

Update from Google Ocean



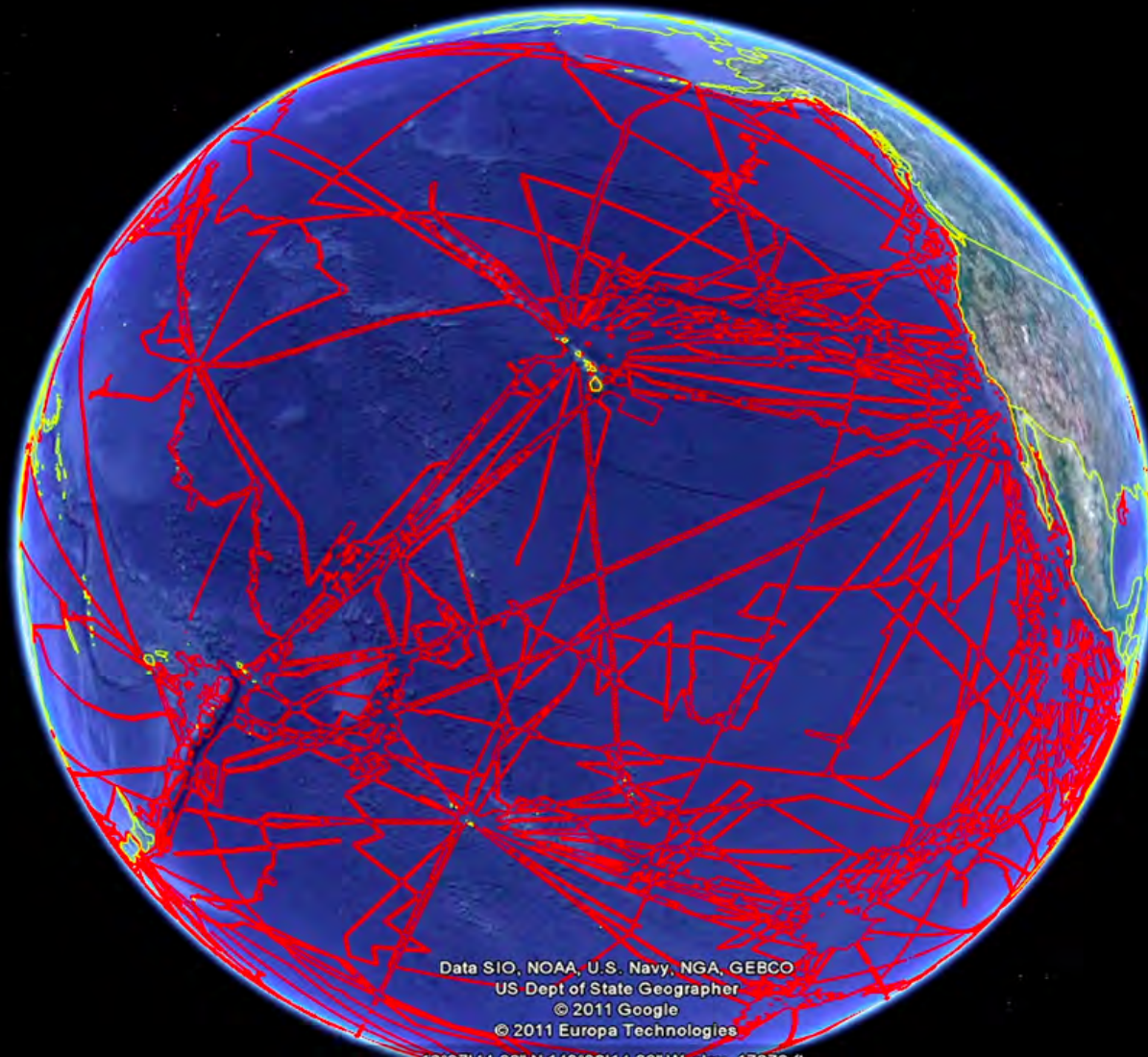
New Data, Google Maps Engine.

