

An aerial photograph of a rural landscape. A river flows through the center, bordered by a dense forest. To the right, there are green fields and a farm with several white buildings. The top of the image has a semi-transparent grey box containing the title text.

Alternative Products from Riparian Buffers

Tracey Coulter

Allegheny Society of American Foresters

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Overview

- Overview of Agroforestry Practices
- Existing Resources
- Buffer Design
- Potential Crop Species



FOREST FARMING



ALLEY CROPPING



WINDBREAKS



SILVOPASTURE





WOODY BIOMASS



RIPARIAN FOREST BUFFERS (RFB)



Why is PA thinking about alternative RFB Designs?



What Are Multifunctional Buffers?

Buffers that
serve functions
beyond conservation



Native nut trees
and shrubs



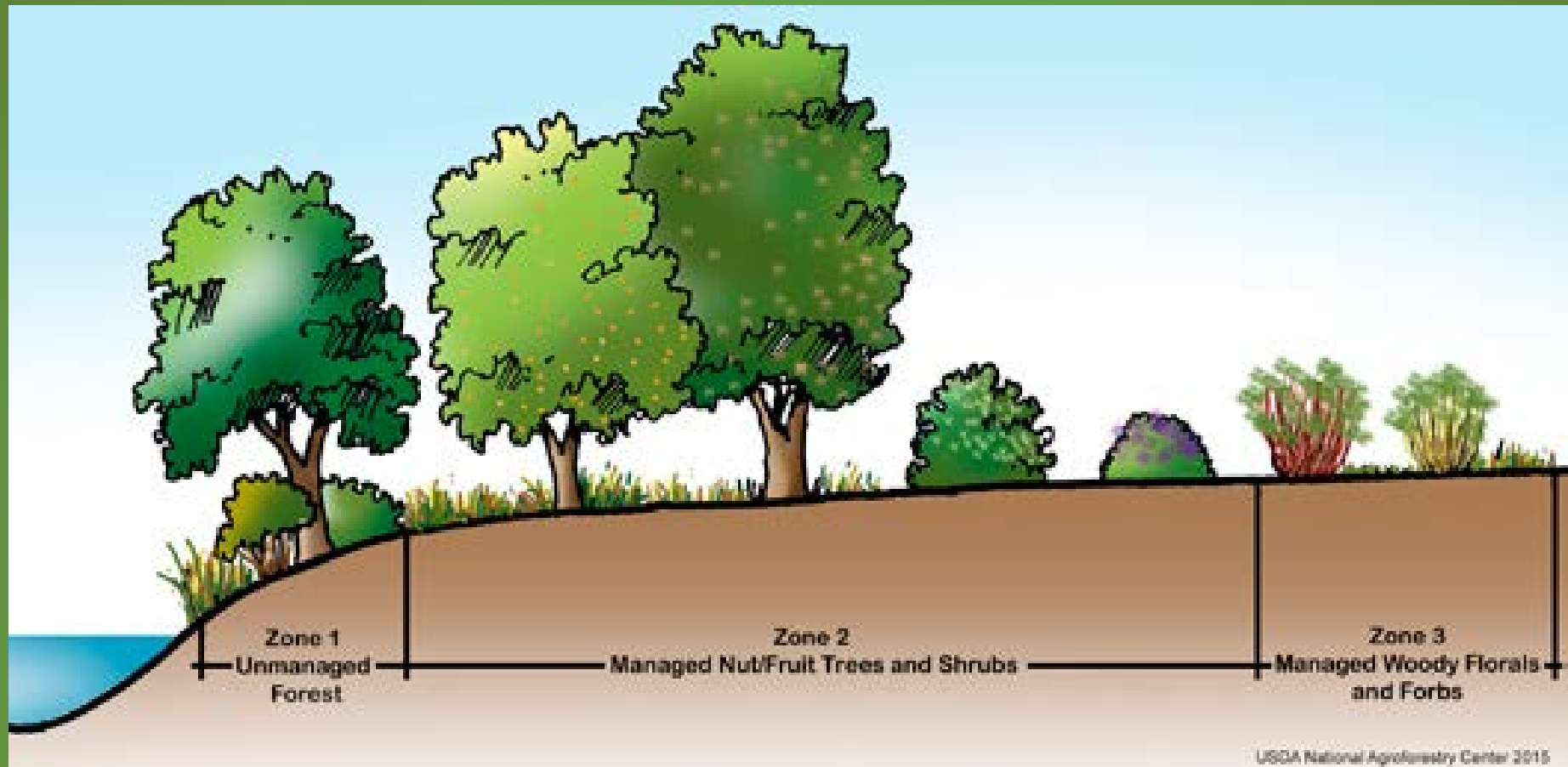
Native fruit trees and shrubs



Woody Florals



Multi-Functional Buffer Concept



Zones 2 and 3: planted with different species and at expanded widths to incorporate perennial crops of fruits, nuts, and floral trees and shrubs.

