Managing for Pine Marten: Keeping the Common Species Common

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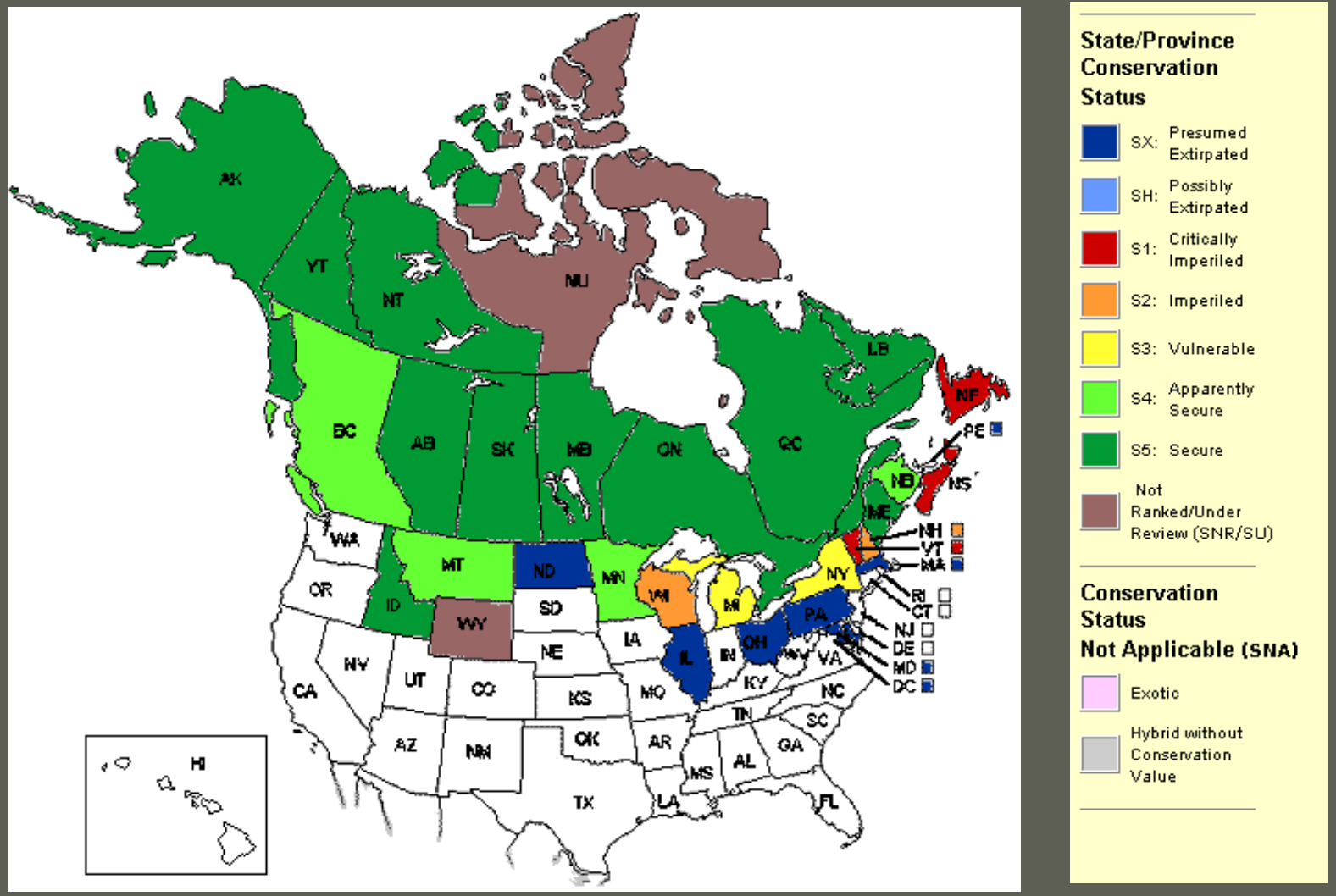
SISCO- June 10, 2016

Photo credit: B. Steventon courtesy of D. Steventon

Why are Marten Important?

