Supporting pollinator populations and ecosystem services with sustainably managed landscapes

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- A lack of good habitat
- A lack of understanding
- A lack of data

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- 5 year study (2011-2015)
- Southern Mississippi slash pine forest
- Assessing the impacts of reducing herbicide on honey bees and native pollinators
- Evaluating pollinator dependency in key wildlife food species
- Impact of pollinators on wildlife food and wildlife (hunting revenues)
- Impacts on costs of operations
- Impacts on honey bee health (hive productivity)

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Current Findings

- The floral community is benefiting from honey bees on the landscape = more fruit, bigger fruit.
- Honey bees are using key wildlife plants for food, pollinating the plants.
- Honey bee colonies are gaining weight on managed lands.
- Managed timberlands are more botanically productive than control lands.
- Managed timberlands have more native bees than control lands; native bees and honey bees are sharing the landscape.

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- Standard bagging and pollinator exclusion experiment
- Assessing how dependent the landscape is on pollinators

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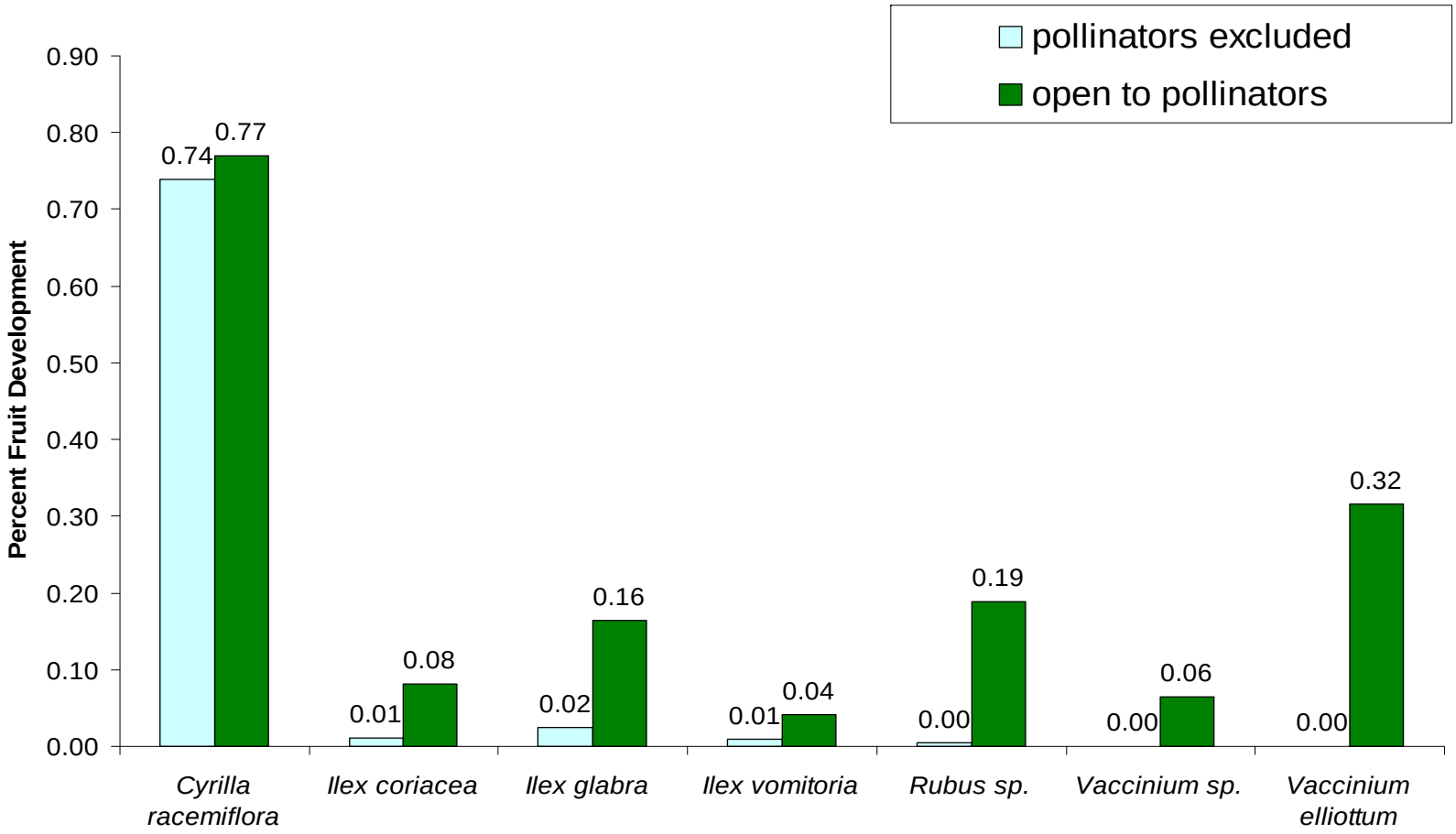
ALL key wildlife plants in this landscape need pollinators.



