Marion County Lake Shoreline Buffer Zone Health Assessment through

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Ecoregion – Flint Hills.

systems since these plants have adapted to survive Kansas's arid, hot summers. Once these root systems are well-established, the plants will reduce erosion rates, increase shoreline stability, and provide more user-friendly lake access.

Big Bluestem.

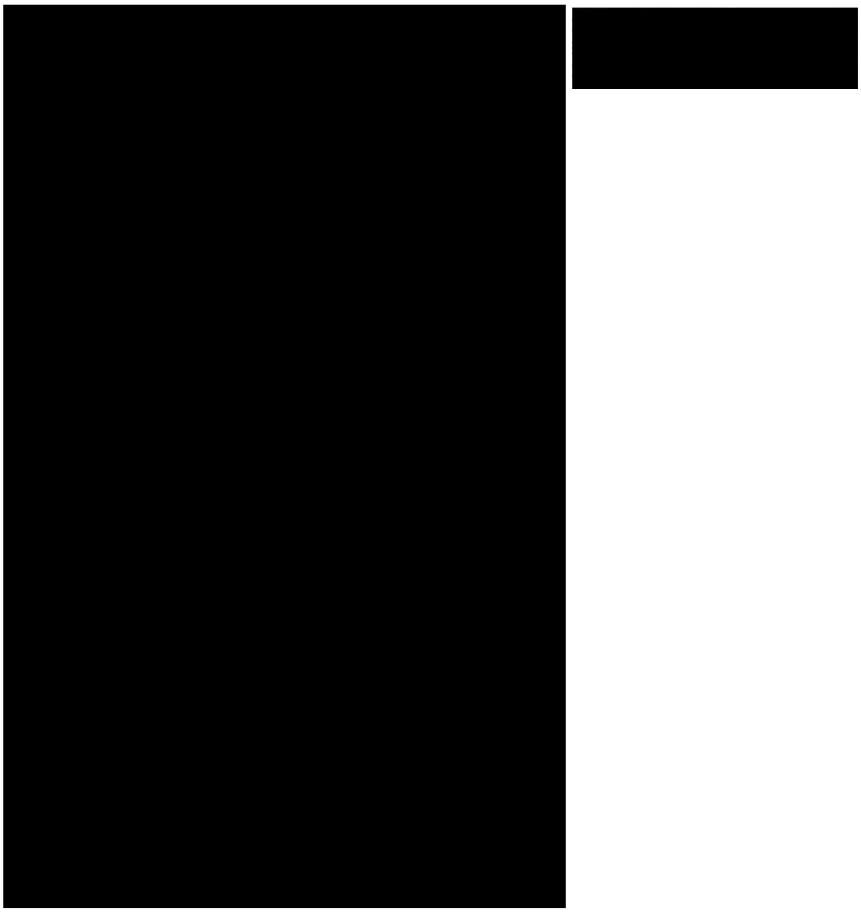


Figure 2. Big Bluestem Stalk and Root Character

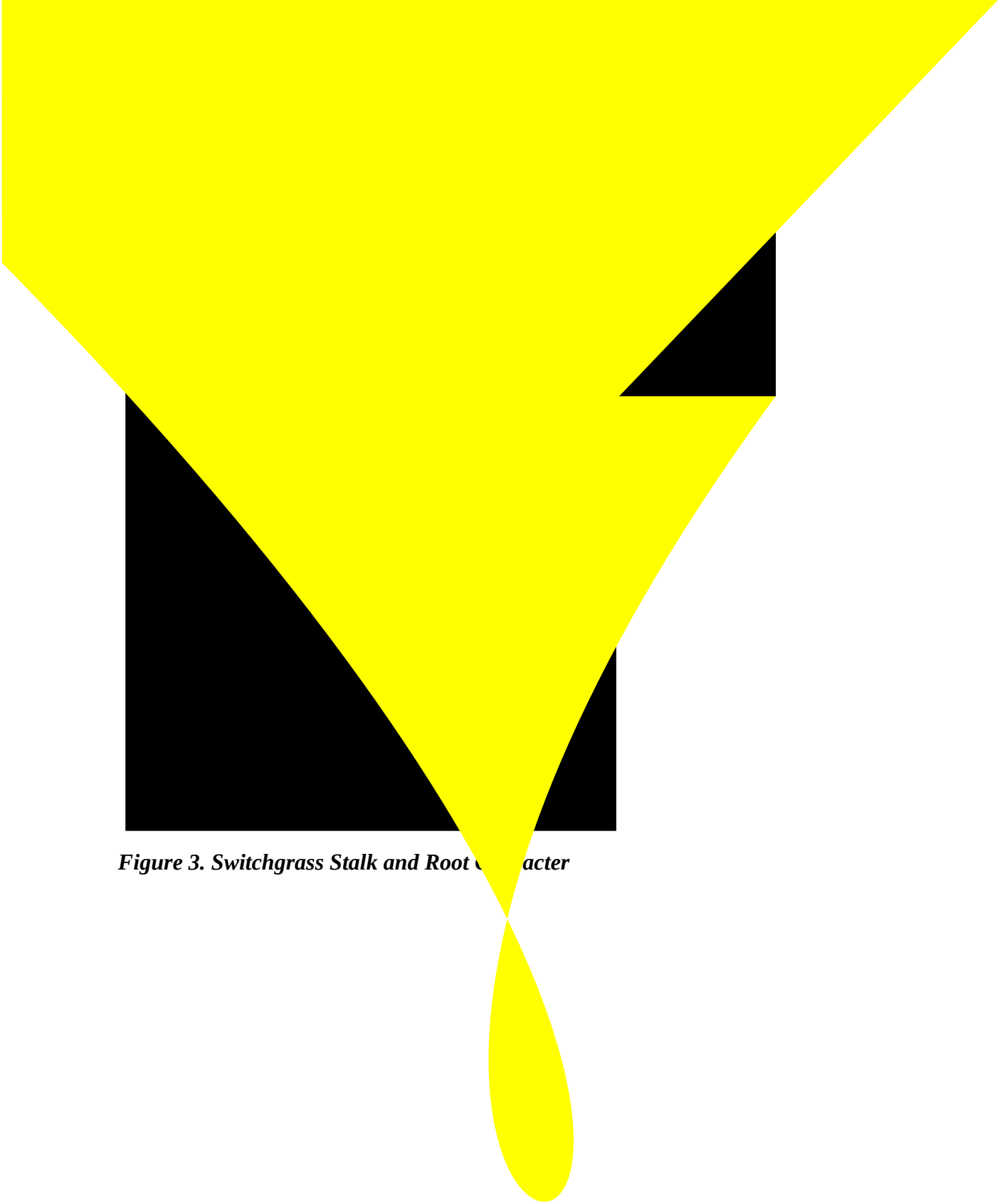


Figure 3. Switchgrass Stalk and Root Character

Indian Grass.

Figure 5. Ind-4.2824722(46815228(n)5.719(0.47820(G6225274(-)1.7465(n)0.96417(s)1.7465(s)1.7454(S 4.96(n)5.71

Purple Top

of runoff could be significant. To address this, later in the report there will be findings from a GIS program that will identify nutrient runoff levels within the watershed.

Below are the ideal soil conditions at Marion County Lake for the previously identified grass

combination approach is recommended. Annual mows and trims of the grasses with a burn off every three years would be the best management practice to promote a healthy riparian buffer zone. Additional cutting and trimming can take plac

samples. The bulk density values for each sample can be found in Appendix 1.1. To calculate the bulk density, the following equation was used:

Bulk density = field capacity mass (g) – wilting po

as it will diminish the amount of nitrogen entering the lake and be more effectively used by the plants.

