Science by the People

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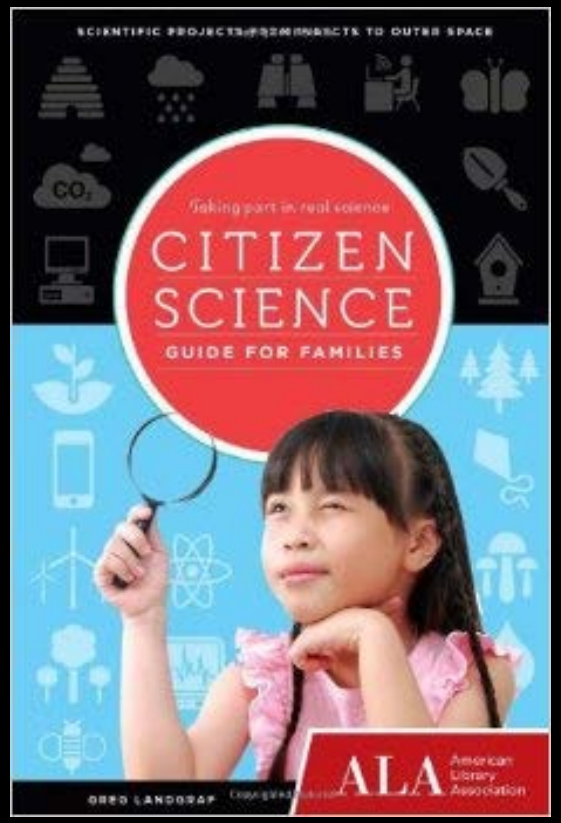
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