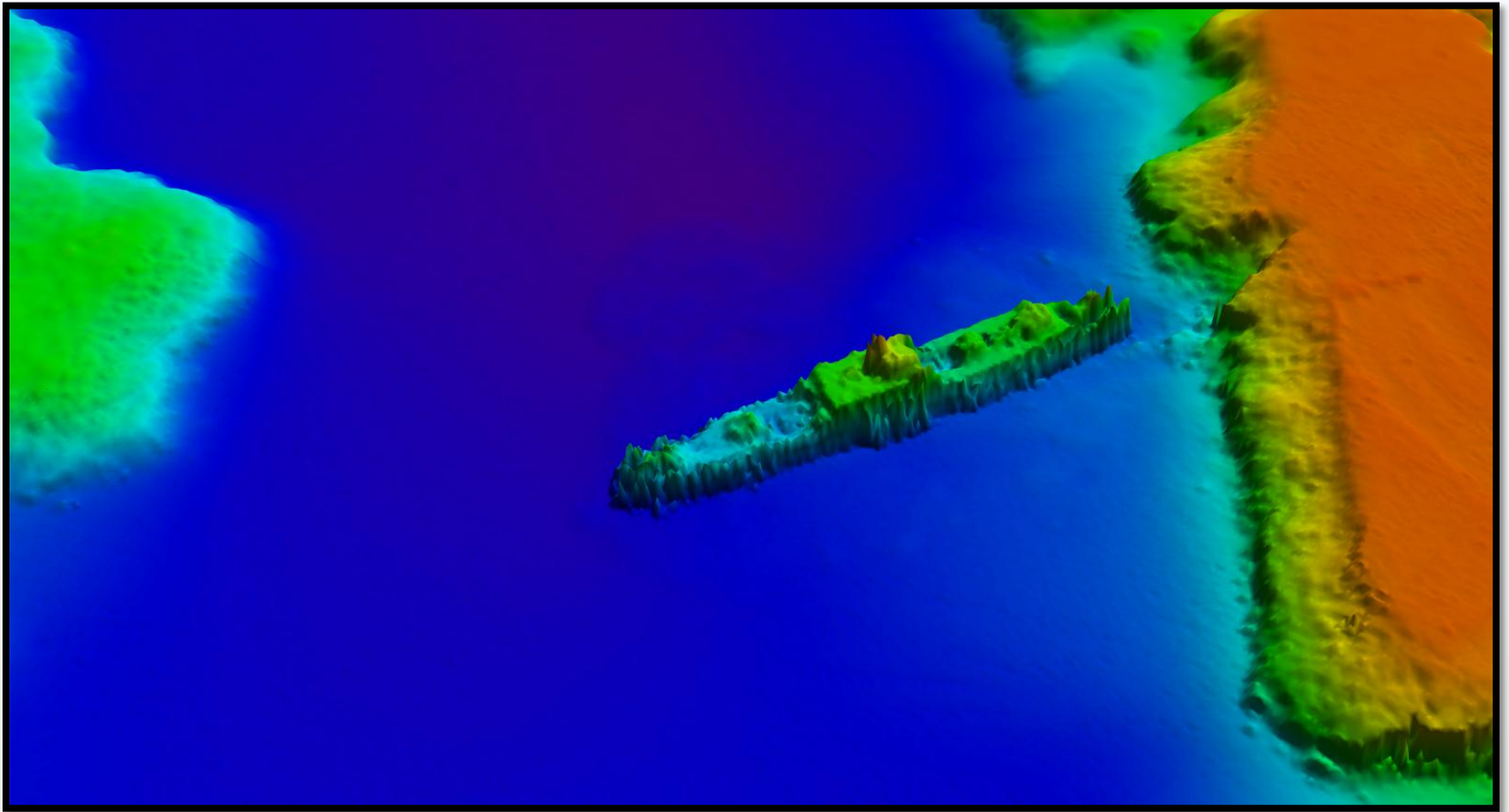
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Images From Red Sea Hydrographic Surveys



VIDEO ON COMPLEX MARINE GEOLOGY IN RED SEA

