Minnesota’s groundwater challenge

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Minnesota Department of Natural Resources
Summary

- **THERE IS A SERIOUS CHALLENGE**: groundwater is at risk from overuse and contamination
- **DNR HAS A KEY ROLE**: regulating use through appropriation permits
- **FAVORED APPROACH**: focus on sustainability; improve information; engage stakeholders; stimulate innovation
Groundwater basics

- Top = undisturbed
- Middle = modest withdrawal, some water table depression
- Bottom = heavy withdrawal, water table depression and surface stream impact
- Concept of sustainability
Groundwater availability

<table>
<thead>
<tr>
<th>Area</th>
<th>General Availability of Ground Water by Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surficial Sands</td>
</tr>
<tr>
<td>1</td>
<td>Moderate</td>
</tr>
<tr>
<td>2</td>
<td>Limited</td>
</tr>
<tr>
<td>3</td>
<td>Limited</td>
</tr>
<tr>
<td>4</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>Moderate</td>
</tr>
<tr>
<td>6</td>
<td>Limited</td>
</tr>
</tbody>
</table>
County Well Index Data
Nitrates in Private Drinking Wells
Total Annual Reported Groundwater Use in Minnesota

Billions of Gallons

Year

Water Supply Trends
Twin Cities, MN

Increased Reliance on Groundwater

- Surface water: major source of Supply until 70’s
- Groundwater: source to meet growth needs since 80’s
West TC Metro (‘45 – ‘12)
DNR’s Draft Strategic Plan

Seven Core Strategies

1. Increase awareness of groundwater limitations
2. Enhance information available for decisions
3. Improve management of water appropriations
4. Improve compliance with permits and regulations
5. Improve communication and education
6. Effectively address challenges in areas of high use
7. Promote water conservation and wise use practices
Next steps

- Improved monitoring network (wells and reporting)
- Water supply planning with Met Council. Include: conservation (less use & system upgrades), alternative sources (surface water), and wise use.
- Groundwater management areas
- Continued diligence
We still have time to do it right

• For more information:
  • MNDNR: http://www.dnr.state.mn.us/groundwater/index.html
  • Met Council: http://metrocouncil.org/Wastewater-Water/Planning/Water-Supply-Planning.aspx
  • MN Geological Survey: http://mn.water.usgs.gov/

• Thank you!