

# Forecasts of Triad Zoning Scenarios on New Brunswick Crown License 1

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## Outline

- **What is the Triad approach?**
- **What are the some of the perceptions about the approach?**
- **Key Results**
- **Discussion points**

# Forest Management

*forests are managed to provide values*

why?

- ...objective is to make each value available:
  - in appropriate abundance
  - at the appropriate times
  - in the appropriate places

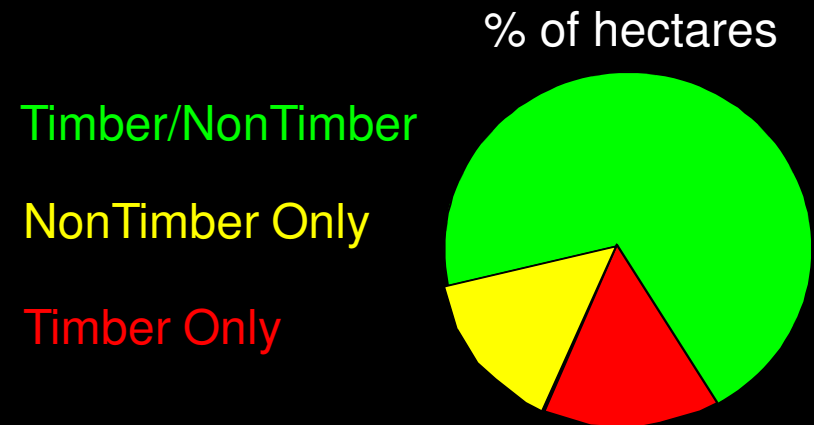
how?

- ...the process of:
  - designing and implementing a set of actions
  - likely to result in a set of forest conditions
  - likely to provide the desired values

# Forest Management Strategies

## 1. *Integrated forest management*

- Consideration of both timber and non-timber values simultaneously  
.....in all or most places



## 2. *Triad forest management*

- Consideration of both timber and non-timber values simultaneously  
.....in some places
- Manage only for non-timber values in some places
- Manage only for timber values in some places

## Triad Forest Management

- Seymour and Hunter Jr. 1992.

*New Forestry in Eastern Spruce-Fir Forests: Principles and Applications in Maine*

**New Forestry** (*Ecosystem Management/ Integrated/ Multiple-Use/ Extensive*)

- Emphasis on structure and function
- Structures and regeneration patterns related to natural disturbances

**Reserves** (*Conservation/ Ecological*)

- Forest left to develop naturally

**Intensive Plantations** (*Wood Production/ Intensive*)

- Yields 2.5x or more greater than natural spruce-fir stands
- Enhance opportunity to create reserves and implement New Forestry





