



# Putting forest raptor conservation into practice: guidelines for forest management and voluntary conservation

Heidi Björklund & Jari Valkama  
Finnish Museum of Natural History Luomus,  
University of Helsinki, Finland

# Forest raptor project

- Part of Finnish Forest Biodiversity Programme
- Trigger: declines of forest-dwelling hawks



European honey buzzard  
*Pernis apivorus*



Hannu Lehtoranta



Northern goshawk  
*Accipiter gentilis*

Hannu Lehtoranta

Common buzzard  
*Buteo buteo*



Hannu Lehtoranta

# Forest raptor project

- Risks related to forest management:
  - 1) Breeding in mature forest – loss of nest sites due to logging

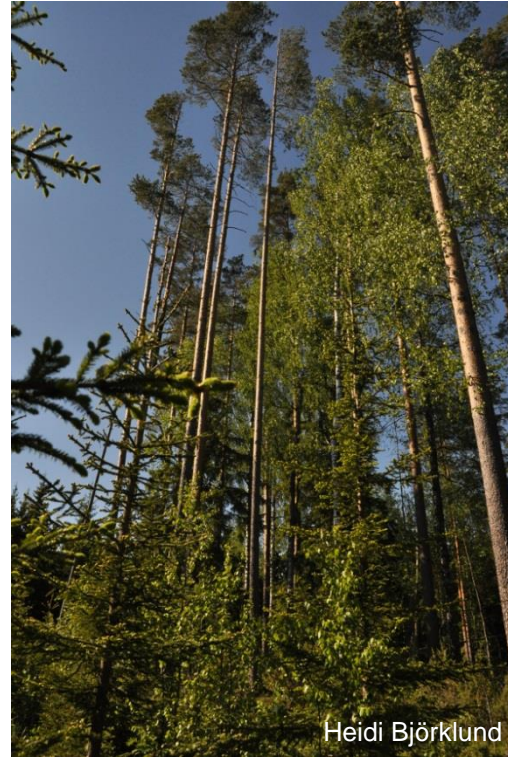


Goshawk  
Tom Björklund



# Forest raptor project

- Risks related to forest management:
  - 2) Big nests; short of suitable nest trees
    - Old trees scarce
    - Trees with straight trunks and thin branches favoured
    - Malformed trees removed



# Forest raptor project

- Objective: support the breeding of hawks in managed forests
- Guidelines on:
  - 1) Preserve hawk nest sites



Breeding of goshawk failed due to logging



# Forest raptor project

- Objective: support the breeding of hawks in managed forests
- Guidelines on:
  - 1) Preserve hawk nest sites
  - 2) More potential nest trees
    - For landowners and forest managers
    - Voluntary conservation, no monetary compensation



Honey buzzard

Goshawks



Jouni Kannonlahti

# Guideline 1) Preserve hawk nest sites



- Aim: Keep the nest occupied despite forest management
- Harvest outside the breeding period



Hannu Lehtoranta has saved hundreds of nests

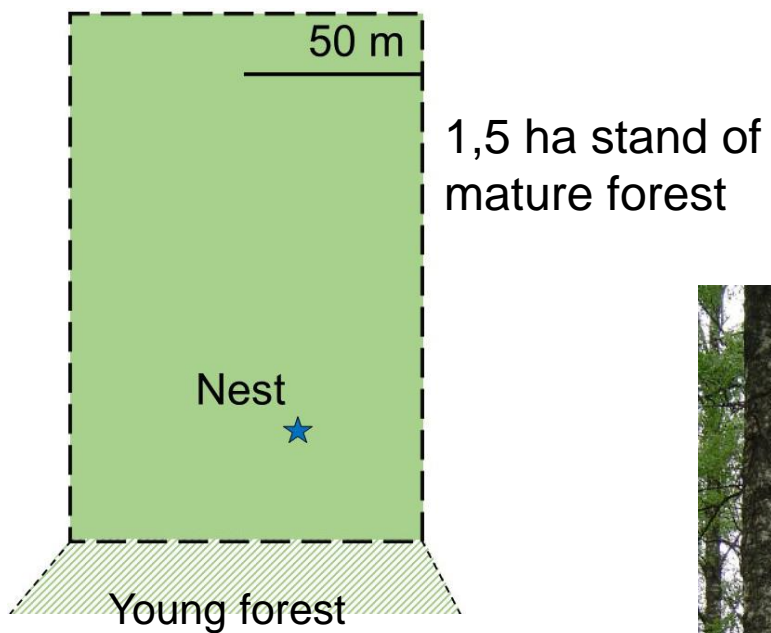


Jukka Ruutinen



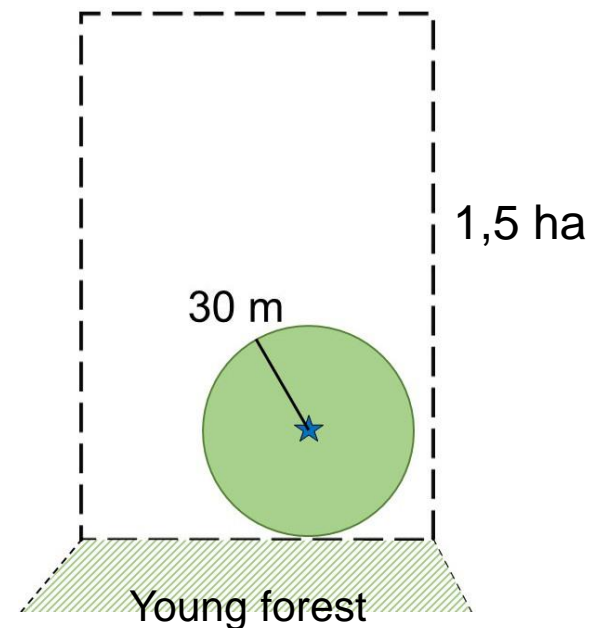
# Guideline 1) Preserve hawk nest sites

- Landowner can
  - postpone logging



# Guideline 1) Preserve hawk nest sites

- Landowner can
  - postpone logging
  - leave a forest buffer around the nest
    - size depends on species and nest location