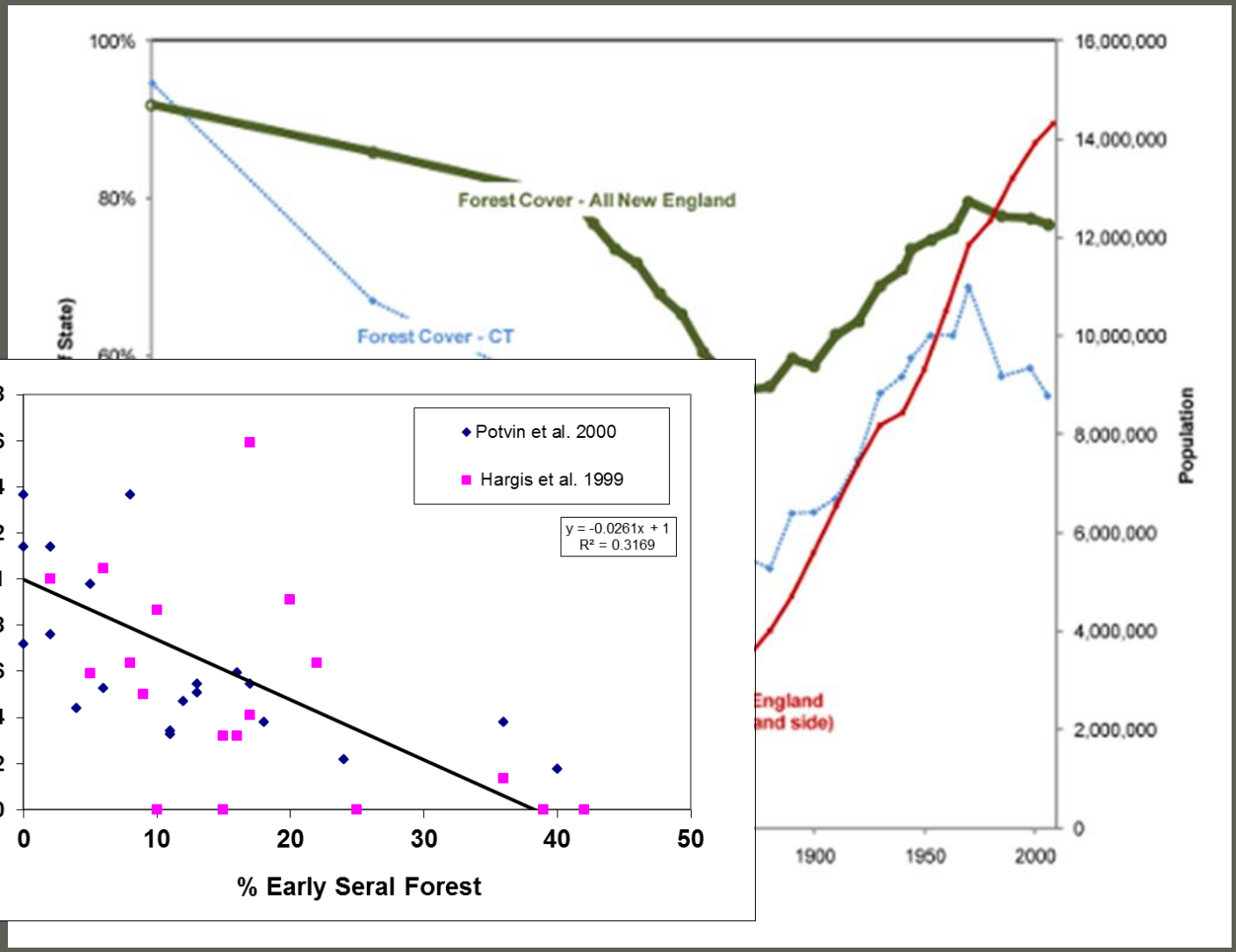
- BC Ministry of Environment Conservation Framework- Goal 2 Species
- Important trapped species in BC and are a primary species contributing to trapper income in BC.
- Recognized as important to First Nations, and relevant when considering aboriginal rights and title.
- Useful candidate focal species for monitoring; marten habitat requirements and life history traits make them susceptible to the cumulative effects of land use activities;
  - Resource limited
  - Area limited
  - Dispersal limited

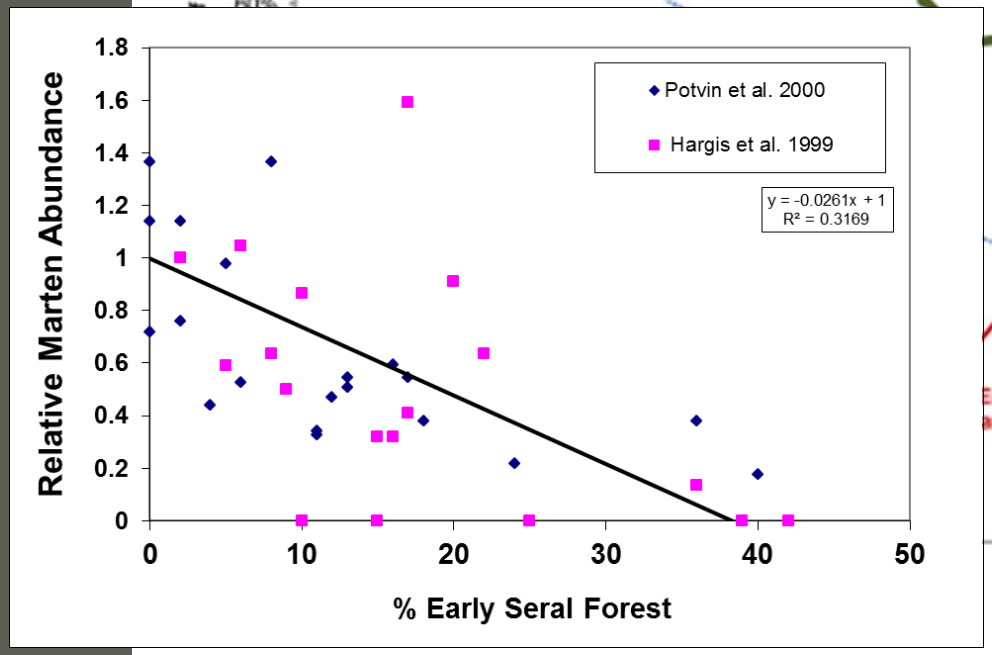
Marten Distribution and Status



Source: NatureServe at http://explorer.natureserve.org/servlet/NatureServe?searchName=Martes+americana

Reasons for Marten Declines?





Managing for Marten in BC

- Few areas (e.g. Okanagan-Shuswap District) have specific legal objectives for marten.
- Marten habitat currently managed through the fine/coarse-filter biodiversity conservation strategy.
- Marten are a Class 1 furbearer species, meaning home ranges are small enough to contain viable populations in one trapline. There are no specific quotas by trapline, harvests are reported and individual trappers modify efforts to sustain the populations in their traplines.

