

Rain runs downhill from rear neighbor's downspouts making this backyard spongy. Rain barrels redirect the neighbor's runoff into her planting beds.

Crofton Stormwater Project



Before and.....



AFTER...Two tons of sand and a layer of compost in a large raingarden allow clay soils to grow plants, hold and evaporate runoff and provide beauty.



Roof downspouts and raised patch on driveway lead runoff into rain garden



Volunteers helped to dig, County Public
Works picked up excess soil



Instead of allowing driveway and street runoff to enter stormsewers which add to stream degradation, other jurisdictions are installing raingardens with curb-cuts to allow runoff to be cleaned, cooled and infiltrated.



57% of Crofton Homes empty runoff into Beaver Creek, causing over 20 million gallons of stormwater to be piped into Beaver Creek with each inch of rain. Cost to manage that runoff in a Stormwater Facility would be \$26.7 million!



The rest have landscaping that receives the rain, cleans, filters into the ground and allows it to become a constant flow to creeks and to aquifers from which we draw water to drink.



To install a raingarden email dicklahn@bellatlantic.net or Anne Pearson: aplace4@verizon.net

George White speaks to us all

The unmistakable sound of raindrops tapping on a roof reminds us the earth, in her infinite wisdom, has begun yet another cycle of refreshing. Flowing water slips quickly into gutters, drops and rattles through downspouts and at my home, enters an underground tube. A few yards away, a gentle sound is heard as the water flows into an open bed, the lush and waiting rain-garden. And so the concert begins.

Welcome to my garden. Here I have no concerns of erosion, chemical waste, or the biologically damaging effects of superheated rainwater runoff.

In the last few months, through the Alliance for Sustainable Communities, I have become educated concerning the need for an alternative to the unwanted effects of ecologically unconscious designs concerning rainwater runoff and am increasingly aware of the need for this education to be fostered in our communities. I am asking for your support in this effort.

Stop by my new rain-garden, join me some summer afternoon, and we might talk about a desire to be more conscious of the beauty, present in every moment and in every square inch of soil that surrounds us - and on what side of the white pickett fence we might choose to stand. Perhaps we would pause long enough to really notice the sounds of life,,,. And to commit to living a little closer to this music that is ours to cherish. The concert has already begun and all are invited.

George White's house on Truro Rd is one of the four Crofton demonstration rain garden sites.

St. Elizabeth Ann Seton Church in Crofton



This infiltration area was poorly designed and disfunctional. Rain flowed from the parking lot through pipes into an appealing stormwater pond which suffered severe algae blooms in summer.

Underwood, Assoc. designed and built a 'dry riverbed' with sand, wood chips, a native stone bridge. Planted with winterberry, inkberry, bald cypress, river birch, virginia sweetspire and blue flag iris, it can absorb 26,000 gallons of rain. Overflow goes to adjacent woods.



This was inserted in the Church Bulletin and sent to all Parishioners

Crofton Rain Gardens and Saving the Bay

We are becoming ever more conscious that our survival depends on how we respect the planet God requires that we care for. Water keeps us alive and justice impels us to keep it fresh. Preserving our nearby Chesapeake Bay is crucial to our future here.

When our creeks and rivers and the Chesapeake Bay were healthy, the watershed was 95% forested. Rain was captured in the forest canopy and in centuries old leaf mold on the forest floor, replenishing ground water which seeped into creeks and rivers slowly and steadily even in times of drought. Now the rain runs off rooftops, driveways and streets into storm drains, which pipe the water to the nearest waterway. In Crofton, Beaver Creek* is assaulted by a power and volume of runoff that erodes its banks, felling trees and leaving a depth of sediment that smothers biological life. Pollutants from automobiles and sediment picked up by the rain during its trip to the Creek go downstream to the Little Patuxent River and eventually to Chesapeake Bay.

Our Seton church property is one of the places where Beaver Creek starts. 57% of Crofton homes empty storm-water from roof drains and driveways directly into storm sewers which erode and pollute Beaver Creek. Those homes send 20 million gallons of water into the Creek for EACH ONE INCH OF RAIN. (Maryland has a total annual rainfall of 42 inches) The cost to manage that much rain in a storm water quality facility would be \$26.7 million. To stop this process we need to each take charge of our own storm-water runoff, as some neighbors are doing.

