Discussion Topics

Ramsey County Aquatic Invasive Species Funding
Michael Goodnature: Ramsey County Parks and Recreation

Water Quality in Ramsey County Lakes
John Manske: Ramsey County Environmental Services

Terrestrial Weed Management Update
Carole Gernes: RCCWMA

Lakes to be discussed at the meeting:
Bald Eagle Lake  Lake Josephine  Otter Lake  Silver Lake  Turtle Lake
Island Lake  Long Lake  Lake Owasso  Snail Lake  Lake Wabasso
Lake Johanna  Lake McCarrons  Lake Phalen  Spoon Lake  White Bear Lake

RSVP to Andrea Prichard by March 10, 2016
andrea.prichard@co.ramsey.mn.us or 651-266-7274

Marsden Room
Ramsey County Public Works
1425 Paul Kirkwold Drive
Arden Hills, MN 55112

March 15, 2016
9 am-11 am
Free Public Event!
Who’s here?

- MN DNR
- Capitol Region Watershed District
- Rice Creek Watershed District
- Vadnais Lake Area Water Management Organization
- Ramsey-Washington Metro Watershed District
- Ramsey Conservation District Board Members and Staff
- Ramsey County
- Ramsey Conservation District Volunteers
- Lake Association Members
Agenda

- Ramsey County Aquatic Invasive Species Funding Update 2016
- Aquatic Invasive Species in Ramsey County
- Break
- Water Quality in Ramsey County Lakes
- Ramsey Conservation District Invasive Species 2015 Overview and 2016 Work Plan
- Terrestrial Weed Management Update
- Ramsey Conservation District Cost Share Opportunities
Local Aquatic Invasive Species Prevention Aid

Ramsey County, MN

Michael Goodnature
Natural Resource Manager
Ramsey County Parks and Recreation
651-748-2500
Mike.Goodnature@co.ramsey.mn.us
LOCAL AQUATIC INVASIVE SPECIES PREVENTION AID

RAMSEY COUNTY, MN

• BACKGROUND
• ACCESS SITES
• FUNDING
• STAKEHOLDER
• COUNTY PLAN
BACKGROUND

• 2014: CHAPTER 308, H.F.NO. 3167: OMNIBUS TAX BILL

• 50% WATERCRAFT TRAILER LAUNCHES & 50% WATERCRAFT TRAILER PARKING SPACES

• SUBMIT PLAN TO MNDNR (PROVIDES TECHNICAL SUPPORT)

• MAY APPROPRIATE FUNDING TO OTHER ENTITIES

BACKGROUND

WHAT CAN THE MONEY BE USED FOR?

“SOLELY TO PREVENT THE INTRODUCTION OR LIMIT THE SPREAD OF AQUATIC INVASIVE SPECIES AT ALL ACCESS SITES WITHIN THE COUNTY”

• SITE-LEVEL MANAGEMENT

• COUNTYWIDE AWARENESS

• OTHER PROCEDURES THAT THE COUNTY FINDS NECESSARY TO ACHIEVE COMPLIANCE
### ACCESS SITES (BOAT LAUNCHES)

<table>
<thead>
<tr>
<th>Access Name</th>
<th>Administrator</th>
</tr>
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<tbody>
<tr>
<td>Silver Lake State Water Access Site</td>
<td>City of Maplewood</td>
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<td>Mississippi River, Hidden Falls State Water Access Site</td>
<td>City of St. Paul</td>
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<tr>
<td>Phalen Lake State Water Access Site</td>
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<td>White Bear Lake, Matsoka State Water Access Site</td>
<td>City of White Bear Lake</td>
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<tr>
<td>Bald Eagle Lake State Water Access Site</td>
<td>Ramsey County</td>
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<td>Johanna Lake State Water Access Site</td>
<td>Ramsey County</td>
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<tr>
<td>Josephine Lake State Water Access Site</td>
<td>Ramsey County</td>
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<tr>
<td>Keller Lake State Water Access Site</td>
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<tr>
<td>Long Lake State Water Access Site</td>
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<td>McCarrons Lake State Water Access Site</td>
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<td>Otter Lake State Water Access Site</td>
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<tr>
<td>Owasso Lake State Water Access Site</td>
<td>Ramsey County</td>
</tr>
<tr>
<td>Snail Lake State Water Access Site</td>
<td>Ramsey County</td>
</tr>
<tr>
<td>Turtle Lake State Water Access Site</td>
<td>Ramsey County</td>
</tr>
<tr>
<td>Wabasso Lake State Water Access Site</td>
<td>Ramsey County</td>
</tr>
<tr>
<td>White Bear Lake, WBL Park (N) State Water Access Site</td>
<td>Ramsey County</td>
</tr>
</tbody>
</table>

