

The Public Laboratory for Open Technology and Science

@PublicLab @sdosemagen @lizbarry

Using inexpensive DIY techniques, we seek to change how people see the world in environmental, social, and political terms. We are activists, educators, technologists, and community organizers interested in new ways to promote action, intervention, and awareness through a participatory research model.



Problems with Environmental Science and Health Research

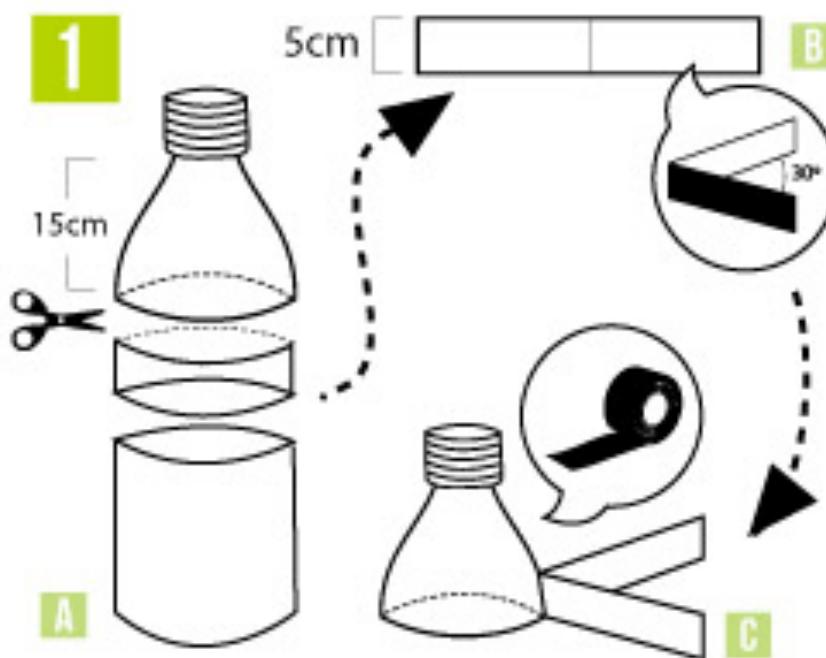
- Expensive
- Limited to hands of experts
- Lag in knowledge between experts and people on the ground
- People on ground don't own the data
- They also don't understand how it is made
- Industry has far greater capacity to generate data

Civic Science Approach to Environmental Health Monitoring

- Community oriented and developed
- Community owned
- Tools can be adapted and spread in an open source fashion
- Supports public exploration and investigation of environments- locals are regarded as experts of their own environments

