Healthy Yards & Neighborhoods
…for healthy streams!

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When One Tugs at a Single Thing in Nature…
He Finds it is Attached to the Rest of the World.  John Muir

GREEN LAWNS/BLUE WATERS
HAVING BOTH THE SMART WAY
The Watershed System
An Area of Land that Drains to a Stream or Basin

Mississippi River Basin

City of Columbia, Missouri
What Does My Urban Yard Have to do With Healthy Streams?
WE ALL LIVE IN A WATERSHED

Where Does Your Water Go?

http://www.gocolumbiamo.com/PublicWorks/StormWater/Watersheds/

www.gocolumbiamo.com/PublicWorks/StormWater/Watersheds
Goals and Benefits of ShowMe Yards & Neighborhoods…

Creating Environmentally Savvy Consumers & Business Professionals: How We Did it in Missouri
Why Address Lawn Care?

- “The City is not in the Lawn Care Business”

- Stormwater Education
  - “Stormwater pollution is one of the most significant sources of contamination in our nation’s waters.” EPA

- Perfect Link between Home (Personal Interest)/Stormdrain/Stream

- Impaired streams
Started in 1994 FYN program began in 4 counties in the Sarasota and Tampa Bay areas in response to nutrient inputs from stormwater runoff being identified by the National Estuary programs as a leading cause of seagrass depletion.

- Florida has more than 5 million acres of home lawns
- High input to maintain and irrigate
- Everglades being restored at the same time
- Florida Green Industry interests filed a lawsuit against a county that passed stringent (overly so?) restrictions
Northwest Natural Yard Days
(Seattle, Washington)

- An month-long incentive program to encourage homeowners in King County to change the way they care for their yards.
- Northwest Natural Yard Days is now in its tenth year.
- The goal is to encourage residents of King County and surrounding areas to purchase environmentally preferable yard care products and to practice natural yard care.
- The retail sales sponsored by Northwest Natural Yard Days partners take place in spring and fall each year.
Start with the Facts
Stick with the Facts

- Green industries can and should be included from the beginning
- Discourage catastrophic, doomsday or demonizing language
- Use USGS or University sponsored studies for information
Pesticide Use in The U.S.

- U.S. home and garden total pesticide amount used in 2000 and 2001 ranged from 90 to 102 million pounds. (University of Florida, [http://edis.ifas.ufl.edu](http://edis.ifas.ufl.edu))

- About 1 billion pounds of pesticide active ingredients are applied each year in the U.S. [http://www.epa.gov/oppbead1/pestsales/01pestsales/usage2001.htm#3_1](http://www.epa.gov/oppbead1/pestsales/01pestsales/usage2001.htm#3_1)

- Pesticides were detected in 90% of U.S. streams sampled [USGS Circular 1291-Pesticides in the Nation’s Streams & Groundwater, 1992-2001](https://www.usgs.gov/centers/nwrc/program/pesticides-and-fertilizers/pesticides-international)

- Agriculture accounts for 75% percent of total pesticide use. [U.S. Geological Circular 1225--The Quality of Our Nation’s Waters--Nutrients and Pesticides](https://pubs.usgs.gov/circ/circ1225/00a-circ1225.pdf) 1999
Pesticides in Water

**4,380 total water samples, including sediment and fish samples.**

*Source: USGS Circular 1291. Chapter 1, p. 4. 2006*
Does This Represent a Threat to Human Health? Aquatic Life?
Building A Program

- Missouri does not yet have a statewide lawn care program like Florida Yards & Neighborhoods
- Is a natural fit for state Extension
- Springfield, Missouri initiated ShowMe Yards
- We started from scratch
- But did not re-invent the wheel
  - Lots of other good programs nationwide
Who Would Invest?