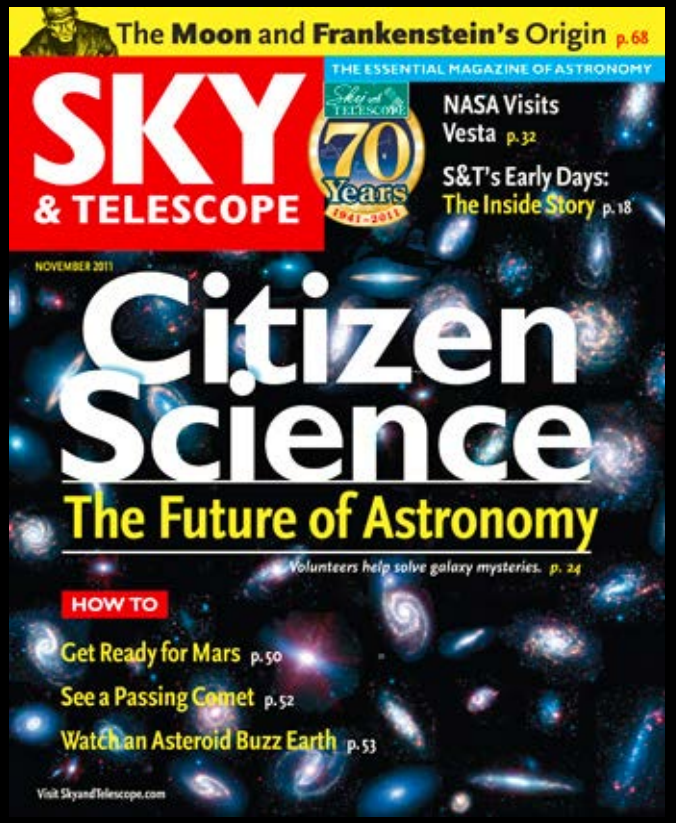
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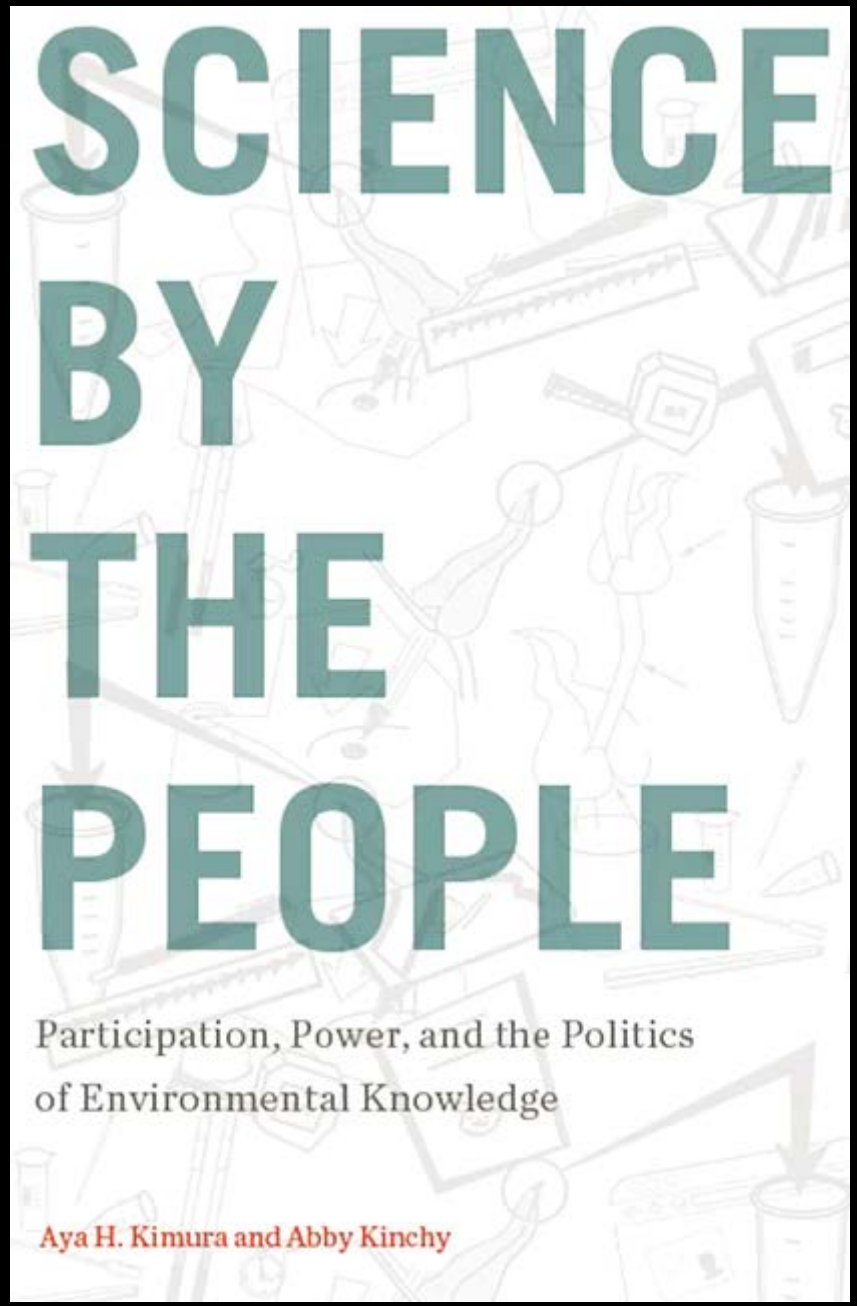

