

Effects of Elevation on Distribution of *Miscanthus sacchariflorus* in the UW-Stout Outdoor Classroom

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Introduction

Miscanthus sacchariflorus (silver banner grass) is a perennial, warm season invasive grass.

- ❖ Can reach 6-8 feet tall.
- ❖ Reproduces through underground rhizomes.
- ❖ Eventually forms a dense monoculture (Anderson, 2012).
- ❖ Zheng et al. (2009) found that the higher the site elevation, the lower the diversity of *M. sacchariflorus* and other invasive grasses.

Research Question

How does small-scale elevation relate to the distribution of *M. sacchariflorus* in the Outdoor Classroom at the University of Wisconsin- Stout?

Hypothesis

M. sacchariflorus is more likely to grow in areas of lower elevation.

Objectives

- ❖ Create GIS polygons of infested sites.
- ❖ Generate elevation map.
- ❖ Determine if there is a relationship between elevation and presence of *M. sacchariflorus*.
- ❖ Determine other potential variables affecting population.

Acknowledgements

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Methodology

- ❖ Made polygons of infested sites using Trimble GPS unit.
- ❖ Surveyed transects every 5 m.
- ❖ Took points every 3 m, documenting presence of invasive grass and elevation using a laser level.
- ❖ Transferred data into ArcMap and mapped out infestation.
- ❖ Ran Kriging, Aspect, and Hillshade tools on data.

