Redbay Monitoring on Cumberland Island National Seashore (CINS)

Conference on Laurel Wilt Disease and Natural Ecosystems
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USDA FS Forest Health Protection
Background History

- Staff from Cumberland Island National Seashore (CINS) contacted USDA FS Forest Health Protection (FHP) in early October 2006 about dying redbay trees.
- A preliminary survey of declining redbay conducted during the week of October 23, 2006 by FHP staff found that *Xyleborus glabratus* and a *Raffaelea* species were present and killing trees on the island.
- The extent of the infestation was identified and mapped using a transect survey on a one-half mile grid.
- At that time, most of the symptomatic trees were located at the southern half of the island.
Redbay Monitoring Plots

- Twenty plot center points were randomly selected.
- Up to 10 redbay trees greater than 1 inch DBH within 75 feet from a monument center were selected for monitor trees.
- Each tree crown was assessed for crown density using FIA/FHM protocols ±10% intervals.
Redbay Monitoring Plots

• A total of 173 stems were monitored
• Trees initially selected were free of laurel wilt symptoms (crown density rating of zero).
• Stems ranged from 1.0 inches DBH to 10.0 inches DBH (average 4.1)
• Stems ranged from 8 to 45 feet in height (average 21.6)
Percent Crown Decline Over Time by One Inch Diameter Class

- One inch class
- Two inch class
- Three inch class
- Four inch class
- Five inch class
- Six inch class
- Seven inch class
- Nine inch class
- Ten inch class

Monitor Date:
1-Jan-07, 1-Feb-07, 1-Mar-07, 30-May-07, 26-Jun-07, 24-Jul-07, 24-Aug-07, 15-Oct-07, 25-Nov-07, 4-Jan-08, 29-Jan-08, 26-Feb-08, 25-Mar-08, 28-Apr-08, 27-Oct-08
Percent Original Crown Decline Over Time

Percent Mortality

Data Collection Period

Decline plots today
Most of the sprouts in the fixed plots are subjected to saw palmetto *Serenoa repens* shade competition ranging from moderate to extreme
About 581,000 results (0.48 seconds)

Shop for saw palmetto plant on Google

Saw Palmetto Palm Tree – 6–8in tall
$27.75
The Nursery at Ty Ty

Silver Saw Palmetto Palm Tree – 1–2ft tall
$82.75
The Nursery at Ty Ty

Saw Palmetto Palm Tree – 1–2ft tall
$74.75
The Nursery at Ty Ty

Images for saw palmetto plant

http://www.prostatepillreport.com/reviews/saw-palmetto-for-prostate-health.php
The shade tolerance of redbay has enabled many of the stems to outgrow palmetto competition
Some stump sprouts have been able to grow back into the forest mid-story
Some stump sprouts have succumbed to intense canopy shading and/or herbivore feeding.
Several sprouts have been severely impacted by deer scent marking
Status of Monitoring Plot Stems (2015)

- 126, 73%
- 38, 22%
- 9, 5%
Average Sprout Height in Feet

Height (ft) over time:
- 1/1/2012: 4.25 ft
- 1/1/2013: 4.60 ft
- 1/1/2014: 4.99 ft
- 1/1/2015: 5.72 ft
Some other observations off of the monitoring plots
Heavy redbay sprouting found in areas with little saw palmetto competition. These images were taken near Plum Orchard. Crown fading indicates that *Xyleborus glabratius* and a *Raffaelea lauricola* are still present.
This dense thicket of redbay seed origin reproduction is located near the Dungeness boat dock. The largest stem found measures 3.3 inches DBH and 29 feet in height.
A formerly high volume seed producing tree found along the beach inter-dunes on the southern end of the island. Note the ring of seed origin stems around where the tree drip line was once located.
Seed producing trees located along the sunny inter-dune region of the island.
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