Forest Wildlands & Vermont's UVA Program

Employing a land-use triad of
production forestry, **ecological forestry** and **wildland forestry**
to grow a regenerative and working landscape
in a rapidly changing climate and culture

Presentation by David Brynn, Executive Director, Vermont Family Forests (VFF)
to the Vermont House Committee on Natural Resources, Fish, and Wildlife
March 9, 2021

VERMONT FAMILY FORESTS™

Vermont Family Forests' Mission

- To observe, understand, and preserve **forest ecosystem health**;
- To practice **Earth-centered conservation** that is wholistic and adaptive;
- To support **careful management** of local family forests for ecological, economic, and social benefits; and
- To foster a **forest culture** focused on community well-being, ecological resilience, and the quest for an optimal land ethic.

Vermont Family Forests' Goals

- Cultivate an *ecological ethnicity* in the watersheds of home.
- Promote forest ecosystem conservation based on the keystone virtues of compassion, prudence, and gratitude.
- Promote forest ecosystem health as expressed in flood and drought resilience, clean water, wildlife species richness, and sequestration & storage of atmospheric carbon.

A Forestry Triad & UVA

- Introduction
- Make the case for adding **wildland forestry** to UVA and for expanding practices for **ecological forestry.**
- Imagine and adopt practices for **wildland forestry.**
- Closing

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A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community.

It is wrong when it tends otherwise.

–Aldo Leopold

The *Anthropocene* (1950) is the period during which human activity has become the dominant influence on climate and the environment.

Today that dominance is overwhelming the Earth's capacities for self-renewal.

We humans have created a climate crisis.

The time has come to use the transformative and sometimes regenerative power of crisis to help heal the one and only Earth we Earthlings will ever know.

First Peoples & Migration from Vermont

8,500 BCE	More than 10,000 years of Abenaki occupation has been documented here. The Abenaki peoples call their land "N-da-kenna," "My homeland."
1609 CE	"Voila Verde Mont" – *Spongy Catchments*
1762 CE	New Hampshire Land Grants
1783 – 1808	The Good Years
1808 – 1820	Discouragement and Departures – *Ditched Watersheds*
1820 – 1830	Waterways, Wool, and Other Ways Out
1830 – 1840	The Great Migration
1840 - 1860	A Sequel with a Climax

(adapted from Stillwell 1950)

Why was Vermont's Settlement Up and Out?
(Stillwell 1950)

- The universal fact of exploitation
- No permanent economic footing
- Soils deteriorated quickly as humus was used up
- Tough climate and challenging topography
- Vermont gave itself up to pasturage which never supported a large population

1905 to Present: Gifford Pinchot's Practical Forestry (Production Forestry)

There are four things we must do so forests can give the best service:

- Protect trees fire, insects, and thieves.
- Ensure strong and abundant reproduction.
- Create plenty of growing space for crop trees.
- Grow trees ripe and ready for the axe.

A Manifesto for Earth (2004)

Humanity's ten-thousand-year-old experiment in mode of living at the expense of Nature, culminating in economic globalization, is failing.

A courageous change in attitudes and activities is urgent.

—Stan Rowe

A Manifesto for Earth

Principles:

- The ecosphere is the center of value for humanity.
- The creativity and productivity of Earth's ecosystems depend on their integrity.
- The Earth-centered world view is supported by natural history.
- Earth-centered ethics are grounded in awareness of our place in Nature.
- An Earth-centered worldview values diversity of ecosystems and cultures.
- Earth-centered ethics support social justice.

A Manifesto for Earth

Actions:

- Defend and preserve Earth's creative potential.
- Reduce human population size.
- Reduce human (per capita) consumption of Earth parts.
- Promote Earth-centered governance.
- Spread the message.

–Stan Rowe

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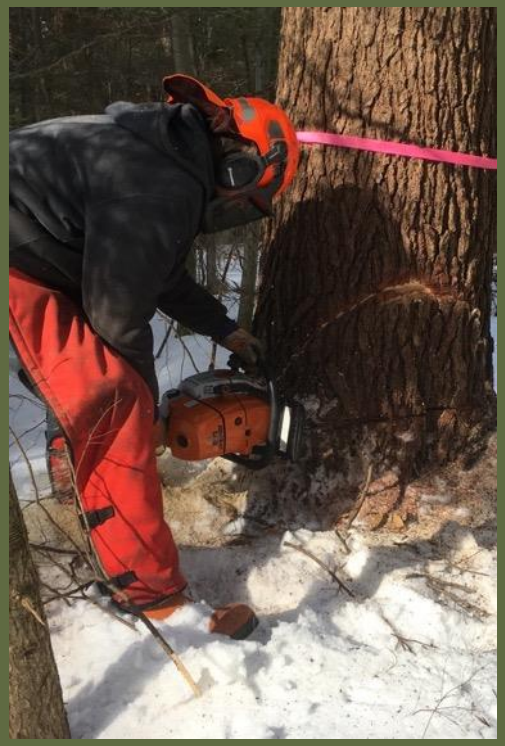
Seven Essential Criteria

for regenerative forest resource management & forest ecosystem conservation (from Montreal Process)

1. Biological diversity
2. Local & regional forest enterprises
3. Forest ecosystem health & vitality
4. Soil and water resources
5. Carbon sequestration & storage cycles
6. Long-term multiple socio-economic benefits
7. Legal, institutional and economic framework



Four important terms related to Vermont's working landscape

WETLAND: a natural community group saturated with water during the growing season.

WOODLAND: a natural community group dominated by trees but with an open canopy of 25 – 60% crown closure.

FOREST: a natural community group dominated by trees and other woody plants with a canopy cover of at least 60% .

WILDLAND: a land-use category described as a natural place where it is calm and quiet and largely self-willed ecologically.

Three forest land uses

- PRODUCTION FORESTRY ~ Forest Resource Management: *Wise use of timber resources* and *sustained yields over time* are key phrases. ***Control*** is the key word. Motivation is primarily economic.

- ECOLOGICAL FORESTRY~ Forest Ecosystem Conservation: *Mimicking natural forest disturbance and processes* is a key phrase. ***Care*** is the key word. Motivations are ecological, ethical, and economic.

