

Tracking Trash

A collaboration of Girls, GIS and Mobile Devices

MAP GIRLS to the rescue

Tracking Trash, is a project between partners with the National Girls Collaborative Project. Pilot project teams in two states, Louisiana's Sci-Port Science Center and Missouri's Afterschool Network, worked with geomentors to develop a collaborative, service-based, field data collection project focused on the relationship between trash and watersheds along the Mississippi River. ArcGIS and ArcGIS online for Organizations functionality facilitated the multi-state data collection and analysis



Project Overview



Links

LA-NGCP

- <http://www.ngcproject.org/collaborative/louisiana-stem-girls-collaborative-project>
- <http://sciport.org>

MO-NGCP

- <http://www.ngcproject.org/collaborative/missouri-girls-collaborative-stem-initiative>
- <http://www.moasn.org/>

Collaboration

Learning Curves with Methods of Collaboration:

Google Docs

DropBox

Phone Conferences

Google Hangout



Models of Collaboration

Known Collaborators vs (co-conspirators)

New or Unknown Collaborators (co-workers)



READING, WRITING AND THINKING AROUND THE GLOBE

Geospatial Technologies for the English Language Arts Classroom and Beyond

BY BARBAREE ASH DUKE



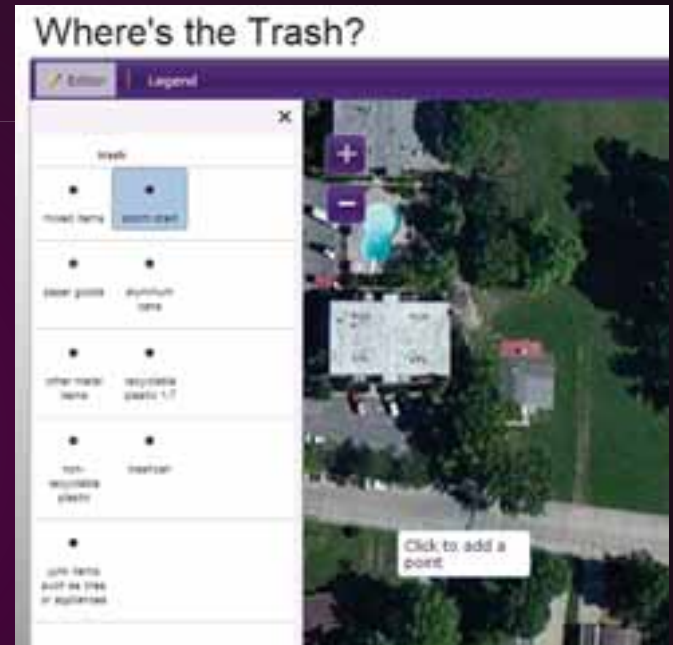


GIRLS

GIS

MOBILE
Devices

Girls



Who said trash couldn't be fun?

7 Proven Strategies for Engaging Girls in STEM from SciGirls

1. **Girls benefit from collaboration, especially when they can participate and communicate fairly.** (*Fancsali, 2002; Parker & Rennie, 2002*)
2. **Girls are motivated by projects they find personally relevant and meaningful.** (*Eisenhart & Finkel, 1998; Liston, Peterson, & Ragan, 2008; Thompson & Windschitl, 2005*)
3. **Girls enjoy hands-on, open-ended projects and investigations.** (*Burkam, Lee, & Smerdon, 1997; Chatman, Nielsen, Strauss, & Tanner, 2008; Fancsali, 2002*)
4. **Girls are motivated when they can approach projects in their own way, applying their creativity, unique talents, and preferred learning styles.** (*Calabrese Barton, Tan, & Rivet, 2008; Eisenhart & Finkel, 1998*)
5. **Girls' confidence and performance improves in response to specific, positive feedback on things they can control—such as effort, strategies, and behaviors.** (*Blackwell, Trzesniewski, & Sorich Dweck, 2007; Halpern et al., 2007; Mueller & Dweck, 1998; Zeldin & Pajares, 2000*)
6. **Girls gain confidence and trust in their own reasoning when encouraged to think critically.** (*Chatman et al., 2008; Eisenhart & Finkel, 1998*)
7. **Girls benefit from relationships with role models and mentors.** (*Evans, Whigham, & Wang, 1995; Liston et al., 2008*)

