Learning at Pickle Ponds: what does R2R2R look like in a place?

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Abstract

The Great Lakes Restoration Initiative has catalyzed environmental change throughout the Great Lakes Region. To better understand the impact of these changes, USEPA's Great Lakes Toxicology and Ecology Division (GLTED) has been studying the steps between remediation, restoration, and revitalization in Great Lakes Areas of Concern (AOC). This study:

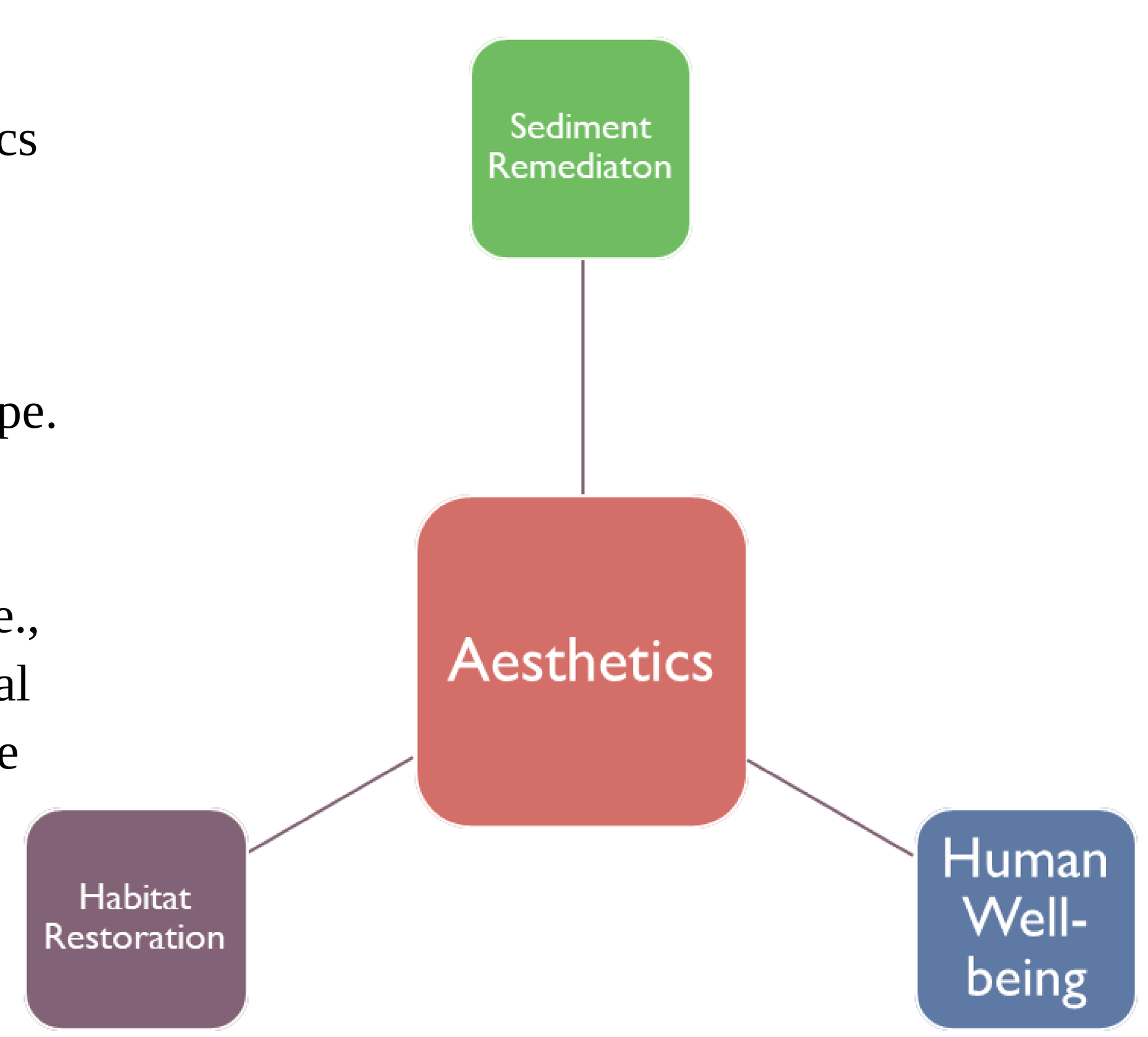
- Will develop a comprehensive mixed-methods strategy to link changes in AOC conditions to changes in human site use and perceptions of well-being.
- Will help us understand the benefits of environmental remediation, restoration, and revitalization.
- Measuring changes in use as an indicator of well-being through trail cameras, webcams, and direct observation of activity.
- Will use aesthetics, or the documented visual changes in the environment, to link environmental changes to the changes in human use and perceived well-being.
- Will utilize a survey and a city workshop to engage with the community to better understand less visible factors that might influence perceptions of benefit and well-being.

