

# Slotted Inlet Pipes

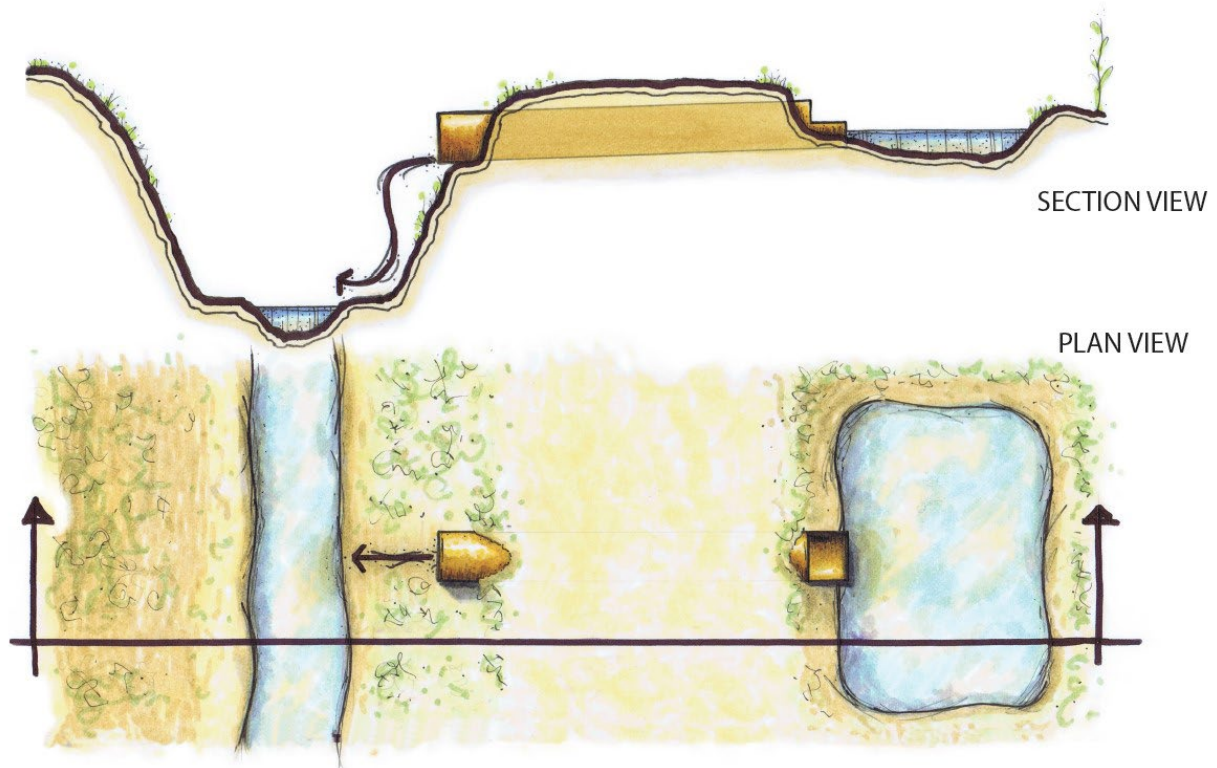
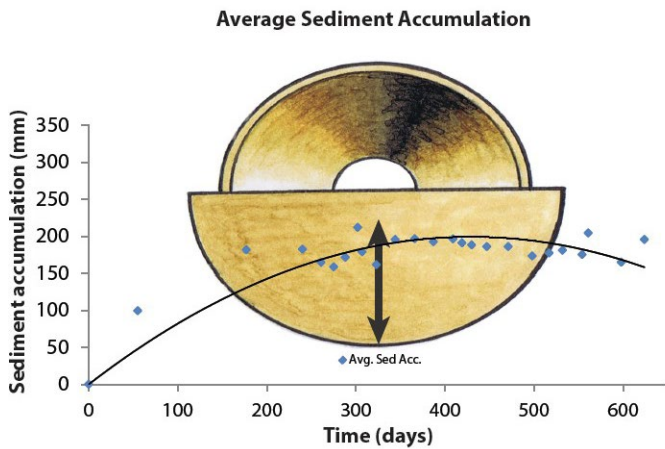


Figure 1. A section view and plan view of slotted inlet pipe installation at the edge of a farm field.

- Using a **slotted inlet pipe** (Natural Resources Conservation Service, or NRCS, conservation practice code 410) is a best management practice (BMP) that is implemented as a sunken pipe to enhance field drainage, while reducing gully erosion, soil loss from fields, and decreasing sediment loads in runoff.
- **Slotted inlet pipes** are used on surface-drained acreage to minimize erosion in the primary ditch by preventing head cutting and directing water through a conveyance device with a fixed elevation.
- A **slotted inlet pipe** controls drainage to reduce erosion and allows sediment to accumulate behind pipes and holds it in the field.



Figure 2. The image on the left shows the outflow of a slotted inlet pipe where it exits through an earthen berm or pad and discharges into a drainage ditch. The image on the right shows the slotted pipe intake installed at the edge of a crop field to receive runoff.



**Figure 3. This image plots sediment accumulation (mm) in front of the slotted pipe over time (days). An image of a slotted pipe is visible in the background of the graph to show where sediment accumulates in front of the slot.**

The chart above shows that, over time, slotted inlet pipes require maintenance—just like any other sediment-trapping BMP—to maintain maximum effectiveness. As sediment accumulates, slotted inlet pipes become less effective. To ensure their effectiveness, a scheduled clean-out about once a year (396 days) may maintain the maximum amount of sediment accumulation.

The amount of phosphorus held by a slotted pipe structure will depend on three dominate variables:

1. pipe catchment area
2. pipe retention area
3. soil type

Pipes tested by the Mississippi State University Research and Education to Advance Conservation and Habitat (REACH) program retained between 7.3 and 41.6 pounds of phosphorus. It is possible that slotted-board riser pipes could achieve the same benefits as slotted pipes if a board is left in the slot.



## For More Information

For more information, contact your local NRCS office or Beth Baker at [beth.baker@msstate.edu](mailto:beth.baker@msstate.edu), or visit the [MSU Extension Mississippi Land Stewards web page](#).

## References

- Kröger, R., Prince Czarnecki, J. M., Tank, J. L., Christopher, S. F., & Witter, J. D. (2015). Implementing innovative drainage management practices in the Mississippi River Basin to enhance nutrient reductions. *Journal of the American Water Resources Association*, 51(4), 1020–1028.
- Kröger, R., Littlejohn, K. A., Pierce, S. C., Henderson, J., Brandt, J., Flora, C., Poganski, B. H., & Prevost, J. D. (2013). Evidence toward sediment accumulation characteristics of slotted inlet pipes as best management practices on agricultural landscapes. *Ecological Engineering*, 51, 249–255.

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