SCIENCE
BY
THE
PEOPLE
Participation, Power, and the Politics
of Environmental Knowledge
Aya H. Kimura and Abby Kinchy

Transformative citizen science:

- Allows for marginalized communities to be heard and creates platforms for their political participation.
- Produces knowledge from points of view that historically have been excluded from scientific institutions.
- Creates political power to combat environmental injustice.


Roundup Ready
MAÍZ 2
MaízGard
Protegido de Insectos

Study Design

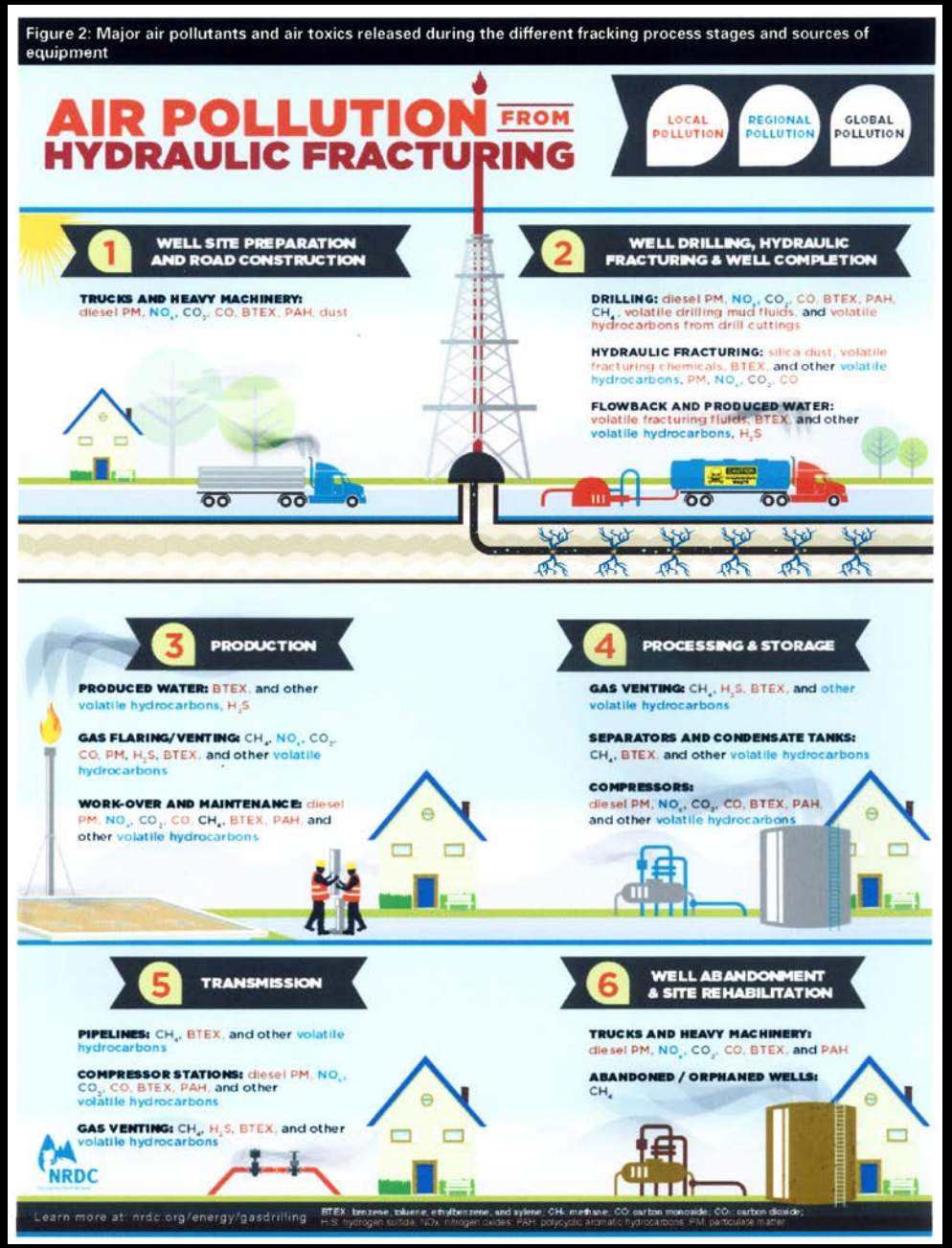
- Case studies based on primary and secondary sources.
  - Ethnographic research in the United States, Mexico, and Japan
- Additional cases based on media reports, web pages, scientific papers, etc.
- Identification and comparison of the areas of tension and contradiction within each case.
- Exploration of the social and political conditions that produced these tensions.