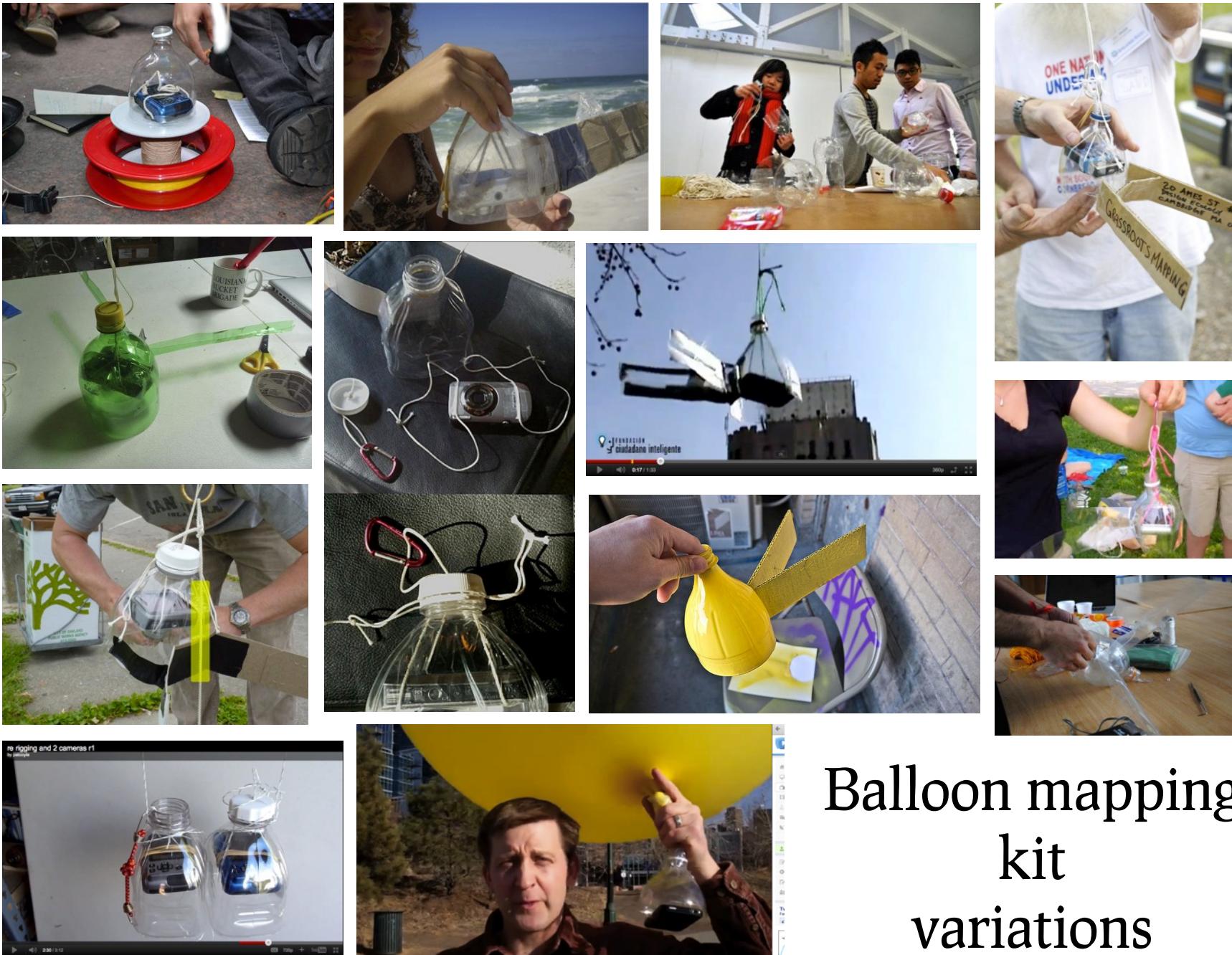
"The term 'civic science' has been used to describe science "that questions the state of things, rather than a science that simply serves the state" (Kim and Mike Fortun 2005:50)

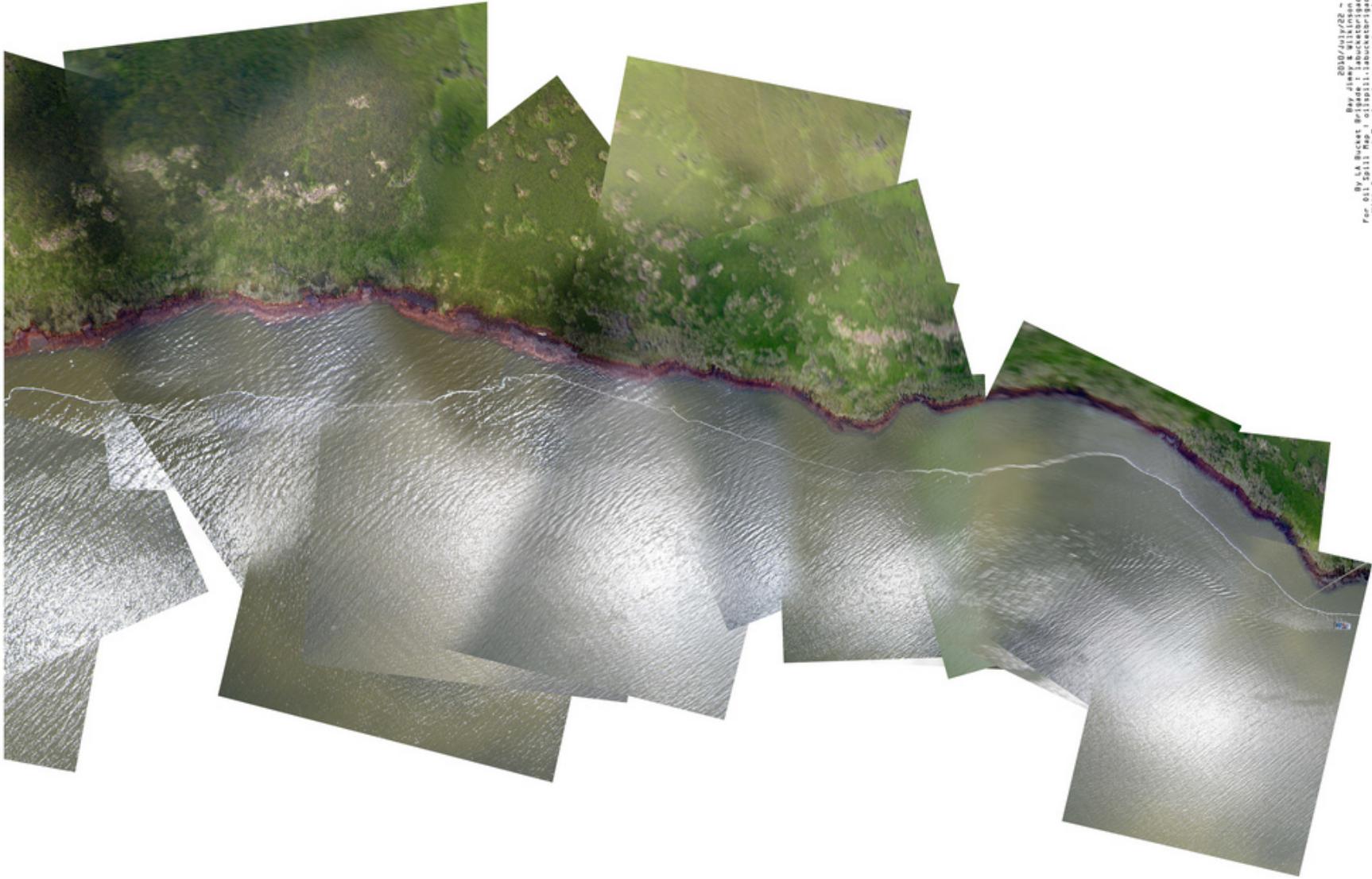
Materiales:



1 Domo Protector

- Con una tijera corta una botella de plástico desechable en 3 partes cómo muestra el dibujo.
- La banda central debes doblarla en 30 grados para convertirla en unos alerones que estabilizarán la cámara.
- La parte superior protegerá tu cámara o teléfono, asegúrate de pegarla muy bien.





Archive publiclaboratory.org/archive

2010/July/22 - 11:30
Bay, Ll. Brucke, Bridgedale, Iabucabobila, Bayu
By Ll. Brucke, Bridgedale, Iabucabobila
For Ll. Brucke, Bridgedale, Iabucabobila
Ll. Brucke, Bridgedale, Iabucabobila
With Grasroot Reporting, grascootreporting.org
Map assembled By Caesar Heredia, caserhereda.com

Recent Maps



[Low Water Bridge, Shenandoah River, Bentonville, Virginia](#)
July 20, 2012



[Corn Maze, Edmonton, Alberta, Canada](#)
July 11, 2012



[Davidson Middle School, San Rafael, California](#)
May 15, 2012



[University of Kentucky W.T. Young Library, Lexington, Kentucky](#)
September 2012



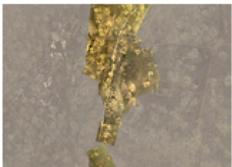
[Asheville Arts District, Asheville, North Carolina](#)
October 22, 2011



[Carney, Asheville, North Carolina](#)
March 10, 2011



[Caliente Ridge, Carrizo National Monument, Santa Margarita, California](#)
January 2009



[Carrizo National Monument, Santa Margarita, California](#)
January 2, 2009



[Cementerio Central, Bogota, Colombia](#)
March 12, 2012



[Kamnolom, Dravograd, Slovenia](#)
April 15, 2012



[Grovetown, Georgia](#)
March 6, 2012



[Ezac Airfield, Axel, Netherlands](#)
May 12, 2012

Maps and available formats

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Location	Capture date	geoTiff	jpg	tms	License
Low Water Bridge, Shenandoah River, Bentonville, Virginia	July 20, 2012	geoTiff	jpg	tms	Public Domain
Corn Maze, Edmonton, Alberta, Canada	July 11, 2012	geoTiff	jpg	tms	Public Domain
Davidson Middle School, San Rafael, California	May 15, 2012	geoTiff	jpg	tms	Public Domain
University of Kentucky W.T. Young Library, Lexington, Kentucky	April 21, 2012	geoTiff	jpg	tms	Public Domain
Asheville Arts District, Asheville, North Carolina	October 22, 2011	geoTiff	jpg	tms	Public Domain
Carney, Asheville, North Carolina	March 10, 2011	geoTiff	jpg	tms	Public Domain
Caliente Ridge, Carrizo National Monument, Santa Margarita, California	January 1, 2009	geoTiff	jpg	tms	Public Domain
Carrizo National Monument, Santa Margarita, California	January 2, 2009	geoTiff	jpg	tms	Public Domain
Cementerio Central, Bogota, Colombia	March 12, 2012	geoTiff	jpg	tms	Creative Commons Attribution
Kamnolom, Dravograd, Slovenia	April 15, 2012	geoTiff	jpg	tms	Public Domain

1 2 3 4 5 6 7 8 9 ... [next >](#)
[last »](#)

This map was made for under \$200 by volunteers using a helium balloon, a digital camera, and a boat.