**Eurasian water milfoil, Curly Leaf Pond weed, Flowering Rush**

**Access Sites**

- Bald Eagle Lake
- Island Lake
- Johanna Lake
- Josephine Lake
- Keller Lake
- Long Lake State
- McCarrons Lake
- Otter Lake State
- Owasso Lake State
- Phalen Lake
- Silver Lake (east)
- Snail Lake State
- Turtle Lake State
- Wabasso Lake State
- White Bear Lake

**Zebra Mussels, Eurasian water milfoil**
FUNDING

• 10 MILLION STATEWIDE - YEARLY

• RAMSEY COUNTY
  • 2014 = $47,000
  • 2015 AND ONGOING = $103,500

• RCPR WAS DELEGATED BY RC TO ADMINISTER THE FUNDS

STAKEHOLDERS MEETING 2/2015

WATERSHEDS (3)LAKE ASSOCIATIONS(2)
1. Capitol Region
2. Rice Creek
3. RWMWD
4. Valley Branch
5. Lake McCarrons Neighborhood Association
6. White Bear Conservation District
7. Bald Eagle Area Association
8. Lake Josephine Improvement Association
9. Long Lake Homeowners Association
10. Turtle Lake
11. White Bear Conservation District
12. Friends of Island Lake
13. Gervais Lake Association, Kohlman Lake Association
14. Owasso Lake Association
15. SLID
16. Owasso Lake Association
17. Silver Lake volunteers and residents

OTHER LGUS(4)
1. City of St. Paul
2. City of White Bear Lake
3. City of Maplewood
4. Ramsey County PW Lakes Mngmt.
5. MN DNR
STAKEHOLDERS -- RAMSEY COUNTY AIS PREVENTION OBJECTIVES

• **ACCESS SITES** – The point of exit and entry into a lake can be the most susceptible area to AIS relocation. Any initiatives, including but not limited to awareness, inspections, an enforcement program, and surveys, at the access sites will be considered for funding.

• **EDUCATION AND PLANNING** – Education, planning, and awareness can prevent the further introduction or spread of AIS and will be considered for funding. Initiatives must strive to collate educational materials and planning efforts across multi-jurisdictional agencies county wide.

• **RESEARCH/MONITORING** – Research and monitoring is key to determine the movement, existence, and establishment of AIS within the county. Gathering and processing AIS information is the basis for any action plan. All research and monitoring initiatives will be considered for funding.

• **TREATMENT** – Where applicable the RCPRD and key stakeholders may review and approve the treatment of AIS with funding provided by AIS prevention aid. Treatment considered will likely include early detected and aggressive species that have previously not inhabited the water body, such as a newly found population of zebra mussels. Large scale treatment of established AIS, primarily vegetation such as Eurasian Watermilfoil, will not be considered.

STAKEHOLDERS – FUNDING INITIATIVES 2015/2016

Launch inspections
Education & outreach
Access Site Improvements at launches
Zebra mussel surveys & monitoring program
## 2015 Initiatives Completed

- **Access Site Improvements** – RCPR
  Access improvements designs completed

- **Launch Inspections** – 150 hours
  - Long Lake, Turtle Lake, Bald Eagle Lake, Lake Johanna. LHA & RCD (Completed Level 1 DNR Training)