- WILDLAND FORESTRY ~ Forest Wildlands Protection: *A natural place, a calm and quiet healing place,* and *self-renewal* are key phrases. *Wild* and *Self-willed* are the key words. Motivations are primarily ecological and ethical.

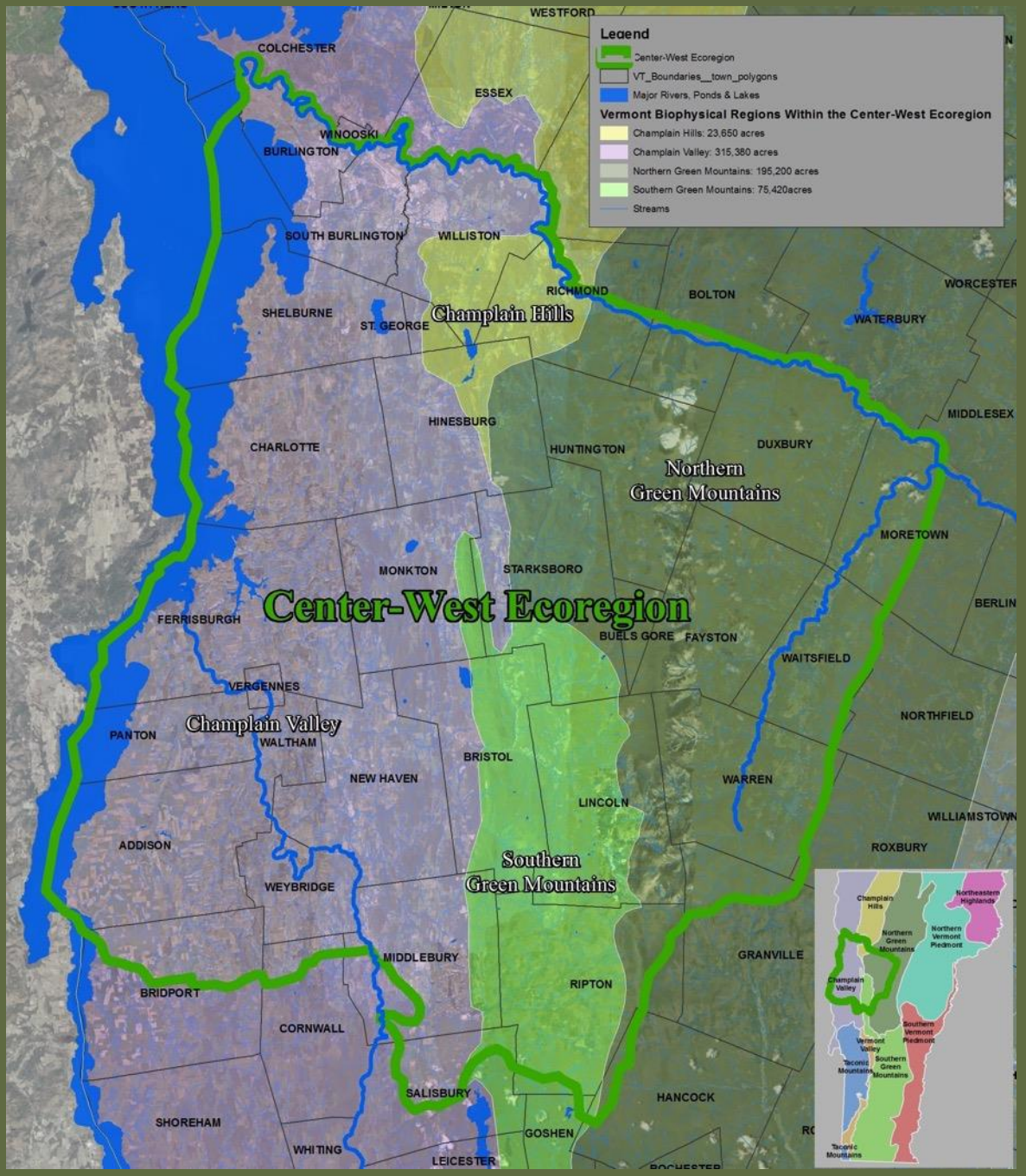
Why does adding more forest wildlands to Vermont's working landscape matter?

Seven Key Functions

of healthy, intact forest wildlands in a regenerative and working landscape

- Protect the full range of biological diversity.
- Serve as reference sites.
- Provide aesthetic , spiritual, and recreational values that do not occur in managed forests.
- Protect water quality better than any other forest land use.
- Protect soil stability, productivity, and infiltration capacities better than any other forest use.
- Sequester and store more atmospheric carbon than any other forest land use.
- Create more flood and drought resilience than any other forest land use.

Where is Vermont's Center-West Ecoregion?



Results from public & commoner engagement in Vermont's Center-West Ecoregion

Love of land↑
Soul Restoration↑
Honor the First Peoples↑
Honorable Harvest↑
Gratitude↑
Eating the Forest↑
Organic Family Forestry↑
Clean, clear, highly-oxygenated water↑
Atmospheric carbon sequestration and storage↑
Wildlife species richness↑
Re-enchantment↑
Stable, humus-rich, productive soils↑
Ecological diversity↑
Slowing, spreading, and sinking storm flows↑
Flood and drought resilience and recovery↑
Invasive plant species resistance↑
Forwarding ~ *Lines of Grace* ↑
High quality, diverse, high value timber products↑
High quality, energy-efficient, local, primary & secondary value-adding↑
High quality, well-educated, well-paid, properly equipped & insured work force↑
Outstanding natural beauty↑
High quality forest-based re-creation↑
Places to snowmobile↑
Peaceful and quiet places↑
Dark skies at night↑
Social justice↑
Places to hunt↑
Less stuff↑
Cultural restoration↑

FACT: Every acre cannot be everything to everyone.

What should we do, here in the forests of Vermont's Center-West Ecoregion?

