

Washington County Water Consortium

December 4, 2024

2 to 3:30 pm

Remote meeting - Zoom

(If you are not on the Consortium listserv, please email

Georgia.Eilertson@co.washington.mn.us for the Zoom link and access code)

Agenda

2:00 – 2:05 **Welcome**

Introductions, Announcements

2:05 – 2:40 **Meadow Grass Community Garden**

Topic: Hear about the development of the new community garden in Cottage Grove, which opened early 2024. It was created with the goals of increasing access to healthy food and green spaces, celebrating diversity through the growth of culturally relevant foods, connecting community members, and fostering mental and physical well-being.

Presenter: Murugi Mutiga and Alyssa Wolf (Washington County Public Health and Environment), and Eric Ini (Community Organizer and founder of the Influencer Hotspot)

2:40 – 3:15 **An Assessment of Invasive Buckthorn and Water Quality**

Topic: The adverse impacts of extensive stands of invasive common buckthorn on terrestrial plant communities across a watershed are widely recognized and well documented. This presentation will address this issue, and review why water quality efforts should be involved with buckthorn control efforts.

Presenter: John Goodfellow, Master Water Steward and Carnelian-Marine-St. Croix Watershed District Citizen Advisory Committee member

3:15 – 3:30 **Questions/Adjourn**



Meadow Grass Community Garden

Murugi Mutiga, Eric Ini & Alyssa Wolf
Washington County Water Consortium
December 4, 2024

Washington
County

Background

Parks Commission Partnership Nov 13, 2023 & Feb 12, 2024



Developing the site: October 2023-April 2024



Building the Fence & Partitioning: April-May 2024



Ed hard at work



Assisted by community member



All done!

Community Outreach



2024 COMMUNITY GARDEN PLOTS

The purpose of the Community Garden is to provide an opportunity for positive social and cultural interaction, physical activity and healthy food access for residents.

Meadow Grass Community Garden is a joint project with the City of Cottage Grove, University of Minnesota Master Gardeners (Master Gardeners), Washington County, and Influencer Hotspot with a core group/committee of community leaders planning and managing the program.

 651-458-3400

 www.cottagegrovemn.gov/CommunityGardens



Location
The garden is located at Meadow Grass Park; 6950 Meadow Grass Avenue, Cottage Grove MN 55016

Hours
The garden is open and accessible during the gardening season: after the garden is tilled Gardeners may be in the garden 30 minutes prior to sunrise and 30 minutes after sunset.

Cost: \$20
Scholarships available based upon financial need.

40 Plots
Each individual plot will be approximately 10 x 22 feet.



Gardening Begins

Gardening Begins & Seedling Distribution



Gardening



The Launch: May 22, 2024



The Gardens



The Gardens Cont'd



July/August 2024

The Commissioner Visit



Impact

Community Impact

I've made a new friend and am trying new vegetables.

We always look forward to going to the farm.

Our kids are becoming engaged in tending their plot.

Comments from Gardeners

We are on our fifth harvest of njama njama.

When I see the maize growing it takes me back home.

Community Impact Cont'd

- Relationship building
 - Community members
 - City of Cottage Grove & Washington County
- Cross cultural interactions and competence
- Mental health benefits
- Economic and social impact



Conclusion



Continue to expand
community garden
space



Need to sustain partnerships
to continue to advance
equity in our community

***Community gardens are
healing our bodies, healing our land and
healing our community.***

-Dr. Murugi Mutiga

Acknowledgements

The Community



The Working Group

- **Murugi Mutiga**
- **Ignatius Kadoma**
- **Ed Myatt**
- **Alyssa Wolf**
- **Maggie Noubissie**
- **Eric Ini**



Our Partners



Thank You!



An Assessment of Invasive Buckthorn and Water Quality

Why would a Watershed District support control of an invasive terrestrial plant?

4 December 2024

Adverse impacts of extensive stands of invasive common buckthorn (*Rhamnus cathartica*) in a watershed

Extensive stands of buckthorn can:

- Suppress and decrease the abundance and diversity of native forest understory species and reduce regeneration of native forest trees.
- Decrease leaf litter and soil organic matter, exposing areas of bare soil and increasing the risk of soil erosion.
- Disrupt nutrient cycling, causing late season peaks.

