

# **Evaluating the importance of marten cores to trapper harvests**

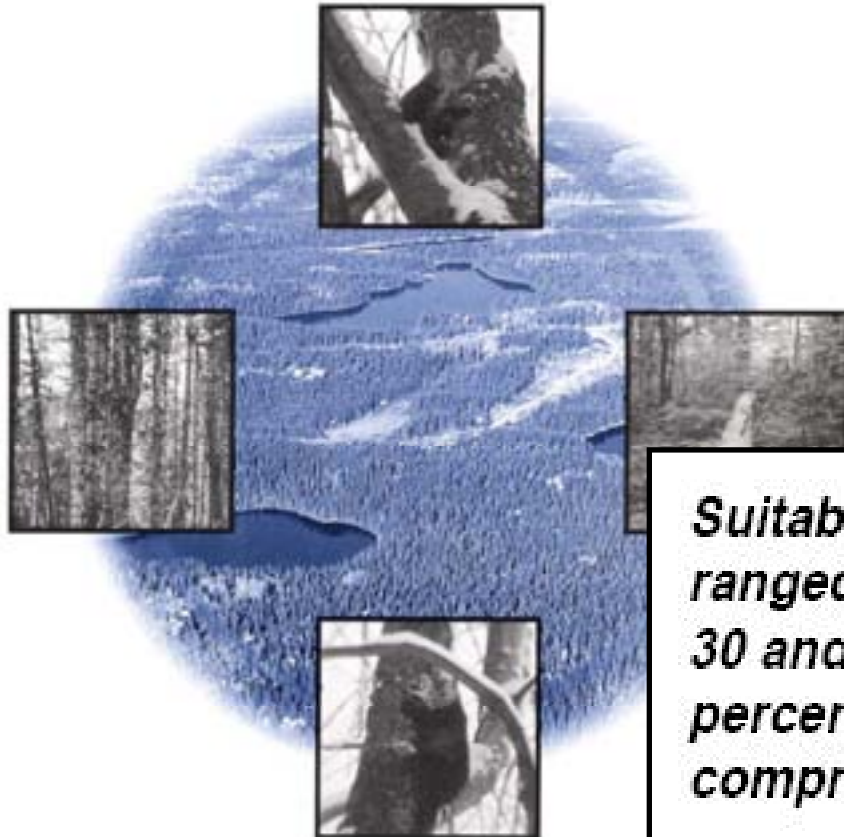


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## Forest Management Guidelines for the Provision of Marten Habitat



**Are large  
cores  
necessary?**

*Suitable marten habitat should be arranged in “core habitat areas” between 30 and 50 km<sup>2</sup> in size. A minimum of 75 percent of core habitat areas should be comprised of suitable stands.*

An aerial photograph of a forested landscape. A road or path runs diagonally across the scene. A stream or river flows through the lower right portion. The terrain is hilly and covered in dense green vegetation.

## **HYPOTHESIS:**

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**Core-sized patches of suitable habitat are necessary to sustain marten populations**

## **PREDICTION:**

**Marten harvest on traplines is best predicted by the amount of suitable habitat in core-sized patches**

# Methods – Phase 1

- 500 traplines from boreal east, boreal west, & transition forests

- marten harvest records (control annual variation)

- index of trapper effort (% beaver quota)

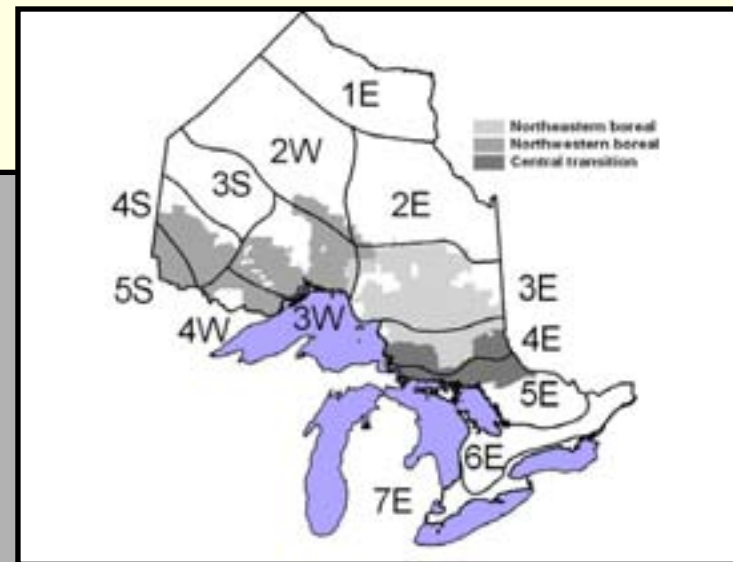
- index of access (km of roads/km<sup>2</sup> trapline)