1. Employ triad mapping

Conceptual allocation of forest land uses in the Center-West Ecoregion

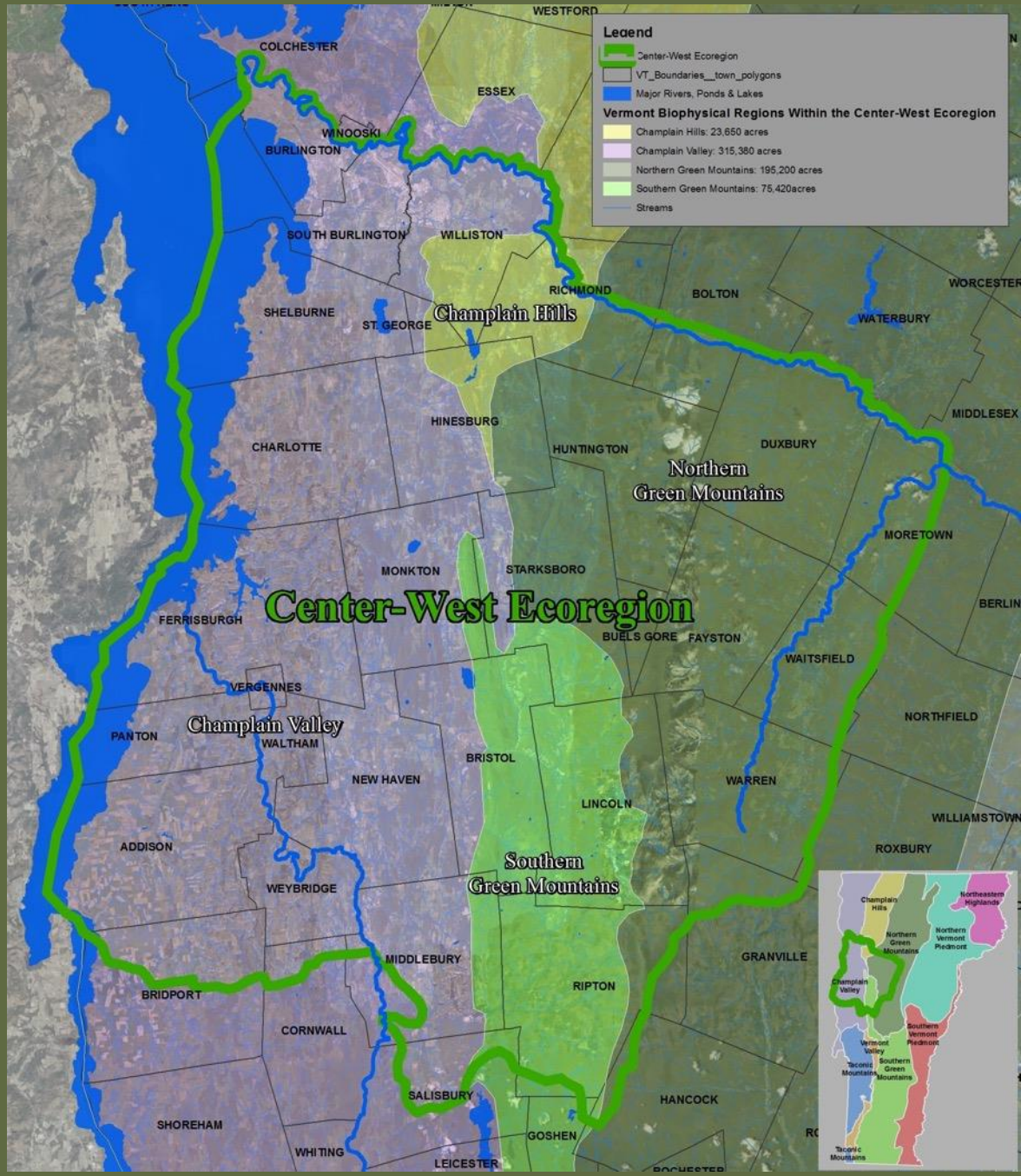
1. Employ triad mapping

- Production Forestry ~ *Tree Farms*
- Ecological Forestry ~ *Family Forests*
- Wildland Forestry ~ *Self-Willed Forests & Sacred Groves*

Conceptual allocation of land uses, using the forest triad approach for three geographic regions across North Carolina (adapted from Mark S. Ashton)

Land Use Category	Coastal Plain	Piedmont	Appalachians
Urban	15%	5%	1%
Agriculture	25%	15%	5%
Production Forestry	30%	15%	5%
Ecological Forestry	20%	50%	30%
Wildlands Forestry (National Parks)	10%	15%	59%

Which biophysical regions are found in Vermont's Center-West Ecoregion?



Conceptual allocation of land uses, using a forest triad approach for four biophysical regions in Vermont's Center-West Ecoregion

Land Use Category	Champlain Valley 315,380 acres	Champlain Hills 23,850 acres	Northern & Southern Green Mountains 270,620 acres
Urban	15%	10%	5%
Agriculture	30%	20%	15%
Production Forestry	30%	20%	25%
Ecological Forestry	15%	40%	30%
Wildlands Forestry (USFS Wilderness +)	10%	10%	15%