Common buzzards



Pasi Makkonen

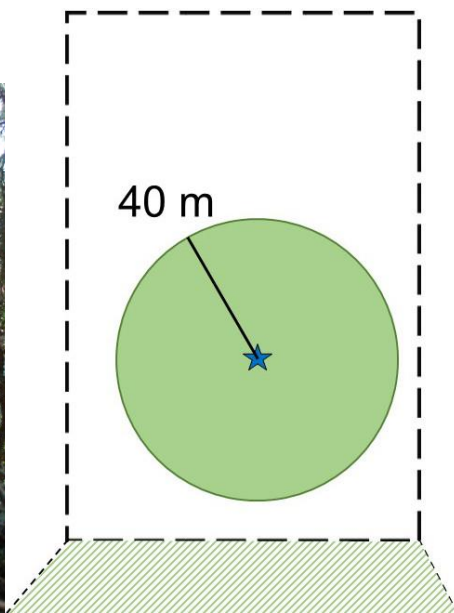


Pirkka Aalto

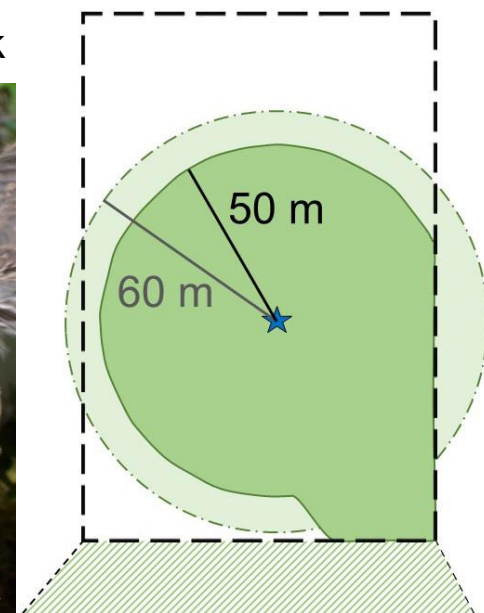
# Guideline 1) Preserve hawk nest sites

- Landowner can
  - postpone logging
  - leave a forest buffer around the nest
    - size depends on species and nest location
    - connection to remaining forest

Honey buzzard

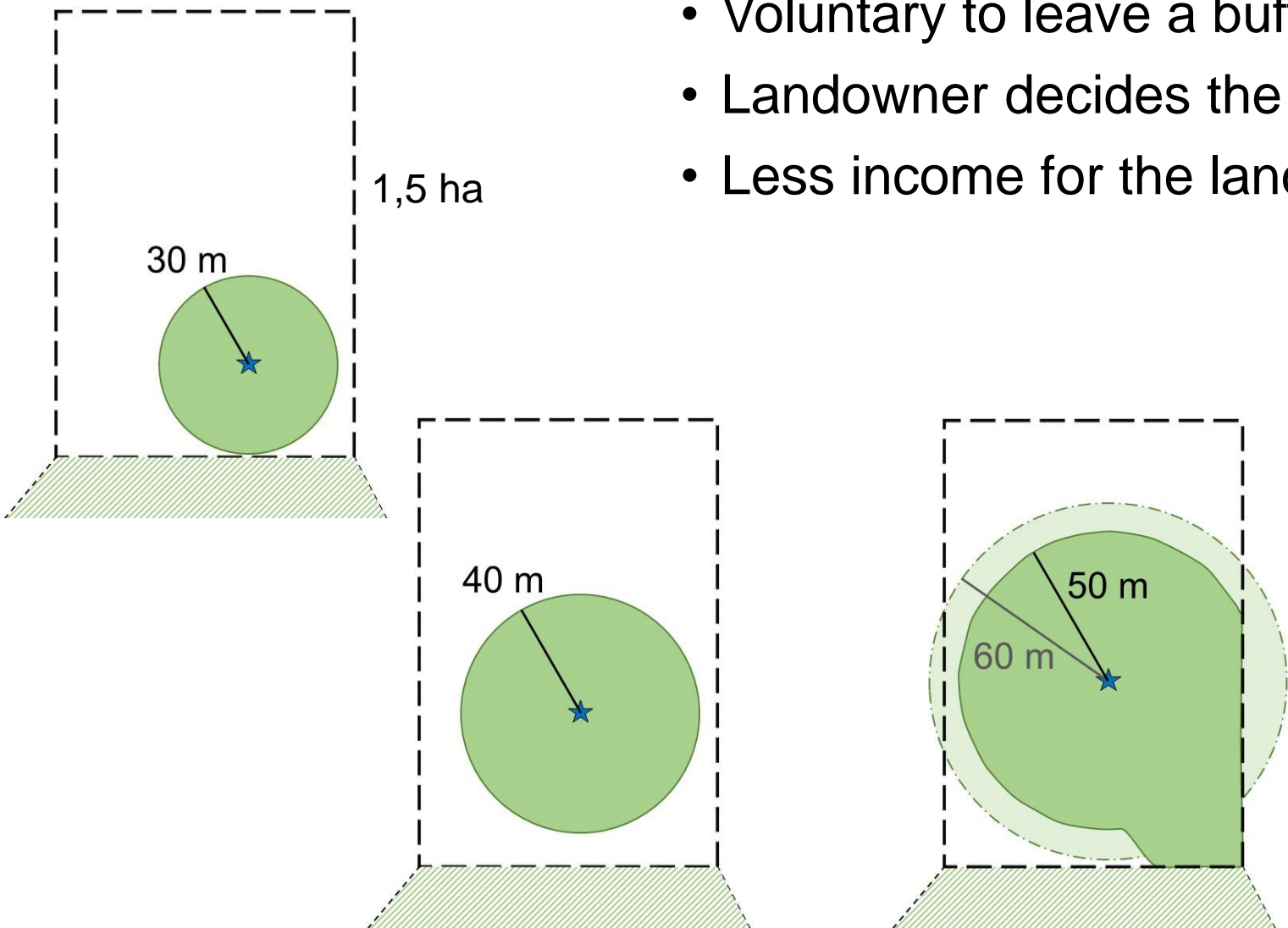


Goshawk



# Guideline 1) Preserve hawk nest sites

- Voluntary to leave a buffer
- Landowner decides the size of the buffer
- Less income for the landowner

