

Survey and Management Plan for *Megathyrsus maximum* (Guinea grass)
in NATL

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Introduction

Invasive species are of major concern in natural areas as they can change the community structures and functions and displace native species. *Megathyrsus maximum* (guinea grass) is currently a Category 2 invasive on the Florida Exotic Plant Pest Council (FLEPPC). Plants in this category have not altered communities as drastically as Category 1 but have the potential to move to Category 1 if they show sufficient ecological damage.

Efforts to control invasive plants in the Natural Area Teaching Lab have been ongoing since its start in 1994. So far only two invasive species have been completely eradicated: *Pennisetum purpureum* (elephant grass) and *Macfadyena unguis-cati* (cat's claw vine). Guinea grass is an aggressive invasive that is found frequently in most of the upland pine areas.

Identification of Guinea Grass

As shown in Figure 1, guinea grass has small, green seeds that are located on whorled branches, meaning that multiple branches radiate from a single point on the stem. Guinea grass leaves are usually hairy, with a slightly off-center midribs (Figure 2). A final important identifying characteristic of guinea grass is its ligules. This is where the leaf blade meets the stem of the grass. In guinea grass, the ligules are hairy and much lighter than the rest of the stem (Figure 3). The overall growth pattern of guinea grass is shown in Figure 4.



Figure 1.



Figure 2.



Figure 3.



Figure 4.

Guinea grass map and management actions

The previous map from 2012 (Figure 5) showed guinea grass in only a few restricted spots around NATL, most notably in Old Field plots A and D. However, the current distribution map (Figure 6) shows that it has expanded to the restricted upland pine as well as several other spots throughout NATL.

Efforts to control guinea grass have been in place since 2011. Both chemical and physical means are used by invasive species interns and the previous invasive species specialist. Manually digging the grass can be effective with isolated plants. Spraying a one percent solution of glyphosate is the recommended rate according to the UF IFAS publication “Identification and control of johnsongrass, vaseygrass, and guinea grass in pastures”. It is important to avoid spraying surrounding vegetation so that it has a chance to grow and further suppress guinea grass growth.

Guinea grass seeds are easily spread when equipment such as mowers or tillers are used. Because NATL utilizes outside help to restart the old field plots, it would be a good idea to communicate the need for a decontamination protocol to the staff. Decontamination could include either leaf blowing or washing off vegetation and seeds from the equipment.

Guineagrass (*Panicum maximum*)

Potential threat for NATL: Major Moderate Minor Uncertain

Current status in NATL: Eradicated Controlled Diminished Threatening

Current management: Routine monitoring Controlled when found by:

Manual removal Herbicide applied to: foliage stem or stump soil

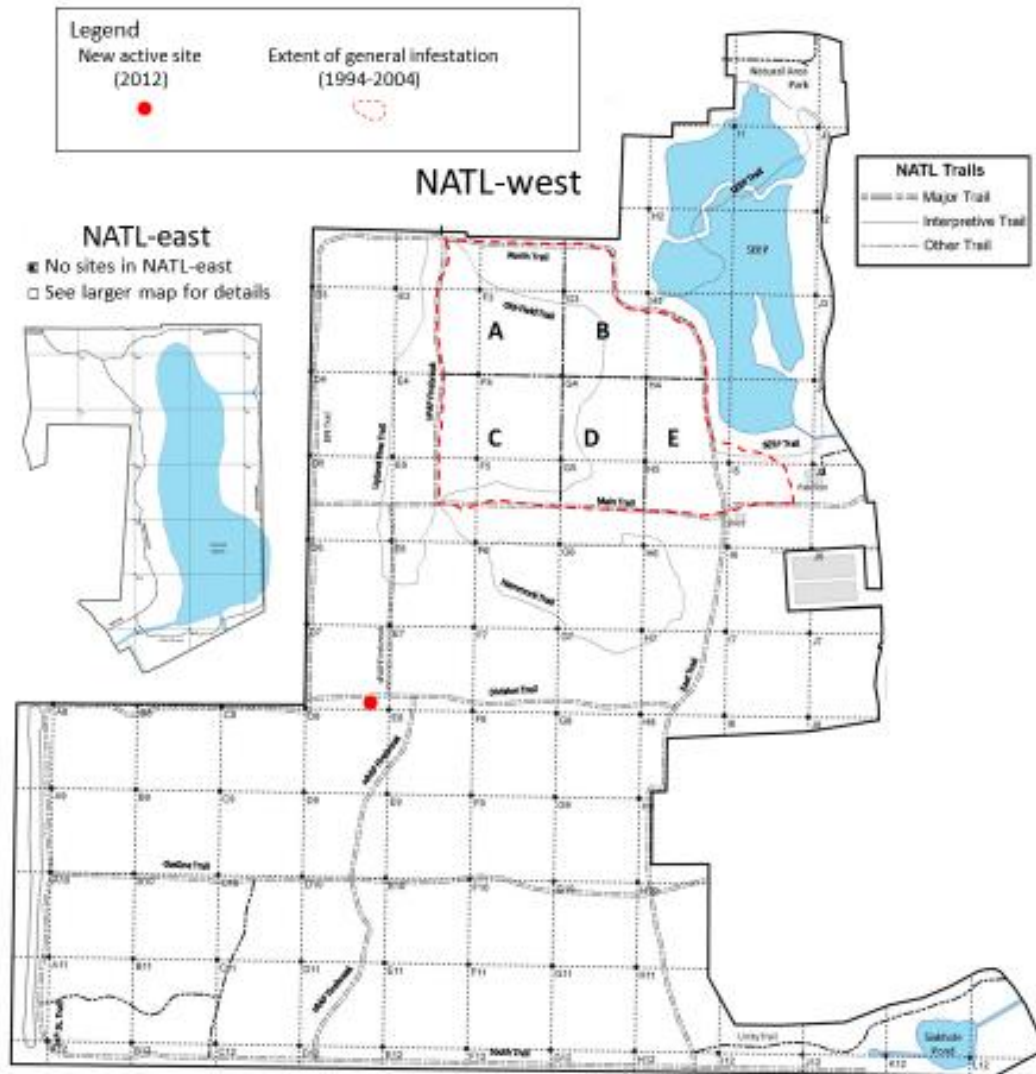


Figure 5. 2012 map of guinea grass infestation in NATL.

Guineagrass (*Megathyrus maximum*)

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 Current management: Routine monitoring Controlled when found by:
 Manual removal Herbicide applied to: foliage stem or stump soil