Conceptual allocation of forest land uses in the Center-West Ecoregion

Employ triad mapping

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10-30%

Production Forestry

Forest Resource Management

Economic Returns

AMPs *(Acceptable Management Practices)*

Wise Use of Forest Stands

Competition & Control

Stewardship

40-80%

Ecological Forestry

Forest Ecosystem Conservation

Ecological & Social Wellbeing

OCPs *(Optimal Conservation Practices)*

Care & Honorable Harvest of Forest Ecosystems

Mutual Aid

Friendship

7-15%

Wildland Forestry

Gaia Theory & Proforestation

Intact Forest Ecosystems

WPPs *(Wildland Protection Practices)*

Forests as Self-Willed Organisms

Aesthetic Empathy

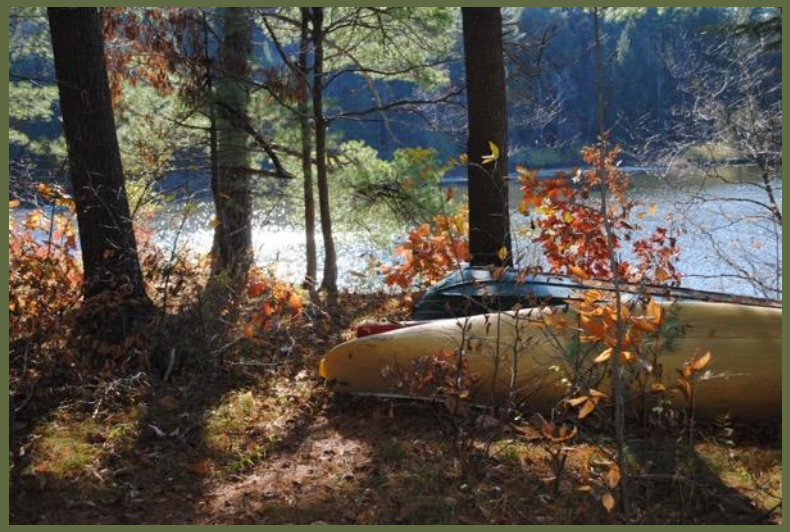
Membership

Tame

Wild

What should we do, here in the forests of the Center-West Ecoregion?

1. Employ triad mapping
2. **Match governance with holders of assets**
   - Publicly-held assets—soil, plants
   - Privately-held assets—soil, plants
   - Commonly-held assets—water, wildlife, and air



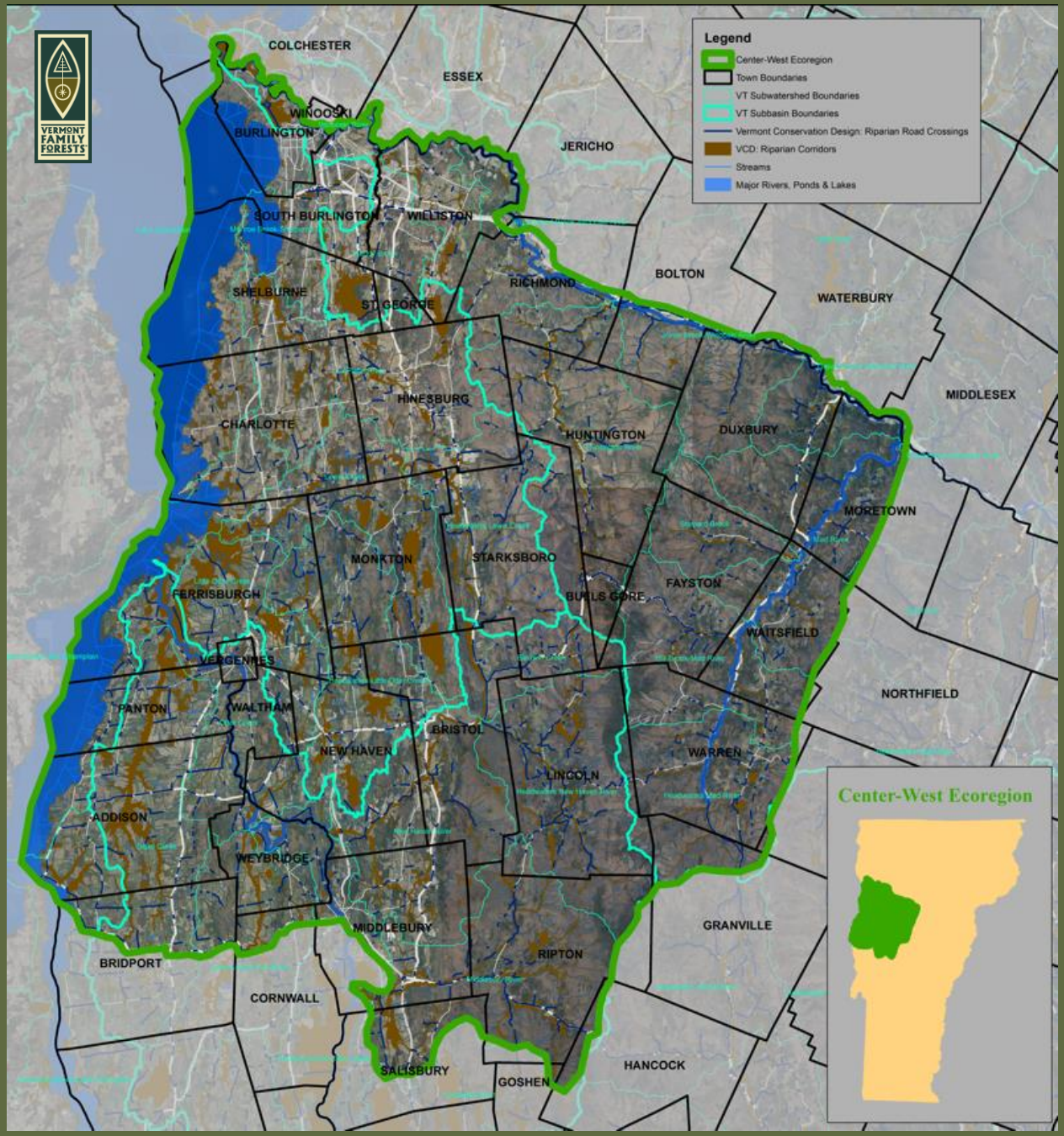
What should we do, here in the forests of the Center-West Ecoregion?

1. Employ triad mapping
2. Match governance with assets
3. **Focus on conserving our commonly held assets**
   - High quality water commons (including flood & drought resilience)
   - Species rich wildlife commons
   - Sequestered & stored atmospheric carbon commons

Vermont Conservation Design (VT-ANR)