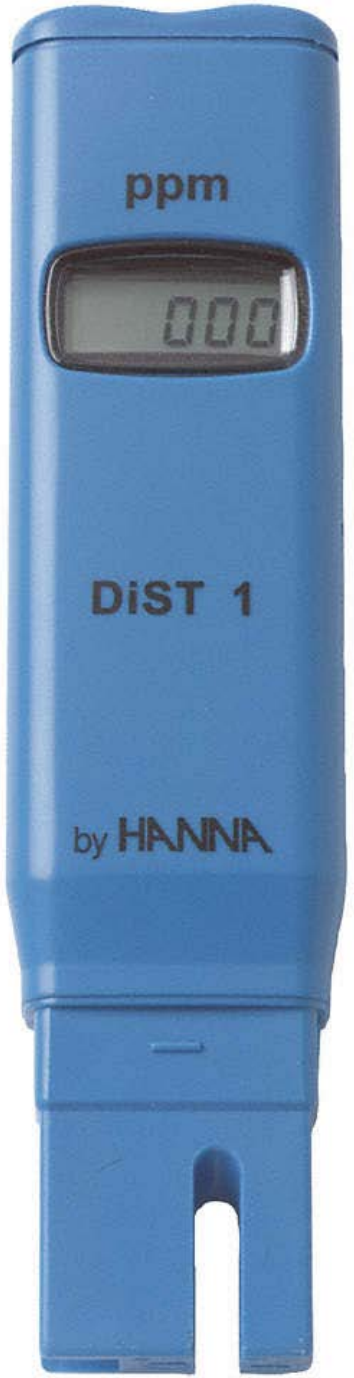
Recurring Tensions:

- Dilemmas stemming from dependency on volunteer labor.
- Tensions between the need for activism and the maintenance of an image of scientific credibility.
- Questions about how to contextualize data, in regulatory contexts that prefer “value-free” information.
- Difficult decisions about the scale at which data should be aggregated and the scale of political intervention.

Monitoring fracking

Figure 2: Major air pollutants and air toxics released during the different fracking process stages and sources of equipment

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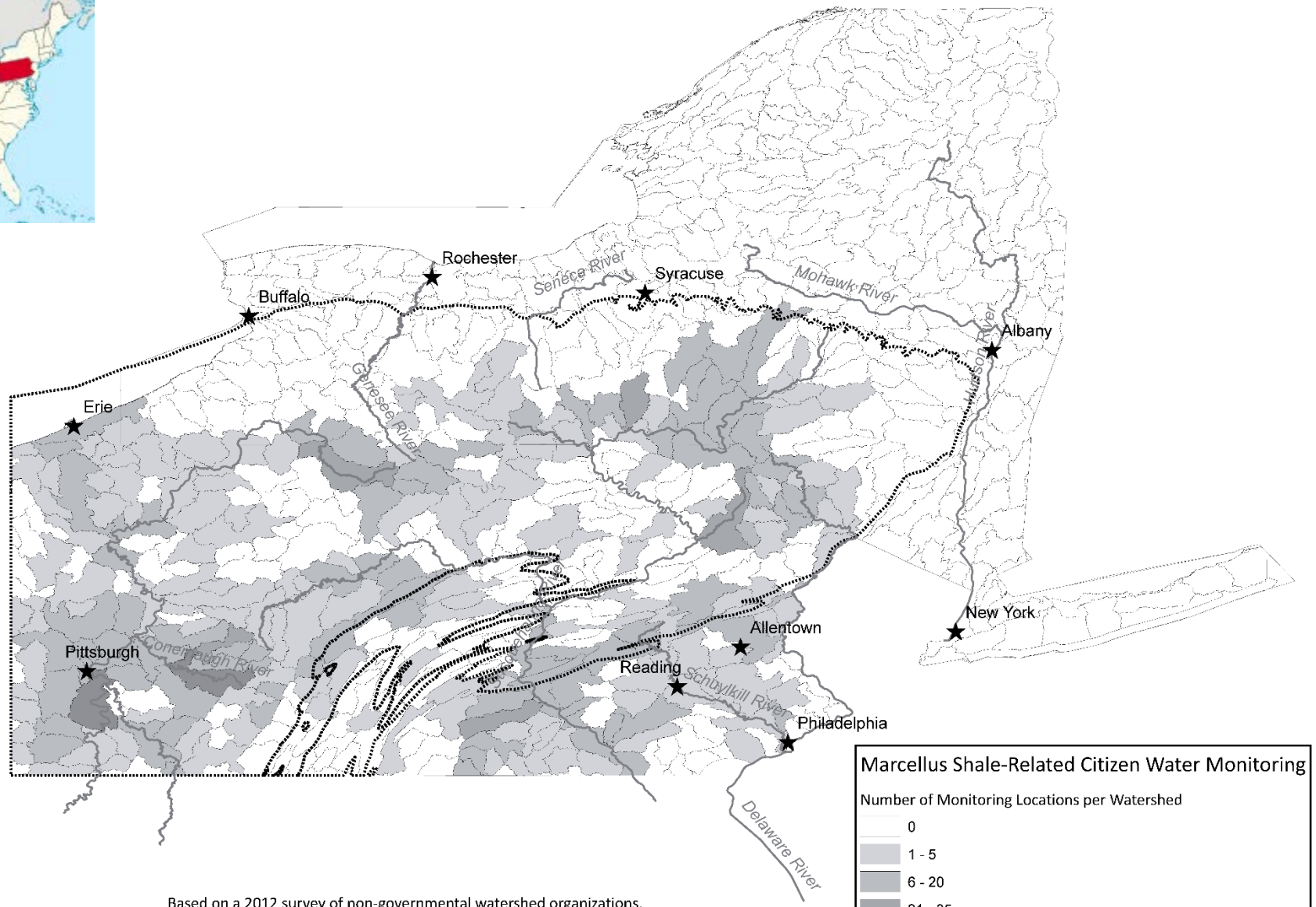
Dilemma #1 – The meaning of volunteerism

