A stylized, light blue line-art illustration of a city skyline with various skyscrapers and buildings, serving as a background for the text.

sensors, uncensored:

an overview of sensor applications
in the field

lily bui | @dangerbui
MIT Urban Studies & Planning

Sensor

Something that reacts predictably to its environment and can measure some aspect of it.



Sensor journalism

Collecting data from sensors, then using that data to tell a story or to investigate a problem.



huna 45 Alma

MAC DONALD'S FARMERS ALMANAC—48TH EDITION

4th Month APRIL 1945

Moon's Phases		Eastern Time		Central Time		Mountain Time		Pacific Time	
		D. H. M.		D. H. M.		D. H. M.		D. H. M.	
LAST QUARTER	5 2 18	even	5 1 18	even	5 0 18	even	5 11 18	morn.	5 11 18
New Moon	12 7 28	morn.	12 6 29	morn.	12 5 29	morn.	12 4 29	morn.	12 4 29
FIRST QUARTER	19 2 46	morn.	19 1 46	morn.	19 0 46	morn.	18 11 46	even.	18 11 46
FULL MOON	27 5 33	morn.	27 4 33	morn.	27 3 33	morn.	27 2 33	morn.	27 2 33

Calendar—S. States		Calendar—S. States		Calendar—S. States	
SUN	SUN	SUN	SUN	SUN	SUN
Rises	SETS	Rises	SETS	Rises	SETS
1 Sun	5 43	6 25	10 18	5 49	6 20
2 Mon	5 42	6 26	11 18	5 47	6 20
3 Tue	5 40	6 28	morn.	5 46	6 21
4 Wed	5 38	6 29	0 17	5 45	6 22
5 Thu	5 36	6 30	1 14	5 44	6 23
6 Fri	5 35	6 31	2 6	5 42	6 23
7 Sat	5 33	6 32	2 64	5 41	6 24
8 Sun	5 31	6 33	3 37	5 40	6 25
9 Mon	5 30	6 34	4 14	5 38	6 25
10 Tue	5 28	6 35	4 47	5 37	6 26
11 Wed	5 26	6 36	5 19	5 36	6 27
12 Thu	5 25	6 38	sets	5 35	6 28
13 Fri	5 23	6 39	8 17	5 33	6 29
14 Sat	5 21	6 40	9 33	5 32	6 30
15 Sun	5 20	6 41	10 46	5 31	6 30
16 Mon	5 18	6 42	11 52	5 30	6 31
17 Tue	5 17	6 43	morn.	5 29	6 31
18 Wed	5 16	6 44	0 50	5 27	6 32
19 Thu	5 14	6 45	1 40	5 26	6 32
20 Fri	5 12	6 46	2 22	5 25	6 33
21 Sat	5 10	6 48	2 57	5 24	6 34
22 Sun	5 9	6 49	3 28	5 23	6 35
23 Mon	5 7	6 50	4 03	5 22	6 35
24 Tue	5 6	6 51	4 21	5 21	6 36
25 Wed	5 4	6 52	4 41	5 20	6 37
26 Thu	5 3	6 53	5 03	5 19	6 37
27 Fri	5 1	6 54	5 28	5 18	6 38
28 Sat	5 0	6 55	5 52	5 16	6 39
29 Sun	4 59	6 56	6 12	5 15	6 40
30 Mon	4 57	6 58	10 12	5 14	6 41

WEATHER FORECAST FOR APRIL

1st to 3rd—Clear and cool over the entire eastern section, becoming warmer; high winds and cold over the northwest and midland.

4th to 10th—Bate, tending to sleet and snow over the Rocky Mountain region and states of the northwest; showers with thunder storms from Arizona eastward; generally pleasant weather in the New England and North Atlantic States.

11th to 16th—Cool and pleasant weather over western and southwestern sections; fair and frosty in Middle Atlantic and New England States.

17th to 19th—Cool and stormy through the eastern and Gulf sections; generally windy, with rain tending to snow in the northern portions of the northwest.

20th to 24th—Little rain, clearing warm in eastern and northeast sections; warm in the Gulf States; thunder showers in the southeast.

25th to 28th—Generally clear and very warm in eastern sections; high winds and local showers, clearing warm, in western section.

29th to 30th—Warm period over northwest, Gulf and South Atlantic States; cooler, cloudy and showers in New England and Lake region.

31st to 30th—More or less rain in the northeast sections; pleasant in western sections.

HINTS TO FARMERS FOR APRIL

LATITUDE OF NEW JERSEY, PENNSYLVANIA, OHIO, MISSOURI, KANSAS AND CALIFORNIA.

See about, layout, new peas, beans and early. Transplant cabbage, lettuce and now all spring vegetables. Hares require full allowances of feed this month. Plant potatoes and shrubs, vines, etc.