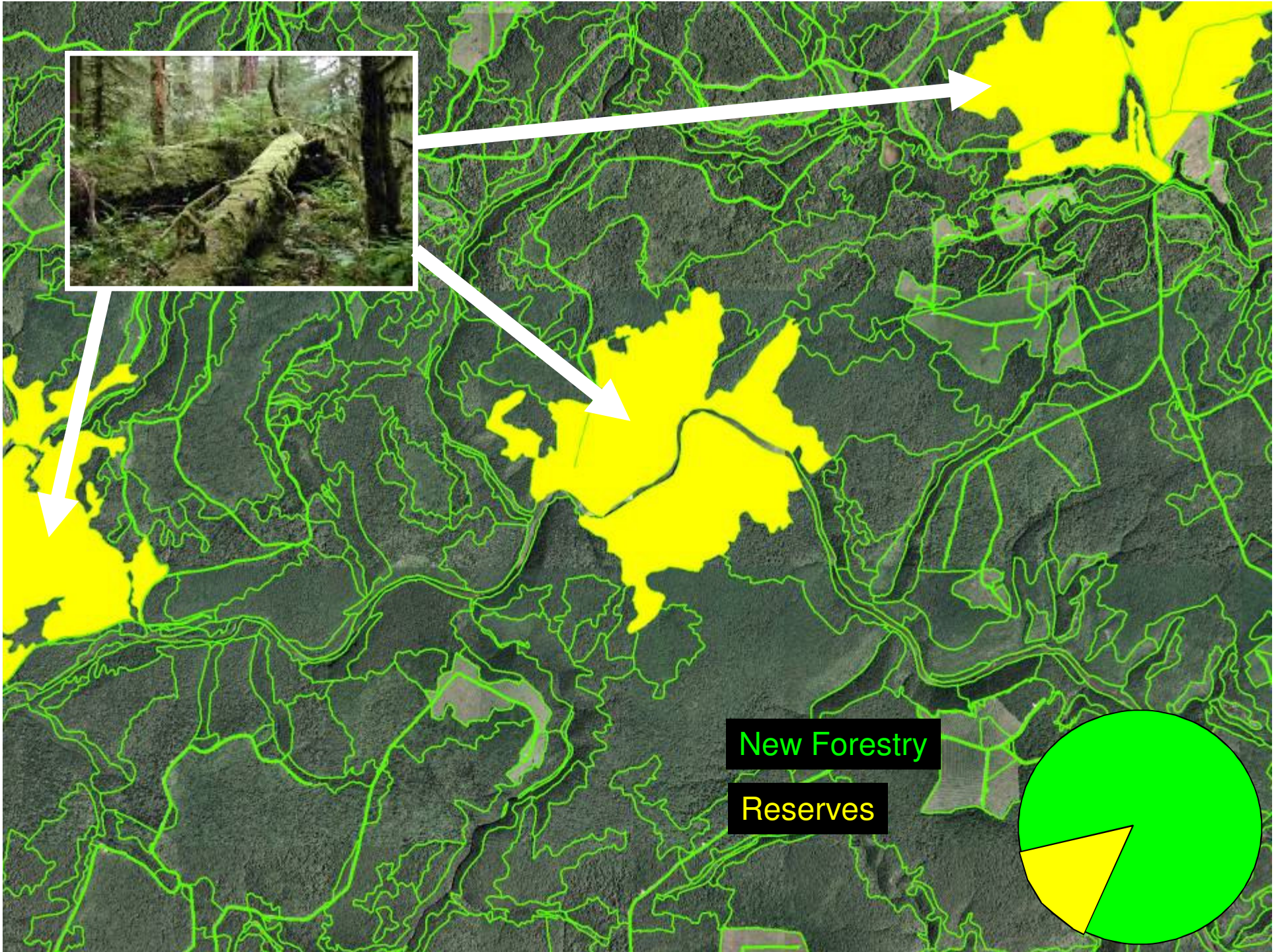


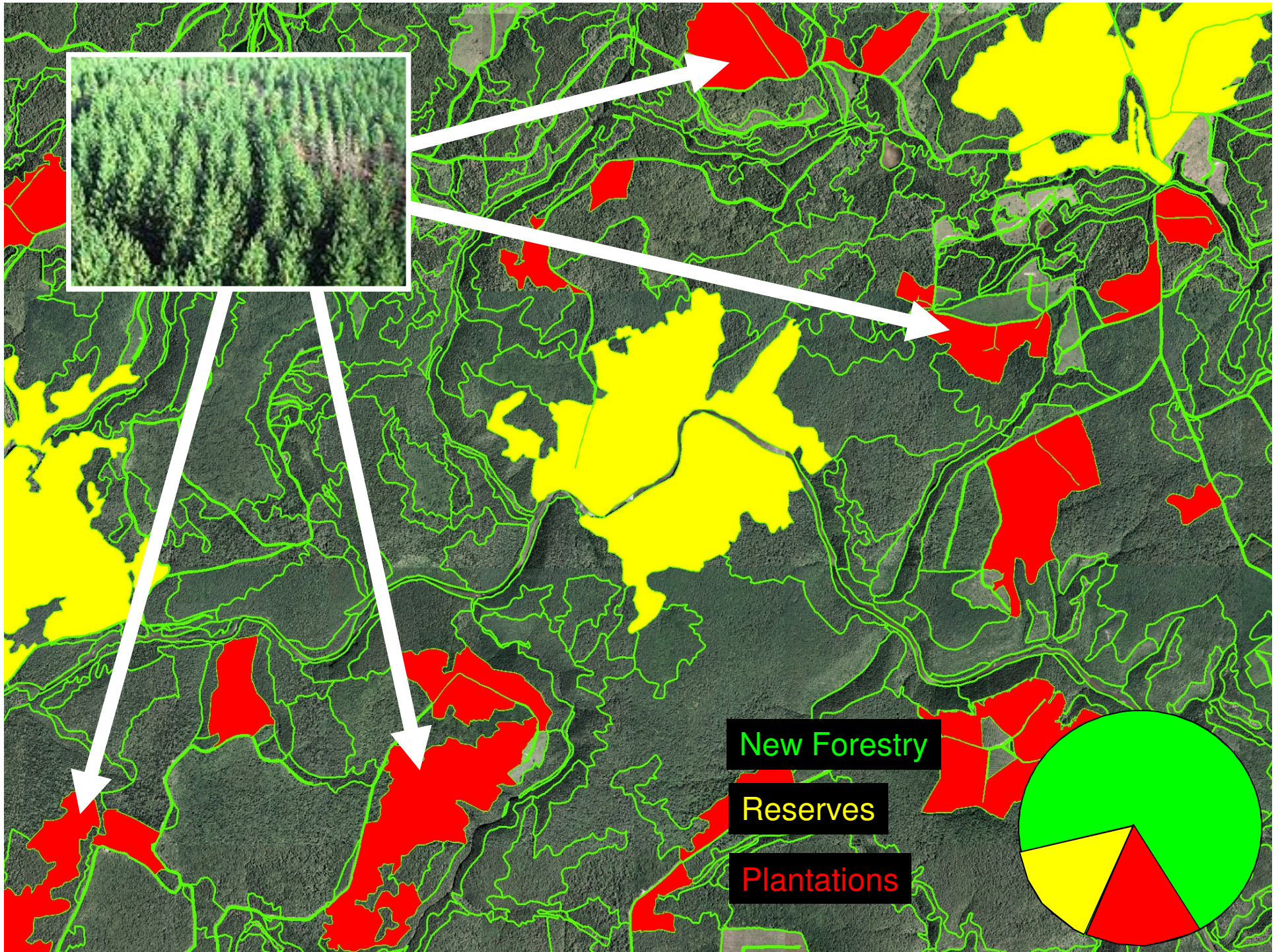
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New Forestry

100% of forest







## What Opportunities Might Exist?

- Ability to maintain harvest and increase area of reserves.
- Ability to concentrate some conditions in the forest.
- Specialized management might result in superior provision of all values compared to management for several values everywhere.
- Provides a clear and effective description of management.
- Values are provided with higher certainty in some parts of the forest.

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## Project Methodology- Scenarios

*Scenarios were defined by the area allocated to each Triad zone.*

Changed the amount of area allocated to:

### Extensive

- Clearcutting / Partial Harvesting / Pre-commercial thinning
- Permanent retention to maintain important stand structures

### Reserve

- no actions
- forest left to develop naturally

### Intensive

- Clearcutting / Planting / Herbiciding / Commercial Thinning
- timber production approx. double that in the extensive zone