Why might this be true?

Buckthorn 101

- Is an invasive species of short-stature tree native to Europe.
- Has become well-established in Washington County, MN, and throughout the upper Midwest.
- Is moderately shade tolerant (to ~3% light penetration), while producing deep shade below on the forest floor.
- Is an aggressive competitor in riparian forests, forest edges, and old agriculture fields reverting to forest cover.
- Can tolerate higher levels of soil moisture and occurs on relatively wet sites, e.g., margins of wetlands and riparian corridors.
- Is a prodigious seed producer, and buckthorn growing on wet sites bear more and larger fruit than similar individuals on upland sites.
- Produces leaves earlier in the spring and retains its leaves longer into the fall than most native understory species, up to 58 days longer!
- Leaves decay much more rapidly than leaves of other forest trees.
- Has allelopathic properties that suppress the growth of competing native plants.



But wait, there's more: Buckthorn and earthworms

- There is evidence that these two invasive species have a symbiotic (*facilitative*) relationship and may occur in greater abundance together than either would on their own.
- Earthworms reduce leaf litter and organic matter in forest soils, increasing the amount of bare soil in the forest.



Impact on water quality - chemistry

- ▶ The largest source of energy and nutrient contributions to small headwater streams is the terrestrial riparian environment, predominantly in the form of plant materials.
- ▶ Buckthorn leaves contain as much as 5X more nitrogen than leaves of other forest trees.
- ▶ Buckthorn leaf drop can occur as late as November, and the rate of decomposition of buckthorn leaves is much more rapid (5-7X) than that of other riparian tree species.
- ▶ The delay in leaf falling into streams, the high nitrogen concentration in buckthorn leaves, and their rapid decay can result in a late season pulse of energy and nutrients into the aquatic ecosystem, potentially altering food webs.
- ▶ The increase in bare soil and subsequent erosion can increase phosphorous carried along with sediment particles.

Impact on water quality – erosion

Forest cover and associated soils slow and filter water moving through a watershed. This slow, natural filtration process may be disrupted and accelerated because:

- Deep shade suppresses native understory plants and associated litter.
- Rapid decomposition of buckthorn leaves creates areas of little or no leaf litter, exposing bare soil surfaces.
- The presence of earthworms exacerbates the process of decreasing leaf litter and organic material, exposing bare soil.
- Bare soil beneath stands of buckthorn in riparian areas that are subject to seasonal flooding can increase erosion and sediment loads directly into streams.
- These potential impacts increase with slope steepness (e.g. stream banks).

To be eligible for funding, all grant projects must meet one or more of the following goals:

- ✓ Improve water quality or increase the capacity of the watershed to store or filter water
- ✓ Preserve, protect and restore native vegetation, with emphasis on projects adjacent to or near lakes, rivers, and wetlands
- ❑ Protect and preserve groundwater quality and quantity



Cost sharing grants available under Practice Standards 390 and 391– Riparian Buffer

Reference NRCS: Forested Stream Buffer Improvement, within 50 feet from streambank.

- ▶ Up to 50% of actual cost, not to exceed cost estimate; lifespan 10 years
- ▶ Projects can be either new establishment or restoration.
- ▶ Plan required from the WCD.
- ▶ Minnesota Conservation Corps may be used for labor, counting as part of the cost share



Conclusion

- ✓ The dominance of buckthorn infestations across watersheds can adversely affect water quality by altering forest structure and increasing the volume and intensity of runoff following rain and snow melt.
- ✓ The creation of extensive areas of bare soil can lead to soil erosion and increase sediment load in runoff water that reaches water courses.
- ✓ Buckthorn growing on wet sites produce fruit that can be carried along with sediments, spreading the infestation further downstream and throughout the watershed

Bottom line: it makes sense that the Carnelian-Marine St. Croix Watershed District offers a cost-sharing program targeting buckthorn control in riparian corridors.