Know an area that needs to be mapped? Get in touch:

[\(504\) 358-6647](mailto:team@publiclaboratory.org)

Reimagining the data lifecycle

By [Sharon Doverspike & Jeffrey Harris](#)

We are concerned that many people are not using science tools to collect science facts. Instead, people use mere data points.

The Public Laboratory for Open Technology & Science

Wilkinson Bay, Louisiana

Wilkinson Bay, Louisiana

July 22, 2010

Latitude: 30° 18' 26.835", Longitude: 90° 54' 29.2268"

Report a new issue, view other posts and contribute to this Geographic Information System

<http://publiclaboratory.org/welcome>

On Site

by [Barbara Marcotte](#)

What's your take on the impact of the spill? What you see below is about changes I've seen!

What's your take on the impact of the spill? What you see below is about changes I've seen!

What do you think about the changes you see?

What do you think about the changes you see?

They say that they are doing this under the guidelines of protecting people. Well, you're not protecting people if you intentionally leave them outside of a levee protection system and flood them!

Wetlands loss

MRGO.

An Essential Guide to Grassroots Mapping with Balloons or Kites

Use the map above to help monitor Wilkinson Bay, LA

Search our site

Find a guide or a resource about the health of the ecosystem, including information on oil dispersants, or other issues related to the environment in the area you live in or work in. This is a great way to learn more about your community and its environment from getting your own hands-on experience.

<http://publiclaboratory.org/forum>

Grassroots Mapping Forum publiclaboratory.org/forum



1. Engage researchers not subjects



2. Pull complexity off the shelf: modify minimally



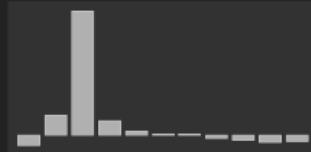
i02

concealed operator



revealed operator

3. Build in openness & accountability



Images from "2011-7-31-brooklyn-gowanus-vis-b"

Sorted best to worst | [sort only this site](#) | [view unsorted from this site](#)

(733 images, 49.5/100 average, ~33.54 votes per image, 100% have votes, >58 participants)

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10 out of 10 | 1 reviewers
[Open in Knitter »](#)



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10 out of 10 | 1 reviewers
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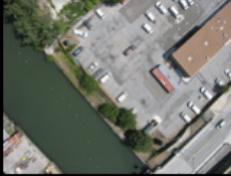
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± ≈ =

8 out of 10 | 6 reviewers
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± ≈ =

8 out of 10 | 5 reviewers
[Open in Knitter »](#)