Water Commons

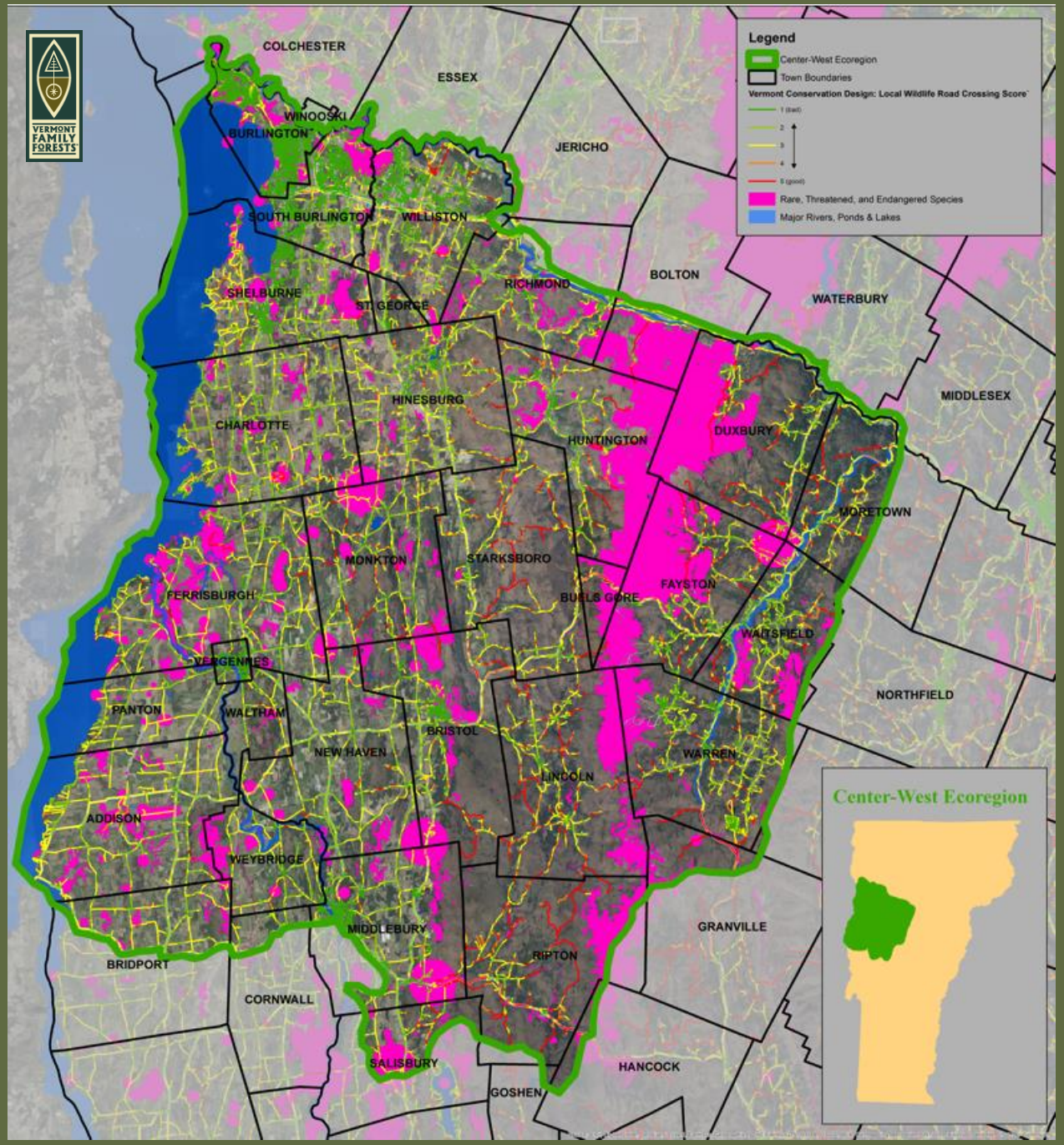
We the People hold the Water and the State is Our Trustee



Vermont Conservation Design (VT-ANR)

Wildlife Commons

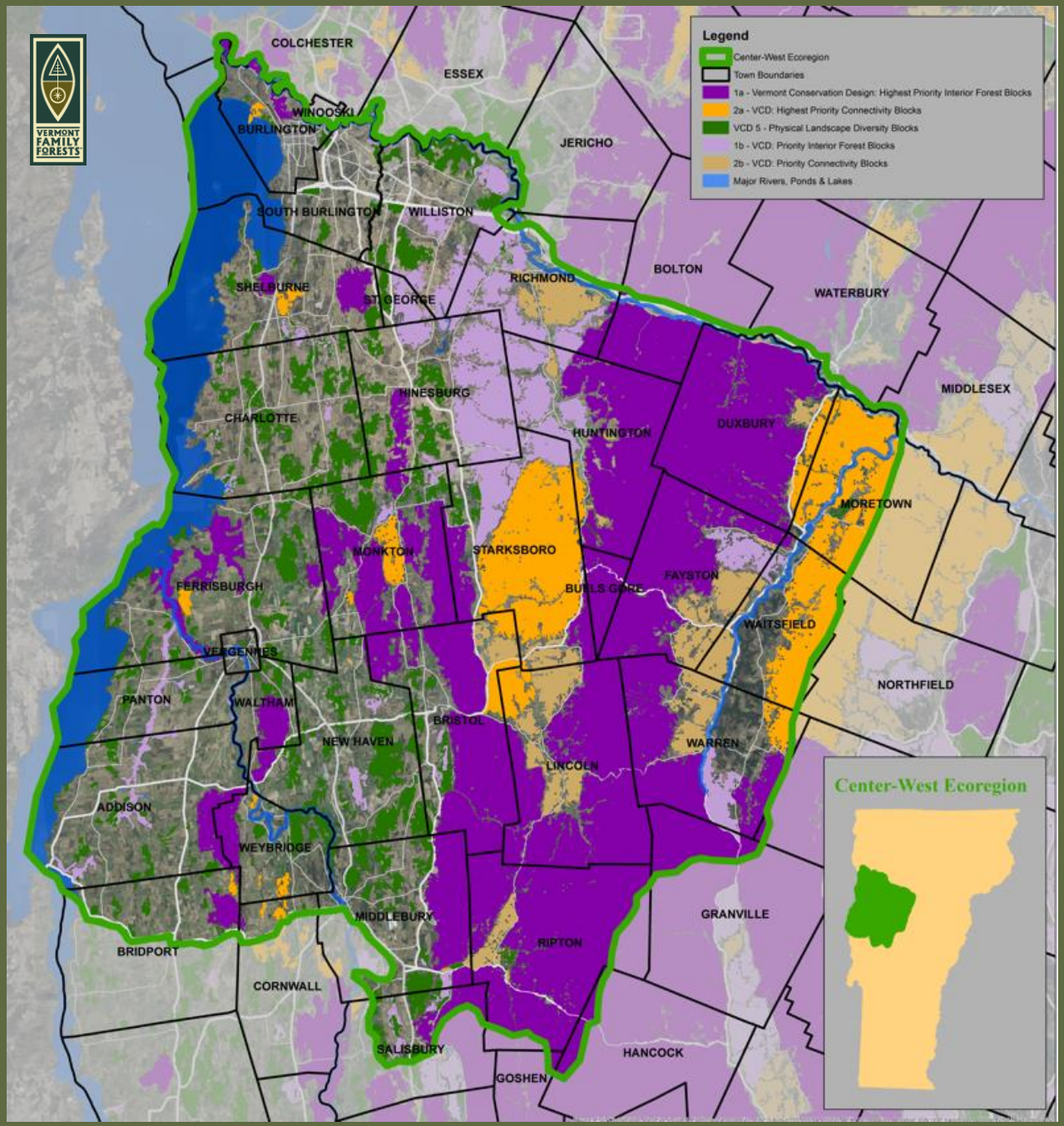
We the People hold the Wildlife and the State is Our Trustee



