



# Save Our Streams!

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Stream Team

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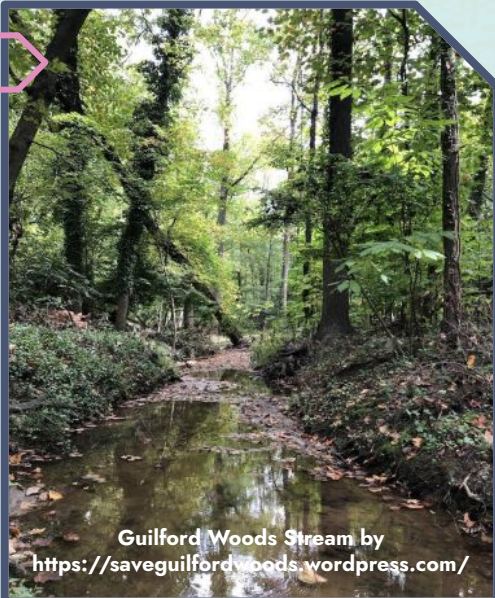
**01**

# **Stream Stabilizations 101**

# What are Stream Stabilizations?

- Stream stabilizations (also known as restorations) are projects categorized as best management practices (BMP) and performed for MS4 and mitigation credits.
- Developers purchase mitigation credits to offset the harm caused by developing wetlands and sensitive habitats.

BEFORE



AFTER





**02**

# **Environmental Harms**

# Environmental Harms

Stream stabilization projects have arguably caused more harm than good. Some of these harms are caused by the removal of mature trees, which:

- Heats up the stream due to more sunlight reaching the stream, which harms fish and aquatic invertebrates.
- Mature trees can store up to 48 pounds of carbon dioxide, but their removal releases it back into the atmosphere (Androff).



Photo courtesy of S. Boies

# Environmental Harms (continued)

Other harms caused by stream stabilizations include:

- Animals lose their habitats due to habitat loss and are crushed by heavy machinery
- Heavy machinery compacts the soil, making it less absorbent, increasing runoff
- Soil disturbance leads to invasives taking roots
- Plantings by contractors lack biodiversity, and struggle to become an established forest



Before Stream Restoration Work (2017) –

Wooded stream banks useful for run-off and stream surge control



<https://data.howardcountymd.gov/InteractiveMap.html?Workspace=HistoricAerials>, 2017 Aerial Photo

After Stream Restoration Work (2022) –  
Heavy tree loss which contributes to stormwater surges



<https://data.howardcountymd.gov/InteractiveMap.html?Workspace=HistoricAerials> 2022 Aerial Photo

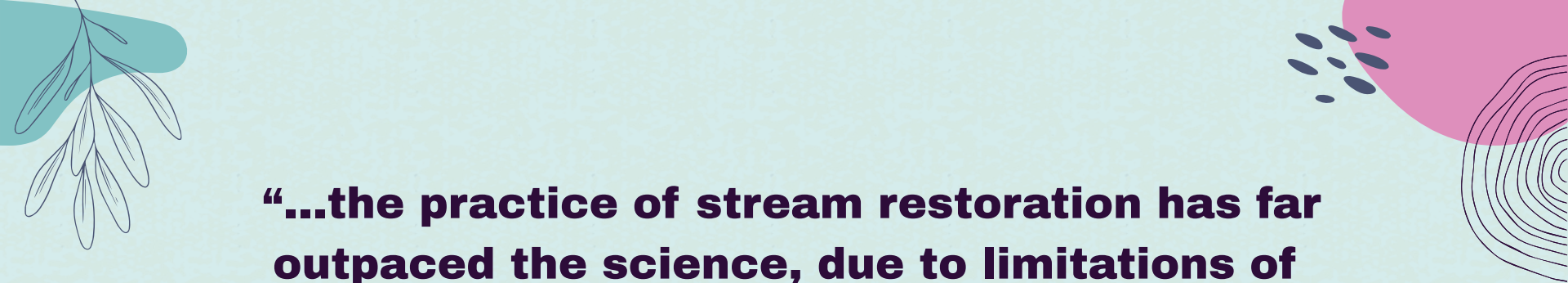
# Font Hill Stream Stabilization Years Later



# Stream Stabilizations in Columbia



Photos courtesy of S. Boies



**“...the practice of stream restoration has far outpaced the science, due to limitations of science-based research, such as multiple interdependent variables control stream functions, biological processes cannot be scaled for laboratory studies, and the response time of stream systems is typically much longer than human planning or funding horizons”**



(Thompson et al.).



**03**

# **Upland Water Management**

# Clean Water Act

The Clean Water Act (CWA), Title 4, Subtitle 2 of the Environment Article of Annotated Code of Maryland states that “the management of stormwater runoff is necessary to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding, all of which have adverse impacts on the water and land resources of Maryland” (Center for Watershed Protection).

