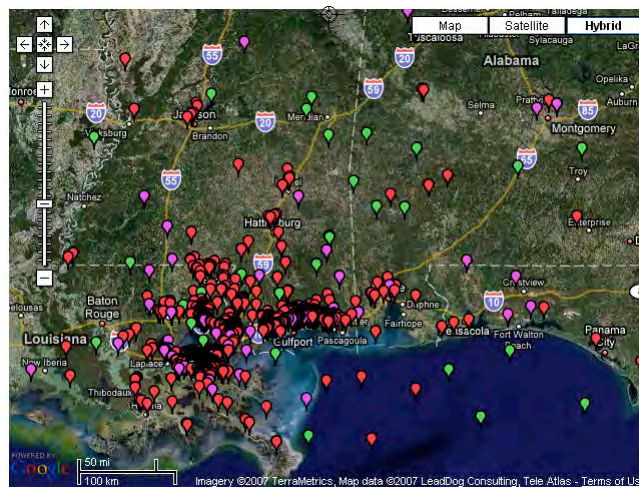


Introducing Location-Based Mass Collaboration Systems



Arie Croitoru and Ofer Arazy
The University of Alberta
Canada

Geo Mash-ups Emergency Response / Disaster Recovery



California Fire Alerts (2007)

http://maps.google.com/maps/ms?f=q&hl=en&geocode=&time=&date=&type=&ie=UTF8&om=1&msa=0&msid=114250687465160386813_00043d08ac31fe3357571&l=32.990236,-116.732483&spn=1.234787,3.010254&z=9&num=1000&utm_campaign=en&utm_source=en-mapshpp-na-us-mm&utm_medium=mapshpp&utm_term=fires

Search Results | My Maps | [View in Google Earth](#) | [Print](#) | [Send](#) | [Link to this page](#)

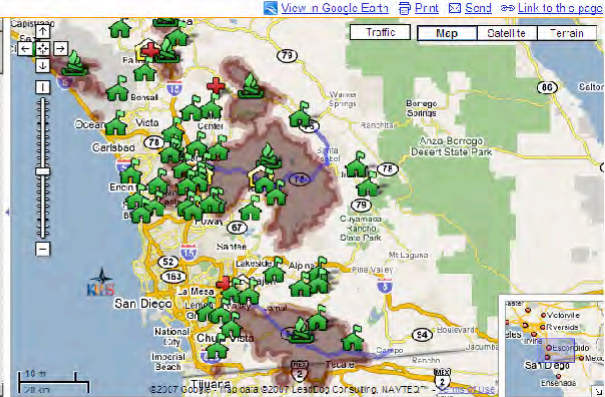
[Save to My Maps](#)

San Diego County Fires - KPBS Online

Updated 11/01/07.
All evacuation orders have been lifted.
Fire status will continue to be updated until all fires are out (click on fire icons for text pop-ups).
Fire perimeters (not active burn areas) are based on County Emergency Operations Center data. They are no longer being updated. Thanks to our friends at SDSU's Geography department for their assistance.

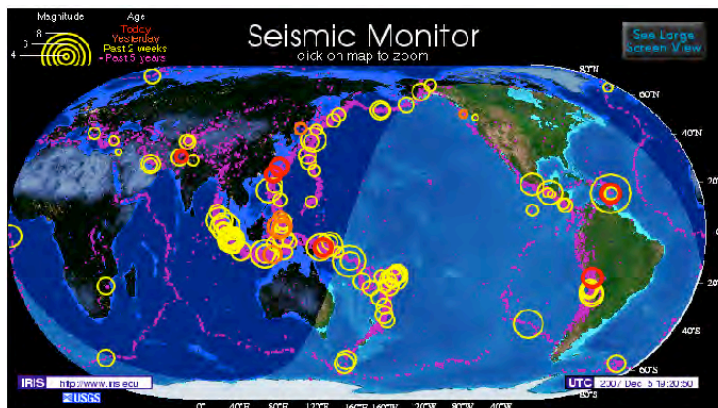
<http://www.kpbs.org/fires>
<http://maps.odcu.edu>
1,855,512 views - Public
Created by KPBS Online on Oct 21
Last updated by [KPBS Online](#) on Nov 13.

