



## Ministry of Forests, Lands and Natural Resource Operations

# IMPACTS OF JUVENILE SPACING AND COMMERCIAL THINNING ON WILDLIFE HABITAT

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# OUTLINE

**How to think like a forester?**

**The Great Divide**

what is and what ain't Goshawk Habitat?

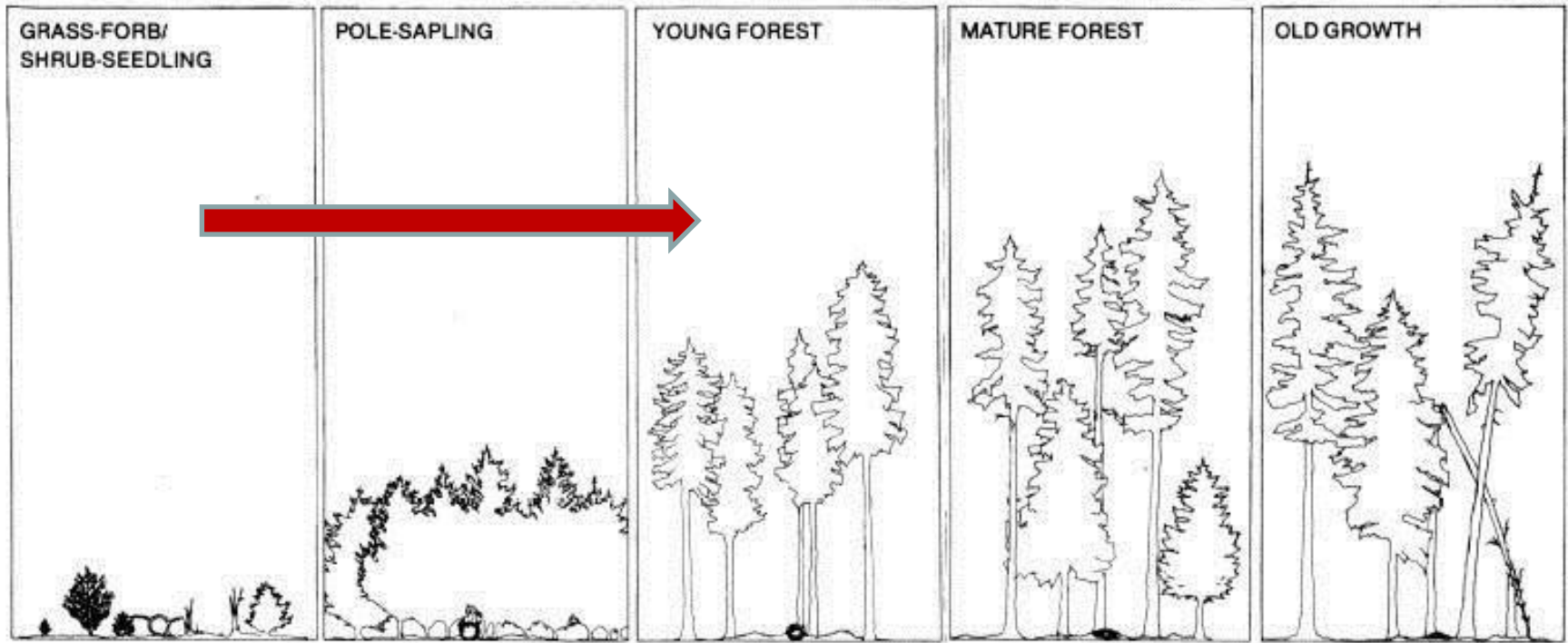
**The Paper Chase**

Accessing stand management records via  
