

Living Green is making choices in our day-to-day lives that reduce our impact on the environment and move us in the direction of a sustainable lifestyle – one that is healthy, ecologically sound, economically viable and socially just.

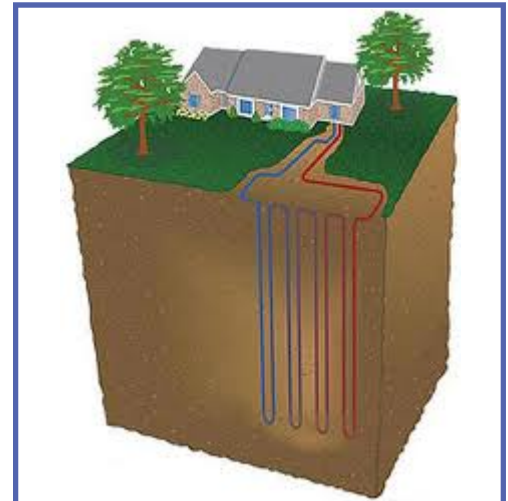
ENERGY FROM THE GROUND UP

The Earth's heat constantly flows from its core and is a source of renewable energy. Wherever you live in the U.S. you can utilize geothermal energy to heat and cool your home. Heat is stored energy that is retained in the ground. In order to utilize this energy, pipes run into the ground where the temperature is constant. The pipes are heated through water passing through them. This heat is then transported for individual use.

Geothermal for Home Heating

Approximately 50,000 geothermal heat pumps are installed in the United States each year. Geothermal heat pumps (GHPs) use the constant temperature of the earth as the exchange medium instead of the outside air temperature. This allows the system to reach fairly high efficiencies (300%-600%) on the coldest of winter nights, compared to 175%-250% for air-source heat pumps on cool days.

The Heat Pump System consists of a ground heat exchanger, heat pump unit, and an air delivery system. The heat exchanger consists of pipes that are buried in the ground. A fluid circulates through the pipes to absorb and relinquish heat within the ground. In winter, the heat pump removes heat from the exchanger and pumps into the indoor air delivery system. In the summer, the heat pump removes the heat from the indoor air into the heat exchanger.



Though some pipe systems can be even more complex, this simplified diagram shows how the fluid filled pipes absorb heat and deliver it for household usage.

The second installment for Living Green's alternative energy series features **geothermal** sources of energy.

Efficiency vs. Cost

Even though the installation price of a geothermal system can be several times that of an air-source system of the same heating and cooling capacity, the additional costs are returned in energy savings in 5–10 years. System life is estimated at 25 years for the inside components and 50+ years for the ground loop.

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MAY IS BIKE MONTH

The League of American Bicyclists is promoting Bike-to-Work Week May 16-20, 2011 and the Bike-to-Work Day is on Friday, May 20. *Spokane Bikes* (formerly *Bike To Work Spokane*) is promoting local events for the week. Starting with the annual Kickoff Breakfast in Riverfront Park, Monday morning from 7-9am. The annual wrap up party will be at the Steamplant Grill from 4-7pm. Be sure to pre-register your participation on their website at www.spokanebikes.org.

Another important event during Bike to Work Week, is the Ride of Silence on May 18th. This is a way to honor those who have been injured or killed while cycling on public roads and highways. The 3.4 mile Ride of Silence is a casual ride in which riders are silent. There are no sponsors and no registration fees. Join the group by meeting at 6pm in the parking lot on the SE corner of Riverside Ave and Howard.

Keep Your Resolutions Bicycling is guaranteed to improve health. The Centers for Disease Control state that to replace driving through walking and biking helps to reduce obesity, diabetes, heart disease, stroke and other chronic health conditions common in the United States.

Save Money Bike transportation is economical. The City of Seattle officials have found that by "Trimming one vehicle from your household, saves you \$340/month."

Pedal For The Planet Whether reducing the impact of a whole vehicle or some routine car trips, bicycling makes environmental sense. America's cars and trucks consume 10% of the world's oil supply.

So start riding today! See the calendar to the right, and visit www.spokanebikes.org for events that couldn't fit here.



A cyclist's rolled-up pant legs. It might be more fashionable than one would expect.

