

## Invasive Plant Species on Seabrook Island

by  
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Invasive plant species are defined as plants that are non-native and harmful to an established ecosystem. The introduction of non-native plants into a new environment can result in significant ecological, economic, and/or human health issues. While the spread of invasive plant species can occur naturally (mediated by wind, water or wildlife), their spread is primarily attributable to human-related activity. For millennia, humans have introduced non-native plants into new geographic areas. Although most human-facilitated plant invasions are unintentional, there are instances when the introduction of non-native plants was intentional. English ivy (*Hedera helix*) and kudzu (*Pueraria montana*) are two well-known examples. The introduction of these non-native plant species has proven to be disastrous for the natural environment. Both English ivy and kudzu grow and spread rapidly, their runners climb over and smother anything in their path, including trees, shrubs and buildings. Kudzu has earned the moniker “the vine that ate the South”. Wherever these plants have become established, native vegetation has been crowded out and wildlife habitat degraded. Over the years, significant resources have been expended to control or eradicate these two invasive plant species.



Kudzu: The Vine That Ate the South

Impacts of invasive plant species on established, healthy ecosystems include diminishment of plant and animal species diversity; degradation of wildlife habitat; increased soil erosion; degraded water quality; and decreased recreational opportunities.

Invasive plants possess attributes that allow them to outcompete native plant species in an established ecosystem. These characteristics include rapid growth and reproduction, high

dispersal ability, and tolerance to a wide range of environmental conditions. A non-native plant can become invasive if it outcompetes native plant species for critical resources such as nutrients, light, physical space, and/or water. For example, non-native plants may be able to utilize natural resources that are not available to native plants (e.g., previously uninhabited soil types or a deep water source). Some invasive plant species can also alter their environment in ways that inhibit native plants (e.g., releasing toxic chemicals, shading out other plants, affecting the behaviour of herbivores). The invaded ecosystem may have few or no natural competitors to the non-native plant, thus allowing the invader to spread and reproduce rapidly. Alternatively, there are scenarios where an invasive plant species may co-exist with native plant species for an extended period of time as it adapts to its new environment. Only gradually does its competitive edge become apparent as its population grows larger and denser.

Changes in landscape can also present an opportunity for the establishment of an invasive plant species. For example, when a cleared lot is adjacent to an undisturbed forested area, an 'edge habitat' is formed where the two distinct ecosystems share a common boundary. The creation of edge habitat is common on Seabrook Island due to the frequent clearing of undisturbed landscape to accommodate residential development. Light, moisture and other environmental conditions within an edge habitat are unique and can present an opportunity for the establishment of non-native plant species that would otherwise not thrive in either a forested area or a residential lot.

Invasive plant species are successful because they

- Outcompete native plant species for moisture, sunlight, nutrients, and space
- Produce large quantities of seed
- Thrive on disturbed soil or previously uninhabited soil types
- Disperse their seed over great distances via wildlife, wind, and/or humans
- Possess aggressive root systems that spread long distances from a single plant and often grow so dense that they smother the root systems of native vegetation
- Produce chemicals in their leaves or root systems that can inhibit the growth of other vegetation.

There are two methods of controlling invasive plants: mechanical and chemical. Mechanical control methods include pulling out or digging up the plants; suffocating the plants with plastic sheeting; and frequent cutting or mowing of the plants. Chemical control of invasive plants involves the use of herbicides. The two most commonly used herbicides are glyphosate (Roundup™) or triclopyr (Brush-B-Gone™ and Garlon™). These herbicides are applied by either spraying on the plant's leaves ('foliar' method) or pouring directly into a stem cut ('cut stem' method). The preferred disposal method for invasive plant material is by burning. Any residual plant material left onsite could result in the area being reinfested.

Invasive plant species are a problem throughout the United States, and Seabrook Island is no exception. Non-native plant species can be found on SIPOA's green space properties as well as on residential properties. Invasive plants were introduced to the island primarily by human-

related activities (horticulture, tourism, construction) and, to a lesser extent, wildlife. The invasive plant species of greatest concern on Seabrook Island are the following:

- Oleaster (*Elaeagnus sp.*, native to Japan, Korea and China)
- Chinese tallow (*Triadica sebifera*, native to eastern China and Taiwan)
- Pampas grass (*Cortaderia selloana*, native to southern South America)
- Privet (*Ligustrum sp.*, native to Europe, north Africa and Asia)
- Beach vitex (*Vitex rotundifolia*, native to China, Japan and Oceania)

A comprehensive survey of invasive plant species on Seabrook Island has never been conducted. However, a listing of invasive plant species on Kiawah Island has been published and it is reasonable to assume that this information is representative of Seabrook Island. This publication can be viewed online at [https://s3-us-west-2.amazonaws.com/kiawah-island/wp-content/uploads/2016/11/28184857/Vegetation Survey of Kiawah Island.pdf](https://s3-us-west-2.amazonaws.com/kiawah-island/wp-content/uploads/2016/11/28184857/Vegetation_Survey_of_Kiawah_Island.pdf).

SIPOA's Environmental Committee is working jointly with the Seabrook Island Green Space Conservancy to implement an environmental monitoring program to locate and eradicate invasive plant species within SIPOA's green space conservation properties. The objective of this monitoring program is to improve wildlife habitat by removing non-native plants. The Seabrook Island Green Space Conservancy is also working to develop a community outreach program to educate residents regarding invasive plants and the importance of not using them for ornamental or landscaping purposes. If you have questions regarding either of these planning efforts, contact Barry Shedrow ([barry@shedrow.com](mailto:barry@shedrow.com)).

#### Selected Resources

1. Adrea Hughes, SIPOA staff arborist ([ahughes@sipoa.org](mailto:ahughes@sipoa.org))
2. Clemson University Regulatory Services (<https://www.clemson.edu/public/regulatory/plant-industry/invasive/index.html>)
3. US Department of Agriculture Animal and Plant Health Inspection Service ([https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/operational-activities/sa\\_invasive/ct\\_invasive\\_species1](https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage/operational-activities/sa_invasive/ct_invasive_species1))
4. Gramling, J.M., 2012. "A Vegetation Survey of Kiawah Island, Appendix III".