Cornell Cooperative Extension

Cornell Cooperative Extension | Putnam County

Putting knowledge to work to improve our community!

- The Environmental Horticulture and Natural Resources Program focus on an array of gardening, agricultural, and community health topics. Our current priority areas are **Climate Change** and **Food Systems**.
- The 4-H Program is a youth development initiative with a range of clubs and activities for kids from age 5-19.

www.Putnam.cce.cornell.edu Social media: @CCEPutnam

Gardening questions? Email Mastergardener.Putnam@gmail.com

Lakeshore Buffer Plantings

Promote Healthy Lakes

"A lake is the landscape's most beautiful and expressive feature. It is earth's eye; looking into which the beholder measures the depth of his own nature."

~ Henry David Thoreau ~

Photo Credit: Maureen Galway-Perotti

Lakeshore Buffer Plantings

Promote Healthy Lakes

OBJECTIVES:

- Explain the Importance of Lakeshore Buffer Plantings
- Identify Best Management Lakeshore Buffer Practices

Clean Water and Healthy Ecosystems:

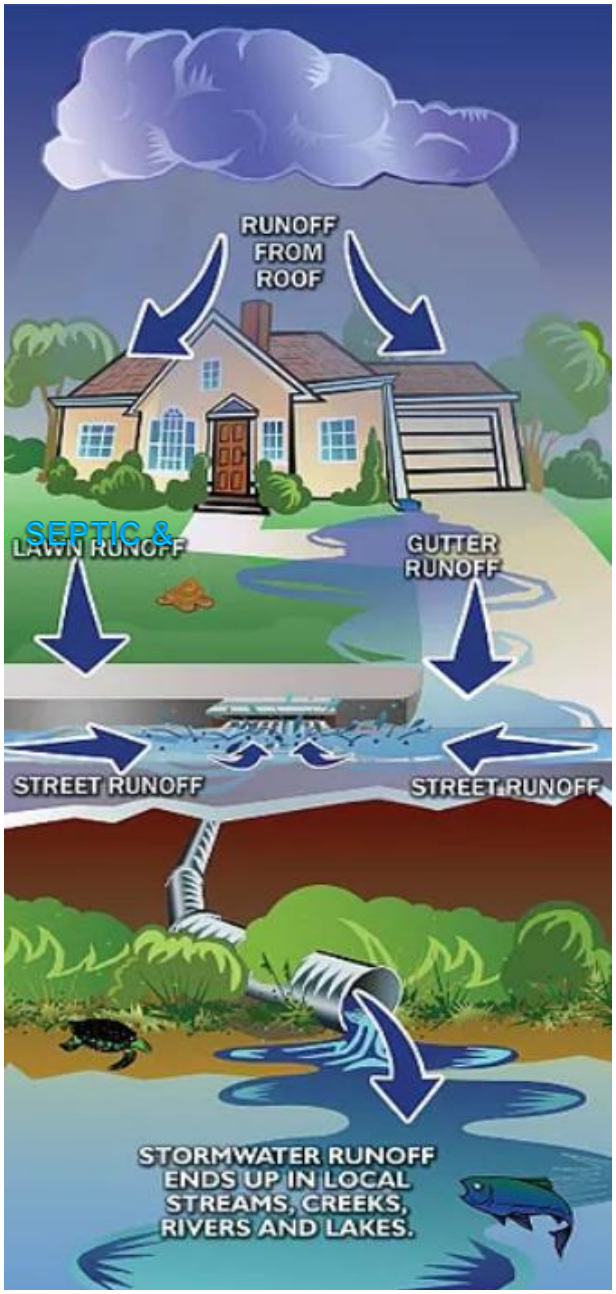
- Enhance our recreational experiences
- Provide fish and wildlife habitat
- Protect lake property values

Cause of Impaired Waterbodies

Phosphorus Pollution: ENEMY NUMBER ONE

Phosphorus Pollution

- Septic system discharges
- Nutrient-enriched storm water runoff



Phosphorus Pollution

- Septic system discharges
- Nutrient-enriched storm water runoff

Photo Credit: eParcel, Putnam County, NY

Best Practices for Living in a Lake Community

Let's Make Healthy Lakes Together

What you can do to help our lakes:

1. Maintain your septic system
2. Manage your lawn to prevent pollution
3. Be aware of your land use
4. Support local lake clean up efforts

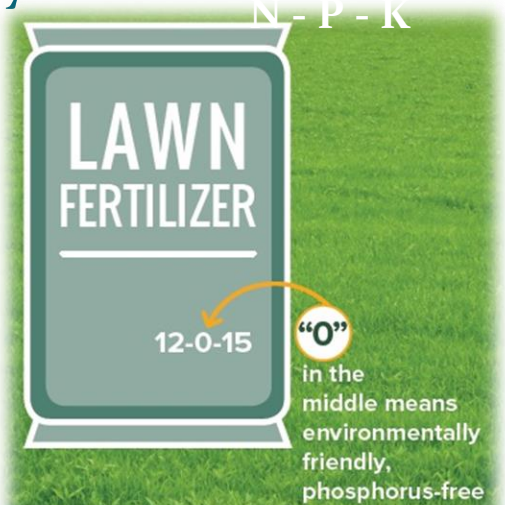
Maintain your septic system

- Pump and Inspect once every 2 – 3 years
  - Putnam Valley Town Code, Part II General Legislation Chapter 90: Septic Tank Pump Out Requirements for Protection of Lake Oscawana District
  - Section 90-3: Pump Out Requirements

- Protect your leaching area
  - Keep it free of Vehicles & Encroachments
  - Maintain grass cover

Manage your lawn to prevent pollution

- Follow Town Code
  - Putnam Valley Town Code, Part II General Legislation, Chapter 88: Phosphate Fertilizer – prohibits use of fertilizer containing phosphorus or any compound containing phosphorous (such as phosphate) to any outdoor location within the Town
- Look for the Zero!
- Minimize grass areas
- Use more native shrubs and ground cover



Be aware of your land use

- Properly store and dispose of **oil** and **toxic liquids**
- Do not dump anything into storm drains
- Clean up after your pets

Where do Buffers fit into all this?

