



HOW DO INVASIVE EXOTIC PLANTS AFFECT NATIVE PLANTS, BIRDS AND MAMMALS IN GREENWAYS?

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What are exotic plant species?

Perhaps you have noticed huge thickets of kudzu vine along the highways of North Carolina. This aggressive vine can completely cover a tree within days – in some places, it grows inch per hour! Kudzu is one example of an exotic plant species.

In North Carolina, exotics usually come from Asia or Western Europe, regions that have similar climate and environmental conditions to this area. Some of these exotics are planted intentionally in gardens or for wildlife food or habitat. Others accidentally get introduced. The beautiful exotic princess tree was accidentally introduced when its seed pods were used as packing material.

Exotic species often escape their natural enemies or predators, which can make them better able to grow and reproduce than local native species. For example, autumn olive, an exotic shrub once planted as food for wildlife, can outcompete native shrubs such as spicebush and holly by growing faster and withstanding harsher conditions than the natives.

It is important to recognize that only a small percentage of exotic species are invasive. Many exotic plants that are featured in gardens, such as roses and pansies, are not a real problem. Those species that are able to establish and reproduce in natural areas, and outcompete native species are invasive.

Why do we care about exotics?

Exotic species can replace native species, in some cases causing local extinction of natives. They can also change the structure of the forest, as kudzu does when it covers every surface. Exotics may also not provide the same food or habitat for birds and mammals, leading to changes throughout the ecosystem.

How is this study addressing exotics?

Greenways may be particularly susceptible to invasion by exotic species. First of all, they are located primarily in urban areas, where many gardens include some of the most invasive species. These gardens provide seeds of exotics that can enter the greenway by being blown in by wind, carried in by water, or dropped in by birds. Greenways provide plenty of high light environments, especially along the edges, streams, and trails. Because most exotics grow best in sunny areas, they often do well in greenways.

We are doing a survey of all greenways to determine the extent of exotic species invasion. We believe that narrower greenways in densely developed areas will be the most invaded because they provide plenty of high light environments and often are located close to exotic seed sources in gardens. We are also looking at the effects of exotic species on the native species to see if the exotics are changing the structure and diversity of greenway forests. Finally, we are measuring soil nutrients, available light, and other environmental conditions to see if there are other factors

that promote invasion in greenways. The results of this study will be used to predict where exotic species invasion will be a problem in the future and to suggest some measures that could be taken to prevent this invasion.

What should we look for today?

The attached brochure illustrates some of the most invasive exotic species in our area. Keep an eye out for autumn olive, Chinese privet, and Japanese bamboo grass since they are common exotic species along greenways. Do you notice that the exotics are distributed in any particular area of the greenway?



Autumn Olive

Also, note the proximity of homes to the greenway. Are there any noticeable exotics in the yards of these homes? As you learn more about the bird and mammal studies, think about how exotic plants may affect these animals along the greenways.

For more information on exotic plants, visit <http://www.se-eppc.org> where you can see photos of many exotics and learn about efforts to control invasives in the Southeast.

Please feel free to contact me (rlvidra@unity.ncsu.edu) for more information about this project!