APRIL'S AFFLICTIONS—April is not so much a month to contract disease as it is to cure them. If you have contracted disease that has not yet run its course you should now begin to "clean up." Malaria, boils, itches, skin diseases, catarrhs and skin eruptions begin to show; neuralgia and nervous trouble generally will add to the pains of other diseases.

huna 45 Alma

APRIL

Some on the other side of the head
Some on the other side of the head

DAILY GUIDE—APRIL

This information is general for all persons born under any of the twelve zodiacal signs and applies to the daily affairs of this year only. With power with a fixed purpose, or set of purposes in any individual's daily affairs may increase or modify the influence of the aspects whether for good or for evil. It is expected this daily guide may prove of useful service to all who are interested. Be aggressive in all you do and cautious in all matters of importance.

ZODIACAL TENDENCIES

ARIES PEOPLE

Born from March 21 to April 19, any year.

General characteristics. Aries is a masculine, positive, cardinal, fiery, equinoctial sign. Expresses idealism, ambition, intellect, rules head, face, friends and relatives.

The man born in this sign has mental energy, more or less headstrong, determined, self-willed, dislikes a master, quick to resent abuse or imposition, but forgiving and will not hold a grudge for long; liable to go to extremes through indignation, hasty speech or lack of discretion. Is at his best when in an executive position. He is very generous, though quite set in his way, stubborn and harsh at times and inclined to be careless in his statements. Generally marries a good woman, but not an easy marriage, has a long lease on life.

Do not speculate or make important decisions and avoid uncertainties.

Not good for important matters.

Push business; sell only; seek work.

Do not buy or speculate.

Read, study; keep cheerful.

Seek work; ask favors; buy, trade.

Be cautious in all affairs.

Do not quarrel or disagree.

Do not speculate; be cautious.

Seek work; ask favors; promotion; do business.

Seek work and favors from those you know.

Read, rest, and avoid uncertainties.

Good for social and friendly matters.

Ask favors; seek work.

Aspects are adverse; be careful.

Do not buy, make changes or speculate.

Attend usual duties only.

Seek work, ask favors; buy, sell, trade.

Rest and read.

Do not buy or speculate.

Correspond; make contracts; seek work, favors.

Seek work; do usual things.

Not good for important matters.

Favor social affairs; ordinary requests.

Do not deal in uncertainties.

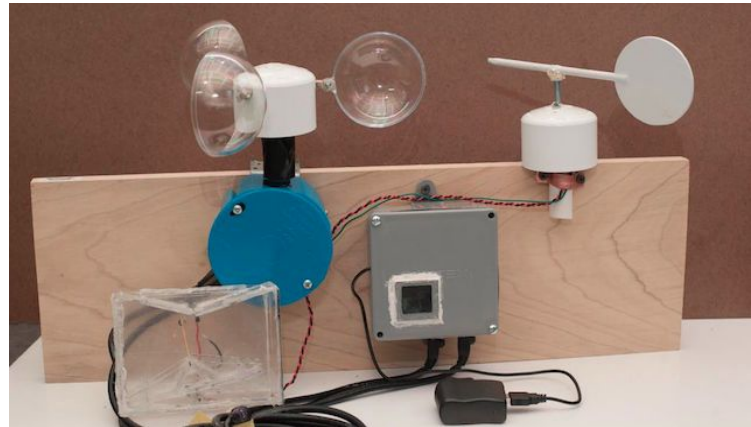
Read, rest; keep cheerful.

Ask business favors; seek work.

Seek work; ask favors; buy, sell, trade.

This day should be taught self-control, and edited and will succeed highly as an executive.

12) President Roosevelt
did not go to butterfly work
for
hammer
not at home



Somerville, MA 02143

Mon

Mostly Cloudy



57°F | °C

Precipitation: 20%

Humidity: 57%

Wind: 16 mph

Temperature

Precipitation

Wind



7 AM

10 AM

1 PM

4 PM

7 PM

10 PM

1 AM

4 AM

Mon



57° 33°

Tue



45° 35°

Wed



56° 48°

Thu



48° 31°

Fri



37° 27°

Sat



40° 32°

Sun



45° 29°

Mon



37° 30°

AccuWeather



YAHOO!



WeatherBug®

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Iowa caucuses 2016: Advancing snow may deter voters



By Mark Leberfingher, AccuWeather.com Staff Writer
February 1, 2016; 6:00 AM ET

Share | f t in G+

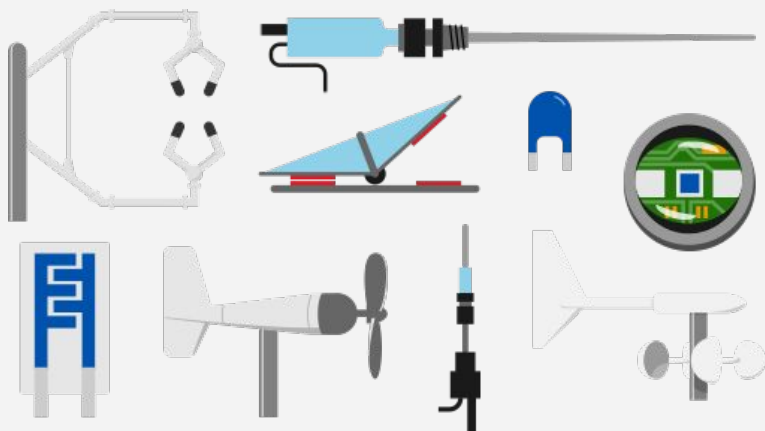
The 2016 Presidential Election season officially gets underway on Monday evening, Feb. 1, with the Iowa caucuses, and advancing snow may affect voter turnout.

