



Google
Developers

Underwater Streetview



Google Maps and Catlin Seaview Survey

Jenifer Austin Foulkes, Google Ocean Manager

Richard Vevers, Director, Catlin Seaview Survey





<http://youtu.be/7svWPIZt9B4>

Our goal: make Google Maps more comprehensive



Launched Underwater Street View

Google™ Official Blog
Insights from Googlers into our products, technology and the Google culture

Search

Dive into the Great Barrier Reef with the first underwater panoramas in Google Maps

September 25, 2012 774

Today we're adding the very first underwater panoramic images to Google Maps, the next step in our quest to provide people with the most comprehensive, accurate and usable map of the world. With these vibrant and stunning photos you don't have to be a scuba diver—or even know how to swim—to explore and experience six of the ocean's most incredible living coral reefs. Now, anyone can become the next virtual Jacques Cousteau and dive with sea turtles, fish and manta rays in Australia, the Philippines and Hawaii.



Get up close and personal with sea turtles at Heron Island, Great Barrier Reef

Starting today, you can use Google Maps to find a [sea turtle swimming among a school of fish](#), [follow a manta ray](#) and [experience the reef at sunset](#)—just as I did on my first dive in the Great Barrier Reef last year. You can also find out much more

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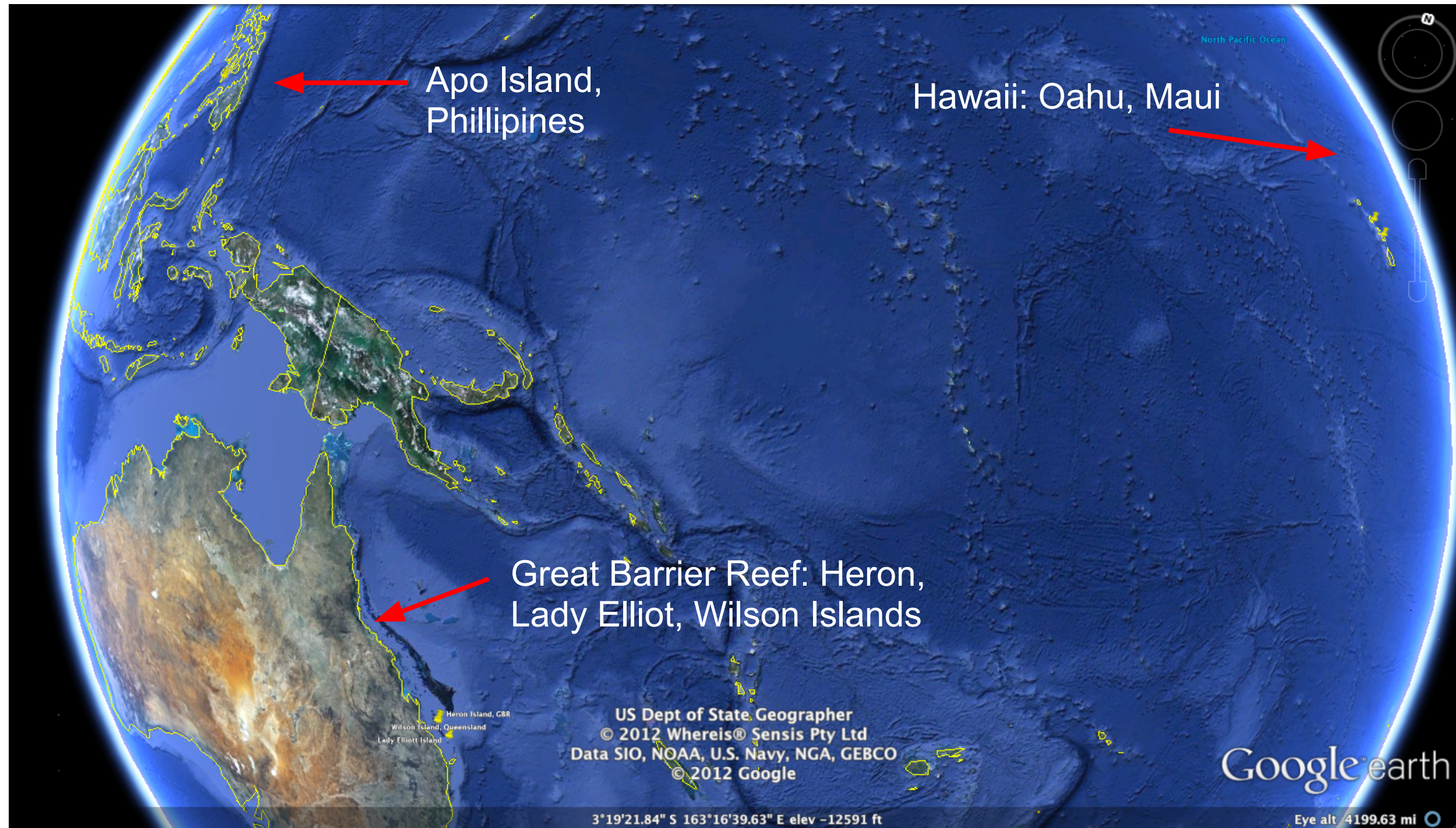
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Taking you from your home to a turtle's home



