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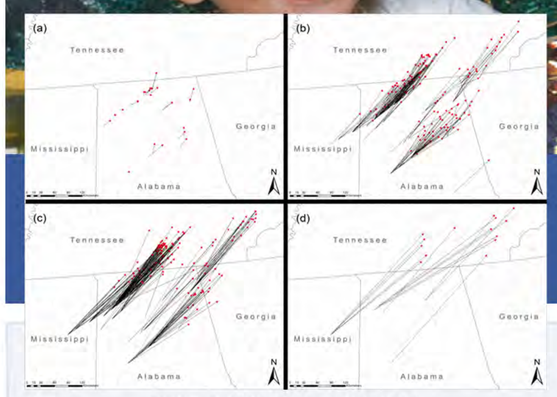
Using Social Media for Scientific Research:
Experiences from a Tornado Debris Research Project



Tracks of debris objects that traveled
a) < 50 km; b) 50 to 150 km; c) 150 to 250 km ; d) >250km

please also see Poster 153

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- Data collected from Patty Bullion's Facebook Page, "Pictures and Documents found after the April 27, 2011 Tornadoes"
- 934 items with accurate beginning and ending locations used for our database
- Each piece of debris was matched with its corresponding tornado and classfied by weight
- Pros of Social Media: Extensive and unprecedented database of tornado debris
- Cons of Social Media: Laborious quality control and fact-checking

Update Info | Activity Log

Authors

see all

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Research and Collecting Information

see all

We accessed the "Pictures and Documents found after the April 27, 2011 Tornadoes" Facebook page and extracted publicly available information about lost-and-found objects. This allowed us to transform information from a socially valuable Facebook page into a scientifically useful database. After a few afternoons of carefully examining the contents of the page, we amassed nearly one thousand items.

Pictures and Documents found after the April 27, 2011 Tornadoes

April 28, 2011 near Lester, AL

Data Collection

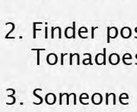
How tornado debris becomes Facebook-viewable images:

1. Someone finds the item and either digitally photographs or scans it.
2. Finder posts image and its location on the "Pictures and Documents found after the April 27, 2011 Tornadoes" Facebook page.
3. Someone recognizes a name on a document or face in a picture. By commenting on the image in Facebook, the user puts the original owner in contact with the item's finders.
4. As each item was returned, the picture was moved to a photo album of returned objects.

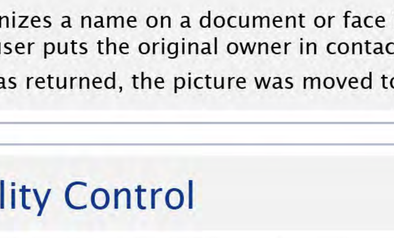
Quality Control

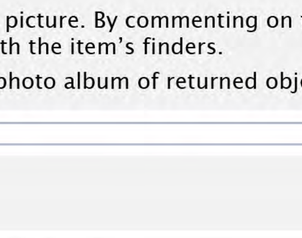
Gathering Facebook information for scientific data:

1. Glean the available information on Patty Bullion's Facebook page for each of the returned items.
2. Recorded the location of each item's takeoff and landing points.
3. Excluded items in which it was difficult to determine the takeoff or landing point due to lack of information available.
4. Narrowed 1500 items were recorded in our database but only 934 items were used for our research.
   a. Many return locations were towns small enough that the object's original location could be narrowed to a region of a few square kilometers.
   b. In fewer than 5% of cases, only the county of takeoff or landing was available. In these few cases, the latitude and longitude of the county seat were used.



This quilt survived not only through an EF-5 tornado but also its trip some 70 miles from home.





Like Comment Share

User 1 I found this in my backyard in Athens, AL. It's embroidered with "Carrie Lynn" on it.
April 28, 2011 Like

User 2 This belongs to Carrie Lynn in Phil Campbell, AL.
1 hour later Unlike 3

A. Hackleburg High School's football stadium was destroyed by an EF-5 tornado (NWS Birmingham).
B. Trees are twisted and cars are tossed around by an EF-5 tornado that tore through Phil Campbell, AL (NWS Huntsville).
C. An EF-4 tornado carved a wide path of destruction seen in this aerial photograph of Tuscaloosa, AL (NWS Birmingham).
D. Harvest, Alabama was hit hard by an EF-5 tornado. The twister's peak winds reached 210 mph and leveled many homes (NWS Huntsville).

Thanks to Patty Bullion, the creator of the "Pictures and Documents found after the April 27, 2011 Tornadoes" Facebook page.

This five foot metal sign traveled 50 air miles and even crossed state lines but now it once again hangs proudly, at Smithville High School in Smithville, Mississippi.

Like Comment Share

User 3 I was clearing some brush on my property in Russellville, AL and found this large metal sign.
May 28, 2011 Like

User 4 The sign belongs to my relatives in Smithville, MS.
May 28, 2011 Unlike 3

User 5 I remember the sign being displayed at Smithville HS. I'm so glad they found it! It holds a special place in our hearts!
May 30, 2011 Unlike 27

Analysis

Facebook information utilized for scientific data

1. For all 934 items, the latitude and longitude of the takeoff and landing points were recorded.
   A point was chosen within the tornado path for each community to represent coordinates of the takeoff locations for those items for which we did not have specific addresses.
2. The straight-line distances between the starting and ending points and the azimuth were calculated for each item.
3. The debris was classified into 3 groups based on weight: paper, light, and heavy.
4. Each piece of debris was matched with its corresponding tornado, and the EF Scale was recorded. If more than one tornado struck the same location, only the afternoon tornado was utilized.
5. We intentionally did not contact finders or owners of items for additional information out of respect for the privacy of tornado victims.

Conclusion

PROS to using Social Media

The use of social media made our tornado debris research possible. Facebook's outreach and accessibility facilitated the recovery of items lost by tornado victims. Valuable information from Facebook users in the Southeast provided detailed information on hundreds of photographs and items. From the information, our team constructed a database of tornado debris travel an order of magnitude larger than any others previously constructed.

CONS to using Social Media

Social media is very helpful, but sometimes there can be inaccurate information. Our research team worked strenuously to sift through all of the data. While we collected information on over 1000 objects, we were forced to throw out hundreds of other objects. Quality control was the key, and any object that seemed questionable was thrown out. In addition, the Facebook site was aimed more towards lost photos. The amount of lighter paper items in our collection was much higher compared to the amount of heavier objects, like the metal sign and quilt. Also, personal checks were not posted onto the Facebook page for privacy issues, so they were not included in our research.

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