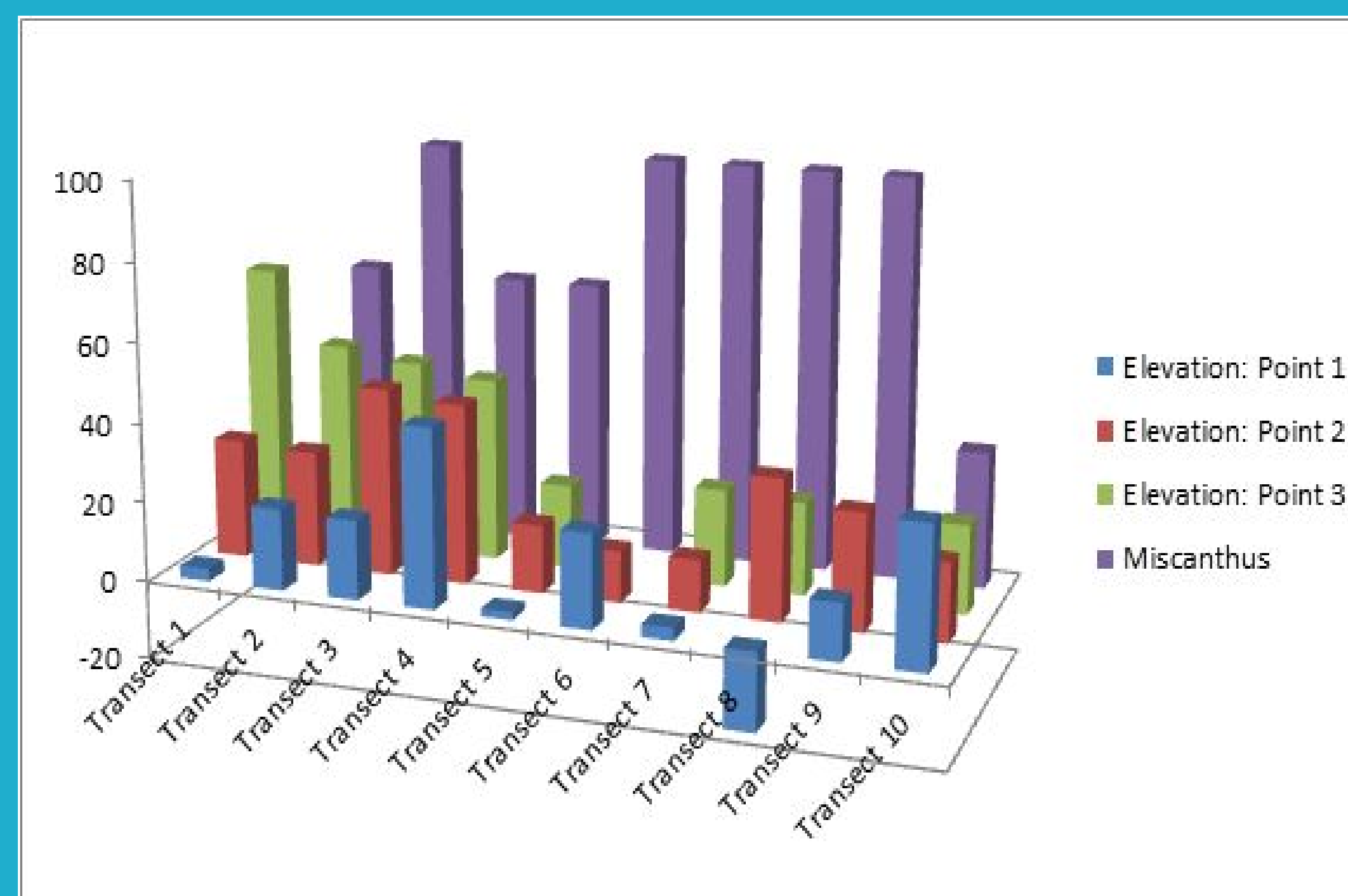


Figure 1: Elevation (cm) per transect

Results

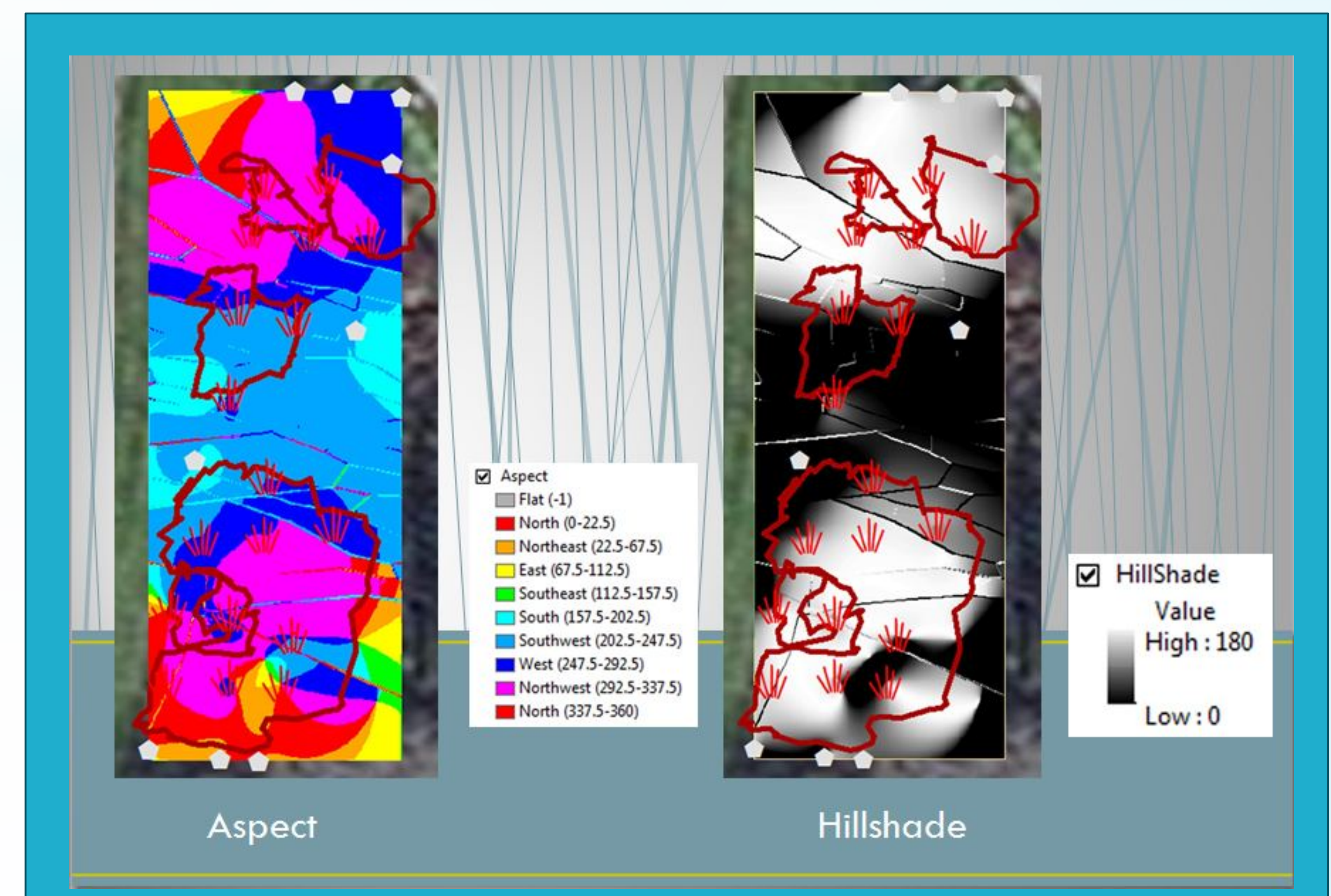
- ❖ Average elevation that contained presence of *M. sacchariflorus* was 20.6 cm.
- ❖ Average elevation that contained no *M. sacchariflorus*: 32.7 cm.
- ❖ In this specific location, the grass grows better with a west, northwest, or southwest downslope direction.
- ❖ The grass thrives in direct sunlight.



Discussion

In the Outdoor Classroom, the lower the elevation and sunnier the spot, the more likely the presence of *M. sacchariflorus*.

- ❖ It has the capability of spreading in any disturbed environment once introduced.
- ❖ It prefers wet sites, ditches, or any environment allowing for its vigorous dispersal (Meyer, 2008).
- ❖ Manual removals of the roots or chemical treatments may be researched to determine best method of control.
- ❖ A t-test may be performed on the plots with and without the grass to determine if the elevation is significantly different.



References

- Anderson, A. (2012). Amur silver grass (*Miscanthus sacchariflorus*). Retrieved from <http://www.dnr.state.mn.us>.
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- Zheng, J., Wang, L., Li, S., Zhou, J., & Sun, Q. (2009). Relationship between community type of wetland plants and site elevation on sandbars of the East Dongting Lake, China. *Forestry Studies*, 11(1), 44-48.