
Implementation of Natural Disturbance Management

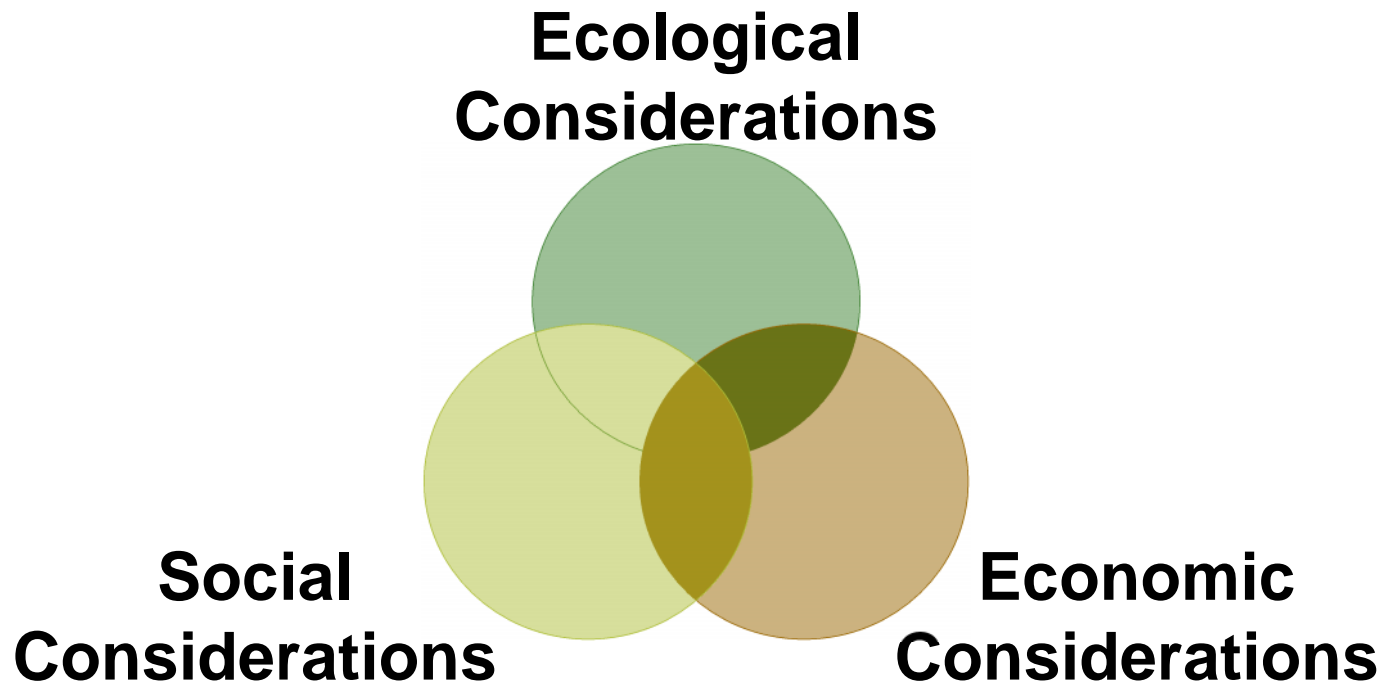
Weyerhaeuser,
Saskatchewan Forestlands

Evolution of Forest Management Approaches



- **Timber Management period** - forest was primarily considered a source of forest products. Forestry's impact on other resources was seldom considered.
- **Integrated Resource Management period** - expectation that if forest and other resource managers just work together to integrate resource management then the forest will provide unreduced harvests of all resources.

Ecosystem-Based Forest Management



Ecosystem-Based Forest Management

- EBM attempts to manage forest resources by balancing social, economic and ecological considerations. Looks to the natural forest condition and natural disturbance regime for guidance in determining appropriate forest management strategies.
- Implicit in the approach is that all forest users will have to compromise and reduce expectations to achieve the best overall solution for most users and the resource.

Natural Forest Pattern Emulation

- Significant work has been done over the past several years to study the patterns that natural disturbances (primarily fire) leave on the forest landscape.
- There has been a recent initiative in SK to set forest landscape management standards and guidelines based on the results of this research. This is referred to as Natural Forest Pattern Emulation.
- An extension of EBM, the underlying premise is that we will be less likely to make serious forest management mistakes if we model our strategies and harvesting activities to closely emulate the landscape patterns we find in the natural forest.

