Coney Island Creek Stewardship Project

BIO 656 ESP Draft Reflection Paper

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Introduction

Millions of people annually visit Coney Island in Brooklyn, New York, a jutting peninsula renowned for its amusement attractions and beaches facing the Atlantic Ocean at its southern edge (NYC Parks, n.d.; NYC Parks, 2014). However, environmental issues related to its northern edge along Coney Island Creek, and how people can help, are less well-known. Trash that has washed up along the Creek-side shoreline, possibly augmented by littered trash, appeared as an issue that could be addressed by an environmental stewardship project (ESP) involving a local community with connections to this coastal environment.

Recreation in Coney Island, which takes many forms such as swimming and beach-going (NYC Parks, n.d.), also includes an Ultimate Frisbee community, which plays regularly on the local beaches. Involving a community like this as a target of engagement in a stewardship project has some theoretical support. Articles in the literature connect outdoor sports activities with a growing sense of connection to nature (Brymer, Downey, & Gray, 2009), and recreation, generally, has also been said to be one way that people engage with the natural environment and develop environmental concern, although that link may be complex and not fully understood (Berns & Simpson, 2009).

Beyond identifying target participants, the design and aim of a stewardship activity along the Coney Island Creek should address important aspects of participant engagement. Certain watershed-related programs have noted the importance of giving local communities the chance to work on something close to where they live and to work towards a tangible result (Shandas, & Messer, 2008). Popular stewardship activities such as beach clean-ups may provide a sense of ownership and greater awareness of environmental issues (Wyles, Pahl, Holland, & Thompson,

2017). And in regards to tangible results, there has been growing interest in and use of "citizen science," where non-professionals collect useful research data, supported by new tools and technology (Silvertown, 2009).

Given the associations noted above between recreation, nature connections, and stewardship, I decided to use my ESP project to engage a community of local beach sports enthusiasts (specifically Ultimate Frisbee players) to participate in a Coney Island Creek beach cleanup, advancing my AIP master plans goals of promoting stewardship around the Creek (as further noted below). A stewardship clean-up and citizen science event, even informal, involving the local beach Ultimate community will allow that community to feel as though they are giving back and contributing to the ongoing remediation of the Creek and Coney Island as a whole, an area they make use of for recreation.

Project Description

My Advanced Inquiry Program (AIP) master plan has the aim of promoting the future stewardship and restoration of the Coney Island Creek, a local urban waterway in Brooklyn, New York. Some of my AIP work-to-date has had a more general focus on urban ecology and local Brooklyn waterways, while, in the meantime, I've begun the steps to generate a network of contacts and local partners related to Coney Island Creek. I've also started volunteering for the NYC Water Trail Association, collecting water samples from Coney Island Creek for water quality analysis. As noted above in the Introduction, my ESP project of engaging local beach sports enthusiasts to participate in a Creek-related stewardship event will help advance my master plans goals.

The smart goals I defined for this project had the following aims: 1) to organize a beach cleanup event for local beach sports enthusiasts that will attract 5-10 participants, 2) that participants will collect enough trash to fill three to four large (30 gal.) trash bags, and 3) that participants will engage in citizen science by collecting data denoting the kinds of trash collected (to then be submitted into the Ocean Conservancy's CleanSwell app and for later analysis).

Partners on this project included the Coney Island Beautification Project, a local neighborhood activist and stewardship organization led by Pamela Pettyjohn. Pamela provided advice, and given her role in the community, it also helped to know she was informed and in approval of this activity. The target audience included players who participate in local Ultimate Frisbee leagues and pick-up games, including those who play beach pick-up on the main, Atlantic Ocean-side beaches of Coney Island. I expected 10 participants, along with enthusiasm and interest. I was unsure what to expect in terms of the amount and weight of trash we'd collect, nor the kind of trash items, other than lots of plastic.

I began the process of planning and publicizing the event in early June, 2018. Over the course of a month, I went through steps that included: contacting my local partner to clarify the event's aims, discussing advice with my local partner on suggested equipment and other needs, creating an event flyer to include with social media posts and emails, creating an online advance sign-up form and waiver, emailing reminders, and obtaining RSVPs for the Saturday, July 7 event.

