

Understanding the Triad model

Western Woodlot Owners Conference

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“The term balanced forestry (Seymour and Hunter 2009) recognizes “that there is no single right way to manage (or not manage) forests, and that thoughtful, cooperative design of forest landscapes can both conserve native biodiversity and sustain forest-based economies.”

“One response to managing for multiple and conflicting demands is to partition the forest into different zones so that all values are met, but not necessarily in each zone.”

“Nova Scotia’s forest policies and operational decision making will be guided by the practice of ecological forestry through a triad model.”

- ▶ **Government Response to the Independent Review of Forest Practices in Nova Scotia, December 2018**

What is a Triad model?

▶ https://www.youtube.com/watch?v=oDB1j_0Dzno&feature=youtu.be

What is a Triad model?

- ▶ Zoning of land for specified values into three zones
 - ▶ Not unlike zoning used in towns and cities;
 - ▶ *Residential, commercial, agriculture, etc.*
- ▶ Already a practice on Crown land as two distinct zones
 - ▶ Protected Areas vs Working Forest

“The challenge is defining the right amount of area and the right locations for each zone so that the desired levels of all forest values are realized”

High Production Forestry *(timber production)*



Ecological Matrix *(biodiversity & timber)*



Conservation Zone *(biodiversity)*

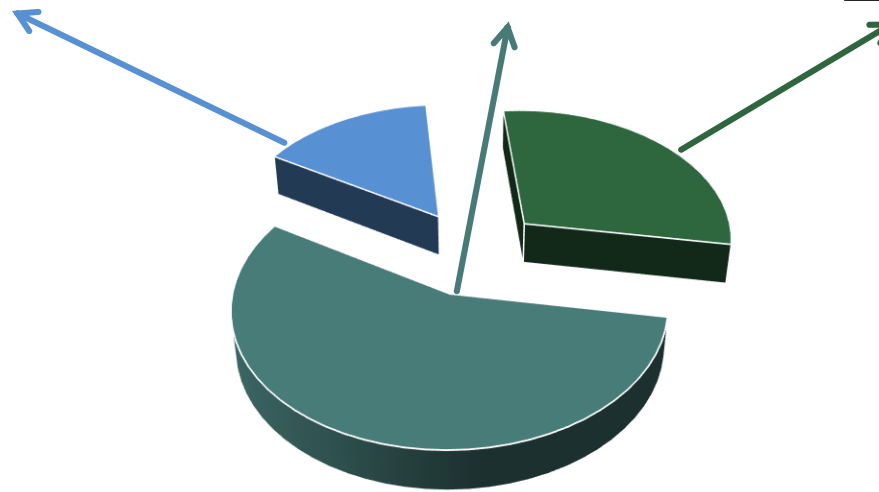


Figure 1. The triad management concept. Allocation of Crown land forest into three distinct zones, each with a specific management objective (in italics).

Zoning

- ▶ Conservation Zone – Protects and conserves biodiversity and functioning of natural processes;
 - ▶ Includes Parks and Protected areas as well as area designated as Old Growth Forests
 - ▶ No timber harvesting permitted
- ▶ High Production Zone – Focused on production of high value timber products
 - ▶ Smallest of the 3 zones
 - ▶ Intensive silvicultural management regime
- ▶ Ecological Matrix zone - Produces a limited amount of timber, while maintaining important ecological stand conditions through low intensity, ecologically-appropriate harvest prescriptions
 - ▶ Biodiversity is the priority
 - ▶ Focus is producing multi-aged forests comprised of long lived, shade tolerant species
 - ▶ Largest of the 3 zones

Continuum of Management Regime



High Production

Ecological
Matrix

Conservation



Timber Focused

Conservation
Values / Timber

Conservation
Values Only

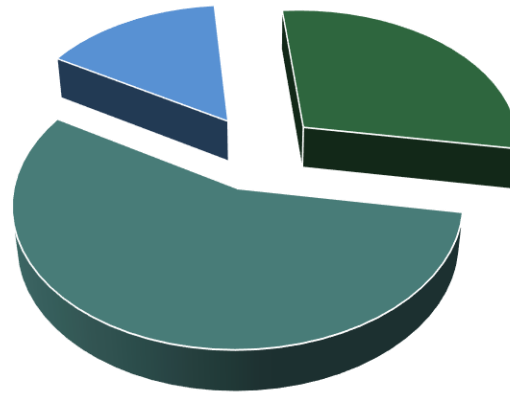
High Production Forestry *(timber production)*



Ecological Matrix *(biodiversity & timber)*



Conservation Zone *(biodiversity)*



“Each zone is indispensable and of equal importance. Effective implementation of Triad zoning requires existence of all three zones in proportions adequate to meet objectives for all values.”