Voters from Iowa's 99 counties will meet in caucuses as the first step to determine who will represent the state at the Republican and Democratic national conventions.

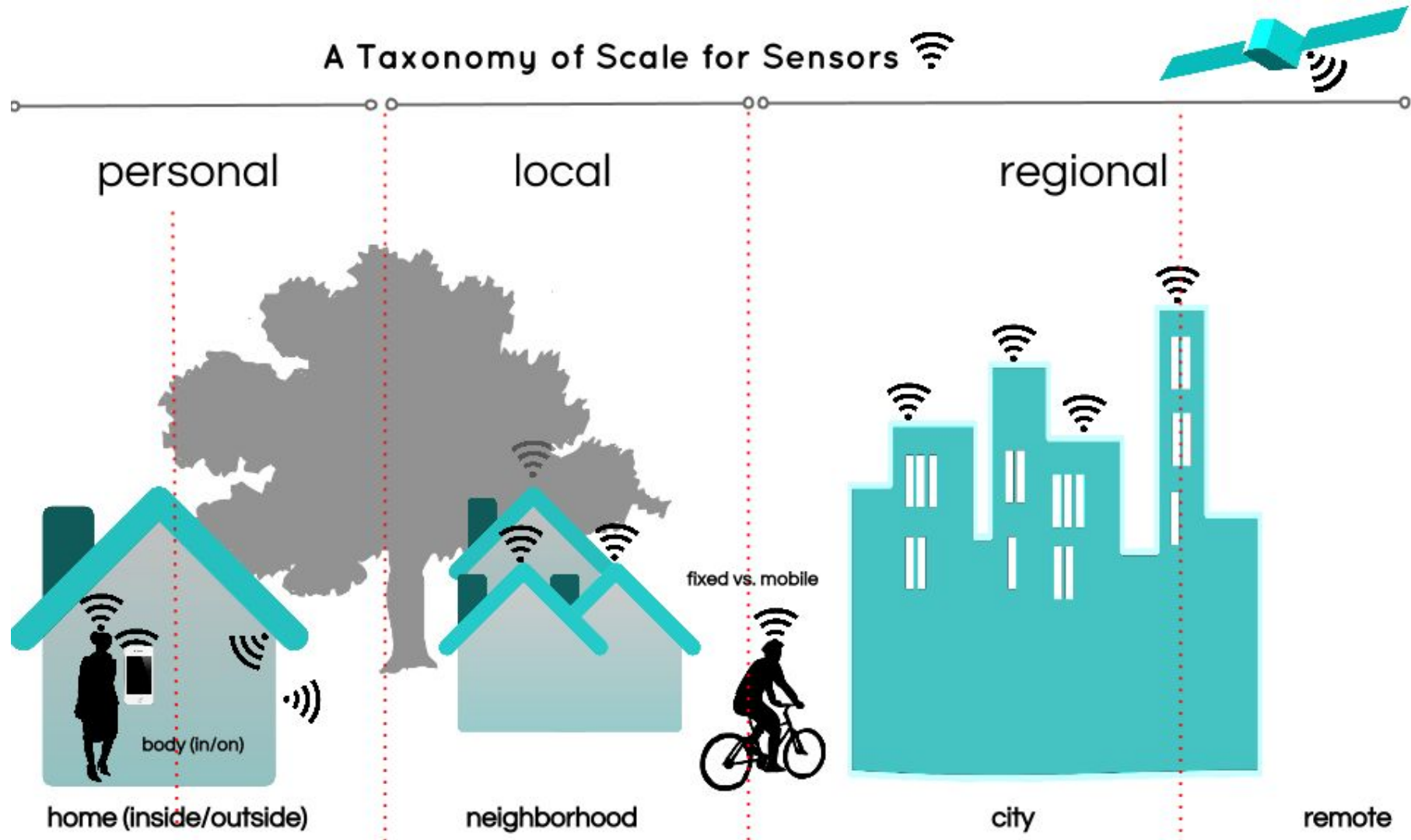
However, a winter storm moving in from the Intermountain West will unleash a blizzard from Colorado to Iowa and northern Michigan later on Monday into early Wednesday.