- [Harris Fire](#)
The Harris Fire is 90,440 acres and 100% out.
- [Witch Creek Fire](#)
The Witch Fire is 197,390 acres and 100% out.
- [Evacuation Lifted: Escondido](#)



IRIS Seismic Monitor

<http://www.iris.edu/seismon/>



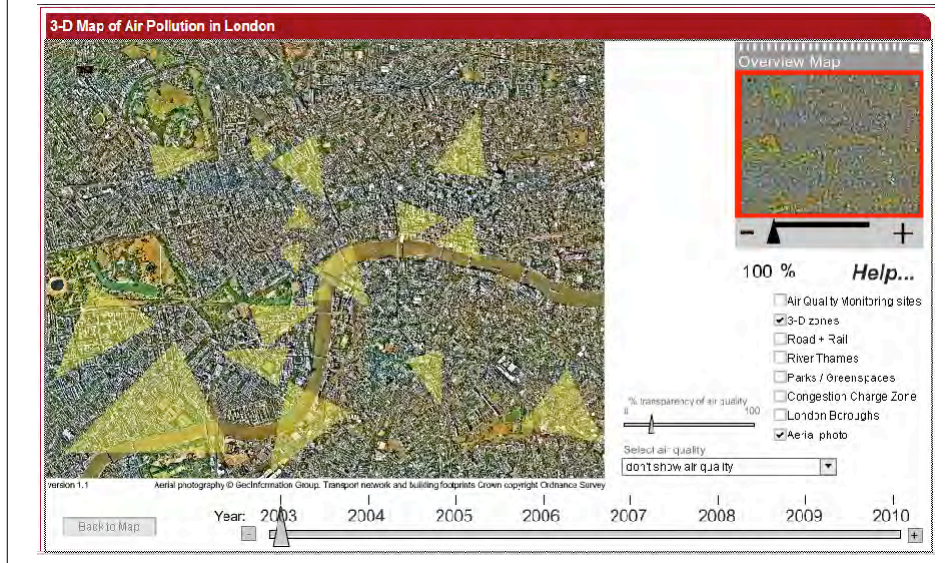
Longitude: -67W Latitude: 90S

[About](#) | [FAQ](#) | [Earthquake Headlines](#) | [Last 30 Days Earthquakes](#)

[Special Events](#) | [Station Info](#) | [Plate Tectonics](#) | [Education Links](#)

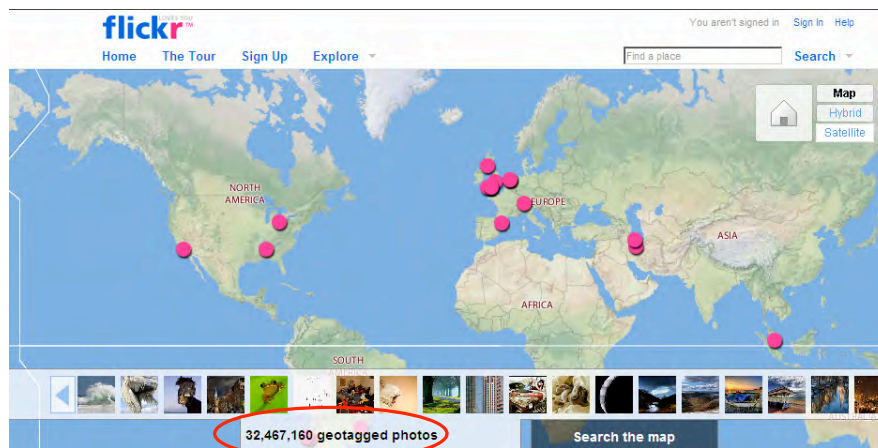
London Air Pollution

<http://www.londonair.org.uk/london/asp/virtualmaps.asp?view=maps>

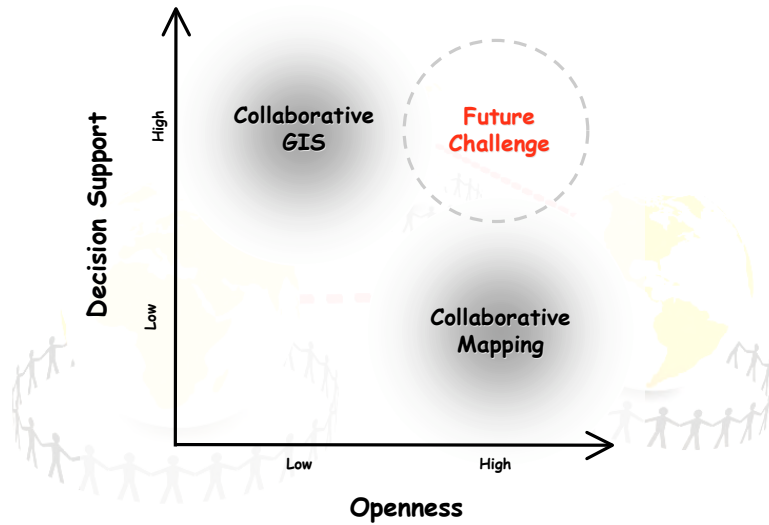


Flickr Map (Geotagging)