- One person has to assume leadership or “heavy lifting”
- City stormwater engineer
- State 319 Water Quality Funds
- Local lawn care companies/Professional Organizations
- Extension
- Non-profit Watershed Groups
- Parks Department Staff
- Americorps
- Other
A Blank Slate

- Name?
- Purpose/Intent?
- Desired Outcomes?
- Funding/Other Support
- Benefit to Homeowners?
Purposes of SMYN

- Educational effort to reduce chemical & nutrient runoff to streams.
- Help Missouri cities meet their stormwater permit requirements under Clean Water Act provisions.
- Provide public outreach & participation in non-point pollution reduction.
- Promote responsible yard care with healthy...not perfect....lawns.
What Show-Me Yards is NOT:

- An effort to promote only organic gardening or lawn care.
- Required under any laws
- An opponent of commercial lawn care
Funding

- Initial workshop cost about $200.00
- City expended about $2000 in 2007
- Nearby city did cost recovery ($45 for three session workshops)
- Room rental, copying, coffee, advertising, brochures & other literature, yard signs
Best Features

- Brochure
- Self-Assessment Scorecard (Rate Your Yard)
- Videos
- City Channel
- Workshops
- Field Days
- SMYN Yard Signs
- Website
For a healthy, beautiful yard with minimum effects on water quality, consider these ideas:

Proper mowing at 3-4 inches high (or the highest setting on your mower) results in 80% fewer weeds and thicker turf that doesn’t require chemical inputs. Mowing height is one of the biggest factors in creating a healthy lawn. When grass is cut tall, it conserves moisture and minimizes weed seed germination.

Consider having a “good enough” lawn... when making lawn care decisions. It doesn’t have to look perfect to be healthy and meet the needs of your family.

Use mole traps or borrow a good dog for mole control. Using insecticide for grubs is totally ineffective for mole control.

Don’t bag your grass clippings. They can contribute much of the nitrogen, phosphorus and potassium your lawn needs.

Clover is your yard’s friend! Instead of treating to prevent it, think of clover as free fertilizer. Clover takes nitrogen from the air and feeds your soil! It can provide up to 30% of a lawn’s yearly nitrogen requirement.

Did you know....

- A watershed-friendly lawn care demonstration site is located at Hickem Cabin in Rock Bridge State Park (upper parking lot).
- Shelter Gardens uses environmentally friendly lawn care practices on its turf and gardens.
- Even the White House lawn is “going green.” Staff there are using gardening and landscaping practices designed to protect the environment and minimize polluted runoff.
- Some golf courses are changing their approach to stormwater. MU’s A.L. Gustin golf course has been certified by Audubon International as watershed-friendly for their efforts to improve water quality, use native plants and reduce chemical use.

Why Have a Show-Me Yard?

Show-Me Yards and Neighborhoods is an educational effort to inform landowners & businesses about ways they can be more environmentally responsible with their lawn and landscape practices. A Show-Me Yard can help protect Missouri’s lakes and rivers for future generations.

What Does My Yard Have to do With Healthy Streams?

- If lawns were classified as a crop, it would rank as the fifth-largest in the country, based on area.
- Homeowners use ten times more chemicals per acre than farmers.
- 67,000,000 lbs. of synthetic pesticides are used on U.S. lawns.
- 30-60% of urban fresh water is used for watering lawns.*

*Source: Berman et al., Redesigning the American Lawn, Yale University Press, 2001.

The EPA now considers stormwater run-off from yards, streets, parking lots and other urban areas to be one of the most significant sources of contamination in our nation’s waters.

Homeowners use more chemicals per acre on lawns than farmers use on crops. Some of these chemicals are finding their way to our streams.

All stormwater flows directly from gutters and storm drains straight to streams and is not treated in any way. This means our lawn and garden chemicals have the potential to cause fish kills and harm other living things.
What does a Show-Me Yard Look Like?

A Show-Me Yard can take any form-unique or traditional. In fact, you can create a Show-Me Yard simply by changing the way you take care of your yard.

1. Mow high...typically 3 to 4 inches or highest setting.
2. Remember: storm drains lead straight to streams.
3. Clover is okay; it provides nitrogen to your lawn.
4. Increase the amount of your yard in tree cover.
5. Sharpen mower blade (at least once per summer)
6. Compost grass clippings and/or leaf litter at home.
7. Check streets & sidewalks after applying lawn products; sweep excess into lawn, not the street.
8. Include native plants. They tolerate drought and require no fertilizers or extra watering.
9. Mulch circles beneath trees and around beds.
10. Install a rain barrel (www.rainbarrelguide.com)
11. Install a rain garden (www.raingardens.org)
12. Clean up pet waste
13. Leave clippings on lawn. They provide nutrients.
15. Map and measure your yard to determine correct application amounts (one adult pace = about 3 feet).
16. Attend a Show-Me Yards workshop
17. Have a soil test done, then apply fertilizer per recommendations. Call Boone County Extension office at 573-445-9792 for details.
18. Use a rain gauge or small tin can to track rainfall and avoid unnecessary over-watering.
19. Reduce use of lawn chemicals and apply according to directions.
20. Identify weeds, diseases or insects before taking action. Contact Boone County Extension for assistance.
21. Overseed bare spots in early spring or early fall.

