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**Crowdsourced Data,
Volunteer Activism
& Crisis Mapping from a
GIS Perspective**



The International Network of Crisis Mappers

- A venue for an interdisciplinary mix of field practitioners, scholars, specialists to meet
 - Conference, ICCM
 - Virtual
- Sharing via google groups and Ning

What is Crisis Mapping?

An interdisciplinary new field?

A subfield of GIS? Something else?



Brega, a local doctor told the BBC. A convoy of military vehicles was hit in a village when a trailer carrying explosives was hit. Children could be among the victims. It has not been confirmed.

<http://www.telegraph.co.uk/news/worldnews/africaandthemiddleeast/libya/1175117/libya-live.html> ★

uuugggh

where did you get this one?

I follow links from twitter thru to see where they lead

I see

..

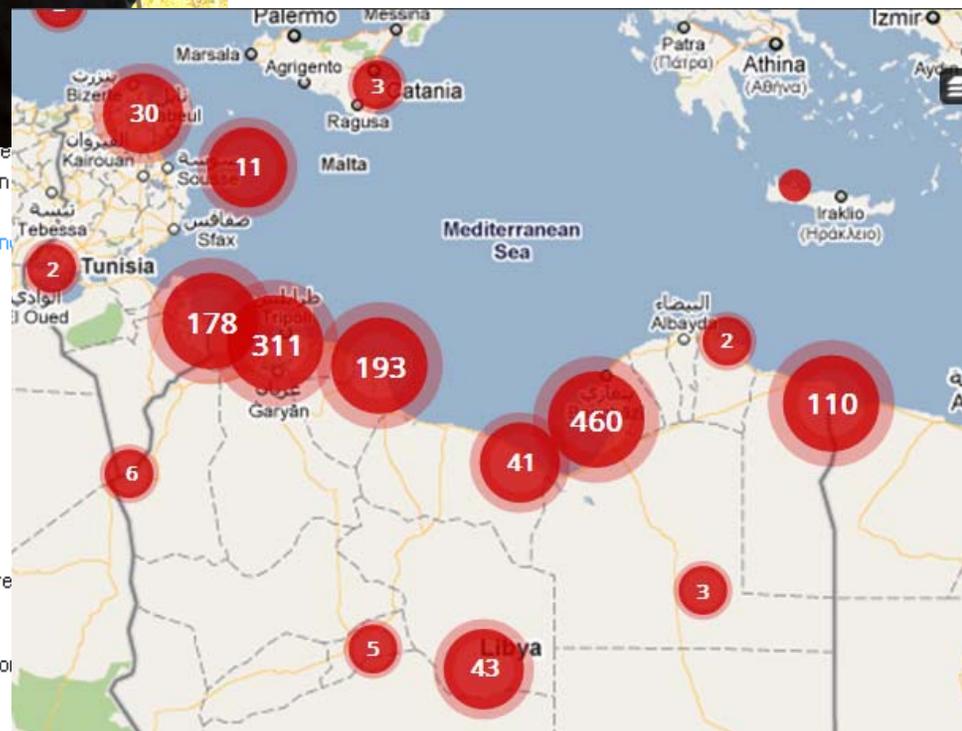
it says it hasn't been confirmed though

but one thing we know for sure, things are going on in Brega

yes.. its a keep an eye out or look for more info

URGENT: #Malta flagged cargo ship "GLYFADA" now in port

that from twitter.



- People Movement
- Health
- Logistics
- Security/Threat
- Sources
- Humanitarian Response
- 3W Clusters
- Media Outlets
- Material Need
- Int'l Coalition



Origins & Accelerants

- Participatory maps
- User-friendly platforms
- Crowdsourced event data:
 - Cell phones, twitter, social media



Core components of Crisis Mapping

- **Data**
 - Crowdsourced events
 - Imagery
 - Roads, landcover, other variables
- Visualization
- Analysis
- Response & P2P Connection

Report Title

Description

Date & Time: Today at 6:35 pm

[+ Modify Date](#)

Categories

- | | |
|--|--|
| <input type="checkbox"/> Aggregate Counts (إجمالي العدد) | <input type="checkbox"/> Food Tampering (الدمج بالخداء) |
| <input type="checkbox"/> Announcement (إعلان) | <input type="checkbox"/> Killed (قتل) |
| <input type="checkbox"/> Article (مقال) | <input type="checkbox"/> Missing (اعتقال/مفقود) |
| <input type="checkbox"/> Eyewitness Report (تقرير شاهد عيان) | <input type="checkbox"/> Water Tampering (الدمج بالمياه) |

Missing Person First Name

Missing Person Last Name

Date person was last seen or killed



Optional Information

Find a location near you

Select a City



City, State and/or Country

Find Location

* Search for your location using a location name or latitude, longitude coordinates (format: 38.19,-85.61), or click on the map to pinpoint the correct location.

Refine Location name

Example: Corner of City Market, 5th Street & 4th Avenue, Johannesburg

News source link

Video link

Upload Photos

Browse...

Syria Tracker

Missing, Killed, Shaheed, Martyr, Kidnapped, Eyewitness, Report

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REPORTS

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Eyewitness account from Syria

UNVERIFIED

🕒 16:36 Apr 29 2011 🌐 Syria

Eyewitness Report (تقرير شاهد عيان)

Description

[Editor's Note: These accounts come via sources in Syria. Their identities are being withheld for their own protection.] I was in Zaid Mosque which had heavy security presence under the guise of protecting people. The sermon attempted to calm people down, but it was not long before less than 200 people started a demonstration calling [...]

News Source Link

<http://alive.in/syria/blog/2011/04/29/eyewitness-account-from-syria/>

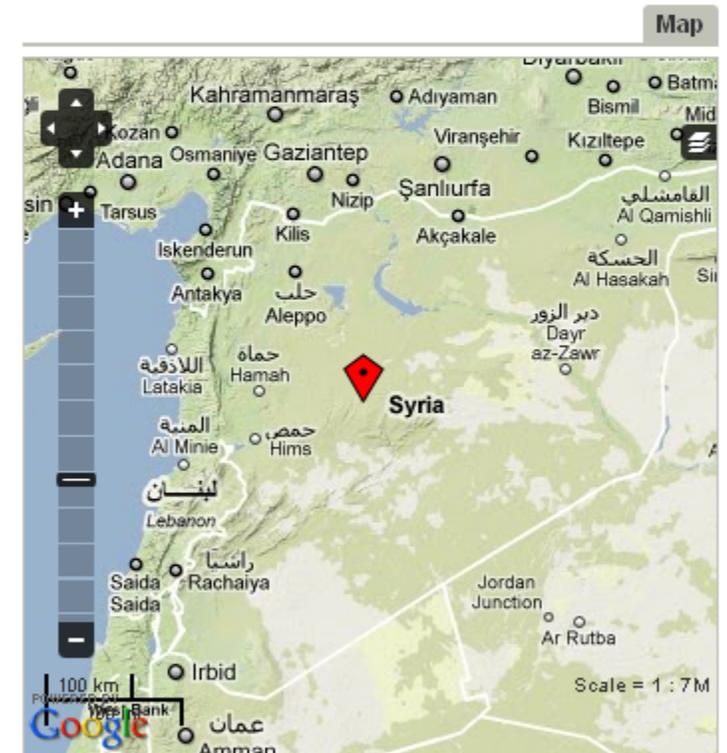
Credibility: ▲ ▼ 0

Leave A Comment

Name:

Email:

Comments:



◀ Wider map

Additional Reports

[Eyewitness account from Syria](#)

🕒 16:36 Apr 29, 2011

🌐 Syria, 0 Kms

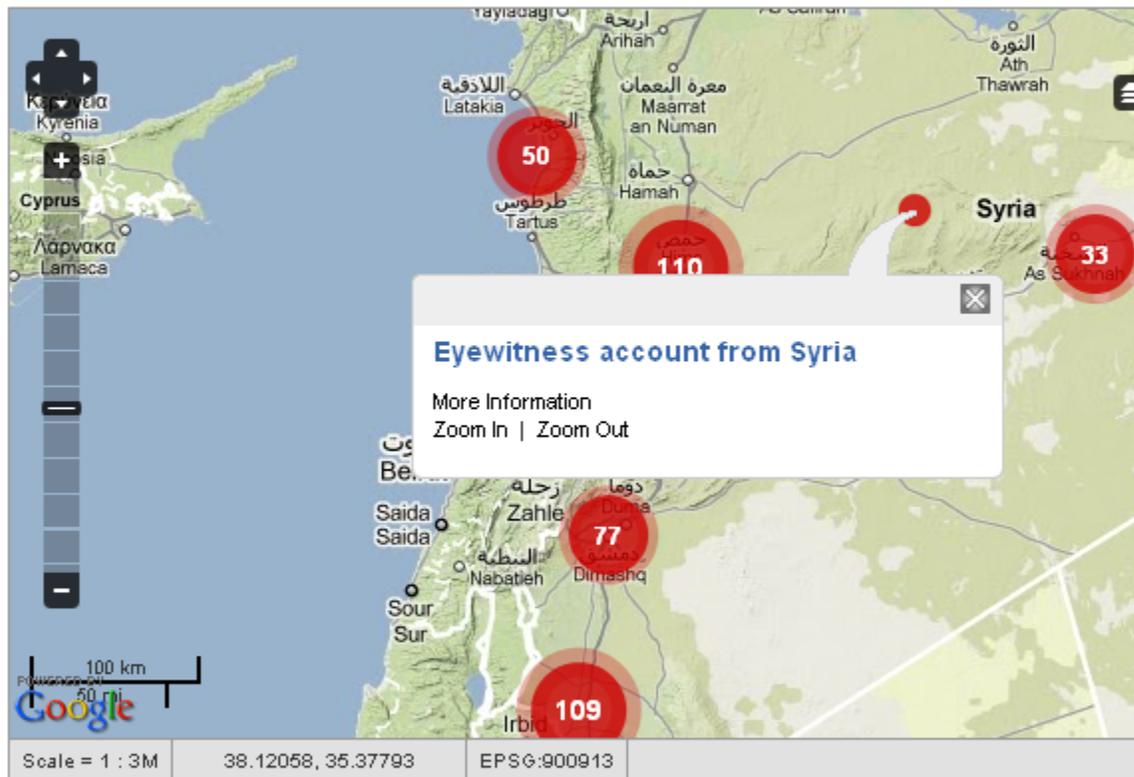
[Rising death toll](#)

🕒 16:08 Apr 23, 2011

Please help us document the crimes in Syria. Please see disclaimer for additional information.

FILTERS → **REPORTS** NEWS PICTURES VIDEO ALL

FULL SCREEN MAP



From: Apr 2011 to: May 2011

Play



↓ CATEGORY FILTER [HIDE]

ALL CATEGORIES

MISSING (اعتقال/مفقود)

KILLED (قتل)

TWITTER REPORTS

EYEWITNESS REPORT (تقرير شاهد عيان)

ANNOUNCEMENT (إعلان)

FOOD TAMPERING (العبث بالغذاء)

WATER TAMPERING (العبث بالمياه)

ARTICLE (مقال)

AGGREGATE COUNTS (إجمالي العدد)

How to Report

1. By sending an email to svriatracker@gmail.com




ALIVE IN LIBYA

HUMAN STORIES FROM THE FRONTLINES

Clipped from blogs.aljazeera.net



Al Jazeera
live blog 10
Febr

News In Depth Programmes Video Blogs Destinations
Correspondents Business Investigations

Live blog Feb 11 - Egypt protests



Al Jazeera Staff
Al Jazeera journalists bring you the latest news.

Recent Middle East Blog Posts

- 11-2-11
- Live blog Feb 11 - Egypt protests
- Kirkuk explosions: No surprise
- Live blog Feb 10 - Egypt protests
- Is Saudi's oil peaking?

Text your needs to

4636

in Haiti





SMS can facilitate telling your story



Volunteers fill the gap



In Haiti? Text **4636** (International: **+44 762.480.2524**) on Digicel or Comcel with your **location and need**. Report emergencies and missing persons.

Haiti

The 2010 Earthquake in Haiti

Ushahidi-Haiti @ 

Search Reports Here:

[DOWNLOAD REPORTS \(3605\)](#)

[REPORTS RSS](#)

Transitioning to Noula.ht

Our local partner, Haiti-company Solutions, has the most up-to-date reports for first responders — please visit their site for the most current data.

[+ SUBMIT INCIDENT](#)

[HOME](#)

[REPORTS](#)

[SUBMIT INCIDENT](#)

[GET ALERTS](#)

[CONTACT US](#)