Jenifer Austin Foulkes

Manager, Google Ocean Program



Multi-resolution ocean map in Google Earth

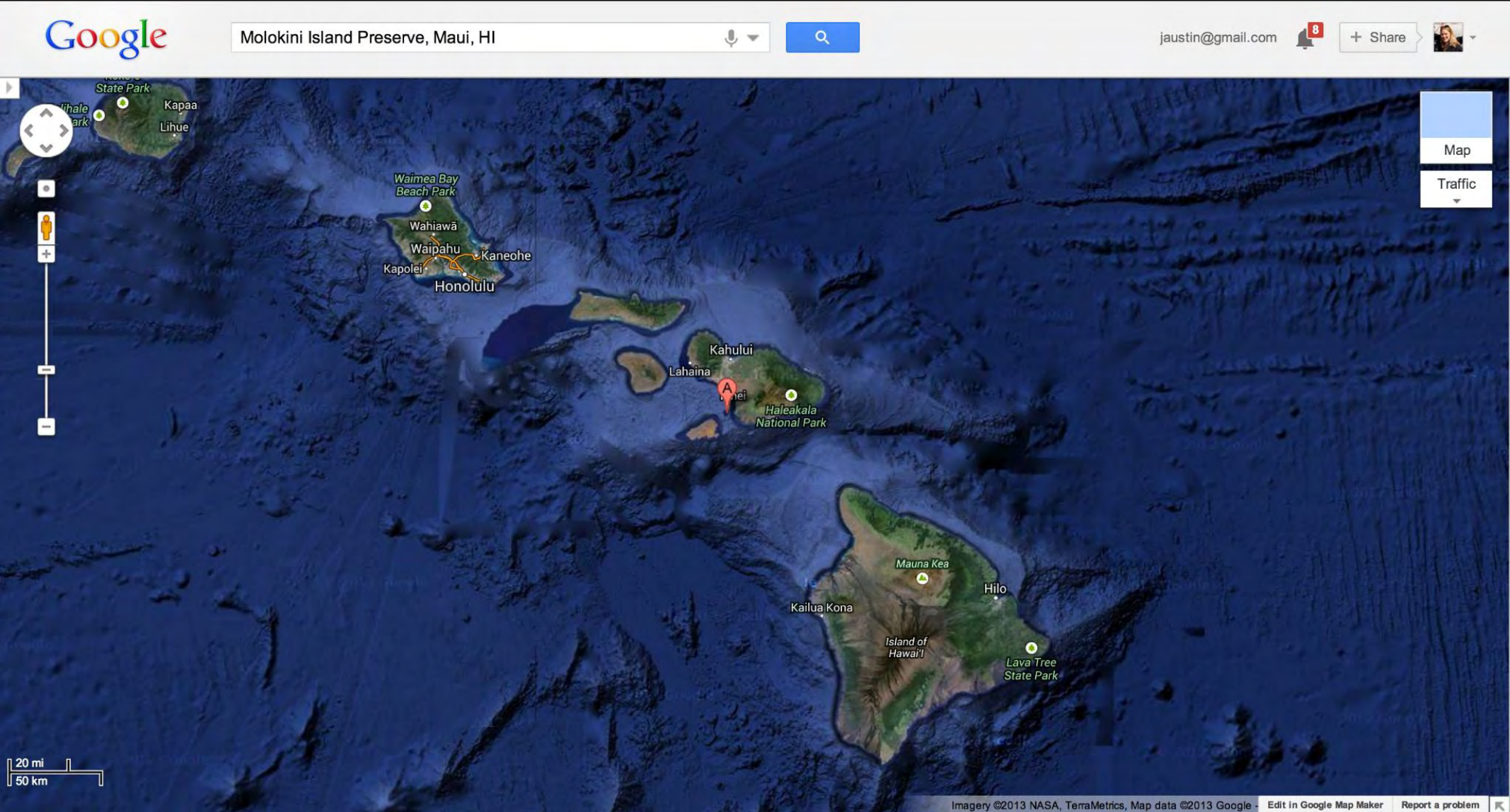


Data SIO, NOAA, U.S. Navy, NGA, GEBCO
US Dept of State Geographer
© 2011 Google
© 2011 Europa Technologies

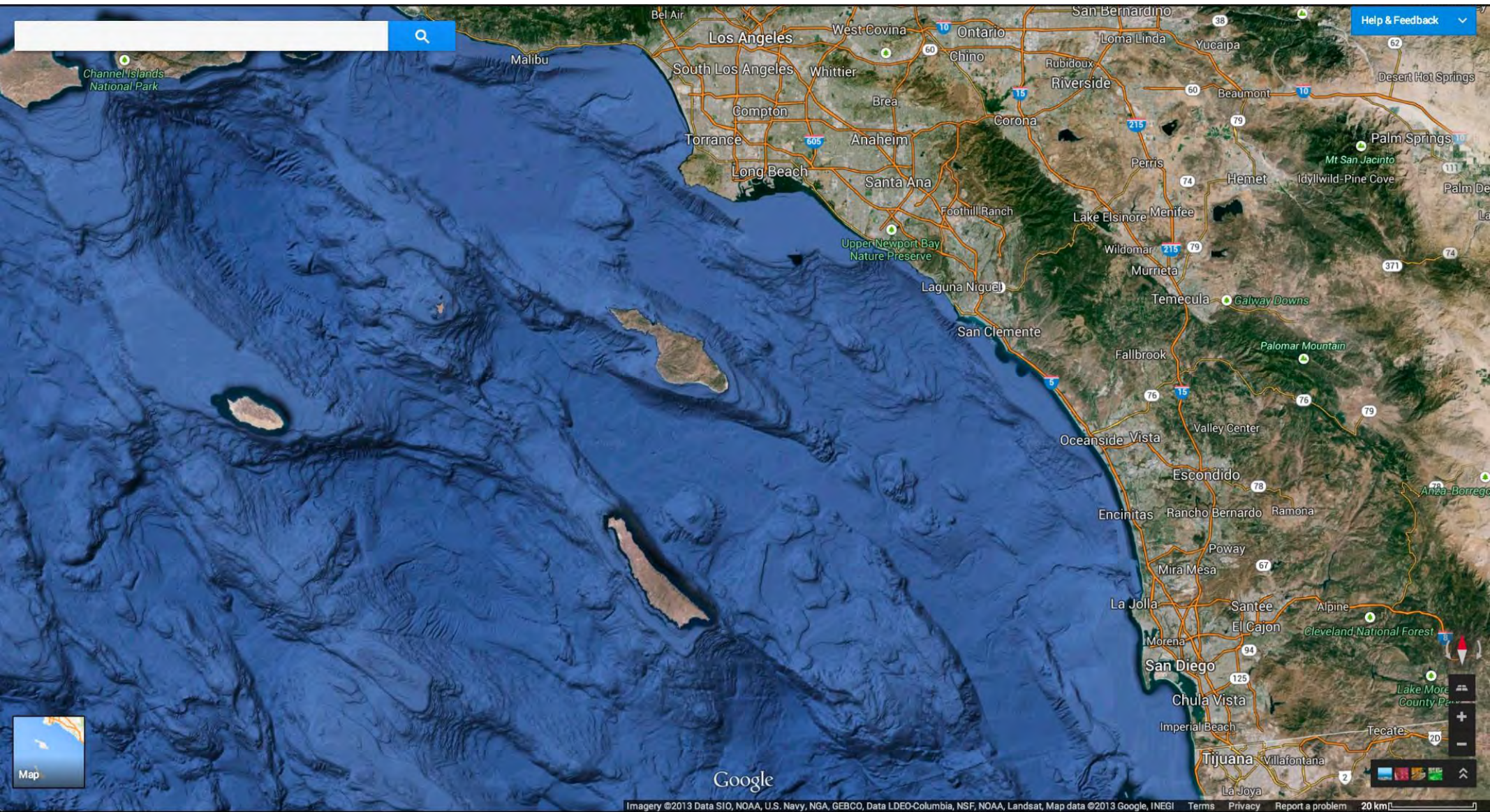
©2010 Google™



Over a billion people use Google Maps every month



New Google Maps



Ocean Map: \$3.5 billion ocean map data synthesis today.

