U.S. National Early Detection and Rapid Response System for Invasive Plants

EDRR Fact Sheet

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Common Name: Beach Vitex
Scientific Name: *Vitex rotundifolia* L. *f*
Family: Verbenaceae

Description: A deciduous woody vine that grows up to 12 or more feet in diameter, and can produce rooting runners up to 60 feet long. **Leaves** round, silvery gray-green, 1-2 in. long, with a spicy fragrance. **Flowers** purplish-blue, 1 in. in width, produced in small clusters at the ends of branches. **Fruits** round, 1/4 in. in diameter, purplish-black when ripe. Reproduction is by seeds and by stem fragments that root at the nodes.

Habitat: Beach vitex occurs naturally on oceanfront dunes in its native range. It prefers sandy soil, but will grow well in a variety of soil types and climates.

Native Range: China, Korea, Taiwan, and Japan south to Malaysia, India, Sri Lanka, Mauritius, and Australia.

NOTE: Beach vitex is also said to be native to Hawaii (Wagner et al. 1999). However, due to the extreme isolation of this island chain, Beach vitex was, no doubt, unintentionally introduced there through human activities at some time in the past.

Pathways of Introduction and Spread: Beach vitex was introduced to the Southeastern United States in the mid-1980's by the N.C. State University Arboretum for use as an ornamental and for coastal dune stabilization. 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, spreading along beaches by seeds and vegetative fragments. The brittle stems tend to break off during high tides and are carried away by long shore currents to infest new areas.

U.S. and Canada Distribution:

Ecological and Economic Impacts: Beach vitex forms monoculture infestations that displace native beach dune species and degrade sea turtle habitat. The plant also releases allelopathic compounds from the root system that inhibits the growth of other plants. Due to chemical alkanes (hydrocarbons with single bonds between the atoms) in the cuticles of leaves and fruits, soil beneath the plant becomes strongly hydrophobic. This prevents the establishment and growth of other plants. In addition to being drought tolerant, salt tolerant, and fast-growing, beach vitex is a prolific seed producer. Seed production can be as high as 10,000 to 20,000 seeds per square meter. The round

seeds are rolled along the beach by strong winds, and are move to other areas by long shore currents. Beach vitex is also a major threat to sea turtle reproduction. The roots grow around sea turtle nests and sometimes prevent hatchlings from emerging. Hatchlings that do emerge can become trapped in the thick tangle of vegetation and perish before reaching the ocean.

Control Strategies: Experience has shown that it is difficult – *if not impossible* - to remove single plants or scattered populations of Beach Vitex plants by hand –the plant readily grows back from roots that remain deep in the soil. The only effective way to eliminate the plant is to cut back the plant to the surface and treat the cut stumps with an approved herbicide such as imazapyr (Habitat and others). Plants that are cut for removal should be properly disposed of to avoid infesting new areas.

Regulatory Status: Beach vitex is regulated as a state noxious weed in the coastal counties of North Carolina and Virginia.

Town/County Ordinances that prohibit the planting of Beach Vitex have been established by Bald Head Island, Caswell Beach, Ocean Isle Beach, North Topsail Beach, Topsail Island, and Pine Knoll Shores in North Carolina. Ordinances have been established in Pawleys Island, Georgetown County, Isle of Palms, Kiawah Island, Folly Beach, and the Town of Edisto Beach, in South Carolina.

A Weed Risk Assessment was conducted for listing Beach Vitex as a U.S. Federal Noxious Weed in 2006. *However, it has not been officially listed as an FNW because it is considered by some scientists to be native to Hawaii***. Otherwise, Beach vitex meets the definition of a quarantine significant pest because it occupies a very small portion of its potential ecological range in the United States, and because it poses a serious threat to certain natural and biological resources (the stability of ocean front dunes and the plant and animal communities that occupy them), as well as the value of beach front property.

Based on the APHIS Weed Risk Assessment, the overall pest risk potential of beach Vitex in the United States is **medium-high**. The likelihood of introduction is **high**. The consequences of introduction are **medium**, since the plant has serious environmental impacts, but a low potential for economic impacts on agricultural production systems. But, if permitted to spread unabated, the plant could have a very significant impact on the value of beachfront properties in the Carolinas and elsewhere.

Wagner, W., D. Herbst, and S Shomer. 1999. Manual of the Flowering Plants of Hawaii. University of Hawaii Press. Bishop Museum Press. Volume 1 – 988 pp. Volume 2 - 1919 pp.

Online Resources:

Beach Vitex Task Force Website.
URL: http://www.beachvitex.org/

Beach Vitex Image - U-GA Bugwood Image Gallery.
URL: http://www.invasive.org/species/subject.cfm?sub=11609

Beach Vitex Profile - USDA Plants Database.
URL: http://plants.usda.gov/java/profile?symbol=VIRO80