

Beach Vitex (*Vitex rotundifolia* L.f.)

Wildland

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Fig. 1. Beach vitex covers a secondary dune on the Isle of Palms near Charleston, SC.

Fig. 2. Beach vitex spreading from beach front properties on Pawleys Island, SC.

Fig. 3. Beach vitex in Point Clear, AL, showing its leaves and flowers.

Introduction

Problems Caused

Beach vitex (*Vitex rotundifolia* L.f.) is a deciduous woody vine that was introduced to the Southeastern U.S. from Korea in the mid-1980's. Prior to its introduction to the South Atlantic coast of the U.S., beach vitex had no history of invasiveness. However, by the mid-1990s, dune restoration specialists with the U.S. Army Corps of Engineers, began to notice beach vitex spreading from original plantings on South Carolina beaches (Figure 1), 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.

Regulations

Currently, beach vitex is not regulated in the Mid-South or the United States. Assessments are now being conducted to determine if the plant should be regulated by federal or state plant regulatory agencies.

Description

Vegetative Growth

Beach vitex can reach 1' to 2' high and typically 12' in diameter, but runners can grow to infinite lengths with reports of up to 60' 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.

Flowering

Flowers are blue-purple, fragrant, 1" across, and in short inflorescences out of the leaf axils (Figure 3). Fruit are round, ¼" wide, and purplish-black when ripe.

Dispersal

Beach vitex is a prolific seed producer, but can also reproduce from stem (runner) fragments (Figure 2). 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. Beach vitex is still utilized as an ornamental, another means of dispersal.

Spread By

Beach vitex is spread by water and human activity.

Habitat

Currently, beach vitex blankets a number of oceanfront dunes in the Carolinas (Figure 1, 2). 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.).

Distribution

US

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).

Mid-South

In the Mid-South, beach vitex has escaped in Alabama and mapping efforts are underway to determine if it exists in other Mid-South states.

Control Methods

Biological

Beach vitex and other species of *Vitex* are utilized as ornamentals and no biological control methods are in widespread use.

Chemical

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 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 non-ionic surfactant should be added to the spray solution at $\frac{1}{4}$ to $\frac{1}{2}$ % by volume. For frill, basal, or cut stump treatments, adding an oil penetrant per manufacturer's recommendations, will improve control.

Table 1. Suggested chemical control methods for woody vines such as beach vitex (*Vitex rotundifolia* L.f.). Herbicides listed in this table are labeled to control wild grape and have not been specifically tested for control of beach vitex.

Herbicide*	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/A
	High volume	0.5 to 2 oz/A
Arsenal	Low volume or soil	2 to 6 pt/A
Krenite	Low volume	1.5 to 6 gal/A

Mechanical

Single plants or scattered populations of Beach vitex plants should be mechanically 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.

Physical

No physical control methods are widely utilized in the United States.

References

Beach vitex: South Carolina's newest menace. 2007. South Carolina Beach Vitex Task Force. <http://northinlet.sc.edu/resource/vitex.htm#Vitex%20Intro>.

USDA, NRCS. 2007. The PLANTS Database (<http://plants.usda.gov>, 15 November 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

More Information

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 (Figure 2).

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