Why Greywater?

Jillian Steinberger, The Garden Artisan, 8/25/12
What is Greywater?

- Household wastewater from *laundry, bathtub, BR sink* piped directly out to garden while the fixtures are in use.

What is blackwater?

- Water from *toilets, kitchen sink, dishwasher* which must go to sewer.
Do’s and Don’ts

• Don’t site it within 100’ of a creek, wetland, waterway or well

• No hazardous chemicals, toxins or washwater from diapers

• Don’t store greywater over 24 hours (turns to blackwater, ick!)

• Test backflow device annually and stay on top of maintenance
Health and Safety

- Don’t allow GW to pool or run off (gravel or mulch pit is essential)
- Don’t drink; wash hands after contacting; don’t swim in it
- Not for use in playgrounds or recreation areas
- Don’t wash pets in it or let them drink it
- Use eco-friendly non-phosphate cleansers; salts/boron bad for soil
- Visit cosmeticsdatabase.com (Environmental Working Group)
#1: Laundry to Landscape
EcoHouse Installation Workshop (Berkeley)
EcoHouse Constructed Wetland

Water is purified by plants such as taro and canna lilies.

When water is clean, ducks will swim in it.
Laundry to Landscape
3-Way Valve w/Clear Labelling
Laundry to Landscape Workshop
Ecology Action Workshop w/
Terra Nova Ecological Landscaping (Santa Cruz)

Note: Permit is unnecessary for L-to-L as of July 2009
w/change in California Plumbing Code. Historic event.
Laundry to Landscape Workshop
Ecology Action Led by Terra Nova Ecological Landscaping (Santa Cruz)

Mulch is very important! 2” deep minimum per safety and health code.
#2: Branched Drain System – Bathroom

Greywater Action Workshop (Oakland)

- Requires simple permit (building dept)
- Installation is more involved
- Notice on off switcher
Residential Landscapes
Watersprout (Berkeley)
Sunset Idea House (SF Mission)
Watersprout
GW & Aquaponics
Watersprout (Oakland)
High Tech, High End Installations

Hyphae Design Lab – GW & RW + Controller
Water Catchment
Park Day School & Watersprout (Oakland)
GW Facts

• No known documented illnesses caused by GW
• Soil microorganisms gobble up pathogens
• Average family of four produces 38,000 gals. GW/year!
• A simple L-to-L system can save typical homeowners 15,000 to 50,000 gals. of water/year
• GW may be more important than water tanks: keeps impure water out of the estuaries / ocean while providing soil nutrients and decreasing irrigation; lightens use of public utilities (WW treatment plants)
Which Plants?

- Great for most fruit trees and vines

- Great for many ornamentals, especially native plants which tend to like alkaline soil (e.g., serpentine)

- Don’t use on acid loving plants (rhodies, camellias, azaleas, blueberries)

- Lawns not best to water with greywater – not good for sprinkler systems

- Suited to bioswale plantings – plants cleanse the water – constructed wetlands
<table>
<thead>
<tr>
<th>Species</th>
<th>Common Name</th>
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<tbody>
<tr>
<td>Juncus effusus</td>
<td>common rush</td>
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<tr>
<td>Scirpus microcarpus</td>
<td>Panicled bulrush</td>
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<tr>
<td>Juncus xiphoides</td>
<td>Iris-Leafed Rush</td>
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<tr>
<td>Juncus patens</td>
<td>gray rush</td>
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<tr>
<td>Eleocharis palustris</td>
<td>Spikerush</td>
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<tr>
<td>Carex Aquaticus</td>
<td>Water Sedge</td>
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<tr>
<td>Cyperus haspens</td>
<td>Dwarf Papyrus</td>
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<tr>
<td>BULBS &amp; PERENNIALS</td>
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<tr>
<td><strong>Euthamia occidentalis</strong></td>
<td>western goldenrod</td>
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<tr>
<td><strong>Achillea millefolium</strong></td>
<td>yarrow</td>
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<tr>
<td><strong>Epipactis gigantea</strong></td>
<td>Giant Stream Orchid</td>
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<td><strong>Lilium pardalinum</strong></td>
<td>Leopard Lily</td>
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<tr>
<td><strong>Sisyrinchium californica</strong></td>
<td>Yellow eyed grass</td>
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<tr>
<td><strong>Mimulus cardinalis</strong></td>
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<tr>
<td><strong>Baccharis douglasii</strong></td>
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<tr>
<td><strong>Mimulus guttatus</strong></td>
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Resources

How To:
• Greywater Action - statewide classes (greywateraction.org)
• EcoHouse – Berk. (www.ecologycenter.org/ecohouse/)
• Ecology Action – Santa Cruz (ecoact.org)

Policy / Advocacy:
• Greywater Alliance (greywateralliance.org)

All Things Greywater, Including Products / Packages:
• Oasis Design – Art Ludwig (oasisdesign.net)