

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

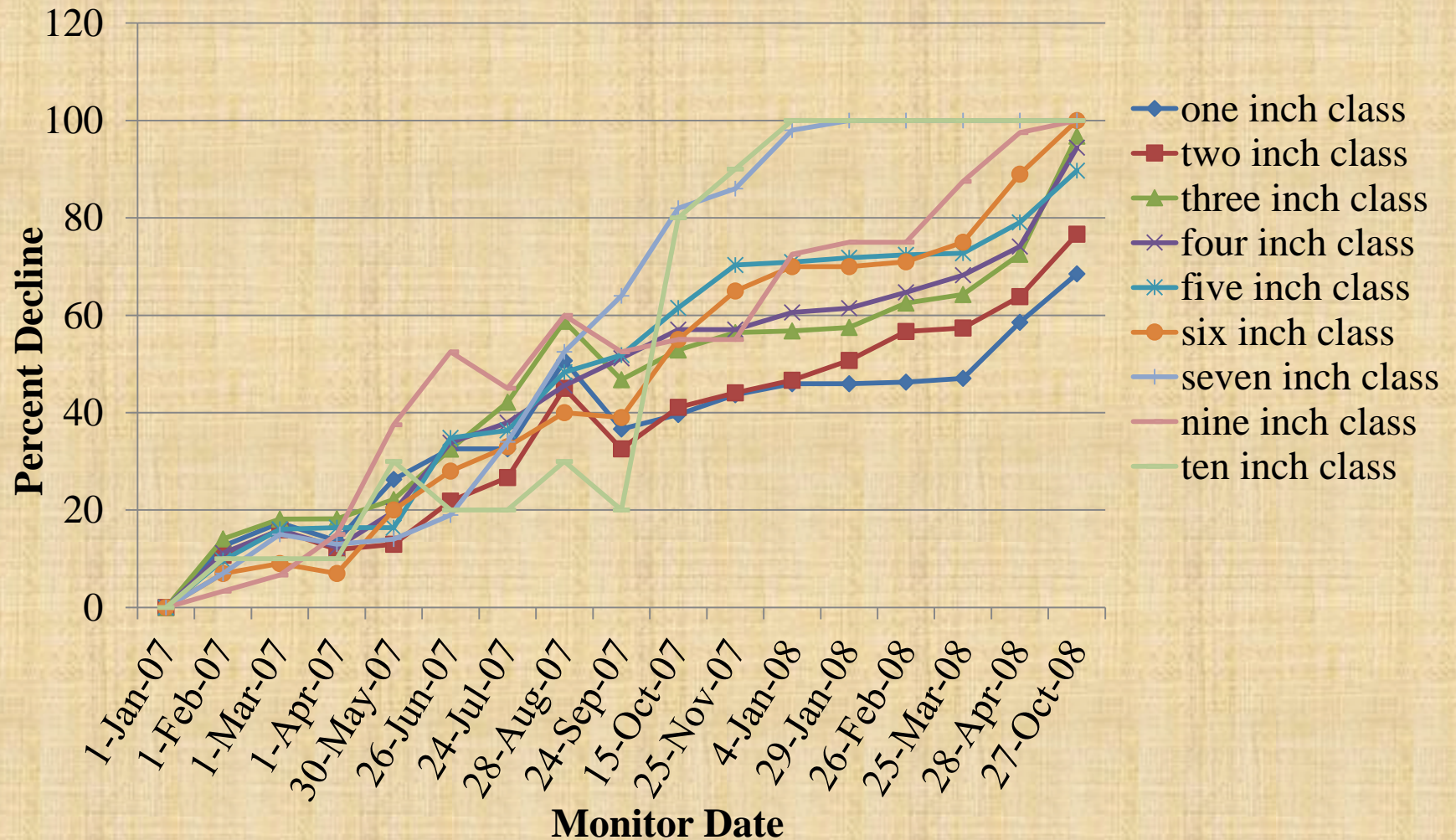
- Twenty plot center points were randomly selected
- Up to 10 redbay trees greater than 1 inch DBH within 75 feet from a monument center were selected for monitor trees.
- Each tree crown was assessed for crown density using FIA/FHM protocols $\pm 10\%$ intervals.