The Federation of Vermont Lakes and Ponds

Buffers are Crucial

SINGLE MOST EFFECTIVE PROTECTION

for

- Water Quality
- Lake Ecosystems
- Essential Wildlife Habitat

How do Vegetative Buffers Work?

Protect Water Quality by:

✓Filtering Run Off

✓Absorbing
Excess Nutrients
(Phosphorus & Nitrogen)

✓Slowing Eutrophication

The Federation of Vermont Lakes and Ponds

Buffer Benefits

- Filter Run Off
- Absorb Excess Nutrients
- Slow Eutrophication
- Stabilize Shoreline
- Preserve Habitat
- Screen Noise
- Enhance Aesthetic Value

Deep-rooted native trees and shrubs stabilize the shoreline, provide a buffer against pollution, and improve habitat for lake fish and wildlife.

U.S. Environmental Protection Agency

What is a Buffer?

University of Wisconsin Extension Lakes – Native Plantings

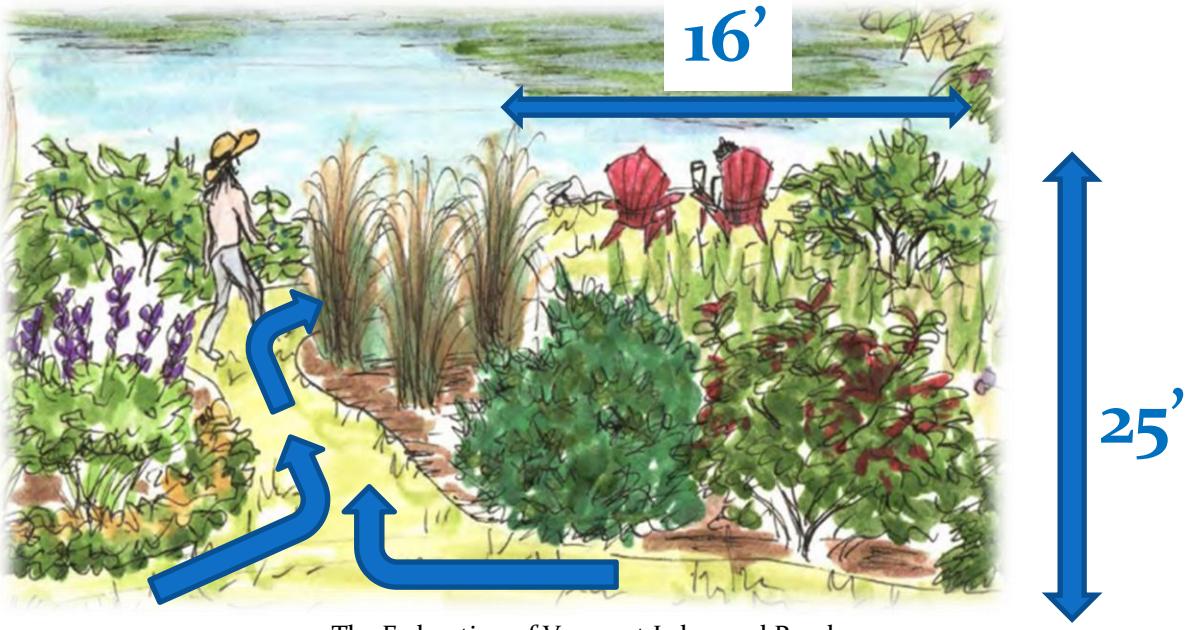
The Buffer Concept

Illinois Environmental Protection Agency

- **Strips of Vegetation**
  - ground covers
  - herbaceous plants
  - shrubs
  - trees
  - organic matter that accumulates on the ground
- **Transitional Areas**
  - where land and water meet
  - creates unique and highly productive ecosystems