According to the soil test results, derived nitrate concentrations are primarily low across

adjacently north of the sample, or the agricultural land located to the northwest. Low phosphorus rates found in the remainder of the lake may be attributed to natural deposits of the phosphorus being depleted over time from runoff accumulating in the water. Conversely, the area may have had naturally low phosphorus deposits, and the area was simply never able to accumulate deposits. The sample areas that show low rates of phosphorus could potentially need fertilization

reason, incorporating tallgrass prairie grasses int

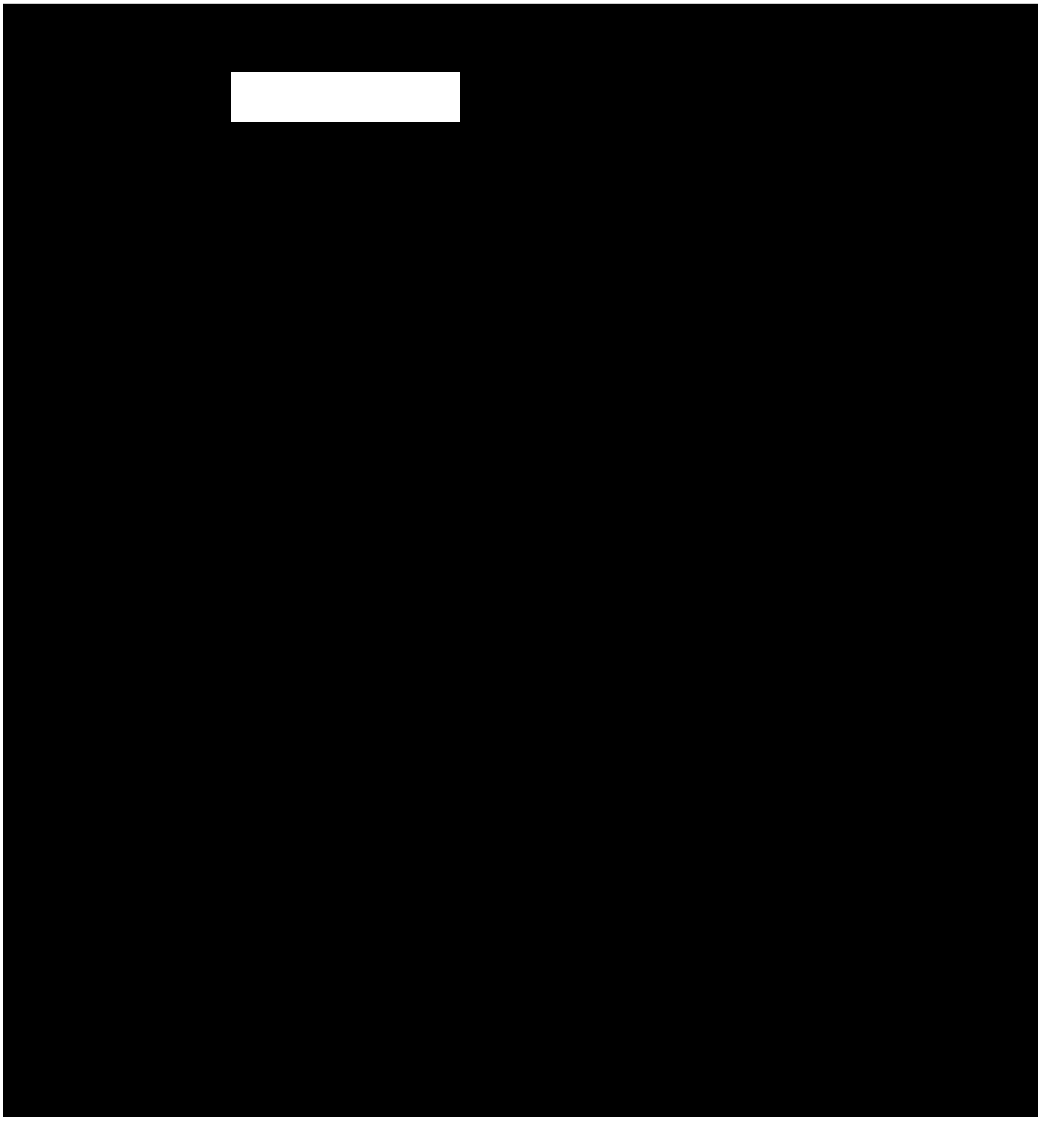
This would retain nutrients, reducing the concentra

