

Riverbank Stabilization Pilot Project

One source of mercury to the South River is mercury-impacted soil from eroding riverbanks. The soil has become contaminated with mercury from decades of exposure, movement, and recycling of river sediment and floodplain particles. Even in uncontaminated systems, flowing water during normal rainfall and storm conditions erodes riverbanks. Soil from the banks impacts the quality of a river system and reduces forage and cover habitat for fish and other aquatic organisms. In the case of South River, riverbank erosion also allows mercury to re-enter the river.

In an effort to reduce the amount of mercury-impacted soil that is transported into the river and to determine if the impacts of riverbank erosion can be lessened, the South River Science Team is performing a pilot project that involves stabilizing 500 feet of riverbank within the City of Waynesboro. The pilot project will test whether riverbank stabilization is effective in achieving the following:

- » Reducing the quantity of mercury-impacted soil that enters the river
- » Enhancing the aquatic habitat and the riparian zone, which is the interface between the land and the river

The pilot project is located immediately downstream of the current INVISTA plant site, on the east riverbank across from Constitution Park and upstream of Rockfish Run. This location was selected because bank erosion is evident and mercury levels in the riverbank soil are elevated. In addition, the Science Team will be able to easily access this location during construction, maintenance, and monitoring activities.

The local Virginia Chapter of Trout Unlimited provided input on the design, which should improve the South River fish habitat. Plantings of native shrubs and trees on the slopes and top of the riverbank will stabilize the soil, help prevent erosion from occurring, and restore and expand the habitat. These plantings will create a desirable wildlife habitat and provide shade along the river in the summer, helping to cool the water and further improve the aquatic environment. The riverbank stabilization is designed to withstand river flows during large storms without adversely affecting flood levels elsewhere along the river.

Because the pilot project may provide information about mercury behavior in the river system, the Science Team will measure mercury levels in water and river sediment and aquatic organisms before and after construction of the stabilized bank. The construction phase of the pilot project is expected to be complete in late fall 2009. Then, the Science Team will monitor the effect of the new riverbank on reducing the erosion of mercury-impacted soil and enhancing the surrounding habitat. In the future, the Science Team may identify and test other options to reduce the transport of mercury-impacted soil into the river.



Photograph shows riverbank conditions before stabilization.

Turn to see the design of the riverbank stabilization pilot project



Contacts

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Design of Riverbank Stabilization Pilot Project