Natural Forest Pattern Emulation

- However, there are serious flaws in the Natural Forest Pattern Emulation approach.
- The forest being managed is not natural.
 - It is the result of 60 years of fire suppression.
 - It has also been subject to forest harvesting and access for ~100 years.
- For the purposes of forest pattern measurement, it is assumed that forest inventories are accurate at the stand level for age class and forest type. This is not true.
 - Photo interpreted ages are accurate + or - 20 years.
 - Forest stands must be ground surveyed before harvest.

Natural Forest Pattern Emulation

- Another significant issue with implementing Natural Forest Pattern Emulation Standards is that social and economic considerations, and operational constraints are generally ignored.
 - Event size standards require some large harvest blocks (between 1000 and 5000 ha) that may have devastating impacts on local trappers and licensed outfitters.
 - Balancing wood flows to multiple mills can become very difficult with large harvest blocks (total annual FMA cut is only 5000 ha).
- It is important to remember that the current working forest is not a “natural” forest, but is the result of ~100 years of man’s intervention and influence.

Recommended Approach

- Fully support continuing research into effect of forest fires and other natural disturbances, and into the forest landscape patterns that result.
- This information is useful in *guiding* development of effective forest management strategy and plans.
- The study results should not be used to set hard and fast standards for landscape management.

Recommended Approach

- Example 1: Prince Albert 20-Year FMP (1999)
 - Pre-1900 natural fire return cycle = 30 to 50 years
 - Current fire return cycle (based on 50 years fire data) = 205 years
 - Although both fire return cycles could be considered “natural”, neither was acceptable from social and economic viewpoints.
 - After consulting with both Government and numerous stakeholders, a future forest with an age class distribution similar to that associated with a 70 year fire return cycle was selected as the forest management target.
 - This set landscape level (FMA wide and regional) old forest retention targets that were modelled in non-spatial wood supply analysis.

Recommended Approach

- Example 1: Prince Albert 20-Year FMP (1999)
 - Minimum retention targets were set for old (~70 – 100 yrs) and very old (>~100 yrs) forest (FMA lands only).
 - These minimum retention levels were set for 9 forest types in 10 landscape management units (average ~300,000 ha in size).
 - Minimum retention levels of 5% and 1% were set for old and very old forest types respectively (10% and 2% minimum levels were set for WS forest type).
 - Allows operational flexibility but still ensures distribution of old and very old forest on the landscape.