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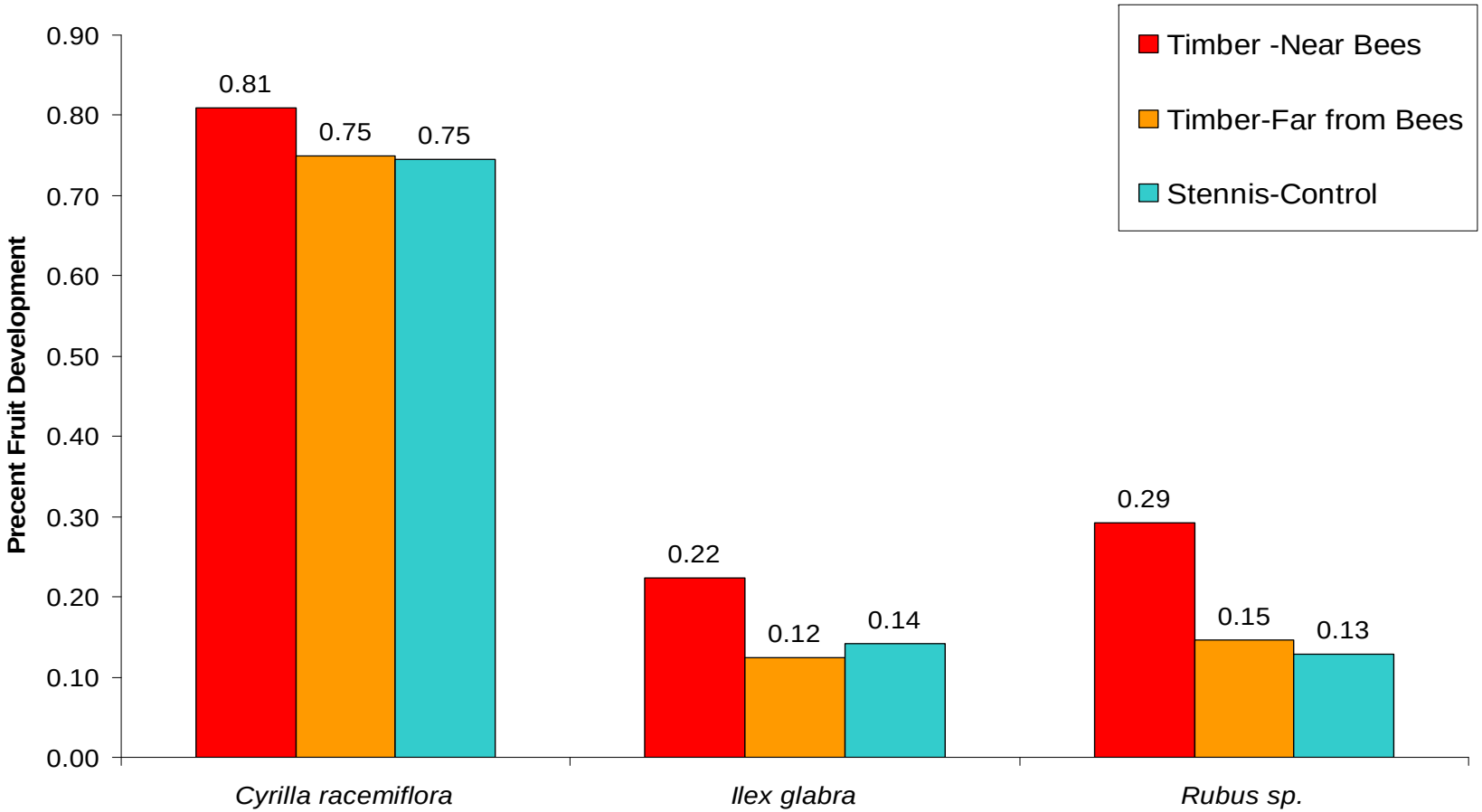
Plants closer to bee yards on managed lands develop more fruit.



