

Beach Vitex Control With Selected Herbicides

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Beach Vitex (*Vitex rotundifolia*)

- Perennial woody shrub
- Thrives on coastal sand dunes
- Native to Hawaii and countries of the Pacific Rim
- Ranked as a “high” threat on the APHIS overall risk assessment model



Beach Vitex



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Why A Threat?

- Spreads aggressively
- Outcompetes native dune species, including the Federally Threatened seabeach amaranth (*Amaranthus pumilis*)
- Dense mats interfere with native water bird and sea turtle nesting
- Negatively affects large multimillion-dollar beach renourishment projects



Beach Vitex



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Why A Threat?

- Releases allelopathic compounds into the surrounding soil as well as compounds that cause the soil to be hydrophobic
- Prolific seed producer
- Sends out long runners that root at multiple nodes
- Potential for fragmentation, allows dissemination by humans, animals, and even floating



Why A Threat?

- BV is not as efficient at trapping wind blown sand to build dunes as some native dune plant species including sea oats
- Has potential to spread up the coast as far north as Virginia, south to Florida, and west to Texas, based on its native habitat distribution
- Soil seed bank is such that even after the removal of BV, there will be enough seeds to reestablish the area

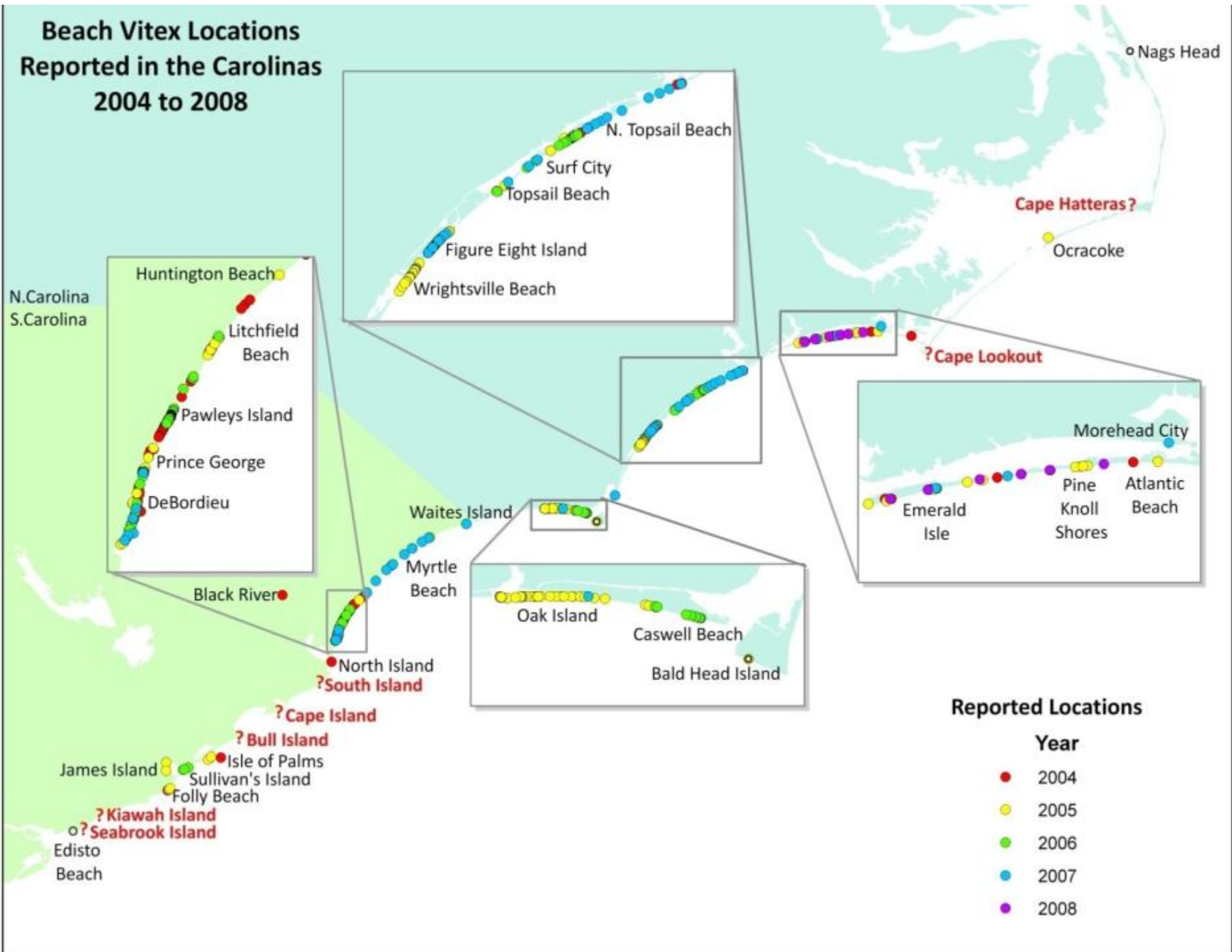


Beach Vitex



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Beach Vitex Locations Reported in the Carolinas 2004 to 2008