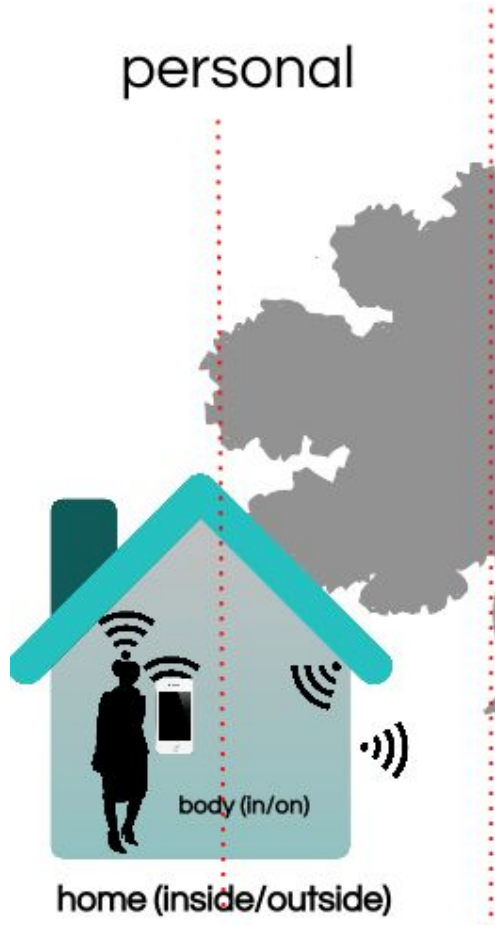
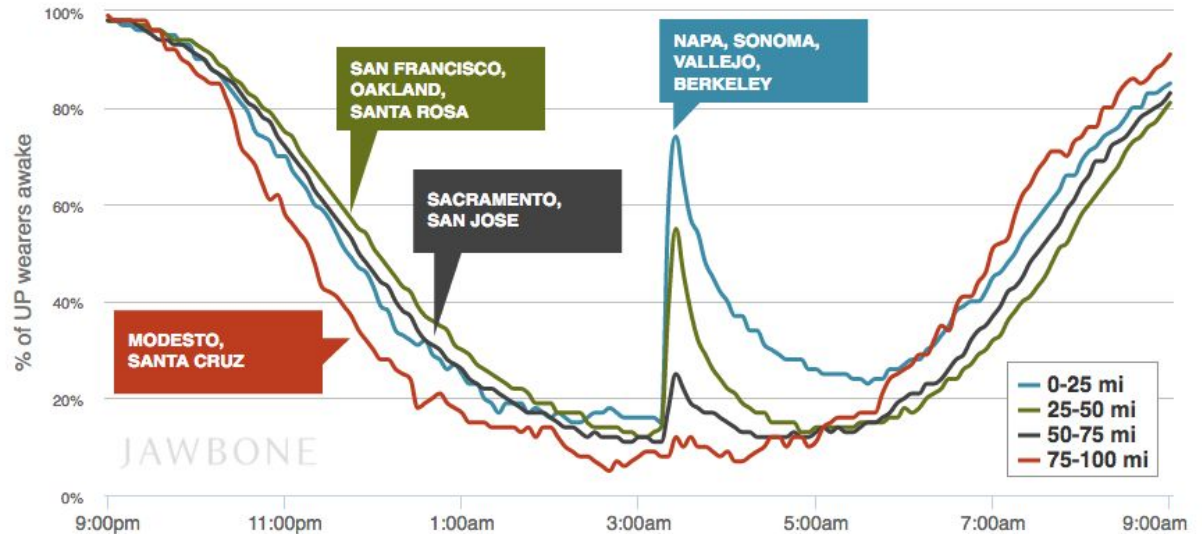
WEATHER UNDERGROUND