Just the beginning...six places so far

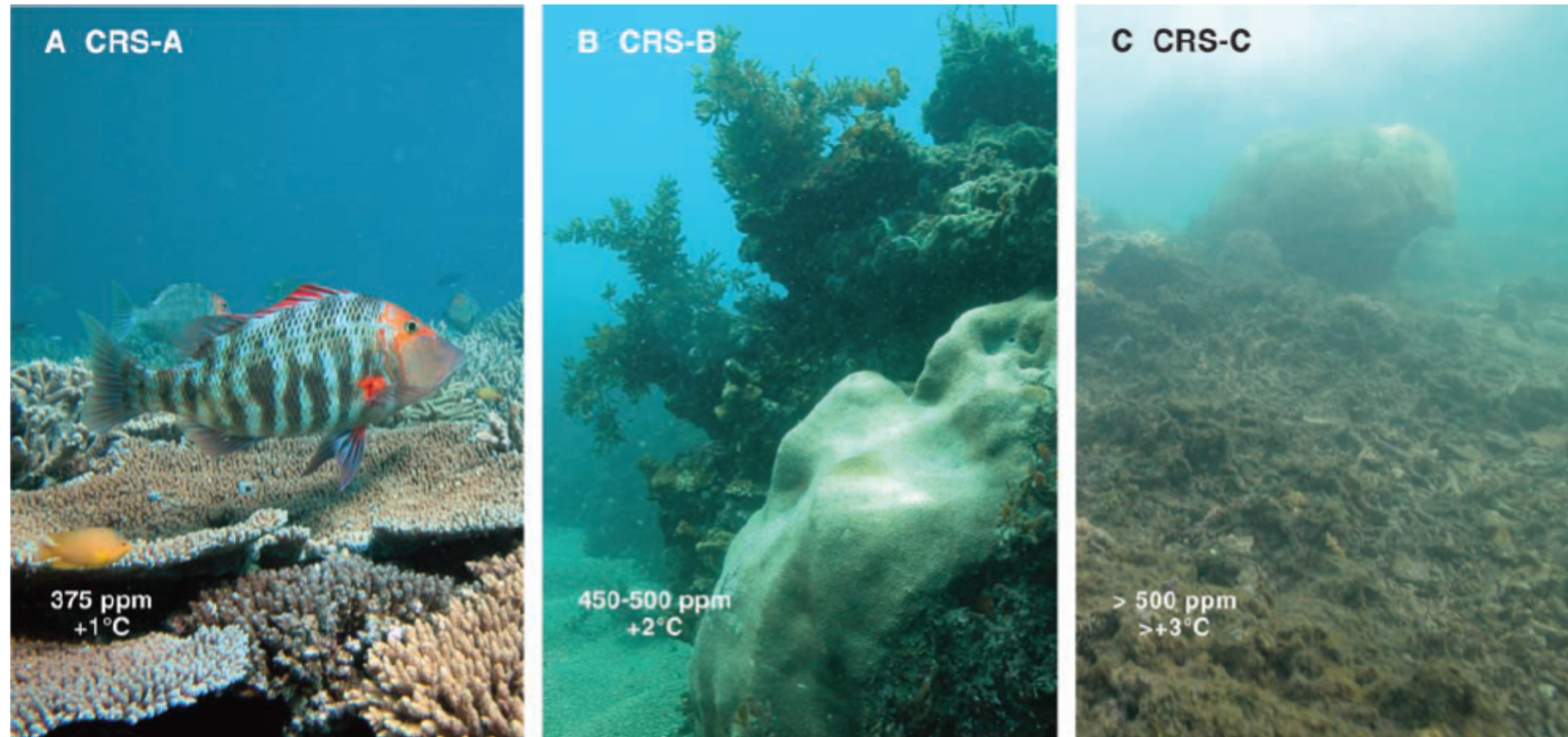


Reefs at risk

- 90% of the big fish are gone.
- Half of corals are gone. Ocean is warmer, more acidic.
- Major coral reef death expected to continue.



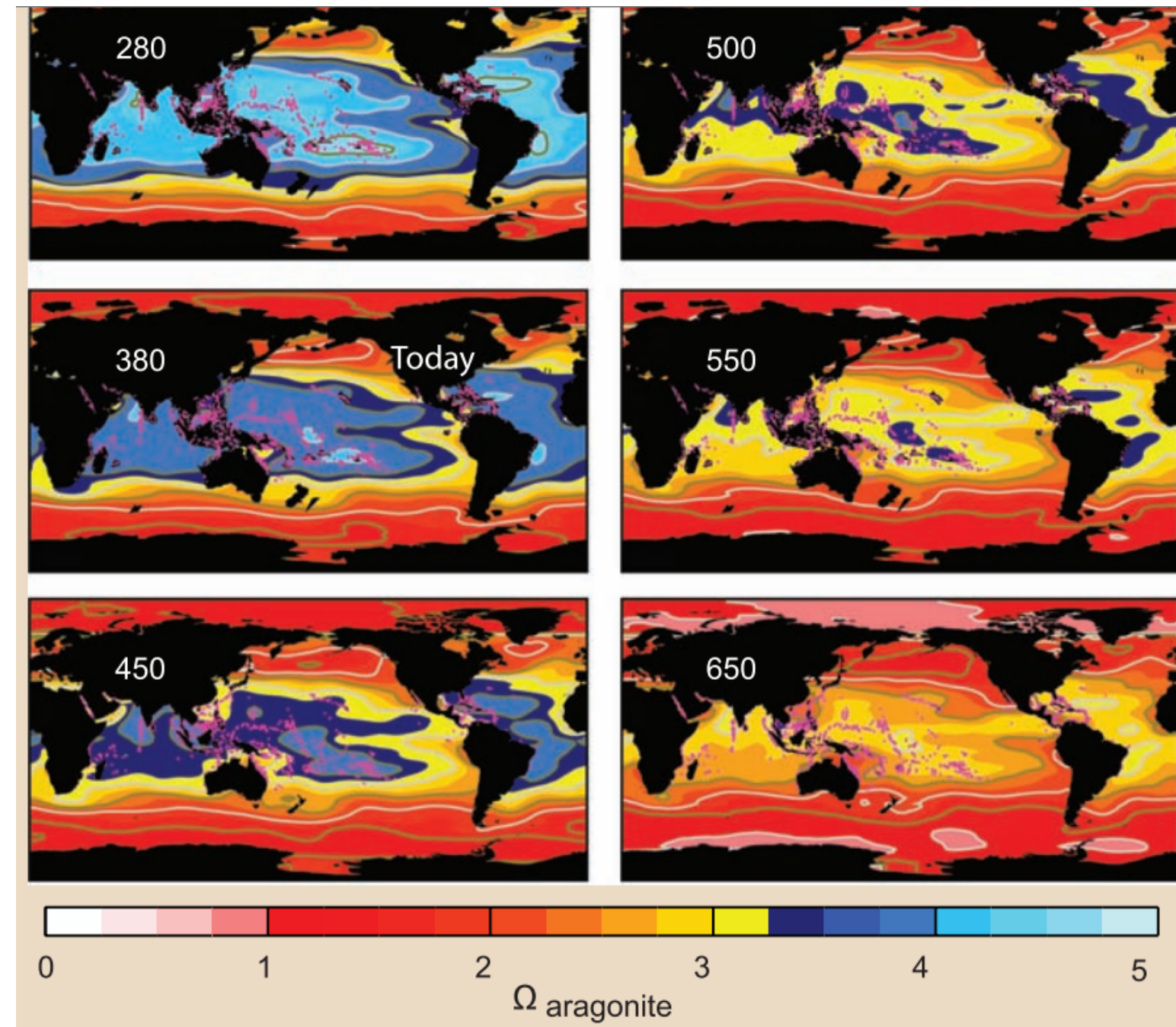
Most corals could die in next 40 years



O. Hoegh-Guldberg et al. "Coral Reefs Under Rapid Climate Change and Ocean Acidification." *Science*. 2007.



Most coral could die in next 40 years



O. Hoegh-Guldberg et al. "Coral Reefs Under Rapid Climate Change and Ocean Acidification." *Science*. 2007.

This is the critical decade for our oceans



Revealing the reefs of the world



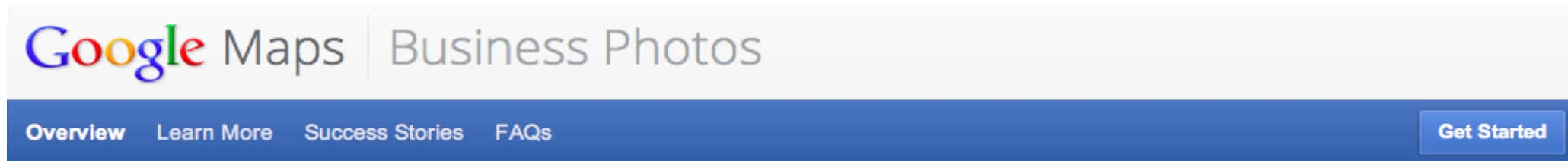
Images taken every 3 seconds - 2km per dive



