

HOW YOU CAN HELP

Currently, an effort is being made by Mississippi State University, in cooperation with the South Carolina/North Carolina Beach Task Force, to determine the distribution of beach vitex in the Southeast and Mid-South. This information which is being maintained in online databases by Mississippi State University (www.gri.msstate.edu) and the South Carolina Beach Vitex Task Force (<http://www.beachvitex.org>), is very important in developing appropriate strategies for addressing the plant. Please send reports of suspected beach vitex populations, including GPS coordinates, site description / ownership, and photo images to: **Victor Maddox**, GeoResources Institute, Box 9555, Mississippi State, MS 39762-9652, Ph. 662-325-2123, E-mail: vmaddox@gri.msstate.edu; or to **Betsy Brabson**, South Carolina Beach Vitex Task Force, Georgetown, SC, Ph. 843-546-9531; E-mail: wbrabson@scccoast.net.

There are other ways to help with this effort, as well:

- Do not plant beach vitex. Use native species such as sea oats.
- Remove beach vitex seedlings from public beach areas.
- Contact the GeoResources Institute for advice on removal of mature beach vitex colonies, and replacement with native plant species.

If removal of beach vitex is not a short term option, consider the following:

- Remove ripe fruits before dispersal by water, trim back branches that may break off and float away, and put all beach vitex clippings in a plastic trash bags to prevent dispersing plants.

Table 1. Suggested Control Methods for Woody Vines such as Beach Vitex (*Vitex rotundifolia* L.f.).

Herbicide*	Method	Rate	Method	Rate
2,4-D+2,4- DP	High volume	1 to 1.5%	Frill, basal, cut stump	3 to 4% in oil
Escort	Low volume	1 to 3 oz	High volume	0.5 to 2 oz
Arsenal	Low volume or soil	2 to 6 pt/A		
Krenite	Low volume	1.5 to 6 gal/A		
Mechanical	Method			
Hand Removal			<ul style="list-style-type: none">• Remove seedlings to prevent reproduction.• Remove mature plants prior to fruit ripening to avoid seed dispersal. Because stems can propagate through fragmentation, be careful to remove all stems and root segments.• Destroy or properly dispose of stem and root fragments to prevent unintentional spread.	

*Herbicides listed in this table are labeled to control wild grape and have not been specifically tested for control of beach vitex.

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INVASIVE SPECIES FACT SHEET

Beach vitex (*Vitex Rotundifolia* L.f.)

Description, Distribution, and Management

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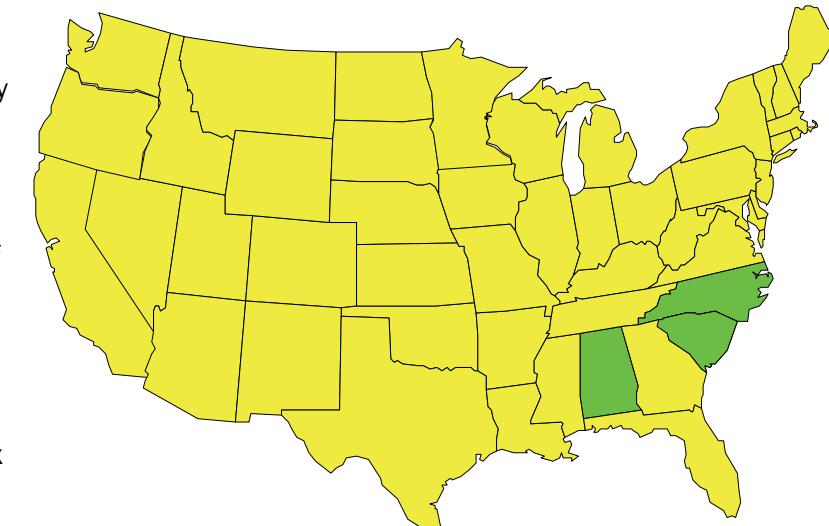


Fig. 1. Distribution of beach vitex (*Vitex rotundifolia* L.f.) in the southeastern United States. Map created by Randy Westbrooks, USGS.

INTRODUCTION

Beach vitex (*Vitex rotundifolia* L.f.) is a deciduous woody vine that was introduced to the Southeastern U.S. from Korea in the mid-1980s. Prior to its introduction to the South Atlantic coast of the U.S., beach vitex had no history of invasiveness. However, by the mid-1990's, dune restoration specialists with the U.S. Army Corps of Engineers, began to notice beach vitex spreading from original plantings on South Carolina beaches, crowding out native dune plants, and spreading by seeds and vegetative fragments.

Over the past two years, the South Carolina Beach Vitex Task Force has documented beach vitex at 115+ populations along the South Carolina coast. It also occurs along the North Carolina coast, and was recently observed on a beach in Alabama. Efforts are now underway to map and monitor its spread (Figure 1).