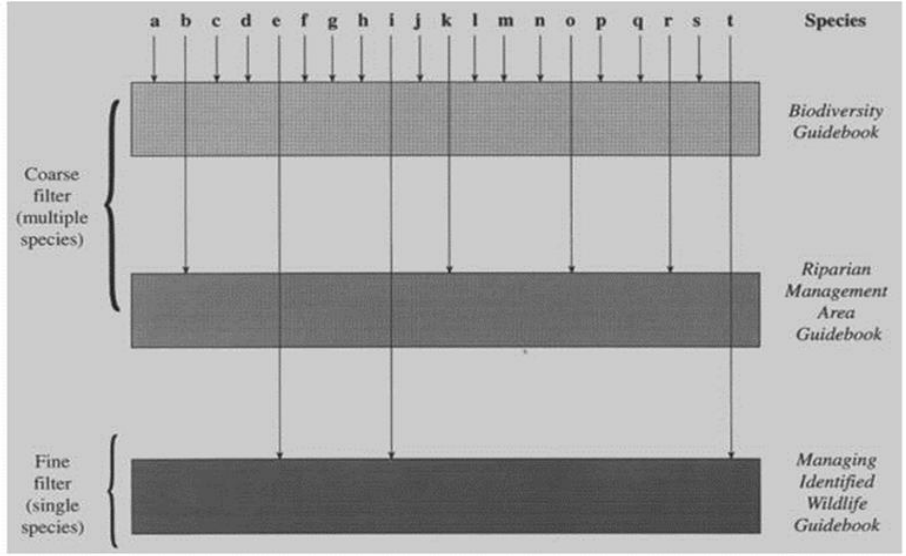
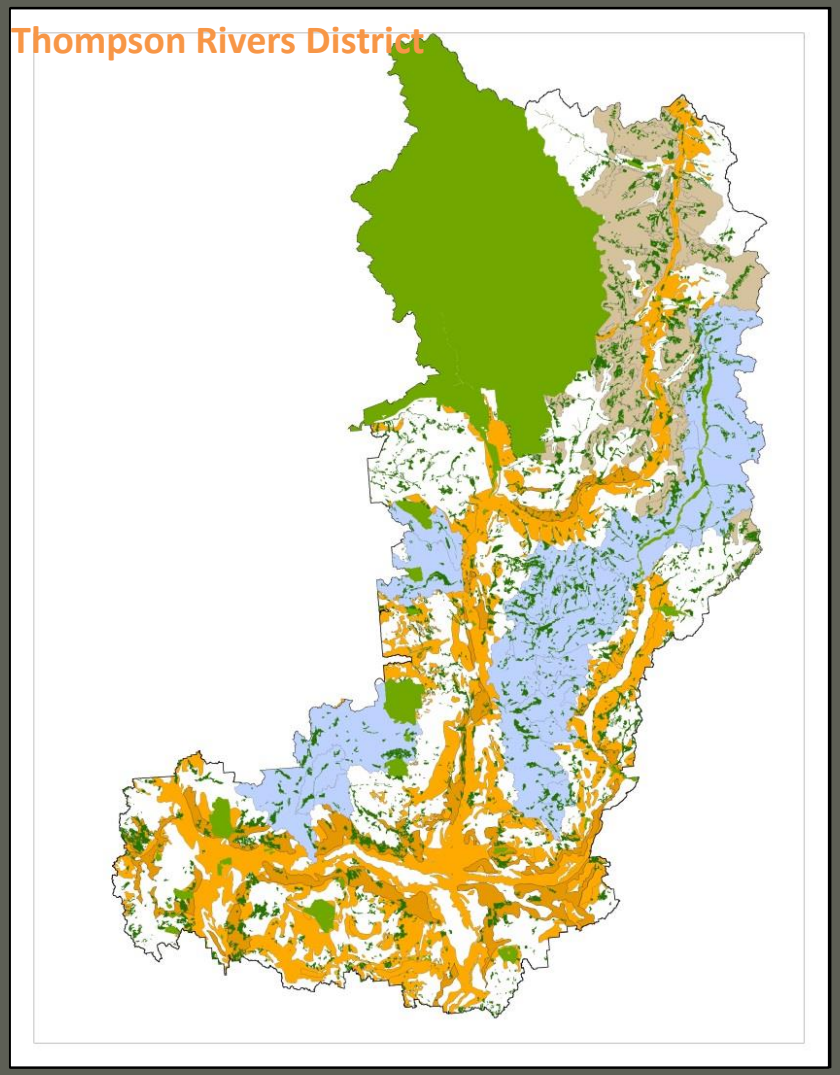


Figure 3. The relationship between the Biodiversity Guidebook and the Riparian management Area and managing Identified Wildlife (Figure copied from Figure 2, page 6 of Biodiversity Guidebook)

