



2023

## City of Auburn Parks Dept Intern

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# COLLEGE OF THE ENVIRONMENT



**Internship Title:** City of Auburn Parks Maintenance - Horticulture

**Organization Worked For:** City of Auburn

**Student Name:** Audrey Patton

**Internship Dates:** 6/13/20 8/31/20

**Faculty Advisor Name:** Ed Weber

**Department:** ESCI

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**STUDENT SIGNATURE** Audrey Patton

**DATE:** 8/2/20

## City of Auburn Parks Horticulture

### Summer 2023 Internship Report

Audrey Patton

This summer, I am grateful to be employed by the City of Auburn working as a horticulturist. Horticulture is the science and art of cultivating plants. My roles include weeding, removing invasive plants such as English Ivy (pictured below), hedging shrubs, pruning trees,



watering flowers, designing garden beds, and planting annuals and perennials. Over the last 7 weeks, I have greatly increased my knowledge of natural systems in cities, specifically parks and gardens.

I went into this internship with the goal of studying and changing the environment through city park landscape maintenance and horticulture. During my time with the City of Auburn, I have learned some of the challenges and benefits of working for a local government agency.

One aspect of city park landscape maintenance that challenged me is that aesthetics and cost, not sustainability are the priorities for parks in this small city. Regarding problem solving, from my observations in department meetings and conversations with coworkers, the quickest, easiest, cheapest, and most visually appealing

option is almost always chosen. Unfortunately, this applies even if it means sacrificing the health of the environment in the long run. Horticulture and gardening behaviors can impact water and soil quality along with greenhouse gas concentrations in the atmosphere.

I've admired the City of Auburn's beautiful, hanging baskets of petunias, and wondered how they are maintained. There are 200 hanging baskets in Downtown Auburn that require water 3 days a week, which involves driving a truck with a water tank and motor attached to a hose for approximately 7 hours each





time (pictured on the right). This releases carbon dioxide into the atmosphere by the burning of gasoline.

Spending time in nature is beneficial for our wellbeing. Parks are built and maintained so that people can enjoy green spaces which provide in general, parks play an important role in people having access to a safe place to appreciate and connect with nature. This is crucial for people to be motivated to care for the environment and their openness to act in favor of the environment. Not only that, but parks also protect groundwater, help prevent flooding, improve air quality, provide buffers to urbanization, create wildlife habitat, and provide a place for children and families to recreate outdoors together.

There is a large storm pond called Environmental Park that hosts many species and filters toxins flowing from Highway 167. At Fenster Park, the City of Auburn partnered with Mid Sound Fisheries to plant native shrubs and trees, improving the shoreline for our spawning salmon in the Green River. Some park maintenance practices can be unsustainable. Irrigation is water intensive and climate change is undoubtedly increasing the likelihood of water scarcity. Furthermore, governments are being called on to improve park management norms and distribute less water to parks. Park managers are obligated to design spaces that maintain community wellbeing first and foremost, particularly as densely populated areas and development increases.

Around 60% of my time in this position is spent hand pulling weeds and most would agree they are the most annoying part of gardening. Additionally, certified park staff apply chemical herbicides as a short-term solution for weed control when maintaining city parks. The poison kills weeds quickly without requiring manual labor. However, they can potentially contaminate nearby water sources, destroy surrounding soil, and kill non-targeted plant and animal life, especially if sprayed in excess or improperly. Park staff are specifically trained in this area, whereas the average homeowner is more likely to misuse it. I have witnessed weeds that have been sprayed with the chemicals returning in just a few weeks, so the method is sometimes ineffective.



Weeds regrowing after being sprayed with chemical herbicide at Les Gove Park in Auburn, WA.

Protecting honeybees is crucial because they pollinate crops. In my first draft of this paper, I thought the health of honeybees was declining due to glyphosate exposure, also known as RoundUp. After review by my supervisor, I have learned that in fact, Honeybees are declining for several reasons including lack of food and habitat, mites, viruses, and invasive species. Auburn Parks pesticide applicators attend school yearly to keep up on current topics. For the past 10 years, bee health has been an ongoing topic during these classes. Pesticide applicators are the most knowledgeable about types of pesticides and the best times to apply pesticides to least harm our bee population. Any pesticide that includes a neonicotinoid (which round up does not have) is the most impactful to bees.

I've also learned that fertilizer is commonly used to keep plants beautiful. Although synthetic fertilizer helps plant production initially, it is not sustainable for cultivating plants because it has negative impacts on the small and large scale. Continued use takes a toll on soil health over time by making it more acidic and decreasing organic matter as well as useful organisms in the dirt. Fertilizer runoff can end up in streams and lakes, leading to periodic algal blooms which ultimately kill aquatic life.

Environmental science provides valuable knowledge about sustainable practices such as water conservation and integrated pest management. Ideally, we help horticulturists grow plants in environmentally friendly ways, reducing negative impacts on ecosystems and biodiversity conservation, my biggest passion. My background in environmental science offers insights into soil composition, nutrient management, and soil conservation through my coursework in chemistry, biology, physics, and ecology.

Considering climate, environmental science helps horticulturists understand patterns, including changes in temperature and precipitation. This knowledge allows us to select appropriate plant species for specific regions and adapt techniques to environmental conditions, so they won't require as much water and physical labor to maintain.



Trailing Blackberry is a native, low trailing shrub with narrow stems.



Himalayan Blackberry is an invasive, shrub with wider, ridged stems.

I would love to see Auburn Parks planting more Pacific Northwest native, drought-tolerant, and pollinator-friendly species. In addition, they should be planted more densely to encourage competition and help keep invasives and weeds at bay. Some of my favorites include Yarrow (*Achillea millefolium*), Milkweed (*Asclepias speciosa*), Snowbrush (*Ceanothus velutinus*), and Oceanspray (*Holodiscus discolor*, pictured on the left) Unfortunately, balancing time and labor is challenging. Budgeting leaves on the back burner.



As horticulturists, we benefit from the ecosystem services provided by nearby natural areas, such as pollination from wild insects and pest control by natural predators. Environmental science helps identify and protect these ecosystem services to support horticultural practices.

Landscaping involves the planning, design, and maintenance of outdoor spaces. Environmental science principles encourage ecologically motivated techniques that mimic natural ecosystems. This approach promotes biodiversity and creates better habitats for wildlife.

Rain gardens, permeable surfaces, and bioswales effectively manage stormwater runoff, reducing the burden on city infrastructure. We must mitigate impacts of the urban heat island effect with as many shady trees as possible.

The horticulture lead and my supervisor, Erin, is a master gardener and has taught me how to properly care for many Pacific Northwest trees, bushes, and flowers. I have learned how to prune trees and bushes in a way that maintains the plant's health based on the species and effectively remove weeds and invasive plants by hand. Every day, I'm building upon my skills in being part of a team in a workplace environment as the work is collaborative.

Overall, environmental science is at the core of sustainable and ecologically responsible practices in horticulture, landscaping, and city park maintenance. Its principles ensure parks maintenance staff promote the environment and human well-being while preserving natural resources for future generations. I have learned that working for a local government includes competitive pay and benefits.

I have greatly enjoyed working outside and appreciate the independence of this job. With this experience under my belt, I'm highly motivated to seek a career working for and/or with a local government agency. I'm so glad that I have had this experience. I feel like I could make a large impact by working for or with a local government to help promote sustainable practices in urban ecosystems.