Global 1 km, low resolution grid for the entire ocean from Scripps/UCSD/NOAA/NGA/US Navy/GEBCO. Version 4 published 2/2/2009. +Version 7 published 2/2/2012

100 meter resolution synthesis covering 5% of the ocean from Columbia University/Lamont Doherty.

+Published 6/8/2011, on World Oceans Day.

+3 MILLION miles traveled: An area larger than North America: [~16,524,000 sq km]

+Over 500 ship cruises from 20 organizations: Antarctic Support Associates, Columbia University, The Leibniz Institute of Marine Sciences at the University of Kiel (IFM-GEOMAR), Monterey Bay Aquarium Research Institute (MBARI), SHOA, Hydrographic and Oceanographic Service of the Chilean Navy, University of California at San Diego's Scripps Institute of Oceanography, University of Hawaii, University of Washington, US Coast Guard, US National Oceanographic and Atmospheric Administration (NOAA), US Navy, Woods Hole Oceanographic Institution

Other Bathymetry published in Google Ocean Map:

- University of Hawaii at Manoa 50 meter synthesis
- Japan Hydrographic Association coast 30 meter bathymetry. (Sugua Bay)
- 6 & 10 meter Massachusetts Bay data from USGS Woods Hole center.
- CSU Monterey Bay CA coastal survey out to 3 nautical miles; 1-2 meter.
- UNH/NOAA/University of Stockholm IBCAO arctic synthesis
- MBARI bathymetry- Monterey Bay 1 m, Oregon, Seamounts, Southern California
- Lake Baikal, Russia bathymetry from Universite Gent
- NOAA Great Lakes bathymetry
- Oregon State data for American Samoa & eastern underwater volcanoes and islands in W. Pacific: Tinian Island, Maug Island, Kingman Island, Johnston Atoll, Rose Atoll, Palmyra Atoll, Saipan Island, Alamagan Island (N. Marianas).
- NOAA Pacific Islands benthic bathymetry (from Hawaii)
- NOAA NGDC Gulf of Mexico bathymetry
- IBCAO Arctic Synthesis with University of Stockholm and many others.



World Ocean Day first feature of NOAA NGDC bathymetry pipeline.



Google Maps

1,763,780 people have them in circles



Google Maps

Shared publicly - Jun 8, 2013

#Ocean

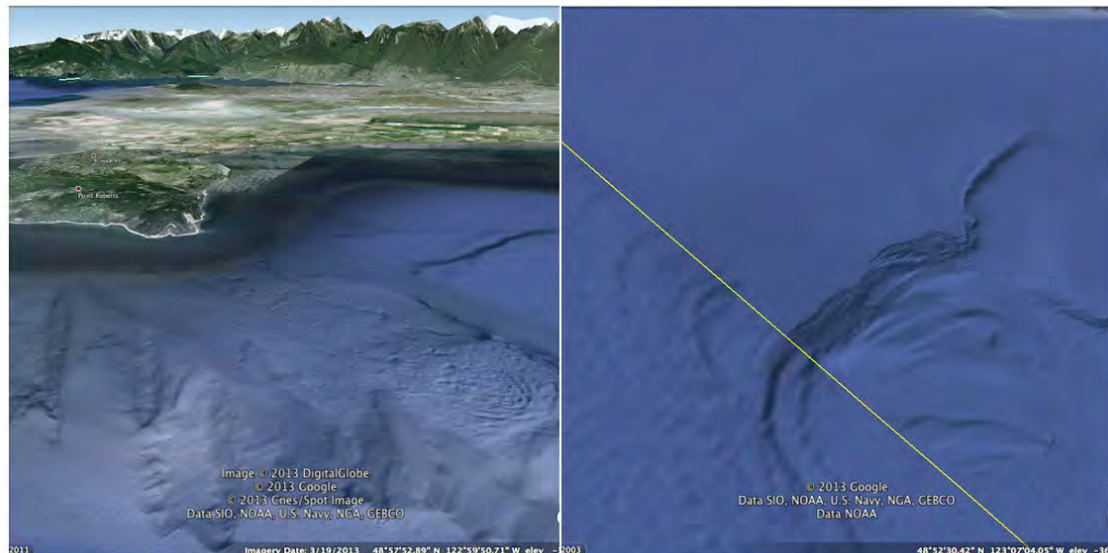
On **World Oceans Day**, it's the perfect time to dive in and explore!

You can download a Google Earth tour list at <http://goo.gl/jyDan> - let us know if you have any favorite spots to share in the comments!

Google Earth originally shared:
Revealing the Ocean on World Oceans Day!

Here's a sneak preview of our work to improve our ocean map in Google Earth and Maps in partnership with NOAA's National Geophysical Data Center (<http://goo.gl/zZpPB>) and the University of Colorado CIRES program (<http://goo.gl/b3dGH>).

Explore more today by downloading this Google Earth tour list <http://goo.gl/jyDan>



+701

80



In Liquid Galaxy display at Oceanographic Museum in Monaco: Schmidt Ocean Institute MBARI Campache Escarpment.



2014 Expected Value of Ocean Map: \$10 b.

Schmidt Ocean Institute MBARI Campache Escarpment Gulf of Mexico Survey.

NOAA NGDC Pipeline bathymetry- 8 datasets published on World Ocean Day. Additional few hundred soon. Additional datasets.

2014: NOAA Tsunami Inundation grids.

Oct 29: Publish 1st Update to: 100 meter resolution synthesis covering 5% of the ocean from Columbia University/Lamont Doherty.

+Version 1: Published 6/8/2011. 400 cruises.

+Version 2: Additional **195 cruises** (representing 2 years of work) from 16 research vessels.