For More Information or To become a Show-Me Yard, Email mona.menezes@gocolumbiamo.com

573-817-6447

Register to attend an upcoming workshop by email or phone (above)

In the meantime, consider these easy changes to how you care for your yard:

ADDITIONAL RESOURCES:

City of Columbia: www.gocolumbiamo.com (Search: Show-Me Yards)
Hilison Creek: www.helpthehilison.org
Love Your Lawn: www.kentuckypride.com/weathermatters/lawn.htm
Natural Yard Care: www.missouricdn.org/dcpo/envi/Invasive/yardcare/lawncare.asp
Grow Native: www.grownative.org

Ask the Hotline...If you have lawn or garden questions, call the Boone County Extension Office at 573-445-9792.
How Did It Work Out?

- Started with 25 people signed up for a 2 hour workshop.
- 3 years later, 300+ citizens/year registered for 3-session workshops, 8 hours
- Field Days attracted about 250 visits
- Tied Field Days to other events (Mayor’s Bike Walk and Wheel Week)
- Total: Nearly 1000 participants in 3 years
A Show-Me Yards Workshop
Green Lawns / Blue Waters: Have Both... the Smart Way!

Want to save time and money on yard care that’s environmentally friendly?
Want to have a great lawn plus get answers to your yard-care problems?
Did you know homeowners use 10 times more chemicals per acre on lawns than farmers use on crops?
90% of U.S. streams sampled contained pesticide residue. Did any of that come from your yard?

This 3-session Workshop will include:

- Moles, Fungus & Crabgrass: Solving Basic Problems
- Adding Nutrients & Minerals Without adding Chemicals
- Why Consider Native Plants?
- Healthy Soil = Healthy Grass & Gardens
- How & Why to Build a Rain Garden
- Resisting the Urge to Spray: The Good, The Bad & The Ugly Bugs
- Equipment & Techniques for Your Best Lawn Yet

This is a 3-week session: Wednesdays at the ARC
February 6th, 13th & 20th, 6:30-9 p.m.

Questions or to Register: 874-7616
or Email mona.menezes@GoColumbiaMo.com
Free & Open to the Public  Registration Required
Rate Your Yard

Scorecard

Show-Me Yard Scorecard
See how you measure up! Circle all the practices you have implemented in your yard, and add them up at the bottom of the page. Place a 37-cent stamp on the back of this card, and drop in the mail to receive a free SMYN rain gauge. Top scoring yards will receive a yard sign (starting Spring ’06).