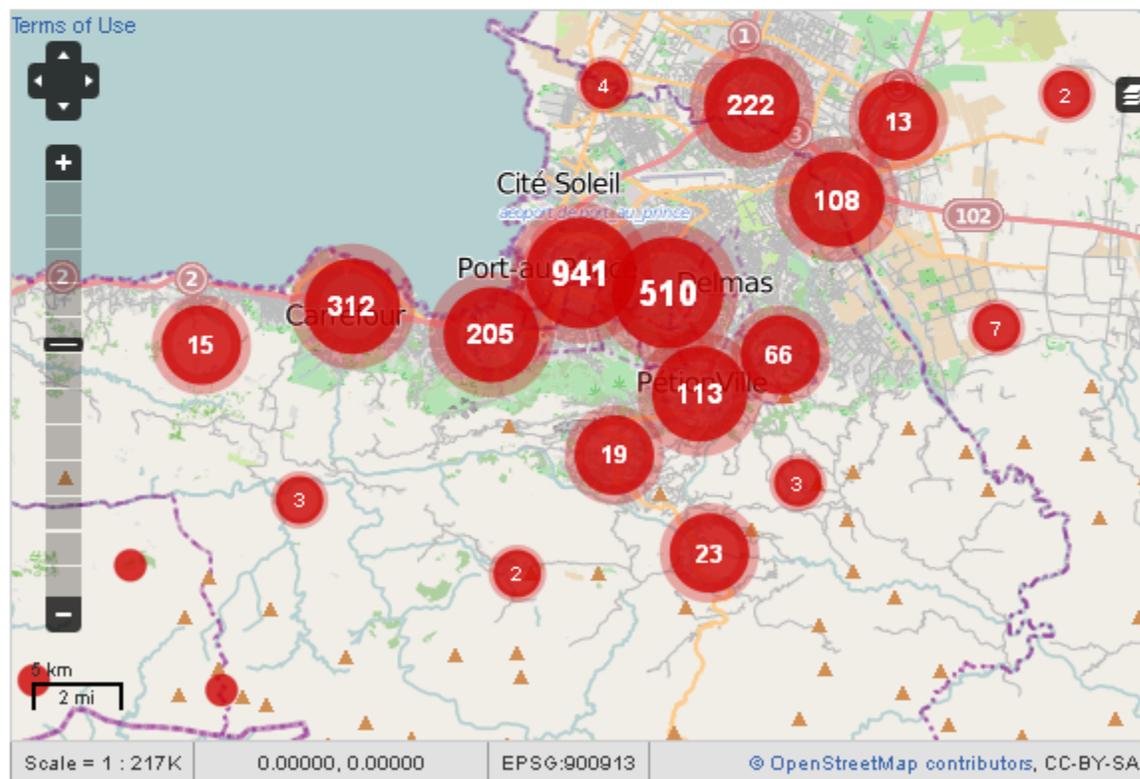
[HOW TO HELP](#)

[ABOUT](#)

FILTERS → [REPORTS](#) NEWS PICTURES VIDEO TODO

VIEWS → [CLUSTERS](#)

↓ CATEGORY FILTER



-  ALL CATEGORIES
-  1. URGENCES | EMERGENCY
-  2. URGENCES LOGISTIQUES | VITAL LINES
-  3. PUBLIC HEALTH
-  4. MENACES | SECURITY THREATS
-  5. INFRASTRUCTURE DAMAGE
-  6. NATURAL HAZARDS
-  7. SECOURS | SERVICES AVAILABLE

↓ TIMELINE OF EVENTS







Open Street Map - 24 hours later



موقع بوناساند لا ينضم إلى مسئولية بخصوص صحة التقارير المرفوعة على الموقع، هذه التقارير المرفوعة تمثل جزء فرعي يصر عن تجارب المواطنين والتي يتم اصدار تقارير نتائجها بواسطة أفراد مستقلين ولا تعطي هذه التقارير صورة كاملة عن الأحداث في مصر

FILTERS → **REPORTS** NEWS PICTURES VIDEO ALL

عرض الخريطة الكاملة



↓ [CATEGORY FILTER] [HIDE]

-  ALL CATEGORIES
-  A.CAMPAIGN EVENT
-  CANDIDATES PREVENTED FROM REGISTERING
-  DEMONSTRATION / RALLY
-  ILLEGAL CAMPAIGNING
-  **VIOLETION OF POLITICAL RIGHTS**
-  MEDIA BIASED
-  OTHER
-  B.VOTING ISSUE
-  C.POLLING STATION
-  D.VOLENCE
-  E. ALL WENT WELL

التصنيف الأكثر امان من هجمة تنمير

FILTERS → **REPORTS** NEWS PICTURES VIDEO ALL

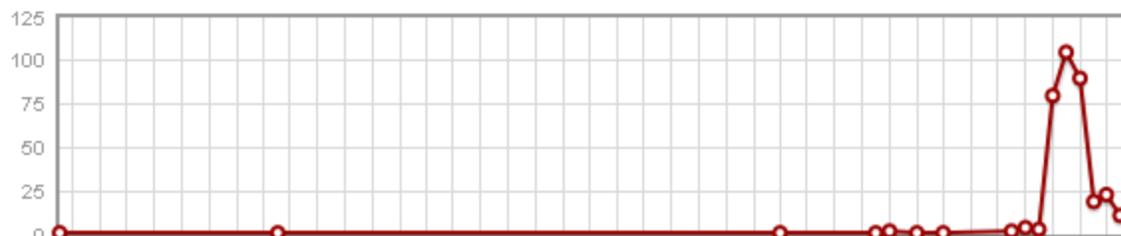
FULL SCREEN MAP



From: Oct 2004 to: Apr 2011

Play

Oct 2004 Jun 2005 Feb 2006 Apr 2007 2008 2009 2010 2011



↓ CATEGORY FILTER [HIDE]

