Yahara WINS
Dorn Creek - EutroSORB® Phosphorus Filtration
Grant Project

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A TECHNICAL RESOURCE team within SePRO focused on accelerating water quality restoration.
• 48,000 US Lakes Impaired for Phosphorus
• Dorn Creek & Lake Mendota Impaired >50 Years
• Poor Water Quality
  • HABs
  • Toxins
  • Reduced beneficial used
  • Ecological degradation
  • Reduced property values
Dorn Creek

• History of nutrient and sediment loading
• 10,000+ pounds/year to Lake Mendota
  • 2013-2019 USGS data
• Additional mitigation activities needed to supplement watershed management and BMPs
• Phosphorus load highly correlated to rainfall
**EutroSORB® F**
Phosphorus Filtration Technology

**Proprietary blend of phosphate binding media**
- Passive management (in-stream)
- Reactive filter media contained in mesh bag
- High specificity to phosphorus
- Safe for fish and invertebrates
- Recycle options
Dorn Creek

- Dorn Creek at Co. Rd. Q
- Place EutroSORB Filters downstream
- Monitor water quality above and below filter placement
Dorn Creek – Filter Installation
Dorn Creek – phosphorus sample results

Table 1: Total phosphorus and Ortho phosphate values from upstream and downstream sampling locations. DS –2 = downstream sampling location 2, DS –1 = downstream sampling location 1, UPS –1 = upstream sampling location 1, and UPS –2 = upstream sampling location 2.

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Ortho P (mg/L)</th>
<th>Total P (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS-2</td>
<td>0.05</td>
<td>0.068</td>
</tr>
<tr>
<td>DS-1</td>
<td>0.051</td>
<td>0.057</td>
</tr>
<tr>
<td>UPS-1</td>
<td>0.053</td>
<td>0.067</td>
</tr>
<tr>
<td>UPS-2</td>
<td>0.051</td>
<td>0.063</td>
</tr>
</tbody>
</table>
Dorn Creek – Filter Removal
Dorn Creek – Filter Comparison

Filters buried
Project Results

• Filters rapidly clogged with sediment
• Poor binding / contact
• 1-2 lbs. of phosphorus bound
• Target: 40 lbs.
• Cost @ Target
  • $250/ lb. P mitigated
  • Material cost
Bear Creek, CO Project

- Wilmot Creek
- Bear Creek Watershed Association
- 53% Removal (SRP)
- 76% Removal (TP)
- ~13 pounds of removal
- Target: 20 pounds
  - 65% of target
  - Filters are still in system
  - Low P levels (SRP <<25 ppb; **50-100 in Dorn Creek**)
Precipitation

EutroSORB SI (Sediment Inactivation)

EutroSORB WC (Water Column Inactivation)

EutroSORB G (Water Dispersible Granule)

Phosphorus Pollution Inputs

Nutrient Runoff

Phosphorus Filtration

Discharge

Sediment Reflux
• A proprietary solution of phosphate binding minerals
• Liquid formulation
• High specificity to phosphorus
• Safe for fish and invertebrates
• Cost at scale - $175 / pound of phosphorus
• Next steps:
  • Yahara Grant April 2022
  • EutroSORB WC Injections & Monitoring – Summer 2022
Discussion

• Thank You
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