Immersive 'virtual dive' experience




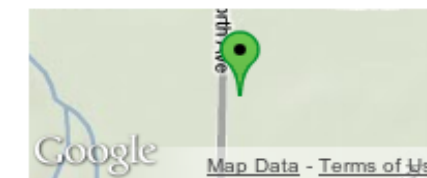
Add imagery with the Business Photos tool



Attract more customers with Business Photos



 **Van Putte Gardens**
Rochester, US
Published less than an hour ago



Add a virtual tour

Engage with your customers

Share with the world



<http://maps.google.com/businessphotos>

Embed Street View api on your own website

The screenshot shows the Google Maps Street View interface. At the top, the Google Maps logo and 'Street View' text are visible. Below the logo, there are navigation links: Home, Gallery, Contribute, Learn, and Privacy. A breadcrumb trail shows 'Collections' > 'Ocean' > 'Apo Islands'. A 'Behind the Scenes' button is located in the top right corner of the main content area. The central focus is a Street View image of an underwater scene with coral reefs. The image includes a compass and zoom controls in the top left corner. A text box above the image reads 'Dauin, Central Visayas' and 'Address is approximate'. Below the image, there is a location pin for 'Apo Islands' in 'Dauin, Philippines' and a 'View in Google Maps' link. A small map inset in the bottom right corner shows the location of Apo Island on a map of the Philippines. The bottom left of the page contains a text block about Apo Islands, describing it as a volcanic island with a marine reserve, home to over 650 species of fish and 400 species of corals.

Google Maps | Street View 41k

Home Gallery Contribute Learn Privacy

Collections Ocean Apo Islands

Behind the Scenes

Dauin, Central Visayas
Address is approximate

Google

Apo Islands
Dauin, Philippines

View in Google Maps

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
Map data ©2013 Google - Terms of Use

Apo Islands

Apo Island is a volcanic island which is surrounded by a marine reserve. At present, the island is home to over 650 documented species of fish and estimated to have over 400 species of corals. Most of the Philippines' 450 species of coral can be found here, from tiny bubble corals to huge gorgonian sea fans and brain corals. [\(Source\)](#)



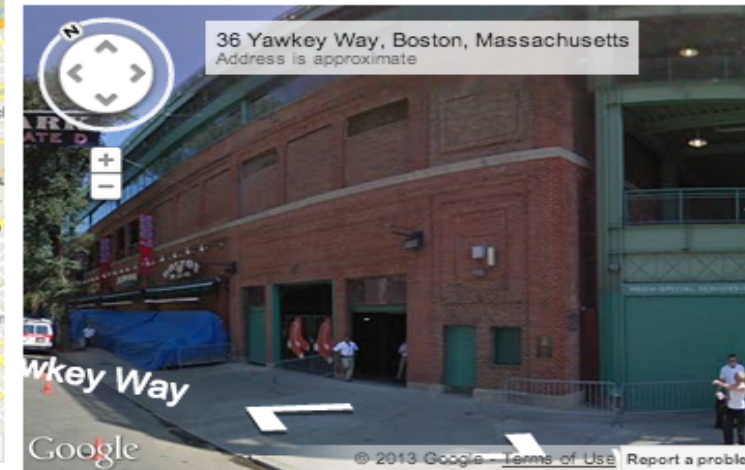
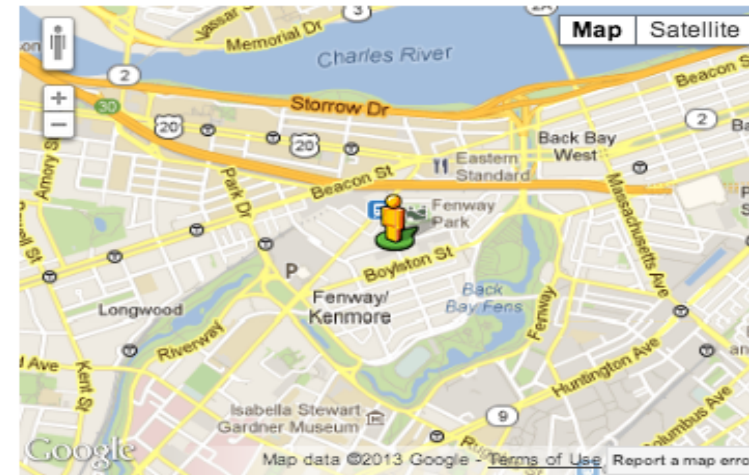
Embed Street View api on your own website

Google Maps JavaScript API v3  +1  0

- ▶ Developer's Guide
- ▶ API Reference
- ▼ Code Samples
 - ▶ Basics
 - ▶ Events
 - ▶ Controls
 - ▶ Styles
 - ▶ Overlays
 - ▶ Layers
 - ▶ MapTypes
 - ▼ Services