Multi-Functional Buffer Concept: Publications

Penn State **Extension**

AGRICULTURAL ALTERNATIVES

Highbush Blueberry Production

Blueberries can be a suitable crop for small-scale and part-time farm operations. However, blueberry production is for everyone due to the specialized cultivation requirements of the plants and the relatively short shelf life of the fruit. The initial investment is high, primarily because of the cost of preparing the land, establishing plants, and installing an irrigation system. However, equipment needs for small plantings are minimal once the plants are established and healthy, well-tended plants can be expected to bear fruit for fifty years or more. Demand for blueberries has been strong in recent years, and fresh-market prices have been relatively high because per capita consumption of blueberries in the United States has been increasing.

To meet this growing consumer demand, commercial blueberry acreage and production has doubled in the past fifteen years. Major increases have occurred in the Pacific Northwest, California, and in the southeastern United States. Half of world's commercial production is from the United States, with considerable production also occurring in Canada and Poland.

Four types of blueberries are grown North America: northern highbush (used in commercial plantings in cooler climates), lowbush (wild fruit harvested commercially in New England), and southern highbush and rabbiteye (used in commercial plantings in the southern United States). This publication focuses on northern highbush blueberry production.

This publication was developed by the Small-scale and Part-time Farming Project at Penn State with support from the U.S. Department of Agriculture-Extension Service.

PENNSTATE
Cooperative Extension
College of Agricultural Sciences

Edibles and florals harvested from multifunctional riparian forest buffers*

Pawpaw	Persimmon	Elderberry
<p>Market Opportunities</p> <p>With a tropical flavor, custard texture and high nutrient content, America's forgotten fruit can be eaten fresh or made into desserts.</p> <p>Average Prices</p> <p>Fresh fruit: \$2/lb wholesale \$3+/lb retail</p> <p>Frozen pulp: \$8/lb retail</p> <p>Jam: \$6/oz jar retail</p>	<p>Market Opportunities</p> <p>The "Fruit of the Gods," sweet persimmon can be sold fresh or made into pudding, jam, dried fruit and even beer.</p> <p>Average Prices</p> <p>Fresh fruit: \$2.75/lb retail</p> <p>Frozen pulp: \$8+/lb retail</p> <p>Dried fruit: \$11+/lb retail</p>	<p>Market Opportunities</p> <p>Coined "Nature's Medicine Chest" for its immune boosting properties, elderberries can be made into syrup, cough drops, juice, wine, jam and food coloring.</p> <p>Average Prices</p> <p>Juice: \$16-\$17/11oz jar</p> <p>Syrup: \$18/4oz jar retail</p> <p>Wine: \$10-\$13/bottle retail</p> <p>Cough drops: \$2.50/16 retail</p>
Hazelnut	Woody Florals	Black Walnut
<p>Market Opportunities</p> <p>A great source of fiber and 'good' fats, hazelnuts can be sold in shell or shelled and made into flours, candies, butters and oils.</p> <p>Average Prices</p> <p>In shell: \$3/lb wholesale \$8/8oz retail</p> <p>Oil: \$8/8oz jar retail</p>	<p>Market Opportunities</p> <p>Woody florals, such as pussy willow and red and yellow twig dogwood, can be coppiced every 2-3 years and sold to the floral industry or used in crafts.</p> <p>Average Prices</p> <p>Cuttings: \$0.37-0.45/stem retail</p> <p>Wreaths: \$45+ ea retail</p>	<p>Market Opportunities</p> <p>This multi-use tree produces valuable timber and heart-healthy nuts sold in shell or shelled.</p> <p>Average Prices</p> <p>In shell: \$9.25/lb retail</p> <p>Shelled: \$12/lb retail</p>

*Prices can vary considerably by season and local markets.