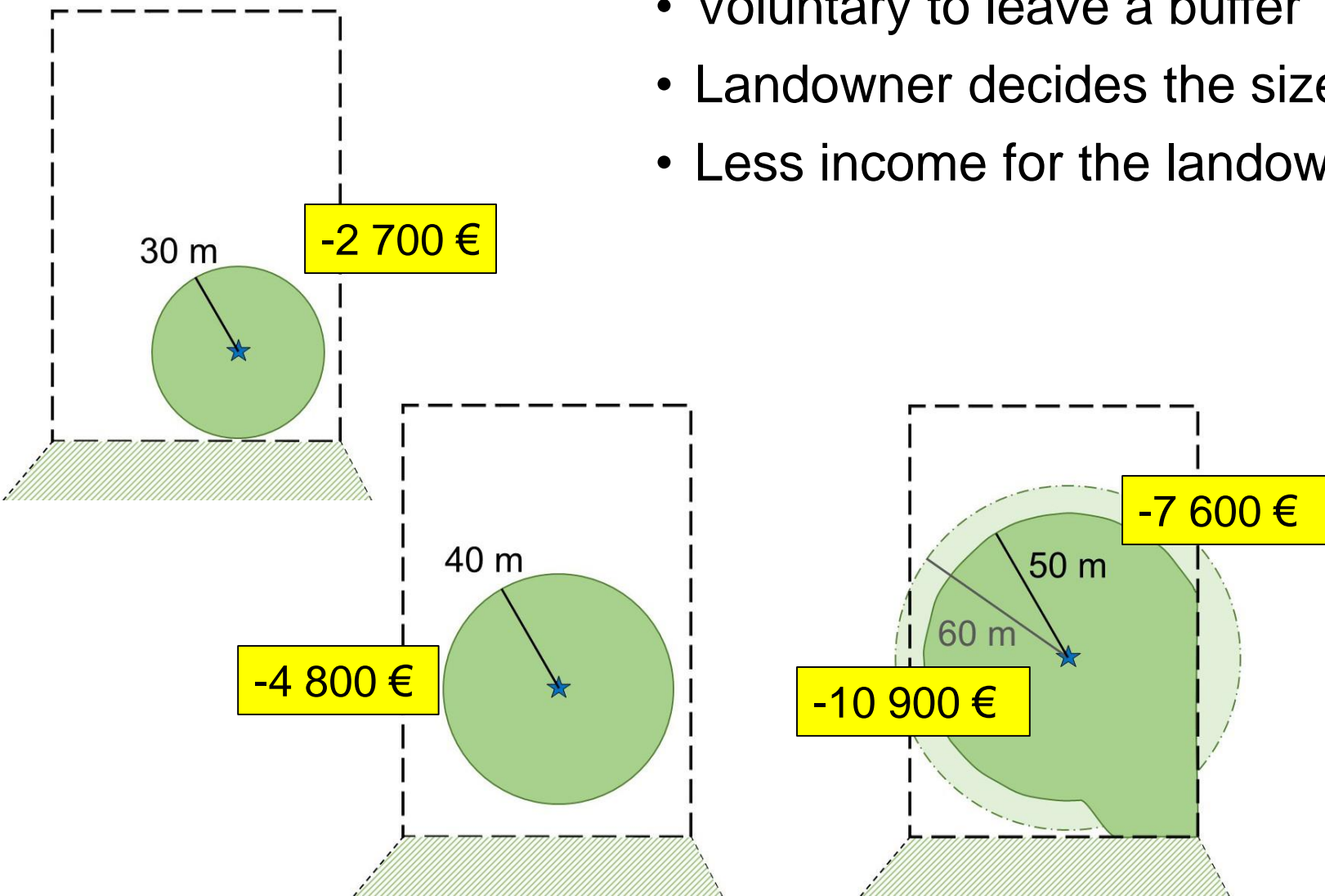


Successful buffer around a common buzzard nest



# Guideline 1) Preserve hawk nest sites

- Voluntary to leave a buffer
- Landowner decides the size of the buffer
- Less income for the landowner