Geocoding service

Street View service



JavaScript

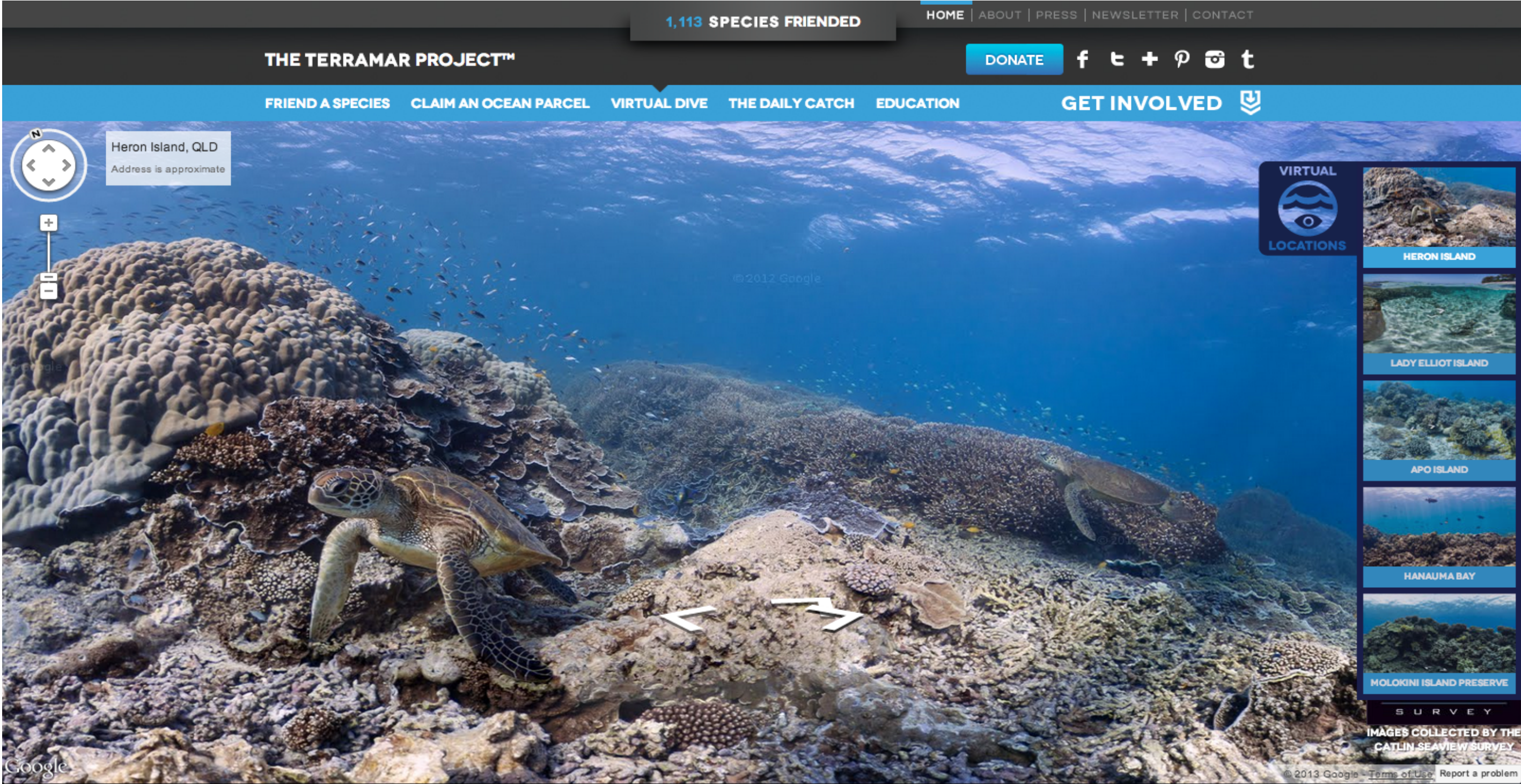
JavaScript + HTML

```
function initialize() {
  var fenway = new google.maps.LatLng(42.345573, -71.098326);
  var mapOptions = {
    center: fenway,
    zoom: 14,
    mapTypeId: google.maps.MapTypeId.ROADMAP
  };
  var map = new google.maps.Map(
    document.getElementById('map-canvas'), mapOptions);
  var panoramaOptions = {
    position: fenway,
    pov: {
      heading: 34,
      pitch: 10
    }
  };
  var panorama = new google.maps.StreetViewPanorama(document.getElementById('pano'), panoramaOptions);
  map.setStreetView(panorama);
}

google.maps.event.addDomListener(window, 'load', initialize);
```



Embed Street View api on your own website



A global reef record for monitoring change

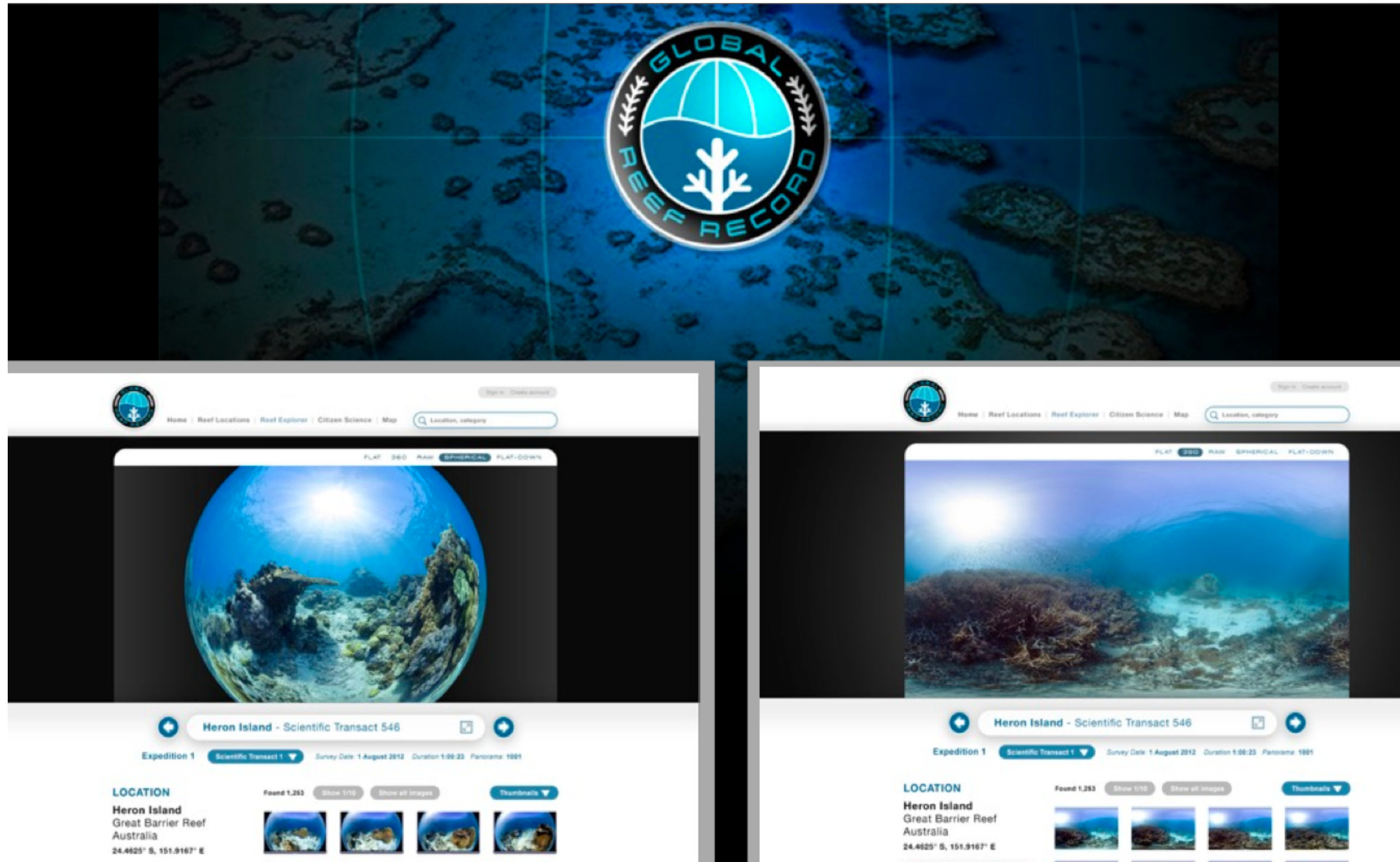


Image analysis - species recognition

1 SC3
2 SC2
3 Pocill
4 SC2
5 SC1
6 SC2
7 Unc
8 Bare-Su
9 Bare-Su
10 Bare-Su
11 Bare-Su
12 Bare-Su
13 Bare-Su
14 SC2
15 SC2
16 SC2
17 Unc
18 Bare-Su

