



# The Arctic in the Classroom: The Savoonga School Land Steward Program



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## The Arctic in the Classroom (TAC)

Initiated by Arctic Research Consortium of the United States (ARCUS) in 2016 which aims to:

1. Increase knowledge about science-rich Arctic landscapes, ecosystems, and people;
2. Engage scientists, educators, and community members in long-term citizen science and monitoring programs; and
3. Promote communication of complex concepts, facilitate effective learning, use real-world Arctic science, cross subject and content areas, environmental stewardship.

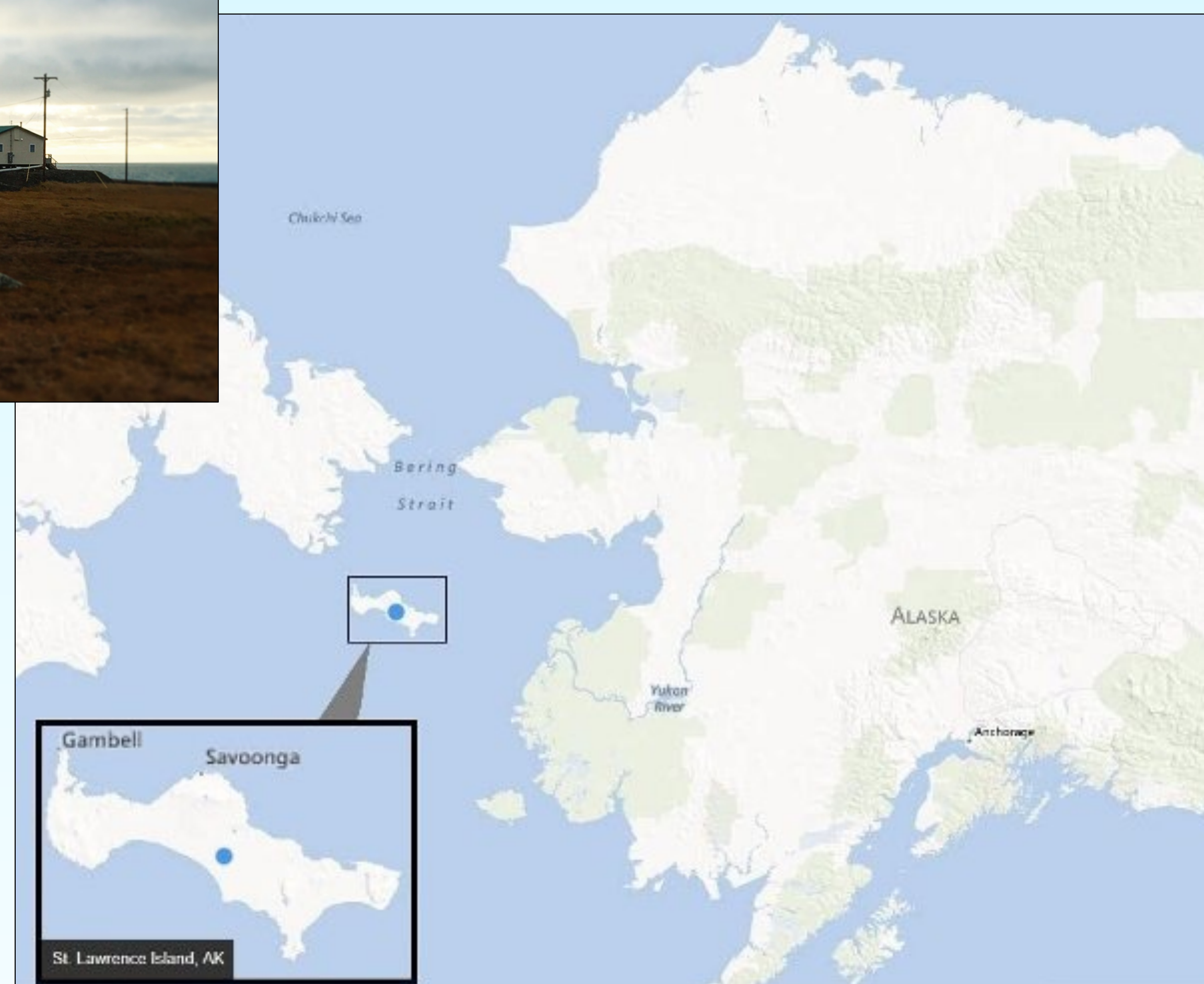


Figure 1: Map of St. Lawrence Island, Alaska (source: <http://nomemuckinaround.com/welcome-to-alaska/>)

## Savoonga School Land Stewards

A TAC partnership between Veronica Padula from UAA/UAF, and Tracy DiPaola from the Hogarth Kingeekuk Memorial School in Savoonga on St. Lawrence Island, Alaska created a land steward program with high school students in Fall 2016.

1. In journals, students considered what it meant for them to be land stewards of Savoonga and the rest of the planet.
2. Students were then presented the science behind marine debris, and its impacts on the ocean environment, focusing on how cleaning up marine debris is one way in which they can become land stewards.