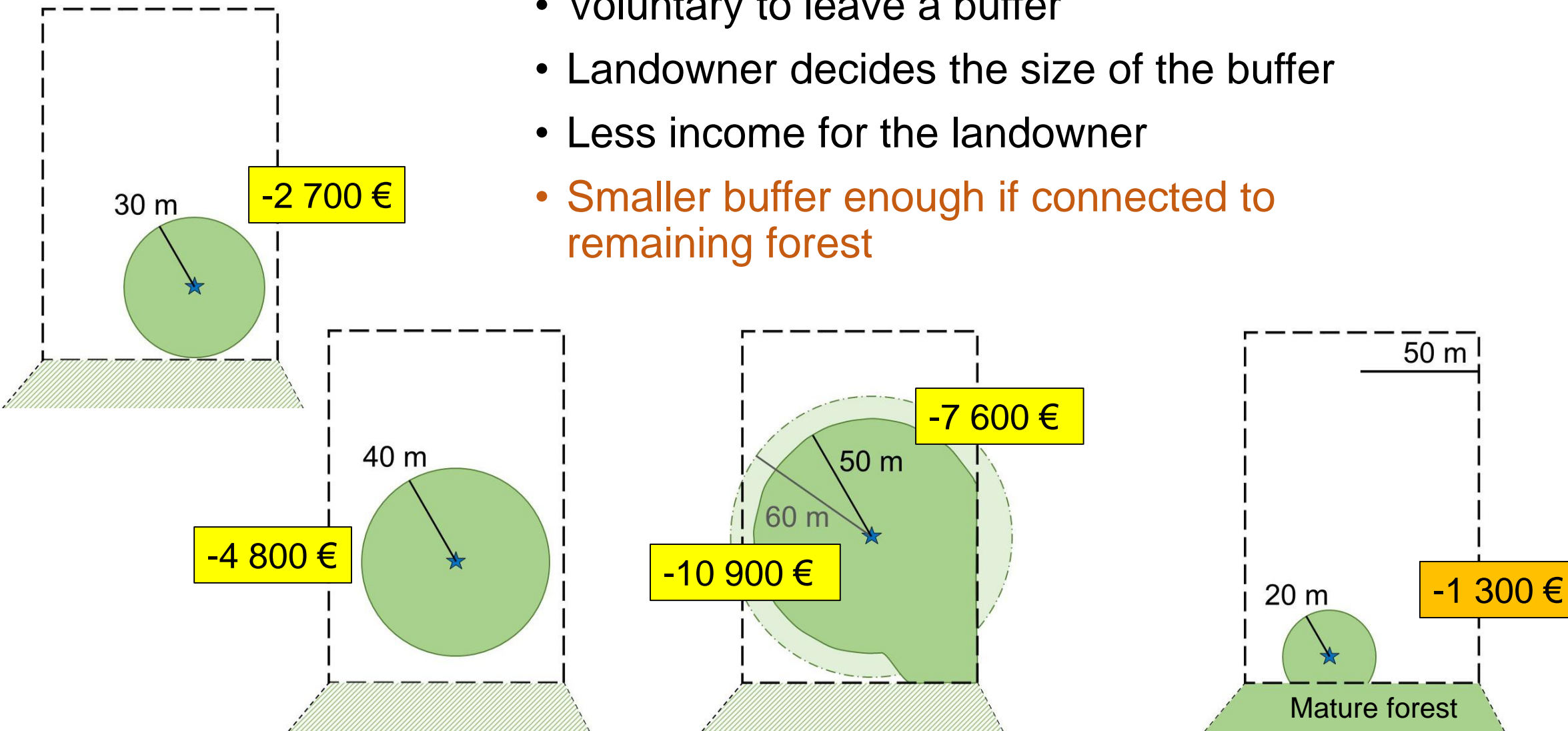
Recommendations



Feasibility

# Guideline 1) Preserve hawk nest sites

- Voluntary to leave a buffer
- Landowner decides the size of the buffer
- Less income for the landowner
- **Smaller buffer enough if connected to remaining forest**



# Guideline 1) Preserve hawk nest sites

- Encouraging results
- Keys for success:
  - Landowner gets the information
  - Voluntariness, power to decide