GIS



<http://tinyurl.com/trackingtrash>

Teaching GIS

Working with the Girls

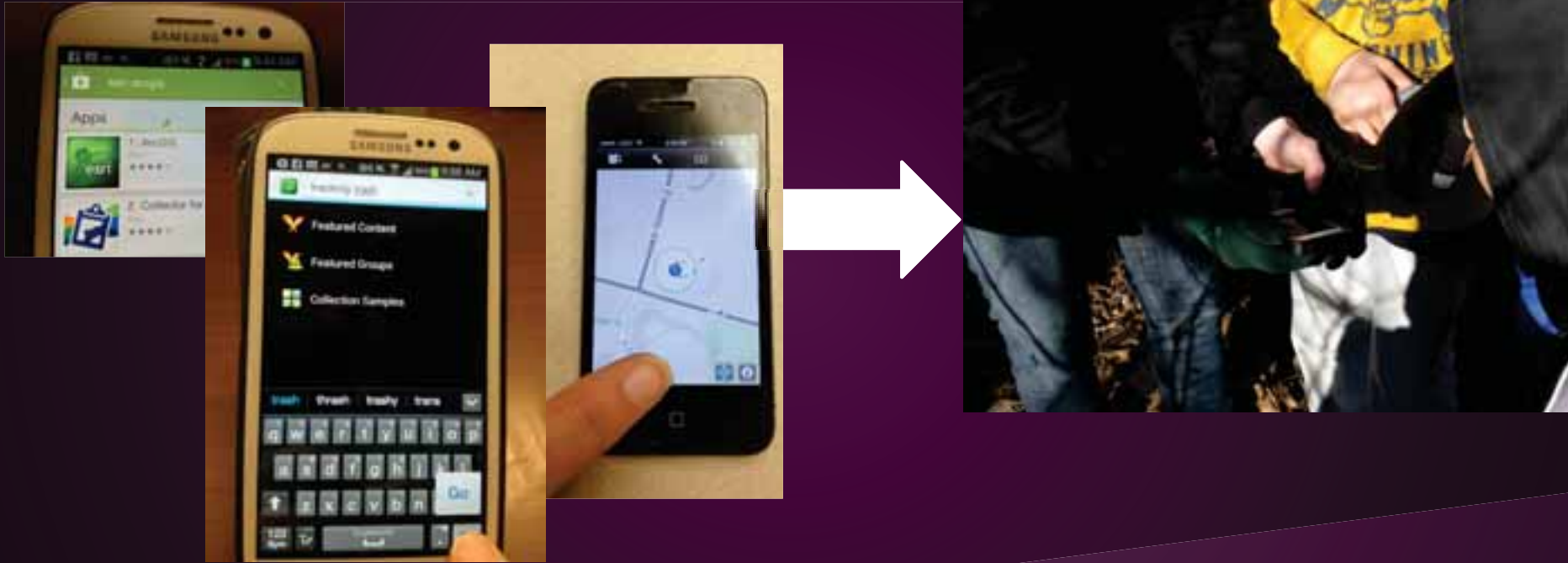
How to GIS

How to Track Trash

<http://tinyurl.com/trackingtrashdirections>



Mobile Devices



Testing on different platforms leads to success in the field

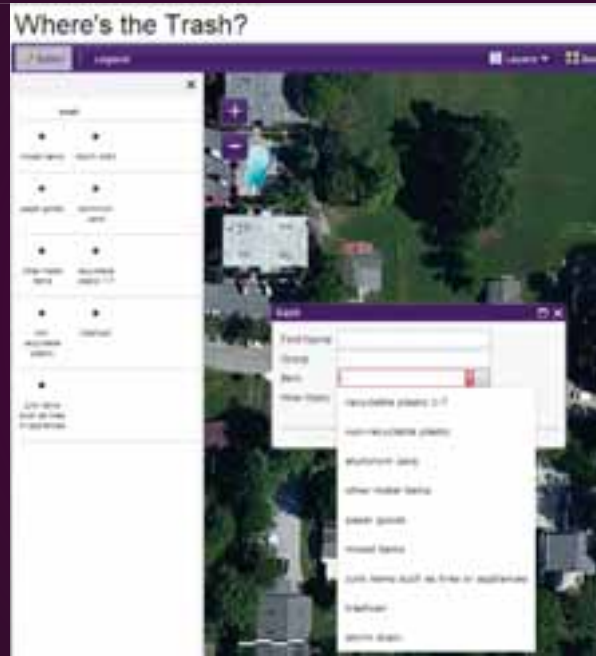
Track Trash

Girls tracking trash

The girls had a blast doing this part, and would of tracked more if my hands weren't frozen “



There's an APP for that!



