

Arcata Community Forest Trash

BY: AUSTIN THERIAULT AND DEVON HARLAN

NOVEMBER 20TH 2014



Introduction

The natural Arcata Community Forest is subject to many types of human activity on a regular basis, and it is important to the preservation of the area as a resource to seek out the detrimental side effects of people inhabiting the forest. In order to assess the issue of trash accumulation within the forest, one square mile of forest located behind Humboldt State University was surveyed. The goal of our survey was to show that a significant amount of trash is currently present, and that a cleanup should be mandated by Humboldt State University or the City of Arcata. Our data showed that there is a significant amount of trash located behind HSU and in the Arcata Community Forest. Our recommendation is that a cleanup should be organized in efforts to, maintain the equilibrium of the ecosystem, preserve the aesthetic integrity, properly manage the local watershed for contaminants and drifted trash, and to not encourage individuals to inhabit the local forest. Alternative habitat for our local homeless individuals should be a problem addressed by the community. Funds should be allocated by the city for this cause because of both its humanitarian as well as its environmental value.

"Trash is one of today's most pressing issues - both directly and as a reflection of our attitudes and behaviors," says Professor Carlo Ratti, head of the MIT Massachusetts Institute of Technology SENSEable City lab

Methods

We chose to define the concept of a significant amount of trash was dependent on a volume of trash that would necessitate vehicles with a large carrying capacity. To collect this data, we acquired the Arcata Community Forest trail system shapefile and waterway shapefile data from the City of Arcata's website. The forest was entered in three different locations. The condition for each location that was visited was documented with a Garmin GPS.. By following main trails, we found many social trails that usually lead to many different types of trash. These locations were largely off trail, requiring navigation through overgrown and strenuous terrain.. Many sites that we found had various quantities of trash from a single trash bag, large homeless camps,

to a long abandoned wrecked car from the 1960's..We proceeded to download our waypoints using DNR GPS and saved them as a shapefile. We opened this shapefile in ArcMap and added attributes for quantity of trash. We collected from 25 sites that were estimated to contain a significant amount of trash. The amounts ranged from 30 to 4030 gallons of trash on site.

Results

By visualizing a typical 30 gallon contractor bag full of garbage, it is estimated that 17,230 gallons of trash currently litter the forest floor. This accumulation represents approximately 24 cubic yards of trash. This amount of trash would necessitate one high walled dump truck. This would be approximately 10 average sized pickup loads. It became clear that the camps were usually hidden in more treacherous terrain, which would add significant challenge to the cleanup process. Due to the large number of sites found in a very small section of forest, the implications of the excess accumulation of trash become serious. Our primary concern was not only that the ecosystem is currently being subject to serious damage, but also the larger social problems that are implicated. Although the task of removing the trash on site to proper disposal would be laborious, the socio-economic implications necessitate more creative solutions to where these less fortunate individuals can be sheltered. We found that most of the camps were within one mile from each entrance and usually within 100 feet of a small waterway. There were usually well-traveled undesignated paths that lead to strings of 3-5 camps. Certain Areas look like they had been inhabited by many people through numerous years. There were a few sights that appeared to have more permanent structures on site. Many sites had large trash piles consisting of many trash bags. There was also evidence in the conditions of certain sites that lead us to believe that a majority of the trash piles were being buried in the duff layer of the forest. This coupled with the fact that many sites were potentially not found made our estimates for trash accumulation conservative. Large hollow stumps of the old growth redwood were reoccurring locations for trash deposition and makeshift structures.