Bike Events Calendar

5/1 Elk Drug Dropout Ride Ride a vintage cruiser (or any other bike) from the Elk in Browne's Addition to David's Pizza and back. 3pm.

5/5 Bike Maintenance Taught by REI, learn how to lube a chain, fix a flat, and make other minor adjustments. Two FREE classes: 5-6:30pm, and 7-8:30pm. Register at 328-9900, 1125 N Monroe.

5/12 Beginning Bike Commuting Taught by REI. This clinic will cover gear, routes, and safety concerns when it comes to leaving the car at home. FREE, 7-8:30pm. See above for info.

5/14 FBC Prom Fiasco Wear your prom finest on this informal ride starting at The Swamp, 1904 W 5th; at 7pm.

6/22 Summer Parkways The first of three events for 2011. Bring yourself and any alternative, motor-less transportation to the Manito/Comstock neighborhood. For more info: www.summerparkways.com.

Pedals 2 People Classes: See the calendar at www.pedals2people.org for upcoming classes.

E-CYCLE THIS SPRING

Spring is here and it is time for spring cleaning around the home, school or office. When deciding whether to recycle or discard: computers, monitors, laptops and televisions, remember that Washington State has a FREE E-Cycle program.



The purpose of the Washington State Department of Ecology program is to keep the toxic materials found in these products out of landfills or incinerators and recover valuable resources from them. A Washington State Law was passed in 2006 requiring electronics manufacturers to help

pay for the recycling program.

In the past two years, recycling centers across the state have collected over 78 million pounds of TV's, computers and monitors.

Any households, small businesses, schools, small governments, special purpose districts and charities can recycle their electronic products free of charge at registered collection sites. However, it does not include: keyboards, scanners, mice, and printers.

Make sure to remove all sensitive

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MICROCLIMATES IN THE GARDEN

Our region is considered "zone 5" according to the USDA Plant Hardiness Zones, which gives us a growing season from May through October and potential for plant killing frosts in the early and the late parts of the season. We also tend to experience dry, hot conditions in the middle of summer. But recognizing microclimates in any garden can help gardeners to alter the growing season.

A microclimate is the climate of a small area that is different from the the greater region surrounding it. It may be warmer, colder, wetter, drier, or more or less prone to frosts. For instance, sunny nooks in your yard that are sheltered from harsh winds and frosts contain microclimates. Such microclimates are excellent for experimenting with plants otherwise considered too tender for your region.

Some of the unique effects of microclimates could be seen as cold air, being heavier than warm air, sinks in the absence of wind, so valleys can get frost while hill-sides are spared. At the same time the hilltops tend to stay cold like valleys, but drier due to wind. Some urban farmers may benefit from the "heat island" effect: cities warmed by heat from roads, buildings. Other regional influences can come from large bodies

of water that would tend to keep the surrounding area cool.

Some microclimates in the garden may allow you to take advantage and even modify growing conditions to a certain extent. Recognize where buildings create shade or radiant heat - for instance, a house absorbs heat during the day and radiates it back at night. Paved surfaces might do the same thing in a garden. Buildings and paved surfaces might also create wet spots from drip lines or water flowing from a certain angle. When wind hits a house, it creates turbulence and higher wind speeds along the walls and corners. In the higher plains of Northeast Washington, this may cause damage to delicate plants or dry out beds quickly.

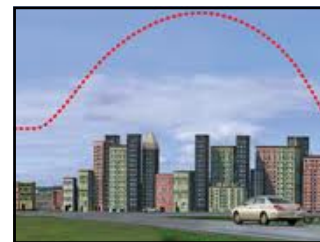
Other useful features are balconies which can avoid frosts but lead to easily dried out planter pots, or fences that can reflect sunlight for heat tolerant plants. Alternately, if the orientation of a fence (or wall, or large rock) provides shade, it will benefit other types of plants but may cause localized frost damage on near-freezing nights.

Soil types can also affect frost. Heavy clay soils can act much like paved surfaces that moderate the temperature near ground level.



An example of using a sunny wall to grow plants in a lean-to greenhouse (above).

The outline above the cityscape shows the urban heat island effect, which can raise temperatures in cities as much as 5 C higher than the surrounding countryside (below). Credit: NASA



Lighter soils can lose heat easily at the surface, and may subject plants to frosts.