## Methods

1. Reflections and lessons were followed by field trips where students collected shoreline debris in garbage bags.



Figure 2: High school students collecting shoreline debris in Savoonga, late September 2016.

2. Students sorted collected materials into categories established by the Marine Debris Tracker application (<http://www.marinedebris.engr.uga.edu/>), and counted how many items belonged in each category.
3. The data were entered into the Marine Debris Tracker application, contributing to an international database.

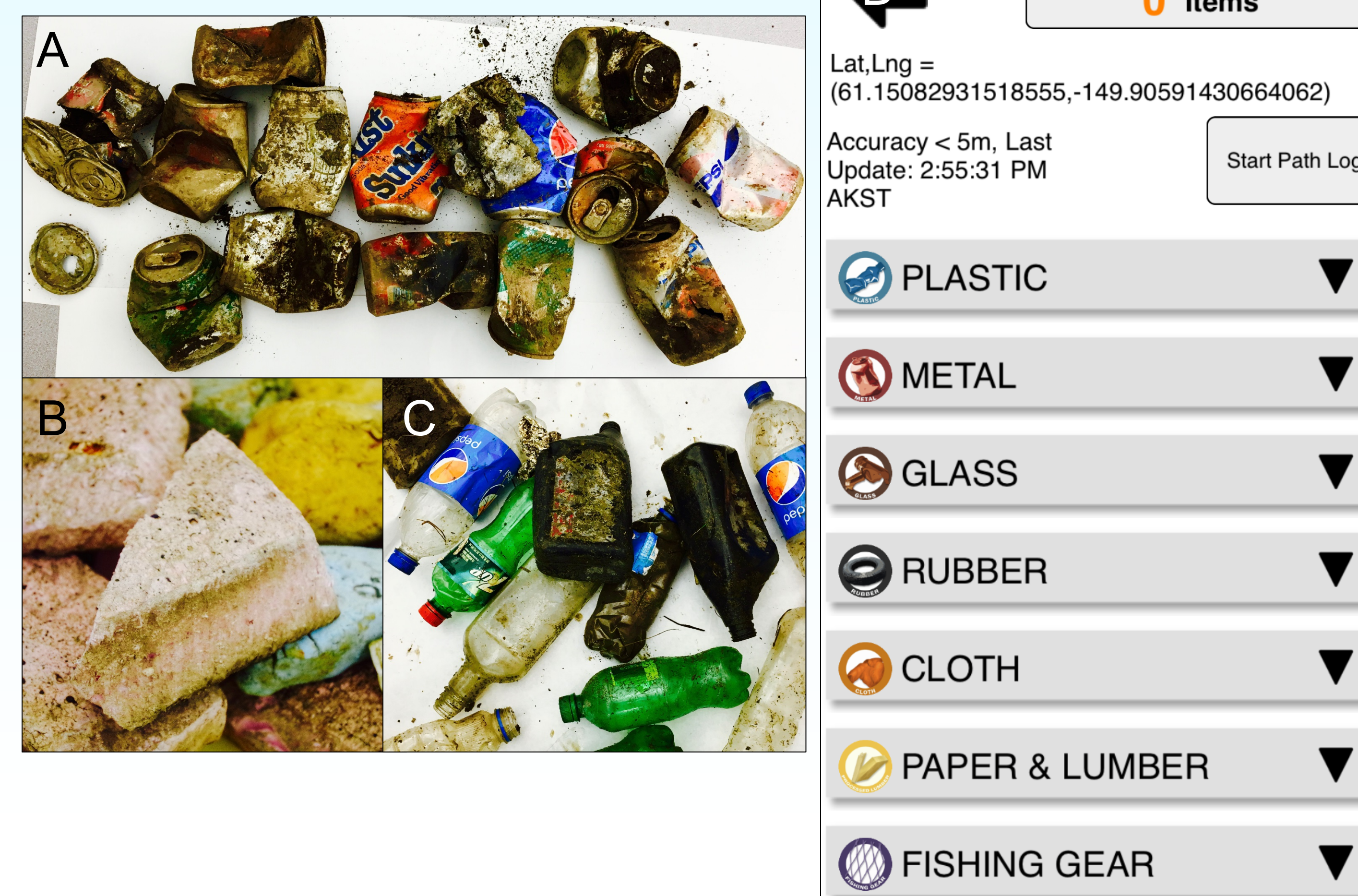


Figure 3: Examples of what students collected included: (A) aluminum cans; (B) foam pieces; (C) plastic bottles. Photo (D) is the data entry page on the application where information can be submitted to a global database.

4. Students followed up their first shoreline cleanup with reflections on the experience, examining whether or not their perceptions of being land stewards changed.