Humboldt, California

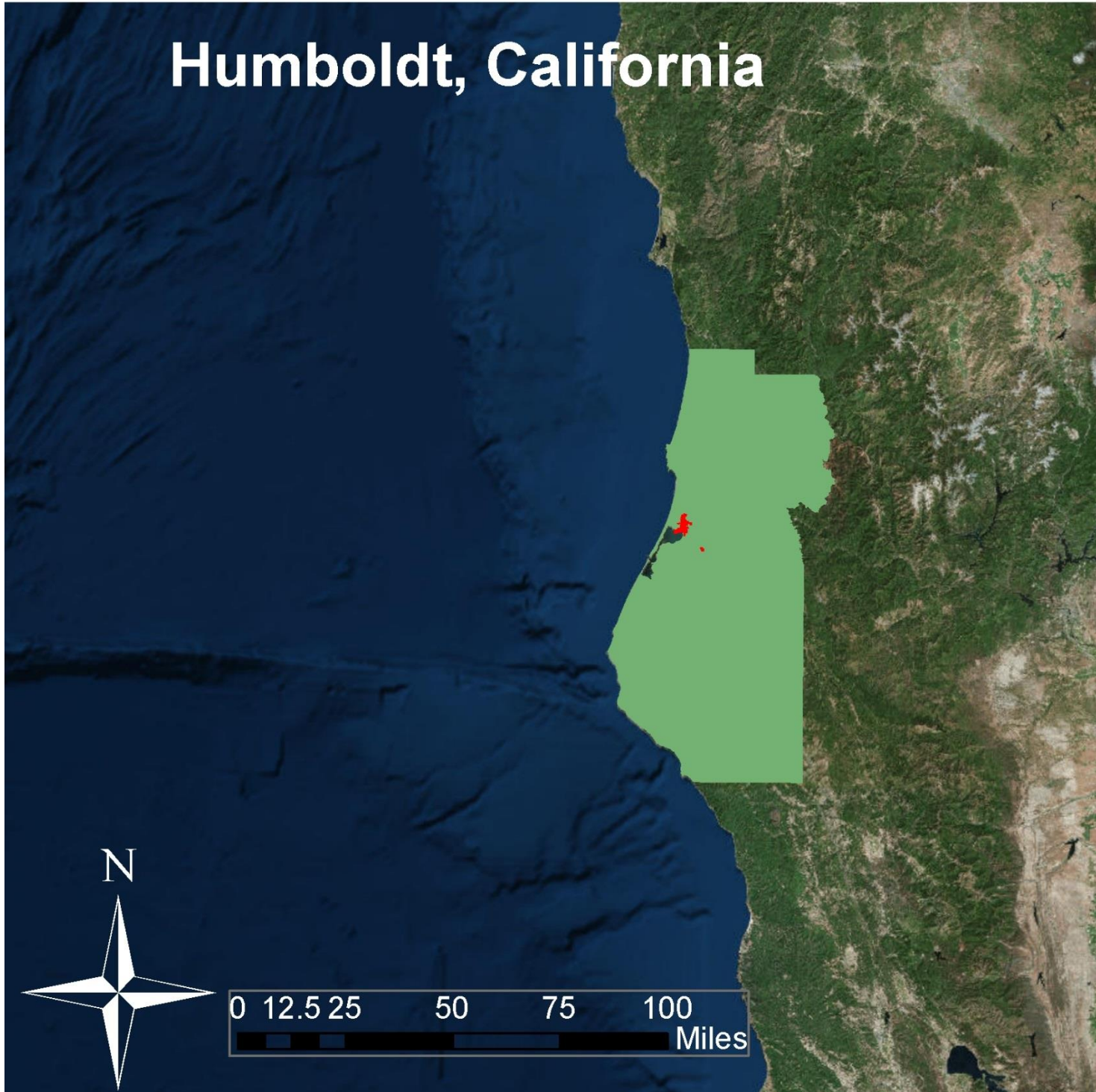


Figure 1. Location