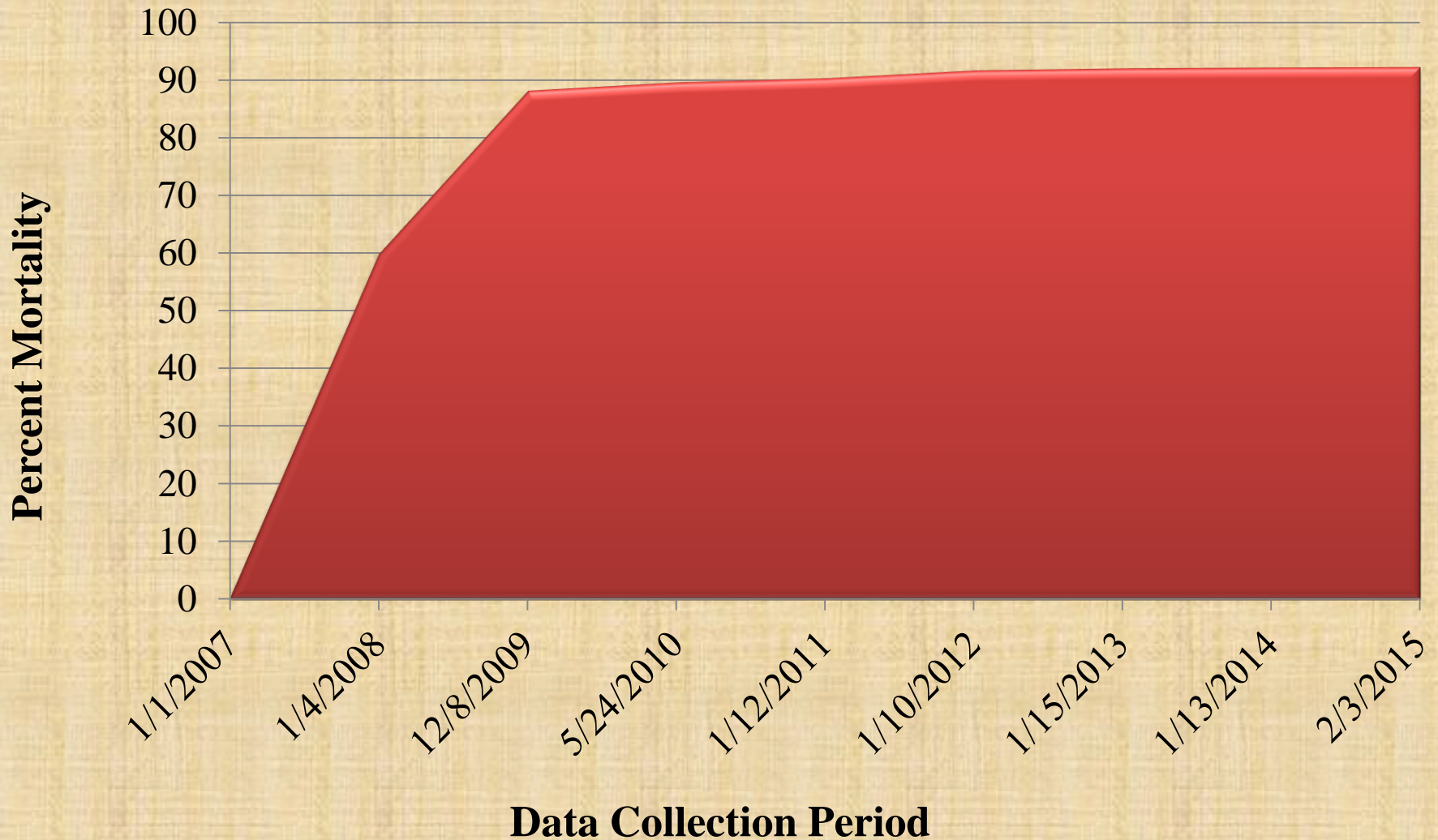
Redbay Monitoring Plots

- 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



Percent Original Crown Decline Over Time



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

Sponsored ⓘ