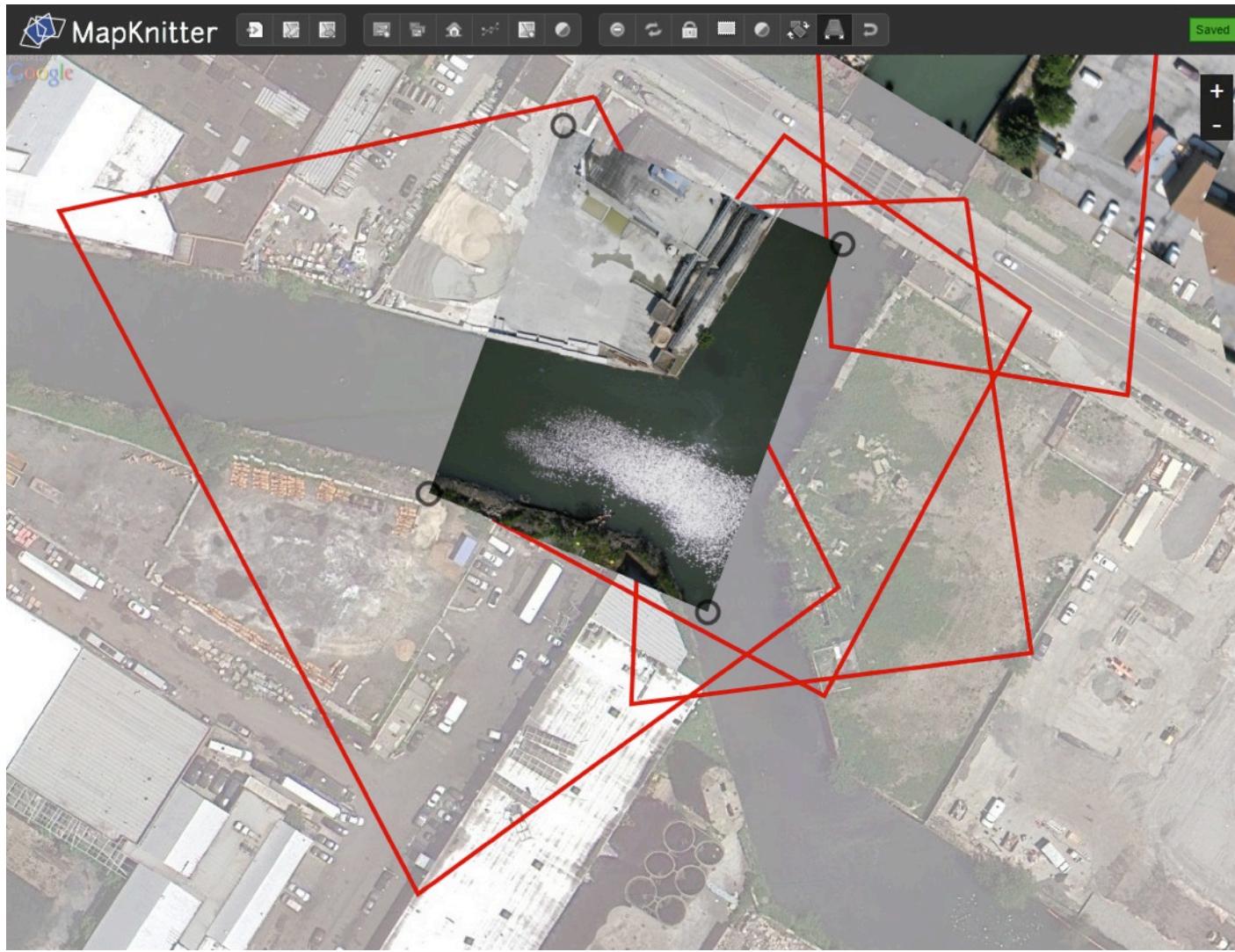
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8 out of 10 | 4 reviewers
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± ≈ =

4. Create collaborative workflows



4. Create collaborative workflows

Post a research note:

Title: *

Main image:

(Choose File) No file chosen

Body:

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Places:

separated by commas

Most popular terms: [gulf-coast](#), [new-york-city](#), [providence](#), [somerville-massachusetts](#), [lima](#)

Tools:

separated by commas

Most popular terms: [balloon-mapping](#), [kite-mapping](#), [near-infrared-camera](#), [spectrometer](#), [thermal-photography](#)

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Image Gallery:

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▼ File attachments

Attach new file:
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[Analytics on aerial images -- using filesize](#)

by: [warren](#)

1 day 8 hours ago

I'm looking for some easy ways to sort blurry images from crisp ones (and good from bad) for a...
[Read more »](#)

Tags: [umbc](#)



[Point Platte marsh restoration over time: air vs ground](#)

by: [eustatic](#)

1 week 3 days ago

Marsh restoration over time, by land, sea, and air In early 2010, GRN worked with bayou rebirth to...
[Read more »](#)

Tags: [gulf-coast](#), [louisiana](#)



[Coded ground control points](#)

by: [Jasja](#)

1 week 1 day ago

Ground control point targets are useful to stitch photos on uniform or repetitive landscapes. They...
[Read more »](#)

Tags: [umbc](#)



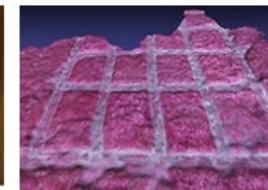
[3-D Images- Big Branch Balloon Mapping](#)

by: [astoicof](#)

1 week 2 days ago

After the balloon mapping trip at Big Branch National Wildlife Refuge on May 14th 2012, I created...
[Read more »](#)

Tags: [big-branch](#), [gulf-coast](#), [louisiana](#)



[NRG images of cover crop trials](#)

by: [cfastie](#)

2 weeks 4 days ago

I used Ned Horning's ImageJ macro to produce false color infrared (NRG) images from 108 of the...
[Read more »](#)

Tags: [New Hampshire](#)

Contributors

PLOTS members who have [contributed](#) research notes or added to wiki pages on this topic:

- [Jeffrey Warren](#) (283)
- [Stewart Long](#) (87)
- [Michele Tobias](#) (7)
- [Adam Griffith](#) (10)
- [Shannon](#) (23)
- [Liz Barry](#) (161)
- [Mathew](#) (104)
- [Cesar Harada](#) (2)
- [Jaekyung lee](#) (3)
- [Jeremy Crampton](#) (6)
- [maning](#) (2)
- [anita](#) (2)
- [Olivia](#) (2)
- [Chris Fastie](#) (35)
- [natevw](#) (4)
- [Joe Larson](#) (2)
- [Valerie](#) (2)

4. Create collaborative workflows



Balloon Mapping

Status: [Proven in the field](#)

Over the last year, we've build a global community of mappers who are engaged in civic issues with low-cost mapping tools like balloons, kites, and remote-control airplanes. We're helping citizens on the Gulf Coast use balloons and kites to produce their own aerial imagery of the Deepwater Horizon...

