Hunters Point Slough

Juliet Meyer ... LA 438 ... Spring 2017

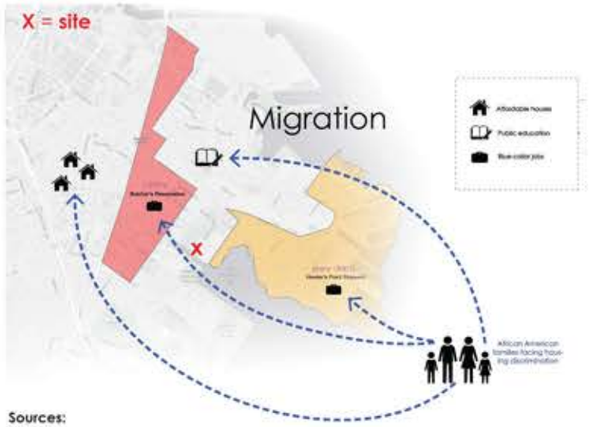
Mission statement

My site, located on the slough of Hunters point, offered two opportunities- restoring the health of the existing wetland that once existed here, and helping the disadvantaged residents of this area. My mission is to design a demo garden, as I believe education is the key for this population to heal both itself and its environment. GIS is the tool I used to analyze demographics, environmental occurences, as well as opportunities and constraints.

Site
- located in San Francisco
- within Yosemite Creek Watershed
- previously a wetland
- extremely damaged over time due to development
- potential of treating stormwater before it enters the sloug

Cultural and Historical Analysis

Many African Americans moved into this region during the Great Migration, as the housing was affordable and public education was available. Additionally, the shipyard and Butcher's Reservation offered many blue collar jobs. Over time, these industries both affected the health of the slough and the health of nearby residents. Hunters Point and Bayview residents all faced environmental injustice and today they suffer from poverty, health issues, violence, substance abuse, and low education levels.



Sources:
noaa.gov
usgs.gov
factfinder.census.gov
https://dataf.org/opendata/
https://www.census.gov

Land Use, Demographics

The land uses near my site depict that there are a lot of industrial sites near the lower part of the watershed, which most likely explains why the slough is so polluted. From my cultural history research, I learned that there was a large African American migration into the area in the late 1800's. My demographics study shows that these populations still exist today. This commuity also struggles with poverty and health issues, so another demographics study on fertility makes connections about pollution in the slough and the health of the community.


African American Population


Median Household Income


Educational Attainment


Women Fertility Rate


Gasworks Park

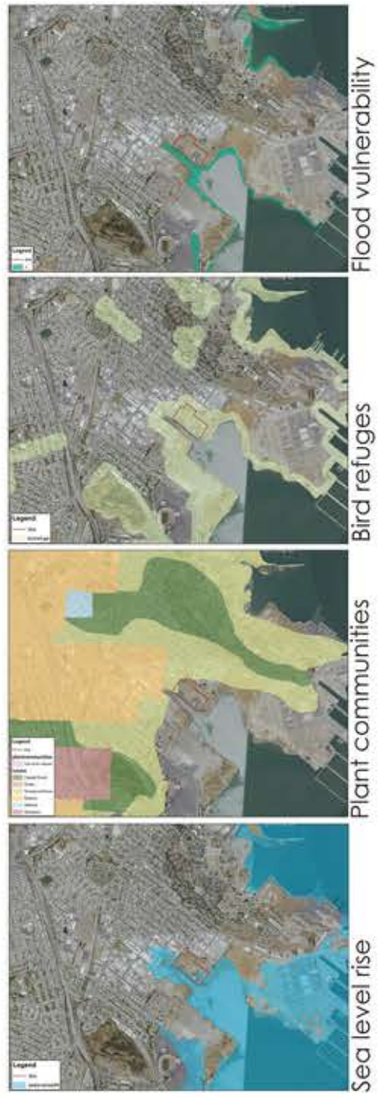

Xochimilo Park


Caltrans Rest Stop

Precedents

- Parks that serve as education demonstrations
- Parks that incorporated wetland restoration
- Spaces the incorporated the history of the site

Connection:
- Educate public and residents of Hunters Point about sustainable practices
- Restore the health of that ecosystem



Environmental Dynamics

Flood vulnerability
- During flood events and severe storms, these areas in teal are vulnerable to flooding
- In combination with sea level rise, my site could be at risk
- Boardwalks will prevent my walkways from being submerged by water

Bird refuges
- Both land birds and sea birds use the coast for nesting and feeding
- Development of city has caused a negative effect on them as their environment was damaged
- My site serves as an opportunity to create wildlife protected areas, including islands that allow nesting and feeding

Plant communities

Most common:
- Grassland
- Coastal scrub
- Dunes
- Riparian
- I will incorporate plants from each of these into my landscape to restore it to its original condition

Sea Level Rise

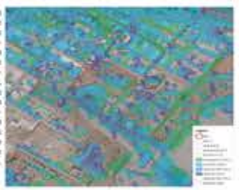
The site is mostly unaffected by sea level rise in the next decade. An analysis of a 6ft rise shows only a small portion of it susceptible to being under water. I will therefore design my treatment wetland to have certain ponds in which those that are vulnerable to the sea level rise will eventually morph into the existing wetland habitat. A barrier will protect the others from having ocean water enter them.

Watershed Boundary

The watershed boundary and stormwater runoff is a large component of my site. The stormwater system is connected to the sewer system in San Francisco, occasionally releasing polluted water into the ocean during storm events. My site is also located at the end of the watershed, so stormwater is drained to the Griffith Pump house right next to it. I can use this stormwater in the demonstration garden as well as create a treatment wetland, which will over time clean the water before it is released into the slough.

Yosemite Creek Elevation Analysis

The aspect study provided me with useful information pertaining to the placement of my solar panels as part of my demo garden. It is commonly known that in the Northern Hemisphere solar panels should be placed in the Southwestern direction to maximize their efficiency. Therefore, I looked at the spaces on my site that face this direction in order to decide the ideal placement of my solar panels. We can see that ideally the solar panels should be placed on the slope side of the walkway near the top of the slough.


ASPECT STUDY

CONTOUR STUDY

Using the same DEM file, I looked at 1 ft contours on my site to determine the placement of my green practices demo as well as the best possible circulation and viewsheds. Unfortunately, the contours from the file hadn't been updated since the recent changes to the slough (although the rest of the site is quite accurate). From my recollection of the site topography from the site visit, I was able to photoshop a few contours near the edges of the water to accurately depict these changes. I plan on placing my green demo garden on the top of the mound near the middle of the site, and create historical stepping stones along the edges of the wetland restoration area.