2014:

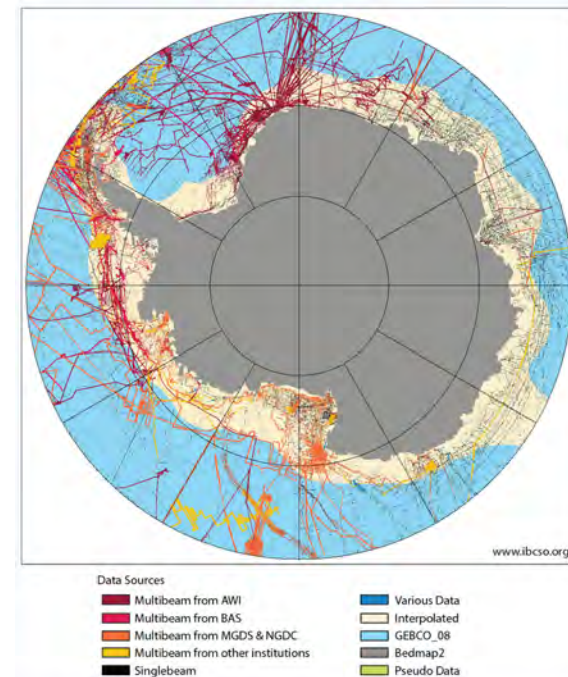
Global 1 km, low resolution grid for the entire ocean from Scripps/UCSD/NOAA/NGA/US Navy/GEBCO.

- Version 9. Adding 3 altimetry satellites worth of data.

CSU Monterey Bay CA coastal survey update out to 3 nautical miles; 1-2 meter.

2014: License new Bathymetry

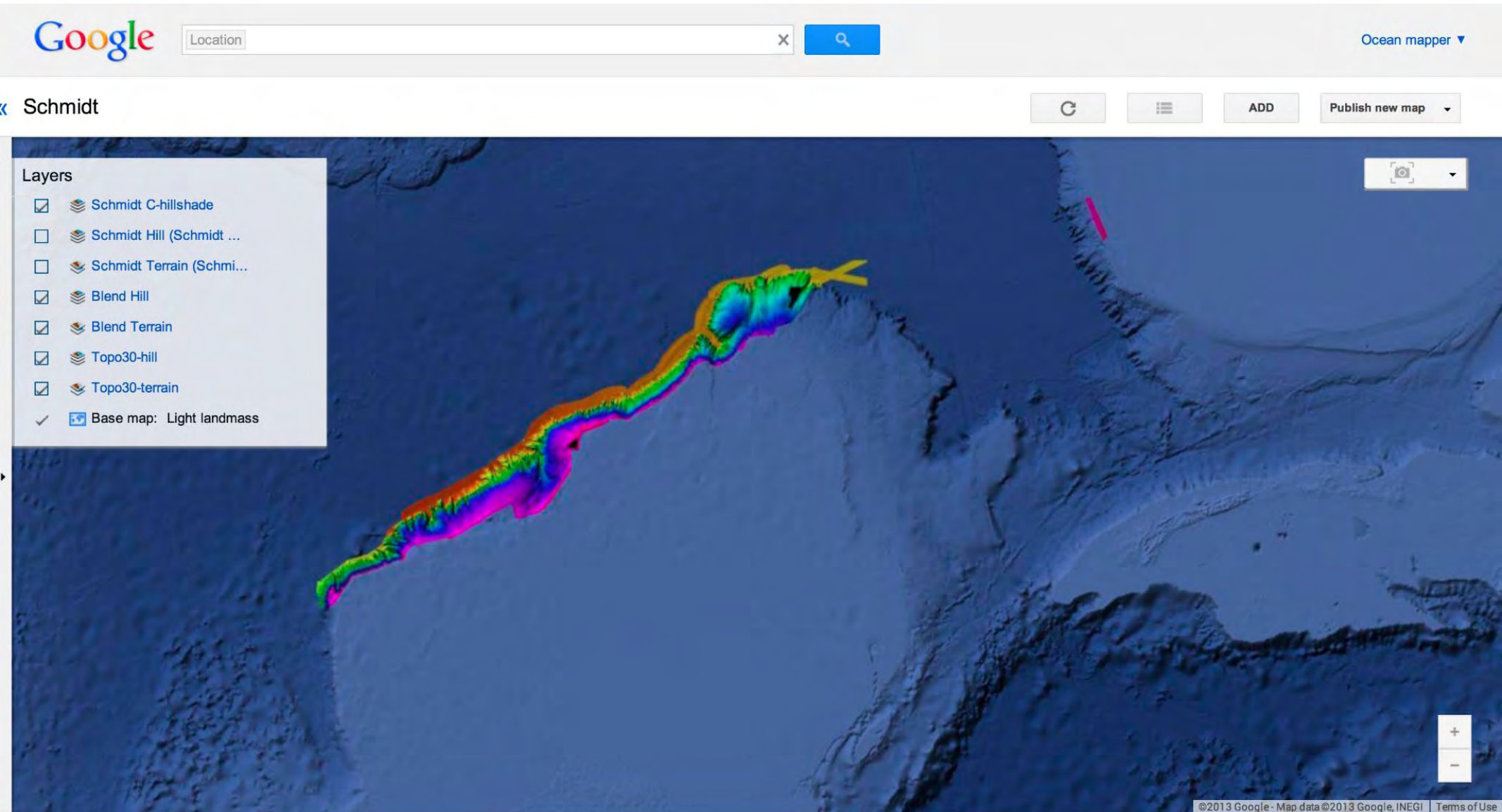
- ?Antarctica synthesis with Alfred Wegner. 177 cruises.
- Ireland, Others?



Need more arctic mapping....