Biodiversity Conservation in BC

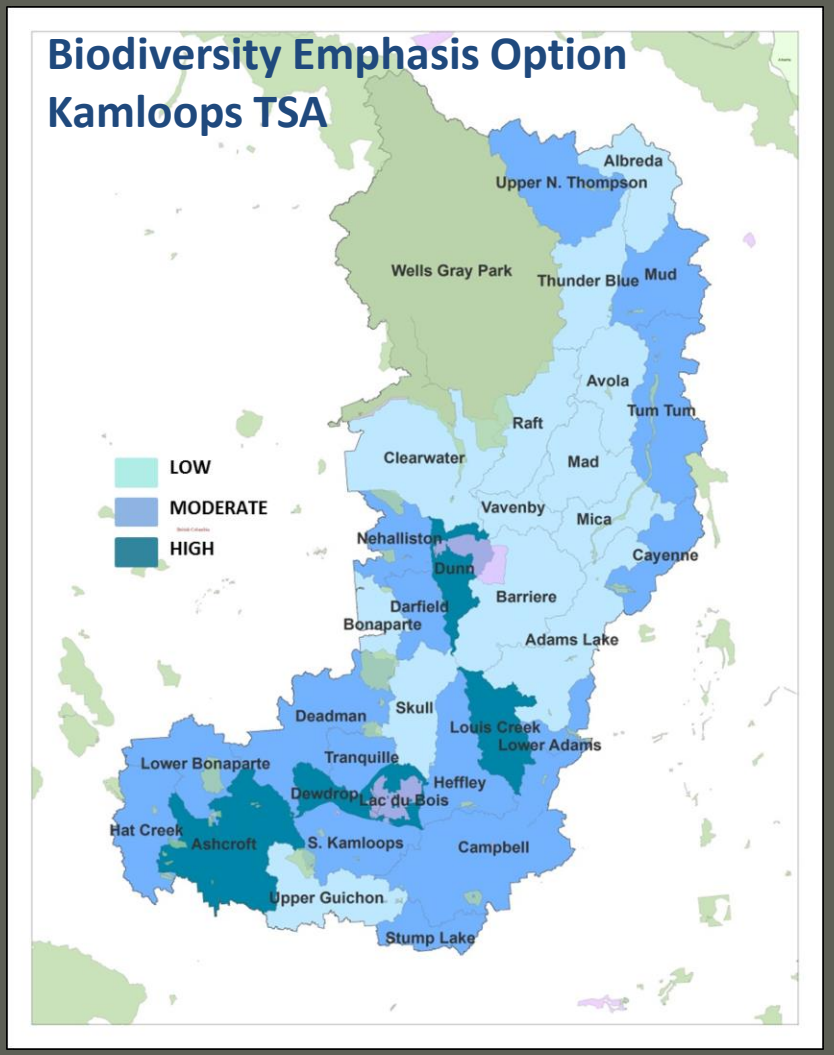
- Parks, Protected Areas,
- Old Growth Management Areas
- Mountain Caribou Recovery Area
- Moose/Deer Winter Range Areas
- Visual Resource Management Areas
- Proposed Fisheries Sensitive Watersheds



Biodiversity Conservation in BC

Some aspects of the original Biodiversity Conservation strategy were not fully implemented….

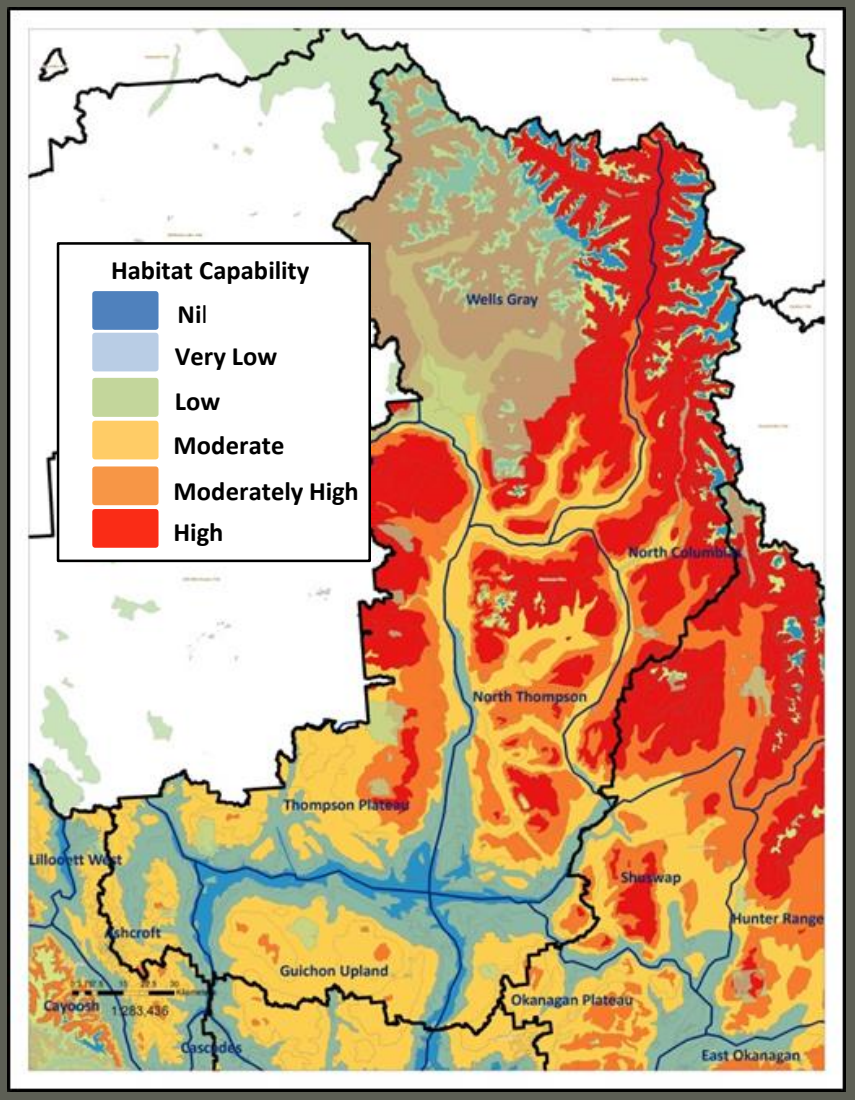
Targets for early, mature and old forest as per Biodiversity Emphasis Options (BEO) assigned at the Landscape Unit Level.