- climate variables (Jan temp, precipitation)

- suitable habitat (trapline & FMU) from FRI (OWHAM/OMA)

- patches: small (< 500 ha), medium, large (3000+ ha)

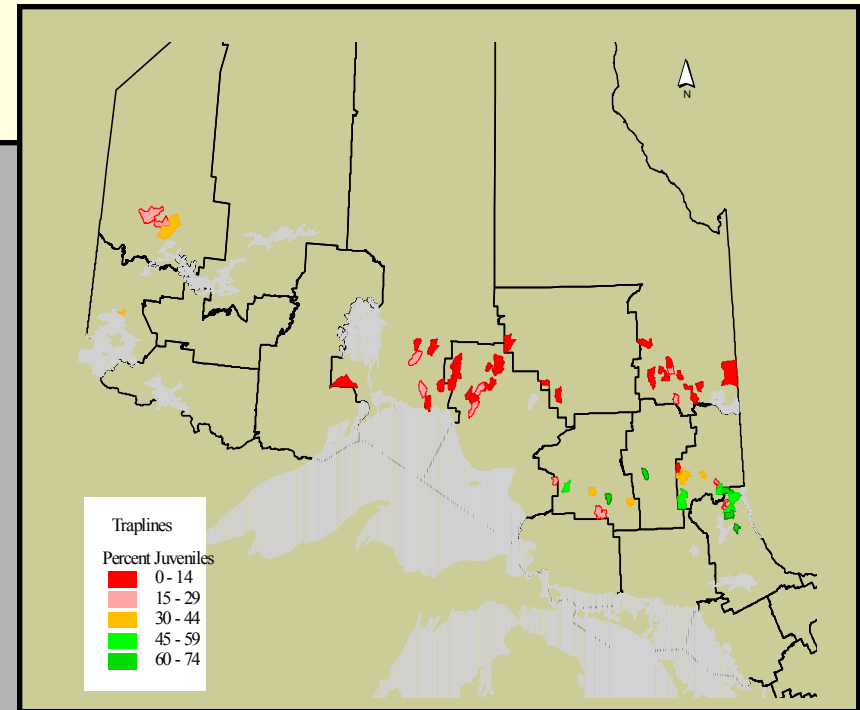
- harvest = f(effort, access, climate, habitat supply)



# Methods – Phase 2

- subset of 56 traplines
- trapping season 2004-05
- effort data (# trap nights)
- sex & age of each capture
- harvest of adults vs. juveniles

= f(effort, access, climate, habitat supply)



# Results – Phase 1

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## Harvest related to:

- effort
- access
- climate (BE & CT only)
- supply of suitable habitat

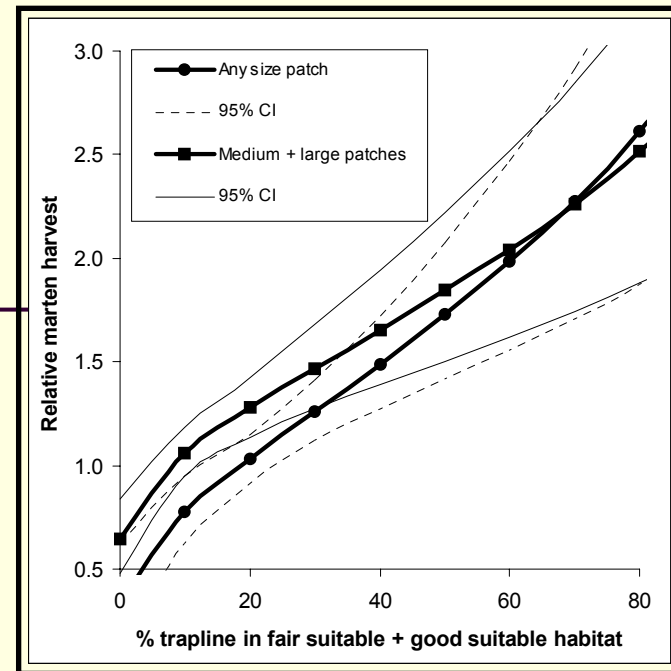
**\*Best models only explain 25% of variation**