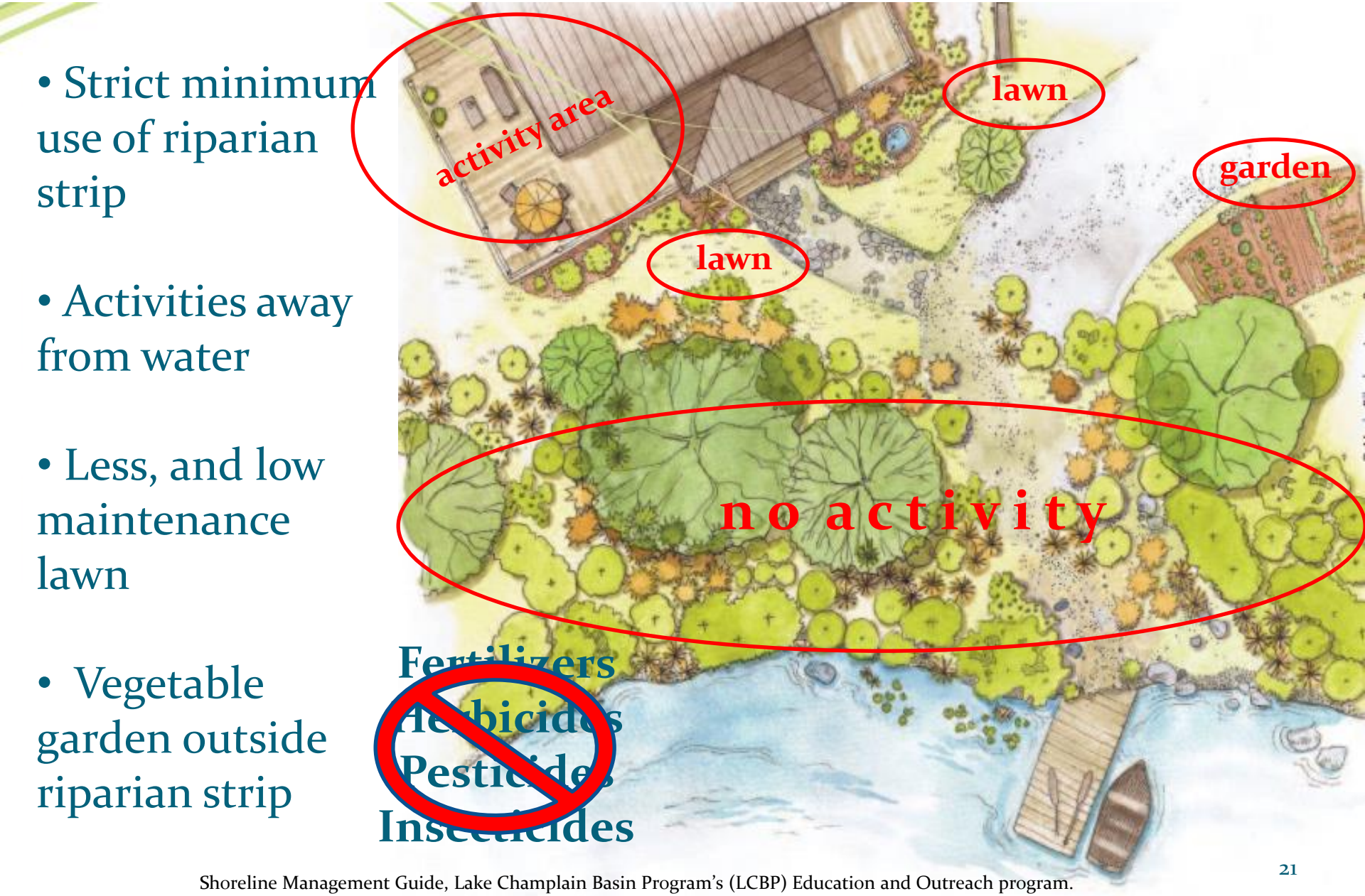
Best Management Lakeshore Buffer Practices

- Minimum 25’ vegetated buffer at the shore
- Multi-layered lakescape gardening with native plants
- No-mow zones and native wildflower meadows
- Meandering paths & infiltration steps to reduce erosion
- Water access no more than 16’ wide



Observing the Golden Rules: Land

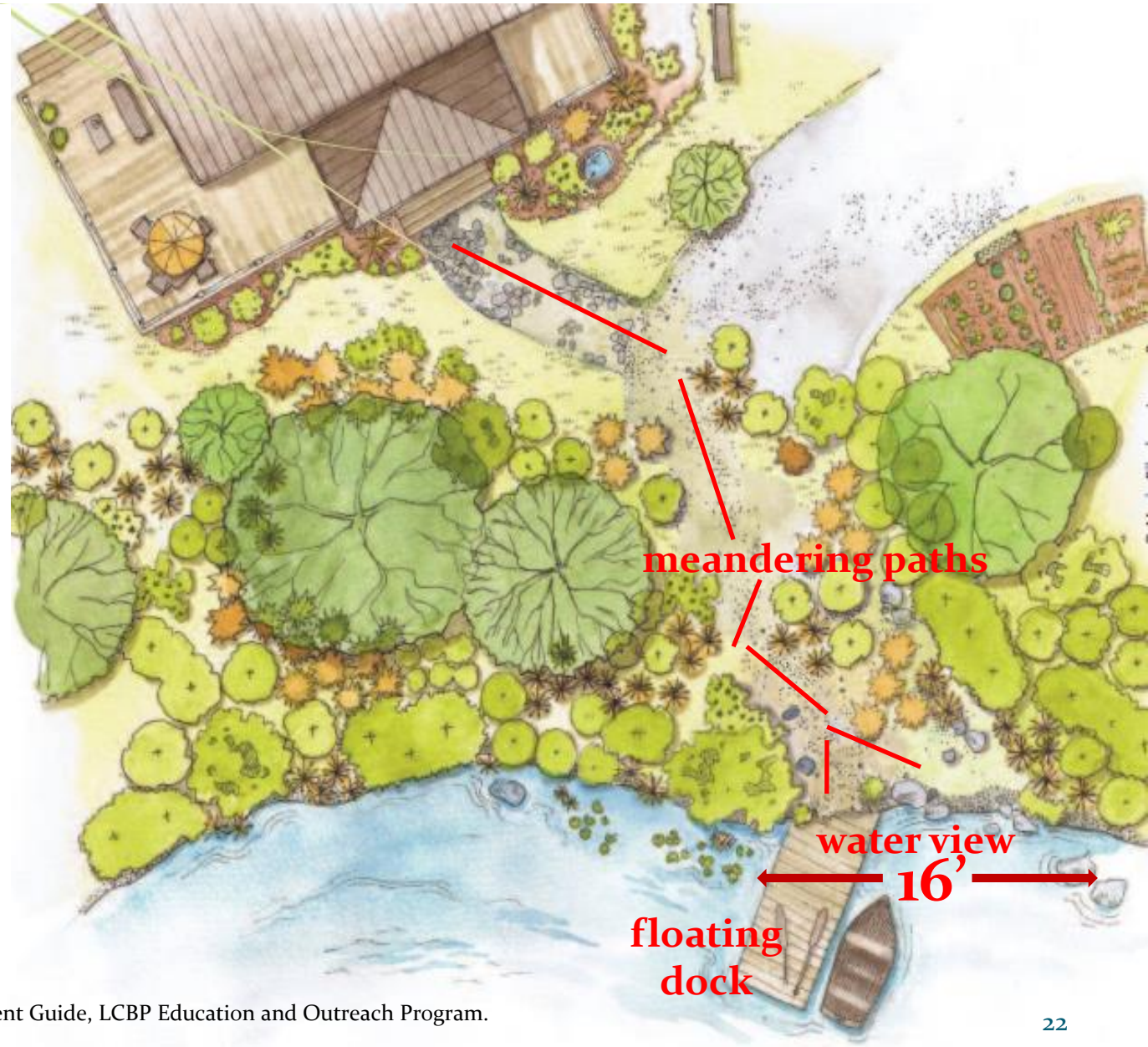
- Strict minimum use of riparian strip
- Activities away from water
- Less, and low maintenance lawn
- Vegetable garden outside riparian strip



Shoreline Management Guide, Lake Champlain Basin Program's (LCBP) Education and Outreach program.