Contact the WSU Extension Master Gardeners for more advice on microclimates: mastergardener@spokanecounty.org or call at 477-2181.

Energy From the Ground Up, cont'd from p. 1

Many GHP systems carry the U.S. Department of Energy (DOE) and EPA ENERGY STAR label.

To learn about financing and incentives, visit the Database of State Incentives for Renewable Energy, or DSIRE, at www.dsireusa.org. Contact the local electric utility company to ask if they offer any rebates, financing, or special electric rate

programs.

Installing a GHP is very complex. To find a qualified installer, call a local utility company, the International Ground Source Heat Pump Association or the Geothermal Heat Pump Consortium for a listing of qualified installers in your area. Installers should be certified and experienced. Ask for references of their clients— preferably

from owners of systems that are several years old, and check them. To search for Geothermal Heat Pump Certified Installers visit: www.igshpa.okstate.edu/directory/directory.asp.

UPCOMING EVENTS

5/7 Riverside State Park Work Party Help plant vegetation along trails at Bowl and Pitcher area to prevent erosion. Dress for weather, bring water, tools. For info or to volunteer, contact Greta at 360-305-0520 or greta.olson@hotmail.com.

5/11 Exploring Northwest Washington's Columbia Highlands Presented by Conservation Northwest at REI. Learn about one of the most wildlife rich and uncrowded recreational destinations in our region, the Columbia Highlands. Free, 7pm. 1125 N Monroe, or call 328-9900 for info.

5/11 Money Management Class by SNAP on financial goals, savings accounts, budgeting, etc. Must Register at 456-7174. In Northeast Community Center, 4001 N Cook, 5:30-7:30pm.

5/14 Garden Expo The annual garden expo is at SCC, 1810 N Greene. 9am-5pm.

5/14 Kids Day: Wild Edible Plant Walk Join PEACH Community Farm for this family friendly event. Must pre-register, call

216-9273 or visit www.peachlocal.com.

5/14 Fish Lake Trail Tunnel Art Bring the family to paint a mural at the Fish Lake Trail near the Scribner Rd trail-head 9am-1pm. Hosted by Inland Northwest Trails Coalition, RSVP by email at traildan@comcast.net.

5/15 Experience Riverside State Park Celebrate and explore this park: equestrian area, ORV park, self-guided tours, activities and drawings. 9am-4pm. Call at 509-465-5064 or email riversidestateparkfoundation@gmail.com.

5/17 Living Green Class Learn to reduce waste, household toxins, and save money. At SNAP, 212 W 2nd, 5:30-7pm. RSVP at 744-3370 ext 242.

5/19 Energy Conservation Class Learn to save energy and money with SNAP. At Northeast Community Center, 4001 N Cook. RSVP at 744-3370 ext 242.

5/21 Clean-up at High Bridge Park Led by EWU students, help

clean up and remove trash and noxious weeds. Dress for weather, bring water, work gloves and small hand tools. 8am-5pm. Call 509-879-2283.

5/22 MacKenzie Conservation Area Hike with Jack Nisbet Led by local author and naturalist, Jack Nisbet. Hosted by Inland Northwest Land Trust, 1:30-4:30. RSVP at outreach@inlandnwlandtrust.org or call 509-328-2939.

5/27 Money Management Class by SNAP on financial goals, savings accounts, budgeting, etc. Must Register at 456-7174. In East Central Community Center, 500 S Stone, 1-3pm.

5/28 Kids Day: Cock-a-Doodle-Do! Join PEACH Community Farm for this family friendly event. Must pre-register, find out more at www.peachlocal.com or call 216-9273.

5/31 Do-It-Yourself Class Learn simple home repairs that can save money. Must Register at 744-3370 ext 242.

E-Cycling, cont'd from p. 2

data from any computer device before donating.

For further information call 1-800-RECYCLE or visit www.1800recycle.wa.gov for a list of drop-off centers, or contact the Spokane Regional Solid Waste System's Recycling Hotline at (509)625-6800. For small business owners and for quantities of more than 10 electronic items to

recycle, please contact the WMMFA at 1-866-779-6632.

For more information on product stewardship, visit the Northwest Product Stewardship at www.productstewardship.net.

VOLUNTEER! Bring the message of sustainable living to people throughout the community as a Community Educator. If this sparks your interest, call 744-3370 Ext. 242.



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