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

Report images



<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



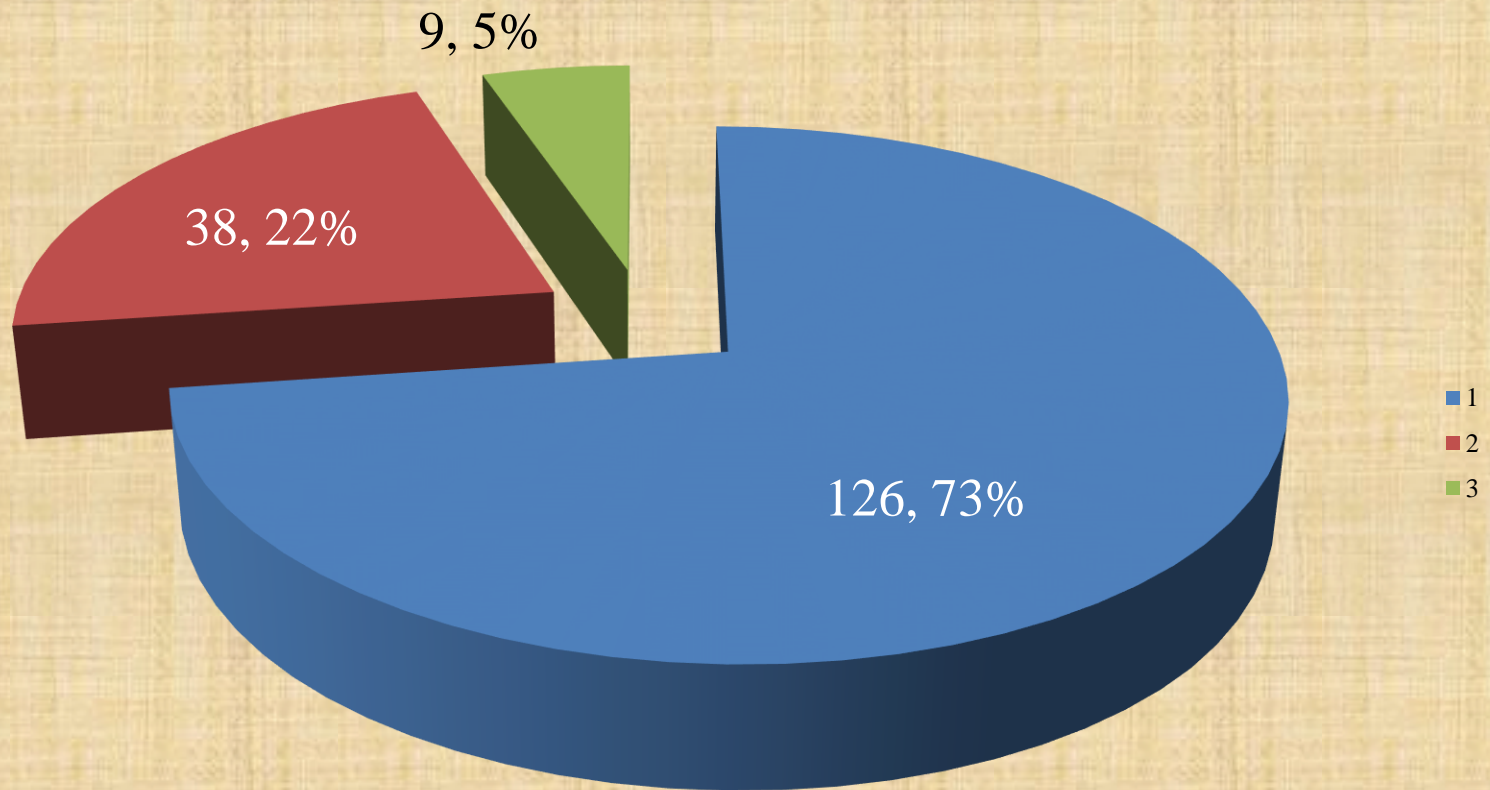
Some stump sprouts
have succumbed to
intense canopy
shading and/or
herbivore feeding



