



## Virginia Master Naturalist Program Basic Training: Urban and Developed Systems Ecology Management Lesson Plan 1

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### Developed Systems Scenarios

#### Overview

This lesson plan is intended to serve as an interactive activity to accompany a presentation on urban and developed systems during the Virginia Master Naturalist basic training course for volunteers.

#### Objectives

- Identify specific ways that land use changes associated with increases in the built environment typically affect natural resources.
- Identify specific practices that can mitigate the effects of these land use changes to improve ecosystem function in developed areas.

#### Materials

Handout #1 – Scenarios, distributed as one scenario with accompanying color photographs per small group

#### Other Resources

- Urban and Developed Systems Ecology and Management multimedia presentation, handout, and background readings, all available at <https://www.virginiamasternaturalist.org/training/basic-training/urban-and-developed-systems/>

#### Time

Allow 15-20 minutes.

#### Leader Instructions

1. Before the activity, participants should view the Virginia Master Naturalist Urban and Developed Systems Ecology and Management presentation or a similar presentation that discusses the impacts of urbanization on natural resources and strategies for mitigating those impacts.
2. Introduce the activity. Explain that this interactive small-group activity is intended to give participants practice in evaluating natural resources at developed sites and identifying ways property owners can enhance ecological functions at the site while also achieving their own goals for the property. As Virginia Master Naturalist volunteers, they may have opportunities to discuss these concepts with landowners or to assist state agency personnel with education and stewardship in developed areas. Divide the class into 4 to 6 groups. Groups of 3 to 5 people are ideal. Provide each group with one of the scenario photos and descriptions and

have them answer the questions included in the descriptions. There are just four different scenarios, so if there are more than four groups, it is fine for some groups to have the same scenarios.

3. Visit with each group to ensure that they are thinking of all the ways natural resources are likely impacted at the site and how ecosystem function can be improved within the constraints of the landowners' goals and the sites' parameters.
4. If time allows, have each group share their findings with the larger group, but this step is not a necessary part of the activity.
5. Wrap-up the activity by pointing out that Virginia Master Naturalists frequently do projects to improve developed sites, including providing advice to homeowners, installing wildlife habitats in public spaces, and conducting tree planting projects. In all cases, the volunteers should consider how the project could be used to actually improve ecosystem functioning and mitigate the impacts of development.
6. Alternative approach: If you do not have access to a color printer or if you prefer to do this activity as a large group, you may instead project the images and scenario questions on a screen.

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## **Urban and Developed Systems Ecology and Management Scenario #1**

You have the opportunity to provide advice to a local homeowner with lakefront property. He is interested in taking action to mitigate some of the impacts that the development of his property has had on natural resources. He would like to preserve his lake views and see more birds from his back deck.

What potential natural resource issues do you see at this site, based on the photo?

What kinds of improvements could the homeowner make to the site to help mitigate these issues and meet his own goals?



Scenario 1 image. Photo by Carol Heiser, Virginia Department of Wildlife Resources. Used with permission.

## **Urban and Developed Systems Ecology and Management Scenario #2**

You have the opportunity to provide advice to a homeowner's association in a subdivision. They have a patch of wooded common area in the middle of a loop road through the neighborhood. They would like it to be a place with "more nature" and perhaps a small walking trail. They also want to make sure that visibility along the roadway is maintained.

What potential natural resource issues do you see at this site, based on the photo?

What kinds of improvements could the HOA make to the site to help mitigate these issues and meet their goals?



Scenario 2 image. Photo by Carol Heiser, Virginia Department of Wildlife Resources. Used with permission.

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## **Scenario #3**

You have the opportunity to work with a non-profit community center to plan a demonstration landscaping project on their property. It will be used for education with youth programs they organize and visible to the many members of the public who come to the center. They would like attract wildlife and reduce the impacts that the development of their site has had on natural resources.

What potential natural resource issues do you see at this site, based on the photos?

What kinds of improvements could the organization make to the site to help mitigate these issues and meet their goals?

What might you want to include in your demonstration landscape?



Scenario 3 image - a. Photo by Carol Heiser, Virginia Department of Wildlife Resources. Used with permission.



Scenario 3 image - b. Photo by Carol Heiser, Virginia Department of Wildlife Resources. Used with permission.

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## **Scenario #4**

You have the opportunity to help suggest some landscape changes at Founders Park. The city wants to maintain this park for recreation, keeping the volleyball court, walking path, and at least some open grassy place for playing games. Other types of recreation, such as bird watching, would be acceptable as well. The park runs along the Potomac River.

What potential natural resource issues do you see at this site, based on the photo?

What kinds of improvements could be made to the site to help mitigate these issues and allow for the desired recreation?



Scenario 4 image. Photo by Dewita Soeharjono. Creative Commons license CC-BY 2.0. <https://www.flickr.com/photos/dewita-soeharjono/4638794651/>