

# Post-buckthorn removal; what have we learned?

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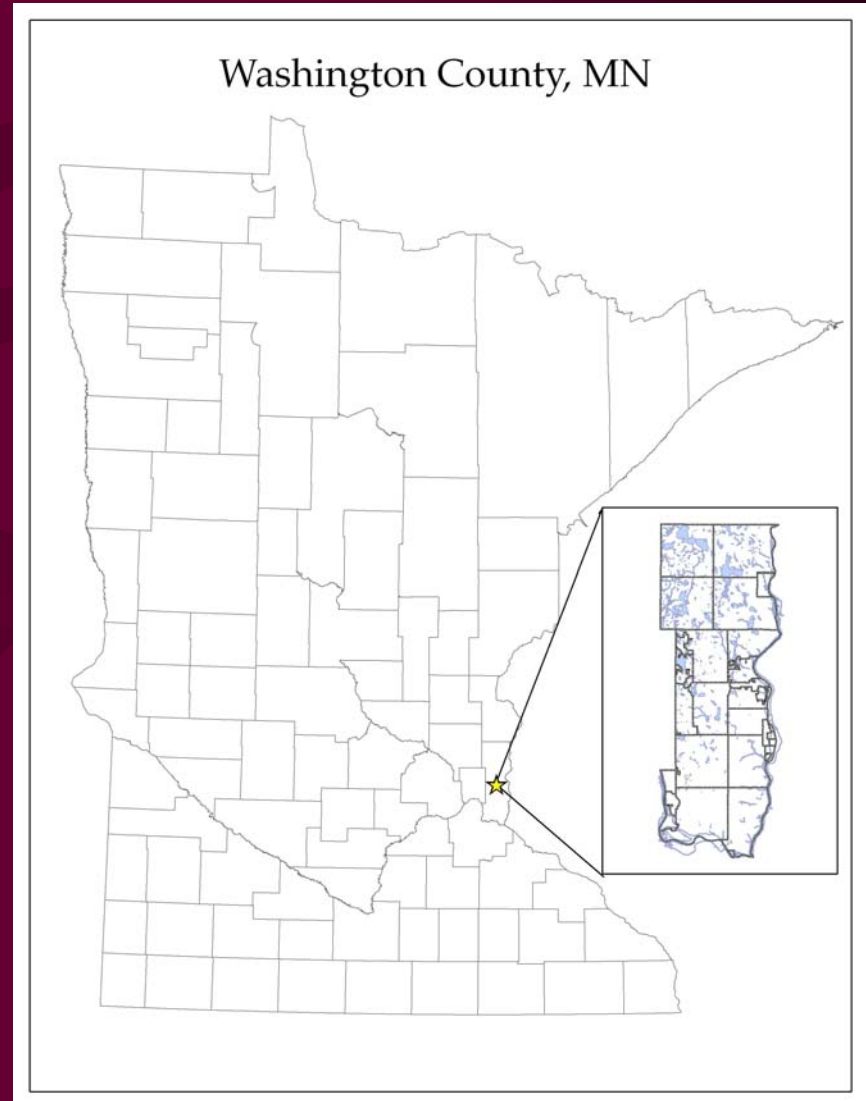
Washington Conservation District

[www.mnwcd.org](http://www.mnwcd.org)



