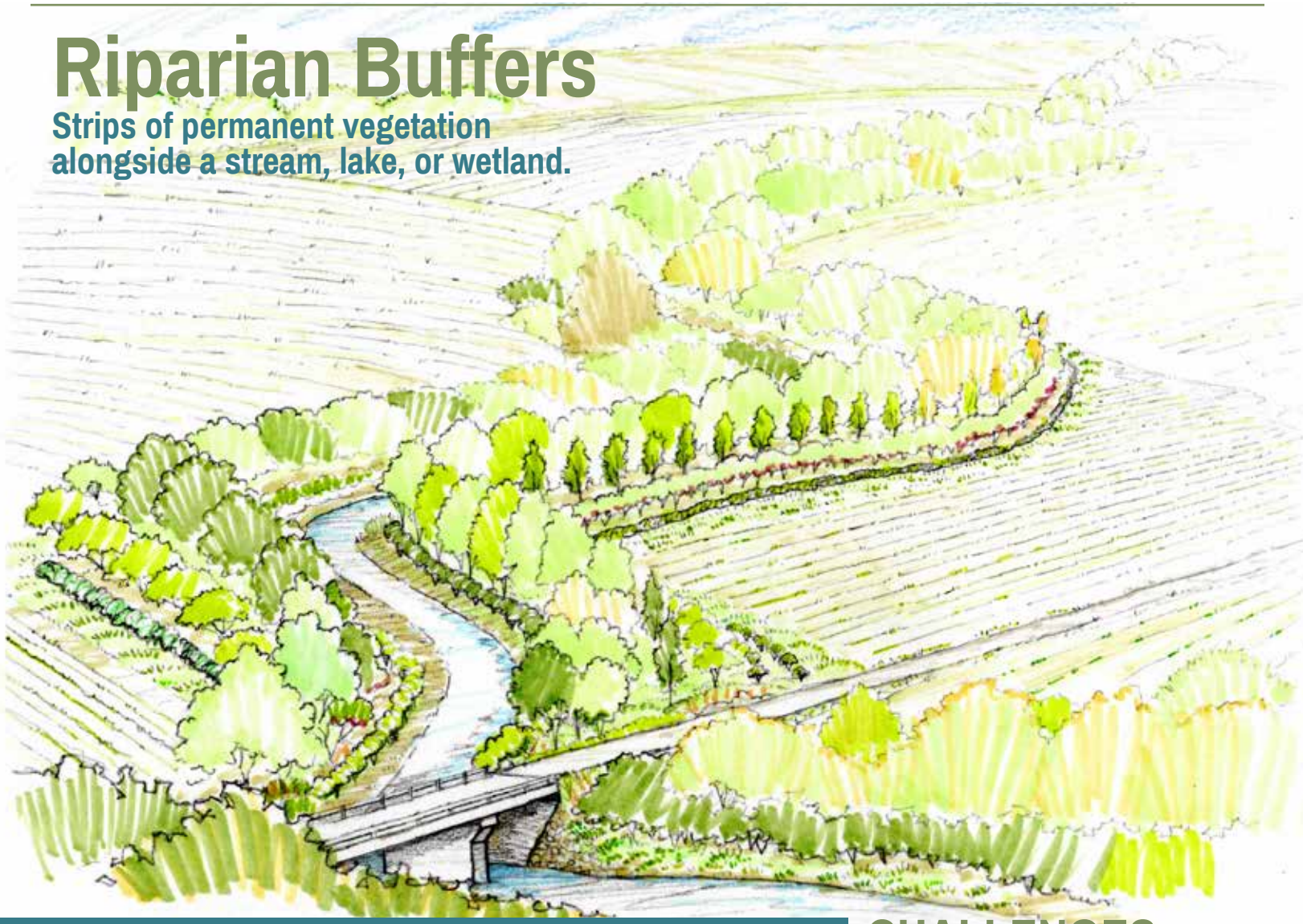
SAVANNA INSTITUTE

UNDERSTANDING AGROFORESTRY

Riparian Buffers

Strips of permanent vegetation alongside a stream, lake, or wetland.



BENEFITS

Economic

PRODUCES INCOME FROM MARGINAL FARMLAND by using resources that are otherwise underutilized due to frequent flooding and poor yields.

DIVERSIFIED INCOME AND FOOD SECURITY from trees, shrubs, and other perennial plants that can be cultivated as food, fiber, and fodder for sale or subsistence purposes.

PROTECTS CROPS by buffering floods.

Ecological

WILDLIFE HABITAT AND CORRIDORS provide resources for pollinators and refuge for beneficial insects that control pests on farm.

EROSION STABILIZATION via above ground foliage and below ground roots that slow run-off, trap sediment, and prevent channelization of streams.

FILTERS NUTRIENTS, PESTICIDES, AND SEDIMENT from runoff. Below-ground roots can take up excess nutrients.

CHALLENGES

FINANCIAL INVESTMENT requires farm to take area out of commodity crop production. Incorporating productive tree and shrub crops into buffer helps to offset loss in acreage.

POTENTIAL TRADEOFFS: There may be trade-offs in performance and/or cost among designs intended to meet a combination of economic and ecological objectives.

HIGH INITIAL INVESTMENT, SLOW RETURN: Including crop-producing trees and shrubs can require high maintenance (pruning, herbivory prevention, and weed control) in initial years when there are not yet returns via harvest.

PUTTING IT INTO PRACTICE

Frequently Asked Questions

BUFFER SIZE AND SHAPE?

Should be based on intended goals.

NARROW: stabilize bank and trap sediment

MEDIUM-WIDTH: enhance aquatic and terrestrial habitat

WIDE: filter soluble nutrients

CAN I HARVEST CROPS FROM THE BUFFER?

If food- and fodder-producing species are included in the buffer, harvesting those crops can provide products for personal consumption and sale.

If harvesting from a buffer that is part of a government cost-share program, make sure harvest complies with program regulations.

PLANT SELECTION?

Buffer must include grasses, forbs, shrubs, and trees arranged in manner to meet particular objectives.

Plants can include both wild, native plants, and improved varieties of food- and fodder-producing species.

Improved varieties typically cost more and require more management, but also provide more potential for future revenue from the buffer.

For example (see sketch above):

ZONE 1: native riparian forest trees and shrubs.

ZONE 2: improved varieties of fruit and nut trees and shrubs with non-aggressive ground cover.

ZONE 3: native herbaceous species, pollinator planting, or perennial shrub crop production.

MANAGEMENT PLAN?

- Pre-existing perennial ground cover should be controlled prior to establishment to maximize survival.
- Consider tree tubes and/or fencing to protect trees from wildlife damage
- Consider weed mats, mulch, or planted ground cover to control aggressive vegetation.

FUNDING AND PLANNING ASSISTANCE?

Connect with the local conservation district and extension offices to learn about federal and state cost-share programs such EQIP, CRP, and CSP. These offices can also provide connections with regional consultants and technical service providers.

The Savanna Institute is a 501(c)(3) nonprofit organization working to catalyze the development of and adoption of resilient, scalable agroforestry in the Midwest US. We work in collaboration with farmers and scientists to develop perennial food and fodder crops within multifunctional systems grounded in ecology and inspired by the savanna biome. The Savanna Institute strategically enacts this mission via research, education, and outreach.

SARE Sustainable Agriculture Research & Education

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