<table>
<thead>
<tr>
<th>Practice</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Mow high—3 to 4 inches or highest setting</td>
<td>5’</td>
</tr>
<tr>
<td>Sharpen mower blade at least once per summer</td>
<td>2’</td>
</tr>
<tr>
<td>Never mow more than 1/3 of the height of your lawn</td>
<td>2’</td>
</tr>
<tr>
<td>“Don’t Bag It”—Leave clippings on lawn. Mow over leaves in the fall.</td>
<td>3’</td>
</tr>
<tr>
<td>Overseed bare spots in early spring or early fall</td>
<td>2’</td>
</tr>
<tr>
<td>Measure your yard (one adult pace = approximately 3 feet)</td>
<td>5’</td>
</tr>
<tr>
<td>Use organic herbicide/pre-emergent (such as corn gluten or 20% vinegar)</td>
<td>5’</td>
</tr>
<tr>
<td>Use a rain gauge to track rainfall and avoid unnecessary watering</td>
<td>1’</td>
</tr>
<tr>
<td>Install a rain barrel</td>
<td>5’</td>
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<tr>
<td>Install a rain garden</td>
<td>8’</td>
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<tr>
<td>Percent of yard in tree cover with no bare soil underneath (2” per 10% of yard, 10” max)</td>
<td>2’</td>
</tr>
<tr>
<td>Identify pests before taking action</td>
<td>3’</td>
</tr>
<tr>
<td>Reduce use of lawn chemicals by changing cultural practices, and apply according to directions</td>
<td>5’</td>
</tr>
<tr>
<td>Have a soil test done. Apply nutrients per recommendations.</td>
<td>8’</td>
</tr>
<tr>
<td>Check streets &amp; sidewalks after applying lawn products; sweep excess into lawn, not the street</td>
<td>3’</td>
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<tr>
<td>Properly dispose of old lawn care products at household hazardous waste collection site</td>
<td>4’</td>
</tr>
<tr>
<td>Clean up pet waste on lawns</td>
<td>2’</td>
</tr>
<tr>
<td>Compost or mulch yard waste, grass clippings and/or leaf litter at home</td>
<td>3’</td>
</tr>
<tr>
<td>Include native plants (1” per 10% of yard, rounding up)</td>
<td>1’</td>
</tr>
<tr>
<td>Mulch circles beneath trees and around beds</td>
<td>3’</td>
</tr>
<tr>
<td>Replace synthetic landscape fabric with natural fiber such as newspaper</td>
<td>2’</td>
</tr>
<tr>
<td>Required: Attend a Show-Me Yards workshop OR go to</td>
<td>6’</td>
</tr>
<tr>
<td><a href="http://www.clemson.edu/cry/nine.html">www.clemson.edu/cry/nine.html</a> for online tutorial.</td>
<td></td>
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</tbody>
</table>

Total
Yard of Merit

Healthy Show-Me Yards & Neighborhoods
... for healthy streams!

See how your yard scores for the environment at www.helpthehinkson.org or call 882-9909 ext 3257
Use of Yard Signs

- To date the 319 project has put out signs in 43 yards
- Each for two weeks
RAIN GARDENS

1. Roger Bannerman, 614 Piper Drive, Madison

Established in 1999, this 180-square-foot garden traps over 8,000 gallons of water each year due to its high infiltration rate and careful design. Roger offers a couple of tips in sizing your garden: make it 20-30 percent of the roof area, or if you have sandy soils, drop to 10 or 15 percent of the roof area. Roger did the planting, but recommends a professional designer for plant selection and placement.

2. Edgewood College, 1000 Edgewood College Dr., Madison

Edgewood’s rain gardens capture large volumes of runoff, largely from campus parking lots. Students involved with Edgewood College’s Wingra Watershed Project and community members associated with Friends of Lake Wingra helped plan and plant these gardens in 2000 and 2001. Much of the soil is compacted clay covered with construction fill from previous building projects. Even in these poor soils, the plants are growing well and capturing much of the sediment and runoff from rain events.

3. Willy Street Co-op, 1221 Williamson Street, Madison

There are two rain gardens at the Co-op, both created last year. The project served as an educational opportunity and involved the public in incorporating the rain gardens into the landscape design. The parking lot rain garden is about 530 square feet and is at the low point of the lot. The rooftop garden, about 500 square feet, is integrated into the Jenifer Street landscaping. Native Landscapes by Applied Ecological Services designed and installed these rain gardens and recommend using natives not only for their good looks but for ease of maintenance as well.

4. Ken and Lynn Schreibman, 4206 Redtail Pass, Middleton

Excavated in autumn 2001 and planted in spring 2002, this 200-square-foot garden is located near the back patio along the property line. Native Landscapes by Applied Ecological Services (AES) integrated the rain garden into the landscape where it fit best, even though there were heavy soils that would probably retain water. To accommodate the heavy soils, they chose plants that would thrive in a water garden and that were best suited to that part of the yard. AES recommends planting on 1-foot centers for a fuller look in a shorter time frame.
May 19, 2007  Green Lawns/Blue Waters: A Show-Me Yards Field Day 10:00 – 2:00 p.m.  Experts On-Site

See Map on Back

A Wet Rain Garden
302 Edgewood Avenue (Home of David Webber)

This rain garden is designed to retain some water during the year and will detain, cleanse, and slowly release stormwater runoff. Some native plants that can be used in rain gardens are Copper Iris, Blue Flag Iris, Spikerushes, Aquilegia, Swamp Milkweed, Rose Mallow, Blue Lobelia, and Cardinal Flower.