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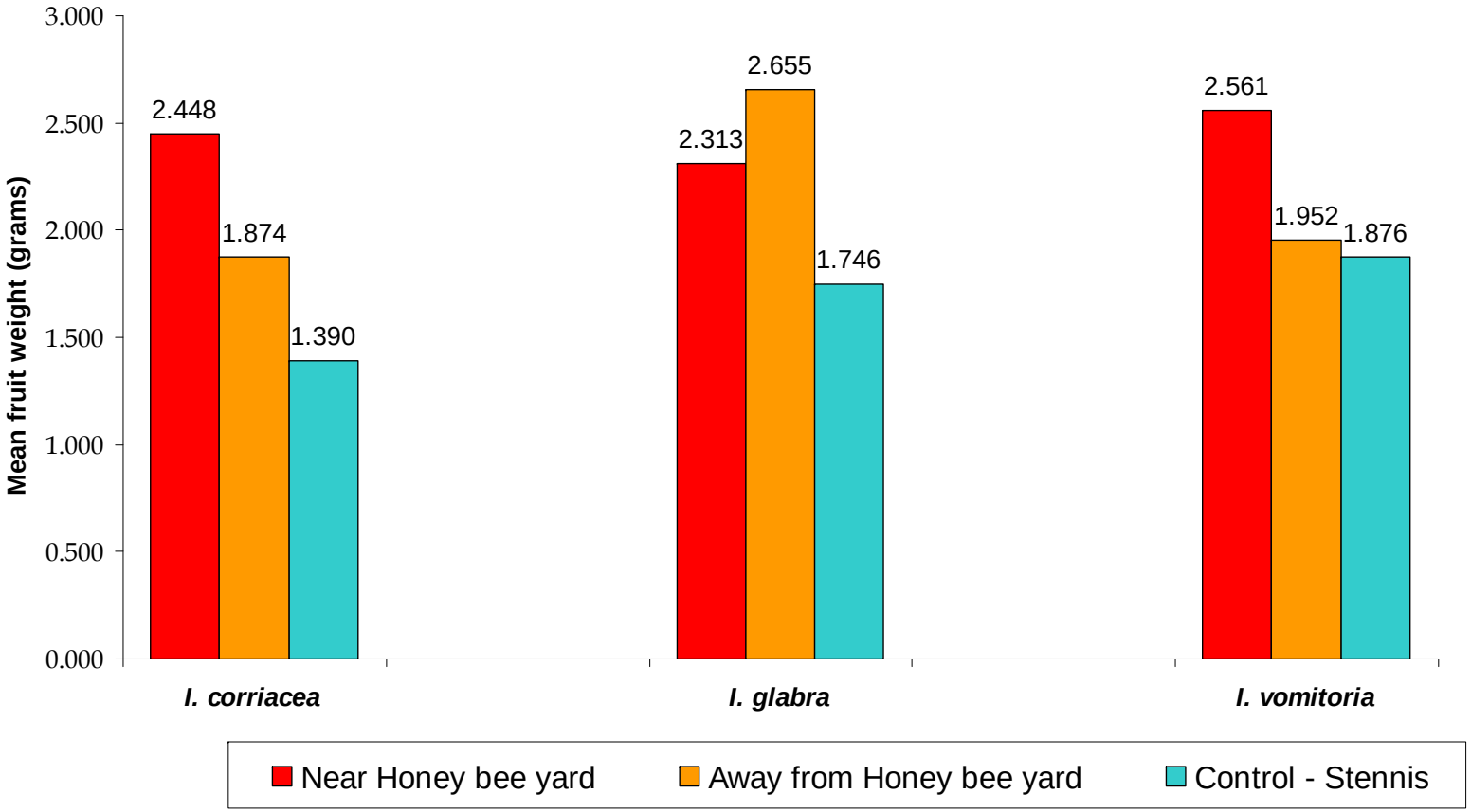
And they develop larger fruit….meaning more food for wildlife.