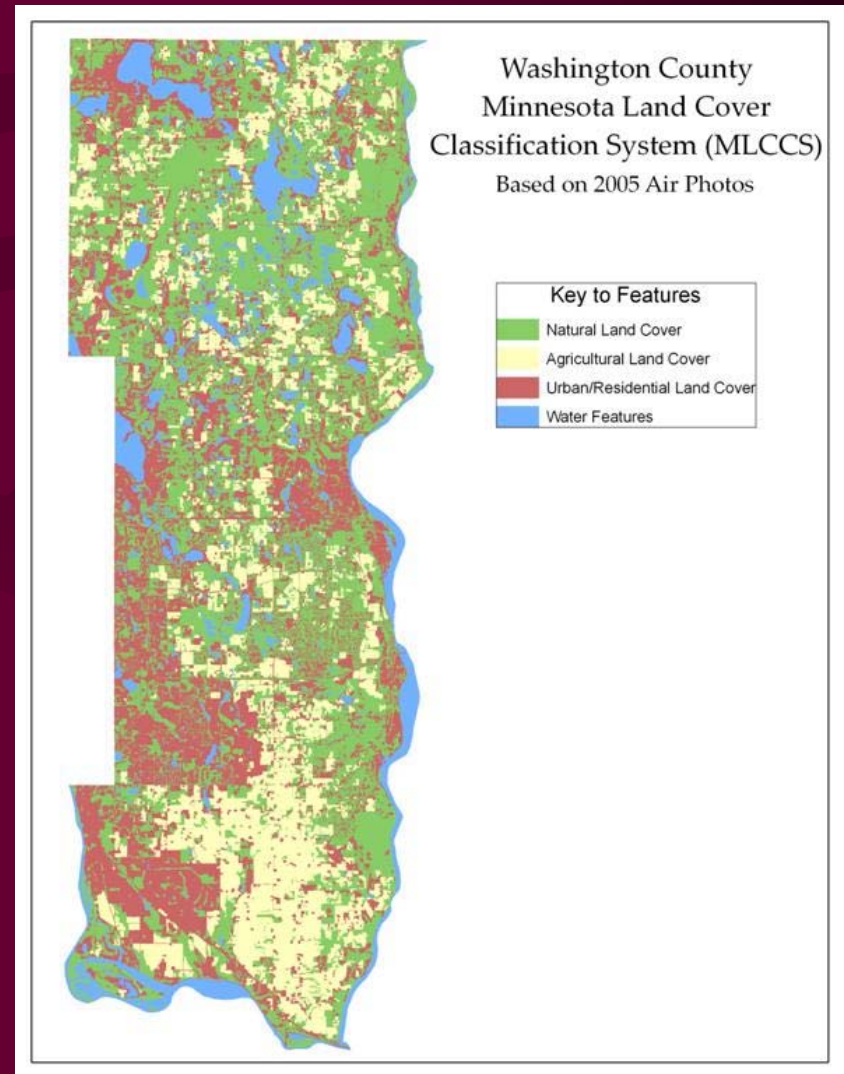
# Background

- Washington County, Minnesota
- East-metro area
- Part of SWCD network
  - Assist private landowners with resource issues
- Limited budget



# County description

- Mix of urban and agriculture, predominance of rural residential
- Lots of open space, natural areas
- Significant forested ravines, water resources



# Views

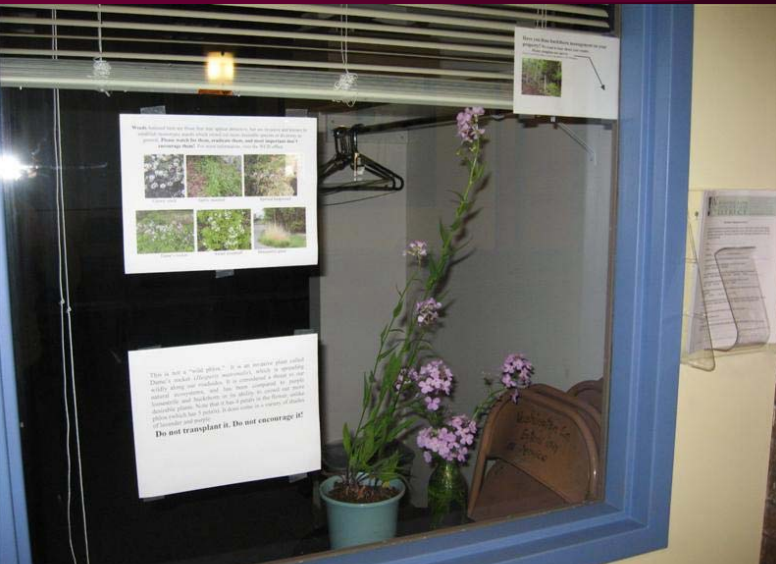


# Assets

- Innovative staff
- Ability to apply for grants
- Authority to form partnerships



# Outreach methods



## Weed or Wildflower?

There are thousands of flowers, grasses and sedges native to Minnesota, but many of the plants we call wildflowers have actually been introduced from outside North America. They are aggressive and can invade garden plots, lawns, and pastures. When this happens, we call them weeds. The plants shown here have not caused significant enough problems to be named to our local "noxious weed" list, but if you have them on your property, beware and please keep them under control.



