Monarch Butterfly Garden

ES 341 Ecological Restoration

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Introduction

Ecological restoration is important in order to improve and protect the natural environment, which people and all other animal rely on for survival. Restoration can take many forms, as long as it 'assists the recovery on an ecosystem that has been damaged degraded or destroyed' (Society for Ecological Restoration, 2004). These projects can also focus on the restoring threatened or extirpated species to an ecosystem by improving their preferred habitat. Such projects are of great importance in order to protect biodiversity. The world's ecosystems are facing rapid rates of species extinction; it is estimated that 5-20% of species in most organisms groups are already extinct and land use change is believed to be one of the largest contributors to this extinction (Chapin et al, 2011). Biodiversity is important in order to ensure genetic diversity and species redundancy. This diversity can improve greater ecosystem health, stability and increase resilience to future changes; such factors are increasingly important in the face of climate change, which has the potential to drastically alter many ecosystems (ibid). All species play an integral role in maintaining biodiversity, especially those who have important ecological roles.

Locally on Vancouver Island many species of butterflies are currently threatened. They play an extremely important ecological role as pollinators and thus are in need of restoration projects designed to improve their habitat. Monarch butterflies are threatened in British Columbia because milkweed, the plant that they lay their eggs on,

is considered to be a noxious weed by the agricultural industry and therefore is purposefully removed (Guppy, 2000, p. 354). This threat to Monarch butterflies, and other Vancouver Island butterfly species threatened by habitat loss, has led up to create an ecological restoration project with the aim of increasing butterfly habitat.

Problem Statement

The Monarch butterfly population on Vancouver Island has rapidly declined and is now considered to be highly vulnerable and listed as threatened by the British Columbia Species at Risk Act (B.C. Ministry of Environment, 2014). The population that is accounted for at this time is not a viable one. The factors that are affecting the Monarch butterflies in the area are habitat fragmentation and possibly from 'weedy programs' which aim to eradicate milk weed. The species relies on the milkweed at the larvae stage they spend most of their time on the plant as well as consume the leaves.

Figure 1: Future garden site (McRory, 2014)

Site Description

The site we have chosen is the large grassy area between the First Peoples House and the University Centre at the University of Victoria. The garden is surrounded by two medium sized cement paths, which keep students from trampling the grass and garden in that area. The soil is moist and marshy on the south side of the past. Prior to restoration there is no groundwater present. The implementation of the plan will involve installing a pond structure. Approximately half of the land in between the paths is covered in Idaho Fescue Grass (*Festuca idahoense*) and the other portion is a garden of a diverse array of flowering plants, shrubs and trees. The species that are present are equally distributed and are moderately diverse. *Festuca idahoense* is native to North America. The UDSA reports, the grass is abundant and spreads from North to South on the West coast of Canada and the United States. The information about which exact species are located in that specific garden was unavailable. Table 1 provides the plants that are around the First Peoples House, therefore at least some of those species are in the site. Humans influenced the decline in Monarch butterfly populations on Vancouver Island. The site is not degraded in any way; however, it is not an adequate habitat for Monarch butterflies survival. The area is manicured and manmade and dominated by grass. The Idaho Fescue Grass was planted as well the other species present in the garden and the paths and rocks were placed strategically.