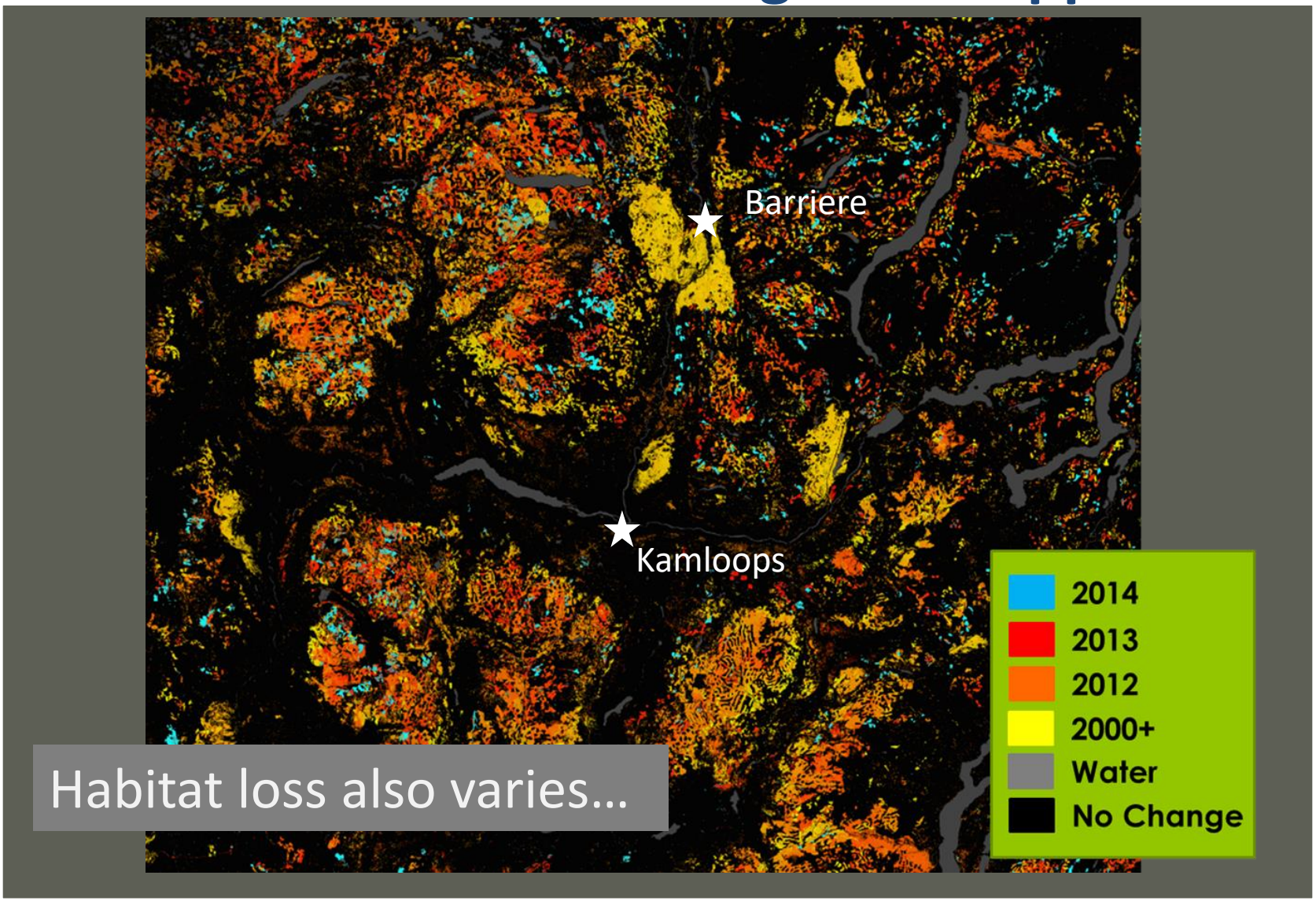
How Effective Is Our Management Approach?

Depends…

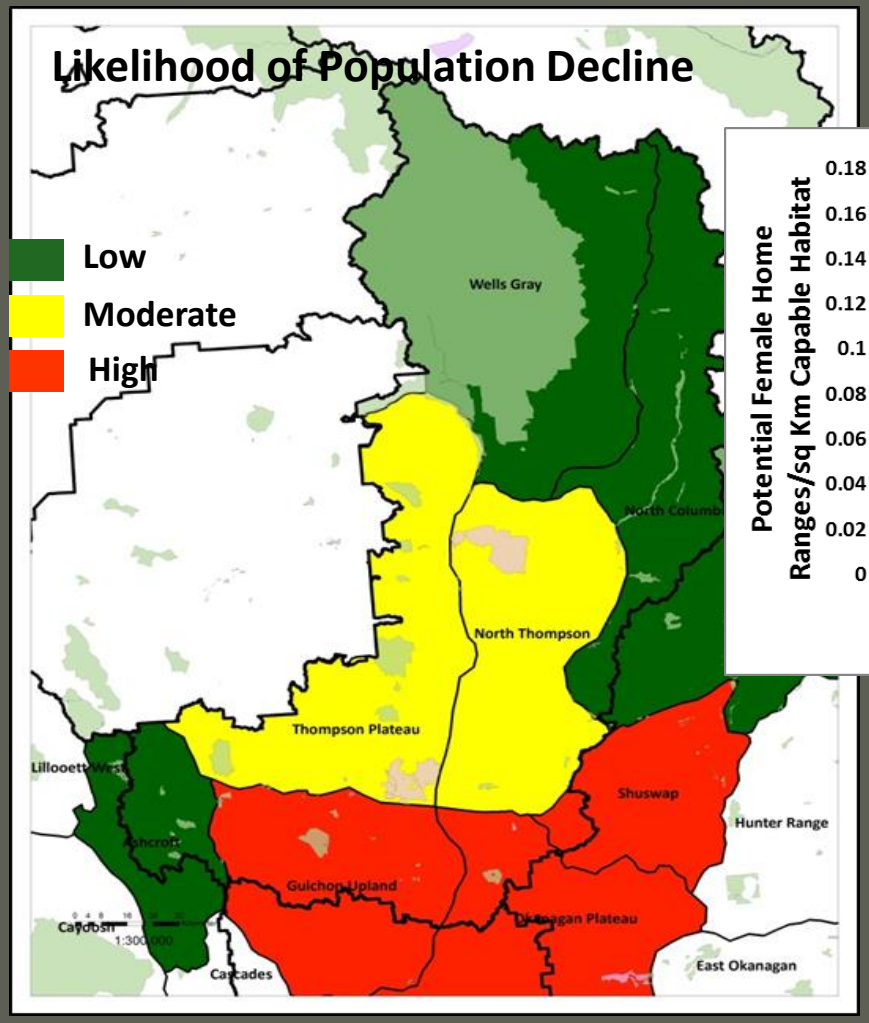
- Marten habitat varies considerably at a District/TSA scale
- Some overlap with landscape-level designations