B Organic Lawn/Dry Rain Garden And Native Plants
408 South Garth Avenue (Home of Jeff Zimmerschied)

This lawn has been maintained organically for more than a decade. Its lush, vigorous grass is the result of using proper mowing and cultural practices (see SMYLN brochure), soil testing, and the use of natural products like corn gluten, microbe, cedar oil, minerals, and garlic spray. The "dry rain garden" in the back yard is designed to minimize and filter stormwater runoff from two roofs. The flower beds & rain garden are filled with native plant species that thrive in Missouri soils and climate conditions without requiring additional chemical inputs.

C Stephens Lake Park Rain Garden
(West Edge of Park, Next To Parking Lot Off Old Highway 63)

This "wet" rain garden was designed by the city Parks & Recreation Department to capture stormwater runoff from the adjacent parking lot. Typically, vehicular pollutants washed off the lot from the "first flush" enter nearby streams. The leaves, roots & stems of the selected aquatic plants can absorb, store, or breakdown potential pollutants like heavy metals, nutrients, oils, and greases. The bald cypress trees planted around the basin can use up to 1000 gallons of water each day.

D Dry Rain Garden
612 Laurel Drive (Home of the Zwonitzers)

There are two kinds of rain gardens - wet & dry. The water stored in a dry rain garden is absorbed into the soil within 24 hours. With either type, when you make a garden a "rain garden" you will improve water quality while creating a beautiful area that will attract birds and butterflies.

E Organic Lawn & Garden
Shelter Gardens 1817 W. Broadway
(Tours by Jeff Zimmerschied & Master Gardeners)

Shelter Gardens began using organic methods and practices in the fall of 2004. This process started with a number of soil tests of the lawn and flower beds. By improving the soil with soil amendments, organic fertilizers and foliar spraying, the plants are healthier, better able to tolerate stresses, have more blooms and the roses are ever more fragrant. During the tour you will probably see a lot of earthworm castings. Earthworms are a sign you are heading in the right direction with your soil management.

F Rain Barrel & ShowMe Yard
1201 Sunset Lane (Home of Trevor Harris)

Collecting rainwater in a rain barrel is an ancient practice that still proves to be very practical. Observe how a rain barrel can collect and store rainwater from a rooftop to use later for lawn and garden watering. These inexpensive and easy to build storage barrels provide water that would otherwise flow through your downspout, onto a paved surface, and eventually into a storm drain. Information on how to make and install your own rain barrel.

G Native Plant Makeover by Grow Native!
1515 Windsor Street (Corner of Windsor & Williams) (Backyard of Jim Ronald and Irene Unger)

Three beds of native shrubs and small trees provide a screen effect from adjoining homes plus a parking lot to create a great habitat for a variety of birds and animals. Shrubs provide early spring blossoms and brilliant fall foliage, among them are Ninebark, American Beautyberry, Serviceberry, and Redbud. A curved bed near a public sidewalk is filled with native plants that attract butterflies, provides summer-long color and forms healthy urban habitat. Among the plants are Purple Coneflower, Purple Poppy Mallow, Royal Catchfly, and Eastern Blazing Star.

H Native Plant Makeover & Rain Garden
3016 Meghann Drive – south of Hy Vee (Home of Scott and Jenny Hanson)

Butterfly Weed serves as a host plant and attracts monarch butterflies to this rain garden. Others plants such as the Stiff-Leaved Asters, provide nectar for the Monarch’s fall migration. Hummingbirds are drawn to the garden’s many nectar-producing plants such as Columbine and Wild Sweet William. As a result of using these wildlife-friendly plants, there are plenty of birds, butterflies and other critters in the Hanson’s yard serving as tools to teach their daughter about wildlife habitats. Once established, the Hansons don’t have to worry about watering them either, because native plants are adapted to Missouri’s weather conditions.

For more information: Contact Mons Menezes, Columbia Public Works 817-8447
SHOW ME YARDS DEMONSTRATION AREA AT ROCK BRIDGE STATE PARK
From Lawn To Stream

We all live in a watershed where water flow connects the actions of those who live in the watershed to the health of streams. Rainwater washes fertilizers and pesticides from lawns downhill into small streams that feed into a larger river. Land in this vicinity drains into Little Bonne Femme Creek and the Missouri River. Watershed-friendly lawn care practices can give home owners beautiful lawns while also protecting water quality for our own health and that of animals that live in and around streams.