Golden Rules: Water View/Access

- Diagonal water access
- Use of porous materials and replanting along border
- Water view no more than 16 feet wide
- Floating Dock



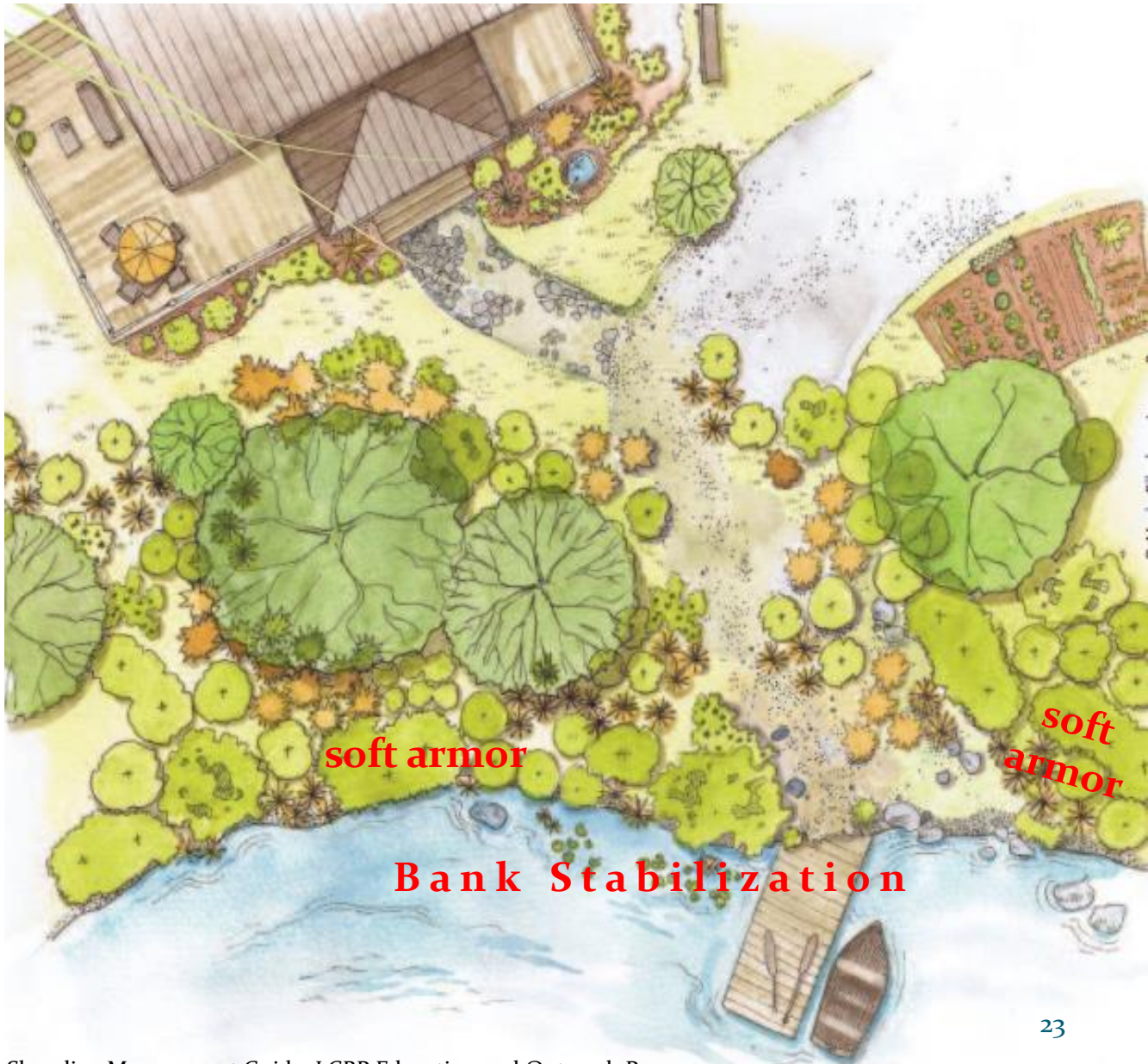
Shoreline Management Guide, LCBP Education and Outreach Program.

Golden Rules: Bank Stabilization

Natural stabilization methods

"Soft Armor"
(live plants, logs, root wads , vegetative mats)

- ✓Easier on environment
- ✓Imitates natural systems
- ✓Lasts longer & costs less
- ✓Alive
  - • adapts to changes in environment
  - •reproduces & multiplies
- ✓ Provides habitat
- ✓Trimmed to keep view