# Results – Phase 1

## Best predictors of harvest:

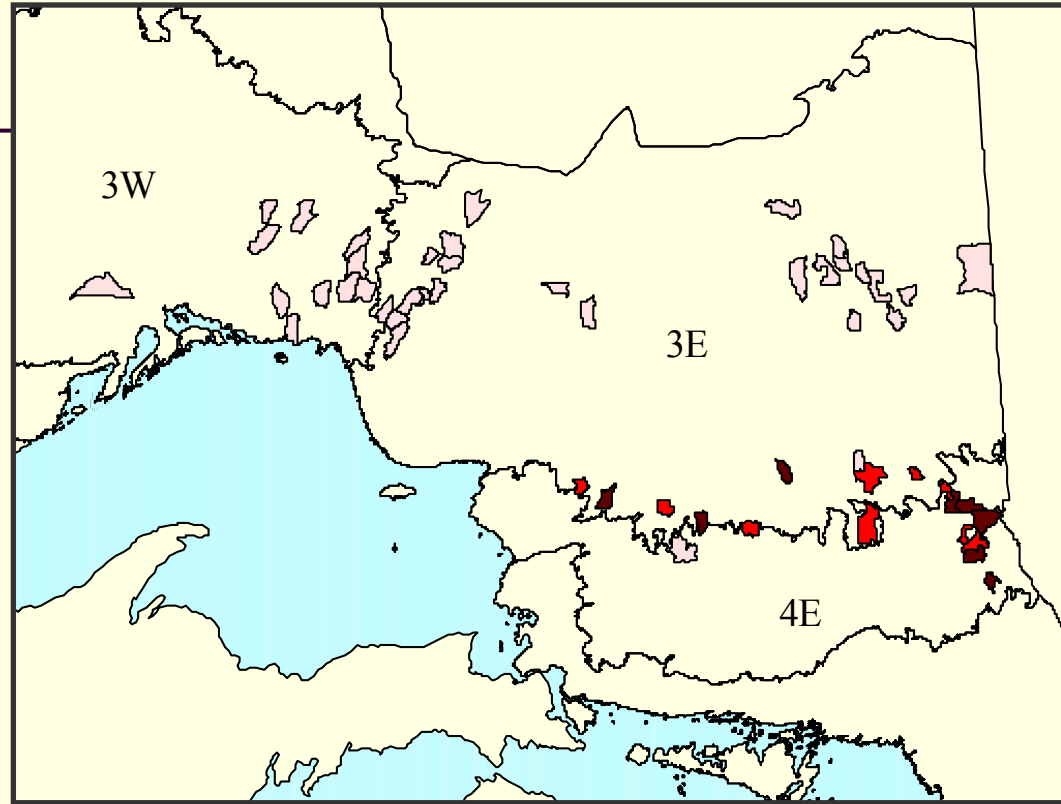
- **FS+GS/S+GS/U+P**
- **Total supply of suitable (BE, CT)**
- **Suitable in M+L patches (BE, BW)**
- **FMU supply of M+L patches in BW & CT**

**\* 1ha in medium patch = 1 ha in large patch**



## Results – Phase 2

- age and sex for 2200+ martens
- 21% juveniles (< 1 year)



- juvenile harvest and % adults variable by forest region
- adult female harvest variable by ecoregion

## Results – Phase 2

- Harvest (martens/km<sup>2</sup>) related to non-spatial supply of suitable habitat

(model explains 32% of variation)

- Harvest weakly related to habitat in medium and large patches ( $\geq 500$ ha)



- Harvest negatively related to suitable habitat in small patches ( $< 500$ ha)

# Results – Phase 2 (OWHAM vs. OMA)

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**OWHAM seems to have a stronger relationships and better predictive ability**

- **distribution of samples?**
- **Spatial considerations during core “building”**

# Trapper harvest data – testing guide effectiveness?

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- **Harvest not always related to habitat**
- **Sample size and distribution is important**
- **Annual variation can be significant**
- **Raw harvest data not always best**

# Some Potential Conclusions

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**Phase 1 and 2 – Suitable habitat does not *necessarily* have to occur in core-sized patches to support high trapper harvest of martens**

**Both the total amount of suitable habitat and habitat in patches at least 500 ha seem to be important.**

# Next Steps?