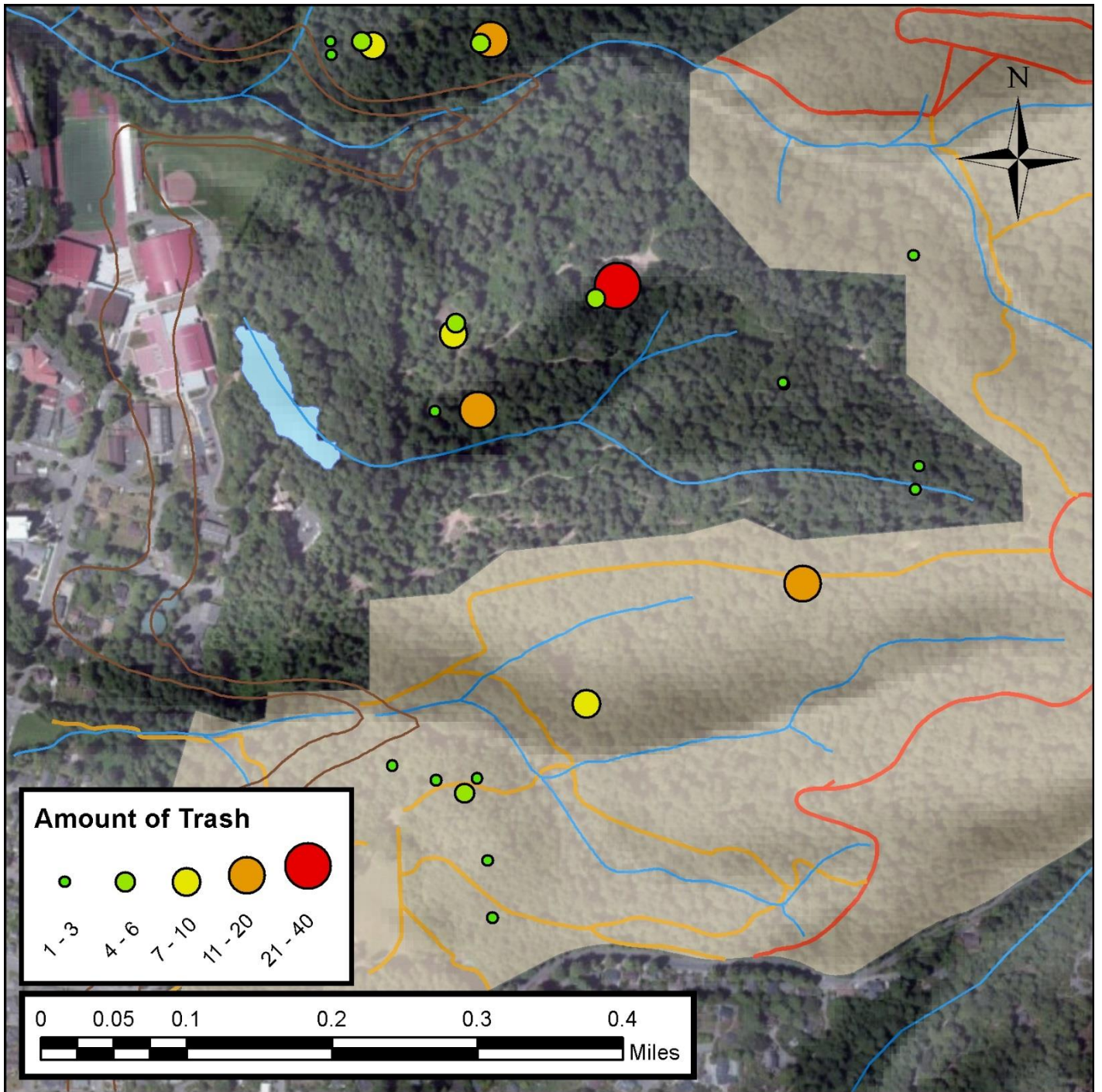
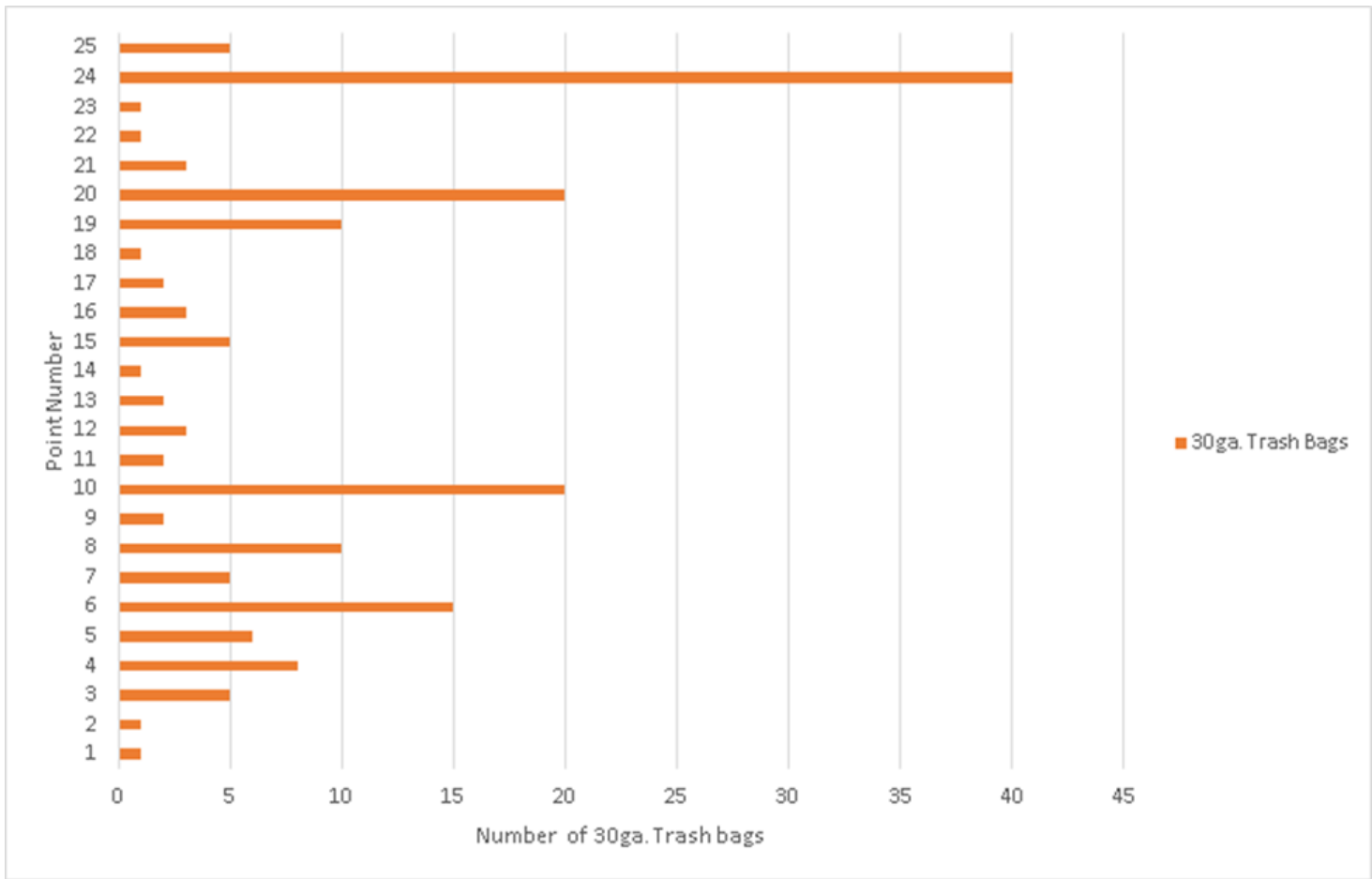