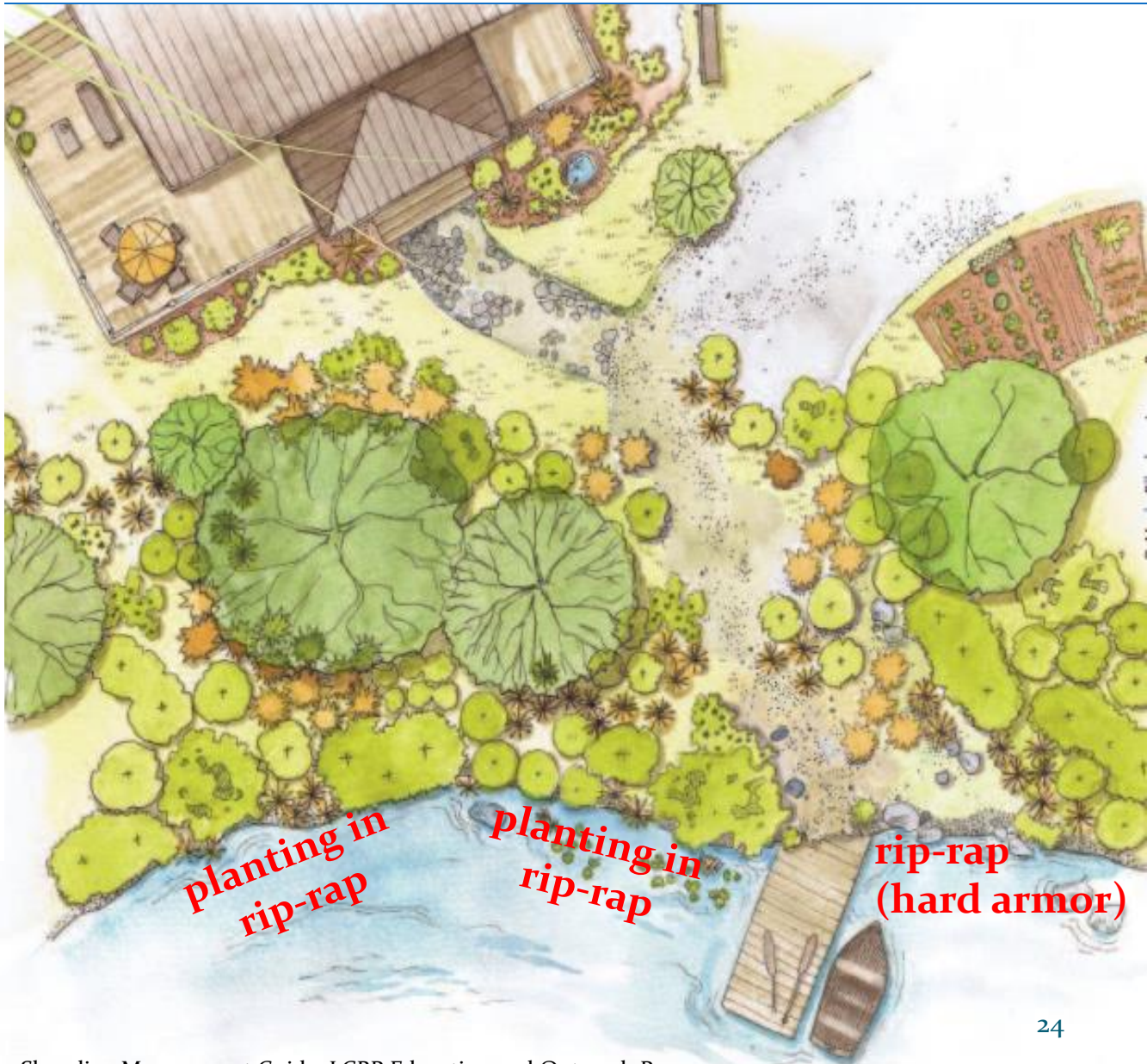


Golden Rules: Bank Stabilization

Restrict structural methods to problematic bank areas

"Hard Armor"
(rock rip-rap, stone blocks, sheet-pile , bulk heads, retaining walls other hard materials)

- Planting in hard armor to reduce water warming
- Never use wood treated with toxic substances

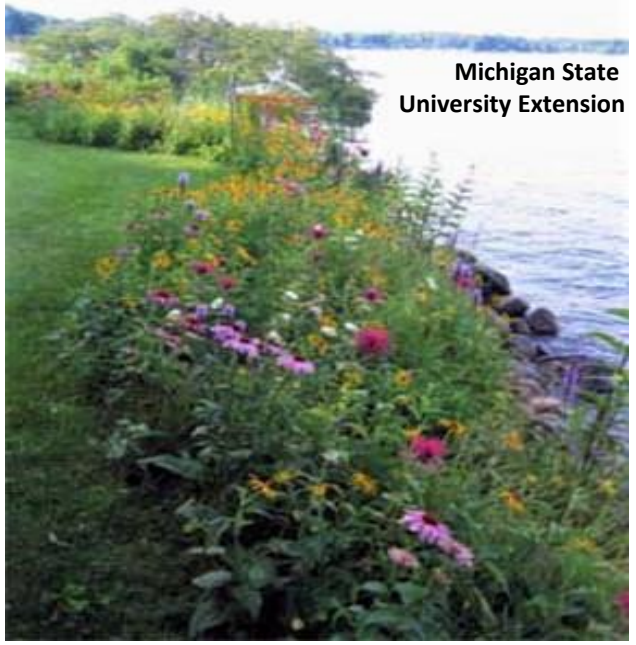


Soft and Hard Armor

Photo Credits: Maureen Galway-Perotti

Shoreline Savvy

Vadnais Lake Water Management Organization
Birch Lake Shoreline Restoration



Multilayered Native Plants in No-Mow Zone

Meandering Paths & Infiltration Steps

Water Access

Successful Planting: When & How

- When to plant:

  Spring to mid-June, or in the fall at the end of August.

- How to plant:

  Do not modify the soil texture so plants can adapt to the natural surrounding conditions.

- Caring for plants:

  Do not fertilize!

  Introduction of nutrients (nitrogen & phosphorus) contributes to eutrophication.