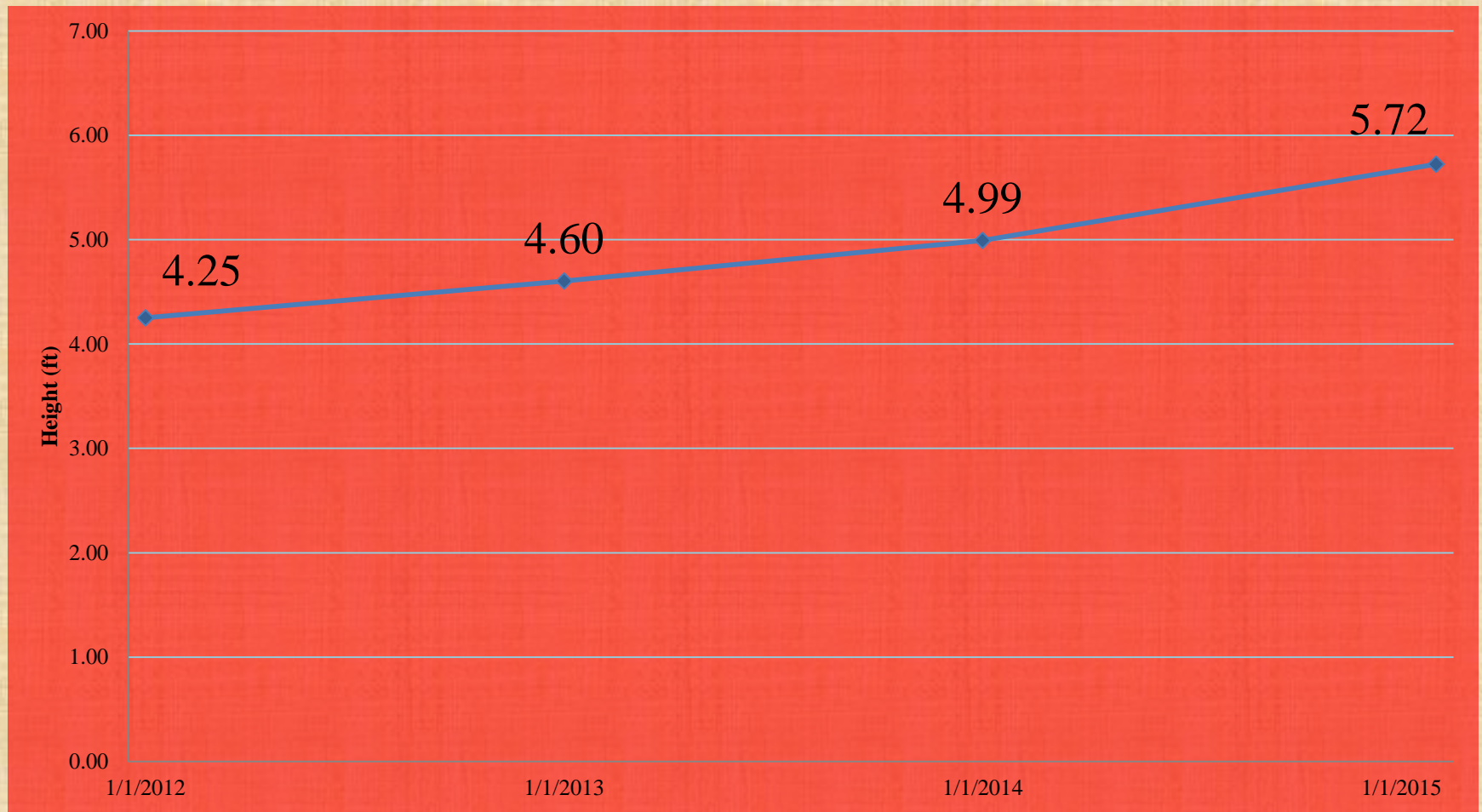
Several sprouts have
been severely
impacted by deer
scent marking



Status of Monitoring Plot Stems (2015)



Average Sprout Height in Feet



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 glabratus* 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.



Acknowledgements

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