

Earthquakes and You

Quick Intro

USGS is the only Federal agency with responsibility for recording and reporting earthquake activity nationwide (via our Earthquake Hazards Program)

Currently locate over 20,000 quakes a year

Estimate several million earthquakes each year, worldwide. Many undetected due to low magnitudes and occur in remote areas.

We put out various maps showing earthquake density, estimated population exposure (PAGER), location maps, Did You Feel It?, and more.

Frequency of Occurrence of Earthquakes

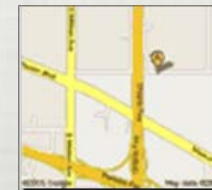
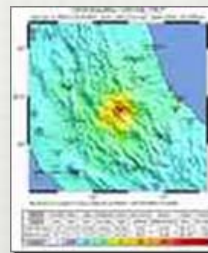
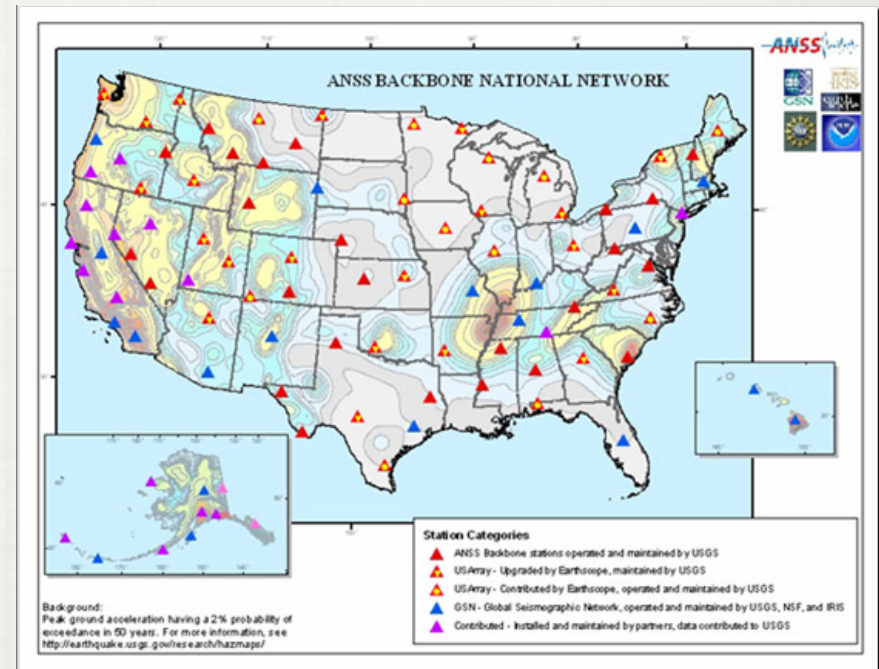
Magnitude	Average Annually
8 and higher	1 ¹
7 - 7.9	17 ²
6 - 6.9	134 ²
5 - 5.9	1319 ²
4 - 4.9	13,000 (estimated)
3 - 3.9	130,000 (estimated)
2 - 2.9	1,300,000 (estimated)

¹ Based on observations since 1900.
² Based on observations since 1990.

Earthquake Data

Push Data

- Seismographs monitor, record, and transmit data about quake.
- Data is reviewed by scientists within the ANSS (Advanced National Seismic System)
- Reviewed data is made available via USGS Earthquakes website, XML feeds, various maps, etc.



Public Engagement

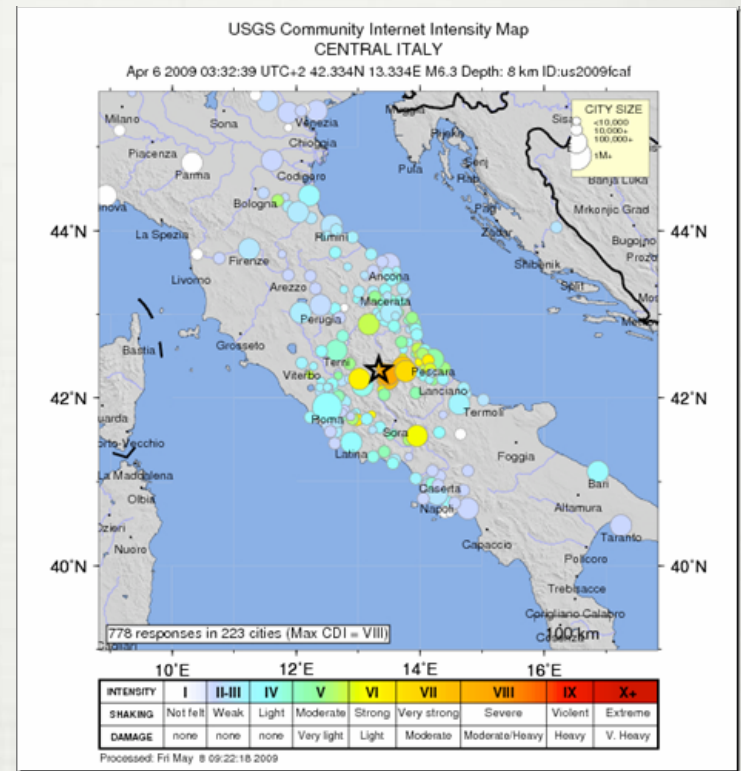
Did You Feel It?