**RESULTS** and District Files





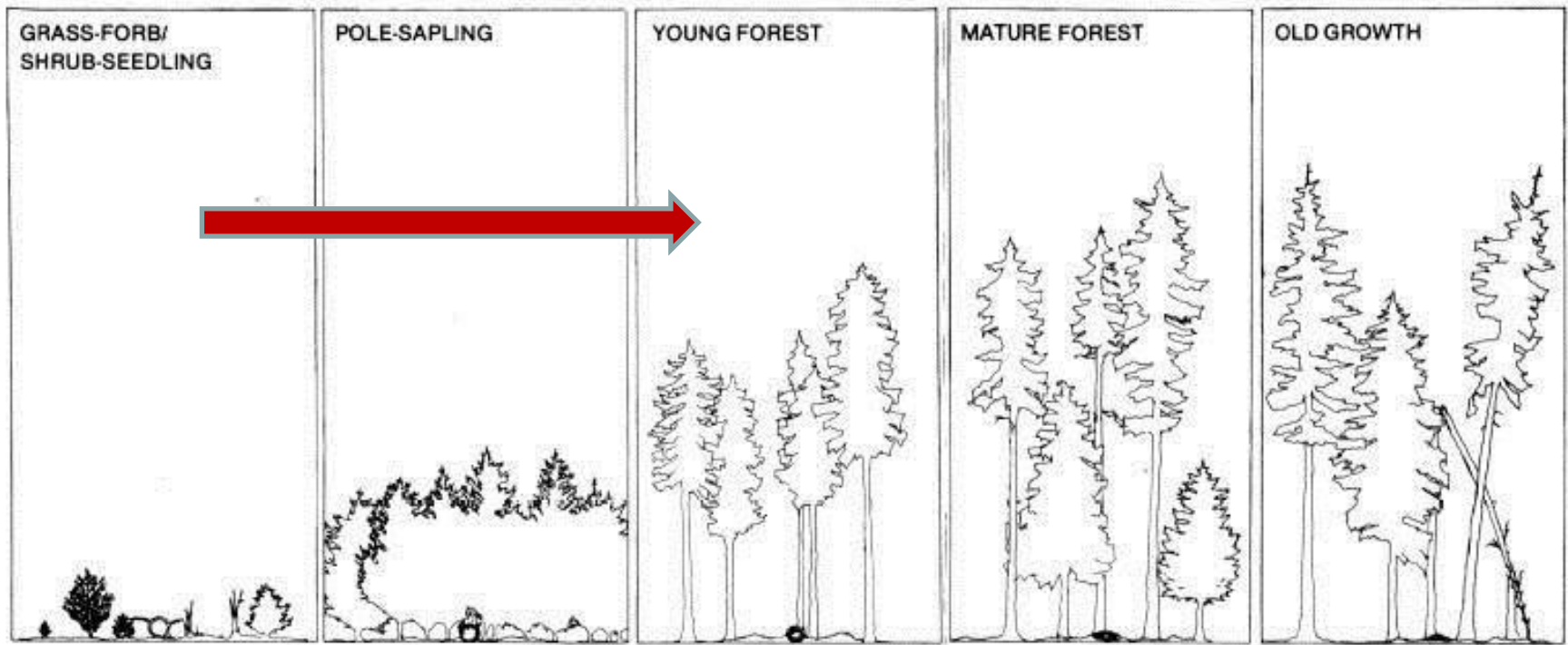
## EXTERNAL SUCCESSION



**Where does the wildlife fit into this model?**



## EXTERNAL SUCCESSION

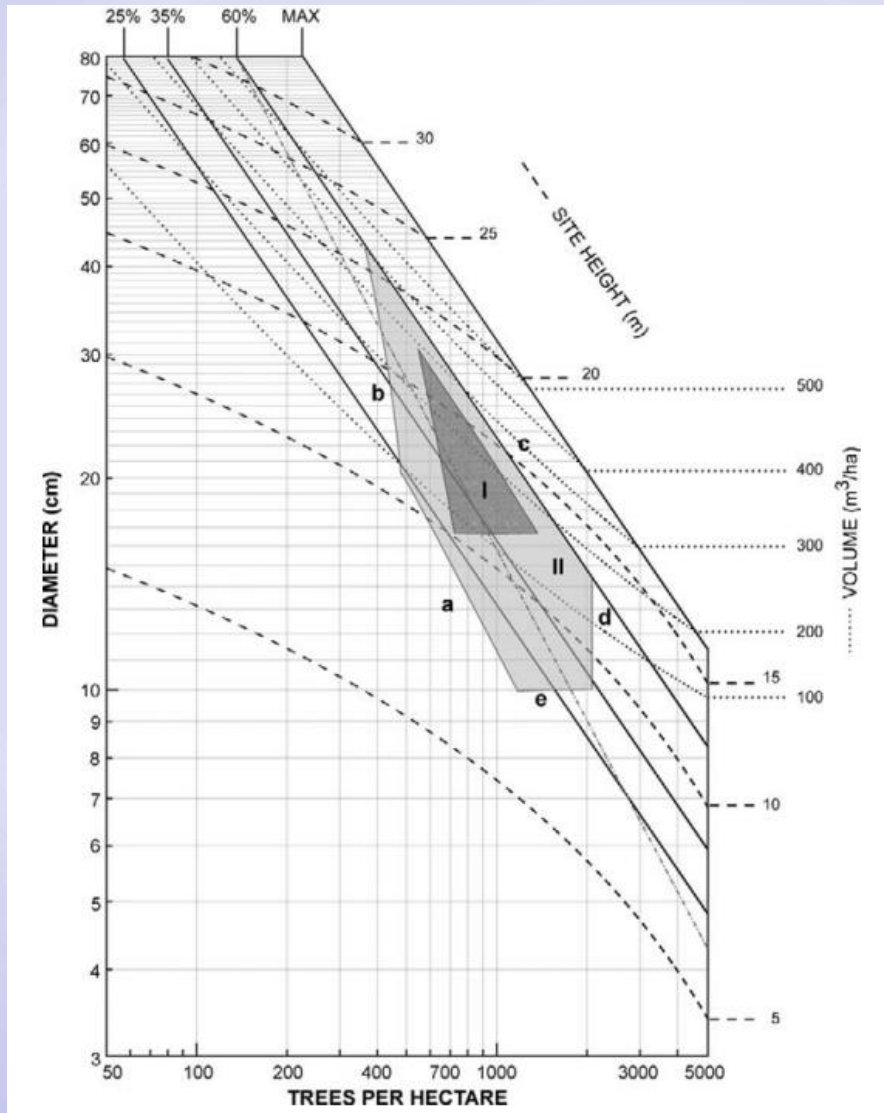


**Will thinning:**

- 1) improve habitat values?**
- 2) accelerate habitat development ?**
- 3) degrade habitat values (current and future)?**



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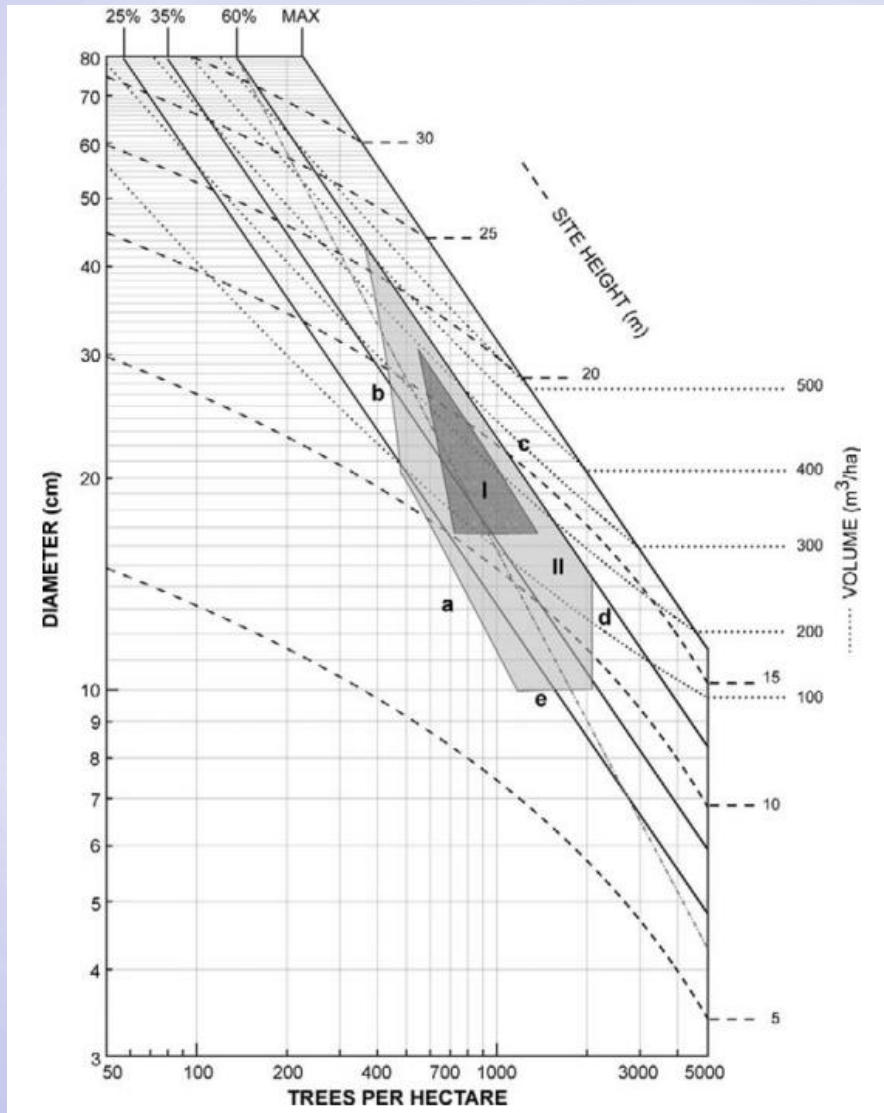


Eureka!