Recommended Approach

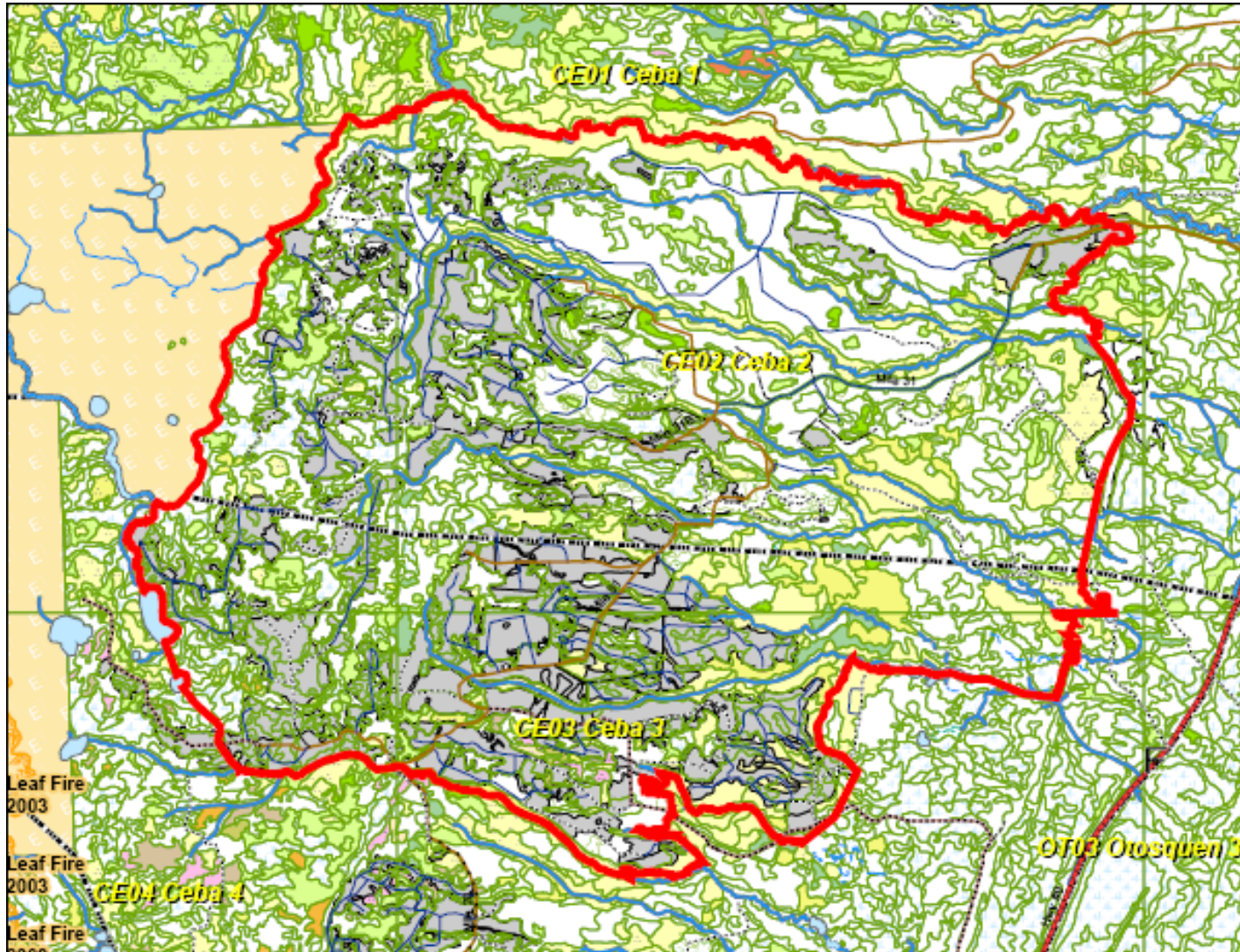
- Example 1: Prince Albert 20-Year FMP (1999)
 - Maximum harvest limits were set for the 9 forest types on the FMA (WS, BS, JP, BS-JP, WSTA, JPTA, TAWS, TABP, WB).
 - Forest type harvest volumes from the timber supply modelling exercise were converted to forest area and tracked annually.
 - Turned out to be a very effective way of preventing the over-harvest of any particular forest type.

Recommended Approach

- Example 2: Timex Operating Area Landscape Plan
 - ~20,000 ha operating area.
 - No previous harvesting, no previous road access.
 - Limited traditional use by trapper and outfitter.
 - Woodland caribou herd present in the area.
 - PAMF planning workshop held to obtain broad input into harvest plan development.
 - Access was developed and all merchantable wood (~3000 ha) harvested over ~4 year period.
 - All roads were reclaimed and all silviculture treatments completed within another 2 year period, and the 25 metre bridge accessing the area removed.
 - Currently, very little human use of area due to reclaimed access.
 - Woodland caribou still use the area.

Recommended Approach

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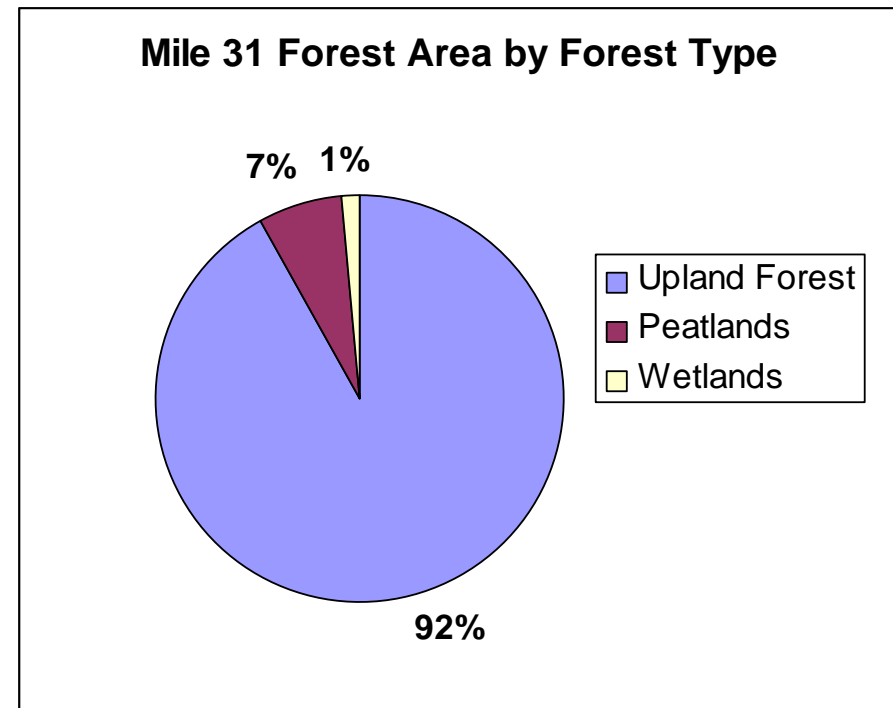