- **Education & Outreach** – WBL
  Pamphlet, RCD SWCD Questionnaire

### 2016 Initiatives

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<th>Initiative</th>
<th>Cost</th>
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<tr>
<td>RCPR Access Site Improvements</td>
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<td>Access Site Inspections/Enforcement</td>
<td>$9,000.00</td>
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<tr>
<td>Education &amp; Outreach 2015</td>
<td>$5,248.00</td>
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<tr>
<td>Zebra Mussel Surveys at Access Sites</td>
<td>$7,000.00</td>
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<tr>
<td>Zebra Mussel Monitoring Program</td>
<td>$1,000.00</td>
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<tr>
<td>Funding for Municipal Launches</td>
<td>$26,752.00</td>
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<td><strong>Total 2016 Funding</strong></td>
<td>$104,000.00</td>
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**TOTALS**

- $64,000.00
- $5,248.00
- $8,000.00
- $0.00
- $26,752.00
- $104,000.00

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**Stakeholders Requested Funds, March 2015**

Plan drafted, approved by County & DNR April, 2015

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**Ramsey Conservation District**

Conservation Forum

March 15, 2016
2015 INITIATIVES COMPLETED

- **ZEBRA MUSSEL SURVEYS** – COMPLETED AT ALL RCPR LAUNCHES. REPORT & RAPID RESPONSE DOCUMENT
- **ZEBRA MUSSEL MONITORING PROGRAM** - RC PW LAKE MANAGEMENT GAINED EQUIPMENT TO ID VELIGER’S IN SAMPLES

2016 INITIATIVES & BEYOND

- **ACCESS SITE IMPROVEMENTS** – RCPR ACCESS IMPROVEMENTS INSTALLED THIS SPRING
- **LAUNCH INSPECTIONS** - INCREASED HOURS BY RCD & LHA
- **EDUCATION & OUTREACH** – PRESENTATIONS, INCREASED AWARENESS THROUGH MEDIA, LINDERS FISHING EDGE (OUTDOOR NETWORK)
- **ZEBRA MUSSEL SURVEYS** – COMPLETE AGAIN IN 2016
- **ZEBRA MUSSEL MONITORING PROGRAM** - CONTINUE VELIGER MONITORING, RESIDENT VOLUNTEER ZEBRA MUSSEL MONITORING PROGRAM

- **BEYOND 2016** – AIS COORDINATOR???
THANK YOU!

MICHAEL GOODNATURE
NATURAL RESOURCES MANAGER
RAMSEY COUNTY PARKS & RECREATION
651-748-2500
MIKE.GOODNATURE@CO.RAMSEY.MN.US
Ramsey County Aquatic Invasive Species

Andrea Prichard
Environmental GIS Technician
Ramsey Conservation District
651-266-7274
Andrea.Prichard@co.ramsey.mn.us
**Invasive aquatic plants**

- Infested Waters List
- Early detection of aquatic invasive plants
- Aquatic invasive plant management
- Minnesota Invasive Non-native Terrestrial Plants
- An identification guide available for purchase from Minnesota’s Bookstore

- Brazilian elodea
- Brittle naiad
- Curly-leaf pondweed
- Eurasian watermilfoil
- Flowering rush
- Non-native phragmites
- Non-native waterlilies
- Purple loosestrife
- Reed canary grass
- Starry Stonewort
- Yellow iris

**Invasive aquatic animals**

Guide to Fish Invaders of the Great Lakes Region

- Bighead & silver carp
- Chinese and Banded Mystery Snails
- Common carp
- Faucet Snail
- Grass carp
- Invasive carp information
- New Zealand Mud Snail
- Bound goby
- Rusty crayfish
- Buffe
- Splyn waterflea
- Sea lamprey
- White perch
- Zebra mussel

**SOURCE:**

DNR
MPR Aquatic Invasive Interactive Map

HTTP://MINNESOTA.PUBLICRADIO.ORG/PROJECTS/2014/04/INVASIVE-AQUATIC-SPECIES-MAP/

DNR Infested waters interactive map

HTTP://MNDNR.MAPS.ARCGIS.COM/APPS/WEBAPPVIEWER/INDEX.HTML?ID=576913C7AB141968846812B217C4EB2
ZEBRA MUSSEL INFESTATION

Year Listed as Infested
2014: White Bear Lake
2007:
• Charley Lake
• Pleasant Lake
• Sucker Lake
• Vadnais Lake
• Mississippi River