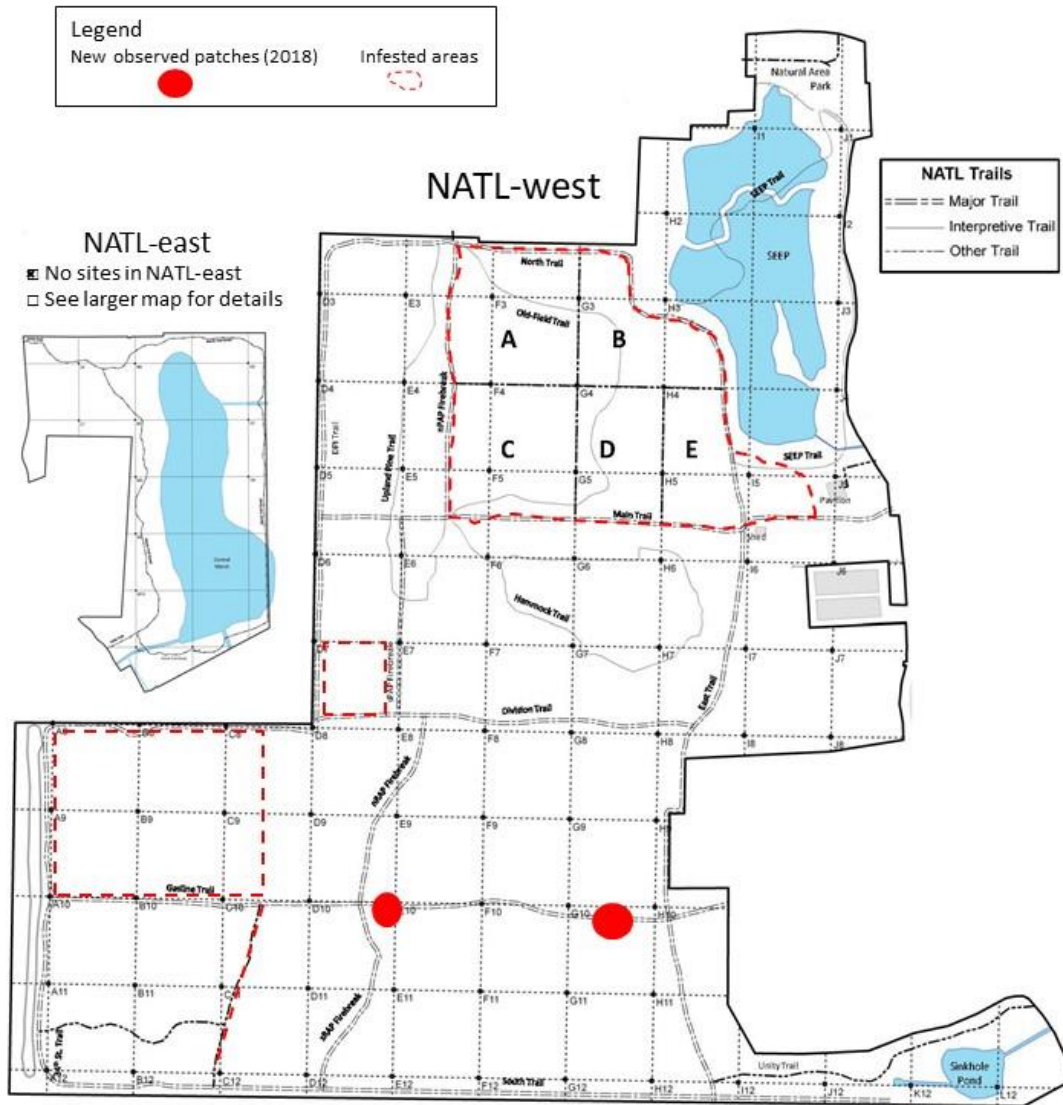


Figure 6. Current (2018) map of guinea grass infestation in NATL. Since 2011 it has spread to other upland pine areas as well as two patches along gasoline trail, which is a hammock ecosystem.

Observations

Compared to spring 2017 the regrowth from winter to spring 2018 has been extremely slow. Grass is growing, but is much smaller than this time last year and many have not yet produced seed heads. This could potentially be due to cold weather, as guinea grass is a warm season grass, or to the drought Gainesville experienced last year.

Jessica Hong conducted a minigrant in 2017 looking at NATL's seed banks. She found viable guinea grass seeds in the herbicide and fire controlled restricted upland pine plots. Because a prescribed burn was conducted on April 26, 2018, care should be taken to monitor and spray any guinea grass that emerges post-burn due to its fire tolerance.

Last summer, two large patches of guinea grass were sprayed in plot E and near the shed along the main and east trails. This plot was tilled and disked since then, but there has not been any guinea grass regrowth. If the grass does not regrow in this area, it could be helpful for future restarts to know that it should be sprayed a few months prior to tilling so that it can be killed and not have its seeds spread.

Acknowledgements

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Sources

Smith, H., Ferrell, J., and Sellers, B. 2012. Identification and Control of Johnsongrass, Vaseygrass, and Guinea Grass in Pastures (SS-AGR-363). Gainesville: University of Florida Institute of Food and Agricultural Sciences. Retrieved: April 12, 2018 from <http://edis.ifas.ufl.edu/ag372>.