The following words are from the Rain-garden Dedication at St. Philip's Episcopal Church in Annapolis:

*"Every part of the Earth is sacred. Teach your children that the Earth is our mother
Whatever befalls the Earth, befalls the children of the Earth
The water's murmur is the voice of our father's father.
The rivers are our brothers, they quench our thirst. The perfumed flowers are our sisters.
This we know, we belong to the Earth.
God is the same God whose compassion is equal for all.
This we know, all things are connected."*

For help in installing your own Crofton rain-garden, contact: Dick Lahn; dicklahn@bellatlantic.net Anne Pearson; email: aplace4@verizon

How to build a rain garden in 8 steps

Materials: Shovel, Ruler (12 inches or longer), Pencil, Compost, Native moisture-loving plants (see Nat'l Fish & Wildlife Native Plants on Web. Fine shredded mulch, Decorative rock (optional)

Step 1: Contact your Miss Utilities (free) (electricity, gas, phone) to have them mark the location of underground wires or cables 1-800-257-7777 or <http://www.missutility.net/>

Step 2: Pick a location. A rain garden should be several feet from foundations, septic systems, utility lines and fence posts. You may wish to extend a downspout to reach the rain garden.

Step 3: Measure drainage rate. Dig a hole the size of a large coffee can. Insert a ruler or stick into the hole. Fill the hole with water and mark the water level on ruler. Wait four hours, then measure and mark water level again. To determine the daily percolation, take the amount that has drained in four hours and multiply that by six.

(Follow this formula: __ inches every 4 hours x 6 = __ inches every 24 hours)

Your rain garden should empty within 24 hours, so if you can drain 6 inches in that much time, dig 6 inches down.

If the water in your test hole doesn't drain well, consider different placement, or add sand and then compost

Step 4: Determine the garden's depth. It should be no more than 6 to 8 inches deeper than the surrounding soil, but you can place it in the bottom of a larger landscape depression or slope.

Step 5: Outline the garden location. Use string and stakes or garden hose to mark the general placement. Think about slope and where heavy rain may come in and flow out; don't orient the garden so that overflow runs into your foundation or \\ septic system. Dig. Slope the edges and make the garden a natural contour, semi-circle not square or rectilinear.

Step 6: Check the drainage rate again. Fill the depression with water, then measure the rate. If the drainage is poor, remove 3 to 4 more inches of soil and mix in some sand and compost to a depth of 1 foot, then check drainage again.

Step 7: Add plants that tolerate "wet feet" in low places. Add compost, leave it at least 6" lower than the surface so it can 'pond' with runoff which will infiltrate.

Step 8: Mulch 2-4" thick (leaving space around plants stems) to keep the weeds out. Water, especially if rain is scarce, 1 inch at least once a week. If there's regular overflow from the depression, you may build a series of rain gardens with connecting drainage notches.

TLC, a Crofton business on Rt 450, will create a Raingarden to absorb runoff from road which is currently diverted into County stormdrain to avoid flooding.



Crofton Woods Elementary School



Parking lot slants toward a drain which directs rain through a pipe into the Crofton drainage system which empties with great force into Beaver Creek, eroding tons of silt which flow downstream into the Little Patuxent River.



Five fifth grade classes will tour Beaver Creek problems, see a power point presentation, discuss the issue and help plant where the County makes curb cuts to drain rain into the forested land between parking lot and street.

Public Outreach takes many forms



DISPLAY PANELS are placed in public buildings - Showing Problems And Solutions;

Crofton Civic Assoc. Town Hall will implement a planned Restoration of stormwater runoff using rainbarrels and raingardens with signage, as a demonstration project and members will Write articles for their newsletter and to the Press.