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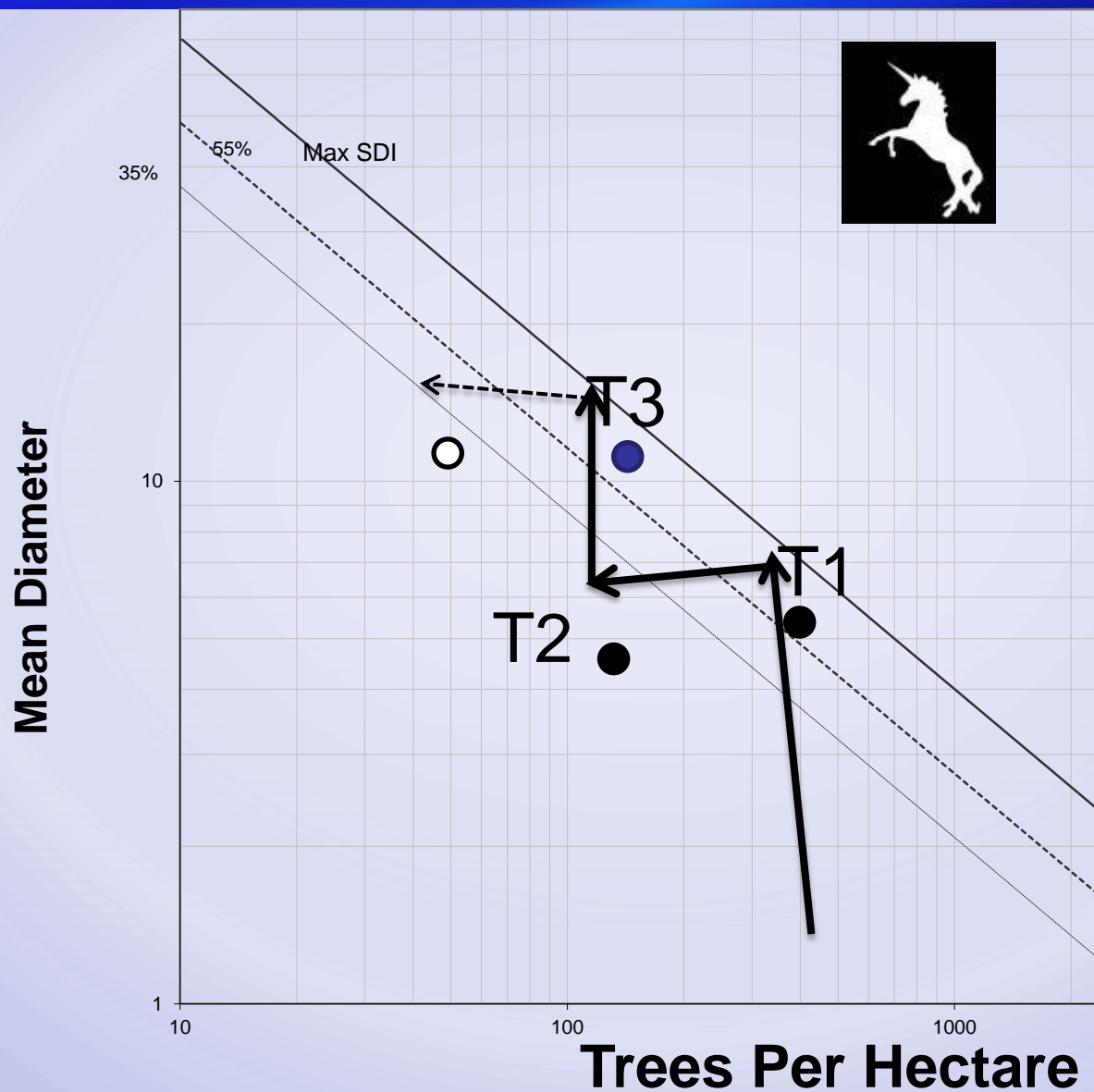


**Eureka!**

**Wildlife?**



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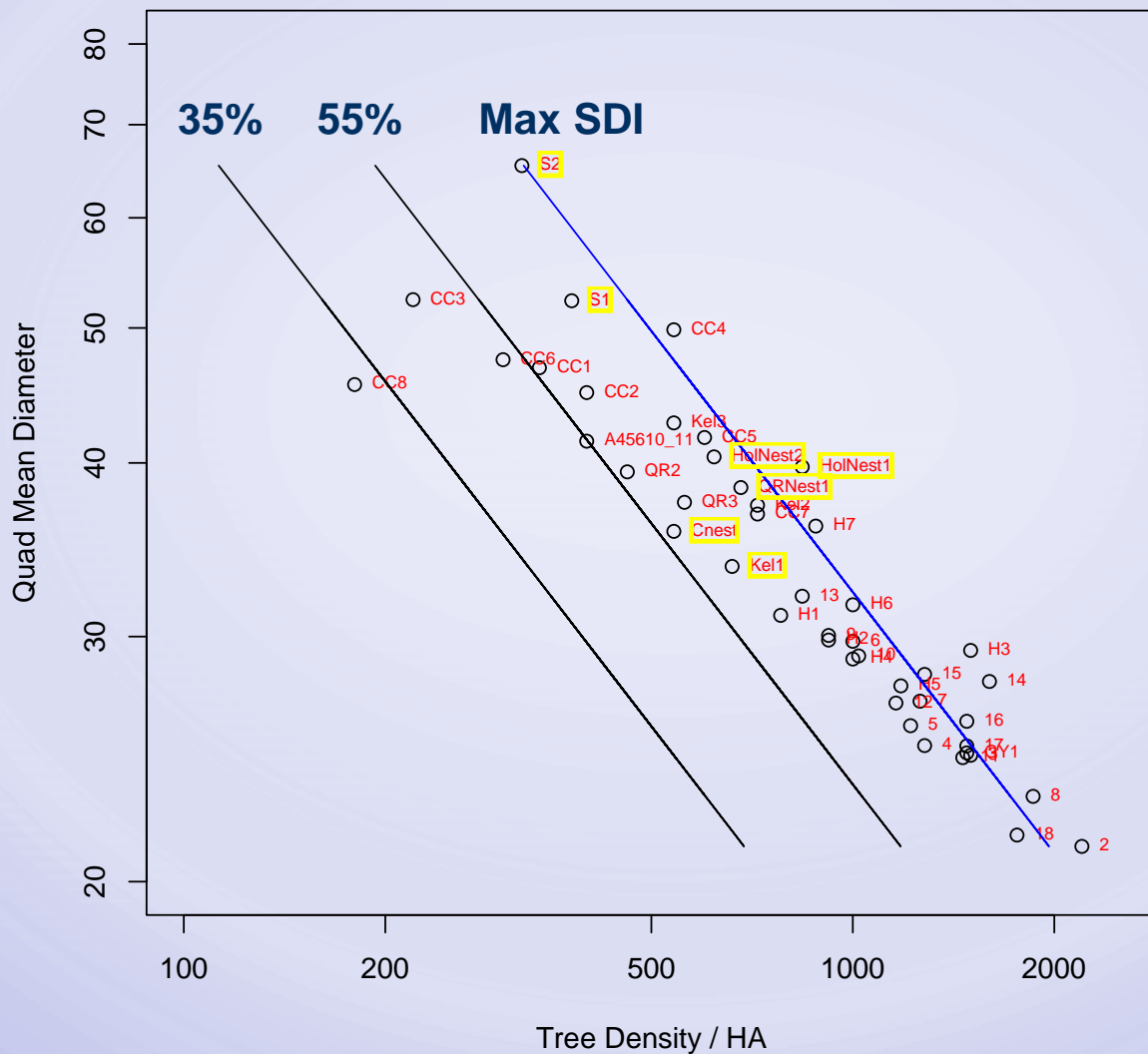
**Question 1. What structural features contribute to Goshawk habitat?**

**How might these conditions be quantified and used to guide silviculture planning?**



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## Density vs Diameter







The figure is a scatter plot with 'Tree Density / HA' on the x-axis (logarithmic scale, 100 to 2000+) and 'Quad Mean Diameter' on the y-axis (linear scale, 20 to 80). It displays data points for various tree species, categorized by color and shape: Cycas (CC, red circles), Quercus (QR, open circles), Keteleeria (Kel, green circles), Holopternis nestor (HolNest, yellow squares), Castanopsis (Cnest, orange squares), and Hedyotis (H, small black dots). Two parallel black lines represent linear regressions for different groups. A prominent blue line shows a strong negative correlation for CC and QR species. A light grey shaded polygon encompasses the majority of the CC and QR data points.