ECOLOGICAL MATRIX ZONE

ECOLOGICAL MATRIX ZONE

“ ... conservation and production objectives are both applicable and combined, but with priority to the protection and enhancement of ecosystems and biodiversity.” (Lahey 2018)

Challenge for us is how do we preserve both the critical roles of the matrix and production of commodities in the working forest?

- Revision of the Forest Management Guide
- More robust PTA assessment process that places greater emphasis on biodiversity



The Value of Retention for Biodiversity Conservation

A scientific literature review by the
Department of Lands and Forestry
February 2020

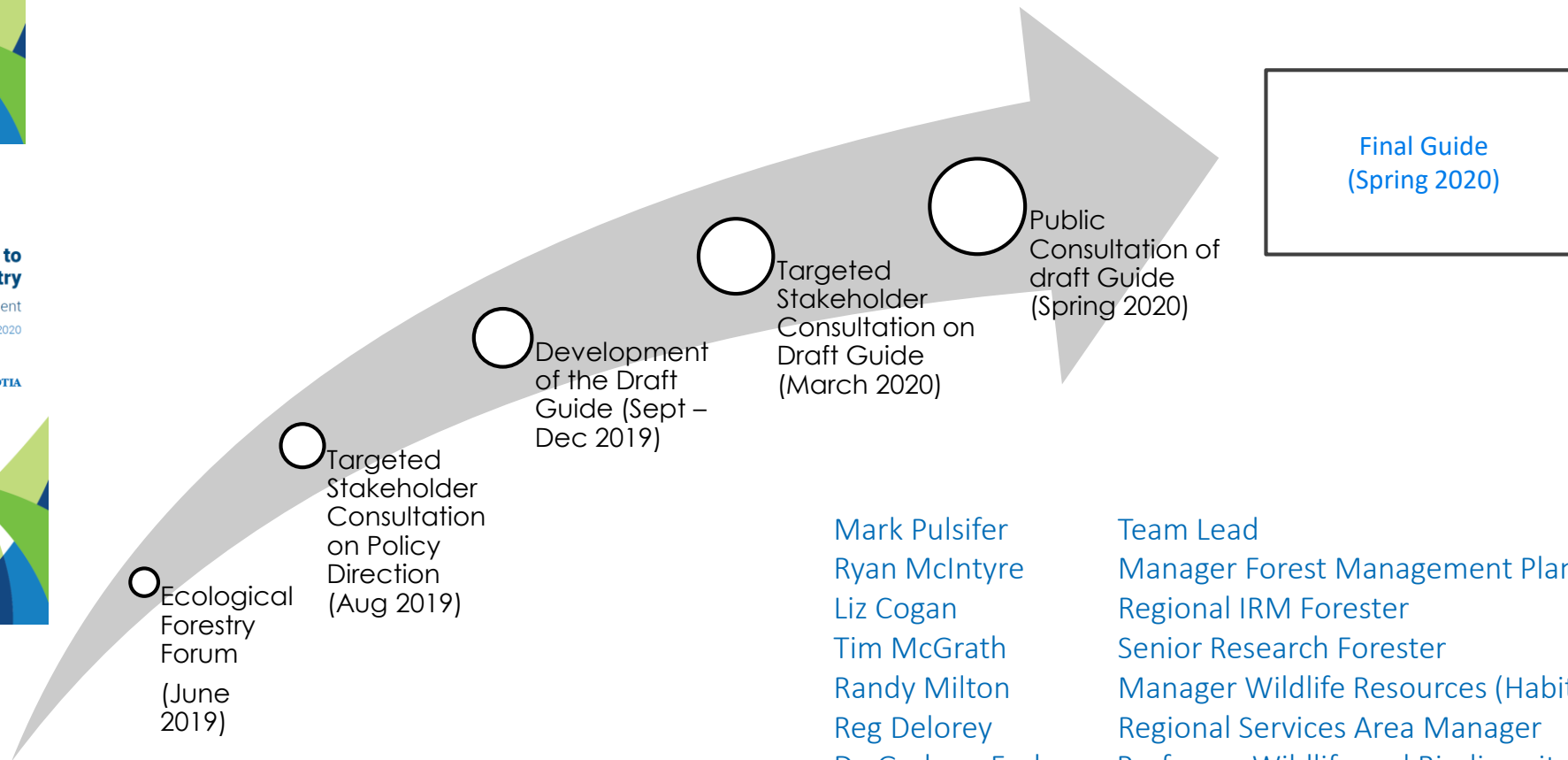


Silviculture Guide to Ecological Forestry

Consultation Companion Document
February 18, 2020



Team and Timeline



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Proposed High Level Changes to the Forest Management Guide