Saved

ACflo	ACfor	AChia	AChum	ACmill	AsTu	BLHard	Dipl	Fav	Favia
Fung	Gon	Gonio	Hard	Isop	Lobo	Monta	Monti	Pcyl	Plat



Over 3 million people following on Google Plus

The image shows a screenshot of a Google Plus profile for the 'Catlin Seaview Survey'. The profile header includes the organization's name, a verified badge, and a follower count of +3,027,510. A green 'Following' button and a red '+1' button are visible. The main content area displays a post from April 2, 2013, titled '360 Panorama: Philippe Cousteau & CNN at Wilson Island'. The post text describes a 360-degree panoramic photo of Philippe Cousteau on a scooter near a large coral. It includes a link to the survey website and several hashtags. Below the text is a large 360-degree panoramic image of an underwater scene. The bottom of the post shows interaction metrics: a red '+1' button, a share icon, three profile pictures of users who interacted, and counts for '+801' likes and '171' shares.

Google+

Catlin Seaview Survey ✓ +3,027,510 Following +1

About Posts Photos ➔ ⚙️

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](#)

+1 ➔ +801 ↻ 171



Engage with live Google Plus hangouts on air

Google+

Home Profile Explore Events Communities Photos Find people Local More

Catlin Seaview Survey

Catlin Seaview Survey Sep 26, 2012 (edited) - Hangout - Public

Night Dive Hangout (3 people)

Night Dive Hangout

10:08 / 11:00

+1

33 comments

Evan Rapoport Sep 26, 2012 +2

Watching a live underwater hangout on the Great Barrier Reef. Wow!

Google+

Home Profile Explore Events Communities Photos Find people Local More

Catlin Seaview Survey +3,027,510 Following

About Posts Photos

Catlin Seaview Survey Apr 21, 2013 (edited) - Public

Hangout underwater with us, and learn how technology makes exciting scientific exploration possible

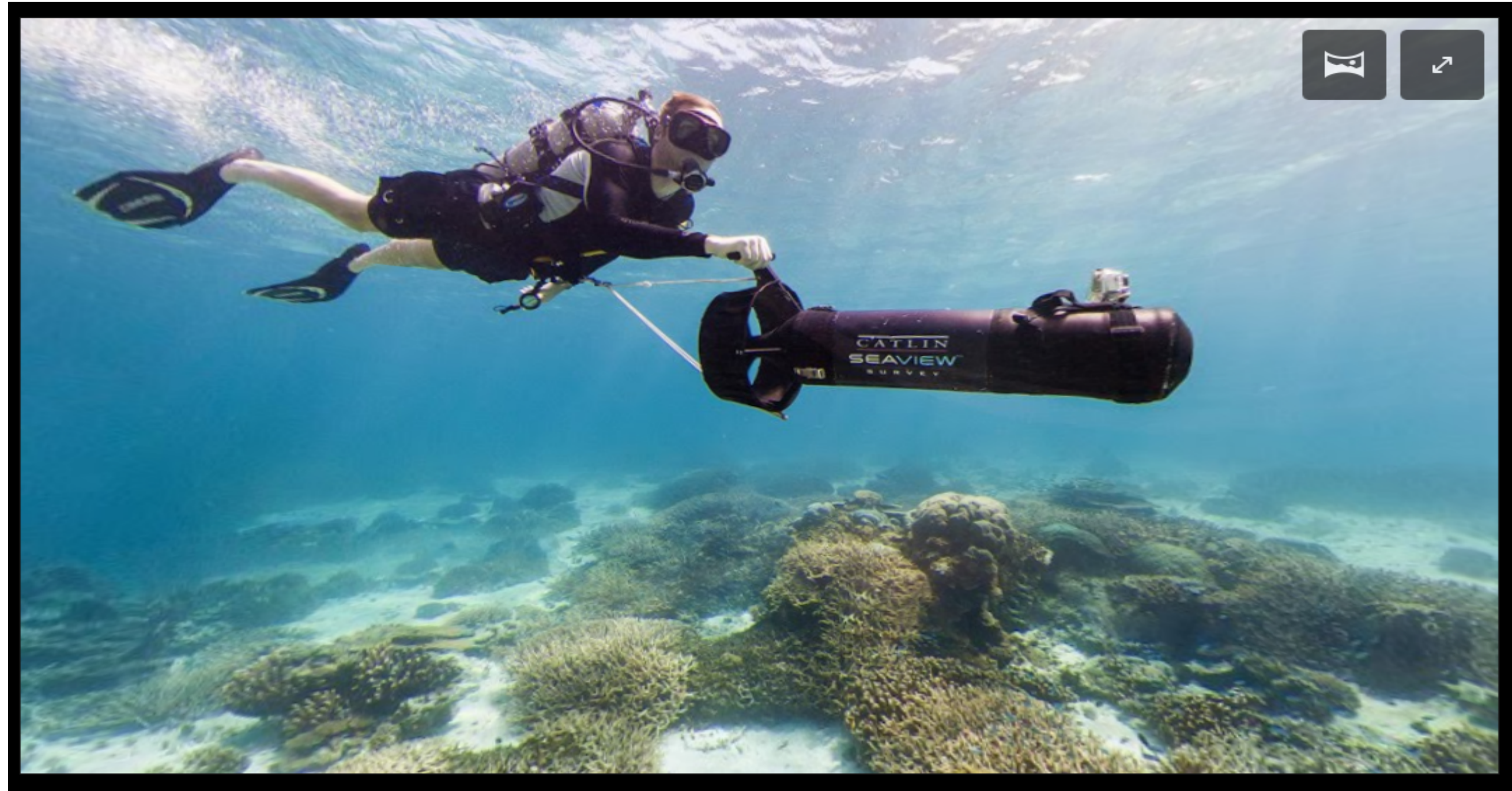
Technology allows us to learn more about our world than ever before. Three teams of explorers are coming together to talk about how technology is helping their own studies. Our Marine Biologists will be joined by a +NASA team from Project Ice Bridge, and +National Geographic's wild storm chasers on the... Expand this post »

CATLIN SEAVIEW SURVEY - Curacao - 23/3/13

+1 +301 28



Immersive Photo Spheres



<https://plus.google.com/u/1/+CatlinSeaviewSurvey/posts/7qGQNtqPMRH>

Upload Photo Spheres of the world to Maps

Google Maps | Street View 41k

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Explore Create About FAQ Discuss