Landscape Planning and Design Workshop
Winnipeg, MB

April 15, 2008

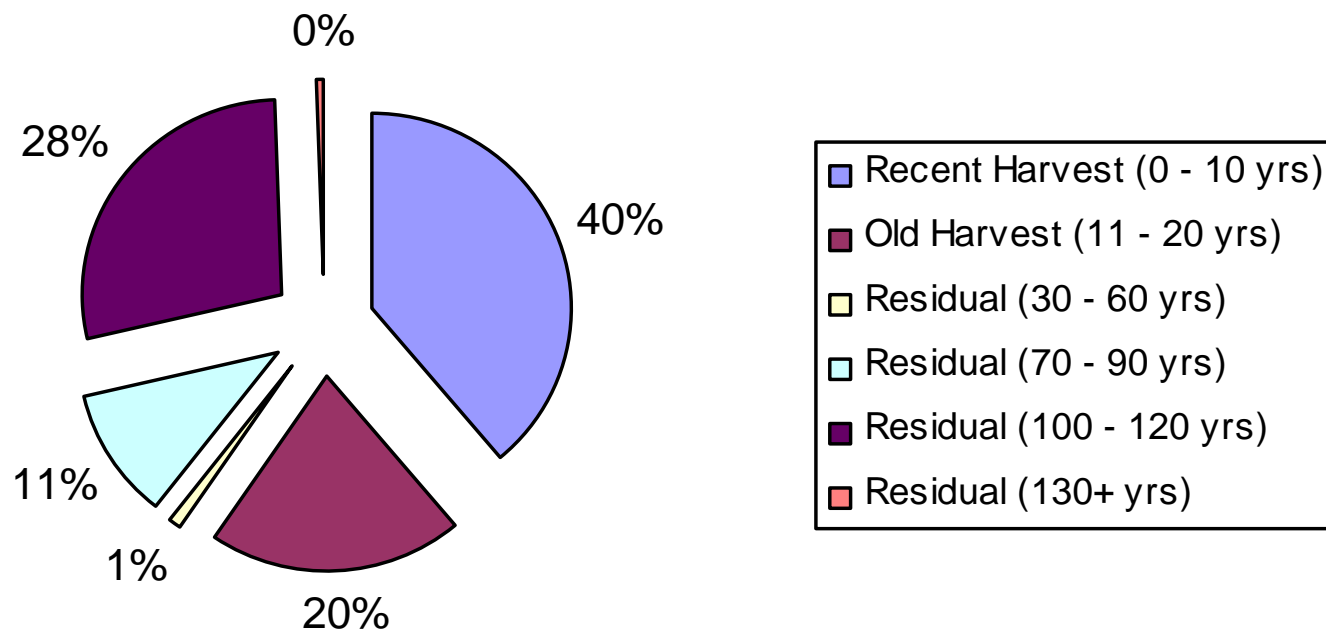
Example 3: Mile 31 Area

- Total Area - 9,694 ha
- Peatlands - 665 ha
- Wetlands - 123 ha
- Uplands - 8,906 ha