Vermont Conservation Design (VT-ANR)

Air Commons:
(focus on carbon sequestration and storage)

We the People hold the Air and the State is Our Trustee

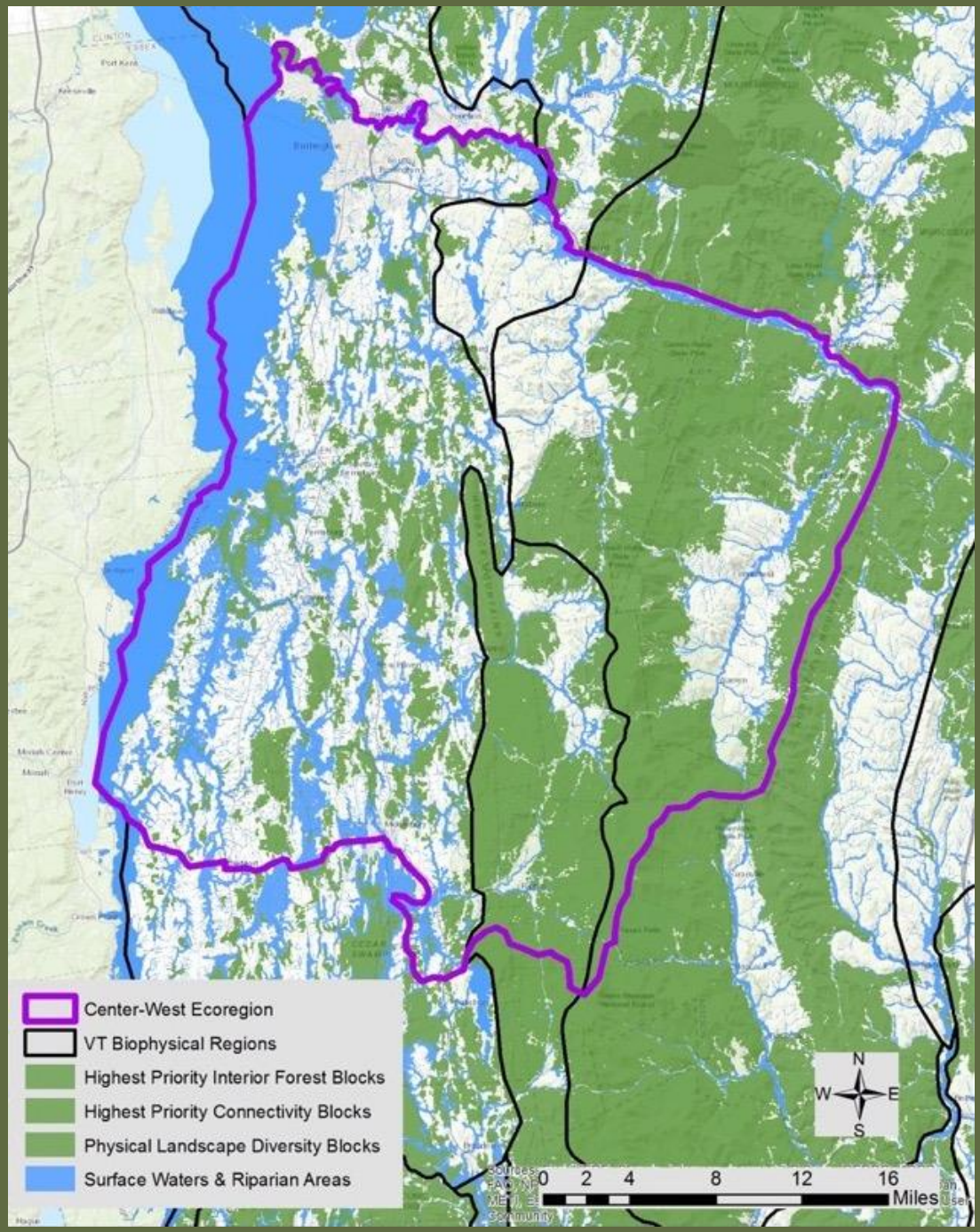


Vermont Conservation Design (VT-ANR)

Combined Highest Priority Common Assets

Our Water Commons
Our Wildlife Commons
Our Air Commons

1. C-WE as Home
2. Commoning Practices
3. Commoners



A Forestry Triad & UVA

A combination of the diverse products and services associated with the forestry land use triad of **Production Forestry**, **Ecological Forestry** and **Wildland Forestry** in the most suitable places.

