

# Planting Native Plants on Campus to Increase Biodiversity and Decrease Water Use

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## Introduction

The practices required to take care of grass lawns are unsustainable and can be environmentally damaging. On average 27,000 gallons of water per week are needed to irrigate an acre of grass, and 9 billion gallons of water are used daily to water lawns in the US. Lawns also require the use of damaging chemical fertilizers; the runoff from these chemicals causes negative effects on native ecosystems. Many of these chemical fertilizers and pesticides are known carcinogens and neurotoxins. Grass lawns are also a monoculture, which consistently remove the same nutrients from the soil, damaging soil health and causing a higher dependence on chemical fertilizers. The goal of this project was to increase native plants on campus. Native plants reduce water and chemical use, increase biodiversity, support local wildlife, and store significantly more carbon than grass. Native plants provide major ecological and environmental benefits and they are aesthetically pleasing as well.



Figure 1. Map of CWU campus with the garden location marked in red.

## Study Area

The plot that was chosen is on the south wall of Black Hall (Figure 1). It was chosen because the irrigation was already disabled and there was not another location where turning off the irrigation in time was feasible. The grass at this site was already removed which reduced the labor required for this project.



Figure 2. Photo of completed garden two weeks after planting.



Figure 3. Photo of me planting cutleaf beardtongue in the garden plot.

## Plant Species

- Native plants for the garden were selected based on size, bloom time, and flower color
- The garden plot was planned based on the full grown sizes (Figure 4).
- Plants were purchased from Derby Canyon Natives in Peshastin, WA
- 7 species of native plants with 24 individual plants
  - 6 are shrub steppe species
- 4 Idaho fescue, *festuca idahoensis*
- 3 Arrowleaf balsamroot, *balsamorhiza sagitata*
- 6 Dessert yellow fleabane, *erigeron linearis*
- 3 Creamy buckwheat, *erigonum heracleoides* (Figure 6)
- 3 Cutleaf beardtongue, *penstemon richardsonii*
- 3 Purple sage, *salvia dorri* (Figure 5)
- 2 Kinnikinnick, *arcostaphylos uva-ursi*



Figure 5. Photo of purple sage in the garden plot.



Figure 6. Photo of creamy buckwheat in the garden plot.

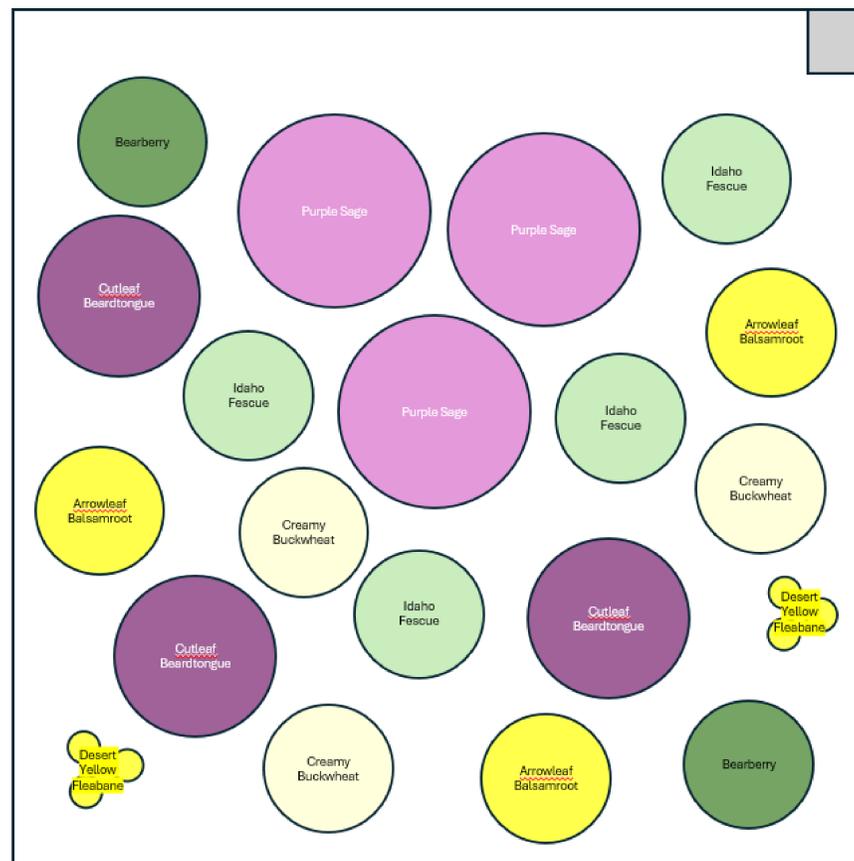


Figure 4. Planned map for the garden. Some adjustments occurred when planting. Each color is a different species and the sizes of the circles is proportionate to the full grown size

## Planting the Garden and Long-Term Care

- The native garden was prepared and planted during Earth Week (Figure 2, 3).
- First 1.5-2 years will require infrequent watering
- After that time the plot will no longer need to be watered again
- No fertilizers or chemicals needed.

## Sustainable Development Goals



## Conclusion

This project increased the biodiversity on campus with native drought resistant plants. These plants will be able to survive without any water once they acclimate to the soil. The grass had already been removed and there was no existing irrigation that needed to be altered. Not only does this help with water and chemical usage, it also helps to support biodiversity and improves the overall aesthetics of the CWU campus. The intent of this is to spur more planting of native drought resistant plants on campus.

## Acknowledgements

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