<http://www.flickr.com/map/>



From Evolution To Revolution



Fusing sensing and sense making

- **Emerging enabling technologies:**

- Sensor networks
- Mobile & ubiquitous computing
- Geo-enabled devices
- Broadband networking
- Visualization techniques

- **Emerging IS applications:**

- Mass collaboration
- Social Networks of knowledge
- Web-based Geographic Information Systems (GIS)

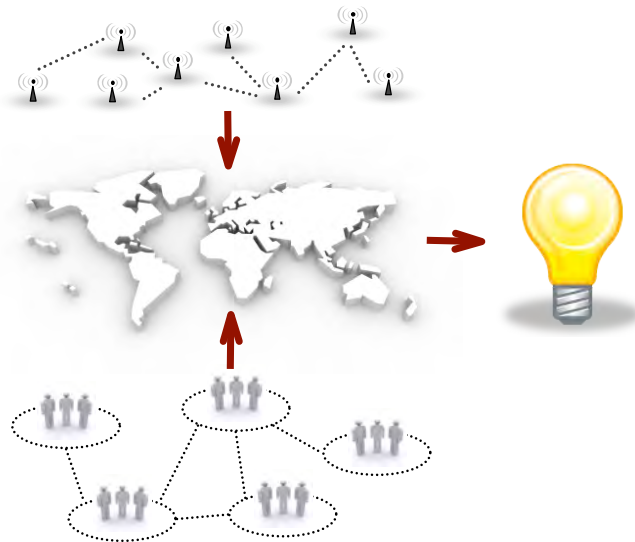
Fusing sensing and sense making

- **Objective:**

Develop a mass collaboration platform for fusing **human in-situ observations** (supported by mobile devices) with **sensor** and **social networks** for the generation of **geospatial knowledge**.



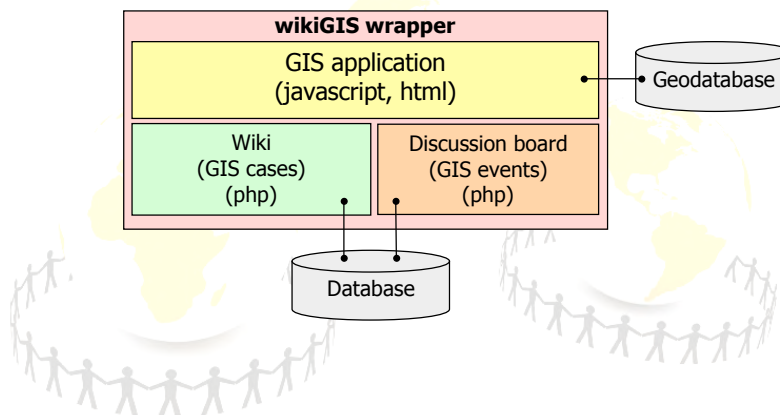
Location-Based Mass Collaboration



Design principles

- **Information aggregation:**
 - Collect information elements (e.g. text, audio, imagery, video)
 - Synthesis of multiple elements into a coherent knowledge product
- **Social:** enabling distributed groups to collaborate in
 - Contributing content
 - Sense-making / synthesis
- **Space:**
 - Geographical reference for information
 - Geo-spatial data analysis
- **Time:**
 - Time reference for information
 - Temporal data analysis

The wikiGIS Platform



The wikiGIS Platform

The screenshot shows the wikiGIS platform interface in a Mozilla Firefox browser. The browser address bar shows the URL: `http://localhost:8000/geoserver/demoapp/tnug.html`. The page title is "WikiGIS". The interface includes a navigation bar with "Event View", "Case View", and "Hybrid View" tabs. Below the navigation bar, there are "Add Event" and "Add Case" buttons. The main content area is divided into two sections: "GIS Cases" and "GIS Events".

