

About The Buzz



The Buzz is a quarterly newsletter containing information on activities related to the Neola- Henschal Creeks Watershed Improvement Project Grant.

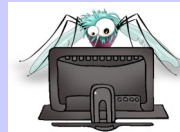
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Escape, Laughing

It's that time of year again, and Sven and Ole face the nasty chore of cleaning out the old out house.

Sven, though, has been thinking about how to make the job a little easier this year, so he suggests that they might use some dynamite placed and timed just right.

Sven and Ole get some dynamite and they place some of it

around the base of the out house, and light the fuse for it. Then they quickly light the fuse for the rest of it and drop it down the hole. Of course, at this point the run for cover.

As they sit protected from their plans, Lena bursts out through the kitchen door and runs straight into the out house. Before Sven and Ole can do anything to stop her, their

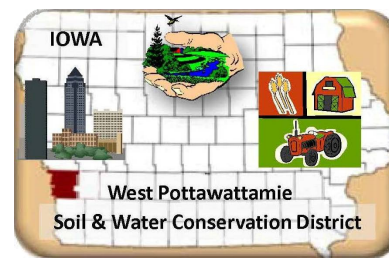
plans go into motion. "Boom!!!" The first half of the dynamite goes off and lifts the out house, and poor Lena, some thirty feet off the ground.

"Ka-Boom!!!" The rest of the dynamite explodes and quickly clears out the underground chamber.

A few seconds later, the out house comes down and lands neat-

ly back into place.

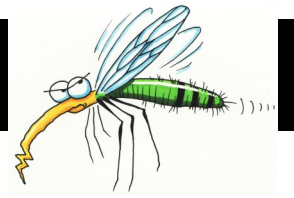
Lena stumbles out a bit shaken and says: "Uffda!! Itz a gut ting I dint do dat in da Kitchen!"



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The Buzz



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This is the final Little Gulps column.

The Editor

"...runoff from the first inch and a quarter of rain carries about 90% of the nasty stuff that will wash off of impervious surfaces.

Once that first flush has passed, what runs off after that is relatively clean.

So it's the small storms that do the most polluting!

By capturing that first flush; the first inch and a quarter of rain; the 'Water Quality Volume' - and allowing it to soak into the soil, no runoff from those small storms is generated.

No runoff—no pollutants reach our streams."

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Neola-Henschal Creeks Watershed Project Quarterly Newsletter

Little Gulps

Two years ago in the Little Gulps section of the newsletter the question was asked - How do we improve the water quality of the two watersheds that make up the project area for the Neola-Henschal Watershed Improvement Project? One way the watershed project chose was to embrace the Nutrient Reduction Strategy.

By now most folks have at least heard of the Iowa Nutrient Reduction Strategy - the science and technology-based approach to assess and reduce nutrients delivered to Iowa waterways and ultimately to the Gulf of Mexico. The Strategy outlines a voluntary effort to reduce nutrients in surface waters from both point sources and nonpoint sources by 45%, in a scientific, reasonable, and cost effective manner. Meeting the goals of the Iowa Nutrient Reduction Strategy will be difficult. The lion's share of the burden is on agricultural producers and landowners.

But they are not alone.

Nutrients contributing to the problem also come from stormwater runoff generated from urban, suburban, and developed areas. Runoff washes pollutants from impervious surfaces like roofs, streets, and parking lots into storm sewers that deliver that polluted water directly to streams. 'Urbanites' also have a role and responsibility in helping achieve the goals set forth by the Iowa Nutrient Reduction Strategy.

Thus everyone has a share of the problem - and a share of the solution.