A HISTORICAL PERSPECTIVE

Lawn care was not a high priority during the early days when people lived in Hickory Cabin. Typically, lawns were “maintained” by grazing cows and sheep, scratching chickens and someone swinging a scythe two or three times a year near the houses. Today, Missourians invest large amounts of time and over a billion dollars yearly in lawn care practices that may be ineffective and harmful to our environment.

HEALTHY SOIL FOR A HEALTHY LAWN

Test your soil to find out how much fertilizer and other nutrients are needed. Use naturally based fertilizers that contain organic matter to promote disease-fighting microbes, reducing the need for pesticides. Aerate your lawn to loosen soil. This helps roots grow and allows water to penetrate. Avoid “weed and feed” products. They contain pesticides and herbicides that can actually reduce the health of your soil.

MOW HIGH WITH A SHARP BLADE

Mow your lawn at 3 inches or higher. Once a week is adequate. Taller grass conserves moisture and mowing often prevents weeds from producing seed heads. Leave clippings on the lawn as much that conserves moisture and adds nutrients to the soil.

WATER DEEPLY BUT NOT TOO OFTEN

Your lawn does not need to be watered every day. Even in the hottest summer, lawns need no more than 1 1/2 inches a week. The best time to water is early in the morning to reduce evaporation. Water longer at a lower setting, so water infiltrates deep into the soil, promoting deep root growth.

INVITE THE NATIVE AND WILD TO HELP

Landscape with native trees, shrubs and wildflowers to attract birds and butterflies into your yard. Birds eat pesky insects and, like butterflies, are delightful to watch. Going “chemical free” may mean a few extra weeds, but it will also mean the lawn is a healthy place for you and the critters who share your watershed.
Green Lawns/Blue Waters
Lawn Care Professionals Workshop

- March 4 2008 8a.m. to 3 p.m.
- University of Missouri Extension
Going Statewide:

- University of Missouri Extension
- Plant Sciences Division
- Pilot starting May 08
- **Title:** “Healthy Yards for Clear Streams”
- *December 08: Web site construction*
- Final report: March 2010
Lessons Learned:

#1. Do Not Demonize Professional Lawn Care Companies or Chemical Providers.

- They are professionals because they have years of experience.
- They are a part of the local business community.
- They are a legitimate business.
- Improvements and research in the chemical industry provide better products than in the past.
- Business professionals make better allies than enemies.
Lessons Learned:

#2 The more partners, the better.

1. Funding partners
2. Technical assistance partners
3. Supporting partners
4. Municipal and Governmental entities
5. Private industry partners

   1. A critical component of launching the professional lawn care workshops
Lessons Learned:

#3. One person has to assume the “heavy lifting.”

- About 25% of my time was spent building this program in the first year.
- About 15% in the second year.
- Less than 10% in the third year.
- Delegated to co-worker after that.
- One grant supported partner has completed his grant cycle and is no longer participating.
Links & Resources

- Florida Yards & Neighborhoods
  - [http://fyn.ifas.ufl.edu/](http://fyn.ifas.ufl.edu/)

- Show Me Yards
  - [http://www.gocolumbiamo.com/PublicWorks/StormWater/show_me_yards.php](http://www.gocolumbiamo.com/PublicWorks/StormWater/show_me_yards.php) (Also links to Springfield Missouri’s SMYN)

- Northwest Natural Yard Care Days

- Carolina Yards and Neighborhoods
  - [http://www.clemson.edu/cyn/](http://www.clemson.edu/cyn/)

- Kentucky Pride
  - [http://www.kentuckypride.com/campaigns/lawn_care/tips.htm](http://www.kentuckypride.com/campaigns/lawn_care/tips.htm)

- EPA  **March 19, 2008 Webcast Seminar on:**
  - "Managing Nutrients in Your Backyard and Your Community"
  - Coming soon to EPA webcast archives
Sport Fish in urban streams are stressed. Populations have higher incidence of poor health, and indicators of disease such as fin erosion, fungus, infections, etc.

- Pale gills in Bass
- Bruise on Trout
- Lesion on Bullhead

Photos taken as part of USGS-BEST program
Healthy v
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