  Prune shrubs

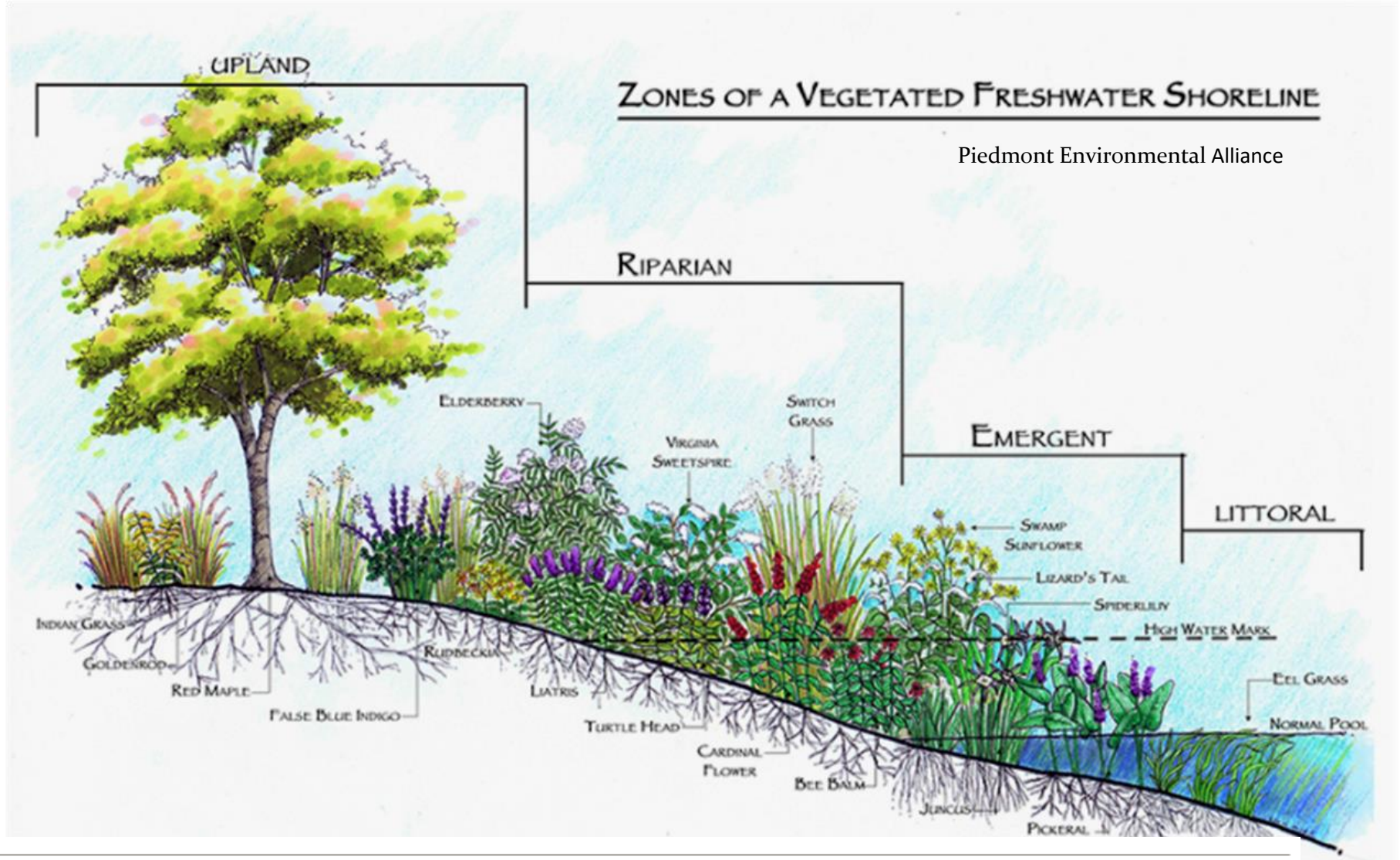
Choosing Suitable Plants

Right Plant for Right Place

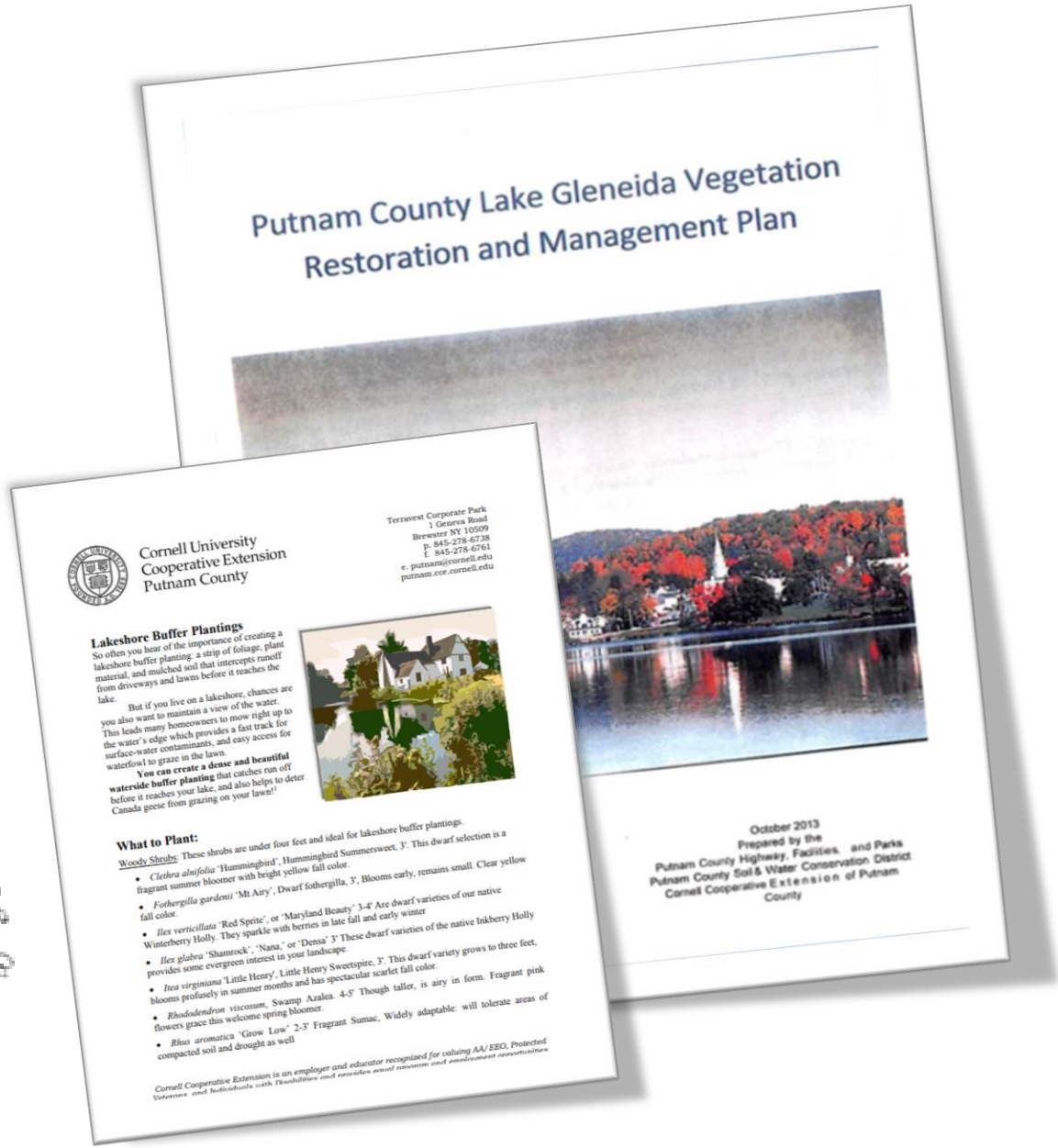
The Federation of
Vermont Lakes and Ponds