## Project Methodology- Scenarios

*2 sets of scenarios*

*36 Aspatial Scenarios*

Intensive = 10, 15, 20, 25, 30, 35

Reserve = 10, 15, 20, 25, 30, 35

Extensive =  $100 - (\text{Intensive} + \text{Reserve})$

} area

*9 Spatial Scenarios*

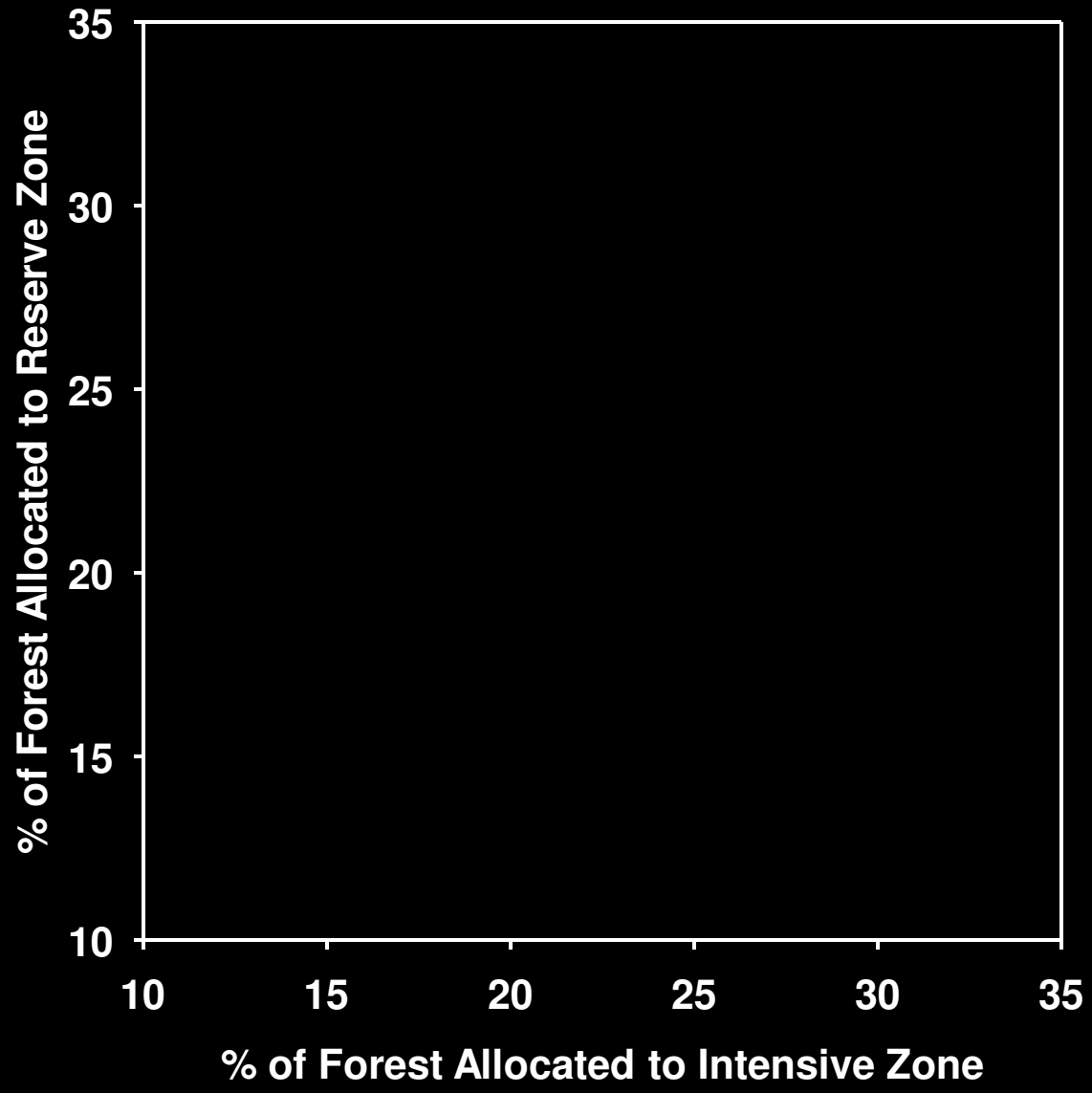
area

Composition/ configuration

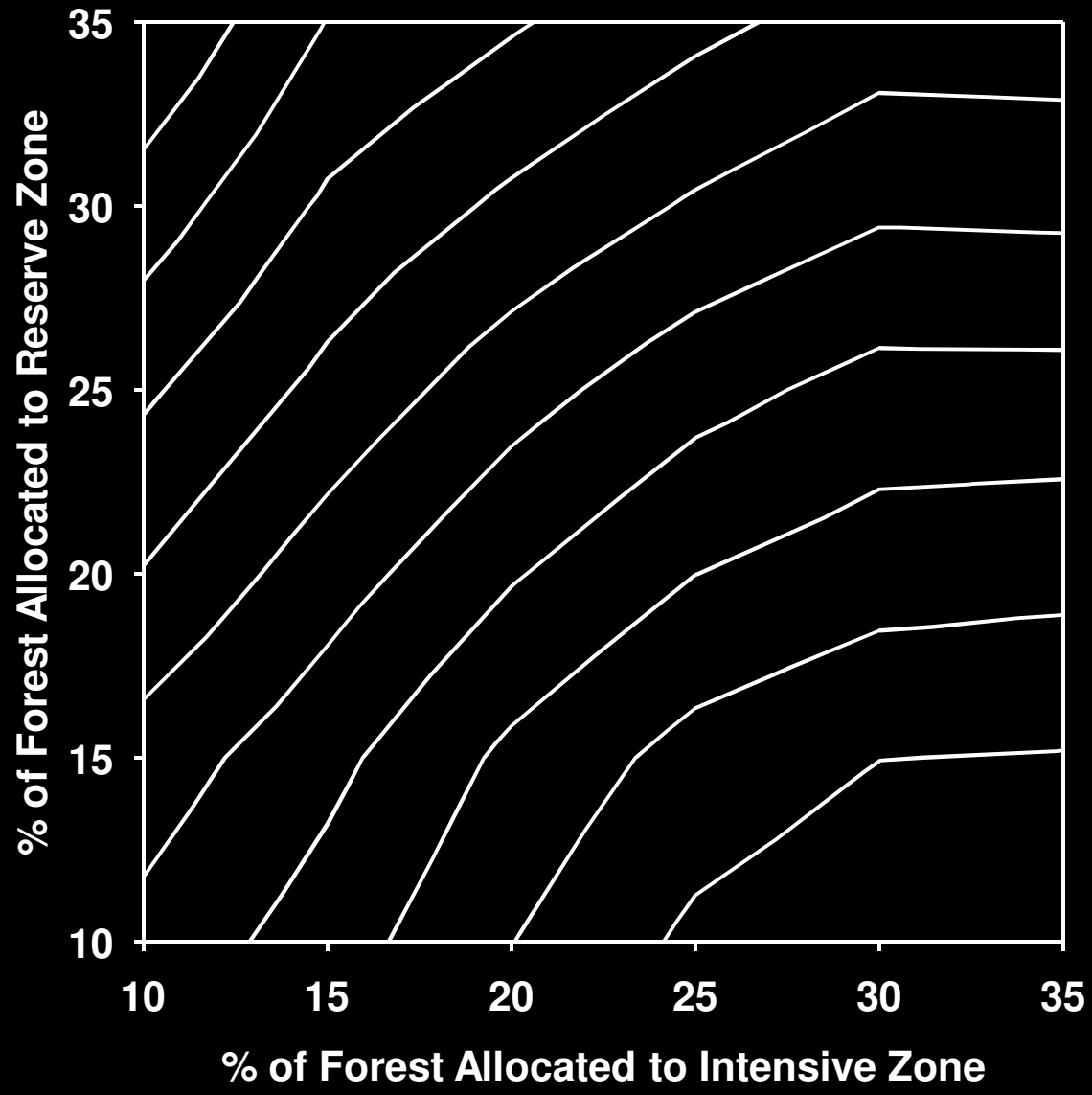
*19 indicators*

Harvest volume, area harvested, old forest, reliance on clearcutting, management history, management costs, snags, carbon, royalties, employment