Used in: [gulf-coast](#), [lima](#), [new-york-city](#), [portland](#), [western-carolina-university](#)



Near-Infrared Camera

Status: [In development](#)

Infrared cameras for vegetation analysis
Infrared photography can help assess a plant's health, and has been used on satellites and planes for agricultural and ecological assessment, mainly by vineyards, large farms and large-scale (read: expensive) research projects. By creating a low-cost camera...

Used in: [gulf-coast](#), [lima](#), [new-york-city](#)

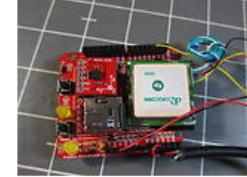


Spectrometer

Status: [In development](#)

tocCollapse=0; Table of Contents
Introduction The Tool: The Application: Online spectral analysis Resources, Downloads, FAQ Introduction What we often perceive as a single color actually consists of multiple blended colors- just as green paint can be made from mixing yellow and...

Used in: [gulf-coast](#), [new-york-city](#), [providence](#), [somerville-massachusetts](#)



Balloon Telemetry Kit

Status: [Early adopter only](#)

This kit was created as a means to improve the georeferencing of images captured using balloon mapping. This kit is based around the open-source Arduino microcontroller. Utilizing a GPS receiver, barometric sensor, three-axis accelerometer and data logger, this module allows for the synchronization...

Used in: [new-york-city](#)

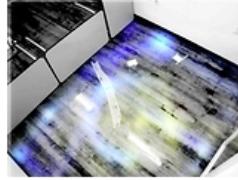


Kite-Balloon Hybrid

Status: [In development](#)

A kite balloon combines a lifting gas with active lift structures like wings to fly in all conditions. A good design may solve the common difficulty of flying in light winds, which makes balloon mapping difficult, but still falls short of kite-flying weather. It may also help reduce helium use, and...

Used in: [lima](#), [new-york-city](#), [portland](#)



Roomba indoor air quality mapping

Status: [In development](#)

The RISD Environmental Justice Research Cluster in Providence uses a Roomba as a medium in order to reveal the condition of our surroundings. Roomba-the room cleaning vacuum—is programmed to travel all around a room once it is left to roam. Therefore, it is an ideal tool to assess the quality of...

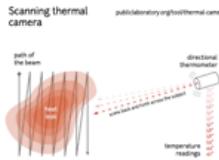
Used in: [providence](#)



DIY Touchtable with Wii Remote

Status: [Proven in the field](#)

PlaceMatters has built and tested a variety of interactive touch screens and touchtables using Wii remotes and LCD projectors so participants can interact directly with maps, images, and brainstorming applications. Here is a video where we integrated the use of the touchtables with GIS and...



Thermal camera

Status: [In development](#)

The DIY thermographer is a camera which creates an image of what temperature things are -- a 'heat' camera. We're making a 'scanning thermal imager' which means we just use a temperature sensor and sweep it back and forth across a scene, recording the temperature variation to build up an image that...

Used in: [new-york-city](#)

4. Create collaborative workflows

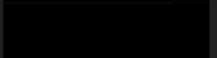
Recent spectra ([refresh](#))



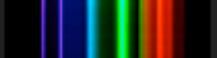
Second CFL Test
By [georg](#)
about 2 hours ago



First CFL test
By [georg](#)
about 2 hours ago



2012-9-24-16-48-untitled
By [anonymous](#)
about 8 hours ago



CFL("evening") calibration
By [arislam](#)
1 day ago



2012-9-23-19-12-untitled
By [anonymous](#)
1 day ago



2012-9-23-19-4-untitled
By [teslagauss](#)
1 day ago



pointer
By [teslagauss](#)
1 day ago



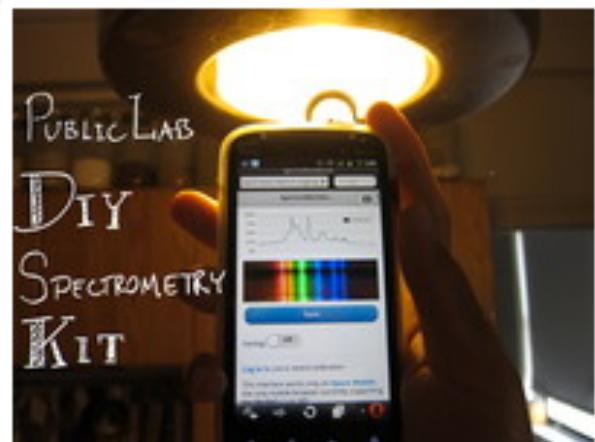
red pointer
By [teslagauss](#)
1 day ago