To publicize the event to the local Ultimate community, I emailed lists of players in some local leagues, and posted details about the event to relevant local Ultimate groups on FaceBook and Meetup.com. These posts/emails included the event flyer (see Appendix). Via use of an

event flyer, one with photos, and which also promoted playing beach Ultimate afterwards, I aimed to provide sensory awareness of the issue, as well as to provide a measure of social pressure or apparent behavior to imitate, both to overcome certain "stone age" biases against participating that might take hold (van Vugt, Griskevicius, & Schultz, 2014). Once it was up and running, I also announced an info/sign-up website with Wufoo form and waiver. I followed up with multiple email reminders and follow-up posts. These emails and materials attempted to draw spatial connections between where players enjoy the beach and a local environment in need (the cleanup site) that is part of the same coastal ecosystem. In addition, I noted that playing beach Ultimate on the usual playing site was still an opportunity for after the cleanup event.

As timing got closer to the date and sign-ups seemed few, I did decide to expand my audience and also sent word out about the event to contacts I know at local boating clubs (Gowanus Dredgers and North Brooklyn Boating Club), and also to Dr. Jessica Joyner, microbial ecologist at Brooklyn College, with whom I work with on Coney Island Creek water quality testing. As it turned out, she herself is a former Ultimate frisbee player. She attended with her husband, and the rest of the attendees were from the Ultimate community, with none attending from the boating community.

The Coney Island Creek beach cleanup stewardship project took place on Saturday, July 7, 2018 as planned. The project had a scheduled start time of 8:00am and my participants and I met at a designated meeting spot highlighted on my website and flyer (Bayview Ave. and Neptune Ave., at the corner of the entrance to Kaiser Park), from which we then walked to the cleanup site, a stretch of beach on the eastern end of Coney Island Creek Park, located between Kaiser Park and the Creek itself.

I supplied equipment and other items that included trash grabbers, garbage bags, disposable nitrile gloves, a luggage scale, a first-aid kit, hand sanitizer, and some giveaways (Ultimate frisbee t-shirts). I brought clipboards and printed out Ocean Conservancy trash logging sheets, however, we all wound up using the Ocean Conservancy's CleanSwell app.

Mostly splitting into teams of two, we picked trash, logged data into the app, weighed bags, took photos, packed up, and then indeed proceeded to the beach pick-up Ultimate game a number of blocks away at West 21st St. off the Riegelmann Boardwalk.

Outcomes / Results

Results of the event achieved the modest smart goals I set when planning the project. Participants in the event tallied seven (7) people altogether, including me. In just over two hours, we collected trash that filled five (5) 30-gallon-capacity trash bags. We weighed each bag with a luggage scale and the total weight of all bags came to 79 pounds. We used the Ocean Conservancy's CleanSwell app to record the breakdown of trash items using categories supplied by the app. The total number of trash items collected came to **2,307** items. Figure 1 provides the

Trash Items	Items Totals	% of Total
Cigarette Butts	125	5.42%
Balloons	14	0.61%
Toys	3	0.13%
Fishing Gear	3	0.13%
Plastic Bags	170	7.37%
Food Wrappers	386	16.73%
Containers (Plastic)	33	1.43%
Containers (Foam)	5	0.22%
Beverage Cans	4	0.17%
Bottle Caps (Plastic)	366	15.86%
Bottles (Plastic)	30	1.30%
Bottles (Glass)	4	0.17%
Cups, Plates	38	1.65%
Lids	15	0.65%
Straws	489	21.20%
Utensils	13	0.56%
Plastic/Foam Pieces	453	19.64%
Personal Hygiene	40	1.73%
Other Packaging	16	0.69%
Other Trash	100	4.33%
Total Items	2307	100.00%

Figure 1

itemization of trash collected based on CleanSwell app category. Plastic straws were the item collected the most (n=489), forming more than 21% of items collected, followed by plastic/foam pieces, food wrappers, and plastic bottle caps. In Figure 2, I attempt to group items in fewer categories to further interpret the data.