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**Question 2. Have previous thinning treatments directed stand development closer to or further from this target?**



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## **Phase 1**

### **Digital World**

**Identify treated forestry blocks from RESULTS**

## **Phase 2**

### **Paper Files**

**Sort through the paper files on treatments and results  
at sites identified in phase 1- likely in district file cabinets**

## **Phase 3**

### **Ground truth and data collection**

**Collect field data on stand structure, e.g. habitat variables  
and forestry variables**

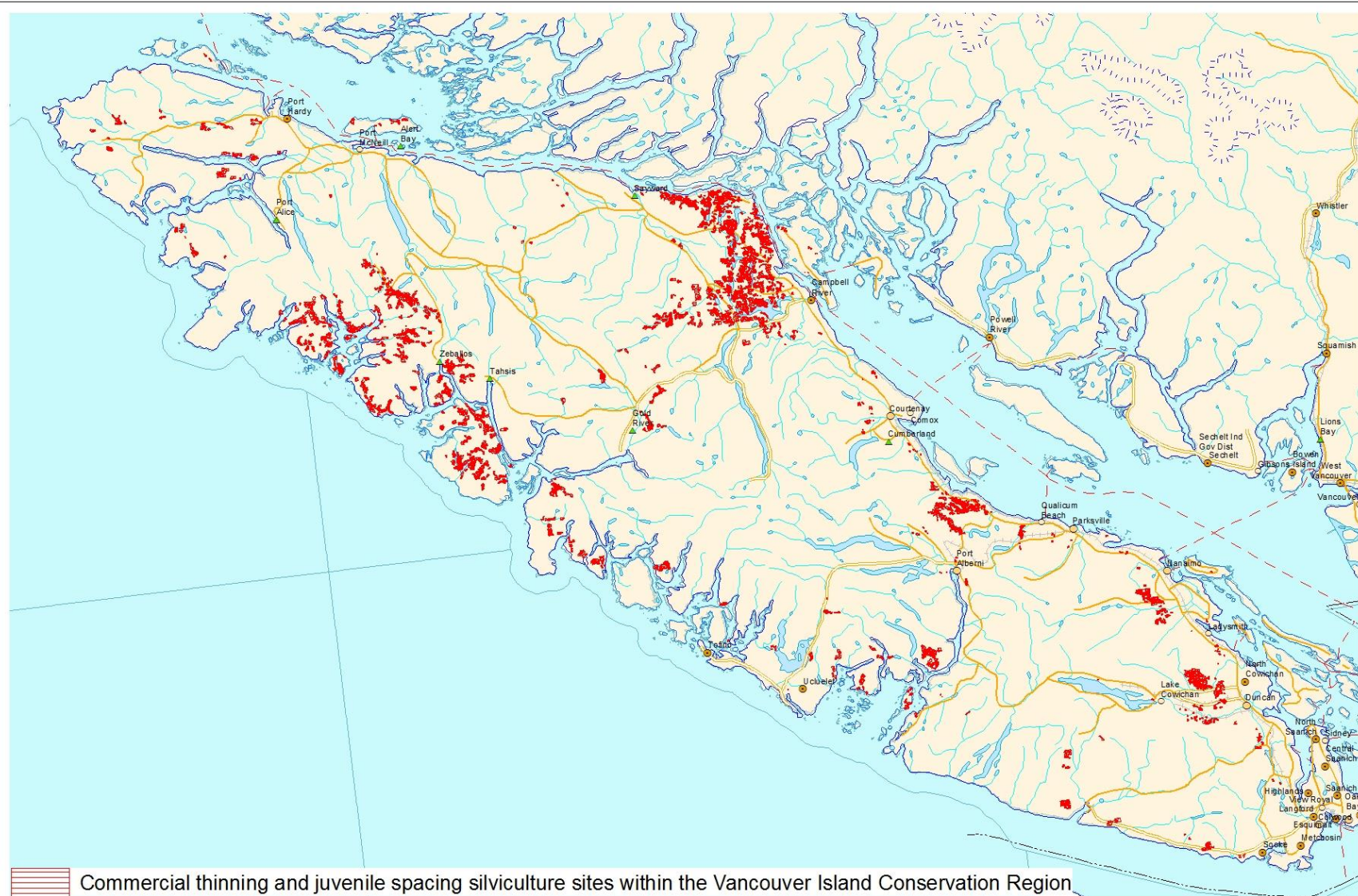