- Volunteering as an act of good citizenship, or…
- Volunteering as self-sufficiency, at a time of government rollbacks



Based on a 2012 survey of non-governmental watershed organizations.
For more information, see the Watershed Knowledge Mapping Project at http://www.watershed-mapping.rpi.edu/
Supported by NSF Grant #1126235.

Control and Quality Assurance of the data.

FIGURE 4
Diagram of the Air Sampling Bucket

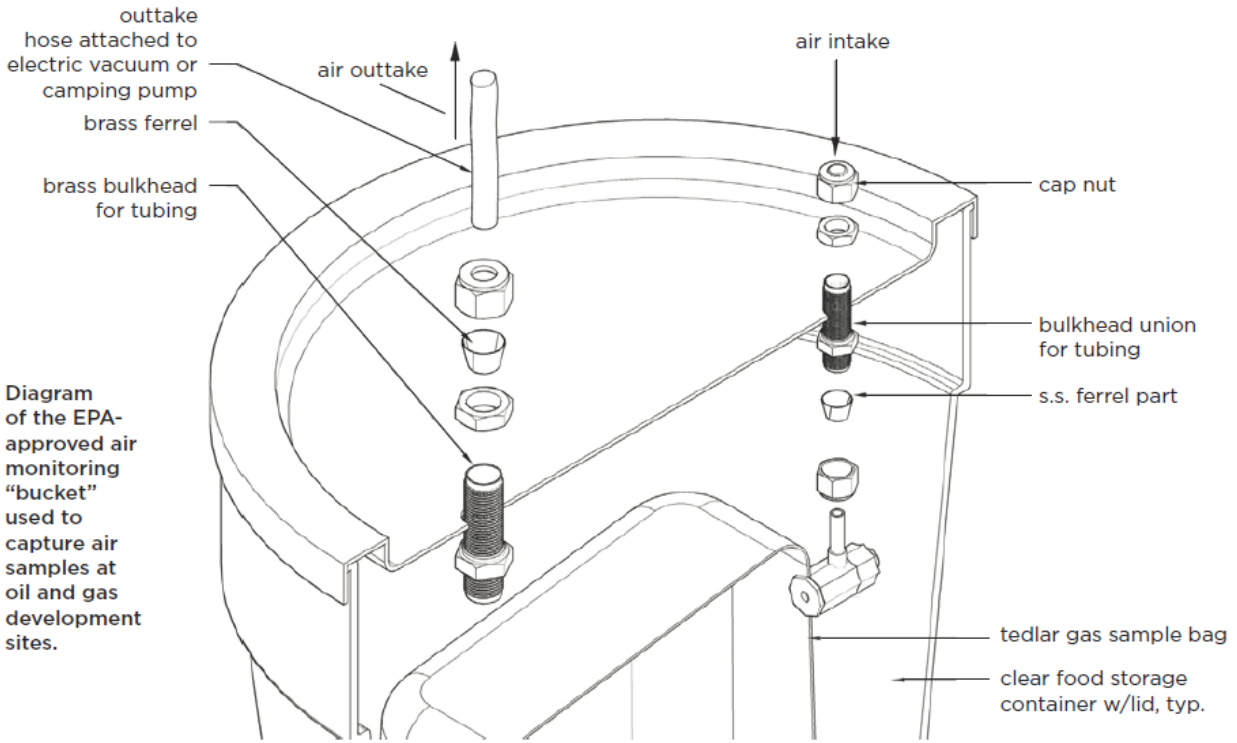


Diagram of the EPA-approved air monitoring "bucket" used to capture air samples at oil and gas development sites.

Dilemma #2 – Activism vs. neutrality

- Citizen science can help communities to validate their experiences of environmental injustice, but…
- The idea that science and activism should not mix is deeply engrained in the scientific field.

Macey et al. Environmental Health 2014, 13:82
http://www.ehjournal.net/content/13/1/82

ENVIRONMENTAL HEALTH

RESEARCH Open Access

Air concentrations of volatile compounds near oil and gas production: a community-based exploratory study

Gregg P Macey[1], Ruth Breech[2], Mark Chernaik[3], Caroline Cox[4], Denny Larson[2], Deb Thomas[5] and David O Carpenter[6*]

Abstract

Background: Horizontal drilling, hydraulic fracturing, and other drilling and well s
now used widely in the United States and increasingly in other countries. They er
production, but there has been inadequate attention to human health impacts. A
operations is an underexplored human health concern for five reasons: (1) prior fe
(2) an evolving understanding of contributions of certain oil and gas production p
state air quality monitoring networks; (4) significant variability in air emissions and