**Dames Rocket - *Hesperis matronalis***  
Looks like phlox, but blooms in early summer.  
Spreads easily by seed.



**St. Johnswort - *Hypericum perforatum***  
The common variety spreads easily by seed and is listed as invasive in Wisconsin. The native species (*H. pyramidatum*) is more restrained.



**Goatsbeard - *Tragopogon dubius***  
Tall dandelion-like flower with a distinctive seed-head



**Grecian foxglove - *Digitalis lanata***  
**DO NOT TOUCH!** Highly toxic via absorption through skin



**Purple loosestrife - *Lythrum salicaria***  
Prohibited noxious weed that takes over wetlands



**Bird's foot trefoil - *Lotus corniculatus***  
Good for pastures and roadsides, but not prairies



**Queen Anne's lace - *Daucus carota***  
A non-native that has naturalized throughout the US, is spread prolifically, especially during drought



**Chinese plume grass - *Miscanthus sinensis***  
A showy grass that creates thickets in roadside forest edges and clearings and prevents native plant growth



**Common goldenrod - *Solidago canadensis***  
A native plant that spreads by rhizome and seed, it does not cause hayfever but does have a bitter taste for birds and insects

- Weed window
- Weed bucket
- Weed tool rental
- Plant of the week
- Buckthorn info web-page



# Buckthorn specific measures



**Buckthorn Chemical Control**

pesticides can injure applicator and/or damage the environment. Always READ THE LABEL before applying! Know what you are using any chemical. Wear protective gear and use proper equipment that is in good working condition. This information is for informational purposes only. Pesticide use must follow label directions and applicable state and federal laws.

| Chemical       | Active Ingredient                           | Application                                                                                                                                                                                 | Advantages                                                                       | Disadvantages                                                                                                                              |
|----------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Roundup/Rodent | Glyphosate<br>Roundup 41.0%<br>Rodent 53.8% | <ul style="list-style-type: none"> <li>✓ Mix 1:3 with water, add spreader sticker and dye</li> <li>✓ Apply to all stump surfaces with pressure sprayer immediately after cutting</li> </ul> | <ul style="list-style-type: none"> <li>✓ Less environmental/user risk</li> </ul> | <ul style="list-style-type: none"> <li>✓ Low efficacy</li> <li>✓ Must be re-applied</li> <li>✓ Will not work during bad weather</li> </ul> |

**Buckthorn Removal Services & Consultants**

| Company                           | Address                                                                       | Phone/Fax                        | Email/Website                                 |
|-----------------------------------|-------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------|
| Applied Ecological Services, Inc. | Minnesota Office:<br>21938 Hushorn Road<br>P.O. Box 55372<br>Duluth, MN 55812 | 952.447.1919<br>952.447.1920 fax | www.appliedeco.com<br>dougm@appliedeco.com    |
| Bonestroff & Associates           | 2235 Highway 36 W<br>St. Paul, MN 55113                                       | 651.604.4812<br>651.636.1311 fax | pboschen@bonestroff.com<br>www.bonestroff.com |



FOR MORE INFORMATION:

**Field Guides:**  
 Brockman, Frank. *Trees of North America. A Guide to Field Identification.* Golden Press. 1968  
 Brown, Lauren. *Grasses: An Identification Guide.* Houghton Mifflin Company. 1979  
 Brown, Lauren. *Weeds in Winter.* WW Norton & Company. 1976  
 Courtney, Booth and Zimmerman, James. *Wildflowers and Weeds.* Van Nostrand Reinhold Company. 1972  
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 Fassett, Norman. *A Manual of Aquatic Plants.* University of Wisconsin Press. 1957, 1985  
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Tree Planting @ Katherine Abbott Park  
Saturday, May2, 2009



- Tool “rental”
- Fact sheets
  - Chemical
  - Contractor list
  - Replant list
- Community events
- Reward/reinforcement



# Buckthorn Management Survey



## Buckthorn Management Survey

Thank you for your interest in participating in this survey, and for your work in managing buckthorn. The information we gather through this survey will help to direct future efforts for buckthorn control projects. Please give as much of the following information as you are comfortable in providing, and return it to our office at address in the letterhead.