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A Forestry Triad & UVA

1. Employ triad mapping
2. Match governance with assets
3. Focus on conserving our commonly held assets
4. Identify management/conservation/protection practices for production forestry, ecological forestry, and wildland forestry.

    a. **Production Forestry:** Acceptable Management Practices (AMPs)

    b. **Ecological Forestry:** Optimal Conservation Practices (OCPs)

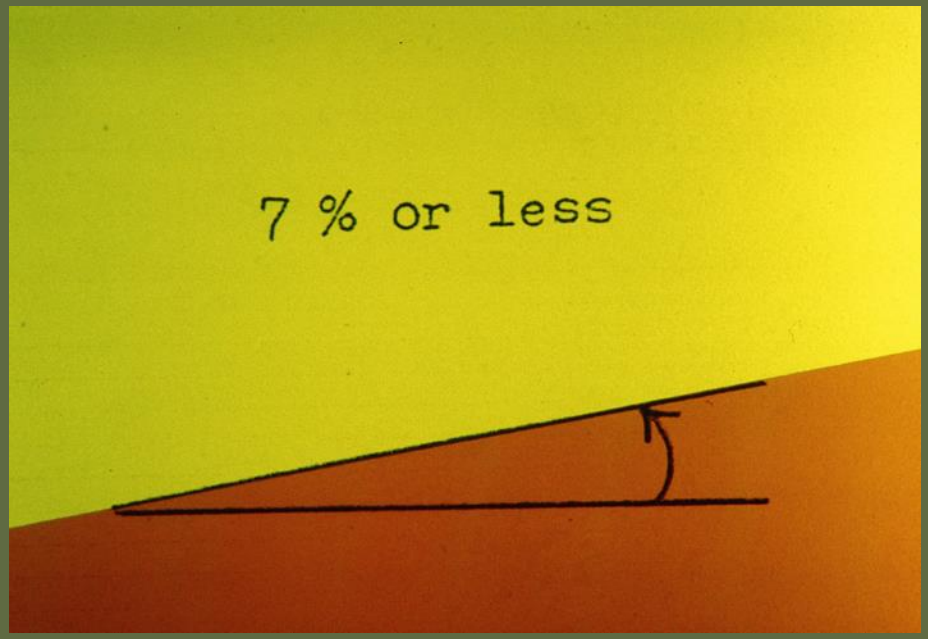
    c. **Wildland Forestry:** Wildland Protection Practices (WPPs)

Optimal Conservation Practices for Ecological Forestry

Limit access road, trail, and path extent to a total of 5% of the area served.

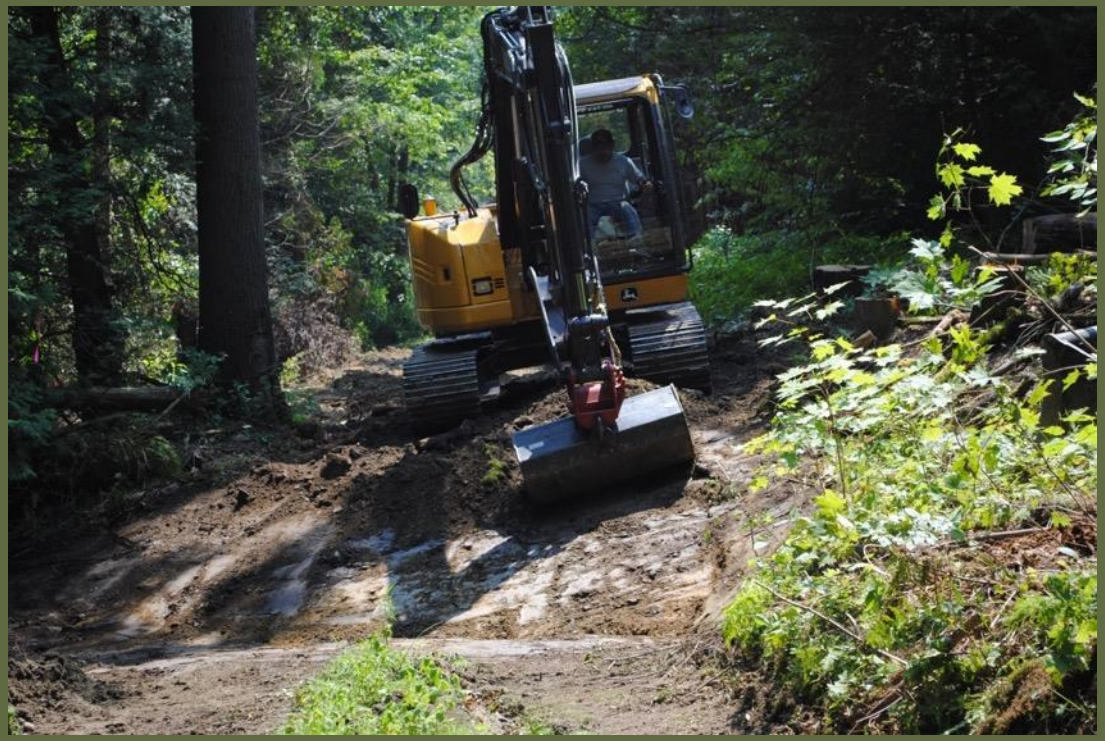
Optimal Conservation Practices for Ecological Forestry

7% average grade of access roads, paths, and trails.



Optimal Conservation Practices for Ecological Forestry

Build access roads, trails, and paths under dry summer conditions.



Optimal Conservation Practices for Ecological Forestry

Use broad-based dips to drain access roads, paths, and trails to the optimal extent.

Optimal Conservation Practices for Ecological Forestry

Avoid ditches to the optimal practical extent in order to reduce storm flow concentration.

Optimal Conservation Practices for Ecological Forestry

Avoid building access in areas that are over 35% slope or adjacent to streams and other waterbodies.

Optimal Conservation Practices for Ecological Forestry

Log under frozen winter conditions.

Optimal Conservation Practices for Ecological Forestry

Use forwarders rather than skidders to move timber from forest to log landing.

Optimal Conservation Practices for Ecological Forestry

Directionally fell low-value timber across slopes,
and leave in place to slow, spread, and sink storm flows.

Optimal Conservation Practices for Ecological Forestry

Avoid clear-cutting and whole-tree harvesting.

Optimal Conservation Practices for Ecological Forestry

Manage for many large, secure cavity, snag, and/or decadent trees.

Optimal Conservation Practices for Ecological Forestry

Manage for large downed trees.

Optimal Conservation Practices for Ecological Forestry

Grow the largest trees and use the longest maturity ages possible.

Optimal Conservation Practices for Ecological Forestry

Leave as much biomass on site as possible.

