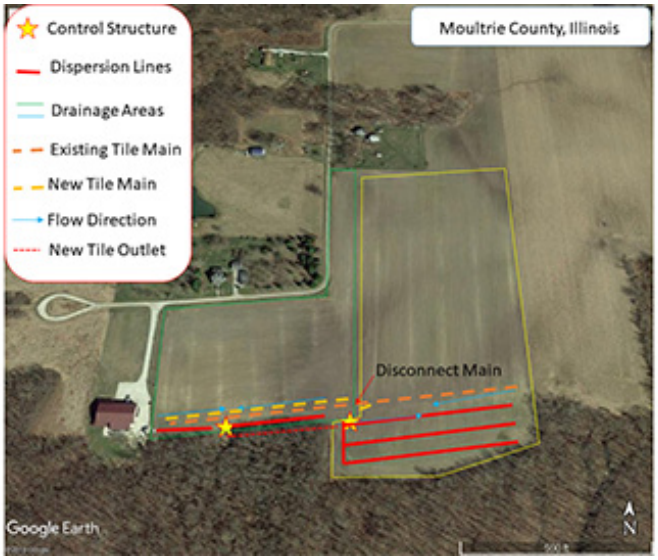
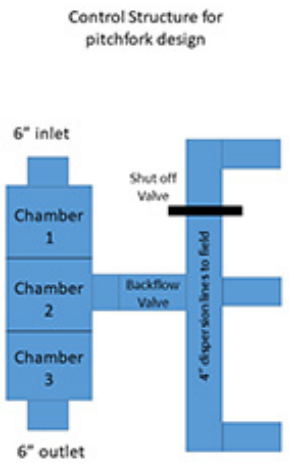
SIU CARBONDALE SOUTHERN ILLINOIS UNIVERSITY DEPARTMENT OF FORESTRY

SATURATED BUFFERS PROGRAM

A McIntire-Stennis supported project for 4 years

McIntire-Stennis funding has led to the development of a Saturated Buffer Partnership between the Department of Forestry and other State and Federal agencies in 2017. The partnership has facilitated the design and installation of two saturated buffers in Illinois. The initial buffer installation followed a two-stage design where a cover crop strip was added into the design, and the second buffer adopted a "pitchfork" design coupled with backflow valves to improve upon the previous designs. Both the two-stage buffer and the saturated buffer have shown promise in reducing nitrogen export as well as overall flow.





Data generated from the saturated buffer program are highlighted at an annual Field Day at SIU farms each summer. The partnership also hosts field days surrounding new buffer installations at the individual field sites across the state. Collaborators provide detailed information to farmers on the designs, economics, and environmental benefits of the saturated buffers. The partnership anticipates installing one saturated buffer per year over the next five years across the state.

COLLABORATION

Southern Illinois University partnered with the Nutrient Research and Education Council, USDA Natural Resource Conservation Service, Illinois Farm Bureau, Land Improvement Contractors of America, and several Illinois farmers to design and install saturated buffers in tile-drained agricultural fields.

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The saturated buffer partnership plans to install 5 buffers over a 5 year period on cooperating Illinois farms

About McIntire-Stennis

The McIntire-Stennis program, a unique federal-state partnership, cultivates and delivers forestry and natural resource innovations for a better future. By advancing research and education that increases the understanding of emerging challenges and fosters the development of relevant solutions, the McIntire-Stennis program has ensured healthy resilient forests and communities and an exceptional natural resources workforce since 1962.

USDA

IMPACT

Saturated buffers are an effective Best Management Practice for managing tile outflow volumes and nutrient runoff in tile-drained agricultural fields.

>10 million acres

Of Illinois farmlands have been tiled to facilitate drainage

$4.33

The cost estimate of a saturated buffer to treat one pound of nitrogen

7.3% - 13%

Range in flow reductions between 2016 and 2019 by the grass strip in the two-stage buffer