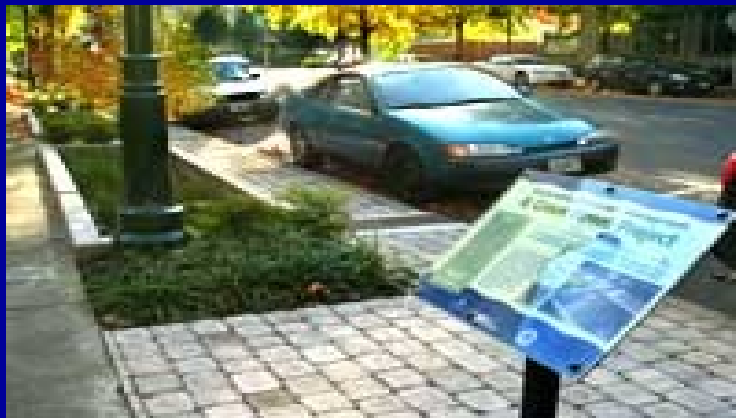
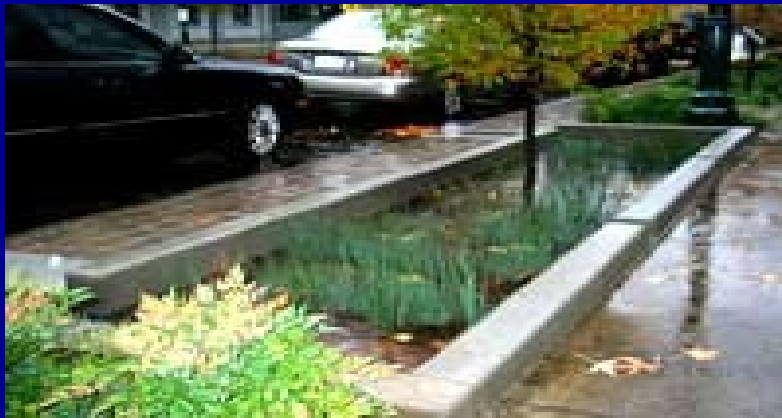


Methodist Church Trustees seek funds to design their grounds to allow conversion of two enormous dry ponds to infiltration, using Raingardens and 'dry creekbeds' with Educational trails for parishioners, children and scout troops that meet at the Church regularly.

Balanced Life Skills', Joe Van Deuren, a Leadership Anne Arundel graduate and volunteer in this project will expand on these concepts by directing his group efforts with schools to paint rainbarrels and emphasize peace through environmental action.

Help us Change the Rules for Stormwater Management to enable Low Impact Development to become the method of choice for new development in Maryland.

Unless Counties implement a Watershed Restoration Fund, we lack monies to retrofit existing impervious runoff in the way Seattle, WA and Portland, OR are doing.



CROFTON STORMWATER STUDY SUMMARY

Funded by National Fish & Wildlife Foundation

Purpose: to alleviate stormwater runoff into Beaver Creek Restoration Area by encouraging homeowners, businesses, churches and schools to install rainbarrels, raingardens and curbcuts to infiltrate or direct runoff into forested areas.

Early Results:

Significant energies were generated, enough for the project to continue beyond the grant.

4 Raingarden demos were installed by homeowners, one in heavy clay soils, using 2 tons of sand in a garden twice the normal size, planted, it relieves the soggy lawn conditions. Each garden infiltrates the entire rooftop runoff;

8 Rainbarrels, which drain to planting beds, have been installed by homeowners to date;

St. Elizabeth Ann Seton Church installed a 'dry-creekbed' which infiltrates 26,000 gallons of rain. A 'greening' of the Catholic Diocese' renovations and new churches is considered.

2 businesses have pledged to install bioretention areas;

United Methodist Church wishes to restore 2 massive 'dry-detention' ponds to 'dry creekbeds' with educational trails for parishioners, children, and scout troops who meet at the Church regularly.

A street bioretention similar to Seattle's SEA Street infiltration of stormwater is being considered by County Roads.

Balanced Life Skills plans to work toward peace with ourselves, each other and the natural world by making videos of restoration needed and helping schools paint rainbarrels for sale.;

Crofton Woods Elementary School's 4 fifth grade classes will be involved in curb cuts to send rain from their parking lot into the woods

The drainage area for the Project is 287.22 acres.

Of that, 97.65 acres are impervious, resulting in 34% impervious for the area;

235.76 acres of residential 1/4 acre lots;

17.17 acres of residential 1/8 acre lots;

6.67 acres of commercial;

6.38 acres of transportation;

11.18 acres of open space;

10.06 acres of woods.