**Sunlight tru
attic window**
By [pa2rf](#)
1 day ago



**Sunlight tru
attic window**
By [pa2rf](#)
1 day ago



Public Lab DIY Spectrometry Kit

by Jeffrey Yoo Warren

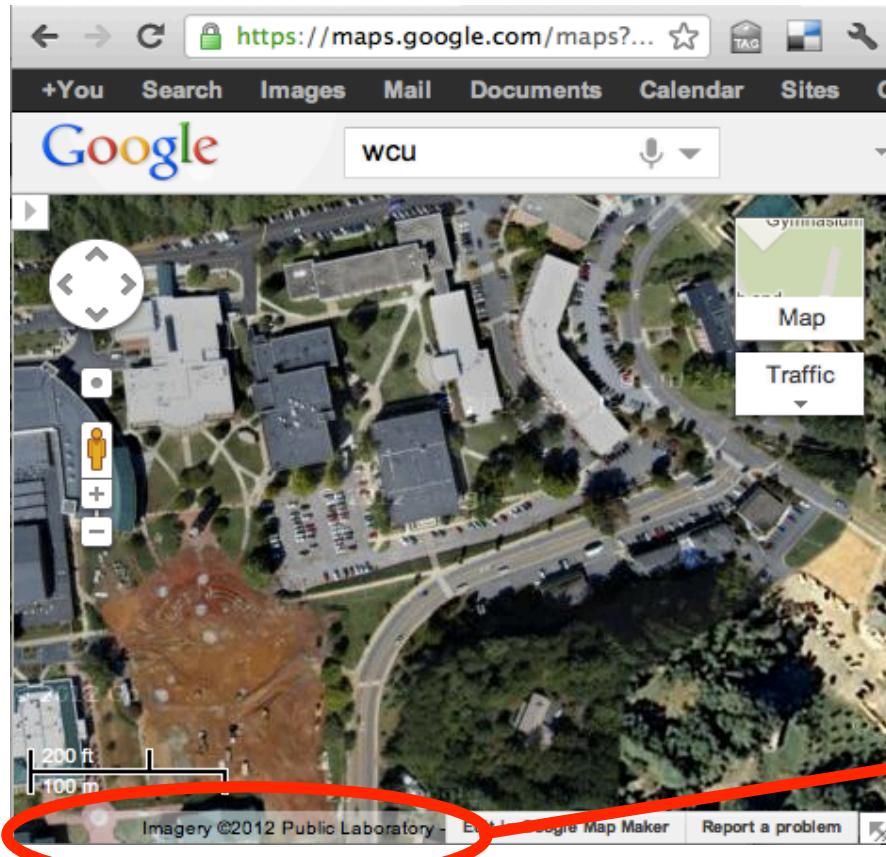
This DIY kit helps analyze materials and contaminants. We need your help to build a library of open-source spectral data.



Somerville, MA



5. Maintain public data archives



See © Public Laboratory

MapKnitter

Intro | Aerial photography | Help | Map Archive || Log in

wcu-library

by Kaitlyn Reda (RSS)

Edit map >

Images in this map:

© 2011 (Click here to open source your map.)

