

Permaculture: Planting Seeds of Sustainability on The Island School Campus

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Introduction

Permaculture is an agricultural system, intended to be sustainable and self-sufficient, that uses natural ecosystems as a model. Permaculture is relevant on a global stage as the world's population is expected to grow to 10.5 billion people by 2050 (Reid 2017), creating an urgency for effective and sustainable agriculture. Beyond investigating how The Island School produces its food, this Permaculture study concentrates on food insecurity in the immediate vicinity of the Island School campus. At present, The Island School imports about 89% of the food. Permaculture practices seek to address the economic, environmental, and social issues prevalent in South Eleuthera and Small Island Developing States (SIDS). By finding possible solutions to Food insecurity and instability within The Island School's campus, Permaculture feeds into the larger global conversation regarding the negative environmental impacts of the global food system, the widespread food insecurity and instability, and the future of food in society.



Figure 1: The Island School has a model farm on campus designed with permaculture principles.

Permaculture Essential Questions

- How do we feed ourselves?
- What are the true costs (economic, social, environmental) to successfully growing food on campus?
- For the long-term, what are the best and most logical uses of our open spaces?
- What is the best way to communicate scientific ideas – and our message regarding food security – in the 21st century?

Methods

The semester's research is focused around campus design and planning. The Permaculture Research Cohort cultivated and planted crops, added soil amendments, conducted animal husbandry, and informed the outside community through social media and a research blog. The Permaculture Team also collaborated with the dining hall and the Aquaponics team to prepare and serve a local meal for Parent's Weekend.



Figure 2: Students filet tilapia from the Aquaponics system in preparation for the local meal.

Data and Results

Throughout the semester, the Permaculture research cohort studied how to best communicate their scientific findings through social outreach. In addition, the group has been working on harvesting crops on the Island School farm that was then a part of the "locavore" Parent's Weekend meal.

Campus Planning:



Figure 3: The orchard near the CSD will be split up into sectors for a crop rotation.



Figure 4: Permaculture students clear a plot of land for agricultural use.

Local Meal:



Figure 5: Radishes collected from Permaculture Research farm plots harvested in preparation for the Parents Weekend local meal.



Figure 6: The aquaponics system on campus produces leafy greens throughout the year for The Island School dining services.

Social Media and Outreach:

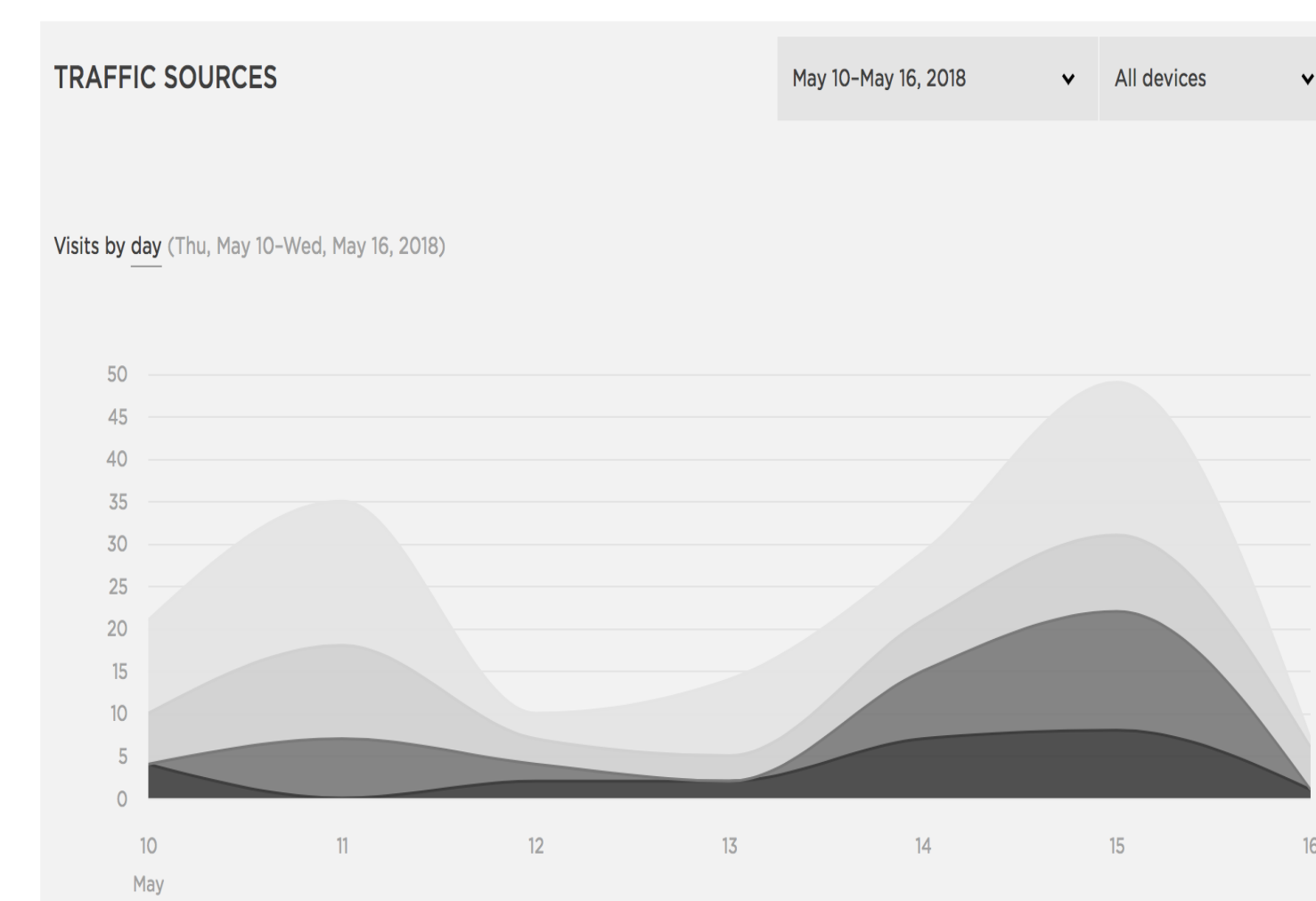


Figure 7: This graph shows the daily views of the Permaculture Research blog throughout the course of a week.