Name \_\_\_\_\_

Address \_\_\_\_\_

Municipality \_\_\_\_\_

What year did you start removing buckthorn from your property? \_\_\_\_\_

Who performed the initial management (circle all that apply)?

Consultant Landowner Volunteer

What methods have you used for the management (circle all that apply):

Chemical Pulling Mowing/Cutting Fire Grazing Other: \_\_\_\_\_

If chemical treatment was used, which chemicals(s) did you use?:

Garlon Tordon Roundup Krinite Other: \_\_\_\_\_

Approximately, what percentage of total buckthorn was removed as a result of management?

0-25% 25-50% 50-75% 75-100%

What was the approximate total cost of the management action (this information will be used only to give us a better idea of the financial need for removal assistance)?  
\_\_\_\_\_

Was any grant money available/utilized to assist with the project? \_\_\_\_\_

If so, from who and how much?  
\_\_\_\_\_

How many years has the property been actively managed for buckthorn after the initial removal? \_\_\_\_\_

Supervisors: Louise Smallidge • Gary Baumann • Tom Meyer • Rosemary Wallace • Tom Armstrong, Jr.

What is the current status of management? Active None Unknown

What has gone right with the management? \_\_\_\_\_

What would you do differently? \_\_\_\_\_

What benefits have you seen from the buckthorn removal? \_\_\_\_\_

What suggestions would you have for others undertaking such a project?  
\_\_\_\_\_

Would you like more information from the WCD and/or have staff visit your site?  
\_\_\_\_\_

Please provide contact information here (phone and/or email):  
\_\_\_\_\_

A large, empty rectangular box with a thin black border, intended for a sketch of the property areas where buckthorn has been managed.

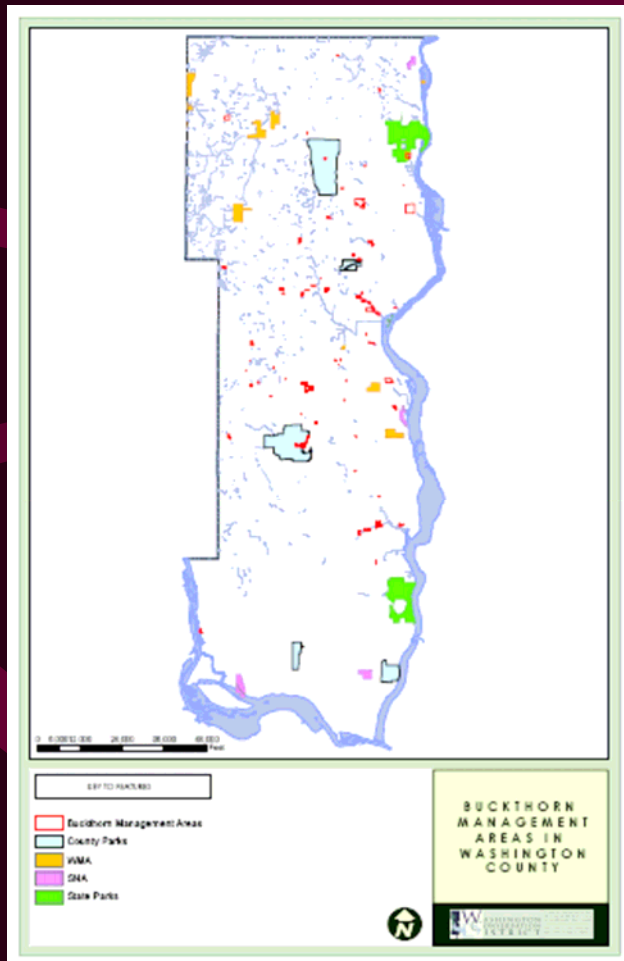
Please provide a sketch of the areas of your property where buckthorn has been managed or indicate that buckthorn on the entire property has been managed.

