

## Mother Nature pays a toll too

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The recession left an unprecedented number of residential construction sites sitting idle in the Upstate and the environment might be paying for it.

Clemson University's Abandoned Developments Project identified more than 100 unfinished residential construction sites in Greenville, Spartanburg and Pickens counties since March. Evidence of erosion and sediment impacting the water bodies and aquatic ecosystems has been noted on the site's interactive map.

"This is a serious problem and almost all Upstate streams are impacted," said Stephen Klaine, director of Clemson University's Institute for Environmental Toxicology.

Klaine's department has been researching this issue for nearly 15 years. When trees and shrubbery are removed for building, the rainwater causes erosion without any plants to slow the drainage. Sediment leaks into water systems, killing invertebrates within them.

The time span from tree and shrub removal to building completion can have significant, negative impacts - and those impacts only increase if developments are left idle or abandoned over time.

Adding silt screens, groundcovers, or breaking up the earth and planting seeds can prevent around 80% of the erosion issues affecting the ecosystems and oftentimes satisfy legal requirements of developments. But the remaining 20% of erosion is still a major issue, Klaine said. He hopes to encourage developers to go above and beyond the minimum legal standards to protect the streams and environment.

The Abandoned Development Project's website began organically as a research project by former Clemson student Josh Werts. It allows anyone to post anonymously on the project's website about idle or abandoned de-



Idle developments can cause environmental issues to water systems. (Photo/Provided)

velopments in the Upstate and the potential environmental impacts of the surrounding ecosystems.

Elena Mikhailova, a Clemson social sciences assistant professor, and Chris Post, a Clemson environmental information science associate professor of Geographic Information Systems, have since taken over the project.

"My husband and I first noticed the red clay when flying out of Greenville. It was everywhere," Mikhailova said. "Following the burst of the housing bubble, a lot of housing developments were unintentionally abandoned."

Mikhailova said the website is a way to use social media and web-based technology to spark interactive, positive dialogue between the business community, developers and residents.

The site hopes to spur action to avoid future problems and remedy current issues. Posts are anonymous and unchanged.

"If it continues on massive scale, then we'll be looking at massive destruction of the environment," Mikhailova said. "Our state is very much based on tourism and the environment needs to look good to continue utilizing that."

Clemson University and Upstate Forever are partnering to take the scientific research and turn it into policy to encourage sustainable thinking from developers throughout the entire process, Klaine said.

Visit <http://abandoneddevelopments.com/> to see the current developments or to add to the list and join the conversation.