- Public submits information on what they felt through a short series of forms on the USGS site.
- That data is plotted on a map showing # of responses, intensity felt, location, and more.

Great example of “citizen science!”

Helps improve overall scientific data of the event.

But, how do we leverage the social web or “Web 2.0” in our existing products?



Tapping into Web 2.0

New ideas

Social web community very powerful, active, resilient.

Need for "right now" info!

Not afraid to point out when something doesn't work for them

Webware
COOL WEB APPS FOR EVERYONE

May 6, 2009 10:57 PM PDT

Twitter Search to dive deeper, rank results

Also, here is a real-time search story from Jayaram, which he used to illustrate the immediacy of Twitter Search during the panel discussion. He told of being in the Twitter offices in San Francisco on March 30, when the Twitter engineers noticed that the word "earthquake" had suddenly started trending up. They didn't know where the earthquake was.

Several seconds later, their building started to shake. The earthquake had been in Morgan Hill, 60 miles south of San Francisco, and the tweets about the shake reached the office faster than the seismic waves themselves.

1715 tweets
retweet

Twittering the earthquake in China

Posted in **technology** by Robert Scoble on the May 12, 2008
Tags: **BBC, Chengdu, China, earthquake, Twitter**

BBC: **Twitter and the China earthquake.**

I reported the major quake to my followers on Twitter before the USGS Website had a report up and about an hour before CNN or major press started talking about it. Now there's lots of info over on Google News.

How did I do that? Well, I was watching Twitter on Google Talk. Several people in China reported to me they felt the quake WHILE IT WAS GOING ON!!!

129 Responses to 'Twittering the earthquake in China'
Subscribe to comments with [RSS](#)

Recently Interesting in My Google Reader - 12 May 2008 | My Blog Posts
said,

ON MAY 12, 2008 ON 1:36 AM

[...] Quake in China BBC: Twitter and the China earthquake. I reported the Twitter quake to my followers before the USGS Website had a report up. How did I do

ARWildlifePhoto: Monitor **USGS** gauge at Ponca for flood conditions, <http://bit.ly/fLywn> (expand) ,00060 .
about 2 hours ago from web · [Reply](#) · [View Tweet](#)

gabyyu: RT **@twitearth**: Earthquake just now near Berkeley, California. Magnitude 3.0. **USGS** info: <http://bit.ly/14FHqj> (expand) (via **@mashable**)
about 4 hours ago from Nambu · [Reply](#) · [View Tweet](#)

twitearth: Earthquake just now near Berkeley, California. Magnitude 3.0. **USGS** info: <http://bit.ly/14FHqj> (expand) (via **@mashable**)
about 4 hours ago from Tweetie · [Reply](#) · [View Tweet](#)

ArenalVolcano: **SI/USGS** Weekly Volcano Activity Report for 5/6-12/2009 : Eruptions: Sporadic strombolian eruptions from the Crat.. <http://tinyurl.com/osk4bp> (expand)
about 4 hours ago from twitterfeed · [Reply](#) · [View Tweet](#)

rajtilak: Earthquake just now near Berkeley, California. Magnitude 3.0. **USGS** info: <http://bit.ly/14FHqj> (expand) (via <http://ff.im/2RCz2>) <http://ff.im/2Sk6c>
about 4 hours ago from FriendFeed · [Reply](#) · [View Tweet](#)

piesrtasty: RT **@Jason_Pollock**: BREAKING NEWS: Earthquake just now near Berkeley, CA. Magnitude 3.0. **USGS** info: <http://bit.ly/14FHqj> (expand) (via **@mashable**)
about 5 hours ago from twhiri · [Reply](#) · [View Tweet](#)

Dawnie22: RT **@Jason_Pollock**: BREAKING NEWS: Earthquake just now near Berkeley, CA. Magnitude 3.0. **USGS** info: <http://bit.ly/14FHqj> (expand) (via **@mashable**)
about 6 hours ago from TweetDeck · [Reply](#) · [View Tweet](#)

Moodzulu: RT **@Jason_Pollock**: BREAKING NEWS: Earthquake just now near



TAPPING INTO WEB 2.0

New ideas



140 character messages ("tweets") sent via phone, web, 3rd party applications

+

```
<updated>2009-05-12T07:30:22Z</updated>
```

```
<google:location>iPhone: 32.647880,-117.010682</google:location>
```

```
<google:location>San Diego, CA</google:location>
```