research that misses impacts important to residents. Preliminary research suggests
including hazardous air pollutants, are of potential concern. This study differs from
community-based process to identify sampling locations. Through this approach,
volatile compounds in air near operations that reflect community concerns and p
fine-grained and frequent monitoring at points along the production life cycle.

Methods: Grab and passive air samples were collected by trained volunteers at lo
systematic observation of industrial operations and air impacts over the course of

Dilemma #3 – Scientization vs contextualization

- Citizen science has the capacity to to improve upon “normal” science because participants can contexualize the data, connecting observations to their social context, but…
- In many examples, citizen science reduces complex subjects to simple measures.

Octubre 10 2003

Contaminación transgénica del maíz en México: mucho más grave

Enviado por ETC Staff el Mié, 2003-10-08 23:00

Boletín de prensa colectivo de comunidades indígenas y campesinas de Oaxaca, Puebla, Chihuahua, Veracruz, CECCAM, CENAMI, Grupo ETC, CASIFOP, UNOSJO, AJAGI

Contaminación también en Chihuahua, Morelos, Durango, Edomex, Puebla, Oaxaca, San Luis Potosí, Tlaxcala y Veracruz

Encuentran en todos contaminación con Starlink, variedad prohibida para consumo humano en Estados Unidos

Dos, tres y cuatro diferentes transgénicos en la *misma* planta, todos patentados por transnacionales biotecnológicas

Las comunidades indígenas y campesinas toman el proceso en sus manos, demandan parar importaciones de maíz, mantener la moratoria al maíz transgénico y detener la ley de bioseguridad en discusión en el Congreso.