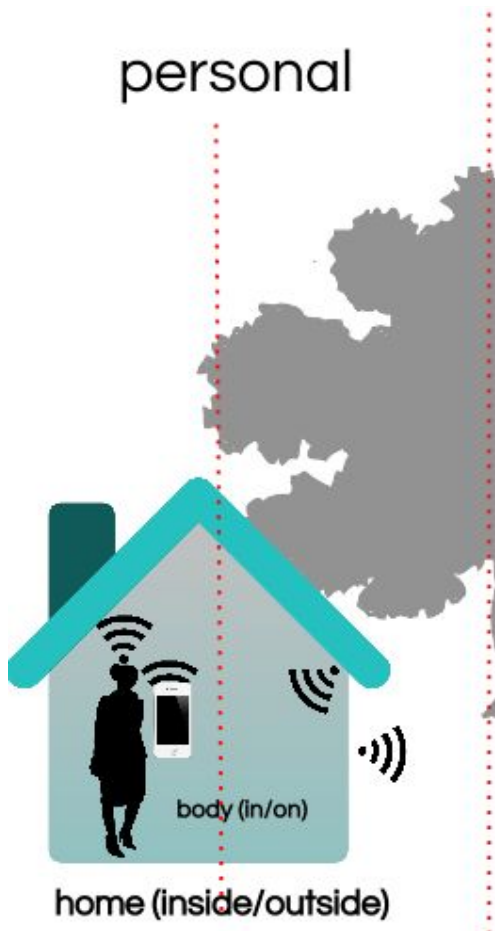


A Taxonomy of Scale for Sensors

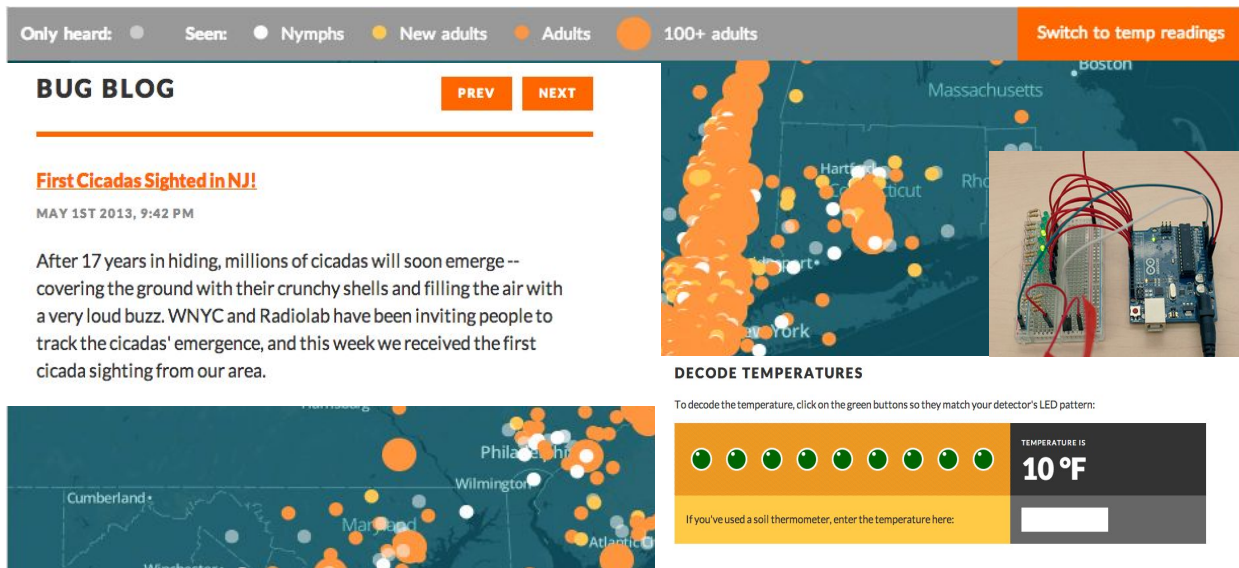


Jawbone and the Napa Earthquake





WNYC Radio Cicada Tracker



local

Beijing Air Tracks

D2

100 N

THE NEW YORK TIMES, SATURDAY, AUGUST 16, 2008

OLYMPICS
BEIJING '08



"I just ran the first 50 meters, then I looked around to make sure I was safe and I shut it off!"
USAIN BOLT of Jamaica, who coasted through early-round qualifying in the 100 meters



Measured Improvement

The Chinese government's effort to improve Beijing's air quality appears to have worked to reduce carbon monoxide emissions, based on preliminary data collected by Columbia University's Spatial Information Design Lab. In a series of measurements taken along the Olympic marathon route, carbon monoxide levels dropped an average of 40 percent after the city put in alternate-day driving restrictions in which motorists could drive only on odd or even days. Unfortunately, other components of the city's air pollution, like particulate matter, are still at high levels, according to Sarah Williams, director of the lab.



Levels were measured around midday in a few locations; the routes could not be exactly followed because of obstructions, like a fire in one case.

Source: Sarah Williams and Cecilia Bousso, Spatial Information Design Lab, Columbia University, New York Times.