St. Paul Regional Water Services Chain of Lakes
Infestation follows pumped Mississippi River water from Fridley to:
• Charley Lake
• Pleasant Lake
• Sucker Lake
• Vadnais Lake

EURASIAN WATERMILFOIL

• Dense mats raise pH, decrease oxygen, and increase water temperature
• Nuisance for swimmers
• Outcompete native vegetation
MACROPHYTE LAKE SURVEYS
Capitol Region Watershed District
Ramsey Conservation District collaboration

MACROPHYTE SURVEYS:
- MCCARRONS
- COMO
- LOEB
- CROSBY
- LITTLE CROSBY

March 15, 2016
BREAK TIME!
Water Quality in Ramsey County

John Manske
Water Quality Specialist
Ramsey County
Environmental Services, Lake Management
John.Manske@co.ramsey.mn.us
WATER QUALITY IN RAMSEY COUNTY

John Manske
Environmental Services, Lake Management

RAMSEY COUNTY LAKE MANAGEMENT
SUMMER MONITORING PROGRAM

- 30 lakes sampled at deepest point
- Sampled 8 times between May 1<sup>st</sup> – September 30<sup>th</sup>
- Samples taken for laboratory analysis
- Depth profile taken
  - Dissolve Oxygen, Temperature, Conductivity, pH
- Aquatic vegetation monitoring
RAMSEY COUNTY LAKE MANAGEMENT LABORATORY

Phosphorus
Nitrogen
Chloride
Chlorophyll A
Turbidity
Phytoplankton
Zooplankton
Zebra Mussel Veliger
RAMSEY COUNTY LAKE MANAGEMENT WINTER MONITORING PROGRAM

- Dissolved oxygen monitoring/aerating
  - Como, Owasso, Island, Otter, Silver West, Beaver
- Chloride monitoring
  - Worked with MPCA to establish a state water quality standard for chloride.
  - A large number of lakes were categorized as impaired for aquatic life, or at high risk of becoming impaired.

Table 2: ISMA Chloride Management Plan - MPCA 2015
LAKES WITH A HIGH RISK OF CHLORIDE IMPAIRMENT

- Beaver
- Bennett
- Crosby
- Gervais
- Johanna
- Keller
- McCarrons
- Wabasso
- Wakefield

WHERE DOES CHLORIDE COME FROM?

- Residential water softeners
- Winter maintenance of roads, sidewalks, and parking lots with rock salt
  - Ramsey County uses 16,000,000 lbs/year to deice roads
  - 700,000,000 lbs/year used in the Twin Cities Metro Area (1)

Table 1. Summary of annual road salt application amounts

<table>
<thead>
<tr>
<th>User</th>
<th>Use (Tons)</th>
<th>Use %</th>
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<tbody>
<tr>
<td>MNDOT</td>
<td>80,797</td>
<td>23%</td>
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<tr>
<td>Counties</td>
<td>70,284</td>
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</tr>
<tr>
<td>Cities</td>
<td>114,314</td>
<td>33%</td>
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<tr>
<td>Commercial Bulk</td>
<td>66,349</td>
<td>19%</td>
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<tr>
<td>Packaged</td>
<td>17,460</td>
<td>5%</td>
</tr>
<tr>
<td>Total</td>
<td>349,204</td>
<td>100%</td>
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</tbody>
</table>
WHY IS CHLORIDE SO BAD?

- 1 Teaspoon of road salt can permanently pollute 5 gallons of water.
- There’s no easy way to remove salt from water.
- Causes osmotic stress to organisms
- Decreases the biodiversity of sediment organisms and plants(2)
- Increases the release and transport of heavy metals(3)

WHAT CAN BE DONE TO REDUCE SALT USE?