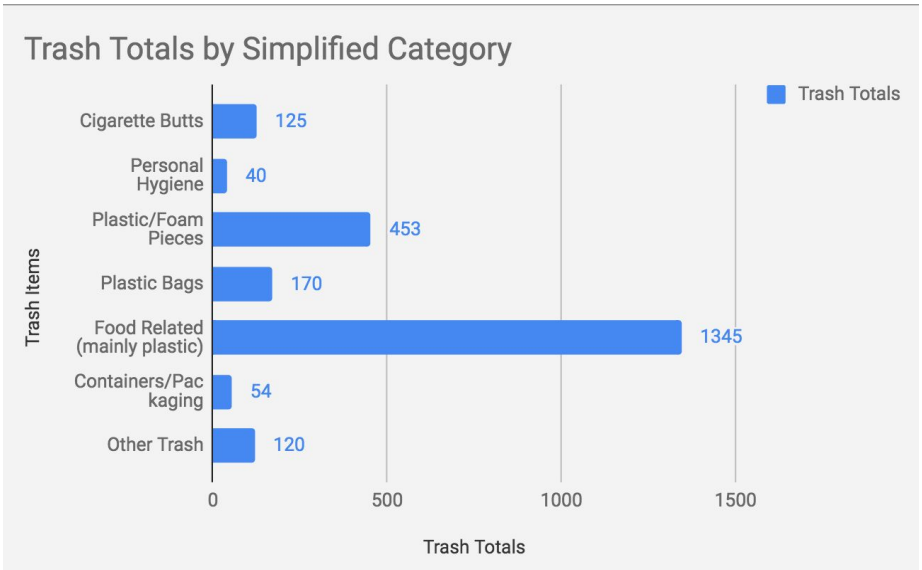

Figure 2

This chart groups nine categories made up of bottles, caps, wrappers, straws, plates, etc. into a food-related category (mainly plastic), keeps four categories the same (cigarette butts, personal hygiene, plastic bags, and general plastic/foam pieces), groups containers with "other packaging," and groups the rest into "other trash," illustrates how much more of the total that mainly plastic, food-related items contributes to beach trash at this site.

Discussion

Reflecting on the outcomes of my beach cleanup stewardship project and the experience of planning it, there are aspects that I believe were achieved along with aspects that I would modify for future endeavors. Based on limited sign-ups (which met modest goals, nevertheless) and past experience organizing a few park cleanups, I would plan to work with a longer timeframe. There are several points that I consider related to a longer, overall timeframe that would be important to greater participation and further project success. These are: 1) more time to produce materials, websites, etc. the publicize the event, 2) more advanced notice for participants to sign up, 3) greater leeway to select a convenient weekend date (I was limited, due to family commitments, to select a date close to the July 4th holiday and it's possible that interested individuals were simply out of town, 4) more time to consult other urban waterway organizations for advice (e.g., NYC H20, Bronx River Alliance, Gowanus Canal Conservancy), and 5) enough time to align with annual dates that have now come into use by other organizations, such as City Water Day or World Oceans Day.

What did work well, from my point of view, involved the activity itself of engaging in a beach cleanup, starting early on a weekend date to let participants feel like they had the rest of the day to do other things, having goals for collecting a certain amount of trash, and logging trash data with the very easy-to-use CleanSwell app.

To further understand the aspects of what worked, and what didn't work, among my participants, I conducted an informal, post-activity audio interview with all participants as a group. Positive comments included that my website sign-up was easy to use, that they felt satisfied to have collected the amount of garbage they did in a short time, and that it became clear why we started fairly early (8:00am) as it left time to do other things (including play Ultimate frisbee, as I note in the next section). Given the pleasant weather we had for the clean up, it was suggested that we even could have worked longer.