ALL CATEGORIES

TOUCHING

CATCALLS

OGLING

COMMENTS

STALKING OR FOLLOWING

PHONE CALLS

INDECENT EXPOSURE

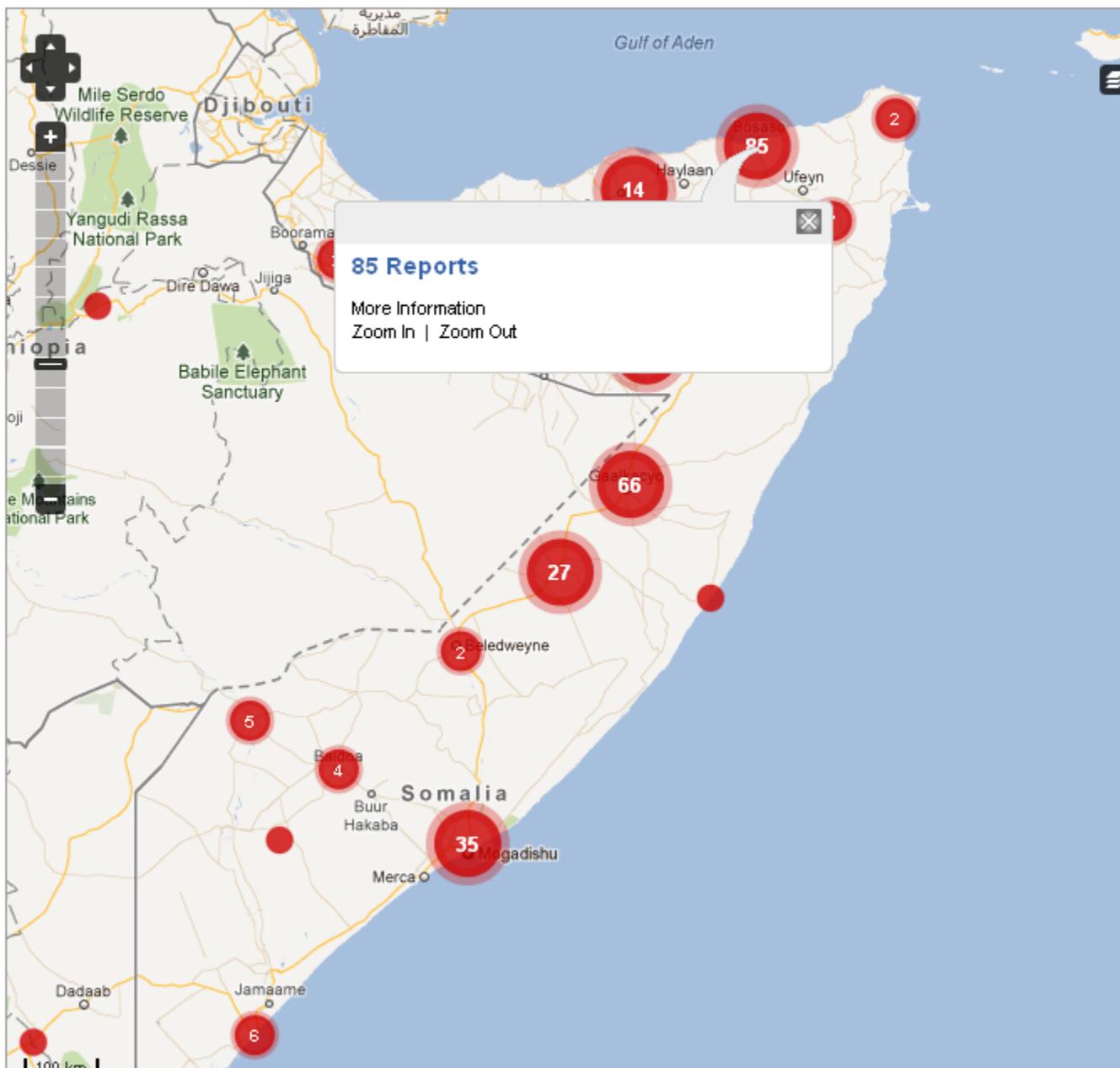
SEXUAL INVITES

FACIAL EXPRESSIONS

RAPE / SEXUAL ASSAULT

How to Report

1. By sending a message to **0169870900**
2. By sending an email to report@harassmap.org
3. By sending a tweet with the hashtag/s **#harassmap**
4. By filling this [form](#)



↓ CATEGORY FILTER [HIDE]

 ALL CATEGORIES ECONOMIC POLITICAL SOCIAL**SMS:+456099103****ABOUT THIS PROJECT**

Al Jazeera English is aggregating unheard from inside Somalia by asking via text mes "How has the Somalia Conflict affected you

Responses are currently being translated i English and plotted onto the map.

1 SMS @**2 TRANSLAT**

Showing Reports from Dec 05, 2007 through Jan 14, 2012 [change date range](#)

☰ List 🌐 Map 1 2 1-50 of 85 Reports ⏪ ⏩



268751763 0

These are hard times especially what Bosaso is facing. - Anonymous, Bosaso

🕒 17:36 Dec 07, 2011



116340508 0

In dawn after morning prayer Sheikh Dr Ahmed, who was a well-known Islamic scholar, was killed in Bosaso.

🕒 12:42 Dec 07, 2011



116420442 1

I lost my kiosk through this fire. I was born in Kandala

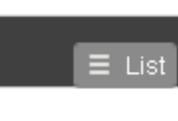
🕒 12:39 Dec 07, 2011



SMS 0

In the last few months the city of Bosaso has had a knock on effect on life. The scholars that were preaching the good to the people and where...

🕒 08:42 Dec 07, 2011



000100054 0

☰ List 🌐 Map 1 2 1-50 of 85 Reports ⏪ ⏩

Filter Reports By

Category

[Clear](#)

- All Categories
339
- Economic
128
- Political
77
- Social
167

Location

[Clear](#)

Type

[Clear](#)

Media

[Clear](#)

Verification

[Clear](#)
[Reset all filters](#)
[FILTER REPORTS](#)

Both problems & solutions...

<http://www.snowmageddoncleanup.com/#>

Google



SIDEWALK PROBLEM

CAR STUCK

POWER OUTAGE

PLOWS NEEDED

ELDERLY/DISABLED ASSISTANCE

POTHOLES

SOLUTIONS

SNOWBLOWER AVAILABLE

PLOW AVAILABLE

SHOVEL TO SHARE

CLEANUP PARTY

VICTORIES

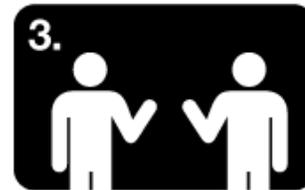
3 Steps to Helping



1. Report a problem or solution.



2. Look for reports near you.



3. Use the report's comment section to connect with neighbors.

Organize a Cleanup Party

Help cleanup your local school / church / temple / community organization!

Snowmageddon Cleanup Challenge

Washingtonians, the challenge has been laid. Go the extra mile to help your fellow neighbor dig us out of the snow. Dig out a car. Shovel a sidewalk. Salt a driveway. Whatever you do.



Concerns raised: Verification

Information Evaluation

Approve this Report?

Yes No

Source Reliability:

— Select One —

— Select One —

Yes, the source has direct access to information (witness or actor)

Yes, the source has access to information, but can be wrong

Yes, the source has no direct access to information, but is often right

Not always, but is often right

No, the source has (had) no access to information

I do not know



Verification II

Information Evaluation

Approve this Report?

Yes No

Source Reliability:

— Select One —

Information Probability:

— Select One —

— Select One —

Yes, the information is confirmed by several independent sources

Yes, the information is not confirmed (yet), but is likely

Yes, the information makes sense

No, the information is surprising

No, the information is unlikely and may be disinformation

I do not know

The Standby Task Force

Online Volunteer Community for Live Mapping

[About](#)[Our Model](#)[Deployments](#)[Partners](#)[Events](#)[Praise](#)[In the News](#)[Contact](#)[APPLY NOW](#)[REQUEST ACTIVATION](#)

About

In the aftermath of some of the recent disasters we have witnessed an increasing number of informal actors, largely volunteer based, entering the field of crisis mapping for humanitarian response. The development of ICTs has opened unprecedented space for engagement to a variety of individuals and groups, regardless of their physical location and affiliation to traditional responders. Similarly, with increased access to technology local communities – always the first responders in crisis situations – are not only building and improving their own preparedness and response systems, but are also more effectively engaging in traditional humanitarian preparedness.

1

tweet

retweet



Search

Recent Posts

- [Samoa Simulation SBTf After-Action Report](#)
- [The Spirit of the SBTf: A Global Network of Self-Starters](#)
- [Standby Human Resources](#)
- [A Review of SBTf Deployments in 2011](#)
- [Mapping the Democratic Republic of Congo Elections](#)

Categories

- [Uncategorized](#)

SBTaskForce Twitter

- Our [#Libya](#) deployment in collaboration with [#WHO](#) stopping for 24 hours to allow [#GISCorps](#) to do data cleaning and quality control [#health 2012-01-04](#)
- need exact location of Albiyar Hospital [#benghazi](#) [#libya](#) anyone can



An ecosystem of remote assistance

- Standby Task Force, Open Street Map, GISCorps, CrowdFlower, Crisis Mappers, Crisis Commons, MapAction, Geeks Without Bounds...
- Working with local communities, international institutions, NGOs...