Optimal Conservation Practices for Ecological Forestry

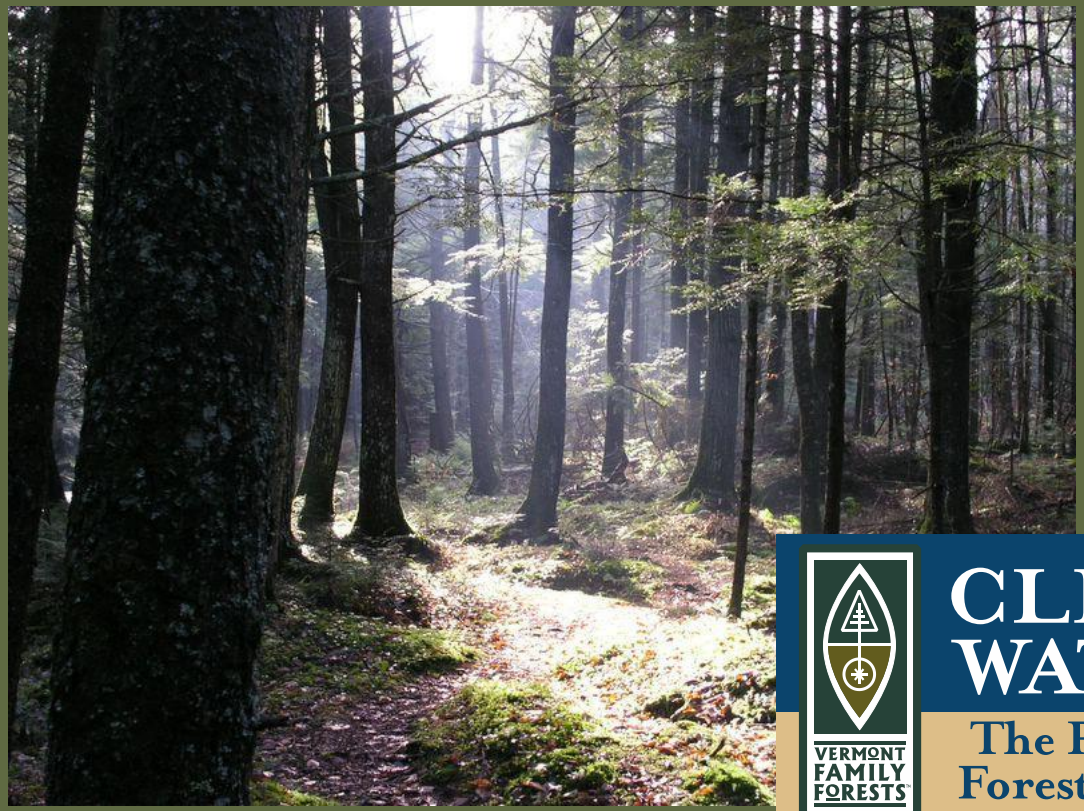
Promote a vertical stand structure that includes over-story, mid-story, shrub, and herbaceous vegetation layers.

Optimal Conservation Practices for Ecological Forestry

Monitor forest health including soil erosion and compaction, water quality, and carbon sequestration and storage.

Optimal Conservation Practices for Ecological Forestry

Convert ditched watersheds to spongy catchments.



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    b. **Ecological Forestry:** Optimal Conservation Practices (OCPs)

    c. **Wildland Forestry:** Wildland Protection Practices (WPPs)

Ecological Values of Forest Wildlands

When properly protected, healthy, intact, temperate wildlands forests:

- Produce the highest quality water.
- Sequester & store the highest levels of atmospheric carbon over time.
- Protect fish & wildlife species richness.
- Slow, spread and sink peak storms flows better.
- Attenuate flooding and drought.
- Resist invasion by exotic plant species more effectively than any other land use.

Most Effective Forest Wildland Shapes & Sizes

- Large forest wildlands are better than a small ones.
- A single large forest wildland is better than a group of small ones of equivalent total area.
- Forest wildlands close together are better than forest wildlands far apart.
- Round forest wildlands are better than long, thin ones.
- Forest wildlands clustered compactly are better than forest wildlands in a line except riparian forest wildlands, which are the rock-star forest wildlands.
- Forest wildlands connected by corridors are much better than unconnected forest wildland islands.

–adapted from Reed Noss and Allen Cooperrider

Adopt Effective Wildland Protection Practices (WPPs), Policies, and Strategies

- Keep forest wildlands wild
- Enlarge forest wildland area
- Protect and widen riparian wildland forest buffers.
- Avoid fragmenting or disturbing by manipulating habitats.
- Minimize and carefully design access.
- Allow beaver-influenced ecosystems to expand.
- Let all forest biomass decompose in place.
- Amend UVA to welcome more healthy, intact, wildlands forests.
- Fund & actively engage citizen and commoner scientists in wildlands forests monitoring and much more.
- Remove the UVA roadblocks and add more permanently-conserved, forever wild, family forest wildlands to Vermont's regenerative and working landscape.

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Closing Thoughts

To keep every cog and wheel is the first precaution of intelligent tinkering.

–Aldo Leopold

A trusting attachment to the Ecosphere, an aesthetic empathy with surrounding Nature, a feeling of awe for the miracle of the living Earth and its mysterious harmonies, is humanity's unrecognized heritage.

–Stan Rowe

Modify UVA to recognize a Triad of forest land uses: Production, Ecological, & Wildland

Map areas with highest priority conservation values

Encourage production, ecological, and wildlands forestry accordingly

Promote permanent forever-wild conservation of highest priority Forest Wildlands

Uncertain climate future.

Need to change our world view Earth-centered.

Create a forest land use Triad of **production, ecological** and **wildlands forestry** in UVA

Water Commons, Wildlife Commons & Air Commons with focus on sequestration and storage of atmospheric carbon should be a focus across the landscape.

Add more permanently-conserved, wildland family forests to the mix.

Work for a regenerative and working landscape by opening the doors of Vermont's UVA Program to Wild Forests and Wildland Forestry.

Vermont's forests will do the work if we let them.

Let's help them.

"Earth Alive!"

This talk is dedicated to Dr. John Stanley Rowe:

Born June 11, 1918, Died April 6, 2004

~

And to Devon, Callie, Ellie and Miles.

May the Forest Be with You!

www.familyforests.org

creative commons