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How are honey bees doing on managed timberlands?

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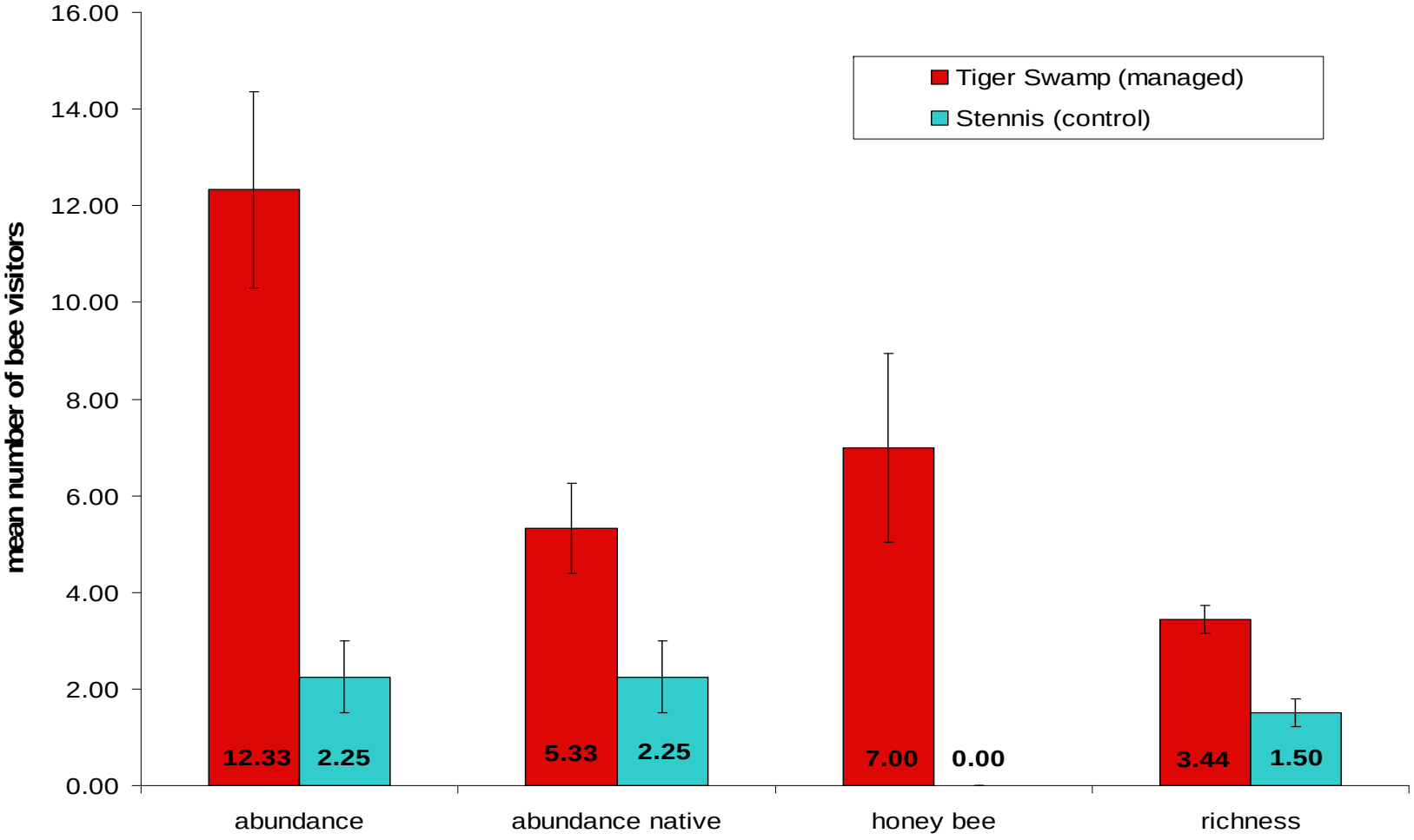
How are the native bees doing on managed timberlands?