[Person Finder: Haiti Earthquake](#)

[English](#) | [Français](#) | [Kreyòl](#)

What is your situation?

[I'm looking for someone](#)

[I have information about someone](#)

Currently tracking about 32500

PLEASE NOTE: All data entered will be available to the public and viewable and usable by anyone. Google does not review or verify the accuracy of this data.

[Embed this tool on your site](#) - [Developers](#)

powered by


[Person Finder: 2011 Japan Earthquake](#)

[日本語](#) | [English](#) | [한국어](#) | [中文 \(简体\)](#) | [中文 \(繁體\)](#)

What is your situation?

[I'm looking for someone](#)

[I have information about someone](#)

Currently tracking about 17300 records.

PLEASE NOTE: All data entered will be available to the public and viewable and usable by anyone. Google does not review or verify the accuracy of this data.

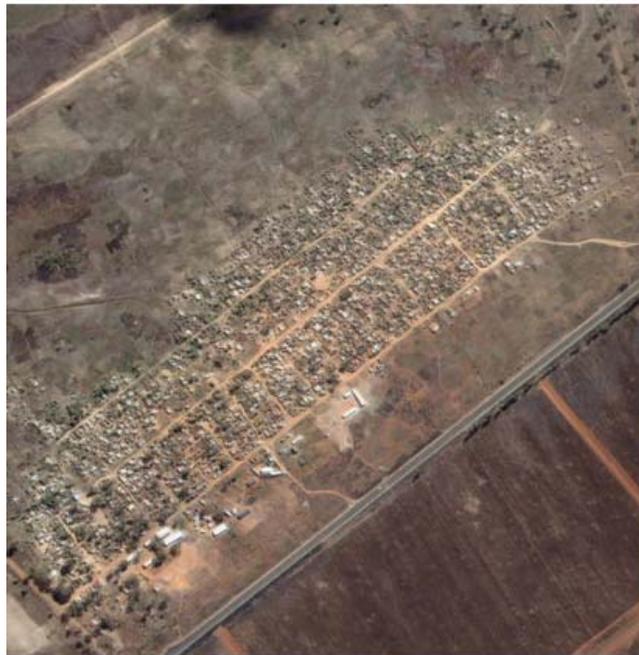
[Embed this tool on your site](#) - [Developers](#) - [Terms of Service](#)

powered by




Crisis Maps help:

- Collect evidence: intimidation, human rights violations, torture, deaths, sexual harassment, GBV, election monitoring,



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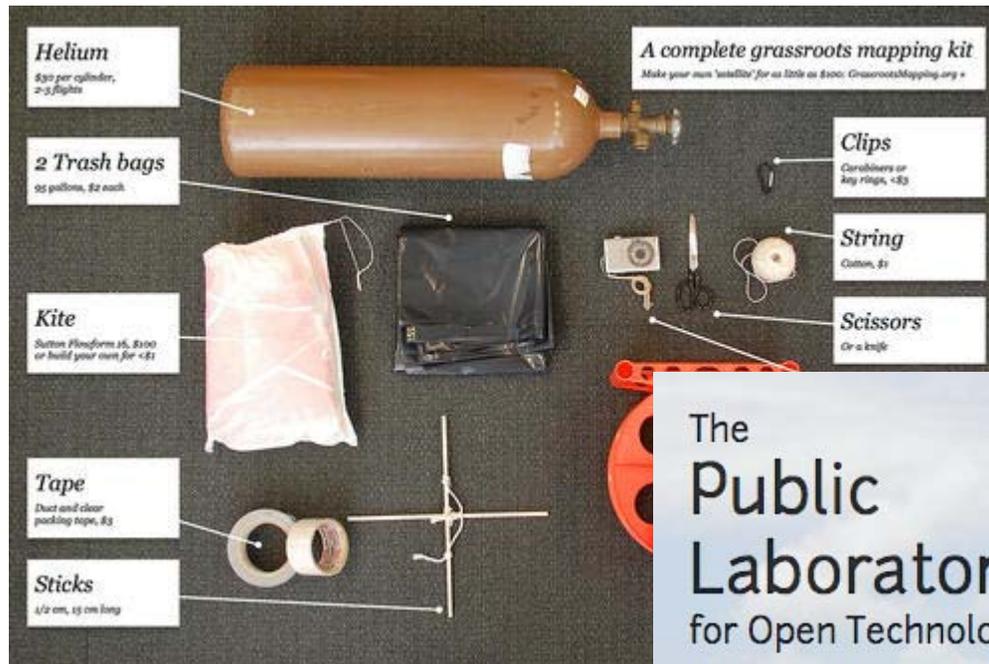
Before: Porta Farm Community prior to the eviction and demolition operation. Approximately 850 structures are clearly visible.



© 2006 DigitalGlobe Inc. All rights reserved.

After: Porta Farm after eviction of residents and demolition of structures. Few buildings remain in the image and vegetation has overtaken much of the area.