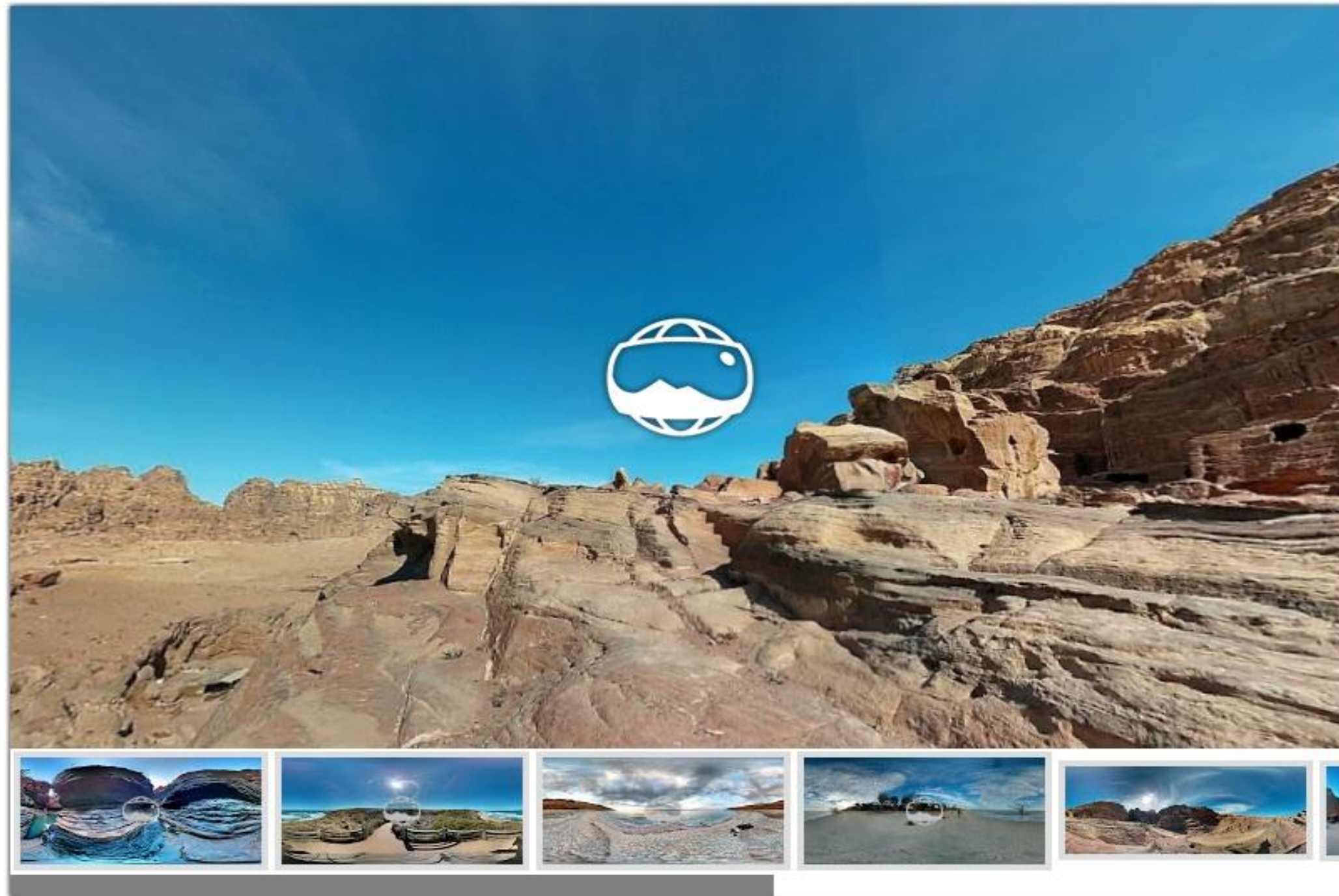
Share Your photo spheres on Google Maps

Photo spheres are 360 degree panoramas which you can easily create, share, and even upload to Google Maps for the world to see. You can also explore the many photo spheres people have taken all over the world.