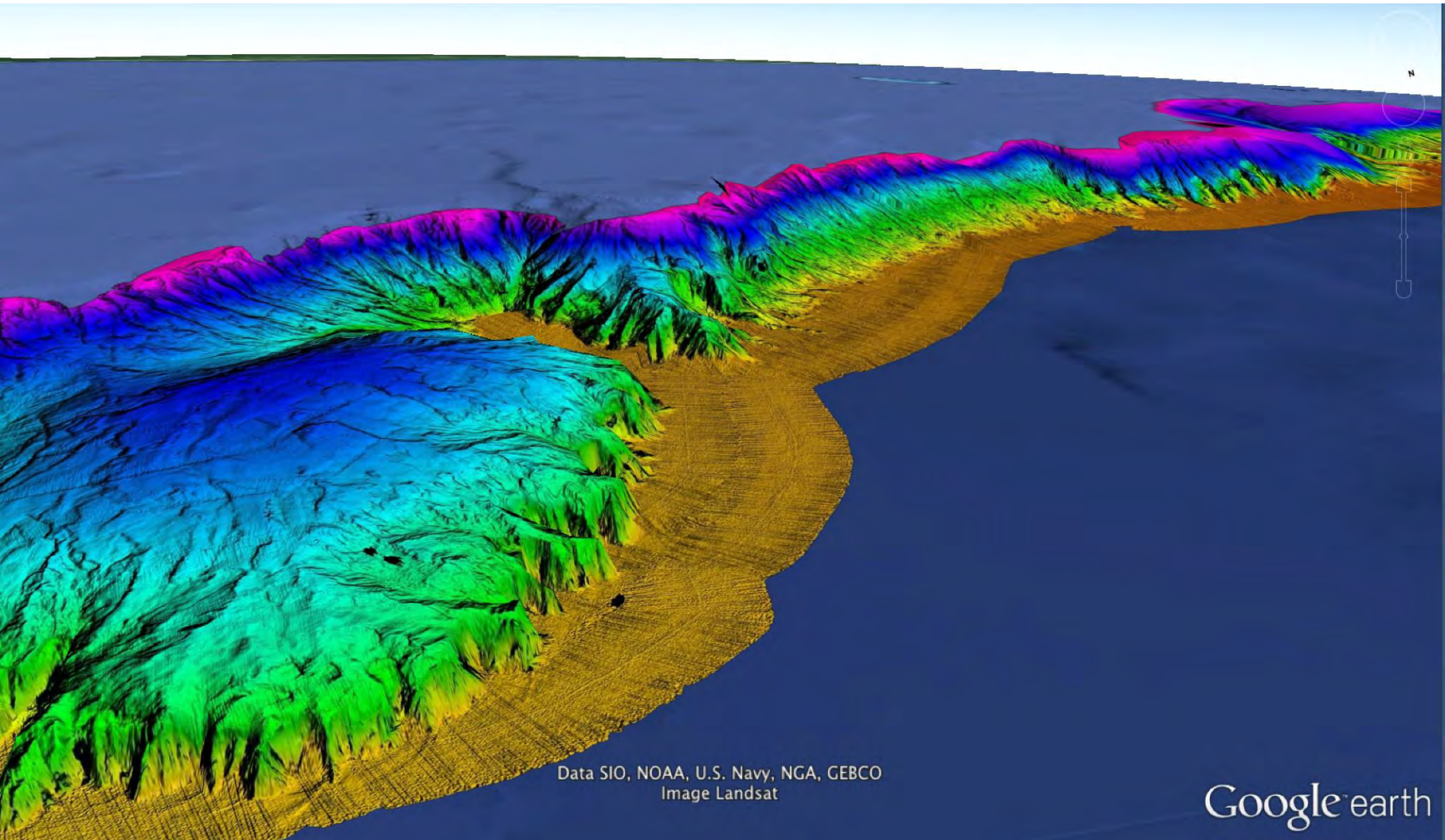


Build your own maps with Google Maps Engine



Schmidt Ocean Institute- MBARI: KT Boundary Gulf of Mexico Survey: understanding the asteroid impact that wiped out the dinosaurs: <http://www.schmidtocean.org/story/show/1185>.

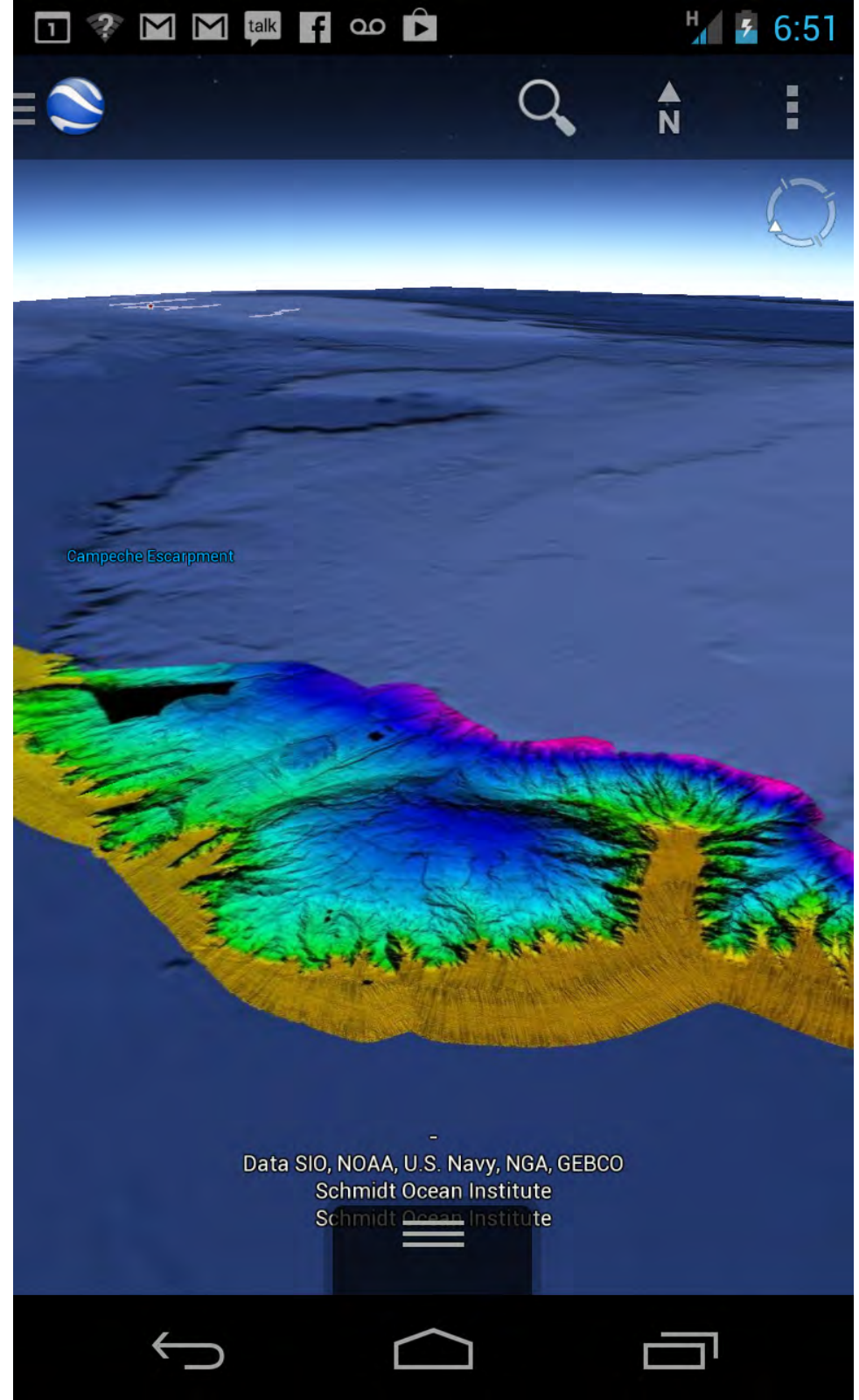
View your own terrain synthesis built with Google Maps Engine in 3d in Google Earth