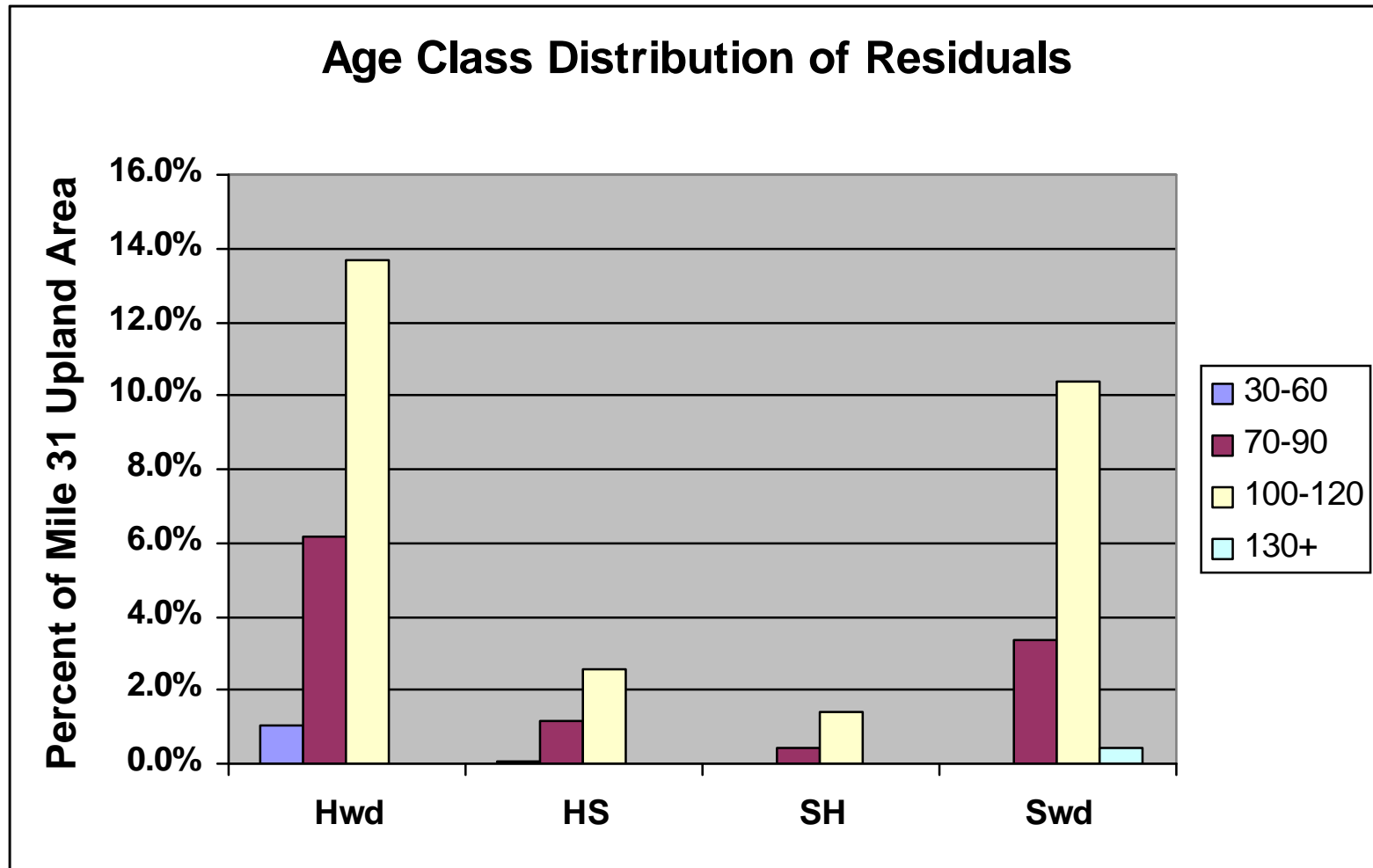


Example 3: Mile 31 Area

Upland Forest by Harvest and Residual Age Grouping



Example 3: Mile 31 Area



Learning From Pilot Projects

- Should compare the landscape forest patterns resulting at Timex, Mile 31, and other operating areas to see how they compare with recent forest fire residual pattern study results.
- Need to identify similarities and differences between harvest event patterns and forest fire patterns, and consider whether the differences are ecologically meaningful or not.
- These results would be useful in guiding development of future landscape level operating plans and 20-year FMPs.

Recommended Approach

- Bottom Line:
 - Weyerhaeuser Sask. supports use of natural disturbance and forest pattern study results as input into developing ecosystem-based FMPs (20 years) and 5-year operating plans.
 - However, it should only provide direction for plan development, and not dictate what the end results must be.
 - It is still necessary to balance social, economic and ecological constraints when developing FMPs.