Figure 2: locations and quantity of trash in Arcata Community Forest, additionally trails and waterways are displayed.





Conclusion

After analyzing the negative impacts of the various human activities with the Arcata Community Forest, it has become evident that there is a very relevant issue of trash accumulation. It is believed that the majority of this waste is the result of homeless people who have pressures to live in dangerous and unsanitary conditions. Some of these individuals may be mentally challenged. Because so many of the sites were camouflaged, it is difficult to determine how many sites remain undiscovered. Considering that fact that large amounts of trash are being hidden in the duff layer, the total volume of trash is most likely conservative. Regardless, the discovered volume of trash is enough to require local government intervention for a proper cleanup. Because of this, government action must be considered to maintain the aesthetic and functional health of our local ecosystem. However, it is not to be forgotten that these trash piles are dwellings of people who are in need of help and sometimes criminal investigation. The situation creates a sensitive scenario that must be carefully addressed. Simply by evicting the inhabitants, we do not necessarily address the issue of the trash and rather risk moving garbage elsewhere. We recommend that the city be more diligent in creating areas where homeless individuals can abide without danger of losing their possessions, unsanitary conditions, and areas that are subject to public use. Certain aspects of the trash are a danger to the public, including increased crime, potential fire hazard,, accumulation of waste in waterways, or contaminations that will be present in the forest indefinitely. May this project serve to raise awareness to the environmental tragedy that is taking place in our local community forest.

Acknowledgements

Bernhardt, Chris, et al. "Illegal Homeless Camping in Portland: Field Analysis and Advocacy Planning." (1995).

Bottorff, Heather, et al. "Homelessness in the Willamette National Forest: A Qualitative Research Project." (2012).

Mendoza, Cindy L. "A Home for the Homeless? Residents' Perceptions of the Armitage Homeless Camp."

World Imagery, Sources: Esri, DigitalGlobe, GeoEye, i-cuberd, USDA FSA, USGS, AEX, Getmappiug, AeroGrid, IGN, IGP, swisstopo, and the GIS User Community