Pəskehtək^{w}ok

Joining of the Branches

Photo: Martin Neptune

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Penobscot Indian Nation
Department of Natural Resources
www.penobscotnation.org/DNR/DNR1.htm

Phone Extensions

David Almenas, *Forest Technician*	*7335*
Michelle Attean, *Water Resources Trainee*	*7381*
Ron Bear, *Forest Technician*	*7335*
John Banks, *DNR Director*	*7330*
Rhonda Daigle, *Water Quality Monitoring Program Coordinator*	*7326*
Kristin Dilworth, *Big Game Biologist*	*7363*
Yvonne "Cookie" Francis, *Administrative Assistant*	*7331*
Tim Gould, *Game Warden Supervisor*	*7395*
Dan Kusnierz, *Water Resources Program Manager*	*7361*
Jason Mitchell, *Water Resources Field Coordinator*	*7381*
Ed Paul, *Game Warden*	*7392*
Jan Paul, *Water Resources Field and Lab Technician*	*7382*
Angie Reed, *Water Resources Planner*	*7360*
Russ Roy, *Forest Manager*	*7339*
Dennis Stevens, *Forester*	*7337*
Bill Thompson, *Air Quality Program*	*7340*
Binke Wang, *GIS Specialist*	*7341*

The Story of Stuff - Step #1

Extraction

In the 20-minute video called "The Story of Stuff," Annie Leonard provides her description of the first step of the process in making stuff - extraction. In Annie's words,

"Extraction is a fancy word for natural resource exploitation which is a fancy word for trashing the planet. What this looks like is we chop down trees, we blow up mountains to get the metals inside, we use up all the water and we wipe out the animals. So here we are running up against our first limit. We're running out of resources. We are using too much stuff. Now I know this can be hard to hear, but it's the truth and we've gotta deal with it. In the past three decades alone, one-third of the planet's natural resources base have been consumed. Gone.

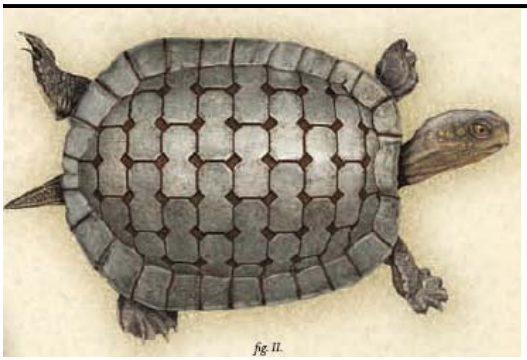
…. in the United States, we have less than 4% of our original forests left. Forty percent of waterways have become undrinkable. And our problem is not just that we're using too much stuff, but we're using more than our share.

The U.S. has 5% of the world's population but we're consuming 30% of the world's resources and creating 30% of the world's waste. If everybody consumed at U.S. rates, we would need 3 to 5 planets."

To hear more of the story and get the bigger picture go online to www.storyofstuff.com!

We will also be featuring more of the information in future newsletters!

STORY OF STUFF.COM

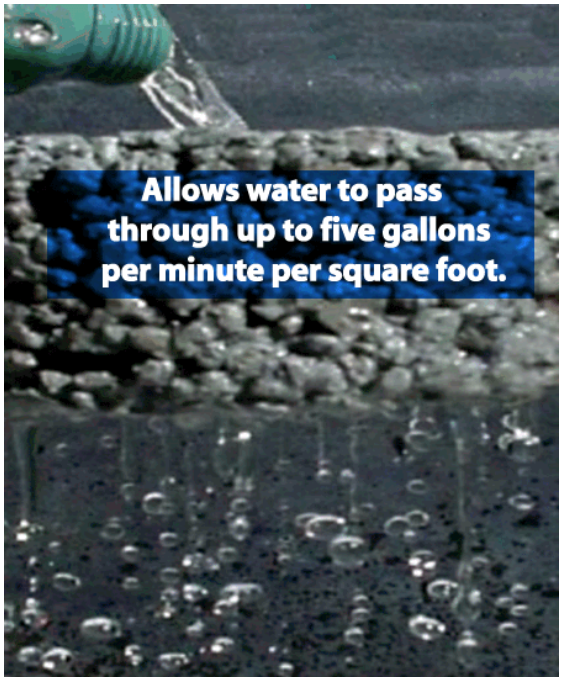


Creating more space for water

By Angie Reed

So I was kicking back watching the HGTV show Rock Solid when I learned about this incredibly cool new product. On this episode (**www.diynetwork.com/diy/gr_lawns_landscaping/article/0,2029,DIY_13852_5848669,00.html**) the guys were flexing their green-muscles and using a bunch of eco-friendly materials. One of them was the paver they used for the driveway and path across the front lawn leading to the door. This paver is closely linked to a topic we Water Resources staff focus on a lot - water running off the surface of the ground and the potential pollution it carries.

The paver is named "Aqua-Stone" (**www.drymixproductsco.com/Aquastone.html**) and it looks like a huge Rice Krispie square. What is unique about them are the spaces between the particles used to make the concrete. This means that water can flow THROUGH it. And if you haven't already imagined there are some big benefits to this ability.