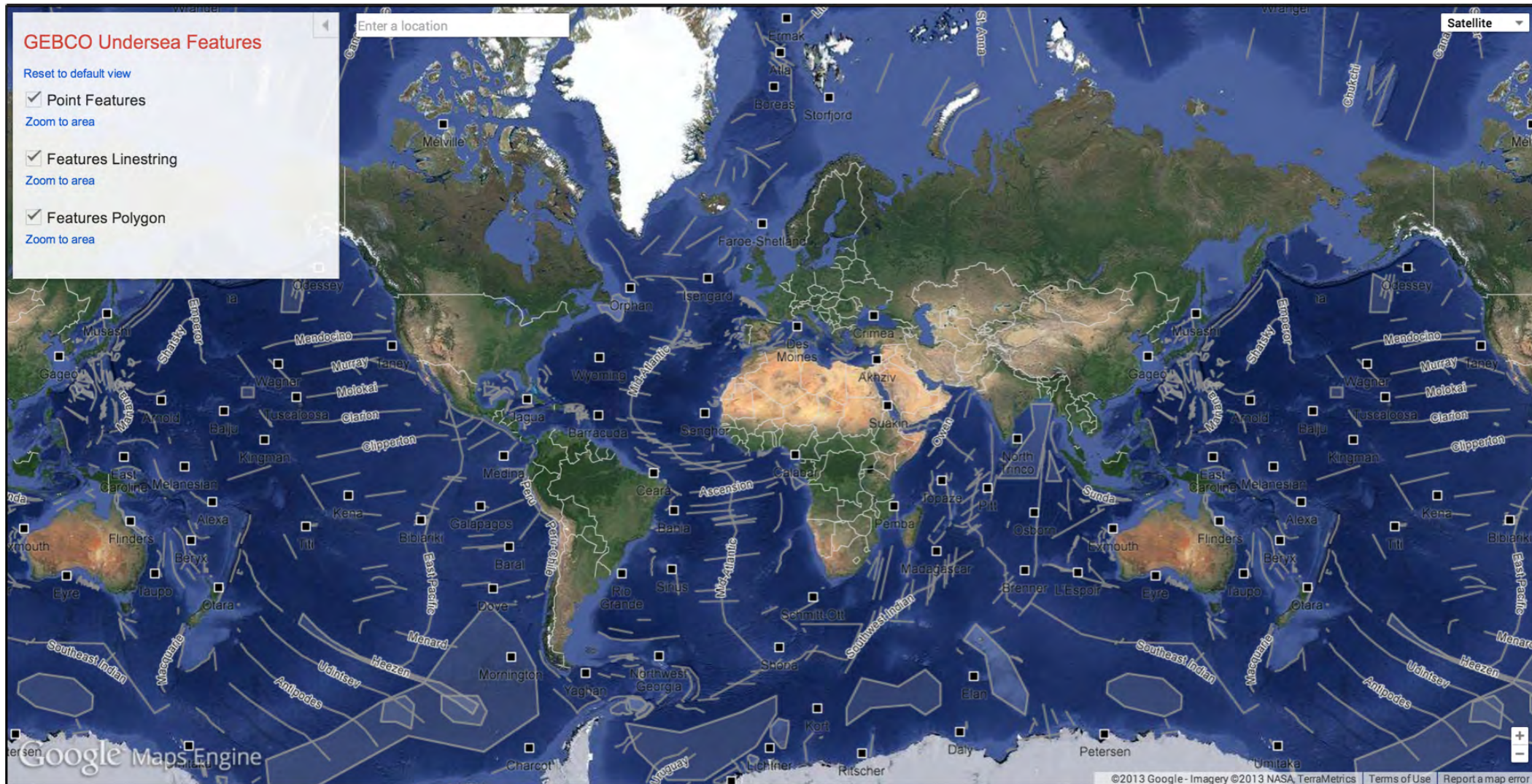
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat

Google earth

Send to a mobile device



Publish to Maps Gallery: GEBCO undersea features names.



Google Maps Engine Grant.



Google Maps Engine for Nonprofits & Researchers

As a part of Google Earth Outreach, we grant Google Maps Engine licenses to qualifying organizations who demonstrate a need to host, style, manage and publish their geospatial data in the cloud. Google Maps Engine has a rich set of capabilities for cloud-hosted spatial data management, cartographic styling, publishing and access control.

[Apply for a Grant](#)

Google Maps Engine is for organizations who have lots of raster and vector data and are excited to use the cloud-based infrastructure to store, process and publish this data. Set different access permissions for who can view, edit, or publish your map data.

[Learn more about Google Maps Engine.](#)

Before applying for a grant, make sure the product will meet your needs! [Learn More](#)



WWF and Eyes on the Forest use Maps Engine to show deforestation in Sumatra

WWF and its Sumatran partner organization, Eyes on the Forest, are using Google Maps Engine to document historical rates of deforestation in Sumatra and how the habitat of endangered tigers, rhinoceros and elephants are literally shrinking before our eyes.

"Google Maps Engine gives us the ability to take all this information that we have crammed into computers all over the world and to get it up on the cloud and to serve it up on a platform where people can ask for the information they want and use it to tell stories that are powerful." - Carter Roberts, CEO of WWF

[Read the full case study](#)

Google Maps Engine Grants accounts include:

- 10GB Storage quota for raster and vector datasets
- 250,000 internal pageviews
- 10 Million external pageviews for publishing data on public-facing websites
- Technical Support (however, the support team will prioritize paying customers over grantees)

Eligibility and How to Apply

Nonprofits: All organizations must be able to provide proof of charitable tax-exempt status and meet our [Policy Guidelines](#).