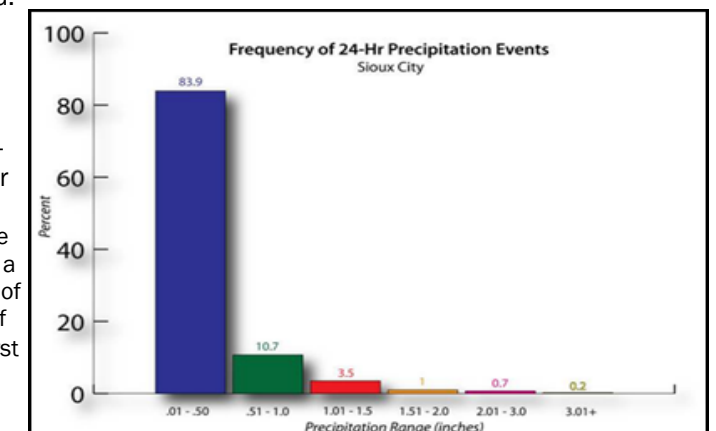
The watershed project area is a little over 53,000 acres; roughly 835 acres are urban. It's a large area and hard to imagine we can do much that would be meaningful. When faced with a problem seemingly too large to deal with, someone may ask, "How do you eat that 'elephant'?" The answer of course, is, "One bite at a time". So how do you catch and hold that first flush of runoff? The answer of course, is, one 'Little Gulp' at a time.

In the agricultural areas of the watershed we are using multiple practices to help meet the goals of the Iowa Nutrient Reduction Strategy—terraces, sediment and water control basins, waterways, cover crops, no-till— these are well known practices that have been used for years.

There is also quite a large toolbox of urban storm water practices (some quite new, and some enjoying a revival) that are very effective at dealing with runoff from urban landscapes.

An important bit of background.

Most of the storms in this area don't give us much rain. As the graph indicates, over three quarters of the precipitation events are one half inch or less. Iowa storm water experts estimate that runoff from the first inch and a quarter of rain carries about 90% of the nasty stuff that will wash off of impervious surfaces. Once that first



Little Gulps, cont.



When the land does well for its owner, and the owner does well by his land—when both end up better by reason of their partnership—then we have conservation.

- Aldo Leopold

In the next issue of The Buzz...
Agricultural Water Quality
Escape, Laughing



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flush has passed, what runs off after that is relatively clean. So it's the small storms that do the most polluting! By capturing that first flush; the first inch and a quarter of rain; the 'Water Quality Volume' - and allowing it to soak into the soil, no runoff from those small storms is generated. No runoff—no pollutants reach our streams.

Over the last two years the Little Gulps column has given you suggestions on how to take a "Little Gulp" of runoff. Four urban stormwater practices were described that are inexpensive, easy to install and maintain, and do a good job of managing the water quality volume. They are: Rain Barrels, Rain Gardens, Restoring the Soil Quality of our Turf Grass Areas, and Landscaping with Native Plant Species .

Rain Barrels

A rain barrel is a container used to capture and store rainwater. Rain barrels have been around for a long time, but we have seen an increased interest bringing them back the past few years. Rain barrels are usually set up so that the water runoff from the gutters of a house, garage, shed or other structure is directed into the barrel. Most rain barrels have a large opening in the top or side of the barrel to allow the water to run in from the downspout. Each time it rains, the rain barrel will be filled with rainwater from the downspout. Then the water will sit in the barrel until it's ready to be used. Modern rain-water collection systems include a first flush diverter. This is a smaller container installed between the gutter and rain barrel that captures that first flush of pollutant rich runoff.



It's amazing how fast a rain barrel will fill up with very little rainfall. There is a formula to use to calculate the amount of runoff from a rooftop; (the number of sq. ft. of roof that drains into the downspout) X (inches of rainfall) X (0.62) = gallons of water. If you have a 500 sq. ft. roof and get 2 tenths of an inch of rain - 500 X 0.2 X 0.62 = 62 gallons. Most rain barrels are 55 gallons. Rain barrels have an overflow outlet near the top where the excess rainwater will drain out when the barrel is full.

Rain Gardens

Why Install A Rain Garden?