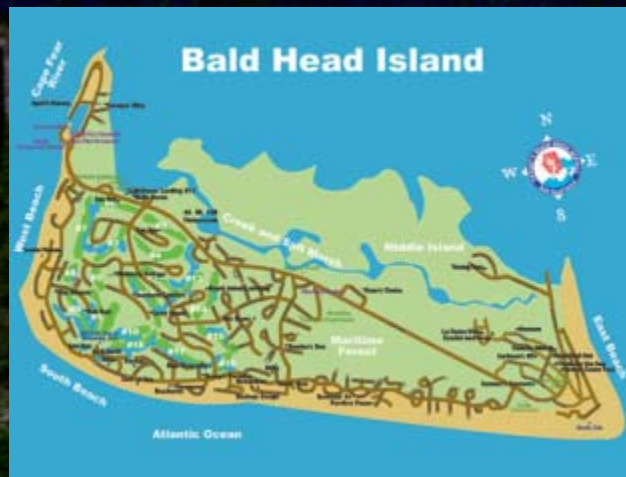


Reported Locations

Year

- 2004
- 2005
- 2006
- 2007
- 2008

Field and Greenhouse Trials



Objective: To evaluate selected herbicides for beach vitex control.



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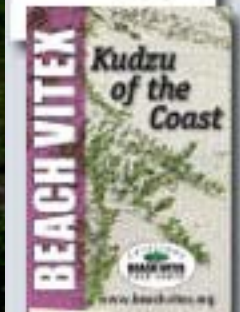
Results of Control Studies

- Glyphosate (5 to 10% v/v), imazapyr (0.5 to 1.5% v/v), or mixtures of these two herbicides controlled BV when applied to foliage.
- Aminopyralid, triclopyr mixtures, imazamox, penoxsulam, and metsulfuron had minimal control.





Identifying Beach Vitex:
Vitex rotundifolia



beachvitex.org



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Thank You!



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Beach vitex control with postemergent herbicides in field study 1

Herbicide	Rate		Control	
	Application	Broadcast	1 MAT	12 MAT
	% v/v	kg ae/ha	———— % ————	———— % ————
Glyphosate	10	11.2	84 a	90 a
Glyphosate + imazapyr	5 + 0.5	5.6 + 0.33	73 a	94 a
Glyphosate + triclopyr	5 + 0.75	5.6 + 0.54	35 b	9 b
Triclopyr + 2,4-D	0.75 + 0.6	0.74 + 0.54	36 b	11 b



Beach vitex control with postemergent herbicides in field study 2

Herbicide	Rate		Control	
	Application	Broadcast	1 MAT	8 MAT
	% v/v	kg ae/ha	%	
Aminopyralid	1.5	1	46 bc	24 d
Glyphosate	10	11.2	77 a	83 a
Imazamox	1.5	0.5	51 b	37 c
Imazapyr	1.5	1	82 a	90 a
Metsulfuron	10 g/L	1.68	66 ab	52 b
Penoxsulam	1.5	1	29 c	19 d



Beach vitex control in the greenhouse with postemergent herbicides

Herbicide	Rate kg ae/ha	Control		Dry weight g
		3 WAT ———— % ————	5 WAT ———— % ————	
Glyphosate	1.12	47 abc	34 d	4.98 ab
Glyphosate	2.24	37 c	56 bcd	5.00 ab
Glyphosate	5.6	53 abc	76 abc	4.47 ab
Glyphosate	11.2	68 abc	87 a	4.48 ab
Imazapyr	0.34	41 bc	48 cd	6.18 ab
Imazapyr	0.67	66 abc	77 ab	5.08 ab
Imazapyr	1.01	76 a	88 a	3.50 b
Imazapyr	3.36	72 ab	95 a	3.90 b
Nontreated	--	--	--	6.93 a

