



hui o ko'olaupoko

Homeowner's Clean Watershed Guide

Hui o Ko'olaupoko hopes you find this guide to be a helpful resource for your yard and garden questions. Here are some topics to help you maintain or build a green yard and a healthy watershed. Provided with each topic are web addresses and phone numbers for additional information. As always, you can contact us and learn more at www.huihawaii.org.

Did you know? Many of Hawai'i's streams have elevated levels of nutrients which can be associated with degraded human health, recreational experiences, and water quality problems. A major source of elevated nutrients in these streams is nitrogen and phosphorus from individual yards, leaves, fertilizers, pet waste and runoff. You can implement simple practices in your yard to reduce overall nutrient levels in the stream.

Fertilizer and Pesticide Use

It's easy to over apply fertilizers or pesticides. Consider not using fertilizer for a year and see what happens-your yard will likely continue to look great. When using chemicals, take precaution and follow some simple tips: Apply only when necessary, preferably after rainy weather, directly on desired area or plant, using a product that is made specifically for the desired purpose. Look for this label  from the Organic Materials Review Institute on all lawn and garden care products. Also look for “**natural organic**” or “**slow release**” fertilizers and other products that are **phosphorus free**. Your lawn and gardening soils have adequate levels of phosphorus for plant needs. Extra phosphorus can end up in streams and the ocean. Consider not fertilizing trees and shrubs, they receive enough nutrients from the soil. Your yard clippings and green waste make great compost for your yard; otherwise use your green trash bin to dispose the green waste.

Resources for fertilizer and pesticide use:

- Ahupua'a friendly fertilizers, pesticides and composts are available locally Ko'olau Farmers and Hardware Hawaii.
 - Look for the OMRI label, or find a product list online at <http://www.omri.org/omri-lists>
 - Try natural options such as blood meal, chicken manure and fish emulsion to give plants a dose of nutrients
- Weed control information for homeowners from the University of Hawaii <http://www.ctahr.hawaii.edu/invweed/homeowner.html>
- UH Master Gardener Program Helpline
Call for any plant related questions. Phone: 453-6055
- Natural alternatives to synthetic pesticides by type of pest:
http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/chemaltsprays2.pdf
- 5 ways the EPA suggests to green your yard while saving time, money, and protecting the environment
<http://www.epa.gov/epawaste/consERVE/rrr/greenscapes/owners.htm#soil>

FOUR SIMPLE ACTIONS

SWEEP – driveways, sidewalks and road gutters instead of hosing them down and prevent green waste and other debris from entering storm drains

SCOOP – pet waste and dispose of it properly to prevent excess bacteria in our streams

PLANT – plant natives that are drought/pest resistant, saving money and the environment

SCRUB – wash your vehicles in the lawn with phosphorus-free soaps

To protect ocean health by restoring the 'āina: mauka to makai

Native Plants

In general, native Hawaiian plants, when planted in the correct habitat, will be able to grow with less irrigation, less chemical pest control, and be able to handle drought conditions better than most common, introduced plant species. Once outplanted natives have become established in the ground they can survive quite well with the water provided naturally during rain events or manual watering during times of drought. Native plants can also provide significant ecological benefits such as reducing soil erosion, stream bank stabilization, and phytoremediation (the uptake of pollutants through a plants root system) and may not need fertilizer at all. A few of the native plants used at HOK restoration projects are:

- *Bacopa monieri*: 'Ae'ae
- *Cyperus javanicus*: 'Ahu'awa
- *Carex wahuensis*: Carex (no known Hawaiian name)
- *Vitex rotundifolia*: Pohinahina
- Sweet potato: U'ala
- *Osteomeles anthyllidifolia*: 'Ūlei

Resources for planting natives:

- Hui Kū Maoli Ola native plant nursery in Ha'ikū
<http://www.hawaiiannativeplants.com/our-plants.html>
- Native Plants Hawaii
<http://nativeplants.hawaii.edu>
- Hui o Ko'olaupoko: Native plant care manual
<http://huihawaii.org/resources.html>

Resources for Erosion Control

Erosion prone areas include: bare soil in gardens/yards, dirt paths, areas under construction, sloped areas and stream sides. To reduce sedimentation into the streams and prevent loss of land area, coir logs or filters made with all natural materials can be placed above stream banks or the toe of slope. Plant groundcover or cover bare areas with woodchips in addition to using coir logs.

- GeoTech Solutions <http://www.geotechsolutions.com/index.html>
- Filtrexx www.hawaiiicec.com

Rain Barrels

Rain barrels collect rain water from your roof to use in your yard, conserving clean drinking water for other uses and lowering your water bill. About 1/3 of household water consumption is for outdoor use. Rain barrels can be easily built and maintained. The Board of Water Supply has information and workshops on what you need to build a rain barrel and where to find construction help. *BWS does not sell plastic barrels.

- Board of Water Supply Rain Barrel information & classes: 808-748-5041
<http://www.boardofwatersupply.com/cssweb/display.cfm?sid=2091>

Rain Gardens

Rain gardens are flat-bottomed depressions in the ground which are used to capture excess water and pollutants, such as storm runoff from rooftops, driveways, sidewalks, parking lots, and streets, and stop them from reaching streams and oceans by acting as an infiltration system. They are beneficial because they reduce flooding by absorbing rain water; they filter oil, grease and other toxic materials before polluting water bodies; they allow groundwater aquifers to be recharged. For a 1,000 square foot roof, one inch of rainfall produces 600 gallons of runoff. Rain gardens can be located near a downspout to capture this rainwater and reduce the amount entering the stormwater system and nearby streams.

HOK is developing the State of Hawaii Rain Garden Manual, due for publication in summer 2012, and a Rain Garden Co-op which will help facilitate the installation of rain gardens on private property with the use of volunteers and homeowners.

Resources for Rain Gardens:

- Hui o Ko'olaupoko <http://huihawaii.org/raingardens.html>
- City and County downspout guideline http://www.cleanwaterhonolulu.com/storm/learning_center/HealthyYards-CleanStreams-DownspoutDisconnectionTips-Final.pdf
- How-to information from Rain Garden Network <http://www.raingardennetwork.com/>

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