- Name of guide changed to *Silviculture Guide to Ecological Matrix*
- Overstory Removal, Seed Tree and Traditional shelterwood methods replaced with Irregular Shelterwood systems
- Nutrient budget model included in new guide to increase ability to mitigate potential opportunities for soil degradation or damage
- More robust PTA system which includes additional requirements for data collection on key biodiversity features, stand age and soil mitigation planning

Proposed Revisions

	Previous Guide (FMG, Feb. 2018)	Revised Guide * (SGEM, Feb. 2020)
Multi-Aged Systems	Selection	Selection & Irregular Shelterwood (IR)
Even Aged Systems*	Overstory Removal, Seed Tree & Traditional Shelterwood	None
Tending	Pre-commercial Thinning (PCT) Commercial Thinning (CT)	Pre-commercial Thinning (PCT) Commercial Thinning (CT)
Retention Levels	2% (OR) – 70% (Selection)	20% (Low Retention IR) – 70% (Selection)
Salvage	No Retention	20% Retention
Options	Limited	Expanded
Decision Points		Use of LITs expanded
	Salvage for Blowdown only	Salvage for “Blowdown” & other “Disturbances”

* Variable Retention not prescribed in the revised Guide

Proposed Changes to Pre-Treatment Assessment (PTA)

Placing greater emphasis on biodiversity by augmenting the current PTA system to include assessments for:

- Super-canopy trees
- Legacy trees
- Snag trees
- Cavity trees
- Diversity trees
- Coarse woody material



HIGH PRODUCTION FOREST ZONE

HIGH PRODUCTION FORESTRY Project Team

- ▶ **Project Lead:** Ryan McIntyre, RPF, Manager Forest Management Planning, L&F

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HIGH PRODUCTION FOREST ZONE

Define High Production Forestry

Objective: To produce high yields to ensure an adequate timber supply to:

- ▶ Support economy and employment
- ▶ Offset losses from reduced management intensity in the matrix
- ▶ Short rotations compared to natural forests
- ▶ Comparable to an agricultural model
 - ▶ Land intensively managed to increase the quantity/quality of products over a specified rotation
- ▶ All silvicultural tools available

HIGH PRODUCTION FOREST ZONE

Identify areas unsuitable for High Production Forestry

- ▶ *Environmental values* - Sensitive biodiversity values not under protection
 - ▶ SMP's, wildlife buffers, watercourse buffers
- ▶ *Social values* – Tolerant hardwood & mixedwood forests
 - ▶ Fertile soils, but conversion from HWD to SWD is poor stewardship practice
- ▶ *Economic values* - Poor soil fertility, wet soils
 - ▶ i.e. low productivity potential

HIGH PRODUCTION FOREST ZONE

Determine key criteria for sites within the High Production Forest zone

- ▶ Productive soils (fertile, good drainage, etc.)
- ▶ Already in a managed state (plantations, old fields)
- ▶ Relatively short distance from existing processing facilities

Other values that will require consideration:

- ▶ *Indigenous rights & values, proximity to protected areas, proximity to settlements, Ecoregion/Ecodistrict Maturity Targets, Other wildlife/SAR habitat layers*

HPF Intervention Strategies

Key Assumptions

- ▶ Market is driven by spruce sawlogs/studwood
- ▶ All silvicultural tools are available
- ▶ Climate change uncertainty

Barriers to TRIAD implementation

- ▶ Forest area is essentially finite
 - ▶ “More” of each value is desired by society, but values cannot be simultaneously maximized
 - ▶ More of one means less of another
- ▶ Willingness to accept compromise
- ▶ Willingness to park ideologies
- ▶ Desire to resolve matters

How do we overcome these challenges?

- ▶ Well-crafted, reasoned analytical approach
 - ▶ Broad-set of alternatives
 - ▶ Comprehensive & understandable set of indicators
 - ▶ Credible short & long-term forecasts
 - ▶ Explicit identification of trade-offs
- ▶ Goodwill, trust, maturity and wisdom

Questions?

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