Critical, constructive comments both matched my own expectations and also offered surprises. One participant noted that June is a month where corporate groups seek to fulfil volunteer requirements and that might therefore be a timeframe to align with. Surprisingly, although the logging of trash data was conscientiously followed, was something discussed while we collected (e.g., people joked of never using plastic straws again), and was later called "interesting," participants also said that it "slowed things down." In effect, participants almost wanted to see more of the beach itself clean and to have that visual feedback of their progress and overall accomplishment. Or, at the very least, data collection would be better "if we could see the visualization of the end results somehow," such as with graphs or pie charts (the app instead rewards "badges" and maintains your collection history using visual icons for their collection categories). One participant proposed that data collection could be done for a "tiny

chunk of beach" and those results then extrapolated for data purposes while the rest of the activity involves a bigger beach cleanup.

I was surprised by these last comments regarding collecting data, as I thought it would provide some novel insight to participants. But motivations for participation as a steward or citizen scientist could potentially differ. Moving forward, and perhaps with more people, I could offer the choice of data collection versus a straight cleanup, to cater to individual preferences.

Impacts

With this ESP project, I engaged a very small subset of a local audience in environmental stewardship. Our impacts in terms of actual trash and data collection (nearly 80 pounds of trash, more than 2,300 items collected and categorized) seemed very tangible and meaningful. Despite that, participants wanted even more visual feedback of their accomplishment, which may speak to the complexity observed by some researchers specifically regarding beach clean-up activities and their level of meaningfulness and restorative impact (Wyles, Pahl, Holland, & Thompson, 2017).

Nevertheless, participants appeared satisfied with their participation and even all stuck together in playing beach Ultimate frisbee afterwards—an advertised, connected activity to further tie-in their recreation interests. Given some informal responses about working even longer and openness to future projects, this ESP went some small way toward cultivating local environmental stewardship.

References

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Appendix - Publicity Flyer and Event Photos

CONEY ISLAND CREEK BEACH CLEANUP & CITIZEN SCIENCE DATA COLLECTION

Saturday, July 7, 2018, 8:00am • **Rain or Shine** • Other dates may be added

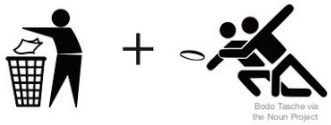
WHAT'S HAPPENING?

Let's contribute to a cleaner Coney Island coastal environment! We'll pick up some beach trash and also record data on what we've found.

Not far from where beach disc takes place, the shore along the **Coney Island Creek** needs help (see photos).

Ocean trash washes up along the Creek-side, and in 2012, contaminated water from this side flooded local residents during Hurricane Sandy.

Helping out a little here helps the whole local ecosystem that we Ultimate players enjoy, too. And if the weather is nice, there'll be time for beach disc after!



Bodo Tasche via the Noun Project

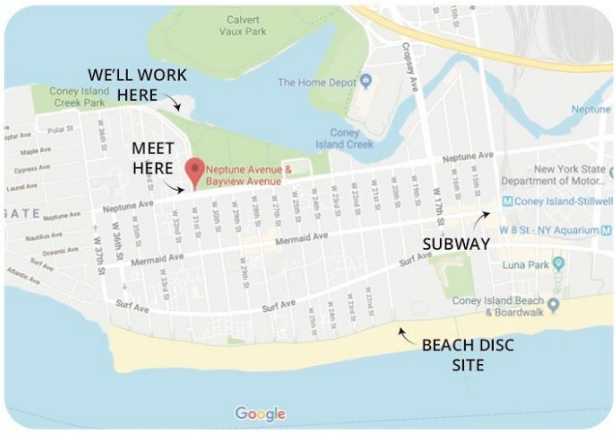
Help the environment, then play Ultimate!

DETAILS

When:	Saturday, July 7, 2018
Time:	8:00am - 9:30am
Where:	See map at right
Equipment:	Gloves, trash pickers, hand sanitizer, & garbage bags to be provided

** How to Sign Up **
Sign up by July 5th at:
http://www.coneyislandultimate.com

In the meantime, for more info, email:
Lpwah1@gmail.com



Coney Island Ultimate organized the annual beach tournament in Coney Island from 2007–2012

More photos can be found online at:
https://drive.google.com/drive/folders/1KXRHLc9Ya0IssLfghBwSHEPqBvp7oYBD?usp=sharing