Ponds & Pools of Drumlin Farm

The Untold Story of Drumlin’s Pond & Vernal Pool Data

Sally Farrow, Ph.D. (Go Blue!)
Sue Beede
MAS Drumlin Farm & Wildlife Sanctuary
Harvard Forest Workshop
April 11, 2013
Topics

1. Ponds and Vernal Pools at Drumlin

2. Overview of Ponding Program at Drumlin

3. Drumlin Pond & Vernal Pool Data
Ponding Sites

- Shopping Cart
- Bathtub
- Boyce
- Old Deer Pen
- Vernal Pool
- Deer Pen Pond
- Poultry
- Ice

Preschool Pond
Drumlin’s Ponding Ponds

Ice Pond

Poultry Pond
More Drumlin Ponds

Bathtub Pond

Preschool Pond
Drumlin’s Vernal Pools

Old Deer Pen Vernal Pool

Boyce “Pond” (a true vernal pool)
Drumlin’s Vernal Pools

Shopping Cart Vernal Pool
Harvard Forest Long Term Ecological Research Project
Old Deer Pen Vernal Pool

Measuring pond diameter

Measuring pool depth
Old Deer Pen Vernal Pool

Drumlin Farm Mass. Audubon

Harvard Forest Schoolyard LTER / Vernal Pool Project
Boyce Vernal Pool
Boyce Pond (Vernal Pool)

Drumlin Farm Mass. Audubon

Harvard Forest Schoolyard LTER / Vernal Pool Project
Collection of pond data at Drumlin Farm

Students observe, measure and record:
• air and water temperatures
• weather and leaf cover
• pond depth using marked poles
• name & number of macroinvertebrates
<table>
<thead>
<tr>
<th>Pond</th>
<th>Date</th>
<th>TN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Temp</td>
<td>Water Temp</td>
<td>Pole Depth</td>
</tr>
<tr>
<td>School / Class</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Circle appropriate responses below.

**Cloud cover:**
Sunny / Partly sunny / Cloudy / Scattered showers / Raining

**Tree Canopy:**
Open (no trees near pond) / Partial coverage (some trees near pond) / Completely covered (trees overhang completely)

**Leaf Cover:**
Closed buds / Open buds / Open flowers / Partial leaf out / Full Leaves open

**Bottom Substrate** (can circle more than one):
Sand or gravel / Whole leaves / Decayed leaf bits / Mud / Silt

**Notes** / **Questions**

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________
### Data key: 1-4 = few, 5-15 = some, >15 = many

<table>
<thead>
<tr>
<th>Organism</th>
<th>Comments</th>
<th>Organism</th>
<th>Comments</th>
<th>Organism</th>
<th>Comments</th>
<th>Organism</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leech – up to 2”</td>
<td></td>
<td>Dragonfly nymph – up to 2”</td>
<td></td>
<td>Caddisfly larva – 0.5-1.5”</td>
<td></td>
<td>Pollwog</td>
<td></td>
</tr>
<tr>
<td>Snails – 0.5-1”</td>
<td></td>
<td>Damsel nymp – up to 1.5”</td>
<td></td>
<td>Predaceous diving beetle</td>
<td>0.5-1”</td>
<td>0.5-1”</td>
<td></td>
</tr>
<tr>
<td>Daphnia – 0.1”</td>
<td></td>
<td>Water boatman – &lt;1”</td>
<td></td>
<td>Mosquito larva – 0.5”</td>
<td></td>
<td>Salamander – 3-5”</td>
<td></td>
</tr>
<tr>
<td>Copepod – 0.1”</td>
<td></td>
<td>Backswimmer – &lt;1”</td>
<td></td>
<td>Bloodworm – 0.5”</td>
<td></td>
<td>Salamander polliwog</td>
<td></td>
</tr>
<tr>
<td>Water pill bug – isopod up to 1”</td>
<td></td>
<td>Water strider – 1”</td>
<td></td>
<td>Phantom midge – 0.5”</td>
<td></td>
<td>Turtle – varies; 3-20”</td>
<td></td>
</tr>
<tr>
<td>Scud – Amphipod 0.5”</td>
<td></td>
<td>Water scorpion – 3”</td>
<td></td>
<td>Frog – varies; 1-8”</td>
<td></td>
<td>Algae</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comment suggestions: unusual numbers – high or low; size; where found in the pond; unusual color or structure; life stage, etc.
Cotting School student & teacher at Poultry Pond
CCHS Pathways Students at Deer Pen Pond
Commonwealth School student with Sally at ODP Vernal Pool
Some Graphs & Data Analysis
Old Deer Pen Vernal Pool Depth - 2012

(3/14) trees bare & buds closed
(3/19) sugar maple buds open
(3/30) buds closed/red maple in flower
(5/15) full leaf out
(11/21) trees bare
Relative Species Abundance - Ice Pond 2012

- Phantom Larvae
- Daphnia/Copepods
- Beetles
- Bloodworms
- Odonates
- Snails
- Isopod/Scuds
- Boatman/Backswimmers
Old Deer Pen Vernal Pool 2011

Relative Species Abundance

ODP 2011

% of organism caught

Date


phantom  bloodw  mosquito  beetles  caddis  dap/cop  iso/scud  snails

*Draft graph courtesy of student at Commonwealth School.
Ice Pond water & air temperature - 2012

Ice Pond Air and Water Temperature 2012

Air Temp Cº

Water Temp Cº
The End