Buffer with common buzzard nest connected to young forest



Heidi Björklund



Hannu Lehtoranta  
and the landowner  
of the nest

Heidi Björklund

# Guideline 2) More potential nest trees

Norway spruce *Picea abies* preferred as a nest tree

Nest height ~10 m



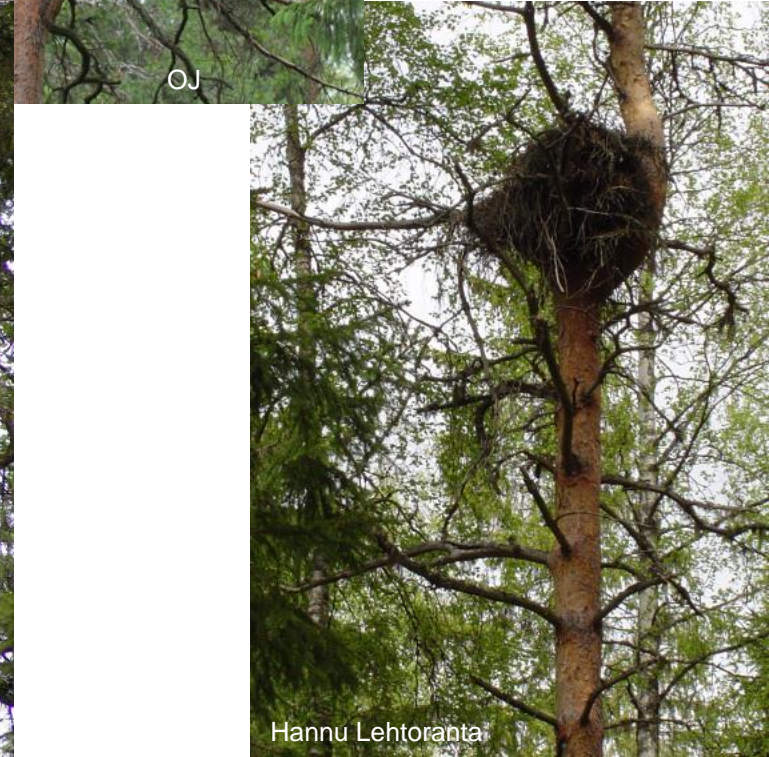
Jukka Ruutiainen



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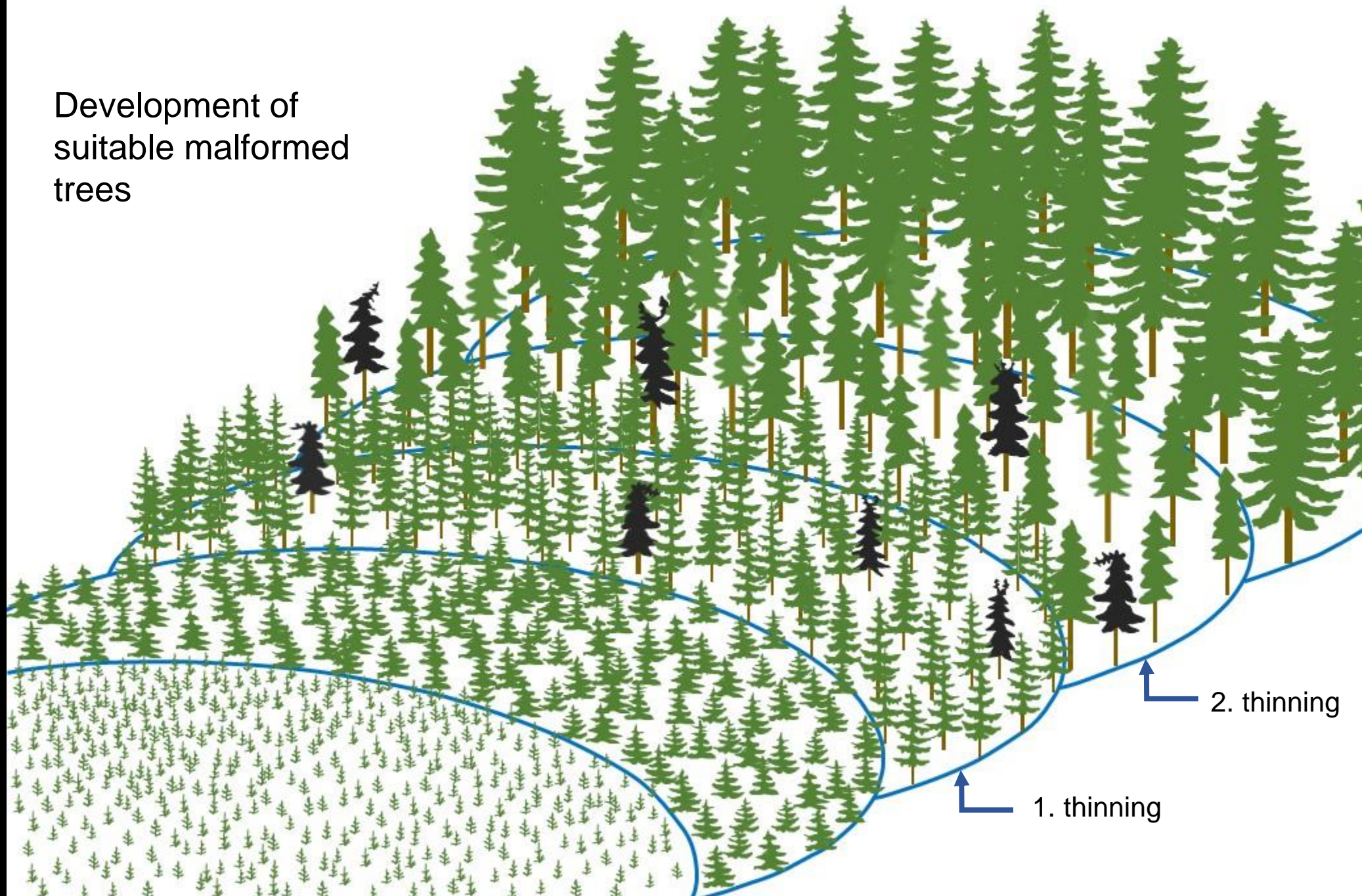
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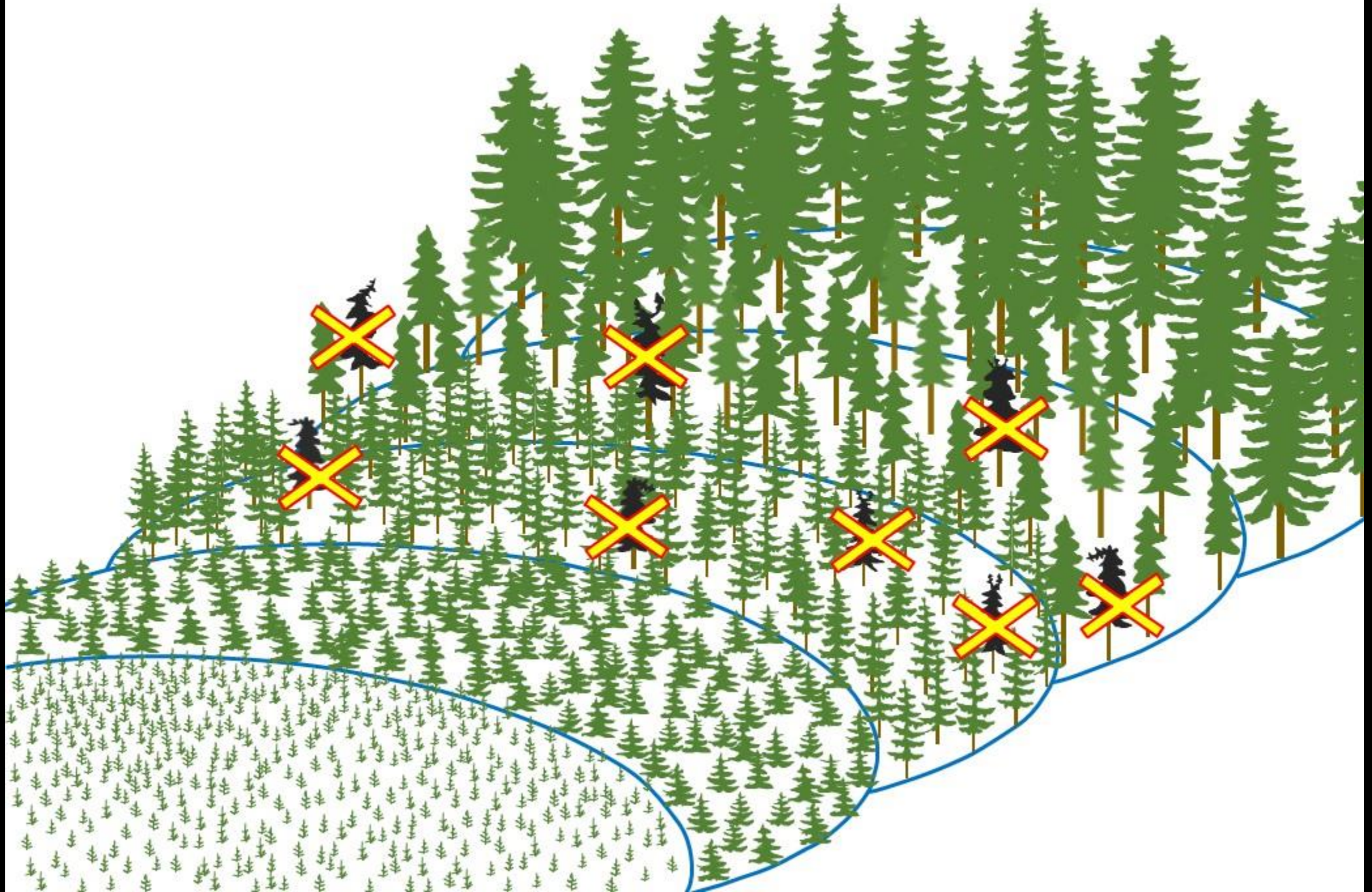


