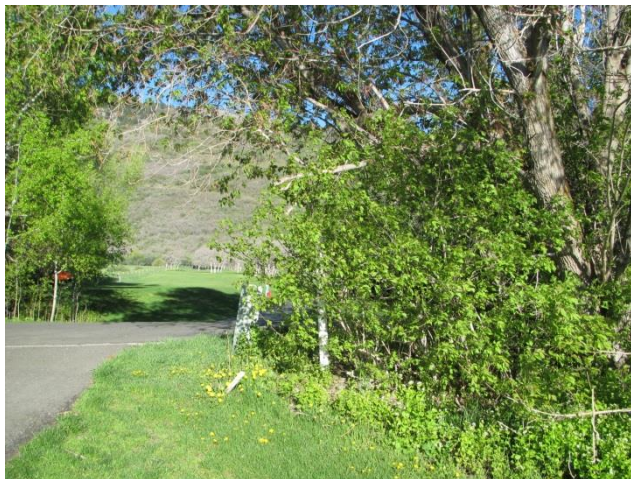


# Garlic Mustard Integrated Weed Management in Summit County



## 2012 ISM Year End Report

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### Prepared For our Sponsors and Partners:

Salt Lake County Weed Control Program  
Summit County Weed Control Program  
Park City Municipal Corporation/ Park Department  
Salt Lake City Public Utilities: Watershed Protection  
Summit CWMA  
Utah Fire, Forestry, and State Lands

## Summary

The Garlic mustard Integrated Weed Management in Summit County project is a grant funded project through the Utah Department of Agriculture, Invasive Species Mitigation Fund. In July of 2012 the Bonneville CWMA was awarded \$22,000 for “on the ground” treatments of garlic mustard within Summit and Salt Lake Counties. The project proposal was aimed at containing the spread of garlic mustard within Summit County, thus reducing the threat to Salt Lake County which has limited infestations on the eastern county perimeter. In the spring of 2013, PMG Vegetation Control was contracted to control garlic mustard in three known locations: Summit Park, Park City, and Snyderville. In addition to treating garlic mustard within those areas, PMG was able to partially delineate the perimeter, or farthest extent, of the garlic mustard populations within each of those locations. The following weeds were also treated if they occurred in the same area as garlic mustard: Hounds tongue, hoary cress, scotch thistle, dalmation toadflax, dyers woad, myrtle spurge, musk thistle, canada thistle, and bull thistle.

Treatment occurred on 11 different days, between the dates of 5/7/13 and 6/13/13. Two different herbicides were used and tested as to their efficacy. Glyphosate, used at both a rate of 60 oz/ acre and 90 oz/ acre, was the recommended herbicide according to many different literature searches. PMG found that the 2, 4-D was faster acting, especially because of the colder temperatures during the month of May and June in the Park City area. The addition of Escort, which is effective on mustards, provided a good kill. The glyphosate acted more slowly because of the cold early season and may have allowed some seed development.

In addition to treatment, PMG was able to partially delineate the extent of the infestations and provide some mapping data which will enable us to determine future treatment areas, obtain the consent necessary, and plan for additional management in association with the ISM 2013-2014 grant project.

Monitoring was conducted on a total of four sites on 6/20/13. Two of the sites were in the Park City area and two in the Summit Park area. Overall, 70% of the seedlings and 79% of the bolted plants were controlled.

The Salt Lake City Department of Public Utilities, a partner on this project, is also committed to treating garlic mustard within City Creek Canyon and in Parleys Canyon on watershed lands. The Parleys Canyon infestations occur near the Summit County border and below the Little Dell dam. Given the dense cover this plant occurs in, backpack sprayers are the only applicable tool and the treatment is very labor intensive. Fall treatments are planned for the same infestations to maximize efficacy of treatments.

UFF&SL, an important partner in the Summit County area, did not identify any large infestations within State owned land. They did find and treat just a few plants located on the short stack trail (northern most trail) at about the second switchback from the trail head. Most of their time was spent walking the property, monitoring, and looking for new infested areas which they'll continue to do each year.

### **2012 Garlic Mustard Control Project Statistics:**

- **77.80 acres treated**
- **93.29 acres mapped**
- **70% control of seedlings, 79% of bolted plants**

### **Challenges and Goals for the future**

Several key features made this project challenging. The terrain within the Park City area where the garlic mustard is growing is within stream banks and riparian areas under willows and other dense shrubs are difficult to access. PMG staff were equipped with backpack sprayers and literally had to crawl through many areas to reach the infestations. This combined with the fact that many residents are very sensitive to the use of herbicides and that garlic mustard was growing amongst many native plants, made the cost of labor high and thus fewer acres of garlic mustard were able to be treated.

Another key feature that was challenging was obtaining consent from the large number of private property owners, especially in the Summit Park area. Several property owners were concerned with the use of herbicides and many required additional contact and follow up with to ensure that manual control was completed. Those that chose not to have the contractor spray, but had extensive garlic mustard populations, created abrupt boundaries of where treatment could occur and limited the acreage controlled in 2012.

### **Follow up and future control**

Overall, this project was successful in that it was the first large scale treatment of garlic mustard in the area. We are excited to continue this project, having now determined a baseline for the extent of the known populations, and having identified some of the perimeter of those infestations. Future control will include:

- Post treatment herbicide clean-up of first year garlic mustard in the early summer-fall especially in high population areas would be beneficial.
- Post treatment pulling of surviving/missed flowering plants 2-6 weeks after is necessary to decrease missed plants left to seed and spread.
- Involve and educate the whole community. There are a large number of people who had GM (based on mapping/personal interaction) but were not having it treated on their property.
- This project is hopeful. There is currently a limited area of GM that must be managed. Many areas that PMG were sent to treat/map (trails etc.) had little or no GM.

### **Garlic Mustard Control Partners**

Thank you so much to our partners and sponsors for their contribution to this program. In particular, thanks to the Utah Department of Agriculture and Food for funding this project.

- Bonneville Cooperative Weed Management Area
- Park City Municipal Corporation/ Park Department
- Salt Lake City Public Utilities: Watershed Protection
- Salt Lake County Weed Control Program
- Summit County Weed Control Program
- Summit Cooperative Weed Management Area
- Utah Department of Agriculture and Food
- Utah Fire, Forestry, and State Lands