MARINE DEBRIS RESEARCH

Gulf of Maine | Lake Michigan | Geneva Lake

Christopher Wells
AU Teaching and Research Symposium
February 18, 2015
BACKGROUND
“Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes” (NOAA, n.d.).

“Marine debris is trash and other solid material that enters oceans and coastal waters and often ends up on our beaches. It is also known as litter” (EPA, n.d.).
MARINE DEBRIS

Sources of marine debris include: stormwater drainage, illegal dumping, lost fishing gear, shipping accidents, washing or blowing from beaches (Erickson, 2014; Khairunnisa, Fauziah, & Agamuthu, 2012).

Marine debris presents a hazard to humans and wildlife (Erickson, 2014; Goldstein, Titmus, & Ford, 2013).
OCEANIC GYRES

(5gyres.org)
GULF OF MAINE
ROZALIA PROJECT

• Founded by Rachael Miller
  • Named for her great-grandmother Rozalia Belsky
  • Funded in part by NOAA Marine Debris Program

• 60 foot research vessel *American Promise*
  • VideoRay ROV equipped with BlueView Sonar
  • Quadrarotor equipped with an HD camera

• Competitive fellowships for guest scientists

• Three expeditions each summer
GULF OF MAINE
GULF OF MAINE
RESEARCH

• Beaches – Manual and aerial surveys
• Neuston layer – Net tows
• Benthic zone – Remotely operated vehicle (ROV)
BEACHES
BEACHES
NEUSTON LAYER
BENTHIC ZONE
LAKE MICHIGAN

Neuston Layer
A new pollution worry for Lake Michigan: Tiny plastic fibers

Researcher Sheri "Sam" Mason inspects plastic samples from Lake Michigan near Milwaukee in 2013. Microfiber use "is another example of how we put things in the marketplace without any thought about the long-term consequences," she said. (Stacey Wescott, Chicago Tribune)

(Hawthorne, 2015)
S/V DENIS SULLIVAN
PILOT STUDY - FALL 2014
BENTHIC SURVEY

(Edgar & Smith, n.d.)
RESEARCH BOAT
DIVERS
AQUATIC DEBRIS
GIS SOFTWARE

42.576970, -88.535760

- [Link to photo of debris found at this site](#)
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DUNHAM GRANT - 2015

- 10 sites
- 4 students
- Modified protocol – use ROV to survey sites
  - Record video from camera
- Divers collect debris
- Enter data in GIS software
ROV
REFERENCES