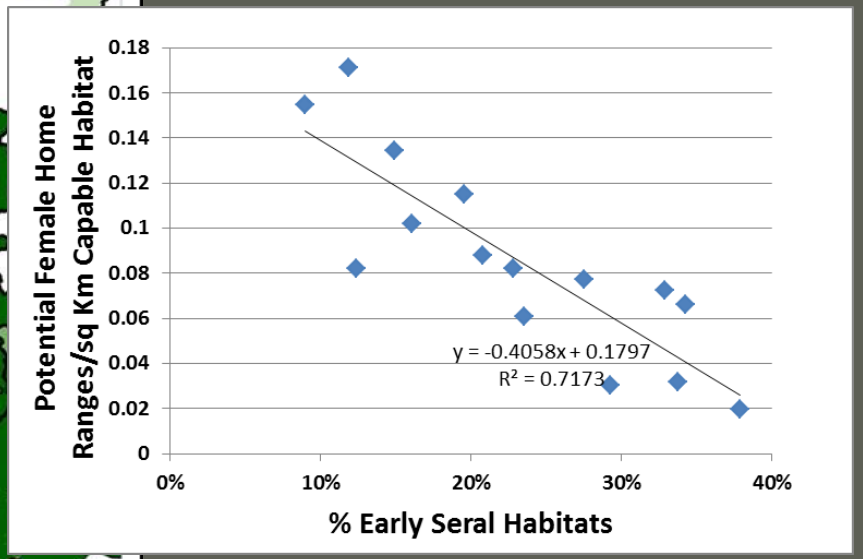


How Effective Is Our Management Approach?