- Salt brine solution instead of rock salt
- Dispersal monitoring devises added to salt trucks
- Plow and shovel more effectively!
  - The more snow and ice you remove manually, the less salt you will have to use.
- More salt does not mean more ice melting!
- Evaluate your water softener usage
  - Test your water!
    - Only hardness over 120mg/L CaCO₃ needs softening.
  - Switch to a demand based softener.
  - Bypass your softener for landscape watering.
Great Online Resources

MN Key Water Info List
http://es.metc.state.mn.us/KeyWaterList/#SurfaceWater

Surface Water Data – MPCA
http://cf.pca.state.mn.us/water/watershedweb/wdip/index.cfm

Road Salt and Water Quality - MPCA
https://www.pca.state.mn.us/water/road-salt-and-water-quality

Improved Winter Maintenance: Good Choices for Clean Water

REFERENCES


Ramsey Conservation District Aquatic Invasive Species Prevention 2015-16

Ashley Bennett
Assistant District Technician
Ramsey Conservation District
651-266-7277
Ashley.Bennett@co.ramsey.mn.us
2015 Pilot Watercraft Inspections

- Six staff trained as Level 1 Inspectors
- Pilot lake inspection year
  - Inspected at 6 boat launches
    - Bald Eagle Lake
    - Lake Owasso
    - Turtle Lake
    - Lake Josephine
    - Lake Johanna
    - Long Lake
- Attended DNR trainings and overviews
- Co-hosted Eastern Ramsey County Lakes Meeting

2016 Work Plan

- DNR 2016 Watercraft Inspections Grant
- Applied for 563 hours
  - White Bear Lake
  - Bald Eagle Lake
  - Lake Owasso
  - Long Lake
  - Turtle Lake
  - Lake Johanna
  - Lake Josephine
- Education and Outreach
Ramsey County

Cooperative Weed Management Area

Carole Gernes
Ramsey County Cooperative Weed Management Coordinator
Ramsey Conservation District
C/O Ramsey-Washington Metro Watershed District
651-792-7977
Carole.Gernes@rwmwd.org
Many infest shorelines, ditches and other wet places:

- Non-native Phragmites, or common reed grass
- Japanese knotweed
- Miscanthus, Amur / Chinese silver grass
- Flowering rush
- Narrow-leaf yellow iris
- Greater celandine
- Yellow iris
Invasive Terrestrial Plant Infestations:

- often have shallow root systems
- prevent growth of other plants, leading to large areas of bare or poorly-held soil.
- soil carried in run-off
- water clarity decreases

A few species we are looking for:
**Oriental bittersweet**  
*Celastrus orbiculatus*

- Buds/flowers/fruit along stem
- Replacing our native American bittersweet
- Often mislabeled at nurseries
- Cut and treat like buckthorn: with glyphosate or triclopyr

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**Common Tansy**  
*Tanacetum vulgare*

- Gravel pits, roadsides, trails
- Toxins absorbed through skin!
- Mow or treat with Escort before flowering
- Do not mow or spray after flower buds open
Wild parsnip
*Pastinaca sativa*

- Spreads by seeds carried on feet, tires and mowers
- Mow before seeds form, cut root, pull, graze; spot spray 2,4-D (1%), glyphosate (2%)
- **CAUTION!!!**
  - Juices of plant on skin can cause severe burns!

Narrow-leaf bittercress
*Cardamine impatiens*

- Tiny, 0.1” White flowers May-Aug., thin seed pods
- Small pointed auricles (ears) at leaf bases
- Moves via feet, tires, and waterways
- Pulling effective before blooming
**Non-Native Phragmites australis**

*Phragmites australis, ssp. australis, Haplotype M*

- Blue-green leaves
- Large, thick seed heads
- No red color on upper stems
- No circular fungus dots on stems
- Upper Great Lakes Phragmites Collaborative

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**Japanese knotweed**

*Polygonum cuspidatum*

- Breaks concrete, asphalt and destroys foundations
- Bamboo-like stems
- Cut/treat/foliar: glyphosate *not* triclopyr; cover/monitor/treat for at least 4 years
Greater Celandine
*Chelidodium majus*

- Grows in wet areas, woods, floodplains, along trails
- Easily confused with, celandine poppy, *Stylophorum diphyllum*
- Up to 4 feet tall
- Look for smaller flower size, long style & long seed pods
- Irritating sap! Wear gloves; **do not rub eyes!**

Chinese Amur/Silver Grass
*Miscanthus species*

- Popular ornamental; many varieties
- *M. sacchariflorus* often found along waterways
- White mid-vein on leaves (sharp)
- Grows into tall, thick monocultures
Ramsey County Cooperative Weed Management Area is on Facebook!