Representantes de comunidades indígenas y campesinas de Oaxaca, Puebla, Chihuahua, Veracruz y las organizaciones **CECCAM (Centro de Estudios para el Cambio en Campo Mexicano), CENAMI (Centro Nacional de Apoyo a Misiones Indígenas), Grupo ETC (Grupo de Acción sobre Erosión, Tecnología y Concentración), CASIFOP (Centro de Análisis Social, Información y Formación Popular), UNOSJO (Unión de Organización de la Sierra Juárez de Oaxaca) y AJAGI (Asociación Jaliscience de Apoyo a Grupos Indígenas)** dieron a conocer los resultados de sus propios estudios y conclusiones sobre la presencia de contaminación transgénica en nueve estados del país: **Chihuahua, Morelos, Durango, Estado de México, San Luis Potosí, Puebla, Oaxaca, Tlaxcala y Veracruz. Los análisis fueron realizados sobre más de 2 000 plantas, provenientes de 138 comunidades campesinas e indígenas. En 33 comunidades (24% del total muestreado) de 9 Estados se encontró alguna presencia de genes transgénicos en el maíz nativo, con resultados en diferentes parcelas que van desde 1.5 por ciento hasta 33.3 por ciento.** (Ver información total al final del documento)

Adjunto	Tamaño
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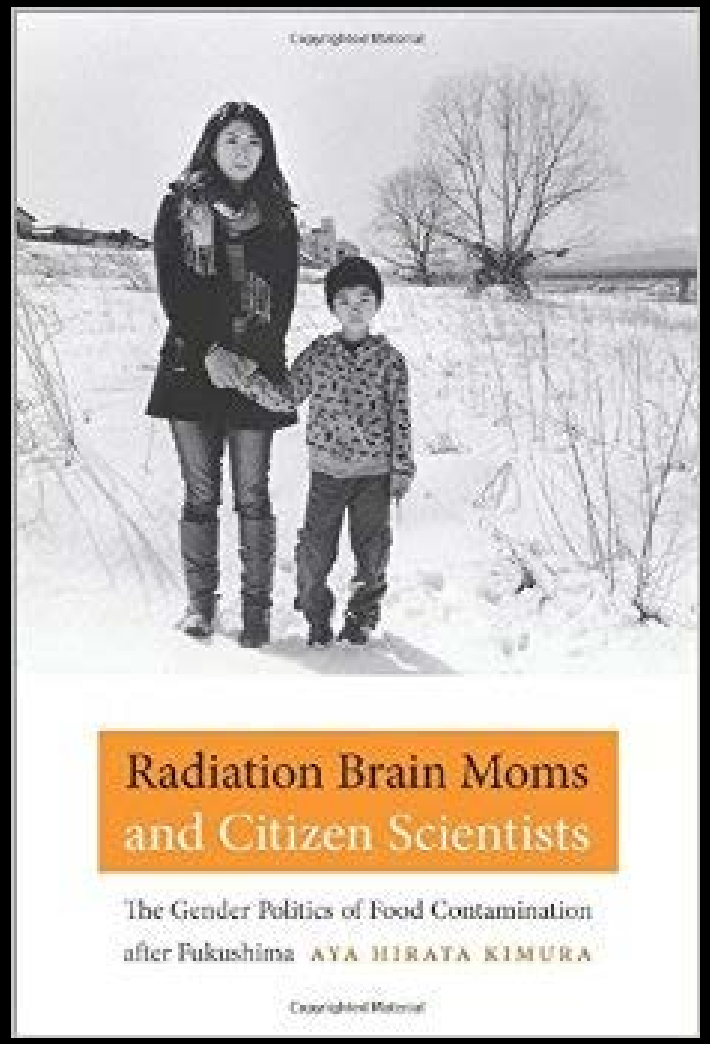
Temas relacionados: Patentes y Biopiratería Genómica y Biotecnología Derechos humanos / Derechos de los Agricultores Biodiversidad y diversidad cultural


#0001
#0002

BIOLOGY
FORTIFIED

Dilemma #4 – At what scale?

- Environmental problems are not usually contained in one country, region, or community.
- There are often good reasons to localize and personalize environmental monitoring, but…
- Hyper-local environmental monitoring can imply personal responsibility for avoiding exposure to pollution.