Managed sites have more bee abundance and richness



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Forest Management and Pollinators

- Banded herbaceous treatments to the properties has **reduced chemical costs** by approximately 50%.
- Improved wildlife habitat **increases** recreational lease value of the property
- Pollinators significantly **improve** wildlife habitat reducing the need for wildlife food plots
- Less food plots **reduces** CO2 emissions to establish wildlife food plots

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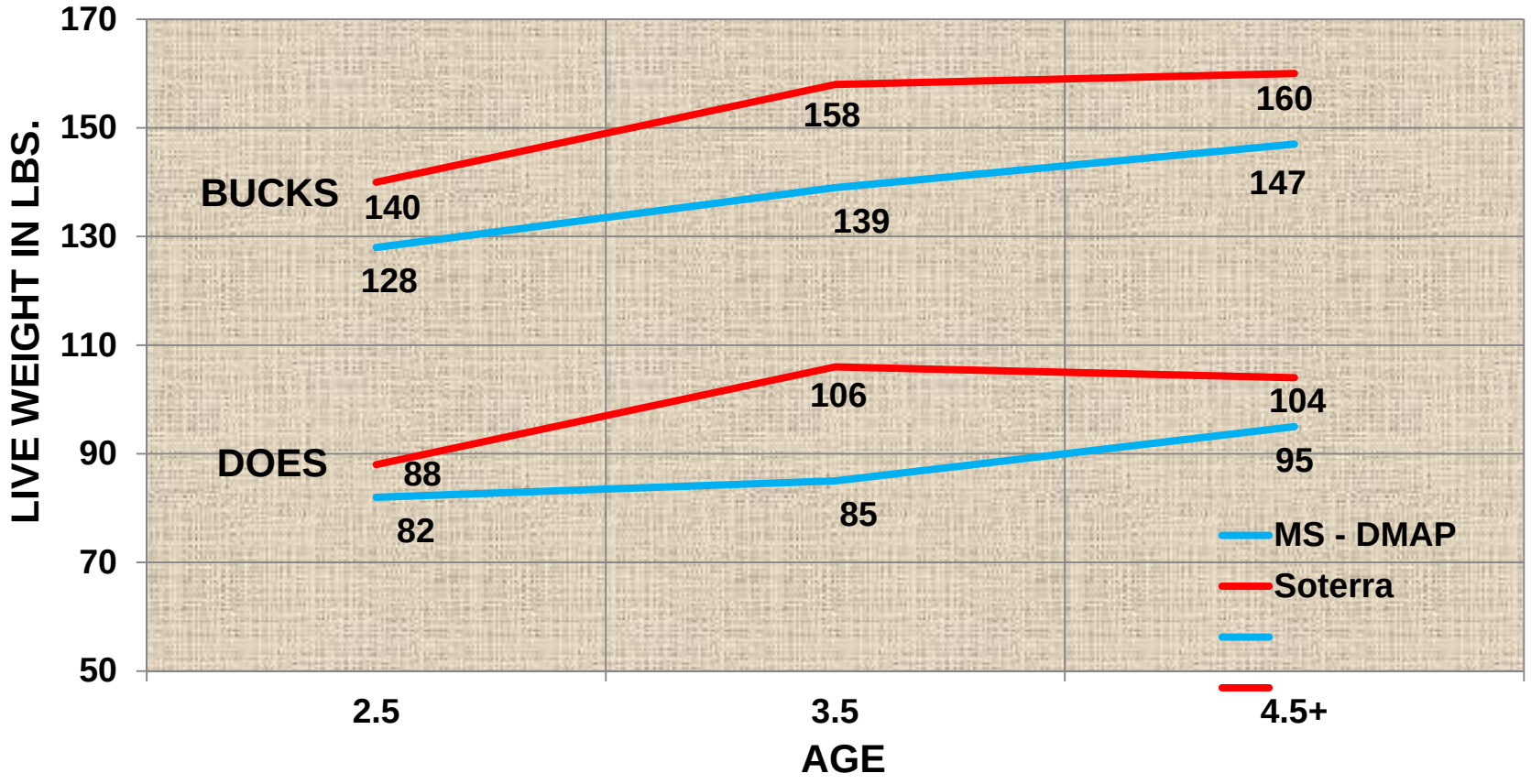
Comparison of 5 Yr Avg Live Weights of Bucks and Does Between MS DMAP and Soterra Lands in the MS Coastal Flatwoods