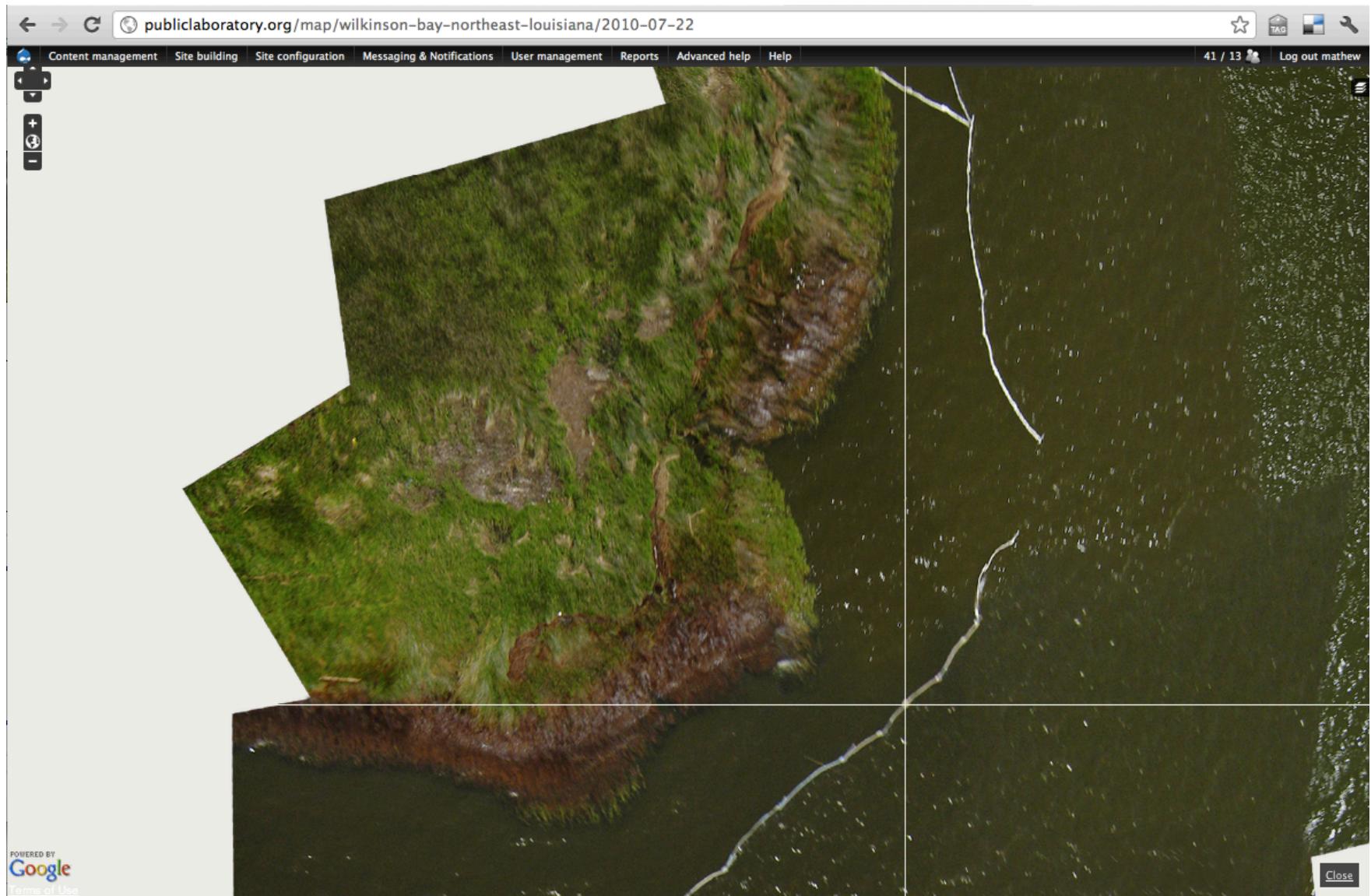
0 cm/px 9 cm/px

Average resolution: 8.9 cm/px

The MapKnitter interface shows a satellite map of the WCU library area. Below the map, there is a section titled "Images in this map:" with four thumbnail images. Each image has a timestamp: "8.7 cm/px 7 months ago", "8.8 cm/px 7 months ago", "8.7 cm/px 7 months ago", and "9.4 cm/px 7 months ago". A yellow call-to-action box contains the text "Now that you've exported your map, consider open sourcing it and submitting it to the [Public Laboratory Archive](#) -- a collection of open data by "counter-cartographers" and [grassroots mappers](#). Click here to begin »".

Find the mapmaker & images

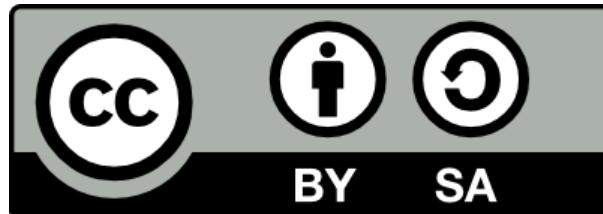
6. Mainstream true accountability



7. Let images communicate complexity



CERN Open Hardware 1.0
Share Back with Attribution



Creative Commons
Share Alike with
Attribution For Media



GNU Public License 3.0
Copyleft Viral
Software Licensing

8. Protect openness with viral licensing

The Public Laboratory for Open Technology and Science

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