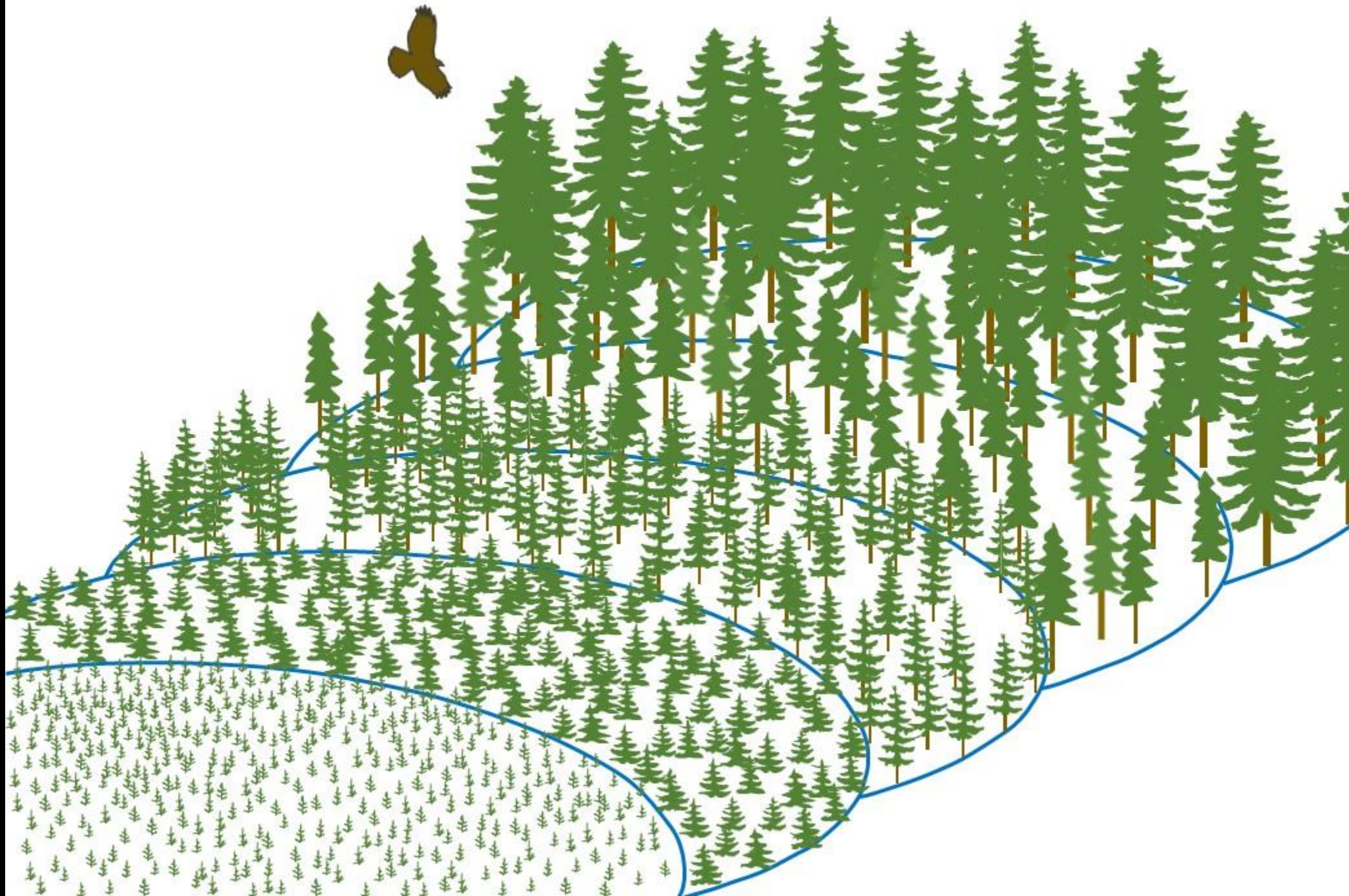
Hannu Lehtoranta



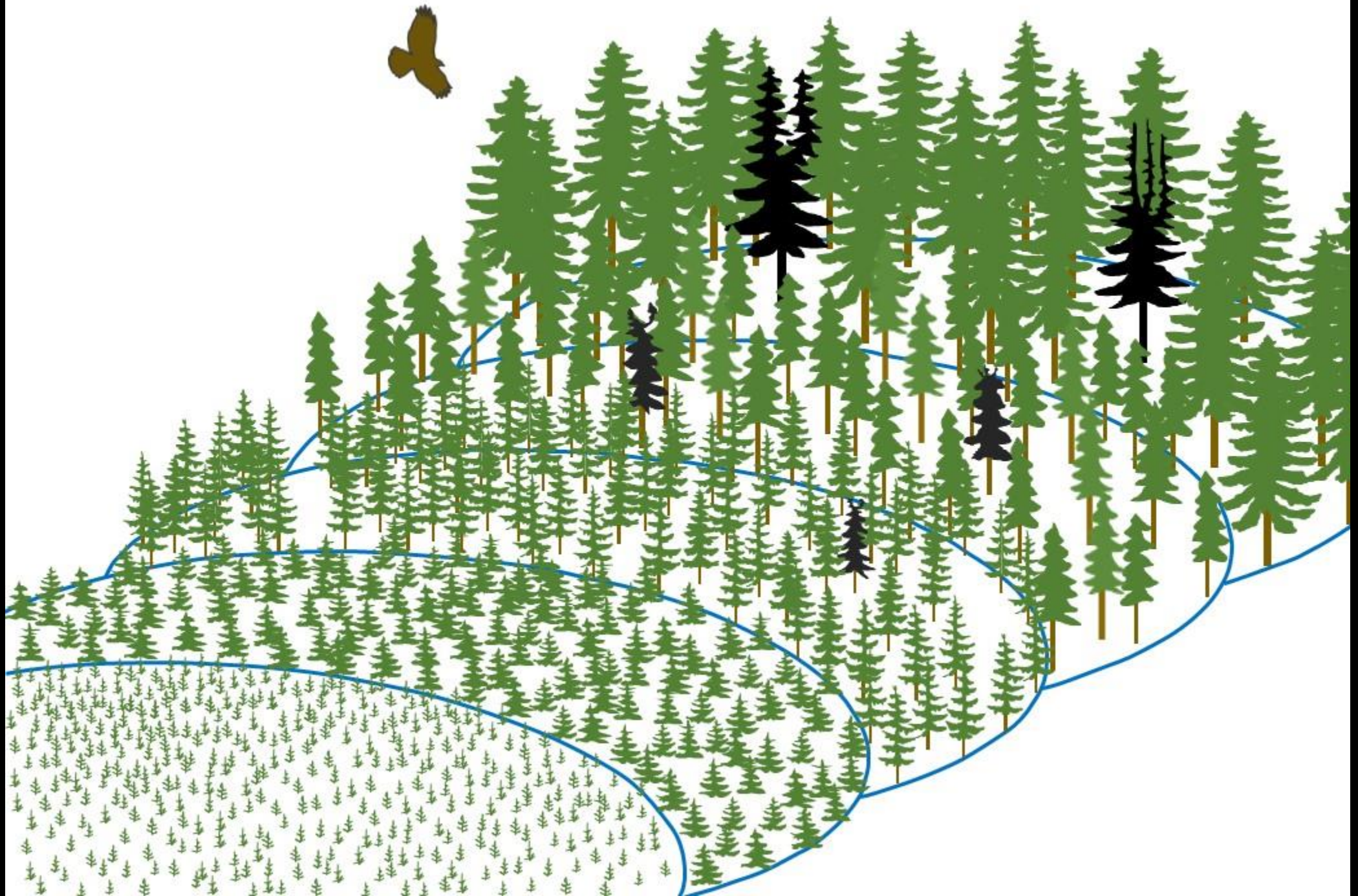
Development of  