## **Phase 4**

### **Write up**





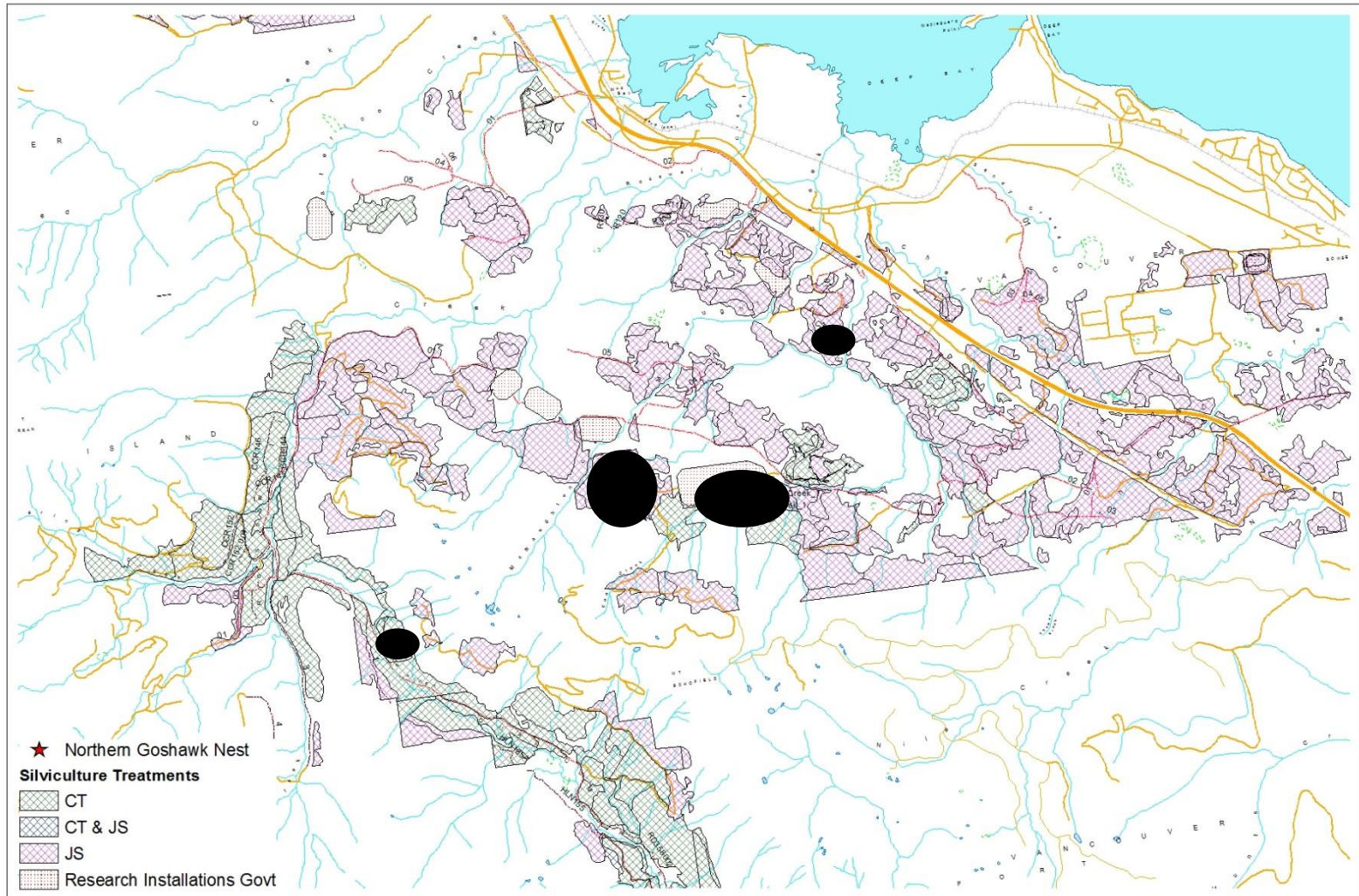
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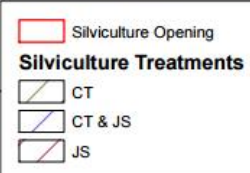


**Juvenile spacing and Commercial thinning sites, Vancouver Island BC**



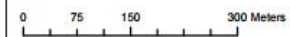


MAP TYPE STRATUMS	STOCKING STATUS	COMPONENT LABELS	TREATMENT RECOMMENDATION	
			TYPE	AREA
1	FG	Silv: Fdc100-49-28.9-29-316-(00X7) Inv: Fdc9Cw1-49-28.9-29-316/4-(00X7)	No Treatment	10.9
2	FG	Silv: Fdc100-49-28.9-29-316-(00X7) Inv: Fdc9Cw1-49-28.9-29-316/4-(00X7)	No Treatment	10.4
		Silv: Inv:		
TIMBER		Inv		
TOTAL				21.3



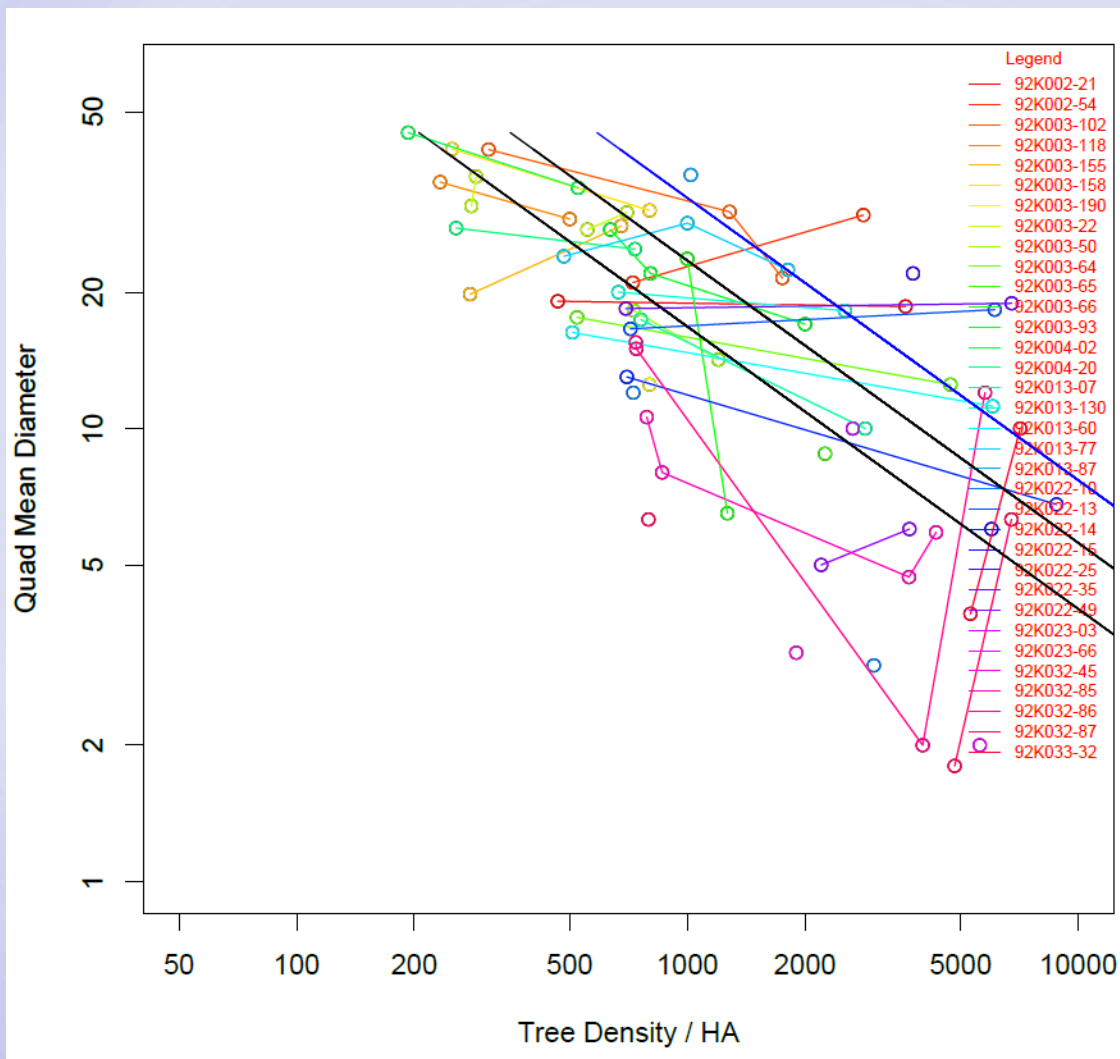
Map Label = 92F047 144  
Projected Age =  
Hectares = 26