Concept plan for restoration of the pond.

Aesthetics

In the Great Lakes Water Quality Agreement, aesthetics are a beneficial use of the ecosystem. We will monitor aesthetics and document the visual quality of the landscape.

Because aesthetics can have both a technical meaning (i.e., beneficial use) and a personal one (i.e., experience) we use aesthetics in this study to connect the technical to the personal.



Sense of Place

Our research and analysis will consider sense of place, or human connection to places. This includes place attachment (the emotions attached to places) and place meaning (symbolism attached to places) - both of which interconnect the social with the biophysical and play an integral role in perceptions of well-being.

These attachments contribute to our sense of identity. Place attachment has been linked to positive health and community participation outcomes. These outcomes may include greater social, community, and political involvement; increased levels of environmental stewardship; increased levels of environmental advocacy; improved physical and psychological health; more satisfying social relationships; and greater local social capital.

Data collection

Webcams

Images collected from a public web camera will provide consistent observation of target areas of the Osaugie Trail, located above the west side of the pond. The community uses this paved trail for recreational activities and the web camera will provide consistent data regarding types of users (e.g., individuals, couples, families, etc.) and types of activities in which users engage (e.g., exercise, socializing, family outing, rest/relaxation, etc.).

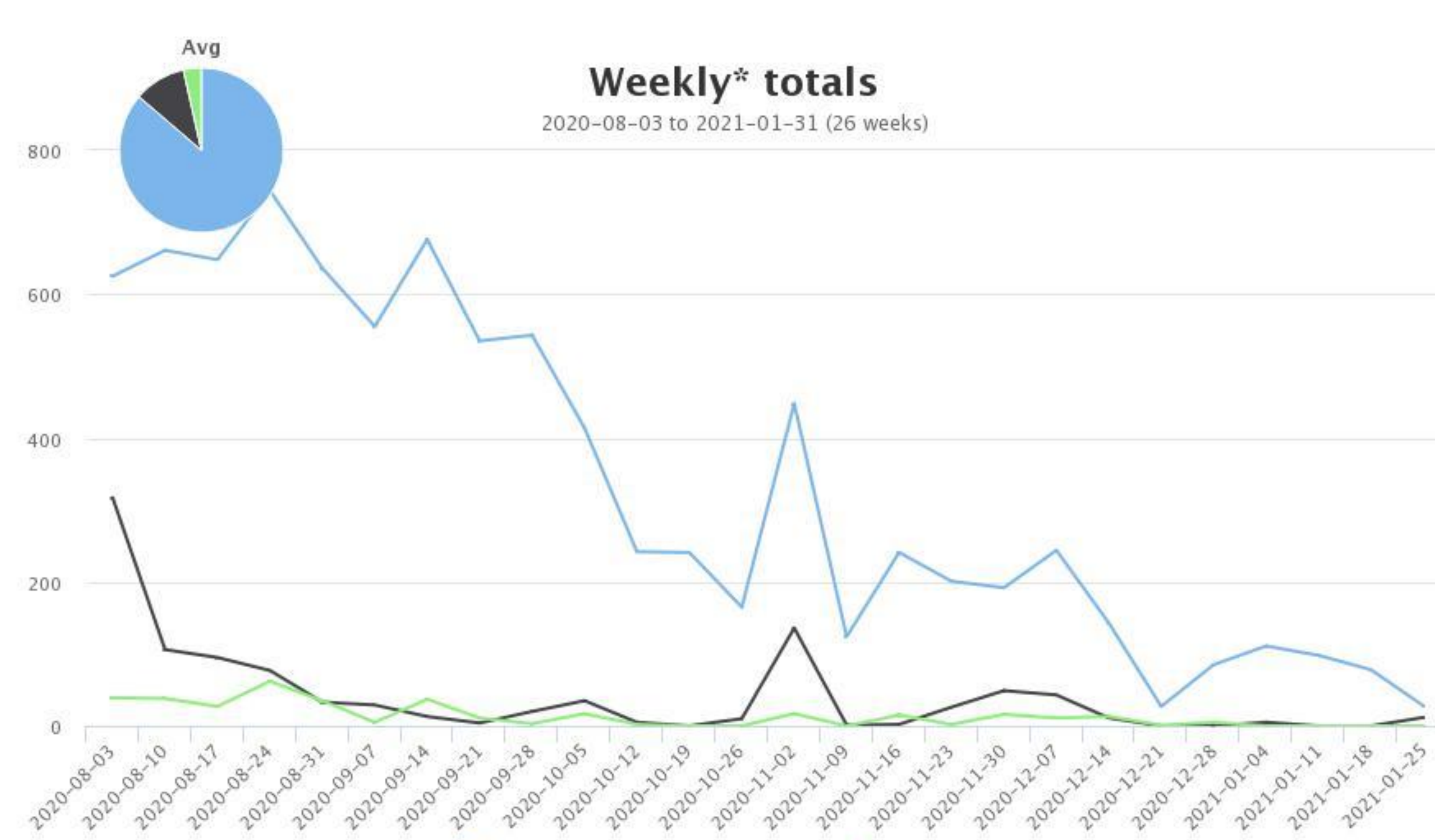
Trail cameras

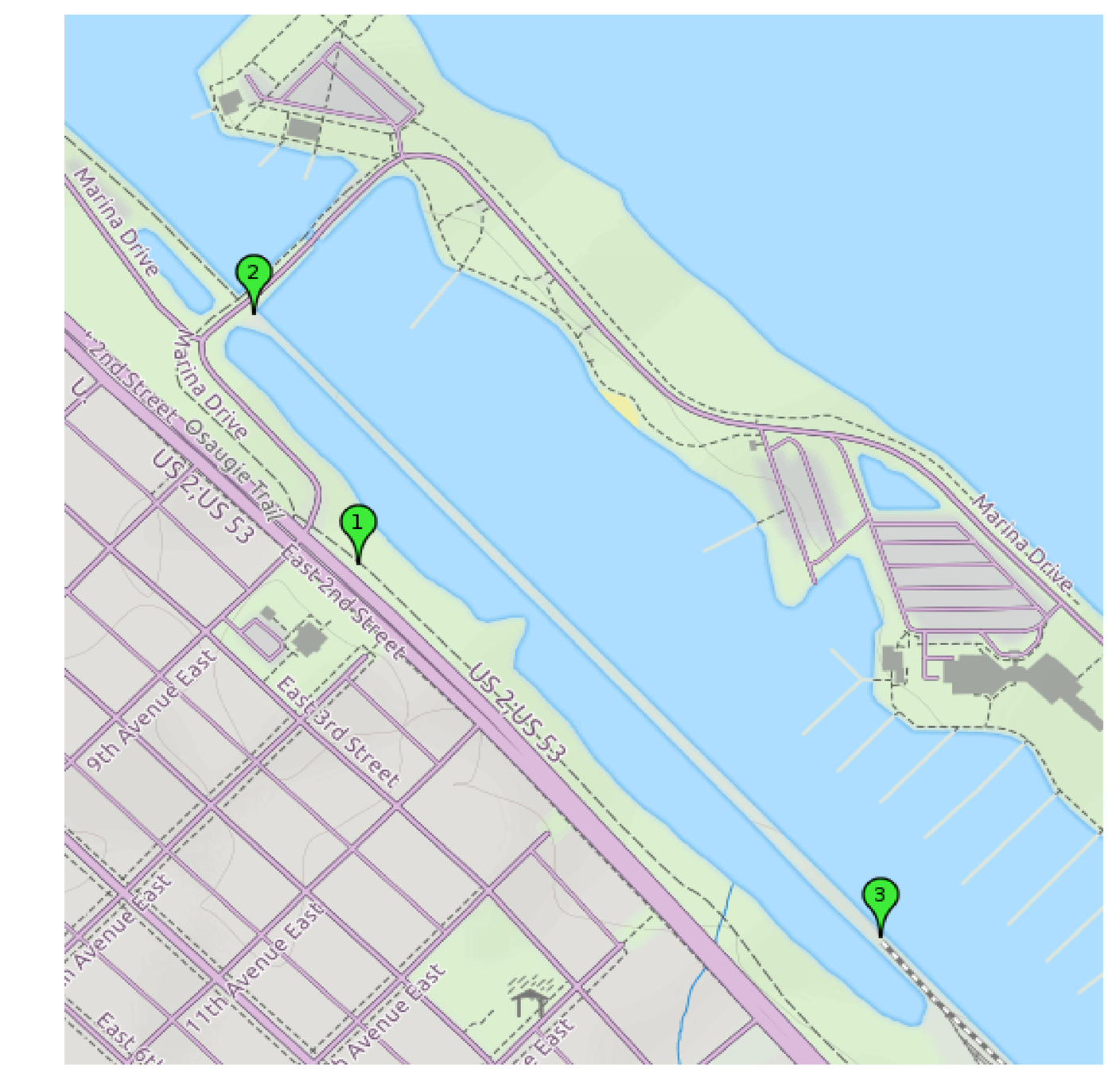
To characterize change in the use of the pond site, digital recording trail cameras provide consistent observation of target areas and will provide reliable information about recreational use of Pickle Pond.

The cameras will be mounted at the north and south ends of Pickle Ponds. They have a range of about 90 ft. and a field of vision of about 43° .

Trail counters

Trail counters are placed at the north and south ends of the pond and along the Osaugie Trail (see map). Data is collected regularly.





Location of trail counters.

Photo of trail camera.

Site User Satisfaction Survey

Why? To collect direct feedback from the people who access and use the project area (natural, hybrid and built amenities).

Purpose? Survey responses will provide primary data linking the geography of the project area to perceived changes, and what these changes mean to the site users and may influence future amenity projects at and around the site.

Site observation

What are we observing? We will observe and record the number of visitors and types of activities at different times of day, different days of the week and seasons of the year.

What do we expect to learn? How people are spending their time at the site, where they are heading towards/coming from; this will further contextualize who is using the area and what other area amenities attract use, as well as other contextual factors.

Aesthetics monitoring

Our monitoring forms will collect water condition, odors, debris, trash, graffiti, aesthetic quality, and weather. We will monitor regularly before and after the project.

Analysis

Multiple lines of evidence

This study is a mixed methods study that will be conducted in a particular place and time. We will not be able to replicate the results in another place.

- To overcome this limitation, we use a multiple lines of evidence approach. No one data set will be relied upon; the data sets will be analyzed in relation to each other.
- The result is a method that can be replicated and implemented at other R2R2R sites.

"This is the strategic use of multiple approaches to address one question. Each approach has its own unrelated assumptions, strengths and weaknesses. Results that agree across different methodologies are less likely to be artefacts (Munafo & Smith 2018)."

Munafò, M. R., & Smith, G. D. (2018). Robust research needs many lines of evidence. *Nature.* https://www.nature.com/articles/d41586-018-01023-3

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