

A close-up photograph of a plant branch with several leaves. The leaves are primarily green, but some are transitioning to a reddish-pink color, indicating autumn. The leaves have serrated edges and prominent veins. The background is a dense thicket of similar foliage.

Perennial Crops for the St. Croix Valley

Productive, resilient agro-ecosystems



Who is this guy?



Creating land-based Communities



Our Journey Unfolds..



Erosion

ADDRESSING COMMON ISSUES



Poor Drainage & Seasonal Fluctuation

ADDRESSING COMMON ISSUES



Production on Marginal Lands

ADDRESSING COMMON ISSUES



Riparian Buffers
Food and Shelter

Habitat along streams should contain a diversity of plants. Willows, in particular, will nourish bumble bee queens in the spring so that large numbers of workers are available when crops begin to bloom.



Snags
Shelter

Keeping dead trees standing provides shelter for native bees. Some solitary bees build nests in abandoned beetle tunnels in snags.



Fallow Fields
Food and Shelter

Even small areas of fallow or unproductive land, especially when sown with native flowers, can offer important resources for native bees.



Hedgerows or Windbreaks
Food and Shelter

Creating hedgerows with a wide variety of plants that have overlapping flowering periods will provide bee habitat throughout the growing season and strengthen populations of natural enemies of crop pests.



Natural or Undeveloped Areas
Food and Shelter

Nearby natural areas may harbor all the native bees needed to pollinate your farm's crops. Consider inviting your neighbors to help with safeguarding these habitats.

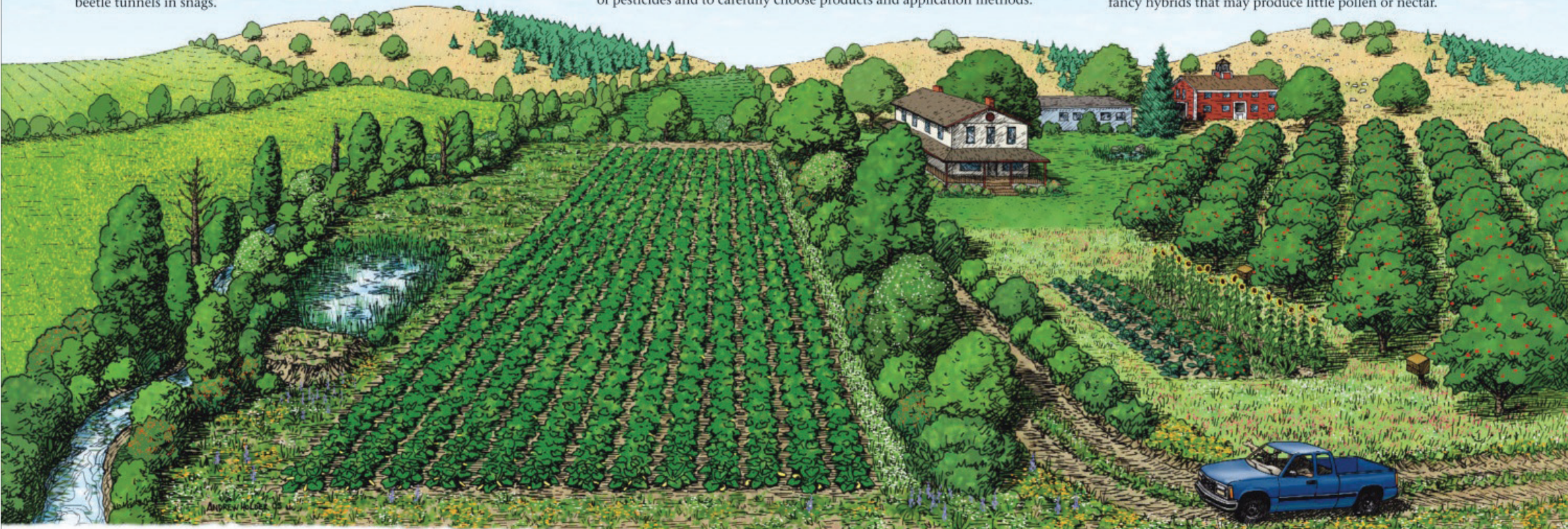
Pesticides

Insecticides kill pollinators outright, and herbicides may destroy plants important for both food and shelter. It is preferable to minimize your use of pesticides and to carefully choose products and application methods.