**Inside C**  
**PCS AI**  
**108865**  
**489320**





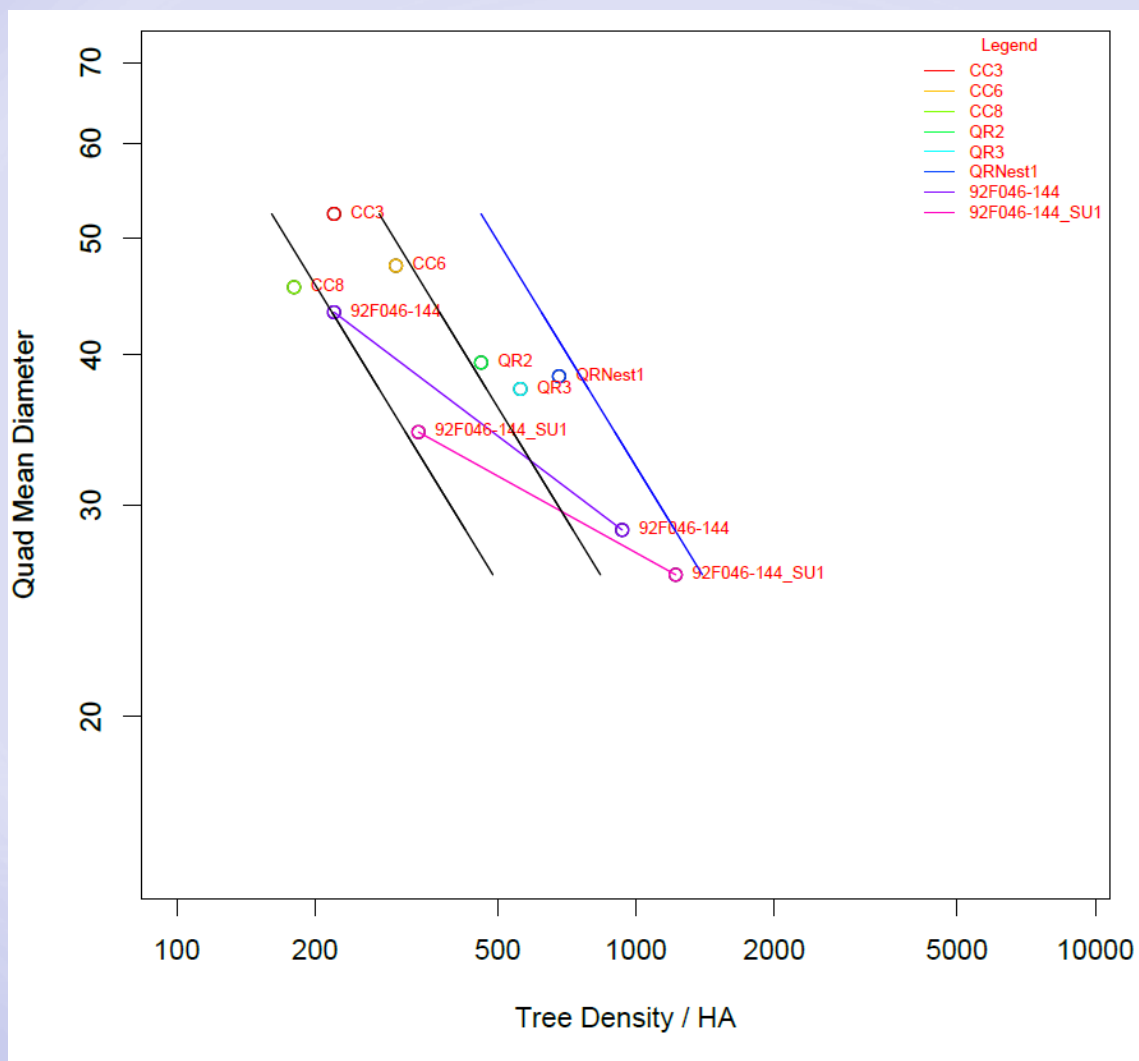
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**Question 3a. How does the vertical distribution of forest canopy change during succession?**