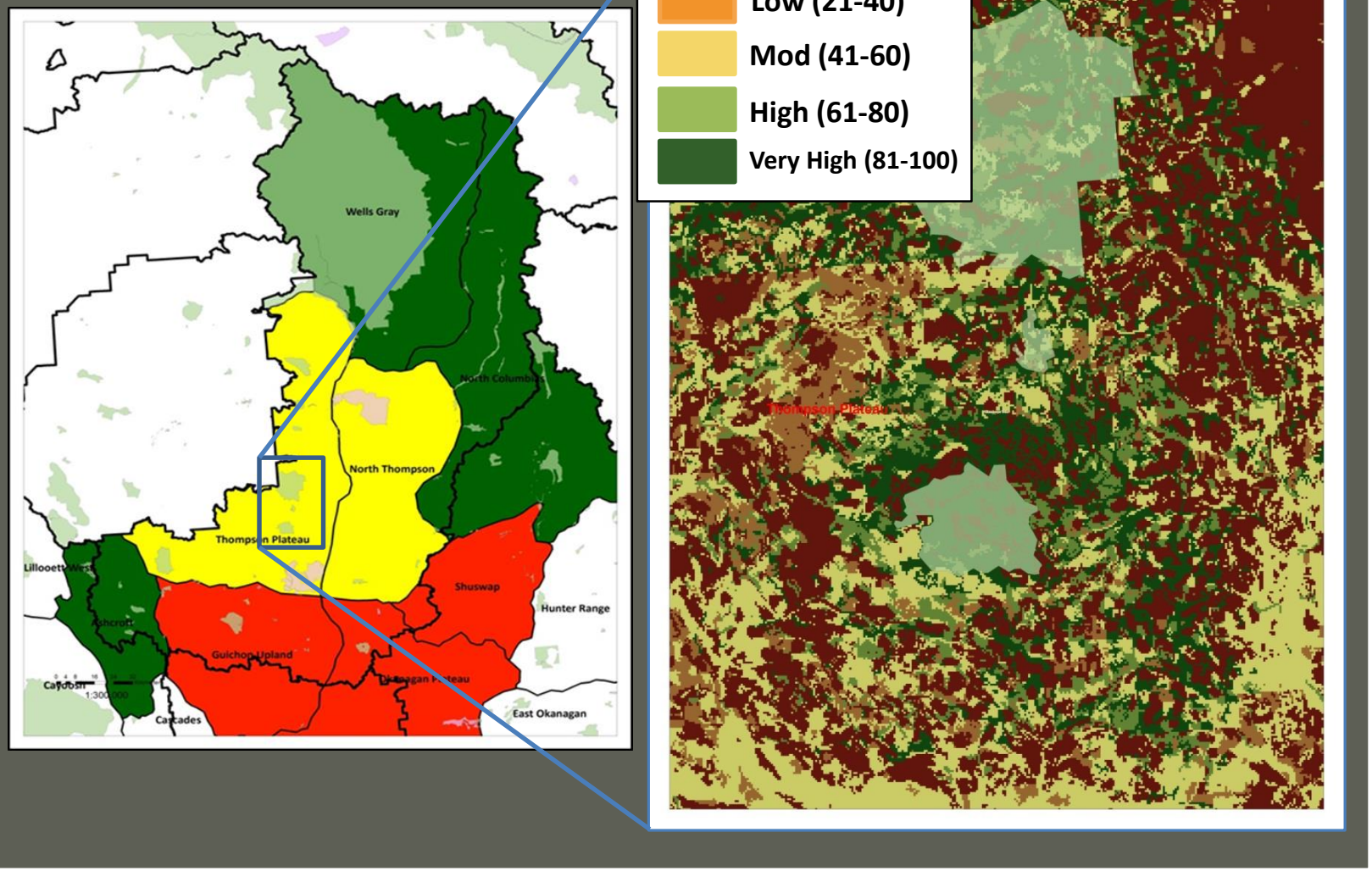
Marten Assessment: Kamloops TSA





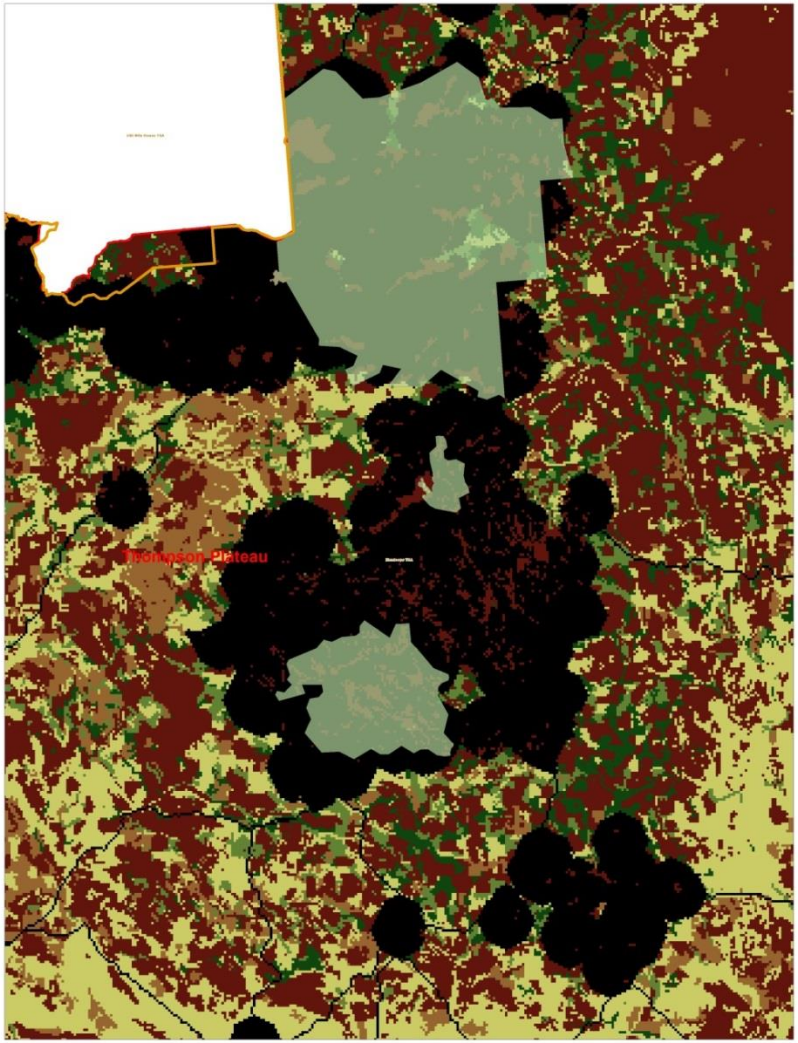
% of early seral forest on moderate or better capability habitat in Analysis Unit