TAXONOMY, IDENTIFICATION AND BIOLOGY

There are approximately 250 species of *Vitex* L. ranging from temperate to tropical habitats. Once classified in the Verbenaceae Family (Verbenaceae J. St-Hil.), beach vitex more recently belongs to the Mint Family (Lamiaceae Martinov) under the subfamily Viticoideae. Many texts still group it within the Verbenaceae Family.

A few *Vitex* species are cultivated as woody ornamentals, or for beach stabilization. Those commonly cultivated include lilac chastetree (*Vitex agnus-castus* L.), negundo chastetree (*Vitex negundo* L.), beach vitex, and simpleleaf chastetree (*Vitex trifolia* L.). *Vitex agnus-castus* and *V. negundo* are grown as shrubs or small trees. Beach and simpleleaf vitex have been considered one variable species (*Vitex rotundifolia*). Simpleleaf vitex is more upright and shrubby, while beach vitex is a prostrate sprawling shrub.

Beach vitex can reach 1 to 2 foot high and typically 12 feet in diameter, but runners can grow to infinite lengths with reports of up to 60 feet long (Figure 2). Stems root along their length forming a mat on the sand. Leaf arrangement is opposite (Figure 3).

Leaves are simple, rounded, and gray-green in color with dense, grayish-white hairs on the lower surface. Leaves are 2" long by 1.5" wide. Flowers are blue-purple, fragrant, 1 inch across, and in short inflorescences out of the leaf axils (Figure 3). Fruit are round, 1/4 inch wide, and purplish-black when ripe.

Beach vitex is a prolific seed producer, but can also reproduce from stem (runner) fragments. Seeds float and can be carried in long shore currents and waves to other beaches. Brittle stems can break off during high tides, float away, root and colonize other

beaches. In 2004, free living plants of beach vitex were detected on North Island, a coastal barrier island near Georgetown, South Carolina, that is accessible only by boat. Seeds and cuttings that have been chipped up and spread as mulch have also started new populations where dispersed. Beach vitex is fast-growing, drought and salt tolerant.



Fig. 2. Beach vitex stoloniferous habit on a beach in Point Clear, AL. Photo by Victor Maddox.

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Fig. 3. Beach vitex on a beach in Point Clear, Alabama, showing leaves and flowers. Photo by Victor Maddox.

CONTROL AND REGULATION

Single plants or scattered populations of Beach Vitex plants should be manually removed from an infested site and properly disposed of to avoid unintentional spread of the plant. Digging or pulling plants manually can be used in areas where herbicide use is not desired. Plants should be removed prior to fruit ripening to avoid seed dispersal. Because stems can propagate through fragmentation, be careful to remove all stems and root fragments. Assessments are now being conducted to determine if the plant should be regulated by federal and/or state plant regulatory agencies.

A variety of chemical methods have been successfully employed to control woody plants such as beach vitex. The herbicides listed in Table 1 are labeled in Mississippi for control of wild grape (*Vitis* spp.) and other woody vines. These include low (less than 100 gallons per acre) and high volume (greater than 100 gallons per acre) foliar sprays, frill treatments (also known as hack and squirt), basal bark, and cut stump. Note that these treatments may also damage other broadleaf or grass plants, and should be applied carefully and selectively. With all foliar treatments, a nonionic surfactant should be added to the spray solution at $\frac{1}{4}$ to $\frac{1}{2}$ percent by volume. For frill, basal, or cut stump treatments, adding an oil penetrant per manufacturers recommendations, will improve control.

DISTRIBUTION AND ECOLOGY

The genus *Vitex* is not native to the lower 48 states, but widely planted. Beach vitex is reported to be native to Indo-Malaysia and Hawaii, but is found from China, Taiwan, and Japan south to Malaysia, India, Sri Lanka, Mauritius, Australia, Pacific Islands, and Hawaii. It has escaped from cultivation in the Southeastern U.S. with free living populations in Alabama, South Carolina, North Carolina, and Florida (suspected). Beach vitex blankets a number of ocean-front dunes in the Carolinas (Figure 4, 5). Because of its invasive nature, beach vitex crowds out native dune plants such as sea oats (*Uniola latifolia* L.), American beachgrass (*Ammophila breviligulata* Fern.) and seaside panicum (*Panicum hemitomon* Schult.). In addition to threatening natural sand dune plant communities, beach vitex degrades endangered loggerhead sea turtle (*Caretta caretta* L.) nesting habitat as well as habitat for the federally threatened plant, seabeach amaranth (*Amaranthus pumilus* Raf.).



Fig. 4. Beach vitex covering a secondary dune at the Seascape Condominiums on the Isle of Palms, near Charleston, South Carolina. Photo by Randy Westbrooks.



Figure 5. Beach vitex spreading from beach front properties on Pawleys Island, South Carolina. Photo by Randy Westbrooks.

ADDITIONAL READING

South Carolina Beach Vitex Task Force at:

<http://northinlet.sc.edu/resource/vitex.htm#Vitex%20Intro>

South Carolina Exotic Pest Plant Council at:

<http://www.se-eppc.org/states/southcarolina.cfm>