Gardens
Food

A vegetable, flower, or herb garden, with a diverse assortment of plants, is a good source of food for pollinators. Be wary of fancy hybrids that may produce little pollen or nectar.



Temporary Bee Pasture
Food

Planting fields with canola or other inexpensive seed—or allowing crops such as lettuce, kale, basil, and broccoli to bolt—will supply bees with nectar and pollen.



Ponds and Ditches
Food and Shelter

When you create a pond or ditch, leave the pile of excavated soil. Ground-nesting bees may build nests in stable, bare areas of this mounded earth. Planting clumps of native flowers will attract more pollinators.



Field and Road Edges
Food and Shelter

Leave areas next to fields untilled and unsprayed to support flowering plants and provide nest sites for ground-nesting bees.



Cover Crops
Food

Flowering plants—certain legumes in particular—can be included in cover-crop mixes to supply pollen and nectar.



Artificial Nests
Shelter

Making bee blocks for wood-nesting bees is a good way to increase the number of native bees in your landscape.

Diversified Harvests + Income

RELIABLE LAND ENTERPRISE



An Uncertain Climate

RELIABLE LAND ENTERPRISE



Resilient Natives

RELIABLE LAND ENTERPRISE



Perennial Root Structure

PERENNIAL BENEFITS



Air + Water Infiltration

PERENNIAL BENEFITS



Carbon

PERENNIAL BENEFITS



Long-term Investment

THE BOTTOM LINE



Niche Income Streams

THE BOTTOM LINE



Shelf-stable Products

THE BOTTOM LINE



A Cooperative Model

THE BOTTOM LINE



Equipment

THE BOTTOM LINE



Establishment + Irrigation

THE BOTTOM LINE



Establishment + Maturation

THE BOTTOM LINE



Establishment + Weed Management

THE BOTTOM LINE



Income, Personal Use, Wildlife?

MEETING YOUR GOALS



Your Lifestyle and Crop Activities

MEETING YOUR GOALS

An aerial photograph showing a landscape with agricultural fields, a wooded area, and a stream. The fields are divided into rectangular plots, some of which are brown and some are green. A stream flows through the center of the image, bordered by a dense line of trees. The background is a dense forest of trees.

Site Conditions
WORKING WITH NATURE



What's Naturally There?
WORKING WITH NATURE



Species and Variety Selection

DIVERSIFIED ORCHARDS



Extended Plant Palette

DIVERSIFIED ORCHARDS

BOTANICAL - *Sambucus canadensis* cultivar's

TOP VARIETIES - Adams, Johns, York, Bob Gordon

SUNLIGHT - Full Sun

SOIL TYPE(S) - High Organic Matter, pH 5.5-6.5

MOISTURE - High

IRRIGATION NEEDS -

Requires Irrigation for Optimal Production

FERTILITY NEEDS - NPK inputs

MARKETABLE HARVESTS -

Flowers, Fruit, Cuttings for Propagation

EXISTING VIABLE PRODUCTS -

Juices

Syrups

Immune-boosting elixirs

Tincture

Dried berries

Jam/jelly

Cuttings for propagation



American Black Elderberry

TOP-PERFORMING PLANTS

BOTANICAL - *Ribes* species cultivar's

TOP VARIETIES -

U of MN White Pine Blister Rust resistant var's

SUNLIGHT - Full Sun to Light Shade

SOIL TYPE(S) - Loamy clay ideal (pH 6-6.5)

MOISTURE - Well-drained, moisture-retentive

IRRIGATION NEEDS -

Requires Irrigation for Optimal Production

FERTILITY NEEDS - NPK inputs

MARKETABLE HARVESTS -

Fruit, Cuttings for Propagation

EXISTING VIABLE PRODUCTS -

Fresh Fruit

Dried fruit

Jam/jelly

Cuttings/Potted Plants for propagation



Black Currant

TOP-PERFORMING PLANTS



Spotted-wing Drosophila

PEST & DISEASE RESILIENCE

RESOURCES + Q/A

Elderberry Production -
www.riverhillsharvest.com/growers

Hazelnut Production -
www.americanhazelnutcompany.com/grow-with-us.html

Honeyberry USA -
<http://honeyberryusa.com/about-honeyberry.html>

***Please leave your email on the sheet for further links and information**