More information available at
https://www.ramseycounty.us/residents/environment/ramsey-conservation-district/cooperative-weed-management-area
Cost Share Opportunities in Ramsey County

Joseph Lochner
Conservation Design Specialist
Ramsey Conservation District
651-266-7273
Joseph.Lochner@co.ramsey.mn.us
Government Resources:
Technical Assistance and Cost Share Opportunities for Ramsey County Citizens

Cost Share Program
Technical Assistance Contacts:

<table>
<thead>
<tr>
<th>District Technician</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe Lochner</td>
<td>651-266-7273</td>
<td><a href="mailto:Joseph.Lochner@co.ramsey.mn.us">Joseph.Lochner@co.ramsey.mn.us</a></td>
</tr>
<tr>
<td>Mike Schumann</td>
<td>651-266-7275</td>
<td><a href="mailto:Michael.Schumann@co.ramsey.mn.us">Michael.Schumann@co.ramsey.mn.us</a></td>
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Ramsey County Watershed Districts Cost Share Program Contacts:

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<tr>
<th>Watershed District</th>
<th>Contact</th>
<th>Phone</th>
<th>Email</th>
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<tbody>
<tr>
<td>Capitol Region</td>
<td>Gustavo Castro</td>
<td>651-644-8888</td>
<td><a href="mailto:Gustavo@capitolregionwd.org">Gustavo@capitolregionwd.org</a></td>
</tr>
<tr>
<td>Rice Creek</td>
<td>Sam Kreibich</td>
<td>763-398-3084</td>
<td><a href="mailto:SKreibich@ricecreek.org">SKreibich@ricecreek.org</a></td>
</tr>
<tr>
<td>Ramsey-Washington Metro</td>
<td>Paige Ahlborg</td>
<td>651-792-7964</td>
<td><a href="mailto:Paige.ahlborg@rwmwd.org">Paige.ahlborg@rwmwd.org</a></td>
</tr>
<tr>
<td>Valley Branch</td>
<td>Tara Kline</td>
<td>651-275-1136 x.28</td>
<td><a href="mailto:TKline@mnwcd.org">TKline@mnwcd.org</a></td>
</tr>
<tr>
<td>Vadnais Lake Area</td>
<td>Kristine Jenson</td>
<td>651-204-6074</td>
<td><a href="mailto:kristine.jenson@vlawmo.org">kristine.jenson@vlawmo.org</a></td>
</tr>
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Compost Bin Sale

- $39 Compost Bins for all Ramsey County Residents ($59 regularly)
- To place your order, visit RecycleMinnesota.org and enter promo code ramsey, or call 651-641-4589
Environmental Forum: Pollinators- Plight and Possibilities
Hosted by: Ramsey-Washington Metro Watershed District and H.B. Fuller

When: Thursday March 24, 2016, 7 PM

Speaker: Dr. Marla Spivak, Director of the Bee Lab and Professor in the U of M Department of Entomology

Where: H.B. Fuller Company
1200 Willow Lake Blvd
Vadnais Heights, MN 55110

Contact Debbie Barnes at 651-792-7959 or deb.barnes@rwmwd.org to RSVP

Free Public Event

April Conservation Forum: Urban Pollinators

► April 21, 2016 2-4 PM
► Speakers
  ► Commissioner Victoria Reinhardt
    ► Ramsey County Commissioner: District 7
  ► Dr. Marla Spivak
    ► University of Minnesota Professor of Entomology
  ► Sarah Foltz Jordan
    ► Xerces Society
  ► Heather Holm
    ► Author of Pollinators of Native Plants