APPALACHIAN SUSTAINABLE DEVELOPMENT

USDA National Agroforestry Center: 402-437-2578 ext. 4812; 402-437-3722; 2047 N. 28th St., Lincoln, Nebraska 68503-0022 nrc.usda.gov

USDA National Agroforestry Center (NAC) is a partnership of the Forest Service (Research & Development and State & Private Forestry) and the National Cooperative Extension Service. NAC's staff is located at the University of Nebraska, Lincoln, NE. NAC's purpose is to facilitate the development and application of agroforestry technologies to create more sustainable, environmentally, and socially profitable agricultural systems. NAC provides technical assistance and training, establishes demonstration sites, and provides useful information to related extension professionals. NAC also provides technical assistance and training to small-scale farmers and ranchers. NAC is a part of the National Agroforestry Center (NAC) which is part of the National Agroforestry Center (NAC) which is part of the National Agroforestry Center (NAC). For more information, contact the National Agroforestry Center at 202-720-2400 (voice) and 202-720-2400 (fax).



How to Plan for and Plant

Streamside Conservation Buffers with Native Fruit and Nut Trees and Woody Floral Shrubs



Katie E. Trozzo, Extension Project Associate, Forest Resources and Environmental Conservation, Virginia Tech

John F. Munsell, Forest Management Extension Specialist and Associate Professor of Forest Resources and Environmental Conservation, Virginia Tech

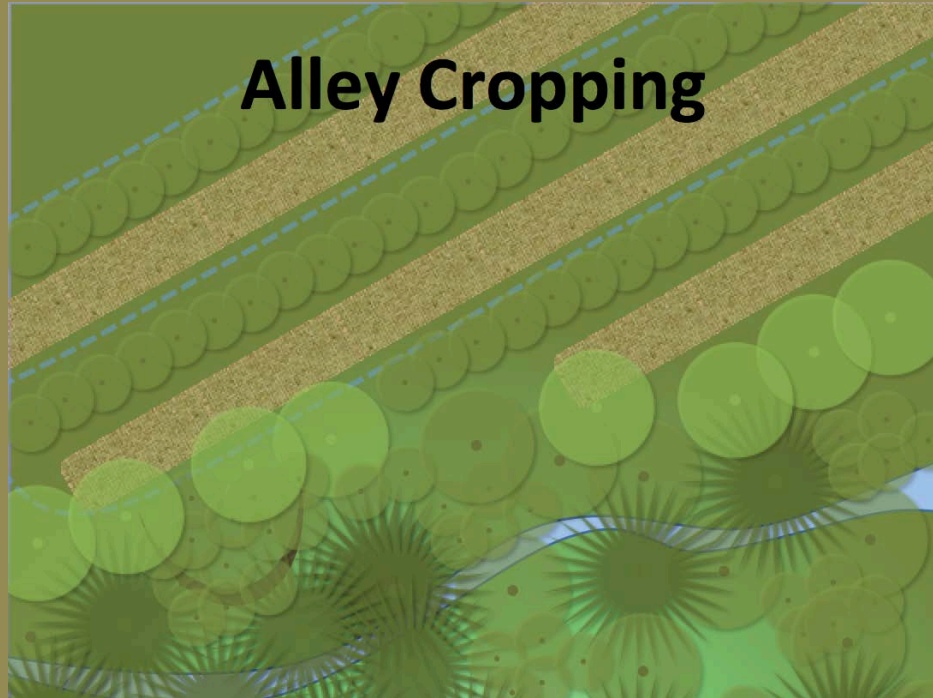
James L. Chamberlain, Research Forest Products Technologist, Southern Research Station, U.S. Department of Agriculture Forest Service

Virginia Cooperative Extension
Virginia Tech + Virginia State University
2013 Publication ANR-69P