In the United States - Click "Apply for a Grant" above to apply for Google Maps Engine. It may take up to 3 months for your Maps Engine grant request to be reviewed.

To be eligible for a grant, organizations must have current [501\(c\)\(3\) status](#), as assigned by the Internal Revenue Service and meet the other Google for Nonprofits [eligibility requirements](#). Please click on the "Apply for a Grant" link above to apply.

Academic Research Departments: Academic faculty must be using the product for research purposes (not for teaching or classroom use - we are working on offering a

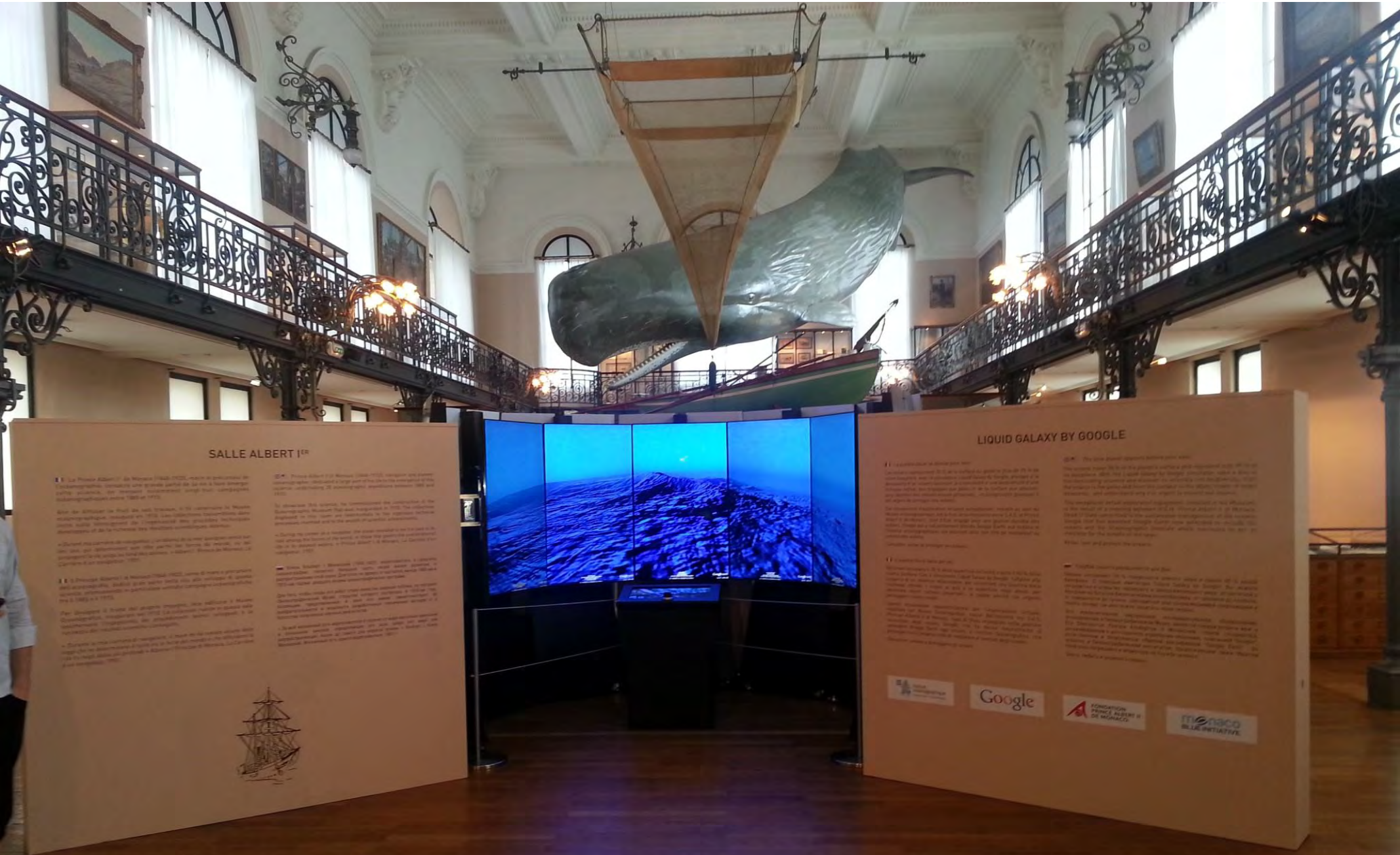
Embed maps api on your site.



Panoramio Map



Liquid Galaxy @ Oceanographic Museum in Monaco



SALLE ALBERT I^{ER}

1 Le Prince Albert I^{er} de Monaco (1848-1922), maron et grand marin, fut le fondateur, sous le grand patronage de sa mère la Reine Charlotte, de l'Institut Océanographique de Monaco, qui fut le premier institut de ce genre au monde. Il fut également le fondateur de l'Observatoire de la Mer de Monaco, qui fut le premier observatoire de ce genre au monde.

2 Le Prince Albert I^{er} de Monaco (1848-1922), maron et grand marin, fut le fondateur, sous le grand patronage de sa mère la Reine Charlotte, de l'Institut Océanographique de Monaco, qui fut le premier institut de ce genre au monde. Il fut également le fondateur de l'Observatoire de la Mer de Monaco, qui fut le premier observatoire de ce genre au monde.

3 Le Prince Albert I^{er} de Monaco (1848-1922), maron et grand marin, fut le fondateur, sous le grand patronage de sa mère la Reine Charlotte, de l'Institut Océanographique de Monaco, qui fut le premier institut de ce genre au monde. Il fut également le fondateur de l'Observatoire de la Mer de Monaco, qui fut le premier observatoire de ce genre au monde.



LIQUID GALAXY BY GOOGLE

1 The Liquid Galaxy is a virtual reality experience that allows you to explore the depths of the ocean in a way that has never been possible before. It is a collaboration between Google and the Monterey Bay Aquarium, and it is the result of a partnership between Google and the Monterey Bay Aquarium.