Radiation Brain Moms
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The Gender Politics of Food Contamination
after Fukushima AYA HIRATA KIMURA


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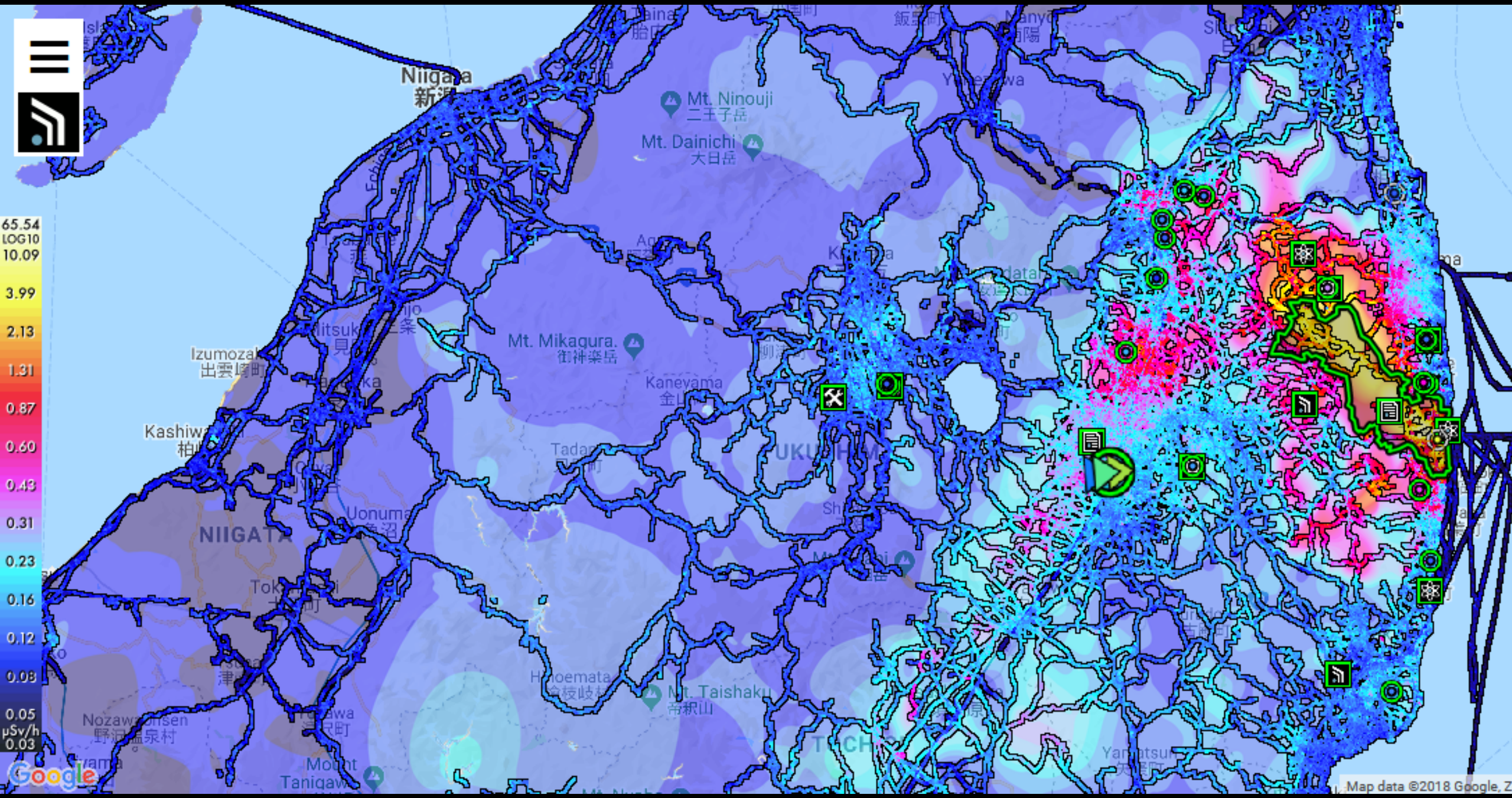
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Niigata
新潟
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Conclusions

- Citizen science has inherent dilemmas, which are related to the broader social context (including law and policy).
- There is no “one size fits all” method for confronting these dilemmas; citizen science practitioners must actively navigate them as part of their work.