

## **Triple-mission riparian buffers: environmental stewardship, profits in the off-season, and youth involvement**

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Emphasis of this project is on multi-use plantings with the incorporation of horticultural enterprises and new crops that offer multiple benefits for the farmer and his family, including effective runoff management, financial returns during off-season time, and the involvement of children.

Willows are an efficient component of riparian buffers due to their high transpiration rates and extensive root systems that effectively trap runoff from fertilized agricultural fields thus assisting with runoff management on the farm. Willow species with ornamental stems for winter-spring harvest incorporated into riparian buffers can be a unique production niche for farmers offering opportunities to supplement incomes during the dormant season. Due to its relative ease of cultivation and visual appeal, willow is an engaging crop for junior members of the family that encourages children's involvement in the production cycle while teaching basic agricultural practices.

This project seeks to select ornamental species suitable for incorporation into riparian buffers and to replace traditional varieties that are used for cut-stems with varieties offering higher yields, exhibiting improved stress resistance and are more suitable to the consumer's taste; to integrate willow riparian buffers into existing agricultural settings; to develop effective production practices using a short-rotation coppice system based on the principals of sustainability. The project also aims to develop a new appealing product - living structures and mini-villages for children constructed from brightly colored willow whips - that can be sold in kit form in late spring thus broadening the market window and supplementing farm income. The project is meant to include junior members of the family into product development and production cycles in order to provide a steady supply of interested, skilled and trained farmers to sustain future agriculture in the U.S. Field trials, integrated on-farm demonstrations, extension publications and workshops will be developed to introduce farmers to these value-added off-season products.