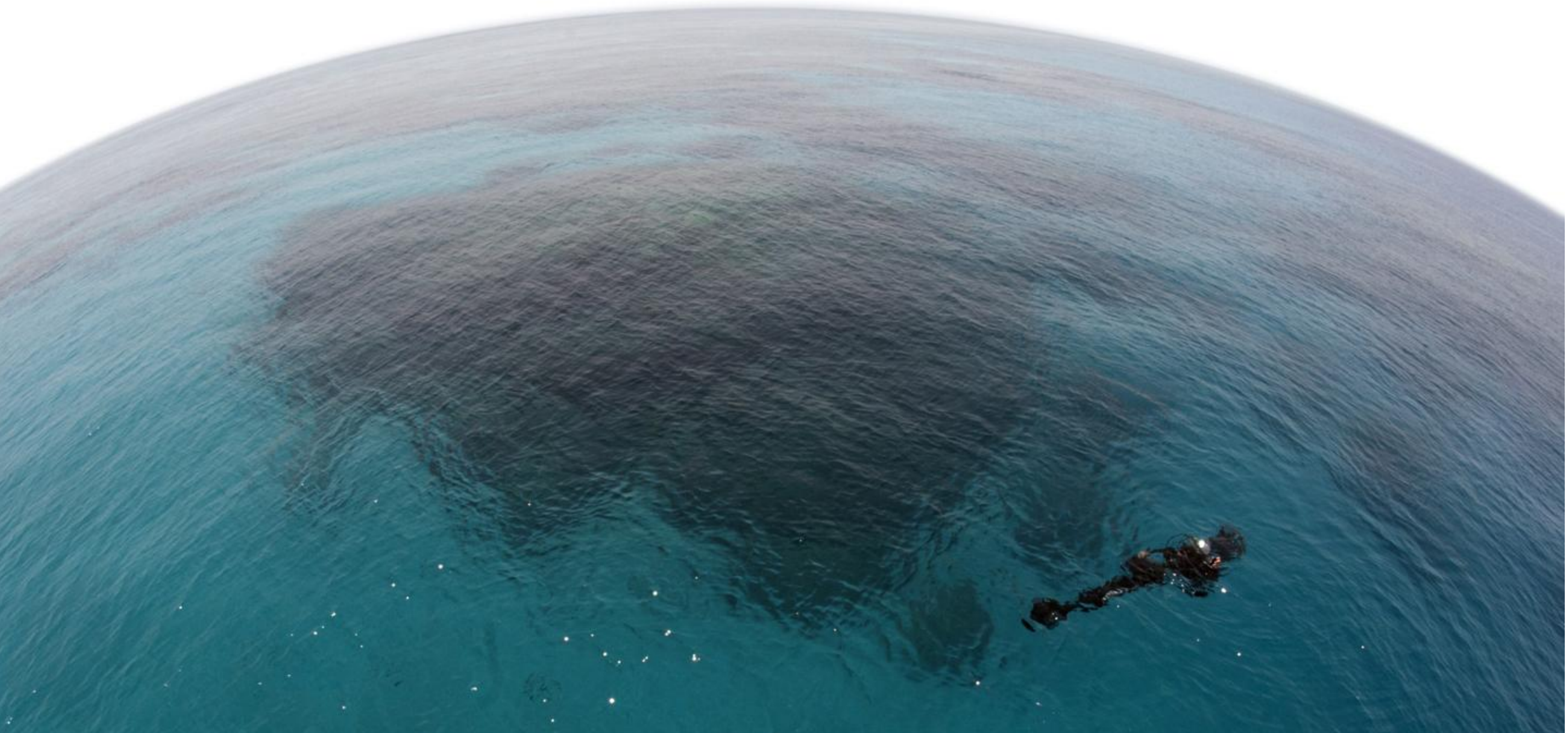
<http://g.co/photosphere>

Add Photo Spheres to any website

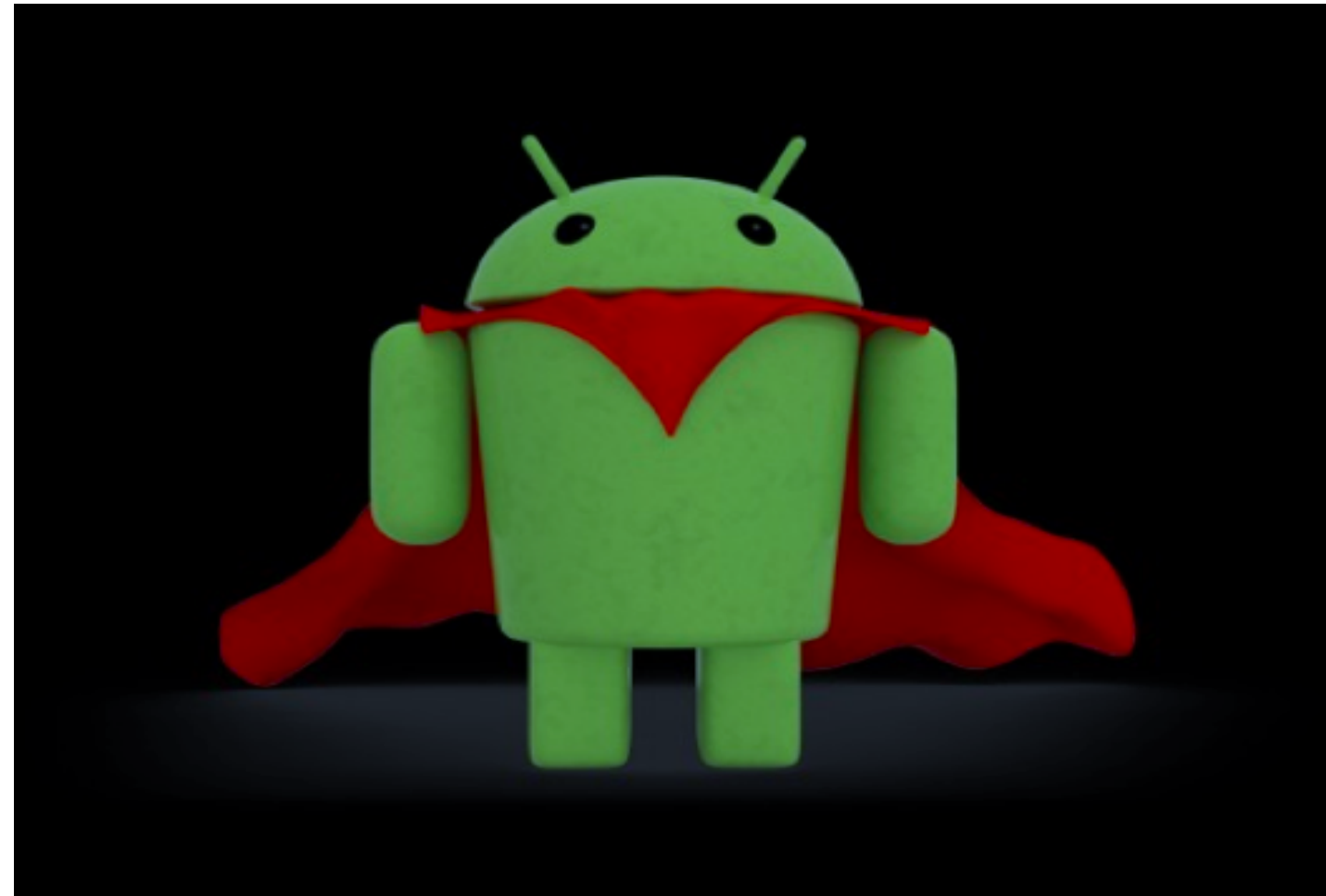


developers.google.com/panorama/web/

A race against time to record and reveal coral reefs



Developers are needed - technology is the solution



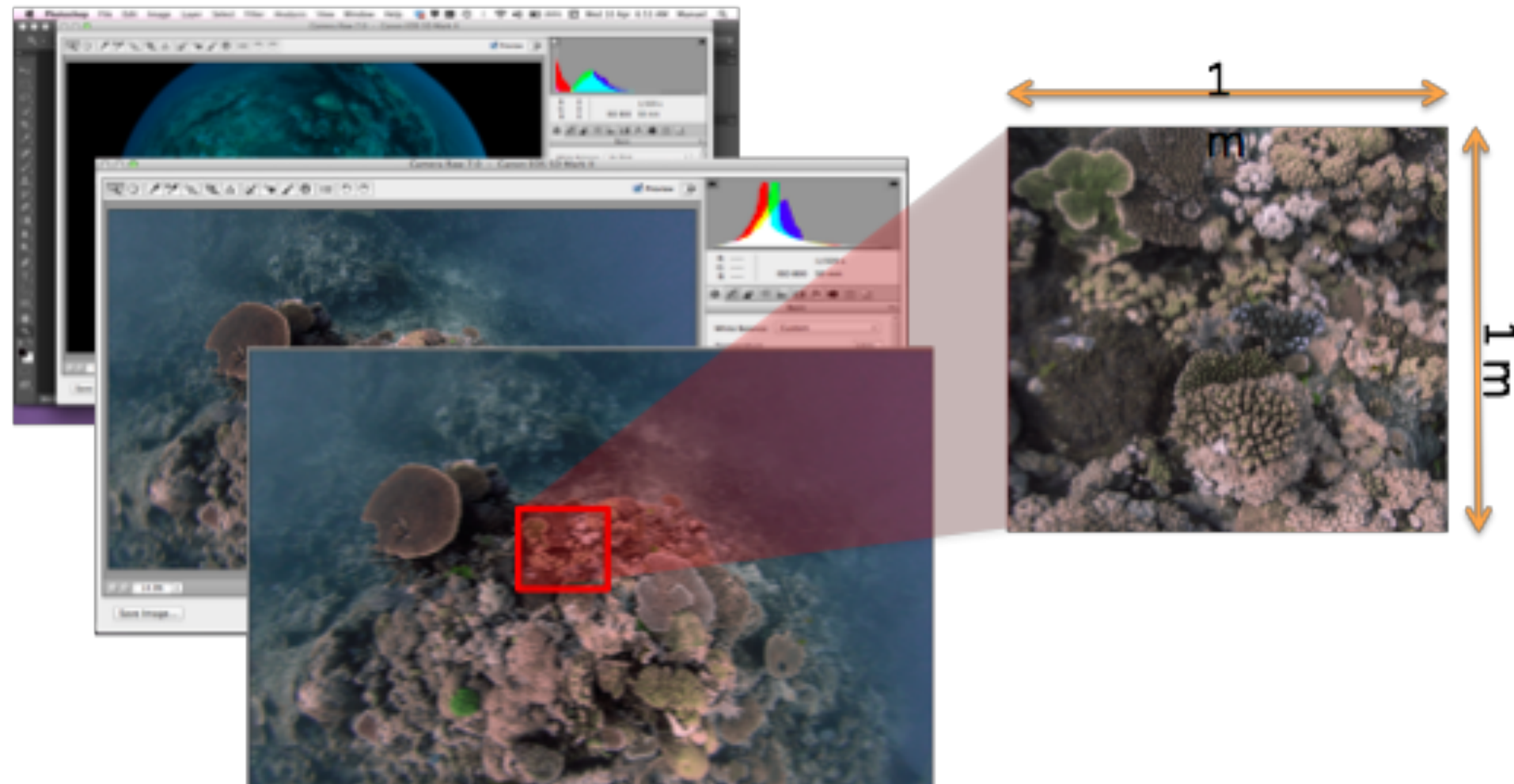
Underwater Android!



<http://g.co/photosphere>

Get involved: develop reef recognition algorithms

- Diversity, textures, colors, variability in light and exposure.



Help develop the solution +catlinseaviewsurvey



Contact: catlinseaviewsurvey.com



Google
Developers