**and**

**3b How can we quantify the space available to goshawks for flight?**





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## EXTERNAL SUCCESSION

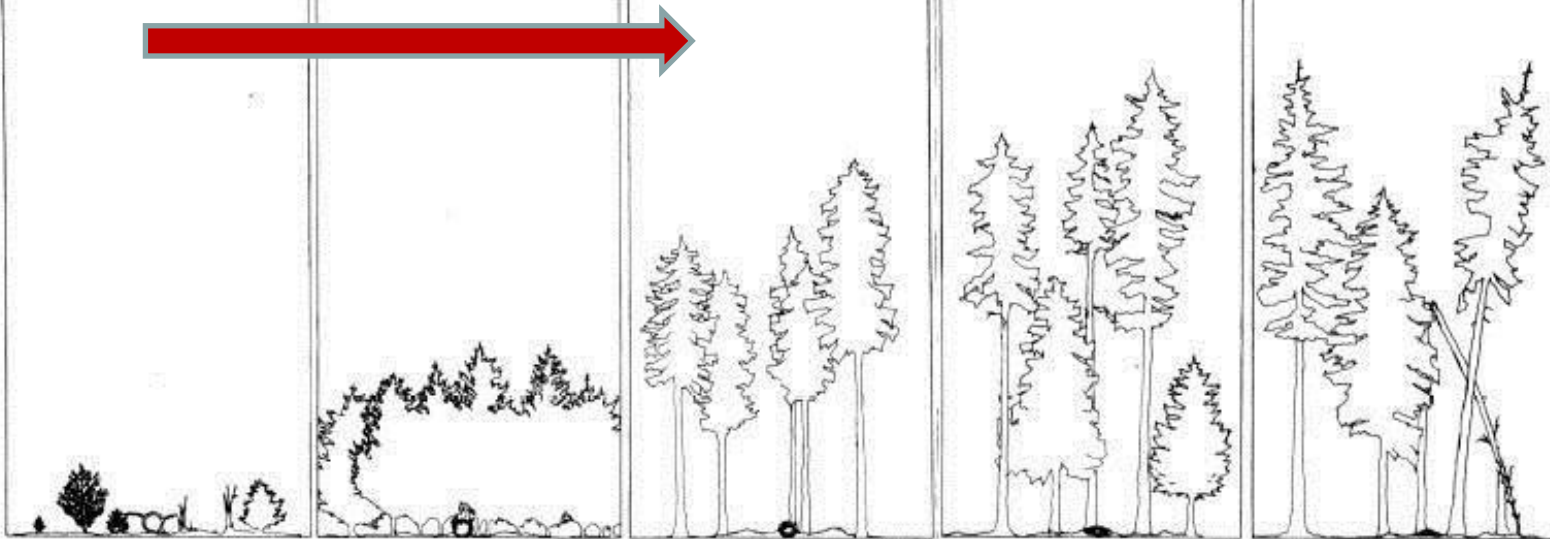
GRASS-FORB/  
SHRUB-SEEDLING

POLE-SAPLING

YOUNG FOREST

MATURE FOREST

OLD GROWTH



**Changes in height and volume of canopy  
and canopy openness?**



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## EXTERNAL SUCCESSION

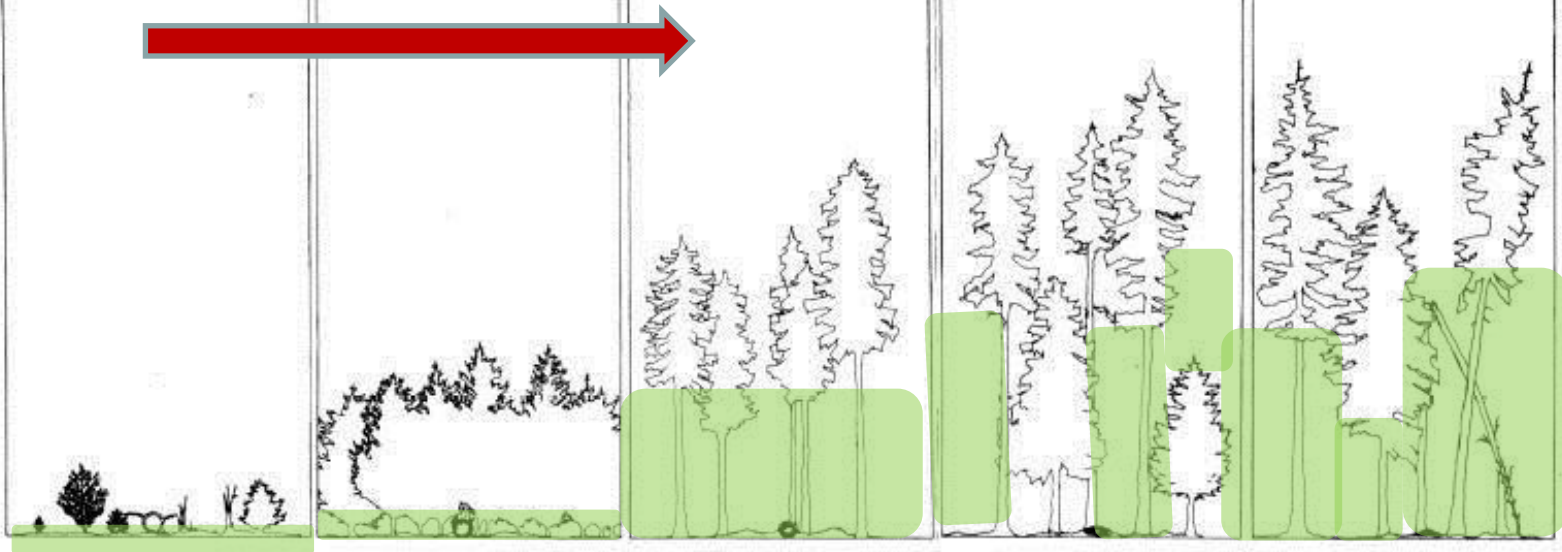
GRASS-FORB/  
SHRUB-SEEDLING

POLE-SAPLING

YOUNG FOREST

MATURE FOREST

OLD GROWTH



How much flying space is required for a goshawk?





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$CW^h$  = crown width at given  
height (h)