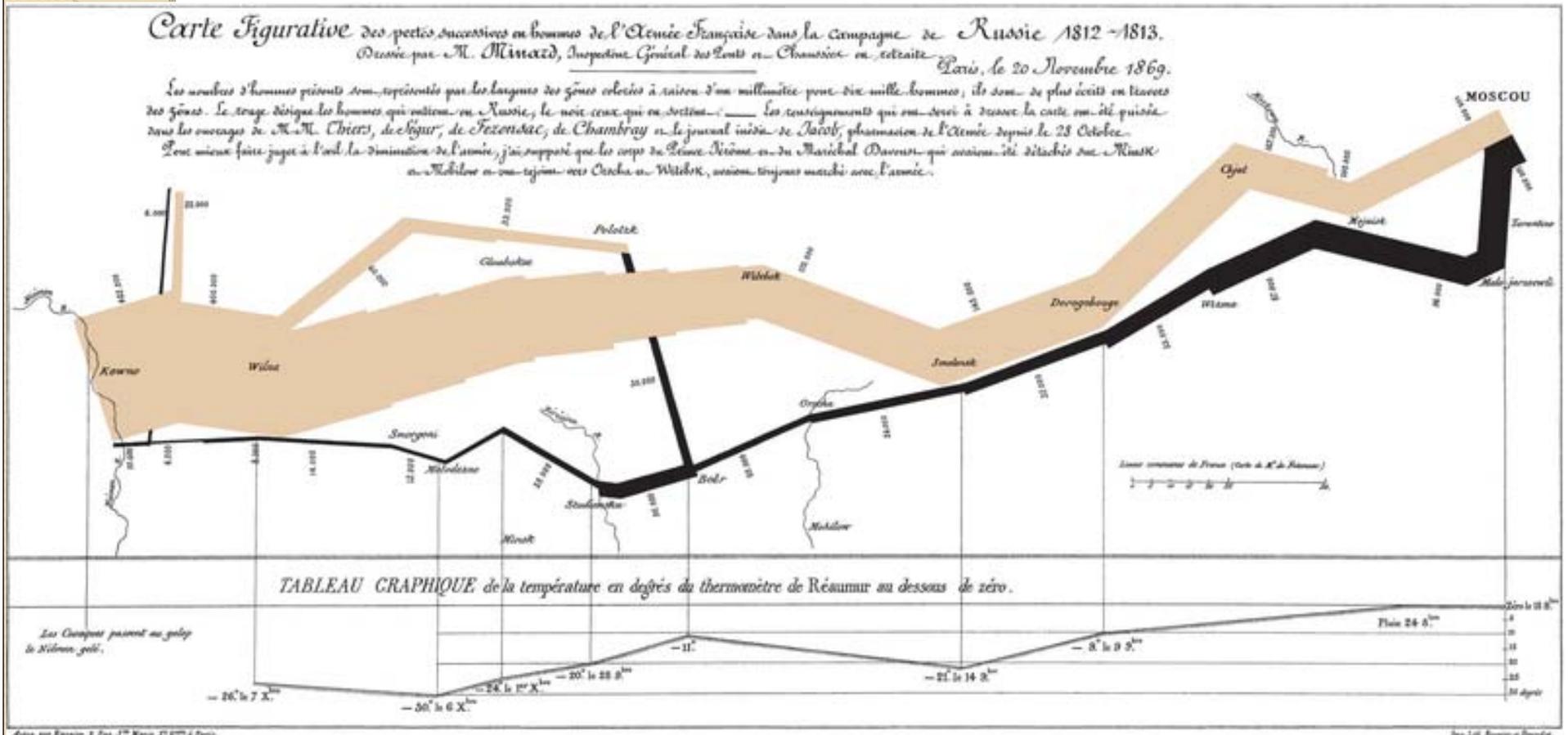
Friends at Public Laboratory: balloons & kites for grassroots mapping



What can we learn from Crisis Maps?

Creative ways to visualize complex data:

Napoleon's march



Analysis: Snow's Cholera Map

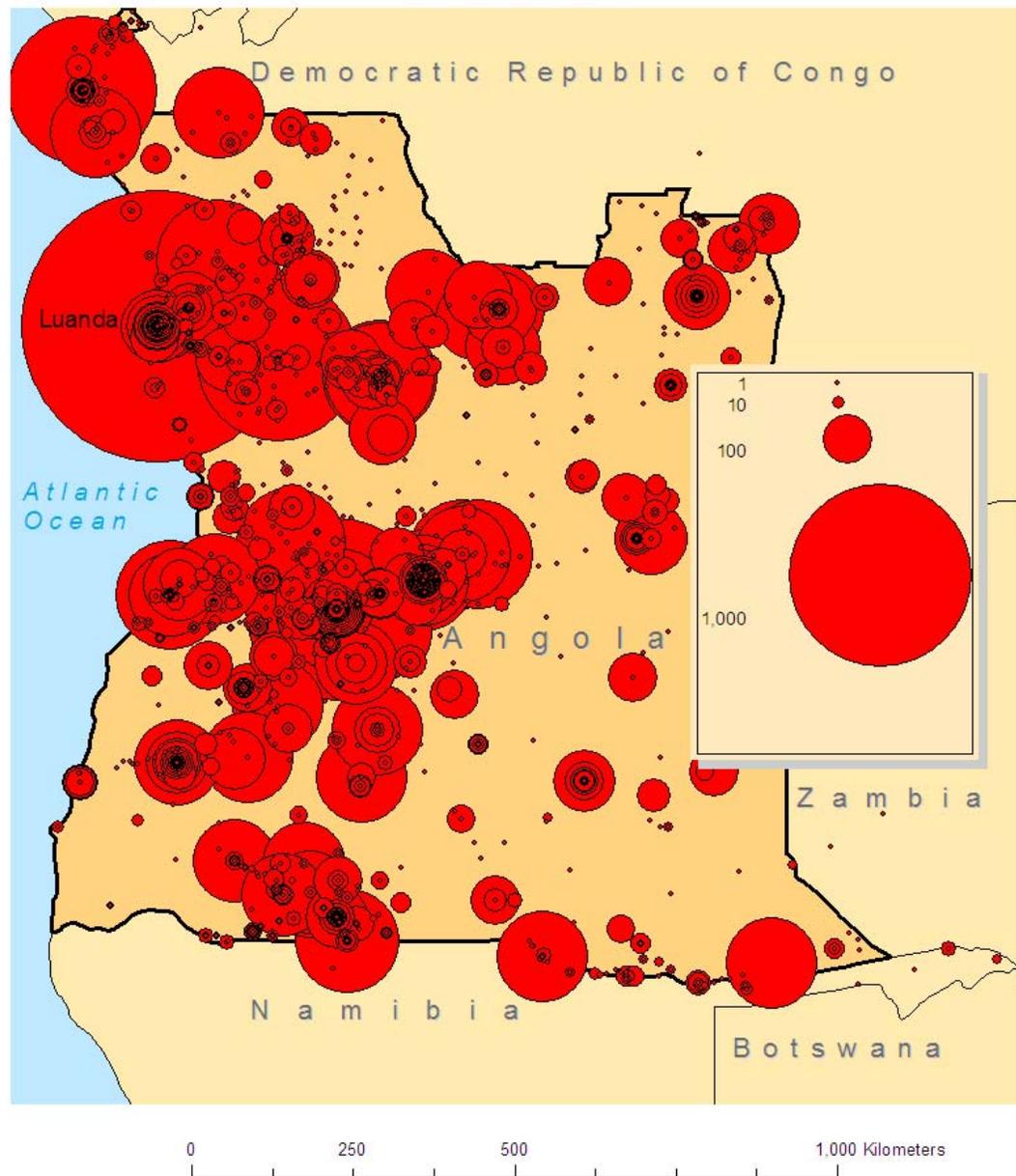




Sample questions & hypotheses from a crisis map

- What explains why combatants sometimes target civilians while at other times they refrain from doing so?
- The deliberate targeting of civilians is NOT a ubiquitous feature in war. What explains patterns, variation and change?
- Coping with complex spatio-temporal event data