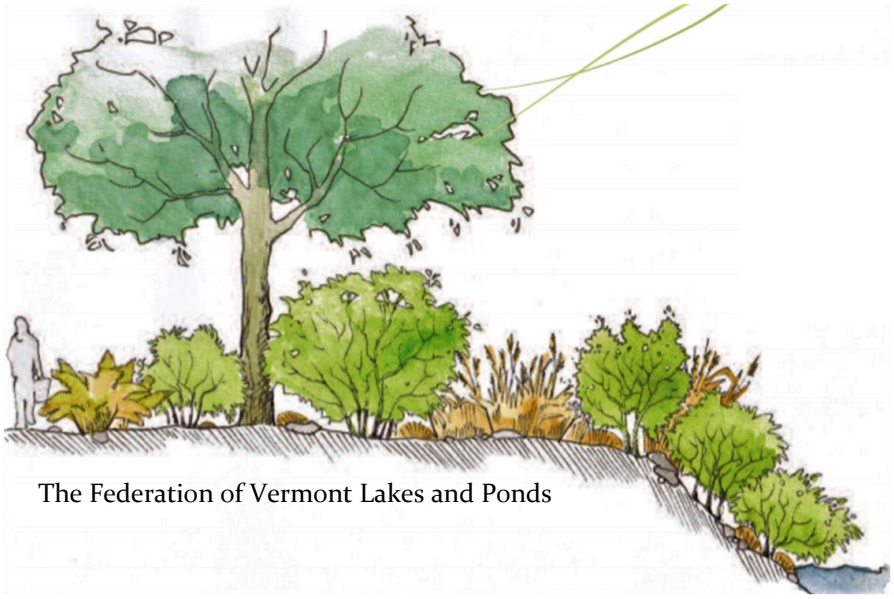
- Choose native species
- Consider sun exposure & soil type
  - Sun, partial shade, full shade
  - Texture - clay, silt, sand, loam, gravel
- Consider water level & roots
  - Wet or dry soil
  - Top of slope - Trees (deep spreading roots)
  - Bank - Shrubs (combination of deep & superficial intertwined roots)
    Herbaceous plants (fine surface roots)

Buffer Cross Section



What to Plant ?





The Federation of Vermont Lakes and Ponds

What to Plant

PLANT LISTS

Scientific Name
Common Name

Woody Shrubs
Herbaceous Plants

Chosen for adaptability to both Upland and Wetland Settings

Trees for Tribs

Watershed Agricultural Council

Mission: Promote the protection and improvement of water quality in partnership with the Croton watershed communities through the establishment, enhancement, and restoration of riparian forest buffers.

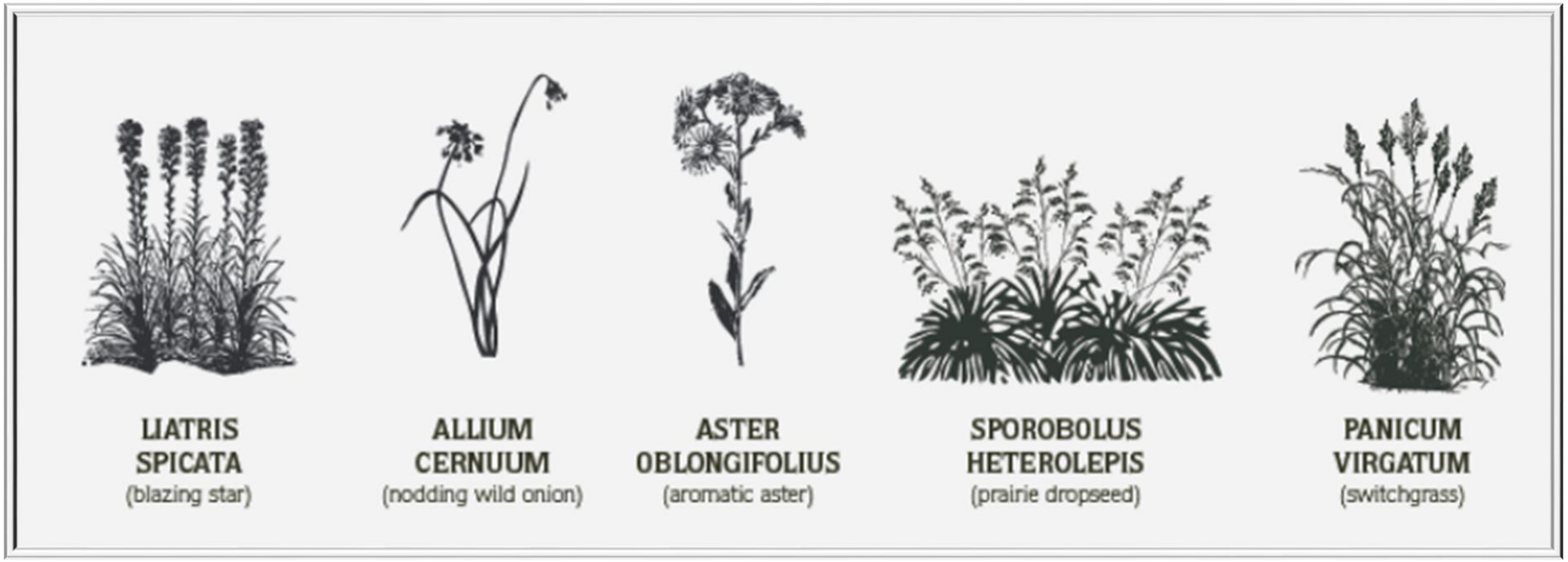
Offer: Free trees and shrubs to eligible landowners in the Croton Watershed, conduct site visits, delineate planting areas, plant selection, provide deer damage protection.