Editable feature service, map apps and data collection

Thinking & Learning Beyond the Data

Examining the Data

Issues of Scale

Size of Watershed Data & Limits of AGOL

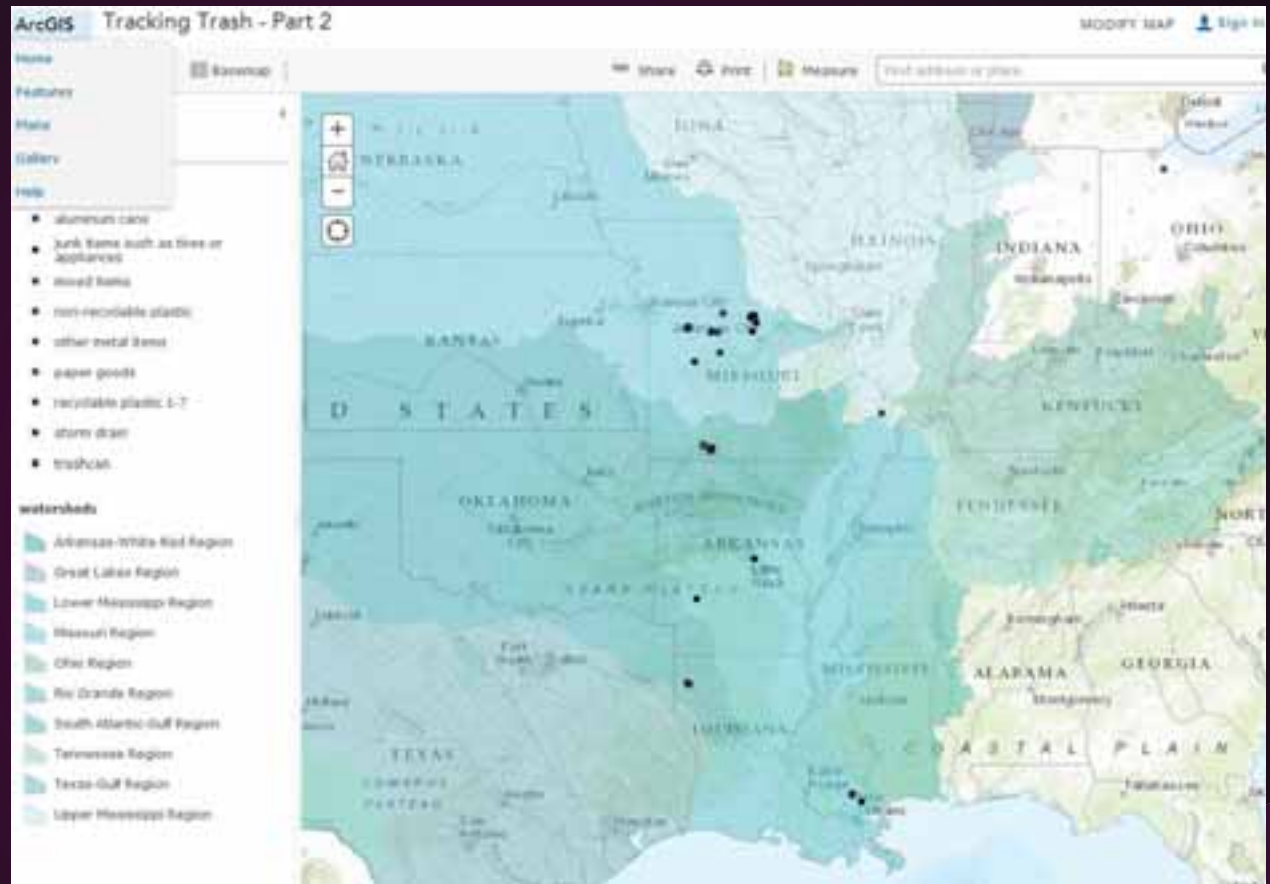


How does your trash impact the watersheds?

Go to the online map: <http://bit.ly/M9CP1s>
Click on Contents (the middle button under details to see the layers available)
Turn layers on ☒ and off ☐ to think through these questions.

1. What are your watersheds? (You have more than one)
2. What part does an aquifer play in this trashy situation?
3. Look at the drainage systems. What can you learn about drainage?
4. Where will uncollected trash end up if it's allowed to follow the drainage and watershed path?
5. What other human impact factors might impact your watershed?
6. You're not the only ones! Why are they picking up and tracking trash on beaches in Costa Rica?
www.gmsporter.net
7. What can you do about it? Make a plan to change your watershed impacts.
8. What else could you learn?
9. What other data might we collect to learn more?

Human Impact on Watersheds Quizlet: <http://quizlet.com/15451303/human-impact-on-watersheds-and-aquifers-flash-cards/>



<http://bit.ly/MoGPUx>

More questions?

Shannon White

Columbia, MO

whiteshan@missouri.edu

Barbaree Duke

Covington, LA

barbareeduke@gmail.com

www.barbareeduke.com