An urban property generating storm water runoff contributes to water quality degradation. Runoff from rooftops, driveways, yards and streets carries pollutants such as hydrocarbons, heavy metals, sediment, bacteria, grass clippings, floatable litter, or nutrients directly to receiving waters without any treatment. Storm water runoff also causes frequent bounces in stream flows. These "flashy" flows (high flows/low flows) cause stream corridor erosion, which contributes sediment to stream flows and also increases flood potential. Installation of rain gardens is one way to capture and infiltrate storm water and reduce a property's contribution to water quality degradation, flashy stream flows and flooding.



Rain gardens are an infiltration-based storm water management practice that rely on soils with good percolation rates to help manage rainfall to protect water quality. A rain garden is a depression or a shallow bowl made in the landscape that is level from side to side and end to end that captures runoff from rooftops, driveways, yards and streets. Capturing runoff in a rain garden allows water to infiltrate into the soil rather than run into storm drains. Rain gardens are a key practice for creating landscapes that are both beautiful and hydrologically functional - that is - landscapes that hold and infiltrate rainfall rather than generating runoff that causes water quality problems and contributes to flooding.

Little Gulps, cont.

Restoring the Soil Quality of our Turf Grass Areas

A little over 2% of the land surface in the United States is covered with cool season turf grass—lawns, parks, cemeteries, commons, golf courses, and landscaped areas planted to bluegrass and fescue. Incidentally these areas are often associated with places we desire stormwater management. So how can we get our turf grass areas to act as stormwater BMP's?

Where turf grass is growing most soils have been significantly altered by the grading practices associated with urban development. Oftentimes topsoil has been removed, little or no organic matter remains, and graded soils are compact. Compacted soils with no organic matter cause nearly all the water to runoff during rainfall. Applied fertilizer or pesticide may also travel in runoff, negatively impacting water quality, and washing your money down the drain!

To improve the quality of the soil in your yard and help create a beautiful healthy lawn that requires less irrigation and fertilizer, do these three things.

1. De-compaction

Soil compaction must be broken up first. If you are establishing a new lawn, deep tillage, 8-18 inches, will break up compacted soils. If you have an established lawn, aeration with a *deep tine* aerator will help do the job.

2. Spread that Compost

On an established lawn, immediately after the aeration operation, apply a shallow blanket of compost. A one quarter to three quarter inch layer is enough. What you want to happen is for the compost to sift its way into and fill the aeration holes. For a new lawn, till one to three inches of compost into the soil prior to sodding or seeding.

3. Strive for Five

The goal is to bring the organic matter content of your soil up to five percent or more. The lawn will require much less water and fertilizer to stay lush and green. At five percent organic matter the soil will be able to absorb about a three inch rainfall. De-compaction and composting should take place about every three years.



Landscaping with Native Plant Species

Why Natives? The Roots!

For thousands of years the Iowa landscape was dominated by tallgrass prairie vegetation with extensive root systems that helped form deep, rich soils. Prairie soils had high organic matter content and ample pore space between soil particles. These characteristics helped the prairie absorb and infiltrate most rainfall and shed very little runoff. As the prairie was converted to agriculture, and cities were established, the ability of Iowa's soil to absorb and infiltrate water decreased. Tillage-based agricultural practices reduced the organic matter content. As the organic matter in the soil declined, runoff increased.

Urban landscapes have impervious surfaces - streets, rooftops, and parking lots. Urban soils are compacted by grading. Impervious and compacted urban surfaces prevent infiltration and increased the amount of runoff. Urban runoff occurs with almost every rainfall, causing water quality problems, stream corridor erosion, and increased flood potential.

The use of native plants in modern landscapes provides a connection to our prairie heritage. Once established, native plants are aesthetically pleasing and require very little watering, fertilizing, or mowing. This reduced maintenance can lead to significant cost savings compared to labor-intensive turf grass. Native landscaping attracts songbirds, butterflies, and other pollinators. Most importantly, it helps restore soil quality over time and helps urban soils absorb more rainfall, reducing the amount of runoff from urban landscapes. So turn your downspout away from the driveway, point it across the yard at your native landscaping, and reconnect to Iowa's prairie heritage.