You may use the back of these pages to further answer any of these questions if the space provided is insufficient

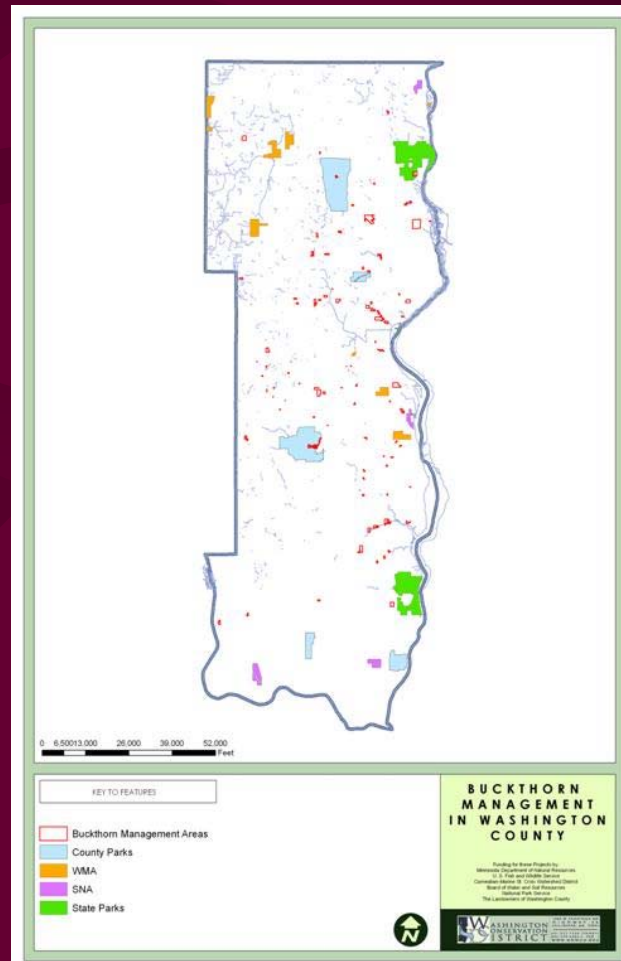
Summer-2009  
2010

# Survey response

2007



2010



# Survey results

- 113 surveys returned
  - Does not include public and semi-public sites
- Range of acreage- hard to quantify
- Method of control
  - Mechanical only- 21%
  - Chemical- even split between Garlon, Tordon, Glyphosate, 3 “other”
- Source of funding
  - Landowner sweat – 80% sites
  - Grants - 31 sites, averaging \$1000-2000

# Grants

- Everyone wants “help”
- Define “help”?
  - Fairy godmother/magic wand
    - Bio-control?
  - Cheap labor
  - Small grants for supplies and equipment



# Grants continued

- Are the results sustainable?
- When can we document success?
- How do we select good candidates?
  - Demonstrated success?
  - Spread funding around?



# Results

- Benefits seen?
  - Wildflowers
  - Soil stabilization
  - Breeze
  - View
  - Encourage others



# More results

- What went wrong?
  - Resprouts, from non-treatment
  - Stumps left too high
  - Unsightly brush
  - Bad results from herbicide
  - Opened up “bad” view



# More results

- Suggestions
  - Don't rush to replant shrubs
  - Start management sooner



# Observations, needing further study

- Mowing of **new** seedlings
  - Effective after two years?



# Observations, needing further study

- Broadcast spraying of seedlings
  - Refine application methods
  - Monitor effects
- Basal bark treatment or injection is slow control
  - Takes >2 years
- Prescribed fire equally uncertain



# Benefits- natural regeneration



Trout lily



Shinleaf



Missouri  
gooseberry

# Observations, needing further study

- Natural recovery seems better in moist habitats
  - Glossy vs common?
  - Understory plant community?
  - Better if roots are pulled?
  - Garlic mustard association?



*Liparis lilifolia*

# Observations, needing further study

- Treatment of sensitive systems
  - Invaded shrub swamps and bogs
    - All resprout if not chemically treated
    - Sunlight stimulates native groundlayer
    - Sunlight encourages germination of buckthorn seedlings



# Further study needed: post-treatment succession



Buckthorn seeds  
sprouting in sphagnum

Resprouted sumac and  
alder



# What have we learned?

- Natural regeneration is happening on some sites
- Need for caution with herbicides
- Cutting stumps low allow more flexibility later
- No magic wand, not even grants



# Conclusions

- Great interest in having buckthorn gone
- No single answer
- Lots of technical problems to solve yet
- Don't under-estimate the power of encouragement



# Questions?



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