

Use Native Plants to Improve Our Water Resources

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This article is the first in a two-part series that will discuss something that each of us can do to improve the quantity and quality of our water resources: Use native plants. This article will discuss the negative impact that exotic plants have on our water resources. A subsequent article will provide input on native plants from Sanibel's Vegetation Committee, and it will describe how the Sanibel-Captiva Conservation Foundation (SCCF) makes it easy to design and install a native plant garden.

Background

In [each of our last two articles](#), we presented a SWOT (strengths, weaknesses, opportunities, and threats) analysis of several efforts that are intended to improve the quality and quantity of our water resources. As those articles pointed out, many of the most important water-related projects take several years to complete. In addition, most of the people who make the key decisions about our water resources reside in Washington, D.C., or in Tallahassee, Florida. In part, because they are located so far away, these decision-makers often feel inaccessible. Because of factors like these, it can sometimes feel as if there is little that each of us can do to improve our water resources. The reality is that there are many things we can do, one of which is using native plants.

The Impact of Exotic Plants

To understand the benefit of using native plants, it helps to understand the negative impact that exotic plants have on our water resources. To illustrate that impact, this article will discuss sod. However, the fundamental points raised in this article apply to all exotic plants.

To be fair, sod does provide benefits. According to [the University of Florida](#), a healthy lawn is an asset to the urban environment because it cools and cleans the air, reduces glare and noise, and filters pollutants out of ground water. However, as discussed in the subsequent article, these benefits can also be achieved with a native ground cover such as Mimosa (*Mimosa strigillosa*), which also has other benefits, including attracting butterflies.

Unfortunately, the widespread use of exotics, such as sod, reduces both the quantity and the quality of our water supply. While that is true on both Sanibel and Captiva, for simplicity, this article will focus just on Sanibel.

A [rule of thumb](#) is that ensuring good looking sod requires one inch of water per week during dry conditions. Assume that a fairly typical Sanibel yard is 100 feet wide and that the first 20 feet of the yard has sod. That results in 2,000 square feet of sod. Also assume that the rest of the yard has another 2,000 square feet of sod, for a total of 4,000 square feet of sod. Based on the rule of thumb, that yard requires roughly 2,500 gallons of water a week. If the yard is watered half of the year, that one yard consumes roughly 65,000 gallons of water annually.

Sanibel has many types of housing, including single and multi-family homes and condo buildings. As [of the last census in 2010](#), there were 7,821 housing units on Sanibel. Housing units, however, are not the only places where sod is found. It is also found at hotels, shopping plazas, restaurants, and golf courses.

To get a sense of how much water is being used just on sod, assume that there are 4,000 homes on Sanibel of the size and type described above and ignore the sod that gets watered other places on Sanibel. Those 4,000 homes take 260 million gallons of water a year out of our water supply. Since the typical swimming pool [contains 20,000 gallons of water](#), the water used to maintain sod on Sanibel is enough to fill 13,000 swimming pools.

As noted, in addition to reducing our water supply, the use of sod also reduces the quality of our water. To illustrate how that happens, consider the common practice of using fertilizer that contains nitrogen to make sod look greener and healthier. Nitrogen runoff into our water bodies is a contributor to many of our environmental issues, [including red tide](#).

The [University of Maryland](#) has established guidelines for applying nitrogen to sod: Each application of fertilizer should use 0.9 pounds of nitrogen per 1,000 square feet of sod. Following these guidelines three times a year would result in 10.8 pounds of nitrogen being deposited onto the typical yard. Assuming 4,000 households, and nobody else on Sanibel apply nitrogen, that means that 43,200 pounds of nitrogen are applied annually just to the sod on Sanibel. It is difficult to estimate how much of that nitrogen is washed into our water bodies. However, if even a small percentage of 43,200 pounds of nitrogen makes its way into our water bodies, it significantly degrades our water quality.

Conclusions

It is easy to feel so overwhelmed by the challenges associated with improving our water resources that you feel helpless. The reality is that there are many things that each of us can do to actively participate in the fight to improve our water resources. One key action is to replace exotic plants with native plants.

The analysis contained in this article uses a conservative approach to provide insight into the negative impact that exotic plants have on our water resources. The approach is conservative because it includes just single-family homes on Sanibel and it only focuses on one exotic plant – sod. As the analysis highlights, taking steps to eliminate, or significantly reduce, the amount of water and fertilizer that gets used on exotic plants has a dramatic impact on our water resources. You can take those steps whether you are a homeowner, a condo owner or a business owner. The subsequent article in this series will provide information to make it easy to take those steps.

In Case You Missed It: Watch a great visual presentation of how fertilizer accelerates the growth of algae [here](#).