How Does Your Garden Grow?

Tuesday, April 14, 2015
Rachel Lord
Tonight’s Agenda!

- Inletkeeper overview
- Food security
- Watershed-friendly gardens
- Water quality & irrigation
- G.A.P. (not the store)
- Head to the lab for soil testing!
Cook Inletkeeper
Cook Inletkeeper

- Clean water
- Healthy salmon
- Engaged Alaskans
- Clean energy
- Strong communities
Gardening?
95% of our food is imported!

=$1.9 billion spent on food from Outside
Climate Change

Global Temperature and Carbon Dioxide

Global Temperature (°F)

CO₂ Concentration (ppm)

Year

1880 1900 1920 1940 1960 1980 2000

56.5 57.0 57.5 58.0 58.5

300 320 340 360 380 400

CO₂ Concentration

A child holding a fish beside the graph showing the correlation between global temperature and CO₂ concentration.
Direct farmer sales rose 32% in Alaska between 2007-2012!

Over $4 million in high tunnel grants from USDA to Alaskans
Your Garden

- Seeds
- Water
- Soil
- Care
- Weather
- Planning
- Storage
Revolution!
Watersheds
Watersheds

You

Upstream

Downstream

Watershed Water Quality
Groundwater vs. Surface Water

Ground versus Surface Water

Information gathered from U.S. Geological Survey

www.ruralwaterresources.com
Septic Systems

Well → septic tank → drainfield

soil layers

soil absorption

purification

ground water

- 50 ft. Septic Tanks
- 50 ft. Livestock Yards
- Silos Septic
- Leach Fields
- 100 ft. Petroleum Tanks
- Liquid-Tight Manure Storage
- Pesticide and Fertilizer Storage and Handling
- 250 ft. Manure Stacks
Fuel Tanks
Fertilizers/Pesticides

10-30%
Efficiency increases can be achieved from the precise management of fertilizer use.

Right Source
Right Rate
Right Time
Right Place
Riparian Zones

50’ Habitat Protection District in the KPB

ADF&G Anadromous Waters Catalog
www.adfg.alaska.gov/sf/SARR/AWC
Water Quality Testing

- Water source
- Treatment?
- Parameters
- Cost & Quality
Good Agricultural Practices

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Audit questions designated by * are the most vital GAP considerations.
Compliance with these issues is absolutely essential in controlling microbial risk,
or to comply with Federal, State and local laws and codes.
Irrigation
Water Rights

Alaska DNR

Water is a common property resource in Alaska

The legal right to use surface or ground water

Stays with the land!

“Significant” amount of water
Invasive plants have the ability to thrive and spread aggressively outside their natural range, without remorse, disease, and bring animals that naturally keep its growth in check.

Invasive plants can alter ecosystem processes and ultimately impact natural and agricultural resources. Not all non-native plants become invasive, but it is important to know what you’re planting!
Invasive Species

Prevention & Education Training
FREE!

April 24, 2015
1-4:30PM

Kenai Peninsula Cooperative Weed Management Area, Homer SWCD, Kachemak Bay Research Reserve

www.kenaiweeds.org or call 235-8711 x5
Soil Testing: Overview

- Timing matters
- Sampling methods matter
- Sending off samples
- Cooperative Extension guidance!
- Hanna Meter Overview
pH

Soil pH influences plant growth in three major ways:

- affects the availability of plant nutrients
- affects the activity of soil microbes
- affects the availability of soil metals that can be toxic to plants in high concentrations

From Jodie Anderson’s AK Farm to School Conference Talk, Jan 2015
### Conductance

Hanna meters read in uS/cm. To convert, divide by 1000.

**EXAMPLE:** 589 uS/cm = .586 mmhos/cm or .586 dS/m

<table>
<thead>
<tr>
<th>Saturation extract (mmhos/cm)</th>
<th>Salt Rank</th>
<th>Interpretation and possible effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>Low</td>
<td>Very little chance of injury on all plants</td>
</tr>
<tr>
<td>2-4</td>
<td>Moderate</td>
<td>Sensitive plants and seedlings of others may show injury</td>
</tr>
<tr>
<td>4-8</td>
<td>High</td>
<td>Most non-salt tolerant plants will show injury; salt sensitive plants like carrots, beans and seedlings will show severe injury</td>
</tr>
<tr>
<td>8-16</td>
<td>Excessive</td>
<td>Salt-tolerant plants will grow; most others show severe injury</td>
</tr>
<tr>
<td>16+</td>
<td>Very Excessive</td>
<td>Very few plants will tolerate and grow</td>
</tr>
</tbody>
</table>
Resources

Brookside Laboratories (www.blinc.com/soils.htm, 419.977.2766)

Alaska Cooperative Extension (Janice Chumley) (www.uaf.edu/ces/districts/kenai/, 907.262.5824)

Homer Soil & Water Conservation District (www.homerswcd.org, 235.8177 x5)

Natural Resources Conservation Service (NRCS Homer Office) 235.8177 x107

NRCS Web Soil Survey (websoilsurvey.sc.egov.usda.gov/)

KPB GIS Parcel Viewer (mapserver.borough.kenai.ak.us/kpbmapviewer)

ADFG Anadromous Waters Catalog (www.adfg.alaska.gov/sf/SARR/AWC)

ADNR Water Rights in Alaska (dnr.alaska.gov/mlw/water/wrfact.cfm)

Water Testing (inletkeeper.org/clean-water/safe-drinking-water/get-your-water-tested)

Cook Inletkeeper (www.inletkeeper.org)

Homer Farmers Market (www.homerfarmersmarket.org)

Sustainable Homer (www.sustainablehomer.org)

Alaska Marine Conservation Council (www.akmarine.org)