What are the Goals?

Over the course of the Spring Semester 2019, I researched and observed various regions of campus (Figure 2) in order to create a map that describes plant communities and historically significant regions on campus. Some other goals:

- The maps will be foundational- part of a buildable GIS database wherein future students can add layers as aspects of campus changes over time.
- Educate PLU students, staff, faculty, and visitors walking through campus of the natural history of PLU and what is here today.¹
- Discover future conservation projects on campus.
- Create displays on campus by Summer 2019 describing the natural history of Parkland and how it relates specifically to campus

The Natural History of Parkland

- The landscape and topography of Parkland was formed by the Puget Lobe as it retreated, leaving behind lowland fill made up of glacial sediments.²
- The Steilacoom Tribe occupied the Clover Creek sub-basin, managing the historical prairie land with prescribed fire.
- Clover Creek used to run through campus and has since been diverted east of campus, through culverts under JBLM and out to Chambers Creek.³

Methods

- Using bird data collected on campus by Ben Sonnenberg, an Environmental Studies Capstone student in 2012-2013.
- This data described 7 zones on campus where he went out in the summer months to observe birds.
- ✤ I selected these 7 zones to describe general patterns about the plant communities around campus.
- ✤ I walked around campus and collected GPS coordinates for each of the seven zones.
- Using ArcMap, I created a map of campus with a 50 meter buffer surrounding each observation point.



Defining & Mapping Natural and Historical Regions of PLU using Geographic Information Systems

Fred Tobiason Outdoor Plant and Animal Sustainability Research Award, May 2019 Alex Moore

a prairie zone on campus, outside of Morker

Zonation of Natural Regions on Campus



Zone Analysis

Zone 1: The Tobiason Outdoor Learning Center. Large native habitat, hosts lots of birds and animals **Zone 2:** Below the University Center Building Partially landscaped, contains mostly shrubs and small trees **Zone 3:** Pathway with natural spring running through on hillside A natural spring runs through the hillside next to the staircase. **Zone 4:** Foss field, near the Soil Profile Pit Grassy area with trees increasing as you go up the hillside **Zone 5:** Pathway right behind the Mary Baker Russell Music Center Garry Oak tree coverage, native plants (lilies, bleeding heart) & also invasives (stinking bob, blackberry)

Zone 6: Morken parking lot

Partially grass and partially forested. Close to the road. **Zone 7:** Morken/Rieke path

Very close to the road, lost of sun exposure, maintained mostly by Grounds Management

Acknowledgments

Thanks to the ongoing support of Fred & Dorothy Tobiason. Without them, the project would not have been created! Also many thanks to Dr. Romey Haberle for being an important mentor and the rest of the Environmental Studies for trusting in my idea.



Figure 2: Map created using GIS to illustrate the zones created. The 50 meter buffer represents the boundary of plant observations in each of the seven zones.

- opportunities on campus.



nst the natural spring that runs through campus or

- 2. McGinnis, Richard. Natural History of the Parkland Area.
- 1942: Interviews with Early Residents.



Discoveries

Zones 1, 4 , and 5 are the most "native" zones on campus Zones 2,3, 6, and 7 are interrupted by human

development, like university buildings and pathways. Humans also changed the course of Clover Creek, which used to run below the hillside on campus.

Other regions of campus hold potential to preserve native habitat, such as the golf course and the prairie restoration project near the greenhouse and Morken.

Future Directions

Research potential for future students!

There are other natural regions of campus outside of these zones. For instance, the golf course and regions near Morken have excellent prairie conditions. PLU has a unique opportunity to preserve these native prairies by refusing to develop on top of them.

Working with Native tribes would be an excellent way to maintain traditional management of these prairies.

Students in the future can apply for this research award and pursue any sort of plant and animal sustainability goal- regardless of the students' field of study. Continue to raise awareness about conservation



mage from zone 4, next to the Morken Center parking lot. This es grassy areas and extends into unmanaged tree covered lan

References

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