fixed vs. mobile



neighborhood

local

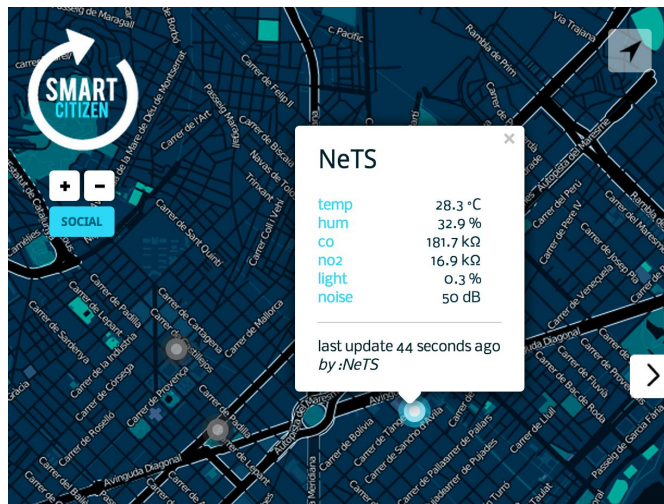
SmartCitizen



fixed vs. mobile

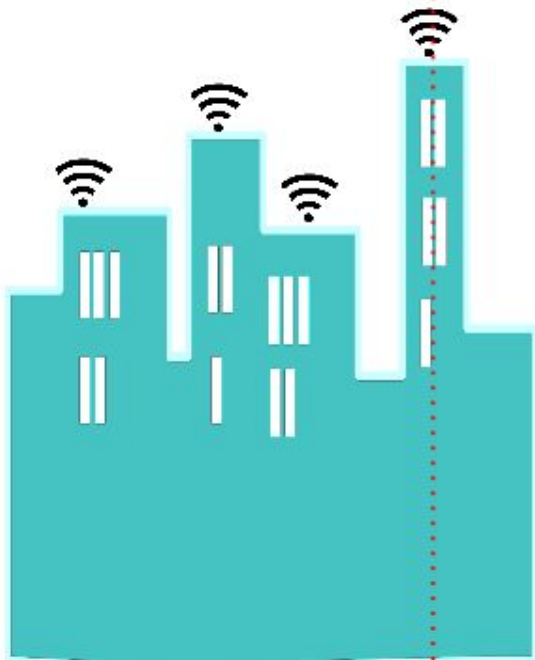


neighborhood





regional



city

remote

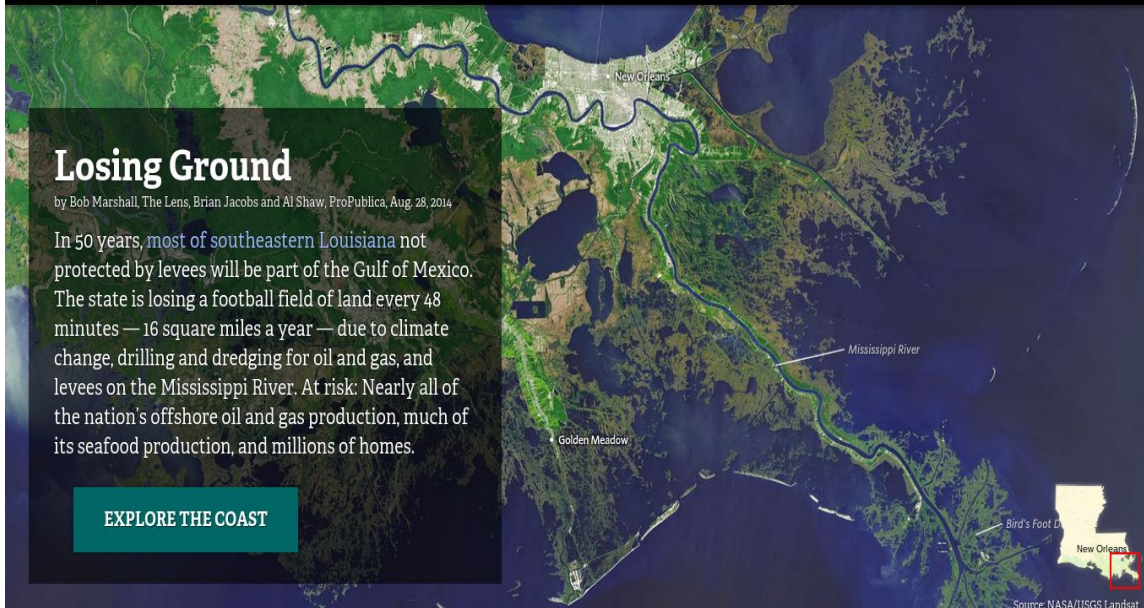
ProPublica Losing Ground

PROPUBLICA

THE LENS

DONATE TO PROPUBLICA

DONATE TO THE LENS



Losing Ground

by Bob Marshall, The Lens, Brian Jacobs and Al Shaw, ProPublica, Aug. 28, 2014

In 50 years, **most of southeastern Louisiana** not protected by levees will be part of the Gulf of Mexico. The state is losing a football field of land every 48 minutes — 16 square miles a year — due to climate change, drilling and dredging for oil and gas, and levees on the Mississippi River. At risk: Nearly all of the nation's offshore oil and gas production, much of its seafood production, and millions of homes.