## Results

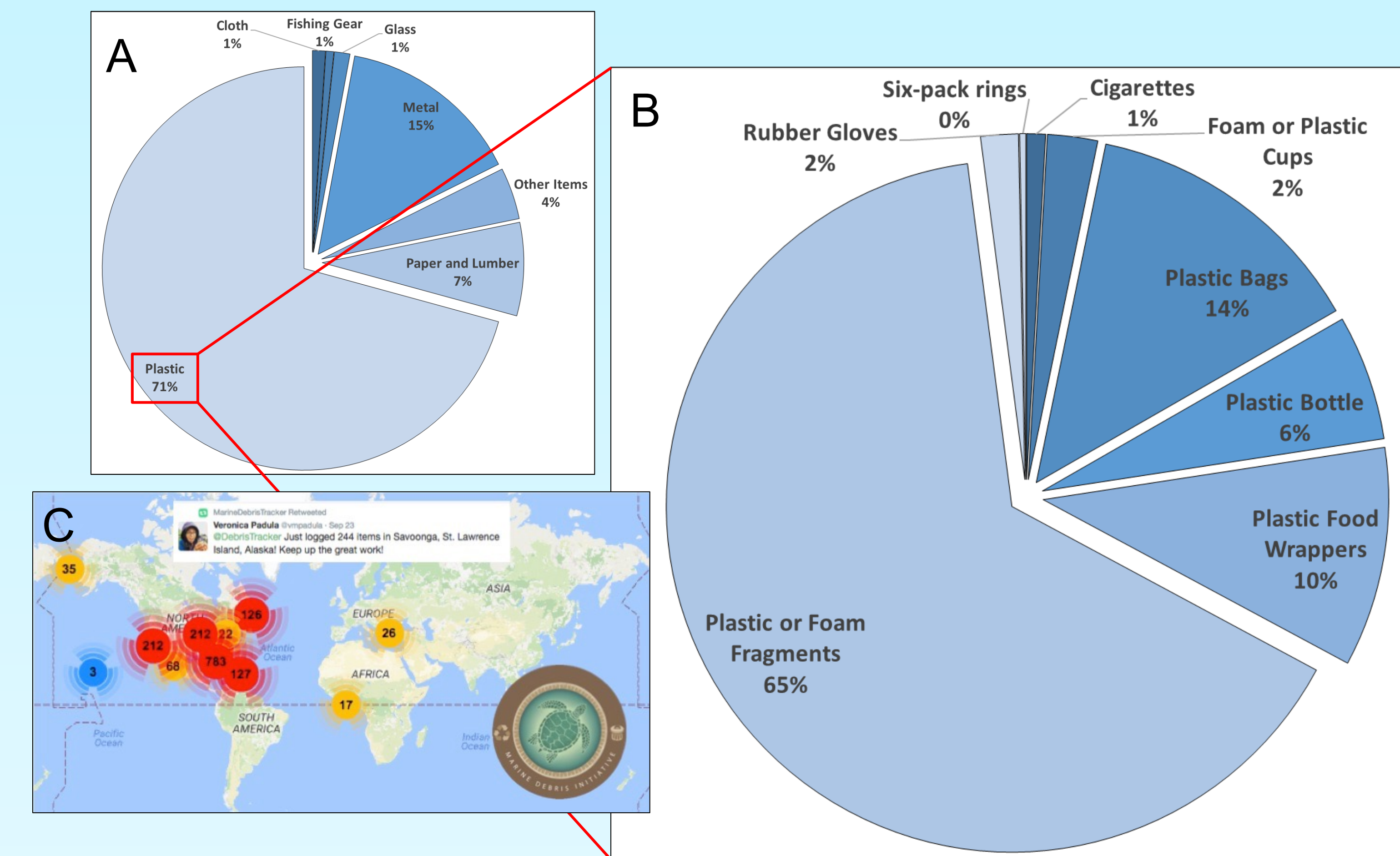


Figure 4: (A) Types of materials collected during shoreline cleanups in September 2016, reported as percentages (total number of items collected was n = 482); (B) types of plastic materials collected; and (C) the map from the Marine Debris Tracker application website depicting the first Alaskan data entry, made by the Savoonga Land Stewards.

Of the 482 items collected during the shoreline cleanup, 71% of those items were plastic, with a large proportion of plastic items being foam (Fig. 4). This information was entered into the Marine Debris Tracker application. The entry from Savoonga was the first for Alaska, and students were able to see that on the Marine Debris Tracker website by looking at the map before and after entering their data.

## Discussion

Students were asked to reflect on their experience:

I think it is important to keep the beach clean, because we wouldn't want our animals eating all the trash. I feel kind of good about cleaning the beach. We need to keep the beach clean as possible.  
Sincerely,  
Beyonce Kava (imaay)

It's important because we need to keep our land clean, to pick berries and green goods. Another thing is when we keep our ocean clean we'll have healthier fish. How I felt about it was a good feeling. Cleaning is something I would do in the future.  
Sincerely,  
Miesha Niksik

I felt great cleaning a little bit of Savoonga not really I would like to be a teacher I'm scared that if people keep throwing trash around the village the village will die.  
Sincerely,  
George Jackson

### Future Directions:

The Savoonga School Land Stewards will hopefully have more events in the future, contributing to a global movement to keep the environment free of debris.