https://www.nycwatershed.org/forestry/implementation/trees-for-tribs/

Before …

Geneva Lake, Wisconsin

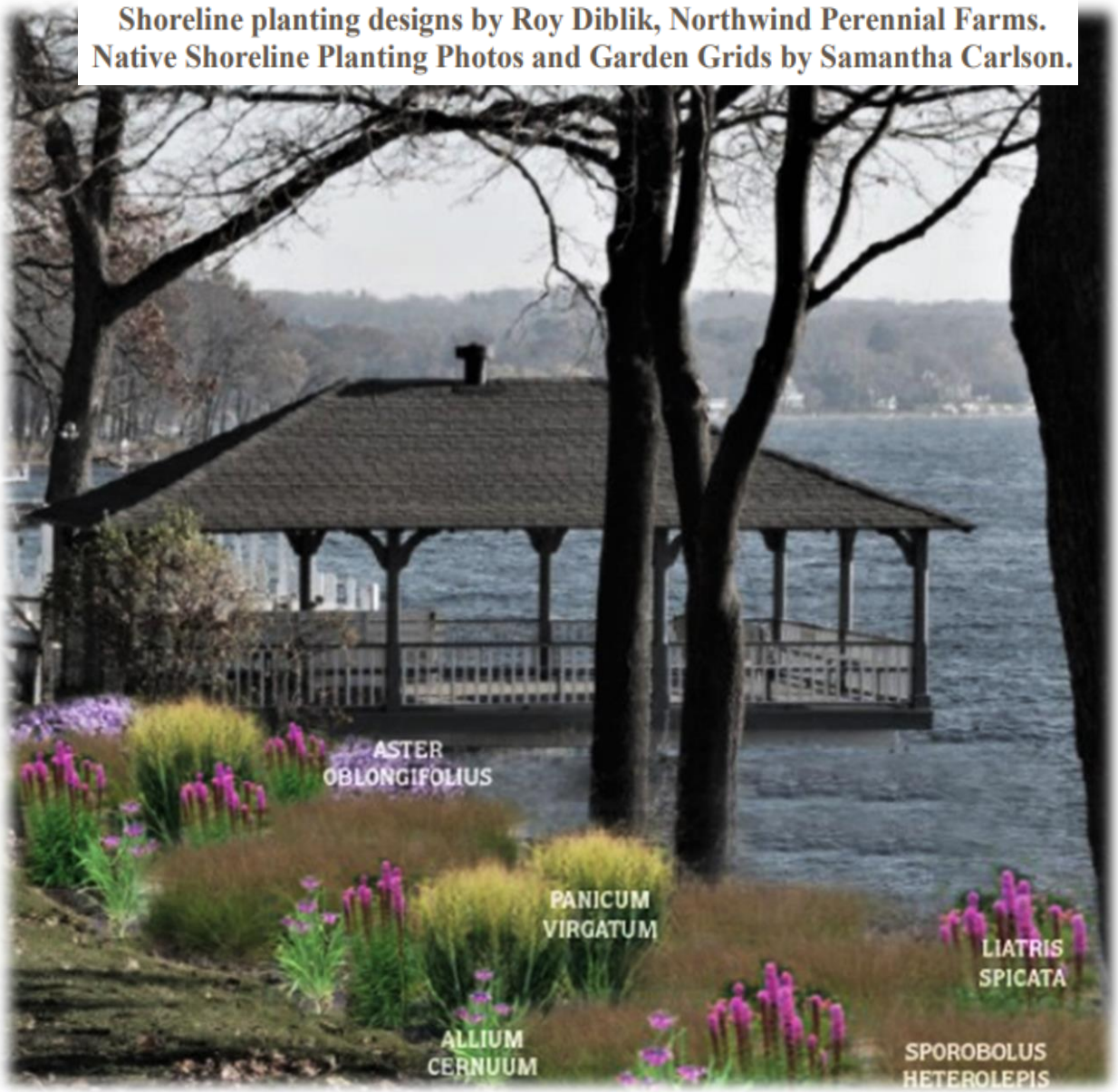
Addition of Native Plantings



Herbaceous Plants

Grasses

… After


Shoreline planting designs by Roy Diblik, Northwind Perennial Farms.
Native Shoreline Planting Photos and Garden Grids by Samantha Carlson.
ASTER OBLONGIFOLIUS
PANICUM VIRGATUM
LIATRIS SPICATA
ALLIUM CERNUUM
SPOROBOLUS HETEROLEPIS

Before and After

Source: Westchester County

Source: Westchester County

Before and after photos of pond/lake buffer restoration. The restored shoreline buffer stabilizes the shoreline and lessens erosion potential, provides more diverse habitat, reduces the maintenance burden, and helps filter out some pollutants; Town Park Pond, Pound Ridge.

QUESTIONS

Cornell Cooperative Extension

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