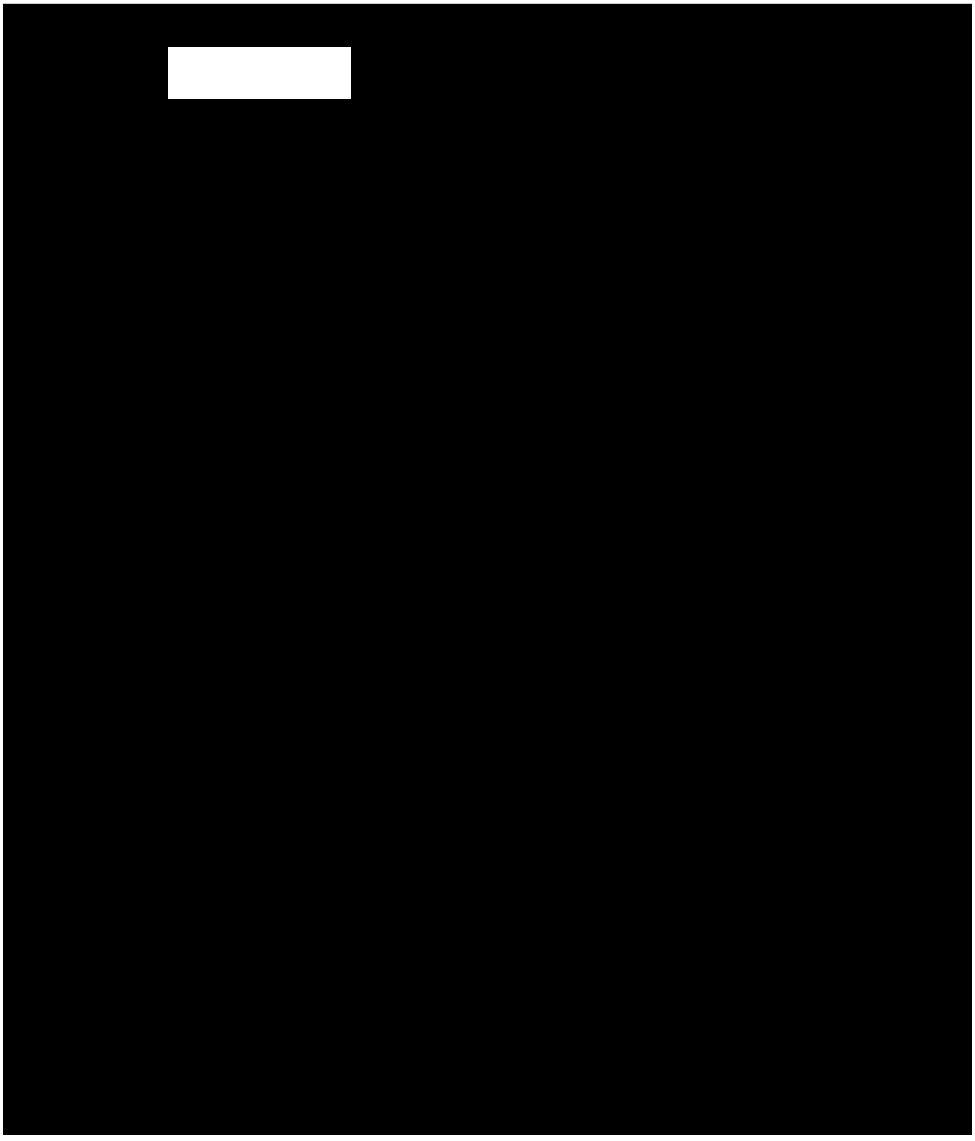
Gyssels, G., Poesen, J., Bochet, E., & Li, Y. (2005