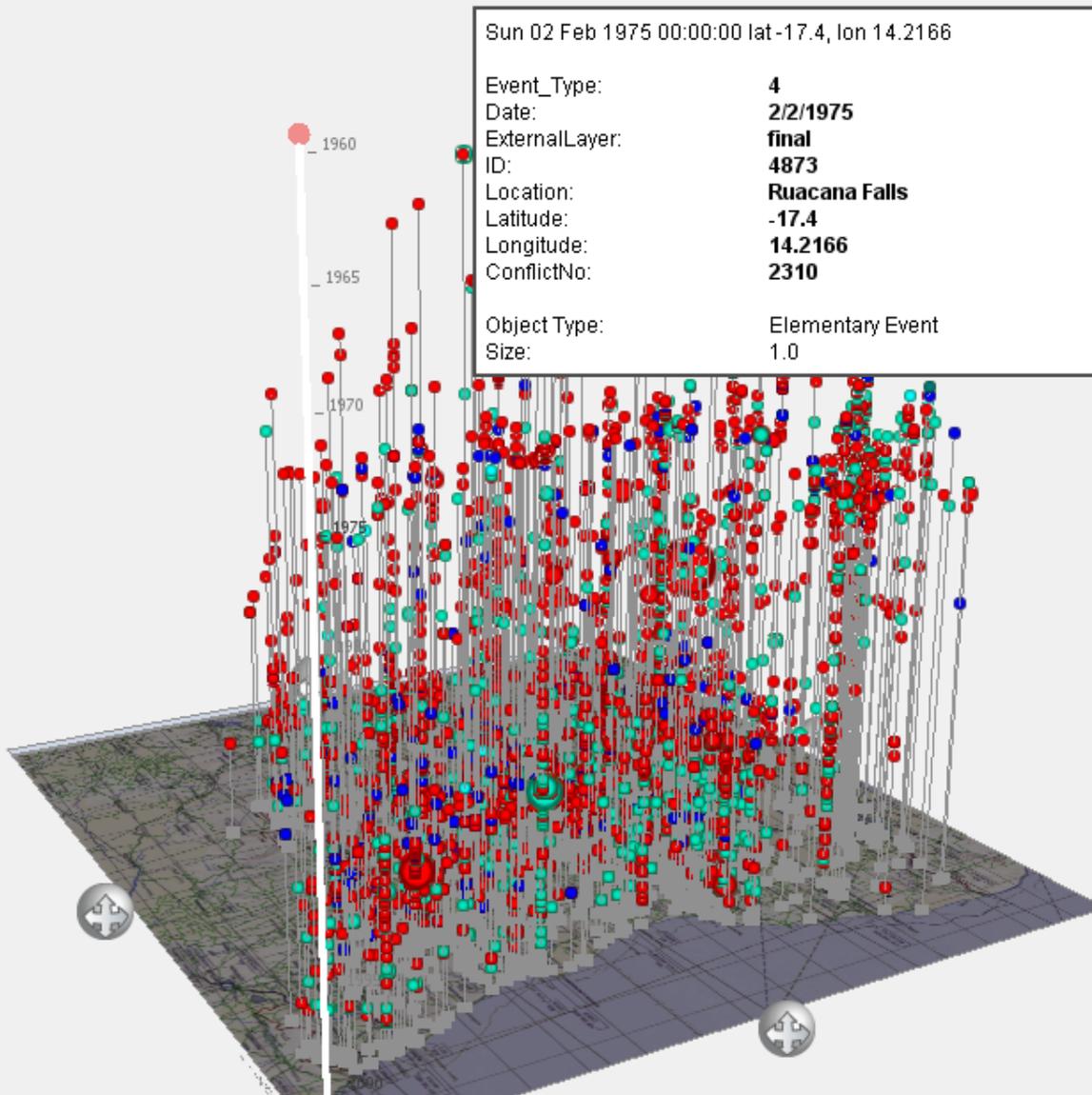
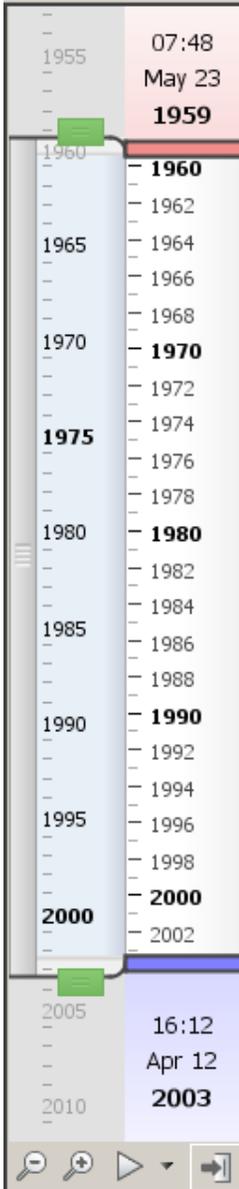
Civilian Casualties in Massacres 1961-2002



This
horrific
war...

and so
many
dots

Closer World Fit All Data Fit Time Show Show Only Select Draw Annotate Select Path Hide Show All