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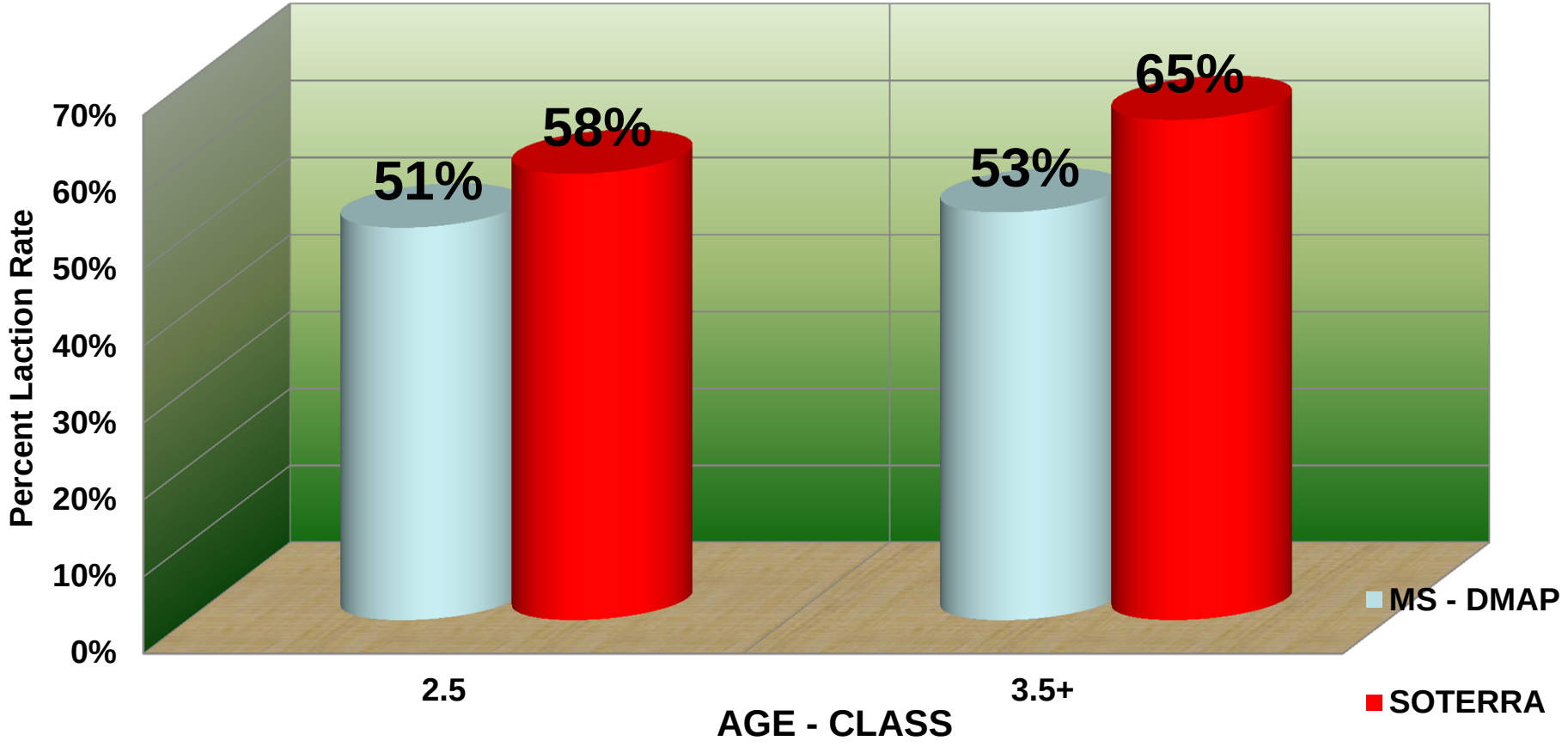
Comparison of a 5 Year Average of Doe Lactation Rates Between MS - DMAP and Soterra Lands in the Coastal Flatwoods Region of South Mississippi