GIS Cases Table:

Cases	Relevancy	Revision	Last Update
Power_outage_due_to_storm	★★★★★	1	Wed, 04 Jul 2007 17:50:18 GMT
Avalanche_near_tracks	★★★★★	1	Wed, 04 Jul 2007 06:49:53 GMT
Landslide_near_the_railroad	★★★★★	1	Wed, 16 May 2007 07:02:42 GMT

GIS Events Table:

Topics	Relevancy	Replies	Author	Views	Last Post
Power failure	★★★★★	0	marc	2	Wed Jul 04, 2007 5:46 pm marc
Avalanche	★★★★★	0	James	4	Wed Jul 04, 2007 6:44 am James
A Landslide	★★★★★	6	henry	110	Wed May 16, 2007 7:07 am henry

The wikiGIS Platform

The screenshot shows the wikiGIS platform interface in a Mozilla Firefox browser. The browser address bar shows the URL: `http://localhost:8000/geoserver/TestWMSHost`. The page title is "WikiGIS". The interface includes a navigation bar with "Event View", "Case View", and "Hybrid View" tabs. Below the navigation bar, there are "Add Event" and "Add Case" buttons. The main content area is divided into two sections: "GIS Cases" and "GIS Events".

The "GIS Cases" table is filtered by a date range from 01/01/2007 to 12/31/2007. The "GIS Events" table is also filtered by the same date range.

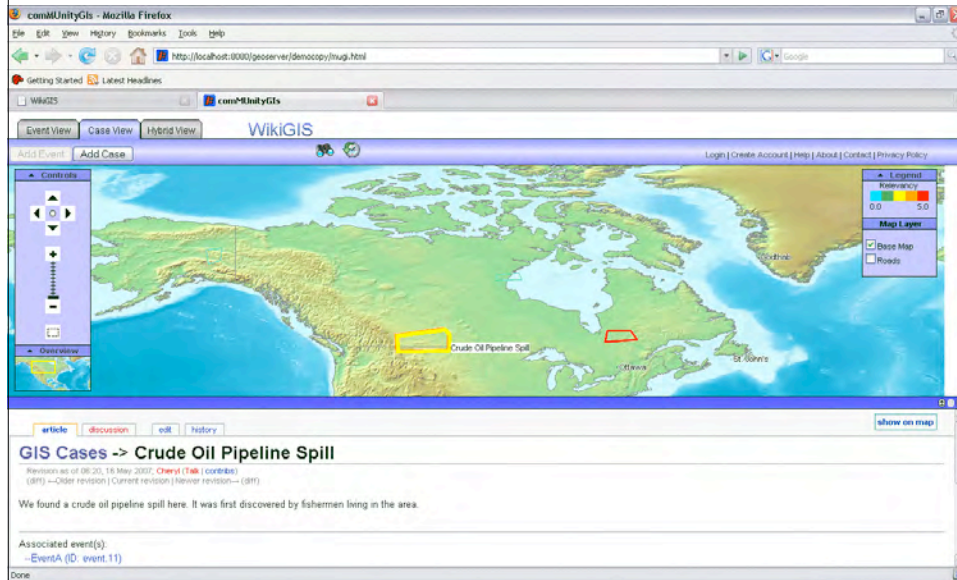
GIS Cases Table (Filtered):

Cases	Relevancy	Revision	Last Update
Avalanche_near_tracks	★★★★★	1	Wed, 04 Jul 2007 06:49:53 GMT
Landslide_near_the_railroad	★★★★★	1	Wed, 16 May 2007 07:02:42 GMT
Landslide_near_railroad	★★★★★	1	Wed, 16 May 2007 07:01:02 GMT
Gas_Pipeline_Leak	★★★★★	1	Wed, 16 May 2007 06:23:37 GMT
Crude_Oil_Pipeline_Spill	★★★★★	1	Wed, 16 May 2007 06:20:11 GMT
Case2	★★★★★	2	Wed, 16 May 2007 04:05:46 GMT
Case1	★★★★★	1	Mon, 14 May 2007 19:18:14 GMT

GIS Events Table (Filtered):

Topics	Relevancy	Replies	Author	Views	Last Post
Avalanche	★★★★★	0	James	4	Wed Jul 04, 2007 6:44 am James
A Landslide	★★★★★	6	henry	112	Wed May 16, 2007 7:07 am marc
A gas leak	★★★★★	0	douglas	18	Wed May 16, 2007 6:14 am douglas
I think there's a leak	★★★★★	0	vincent	3	Wed May 16, 2007 6:13 am douglas
Gas is leaking	★★★★★	0	henry	5	Wed May 16, 2007 6:13 am henry
seems like a snail	★★★★★	0	henry	7	Wed May 16, 2007 6:11 am henry

The wikiGIS Platform



Key challenges (1)

- Group size and diversity
- Motivation
- Accountability and privacy
- Geo-social behavior & mechanisms
- Quality control and evaluation

Key challenges (2)

- Hypermedia georeferencing
- Evidence analysis
- Data fusion
- Database integration
- Interoperability & ontology
- Geo-social mechanisms