Patterns | Tags | Report Charts

Display Settings

Chart: User Data:Event_Type

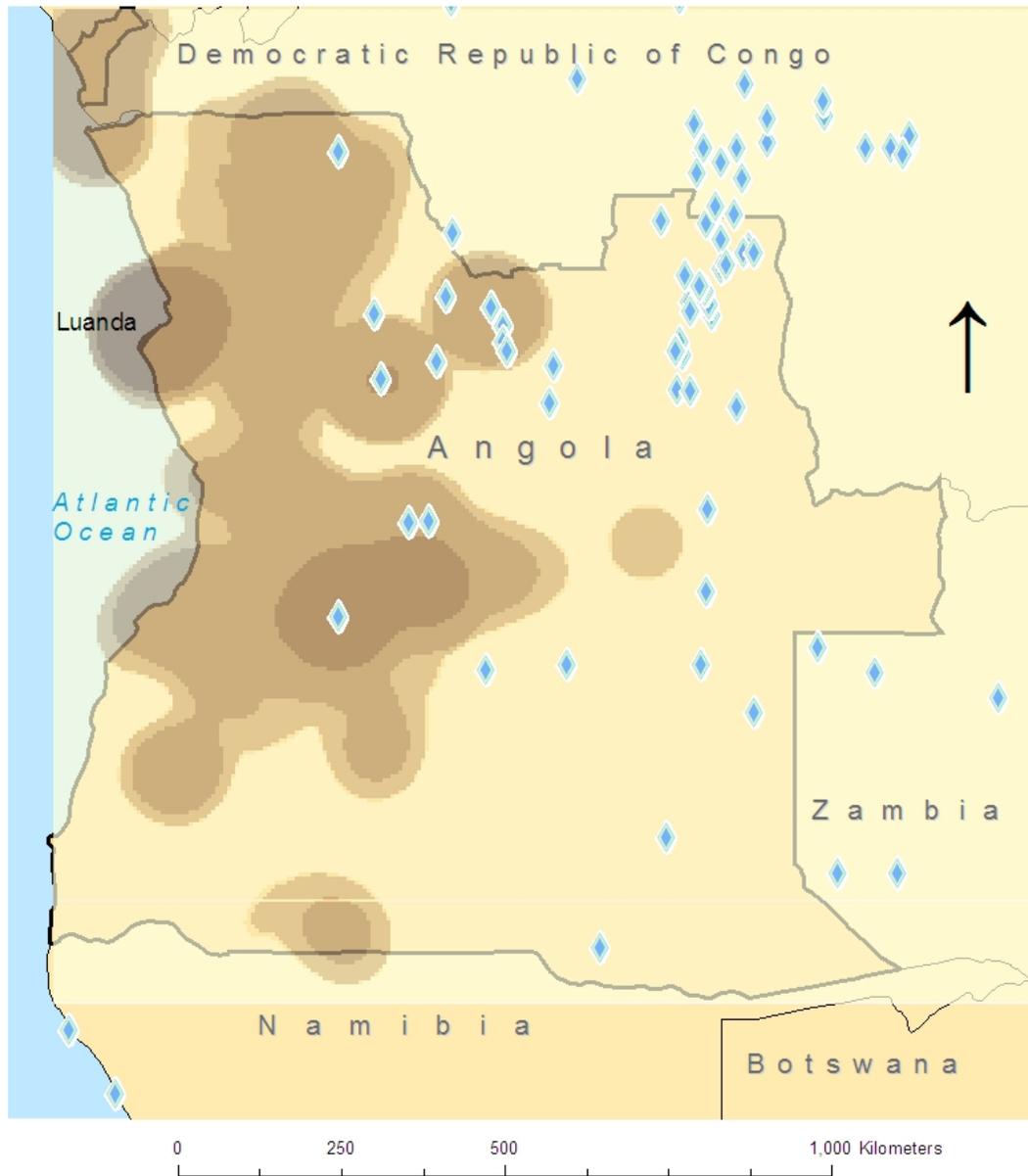
Within: Everything

Count: Elementary Events

Apply Color

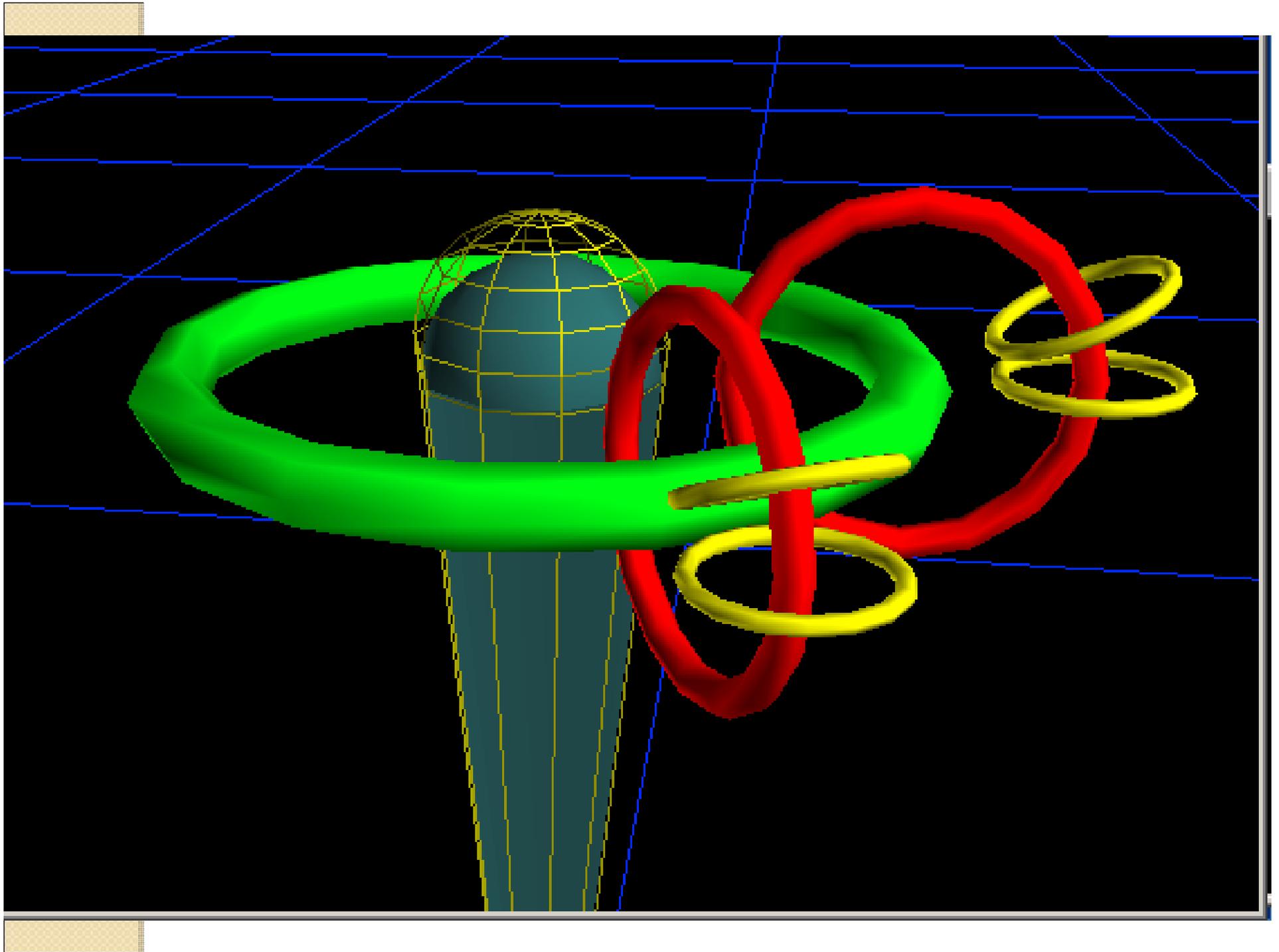
Value	Count
<input checked="" type="checkbox"/> 1	6285
<input checked="" type="checkbox"/> 2	391
<input type="checkbox"/> 3	725
<input checked="" type="checkbox"/> 4	19
<input type="checkbox"/> 5	312
<input type="checkbox"/> 6	342
<input checked="" type="checkbox"/> 7	1142

Diamond Deposits and Event Density



Author: Jen Ziemke, 2007

Kernel Density Function
Geometrical Interval = 5; Z = 1





A girl can dream...

- Complex visualization for pattern detection and hypothesis formulation
- Cross-event space-time correlations



Crisis Mapping Analytics

- Detecting the signal from the noise
- Understanding existing patterns, dynamics, trends
- Testing for spatial effects (autocorrelation, clustering/dispersion)
- Testing hypotheses (proposed correlations, relationships)
- Forecasting
- Data-mining



Learning from you...

- Maps collecting location-event data
- Spatial point pattern processes:
Criminology and epidemiology
 - Mapping space-time discrete events: incidents of crime, an explosion, battle, food distribution points, etc.



Connecting back

- Closing the communications loop:
 - linking back to affected populations
 - Working within existing systems in the humanitarian community



Let's brainstorm next steps!

- For the ecosystem
- For “volunteers”
- For affected populations
- For analysts/experts in GIS
- For working together in cross-disciplinary teams
- For finding ways to preserve this new knowledge



What is Crisis Mapping?

- A field, a sub-field, a practice, just a good party, or nothing new under the sun?
What is your perspective?

- I look forward to learning from you!
Thank you.