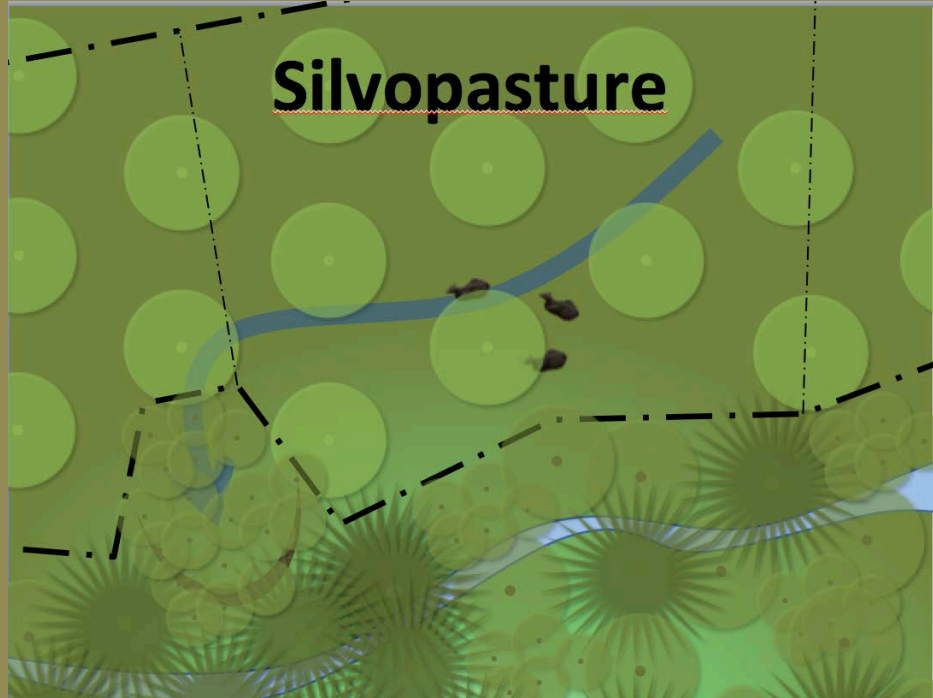
Forest Farming



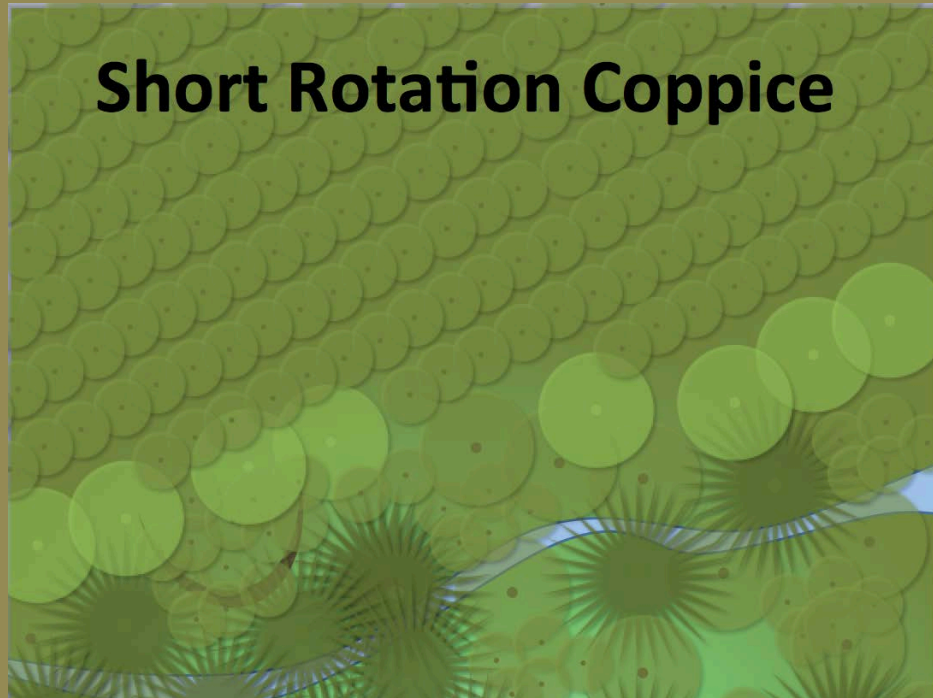
Alley Cropping



Silvopasture



Short Rotation Coppice



Multi-Functional Buffer Concept: *Woody Floral Buffer Design*



Source: Katie Trozzo, Va Tech

Forest Farming



- Food—fruits, nuts, mushrooms, syrups, seasonings
- Medicinal—mushrooms, roots, teas, tinctures
- Decoration—flowers and dried berries
- Crafts—wreaths, baskets
- Other specialty

Ramps

- Mixed hardwoods
- North- and east-facing slopes
- Indicators—trout lily, mayapple, trillium, nettle
- Harvest --- April
- Planting bulbs --- Mid-March to early April
- Seeds --- August - September