2 The Liquid Galaxy is a virtual reality experience that allows you to explore the depths of the ocean in a way that has never been possible before. It is a collaboration between Google and the Monterey Bay Aquarium, and it is the result of a partnership between Google and the Monterey Bay Aquarium.

3 The Liquid Galaxy is a virtual reality experience that allows you to explore the depths of the ocean in a way that has never been possible before. It is a collaboration between Google and the Monterey Bay Aquarium, and it is the result of a partnership between Google and the Monterey Bay Aquarium.



Liquid Galaxy Google Plus hangouts on Air


The image is a collage of YouTube content. At the top, the YouTube logo and search bar are visible. Below, there are several video thumbnails and player screenshots. The main video shown is titled "Google's Ocean Program Plus Hangouts on Air" by Jenifer Austin, with a progress bar at 4/16. A sidebar on the right lists several related videos, all titled "Bob Ballard joins us in Liquid Galaxy Google Ea..." by Jenifer Austin. Below this, another video titled "IUCN Google Ocean Storytelling Panel Jeju, Korea 2012" by Jenifer Austin is shown, with a progress bar at 1/19. The bottom left shows a video player with a progress bar at 1:25 / 3:15. The bottom right shows a video player with a progress bar at 19:43 / 26:26 and a small grid of video thumbnails. A URL <http://goo.gl/biwly> is displayed in the bottom right corner.

<http://goo.gl/biwly>

Explore the Ocean education layer in Google Earth.


The image shows a Google Earth interface with a 3D map of the Venetian lagoon region. The map is overlaid with various colored lines (yellow, green, purple) representing different ocean education layers. A popup window titled "Saving Venice" is open, displaying a photograph of a Venetian canal and providing text about environmental issues. The popup includes a close button (X) in the top right corner. The map shows cities like Ferrara, Modena, Verona, Vicenza, Mirano, Mestre, Venice, Chioggia, and Treviso. The "Province of Venice" and "Province of Rovigo" are also labeled. The Google Earth interface includes navigation controls on the right side and a status bar at the bottom.

Saving Venice
[Scripps Institution of Oceanography/UC San Diego](#)



The historic city calls upon Scripps and a multifaceted team of experts to help decipher the mysteries lying beneath its waters. Venice officials must consistently grapple with environmental issues related to sediment processes, as the shallow lagoon must continually be dredged to allow a steady stream of commercial vessels and cruise ships.

Learn More:
[Scripps Institution of Oceanography](#)
[Saving Venice](#)
[Scripps' Explorations E-magazine](#)

Curated by  MISSIONBLUE

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
© 2013 Google
© 2009 GeoBasis-DE/BKG

Google earth

45°18'56.74" N 12°26'00.62" E elev -56 ft eye alt 20.79 mi

Explore the Ocean education: Mission Blue site.

MISSION BLUE
SYLVIA EARLE ALLIANCE

[DONATE NOW!](#)

[LATEST](#) [HOPE SPOTS](#) [PARTNERS](#) [EXPEDITIONS](#) [ABOUT](#) [PHOTOS](#) [GOOGLE EARTH](#) [ACT](#) [SHOP](#)

italy Discover ocean stories around the globe. Search or explore on your own. [ShareThis](#)

Natural Acidification Near Ischia

Mount Vesuvius and the Island of Ischia

Mount Vesuvius is an active volcano that has created a naturally acidified area off the coast of Ischia, Italy that has existed for millennia. Marine ecologist Dr. Jason Hall-Spencer (University of Plymouth, UK) studies this area, saturated in carbon dioxide, as a microcosm of what the future sea might be.

[Learn more about ocean acidification](#)
[Read Dr. Jason Hall-Spencer's bio](#)
[See photographs on location in Ischia, Italy](#)
[Make a One Ocean Pledge to reduce your carbon emissions](#)
[Play games in your own undersea habitat](#)

Credits: [One Ocean Interactive](#) [Canadian Broadcasting Corporation](#) [National Geographic Channel](#) [Science Channel](#)

Image Landsat

Cloud hosting global satellite AIS ship tracking data.



<http://goo.gl/3kZuk>

Spacequest.

Underwater Earth's Catlin Seaview Survey: Reveal the reefs.





Underwater Streetview

<http://youtu.be/7syWPIZt9B4>

Google Plus: 3 million following

The image is a screenshot of a Google Plus profile for 'Catlin Seaview Survey'. The profile header shows the name 'Catlin Seaview Survey' and a 'Following' button. A post from April 2, 2013, is featured, titled '360 Panorama: Philippe Cousteau & CNN at Wilson Island'. The post text describes Philippe Cousteau driving a Catlin Seaview Survey scooter in front of a large coral. Below the text is a 360-degree panoramic photo of an underwater scene with a diver and a large coral formation. The post has '+1' and share icons. To the right of the post, the profile's website 'www.catlinseaviewsurvey.com' is listed, along with '+1' and share icons, and a follower count of '+3,002,707'. Below this is a 'View full profile' button. At the bottom right, there are options to 'Mute Catlin Seaview Survey' and 'Report / block Catlin Seaview Survey'. The left sidebar contains navigation icons for Home, Profile, Explore, Events, Communities, Photos, Find people, and Local. The top left shows the Google+ logo and a search bar.

Google+

Catlin Seaview Survey Following

Catlin Seaview Survey · Apr 2, 2013 (edited) · Public

360 Panorama: Philippe Cousteau & CNN at Wilson Island

Pictured here is the host of CNN's "Going Green" program Philippe Cousteau driving a Catlin Seaview Survey scooter in front of a huge 500 year old hard coral.

This image was captured by the SVII camera last year on Wilson Island when CNN came to film our project. You can catch the documentary as part of CNN's 'Going Green Ocean's week'.

Read more about the survey here: <http://www.catlinseaviewsurvey.com/>

[#photosphere](#) [#CNN](#) [#goinggreen](#) [#cousteau](#)

www.catlinseaviewsurvey.com

+1 ➦ +3,002,707

[View full profile](#)

Mute Catlin Seaview Survey
Report / block Catlin Seaview Survey

+1 ➦ +799 ➦ 171

Onward and downward.