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Panoramio Map

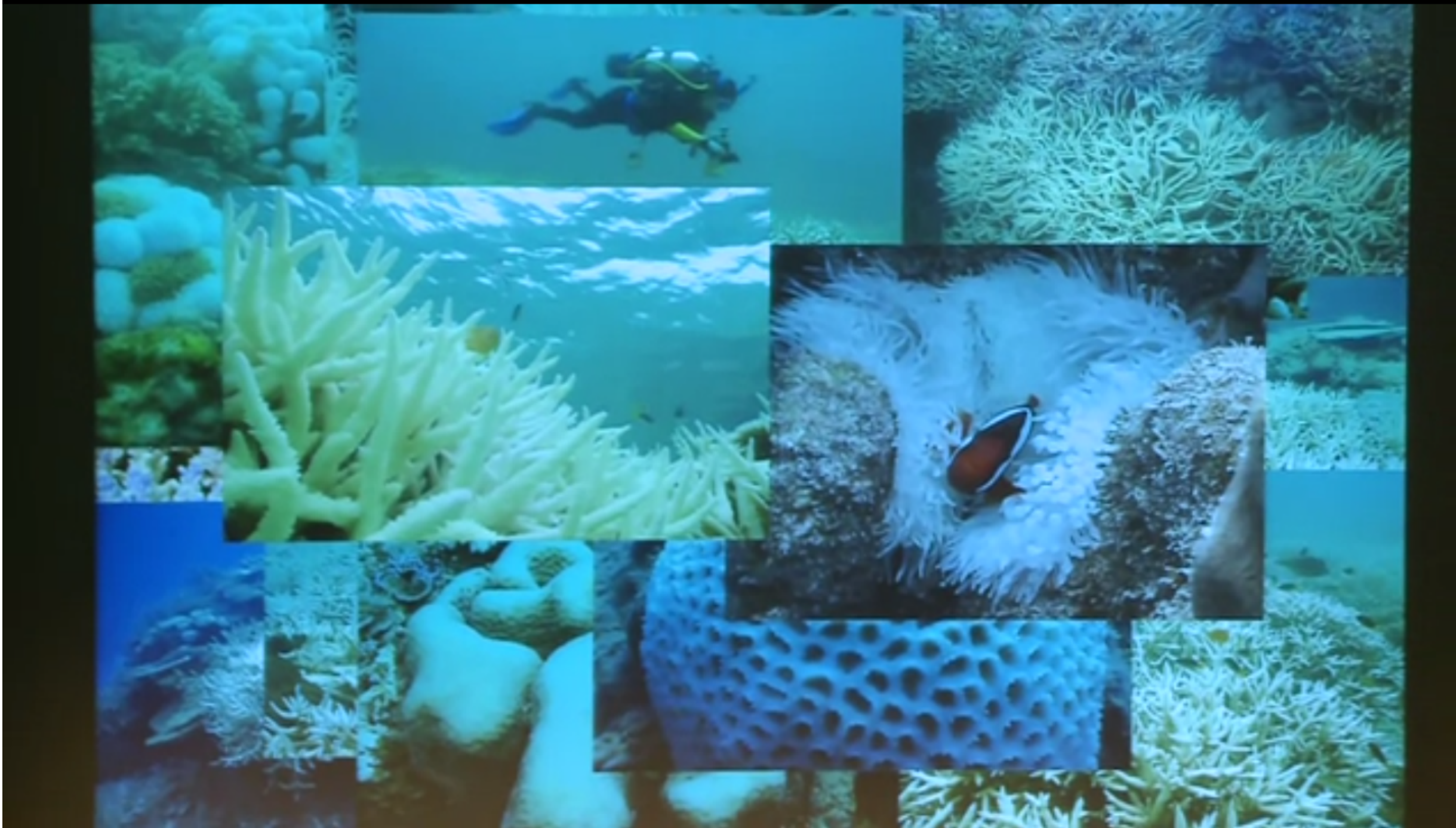
Map Satellite

coralunderwater

[View in Panoramio](#) [By Frank Taylor](#)

Map data ©2013 MapLink Imagery ©2013 NASA TerraMetrics - Terms of Use

<http://www.tahinaexpedition.com/map2.html>



Charlie Veron: "A reef in time: are we heading for the sixth mass extinction?" <http://youtu.be/7NAowjg8qFk>



Add place photos to Panoramio - feature with maps api

Panoramio Layer



View this example [full screen](#).

developers.google.com/maps/documentation/javascript/examples/layer-panoramio