IISG FOCUS: GREEN INFRASTRUCTURE

Sea Grant
ILLINOIS-INDIANA
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In many communities, increasing urbanization and larger storms have led to more flooding. Rainwater that hits pavement and eventually flows into nearby water bodies also picks up pollutants along the way. One approach to address these concerns is installing green infrastructure, which includes rain gardens, rain barrels, permeable pavement, and more. Water is captured or slowly soaks into the ground where pollutants are filtered by soil and plants. Illinois-Indiana Sea Grant (IISG) is providing the latest research and creating resources to help communities and residents use green infrastructure efficiently and effectively.

GROWING RAIN GARDENS

IISG collaborates with Purdue Extension to train master gardeners and other community members about rainscaping techniques. In addition to creating a demonstration rain garden, participants are encouraged to bring rainscaping to their community through public education and technical assistance. The rain gardens installed as a part of training workshops can reduce runoff each year by nearly 410,000 gallons. Rain gardens that have been designed, facilitated, or installed by participants, or their partners, will reduce runoff even more.

CHECK OUT SOILS FIRST

Where you put green infrastructure can be key to how well it works and soil type is part of that equation. IISG and University of Illinois researchers have developed a soils database of the Calumet region that can be used to assess a site's effectiveness for green infrastructure. They have created optimized community-scale designs for two pilot municipalities—Calumet City and Midlothian—and will develop a toolkit that can be used throughout this region south of Chicago.

STEER CLEAR OF TIPPING POINTS

For local planners, balancing community growth and environmental health can be a challenge. Communities armed with science-based environmental limits, or tipping-points, can identify areas to protect or restore, improving watershed ecosystem health. Tipping Point Planner (TPP) is a decision support tool that can help communities optimize green infrastructure placement and learn the benefits of different practices. Through modeling and paint tools, TPP allows users to draw new land cover types, and calculate how landscape changes could impact water quality.

TRAINING A READY WORKFORCE

Rain gardens or other types of green infrastructure need ongoing maintenance or this landscaping can fall into disrepair over time. IISG, as part of the Calumet Stormwater Collaborative, worked with local partners to get a better understanding of green infrastructure maintenance and training needs and available resources. The group also developed a green infrastructure workforce curriculum, which has been used by several Chicago environmental training and hiring programs.

SOCIAL NORMS INSPIRE ACTION

What are effective ways to encourage residents to plant a rain garden or other conservation practices? Purdue University scientists found that social norms are an important component in people's decision making. If we realize neighbors, friends and trusted peers are taking action, this makes us more likely to do something, too. Social norms can be a much bigger motivator to adopt conservation practices than information alone, and sometimes work better than other types of incentives.

RENOVATING A CAMPUS RAINGARDEN

In 2006, the first rain garden on the University of Illinois campus was established, and in 2019 it got a much needed renovation to improve the garden's aesthetics and functionality. The Red Oak Rain Garden has been modernized—its stormwater infrastructure is now a model for campus landscapes. The garden will provide a venue for outreach and education to campus and the community and it is being re-imagined as an example of a living, learning laboratory enhancing the student experience.
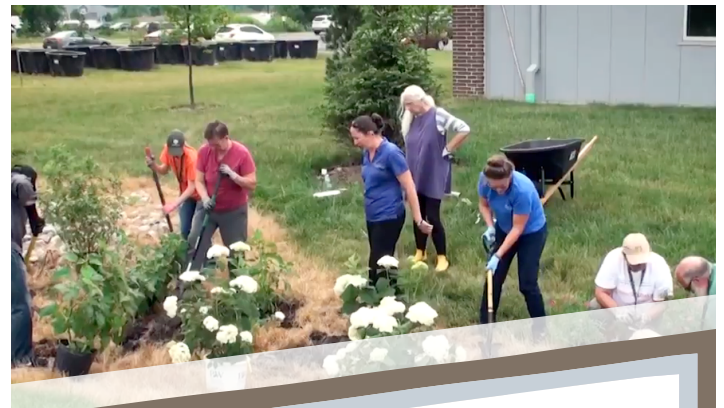
GREEN INFRASTRUCTURE RESOURCES

Whether you are a homeowner, master gardener, or a city planner, these tools can help you to use green infrastructure to manage stormwater and protect water quality.

Stormwater@Home
  A video series of simple steps to manage stormwater
The Southern Lake Michigan Rain Garden Manual
  An A to Z guide for building rain gardens
Rain Garden — A Native Planting Guide for Rain Garden Beds
  Rain garden designs and plant species you can use
Sustainable Lawn & Landscape Practices for Communities
  Reduce water and chemical use with natural lawn care

See more at iiseagrant.org/work/stormwater-green-infrastructure