Pawpaw

- Naturally more shade tolerant
- Best production in full sun
- Moist, rich soils
- Plant in spring
- Fruit production 5-7 yrs.
- Cultivars



Nuts—Foraged



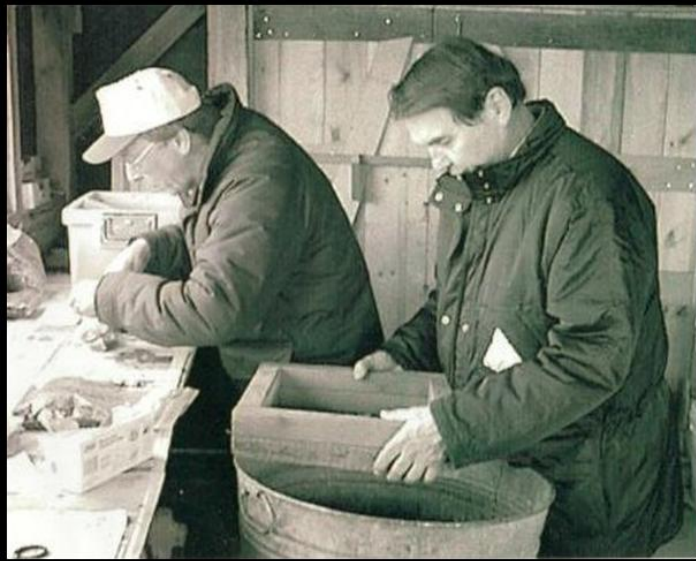
Nuts—Cultivated



AMERICAN HAZELNUT

- Windbreak, edge, intermittent stream
- Can spread through suckers
- Netting or other protection
- Can produce 10-15 lbs.

Nuts—Cultivated

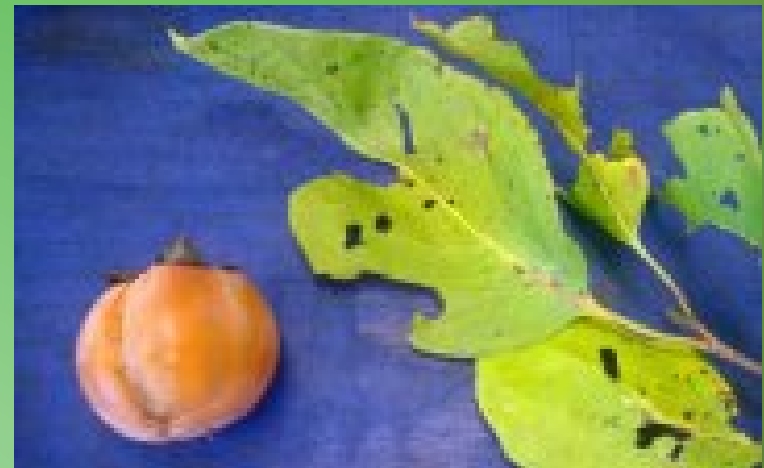


CHESTNUT

- Upland alleys and fields
- Fresh nuts
- Dried/frozen nuts
- Gluten-free flour
- Co-op opportunities ?

Persimmon

- Very adaptable
- Shade tolerant
- Range of soils
- Slow-growing
- Wood –close-grained and strong
- Interplant with
 - Sassafras
 - Elm



Berries

- Species:
 - Elderberry
 - Chokecherry
 - Serviceberry (saskatoon)
- Windbreak or edge plantings
- Riparian buffer
- Medicinal or culinary uses



Spicebush berries



- Shade tolerant
- Moist soils
- Culinary uses

»Spices

»Distilleries

»Breweries

»Teas



A Few More Examples...

- Blueberry
- Crabapple
- Serviceberry
- Hydrangea
- Maple Syrup
- Chokeberry
- Dogwoods
- Pussy willow
- Curly willow
- Witch hazel



To Learn More:

- Northeast/Mid-Atlantic Agroforestry Working Group www.nemaagroforestry.org
- USDA National Agroforestry Center (NAC) <http://nac.unl.edu>
- Association for Temperate Agroforestry (AFTA)
- <http://www.aftaweb.org/about/afta.html>

Contact me:

Tracey Coulter - PA DCNR Bureau of Forestry

trcoulter@pa.gov 717-783-0318