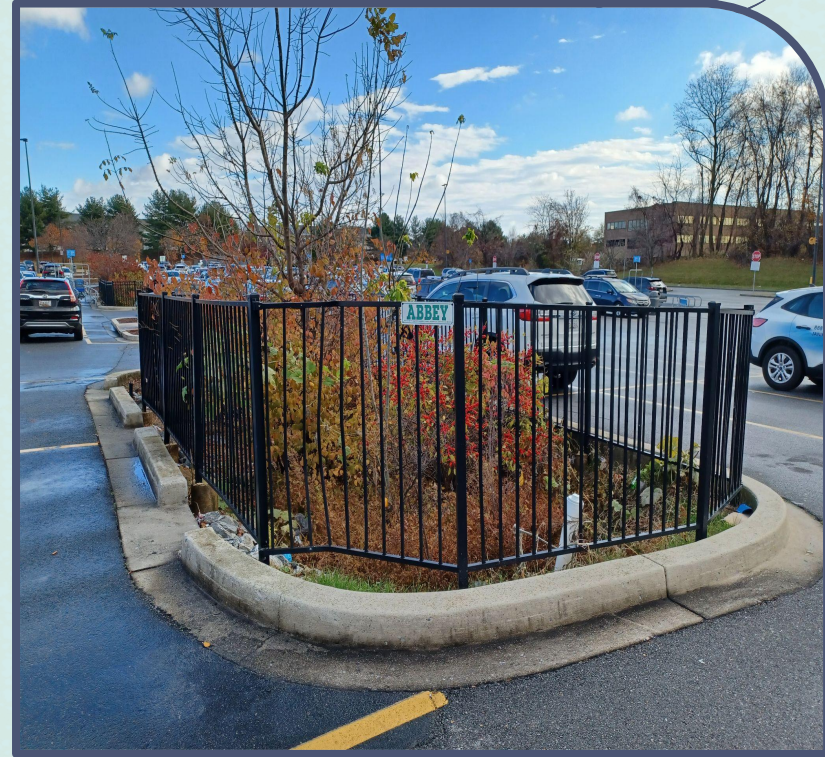


Photo courtesy of S. Boies

# Upland Water Management

Managing runoff *before* it gets to streams is the ideal way to protect streams and our community.

We would like Howard County to employ upland management strategies to prevent silt, sediment, phosphorous, and nitrogen from entering our waterways and the Chesapeake Bay.

See Montgomery County's ["Green Streets" PDF](#) for more examples.



Photos taken from *Green Streets*

# Rain Gardens

Rain gardens come in all sizes and are designed to collect stormwater runoff by using plants to filter and absorb polluted stormwater, allowing it to soak into the ground instead of entering our streams and waterways.



# Bio-retentions and Bioswales

Bio-retentions and bioswales slow down the rate of water flow, creating temporary areas of pooled water. As the water is absorbed, pollutants from the stormwater are filtered out before they reach waterways and streams.



# Curb Extensions with Bioswales

Curb extension create safer crossing for pedestrians. Those that contain bioswales are BMPs, and serve a bigger purpose. Curb extensions also provide traffic calming and creates minimal impact to parking.



Photos taken from *Green Streets*

# Riparian Buffers

- Riparian buffers are strips of trees, shrubs, and native vegetation that naturally occur along the sides of streams and rivers.
- These areas can also be reforested for MS4 credits.
- Control erosion, stabilize streambanks, reduce flood impacts, provide shade for animals and improve water quality.





**04**

# **Our Solution**



# Our Solution to Stream Restoration Projects in HoCo

- We would like for the remainder of this permit period (ending on July 1, 2027), for Howard County to ban any more stream stabilizations.
- Residents of Howard County should be notified in advance of the county seeking a renewal of the 5 year MS4/NPDES permit to MDE of all stream stabilization projects, and all in-stream channel work. There should be sufficient time for Howard County to hold a public hearing and public comment period before the application is submitted to MDE.



## Our Solution (continued)

- Additionally, the public should be notified of each individual project and have an opportunity to attend a hearing with a public comment period before a project is approved for a permit.
- After the permit period has ended, Howard County should put a cap on the amount of impervious surface that will be converted into stream stabilizations and 'in-stream channel' work performed for the MS4 credits. To be able to meet the MS4 goals of each five year MS4 permit, at no more than 20% should be allocated into stream stabilizations.




# Our Solution (Continued)

- The other 80% of credits should come from upland, out of stream BMPs that are scientifically proven effective.
- Stream stabilization credit values should be halved after the current permit period (July 1, 2027).
- The county should provide additional credits toward the maintenance of existing BMP's, like the ones we've mentioned earlier.



**We are the future of  
Howard County...**

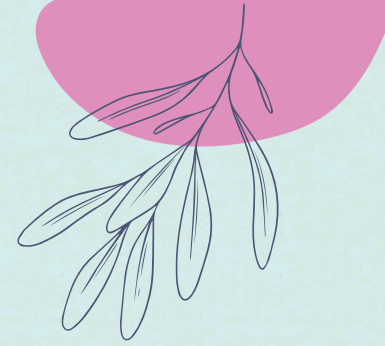

**Save Our  
Streams!**





**05**

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# Questions?