EXPLORE THE COAST

Source: NASA/USGS Landsat



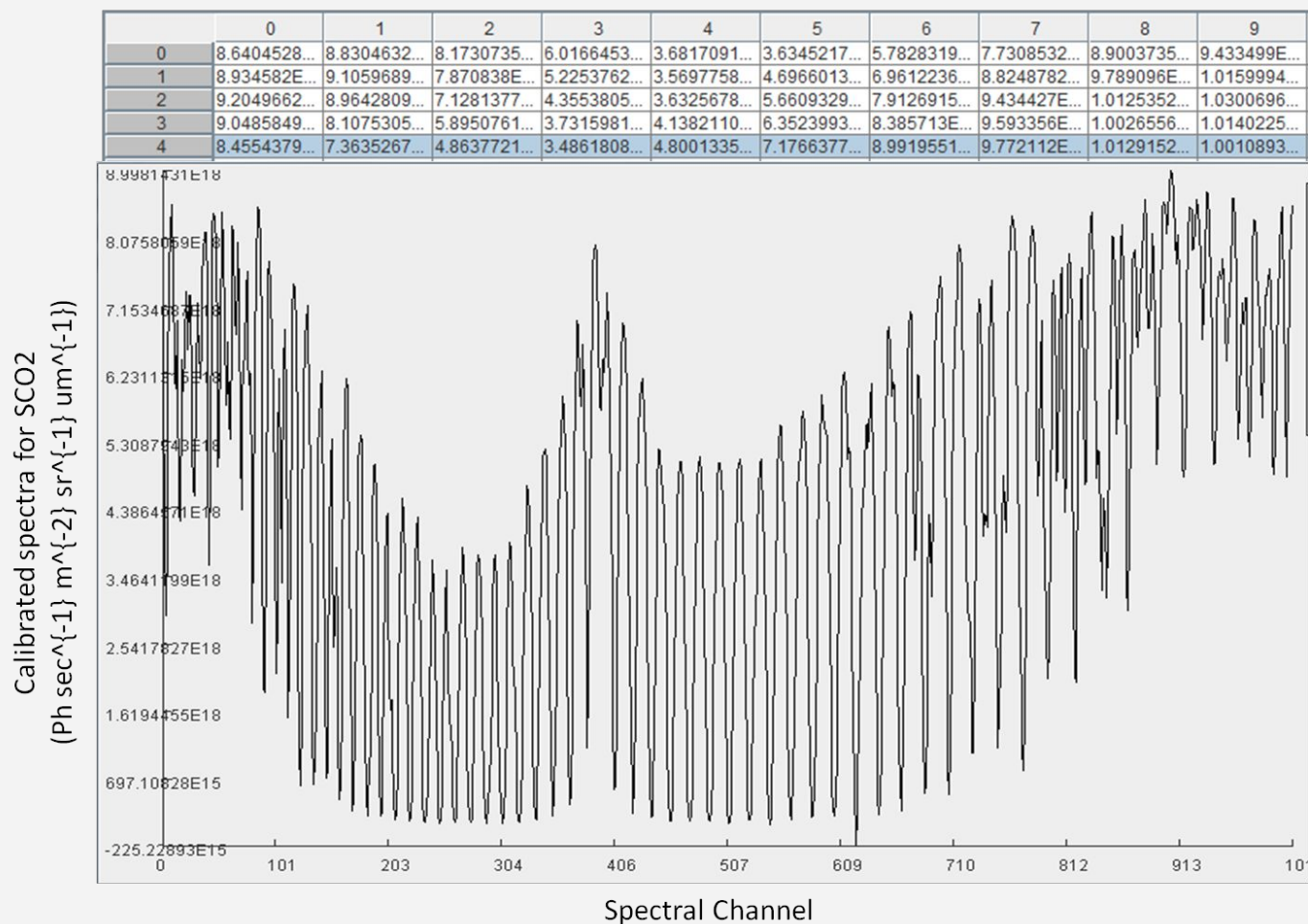
I SEE CHANGE

COMMUNITY CLIMATE & WEATHER JOURNAL

**Investigate how weather and climate change are
affecting your environment.**

[Get started](#)

Calibrated spectra for SCO2 in OCO2_L1B_Science V7r orbit number 03112a



Kara Holsopple 3 months ago



Pittsburgh, PA, US

Another #warm streak in Pittsburgh. These #mushrooms popped up in an empty lot in the middle of a city neighborhood.

1 64.61° DATA



IS THIS WEIRD?

YES

NO



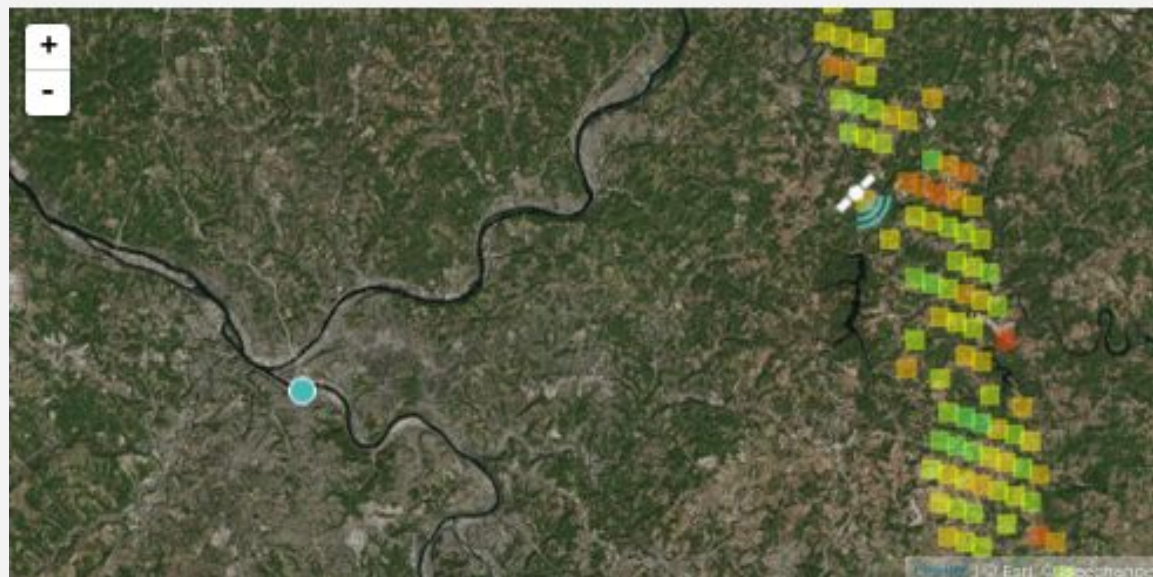
Carbon Dioxide near Pittsburgh, PA, US
October 20th 2015, distance 24 miles

400.45 ppm

ABSORBING

RELEASING

Move, zoom and click to see details of the nearest satellite pass!