The benefit that immediately came to my mind (yes, I am always thinking about how to improve and protect water quality) was that there would be less water running off of solid surfaces and into the river. Of course, this means less chance for any form of pollution to go into the river with that water. Instead, the water gets a chance to have more space to do what water really wants to do when it hits the ground: flow down into the soil, nourish the plants and animals there, allow the soil to provide a cleansing effect and recharge our groundwater drinking supplies. So this is the primary reason why I decided to write this article and share this information.

Another one of the benefits of this kind of a product is that there is MUCH less water to puddle up on the surface. You can imagine that this means fewer puddles to walk through in the warm weather AND less ice buildup in the cold weather. This leads to the next cool result of less water on the surface - using fewer chemicals to melt the ice! So, in addition to reducing the runoff carrying pollution, we have also reduced a potential source of pollution AT THE SOURCE! There have been numerous studies done on streams in the northeast that reveal an increase in salt concentrations in the water. We use a LOT of salt on our roads and walkways.

So one of the words you will see associated with this kind of paver is permeable - describing the process of water filtering down to the soil rather than building up and running off. However, don't be fooled into thinking that all pavers that are called permeable function in the same way. I was. Some companies advertise permeable pavers but what they really mean is "permeable interlocking concrete pavement" or ICIP. There is an official group of people who study, design and certify

various aspects of ICIP - the Interlocking Concrete Pavement Institute (ICPI). One of their web pages (**www.icpi.org/design/permeable_pavers.cfm**) describes the interlocking permeable paver concrete as being *"comprised of a layer of concrete pavers separated by joints filled with small stones. Water enters joints between solid concrete pavers and flows through an "open-graded" base, i.e. crushed stone layers with no small or fine particles. The void spaces among the crushed stones store water and infiltrate it back into the soil subgrade. The stones in the joints provide 100% surface permeability and the base filters stormwater and reduces pollutants."* The site also has a great video showing a hose running continuously without any water buildup on the surface.

Illustrating the ability of rain to flow into the spaces between the pavers and not remain on top.

The ICPI also describes other permeable paving methods - pervious concrete and porous asphalt. They provide a comparison of these methods at this link - **www.icpi.org/myproject/ICPI_PICPcenterspread.pdf**. The University of New Hampshire's Stormwater Center has been doing a lot of research on its functionality and performance in cold climates. It turns out that it does pretty well. On one of their web pages (**http://stormh2o.com/september-2008/pervious-asphalt-concrete.aspx**), the results of a study on pervious asphalt are quoted as saying:

"By design, an open-graded, well-drained porous pavement system incorporating significant depth will have a longer life cycle from reduced freeze-thaw susceptibility and greater load-bearing capacity than conventional parking lot pavements."

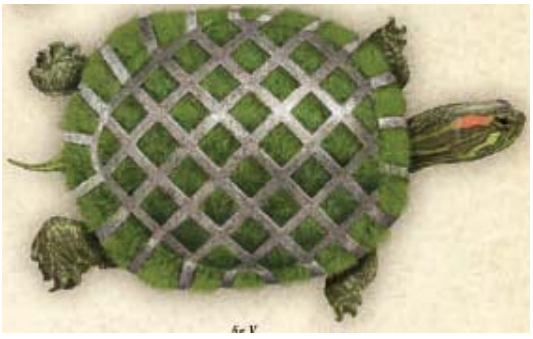
"Throughout the research period, the study found that surface runoff did not occur from the parking lot, even though the Northeast region experienced an increase in extreme storm events."

The Stormwater Center is still conducting research on the performance of pervious concrete in this climate. Check out their home page for more information - **www.unh.edu/erg/cstev/**.

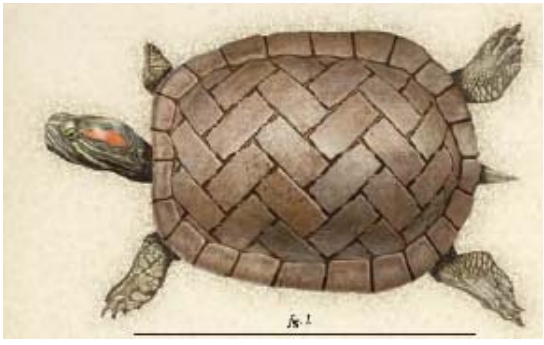
The challenge with the pavers that are actually permeable and pervious asphalt or concrete is that it is not yet widely available. AquaStone is only made in California but can be shipped. Locally, you can get pavers that can be installed in a permeable fashion.

Belgard Hardscapes (the source of the turtle paver images in this article) makes their line of "environmental pavers" - **www.belgard.biz/environmental-pavers.htm**. They have a representative in NH and from their web site you use a zip code search to find the local dealer in Bangor.

A Maine-based company called Genest makes a product called "Stormwater Brick" - **www.genestconcrete.com/architects/genest_stormwater_brick/**



So if you are thinking about any home improvement projects, consider using some permeable products. We will keep bringing you more information about these and other eco-friendly products in the future.



CAN YOU SMELL IT?

If anyone detects an odor that they think may be coming from the Juniper Ridge Landfill in West Old Town, please call this number to report it.

394 - 4376

It's important that folks use this complaint line to report odors so that the company knows when and where the odors are being noticed. The state is in the process of rulemaking to establish regulations to address the landfill odor problem. Thanks for your help!