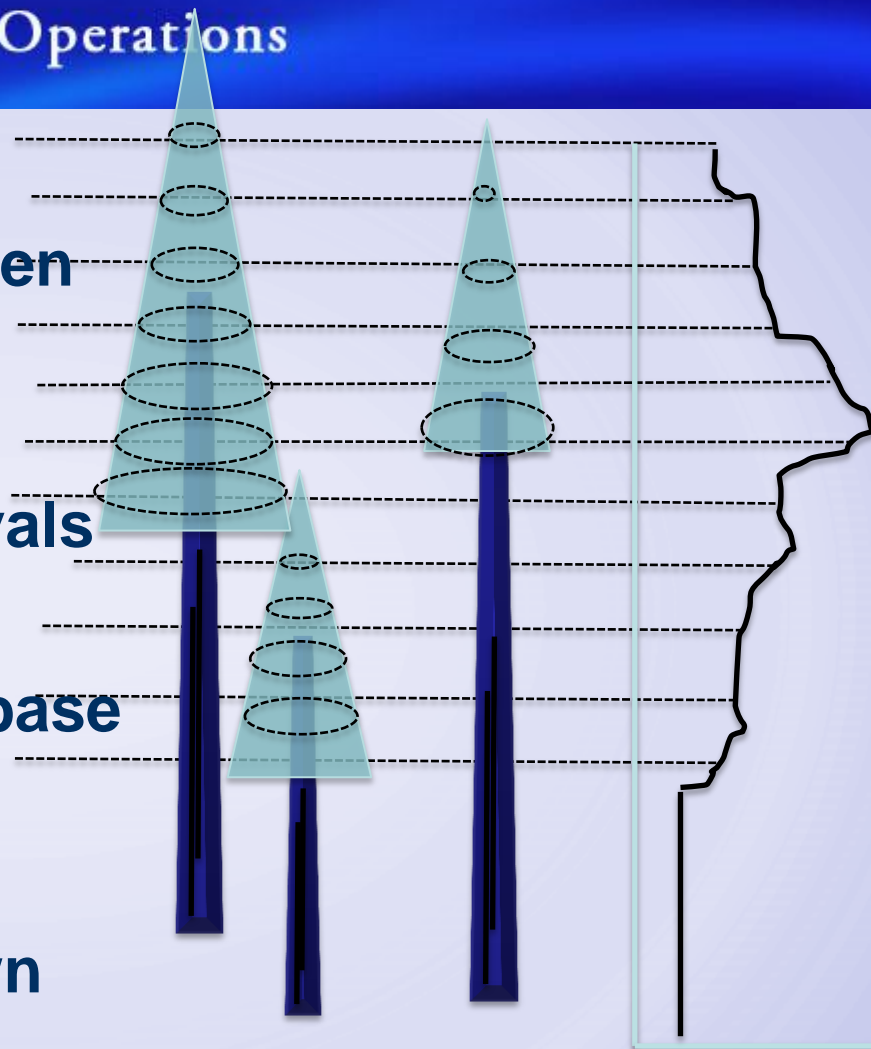
$h(i)$  height at 1 meter intervals

$CW_{base}$  = Crown width at base  
of crown

HTLC height to live crown

TotHt Total Height

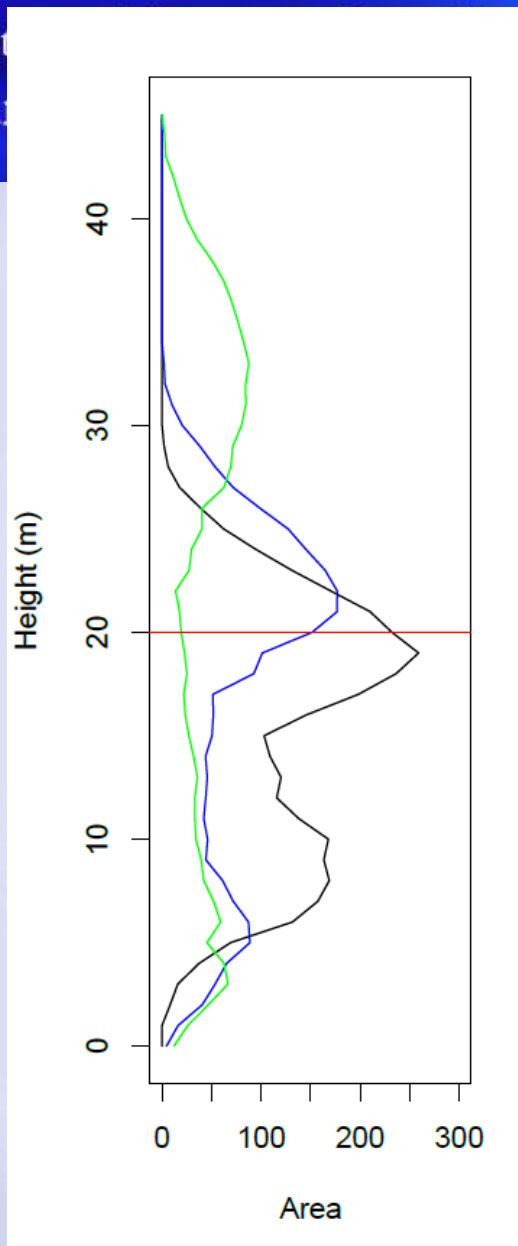
(Dubrasich *et al* 1997)



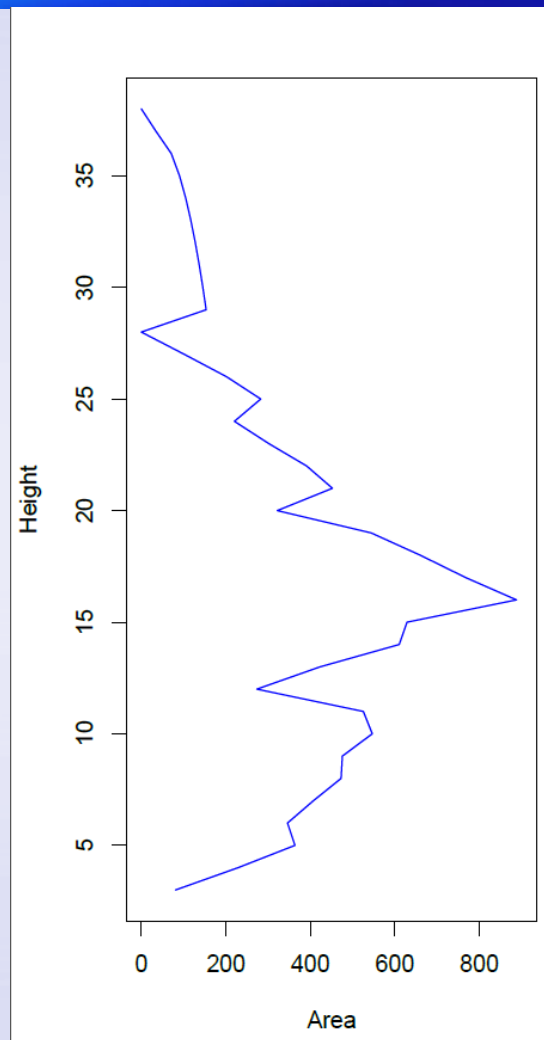


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**Over time**



**Comm. Thinning**





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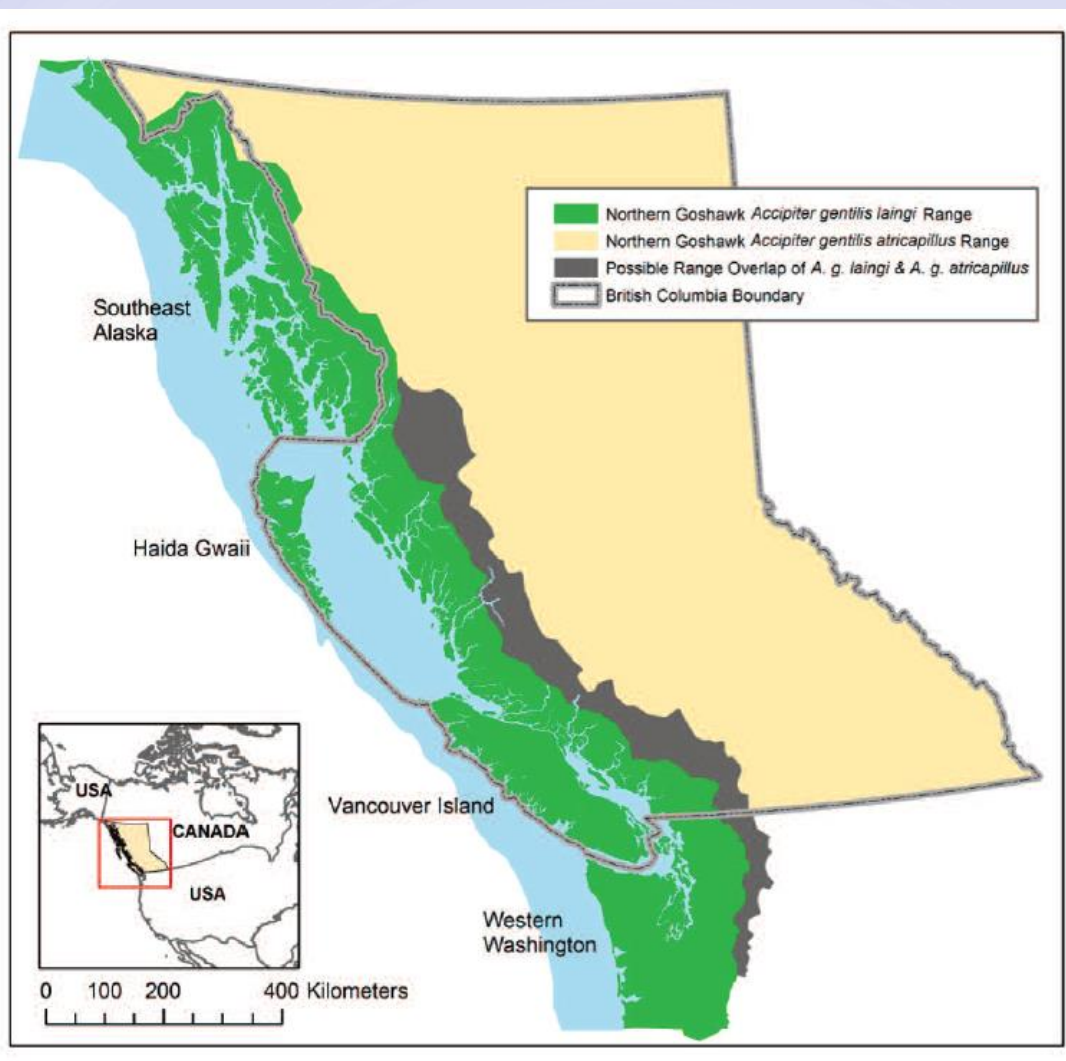
## Ministry of Forests, Lands and Natural Resource Operations

- Acknowledgements
- Staff from South Island and Campbell River Districts
- Dean Stewart- retired Forester- Stand History records
- FLNRO Funding
- Regional Staff- R. Diederichs, J. Anderson, D. McConkey
- Ruth Joy- R coding of canopy profiles
- Growth and Yield folks FAIB





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