Habitat Condition



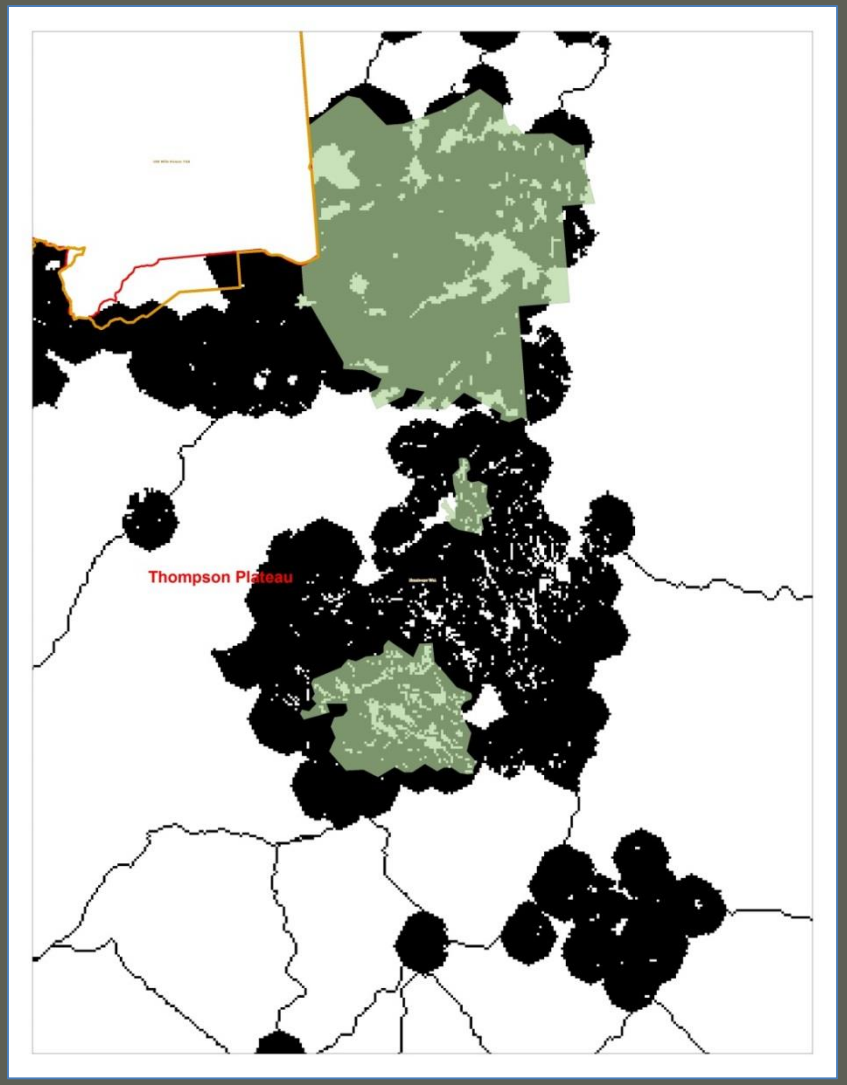
Spatial Female Home-Range Analysis

- Follows an approach applied by Steventon and Daust (2009);
  - Habitats >0.75 HS1 and >50 ha prioritized for formation
  - 200 – 1200 ha size
  - Mean minimum HSI score must be achieved
  - Movement ‘cost’ applied (1-HSI) limiting movement through low quality habitats
  - Maximum amount of low quality habitat (e.g. 40%) can be applied
  - Shape constraints to avoid long thin strips



Spatial analysis: Dispersal and Connectivity

- Modelled following Steventon and Daust (2009) where:
- Adjacent home-ranges grouped into clusters
- Dispersal cost between clusters considering:
  - Maximum 40 Km
  - Decay function (dispersal success declines as distance increases)
  - Movement cost increases in lower quality habitat
- Expected Cluster Size Index (0-1) where:
  - Connected clusters/total clusters
- Optimal conditions – where all clusters are connected



How do we Keep Marten Common?

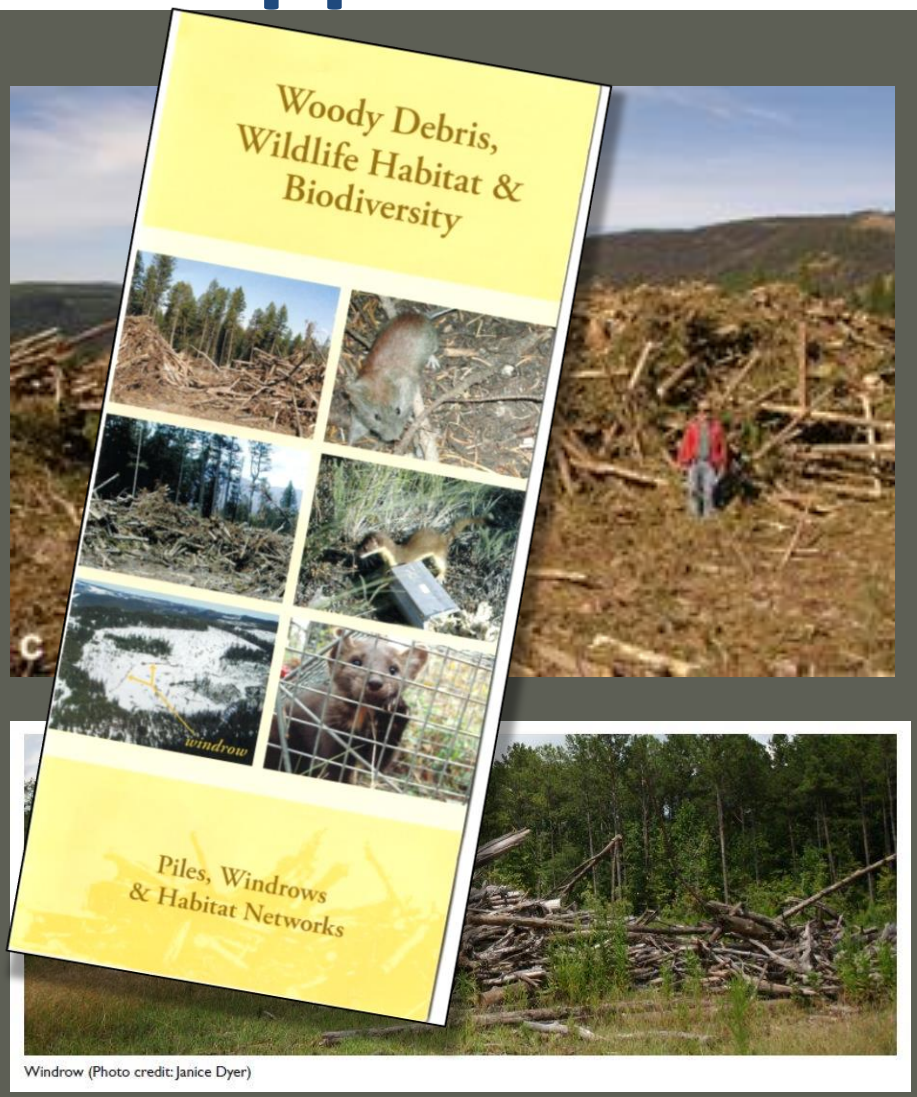
Strategic -> Tactical Approach

- Strategic Analysis
  - Use CEA to identify portions of landscapes where populations are at risk
- Tactical Analysis
  - Determine where important habitats are
  - Determine how much habitat is required
  - Identify overlap with landscape-reserves
- Use a collaborative ‘Total Chance’ concept considering habitat needs to plan:
  - harvest entries over time
  - short-term reserves/deferrals
  - Areas to recruit habitat

Operational Approach

Published Literature shows marten will use forests post-disturbance

- Stand-Level Tree Retention
- Coarse Woody Debris Retention
- Windrows
- Piles



Windrow (Photo credit: Janice Dyer)

Benefit?