+

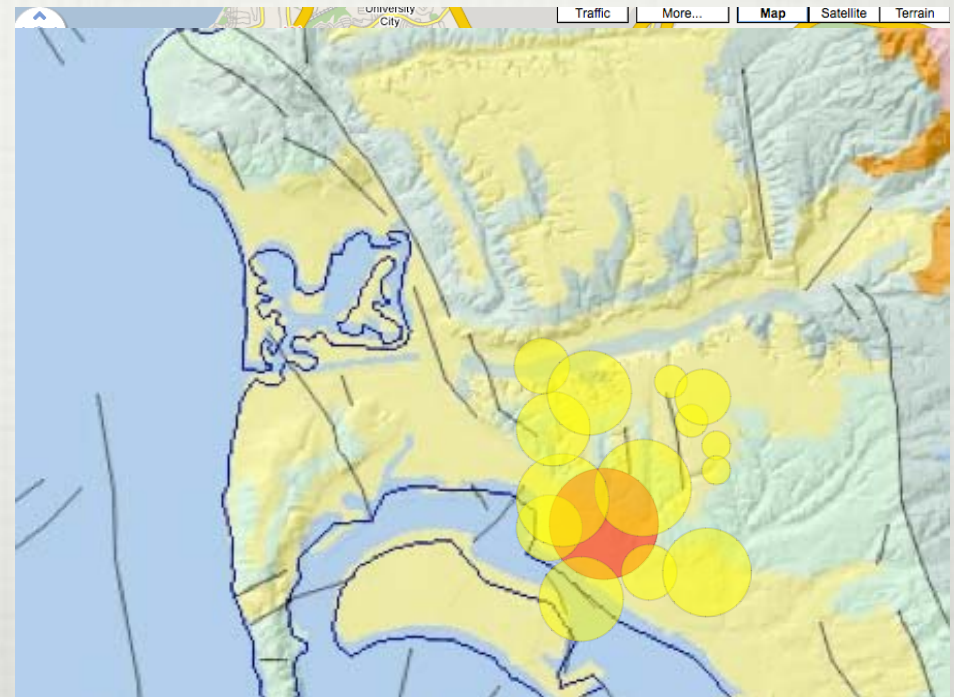
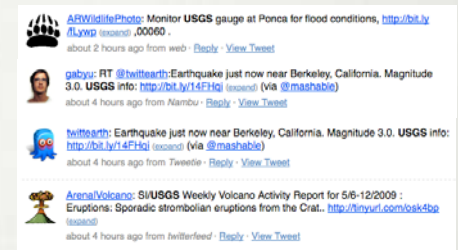


Earthquake Data
(preliminary epicenter data)

+



=



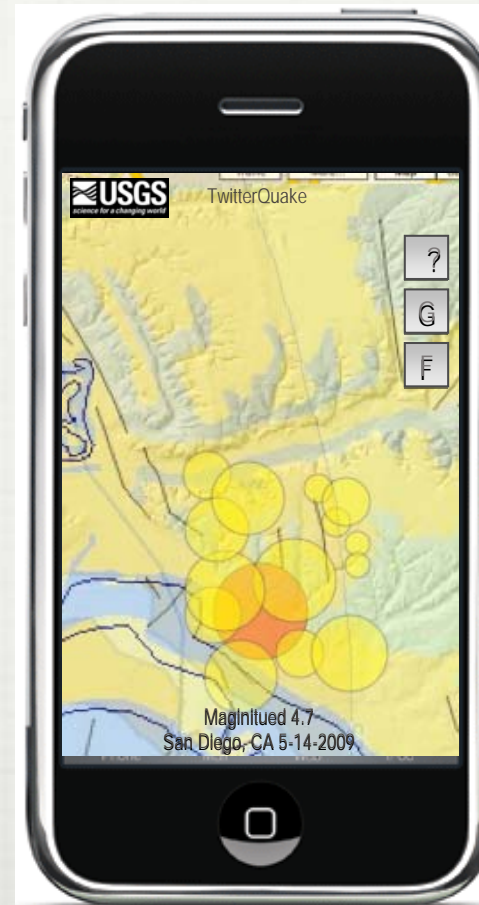
TAPPING INTO WEB 2.0

New ideas

iPhone app?

Send a tweet from the app...you become a part of the data.

Turning on and off data layers (geologic map, known faults, etc.)



Concept only...not actual representation.

Summary

Beneficial to tap into the “wisdom of the crowds” through Web 2.0 services.

Helps to encourage citizen science and leverage that public involvement to improve or complement existing data.

Encourages more Web 2.0 use in other areas of science.

A Twitter application could:

- give real-time data on preliminary epicenter location.
- real-time public acknowledgement of a quake, with tweets, with their location.
- multi-layered maps to compare tweets with geology with fault lines with time.

With with Web 2.0 the sky's the limit! We're only limited by our imagination.