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iSeeChange

Mushrooms Boom This Spring

By TOM YODER • JUN 26, 2015



The unusually wet spring has made some mushroom foragers very happy. As part of the crowd-sourced journalism project iSeeChange, a listener in Paonia, Colorado posted pictures of her harvest of morels and she wondered if this bumper crop is something we'll see more and more. KVNE's Jake Ryan found out.



- generates information and data outside of institutions
- engages participants in scientific processes or issues
- distributes data to audiences that may not otherwise have access



- data accuracy and integrity
- privacy & surveillance issues
- knowledge gap -- need for training, education

People around the world are helping the US save its climate data

 PRI's The World

January 26, 2017 · 5:45 PM EST

By Carolyn Beeler



Share on Facebook

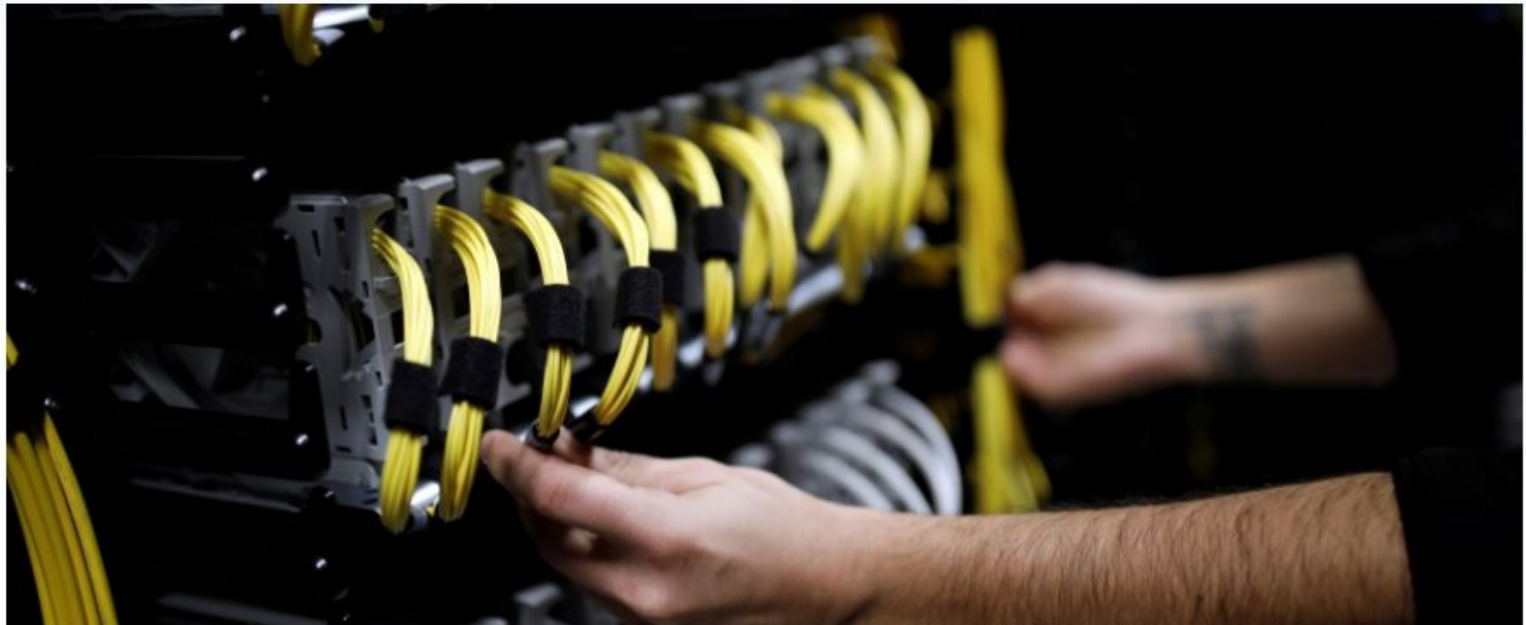


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Share

Comment



DATA RESCUE @ MIT BOSTON

✓ Register on eventbrite

f Facebook event

✱ Join the Slack Channel

Feb 18th, 37-252, 8:30am-5pm

DataRescue at MIT is a hackathon focused on identifying, downloading, processing, and mirroring federal research data at risk of being taken down or obscured by the current administration. The event is being hosted by MIT ACSES, MIT Libraries, and EDGI.