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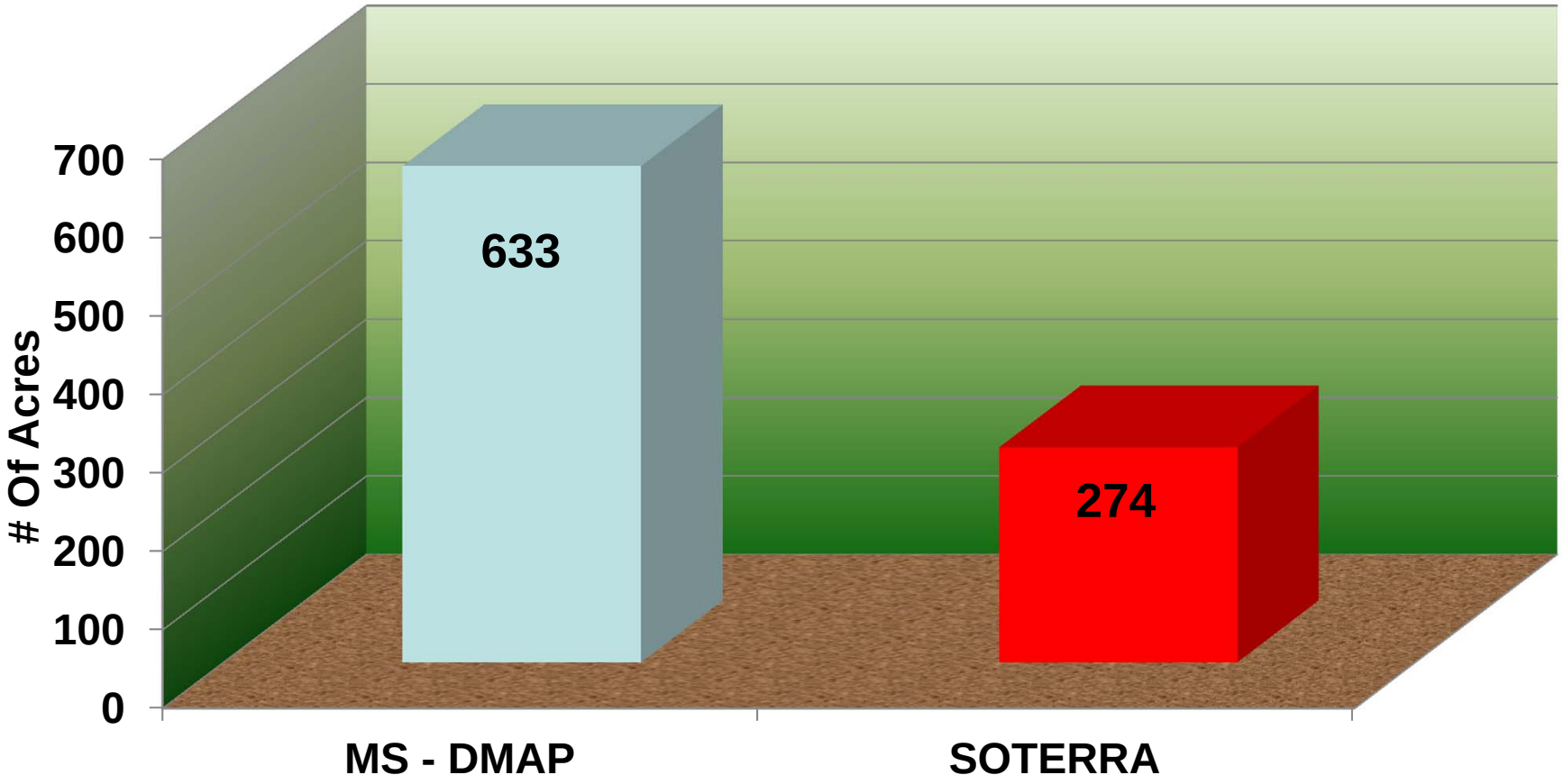
Comparison of a 5 Year Average of the Number of Acres Per Harvested Deer in the Coastal Flatwoods Region of South MS



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Applications: Opportunities to develop land management plans that will be distributed through industry by timber management partners
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Moving forward, more to know

- **Pollen analysis** – what are honey bees feeding on most often
- **Transect studies** – how different is the floral community on managed forests
- **Native bee population** assessments – what trends do we see in the native community


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