Appendix 1.2 – Soil Sample Analysis

Sample	pH

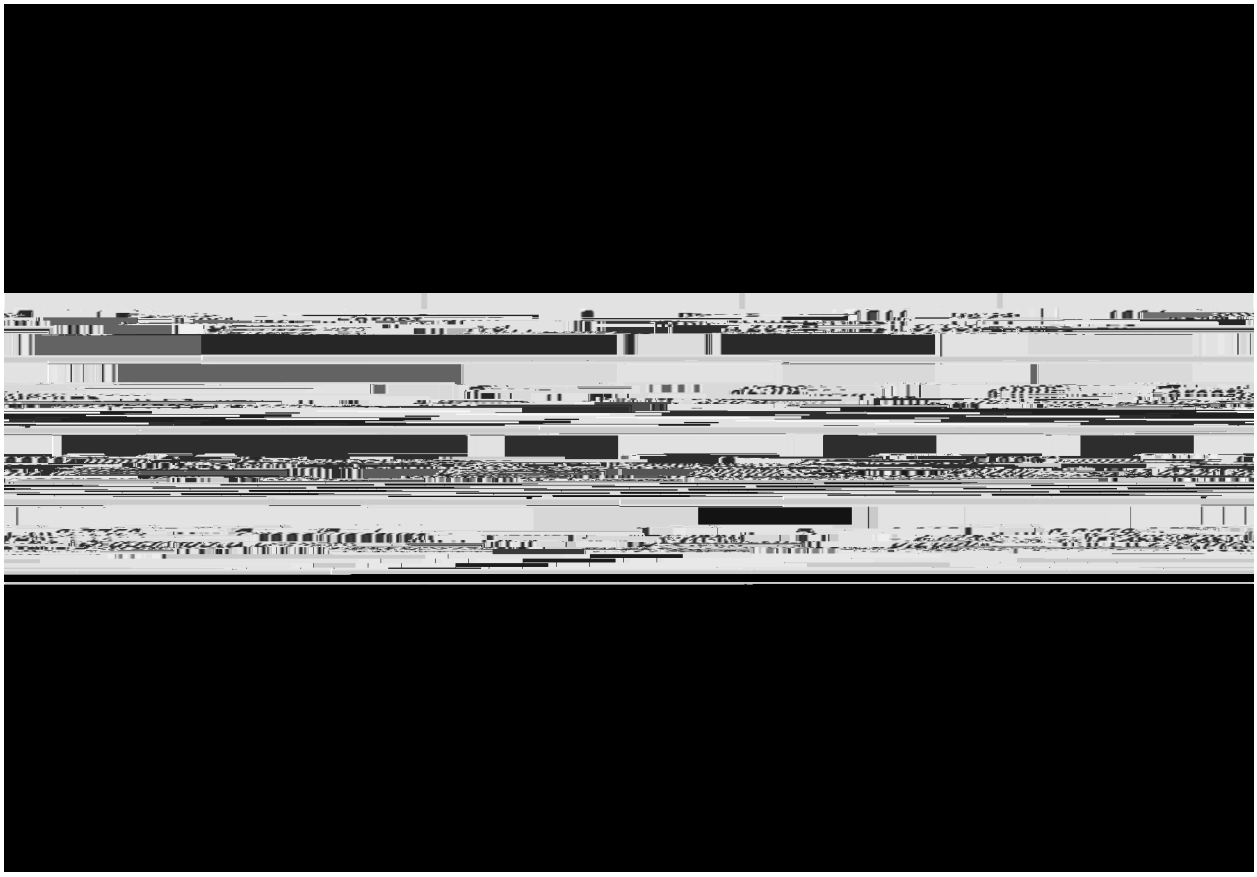
Appendix 2.3 – Mio 0 8.33333On Co 0 8.33333Ounty L0e0%8.33333Oke So 0 8.33333Oil Og





Appendix III. L-THIA Results

Appendix 3.1 – L-THIA for Allen County, KS



Appendix 3.2 – Land Use in km^2

Appendix 3.3 – Average Annual Runoff Volume (m^3)

Appendix 3.7 – Nonpoint Source Pollutant Results – Phosphorus (kgs)