suitable malformed  
trees





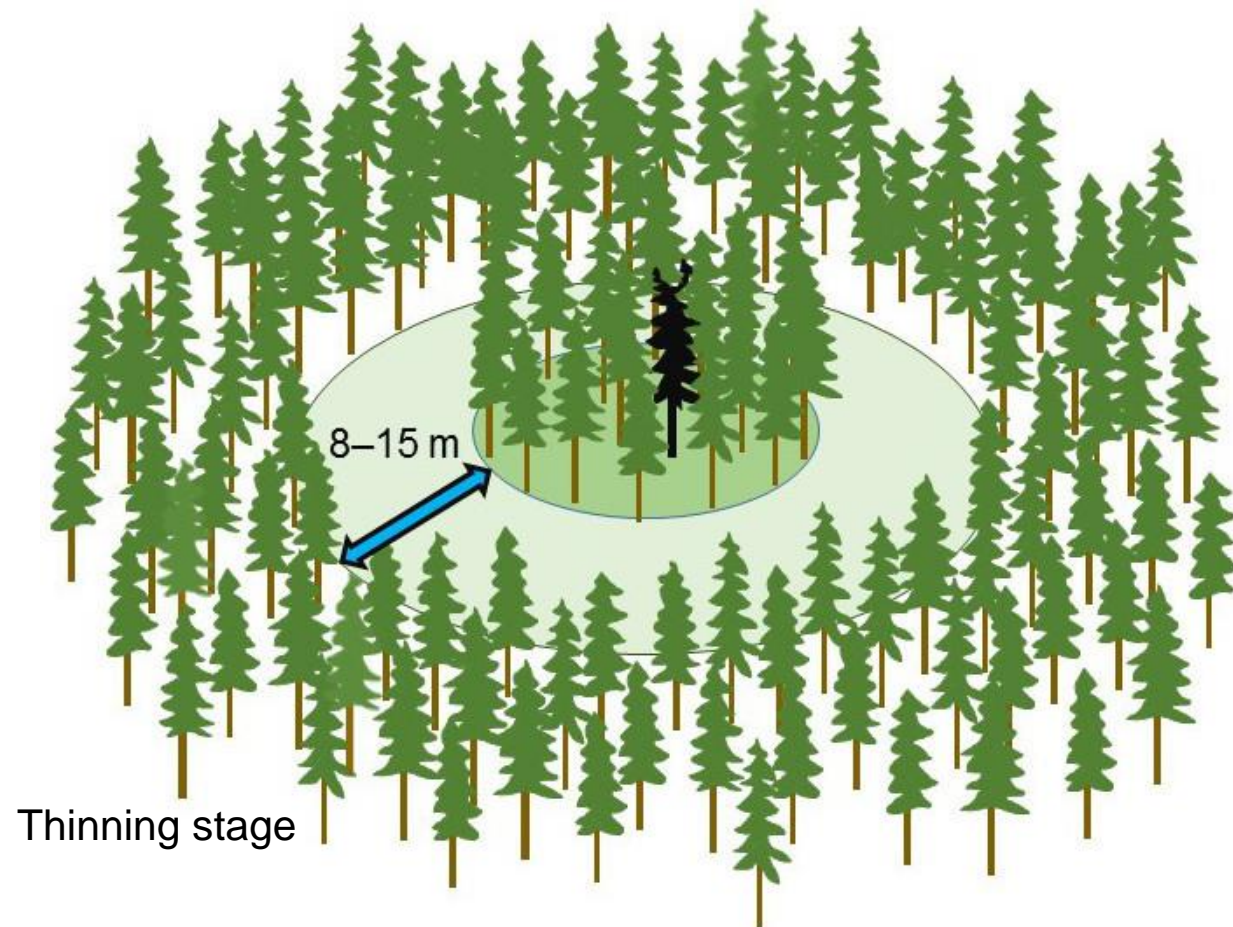
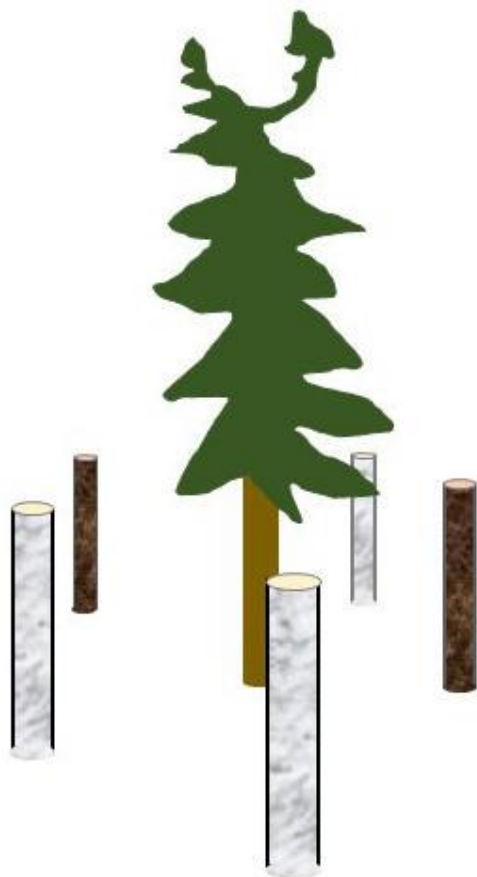