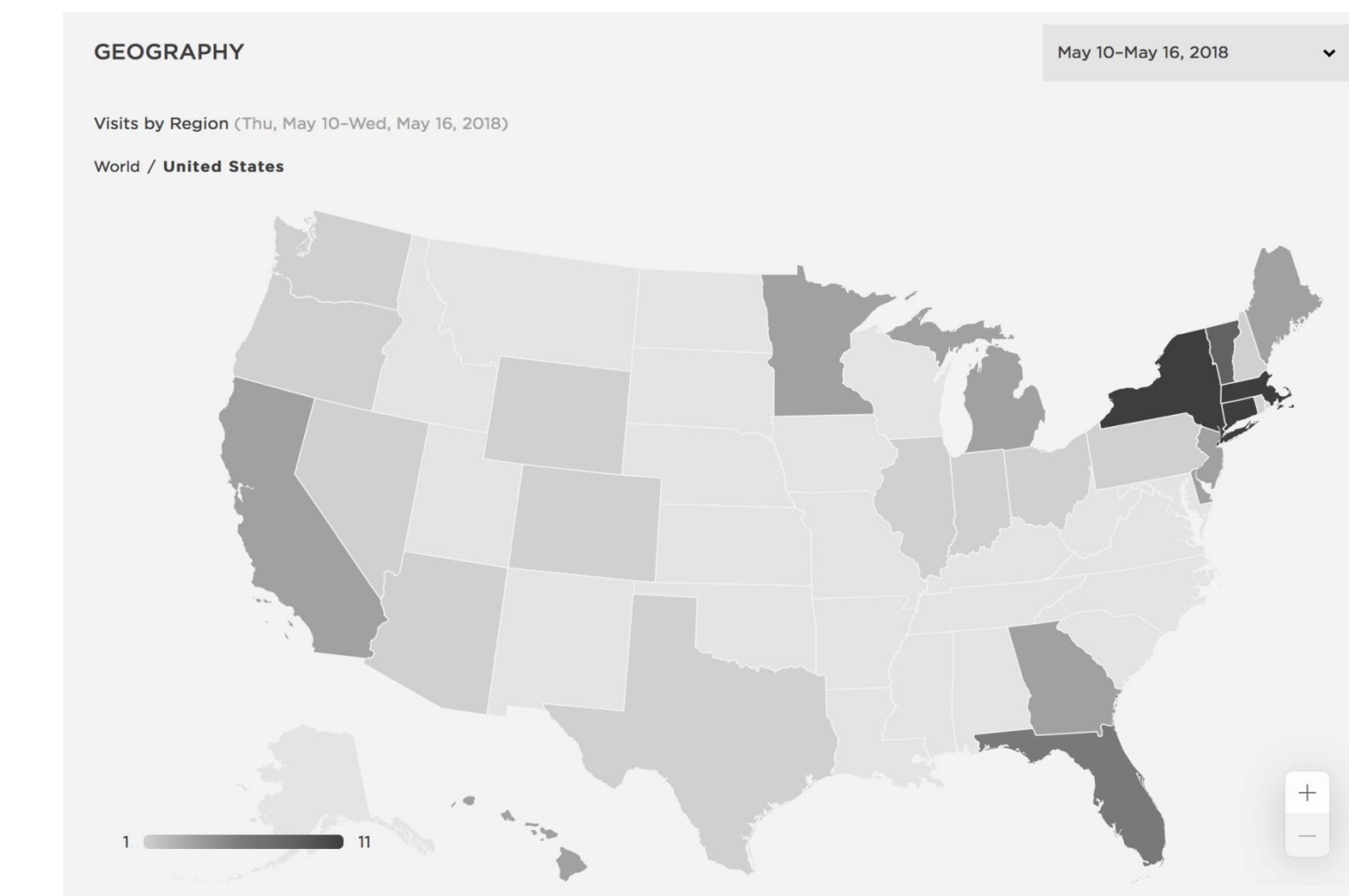


Figure 8: A map of the United States shows the frequency of visits from each state to the Permaculture blog.

Discussion

As the Permaculture research project continues into future semesters, the team plans to expand the farm, increase crop diversity, and implement an integrated animal arable crop rotation system. As a part of this system, there will also be biannual and perennial crops grown on campus to fix nitrogen and carbon into the soil as well as provide food for the animals. There are also plans to increase agricultural intensification by implementing new technologies to produce crops outside of their natural seasons. The Island School also anticipates a greater degree of collaboration with The University of The Bahamas and local farmers. In the future we also hope to collaborate with the South Eleuthera Farmers Association and the Center for Training and Innovation. With all of these organizations, the Permaculture research project hopes to spread the message of sustainable farming on island.



Figure 9: The Permaculture Research Cohort creates a living roof atop the ELC.

Citations

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