## Guideline 2) More potential nest trees

- Preservation of the retention tree?
- Mark with artificial snags
- Mark with a doughnut clear felling





Juri Laurila, Metsähallitus, State-owned Forestry Company

# Guidelines ready, what next?

- Secure the flow of spatial data and preservation of nest sites

**LUOMUS**  
FINNISH MUSEUM OF NATURAL HISTORY

From ringers...

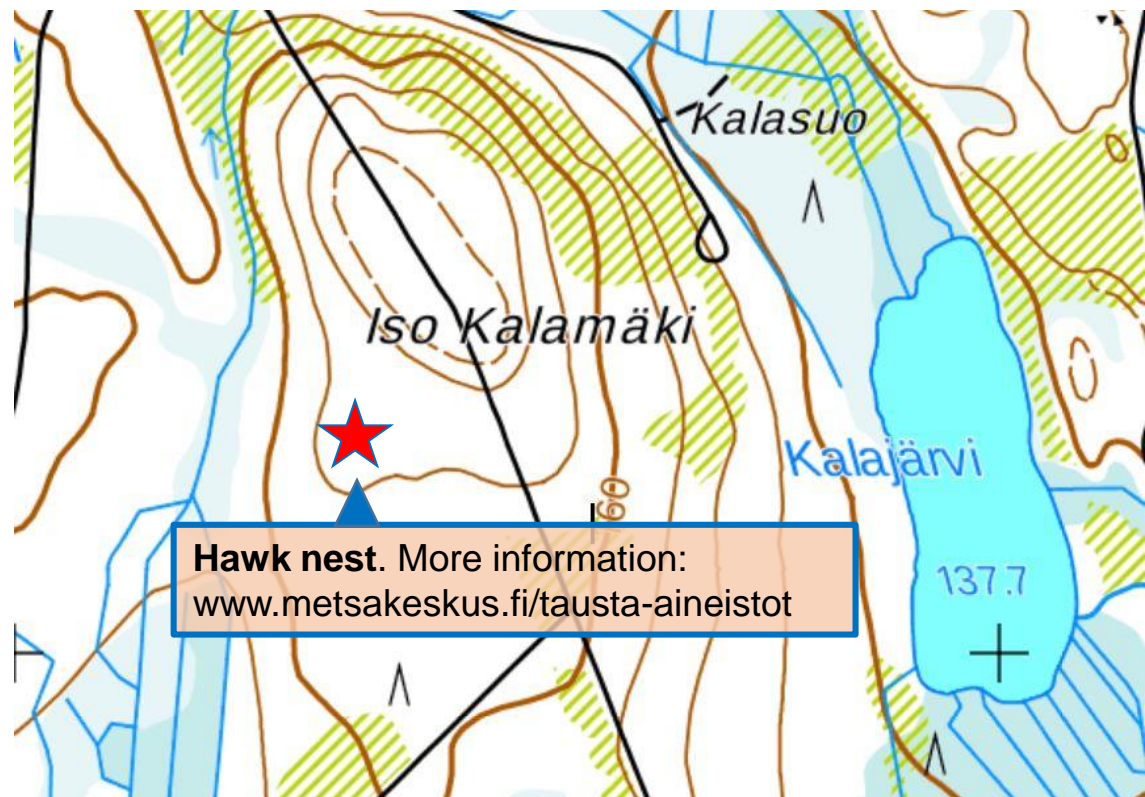


metsäkeskus

...to Forest Centre...



...and landowners.





## Acknowledgements



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**Thank you for your attention!**