# Results

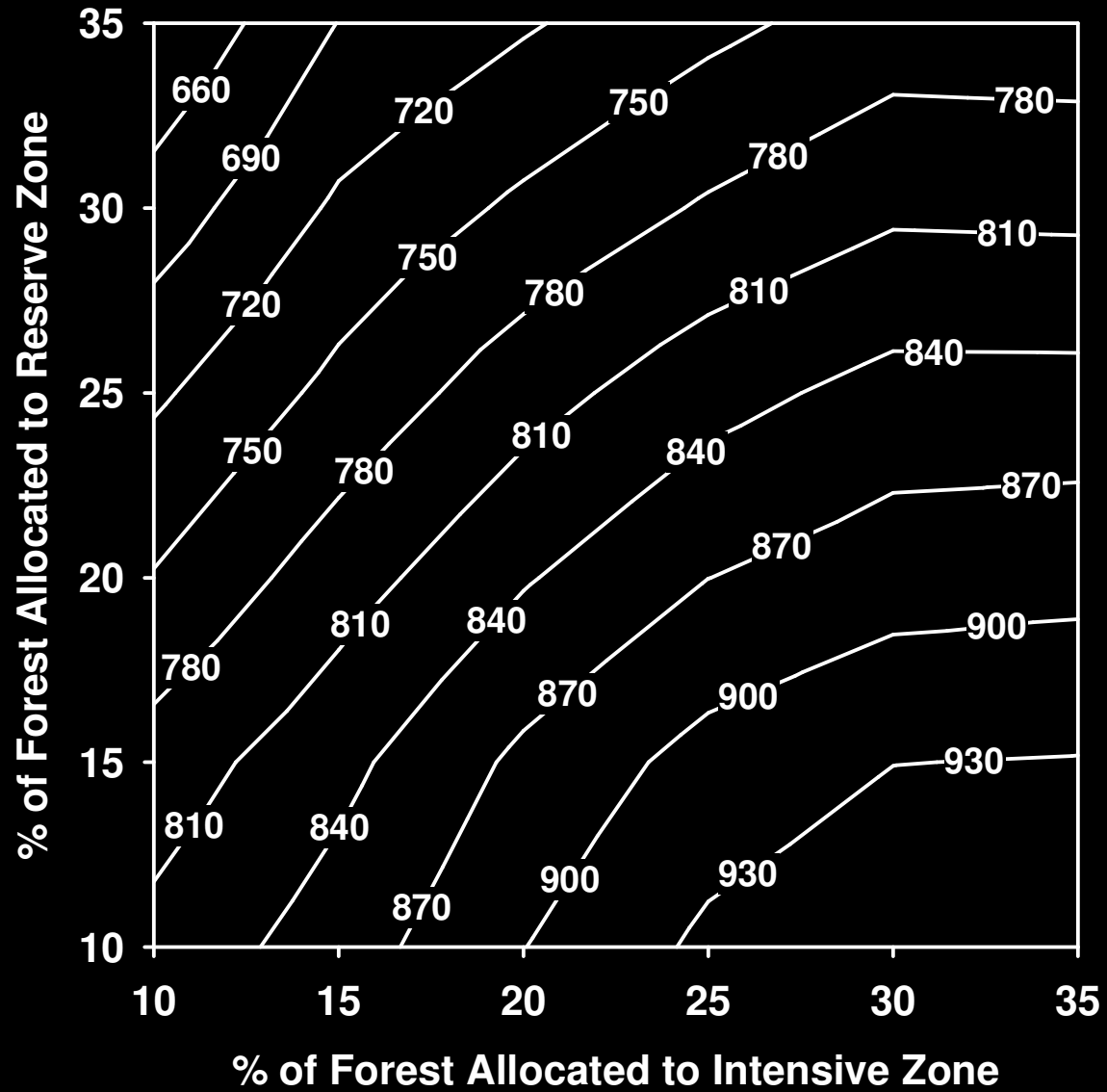


# Results

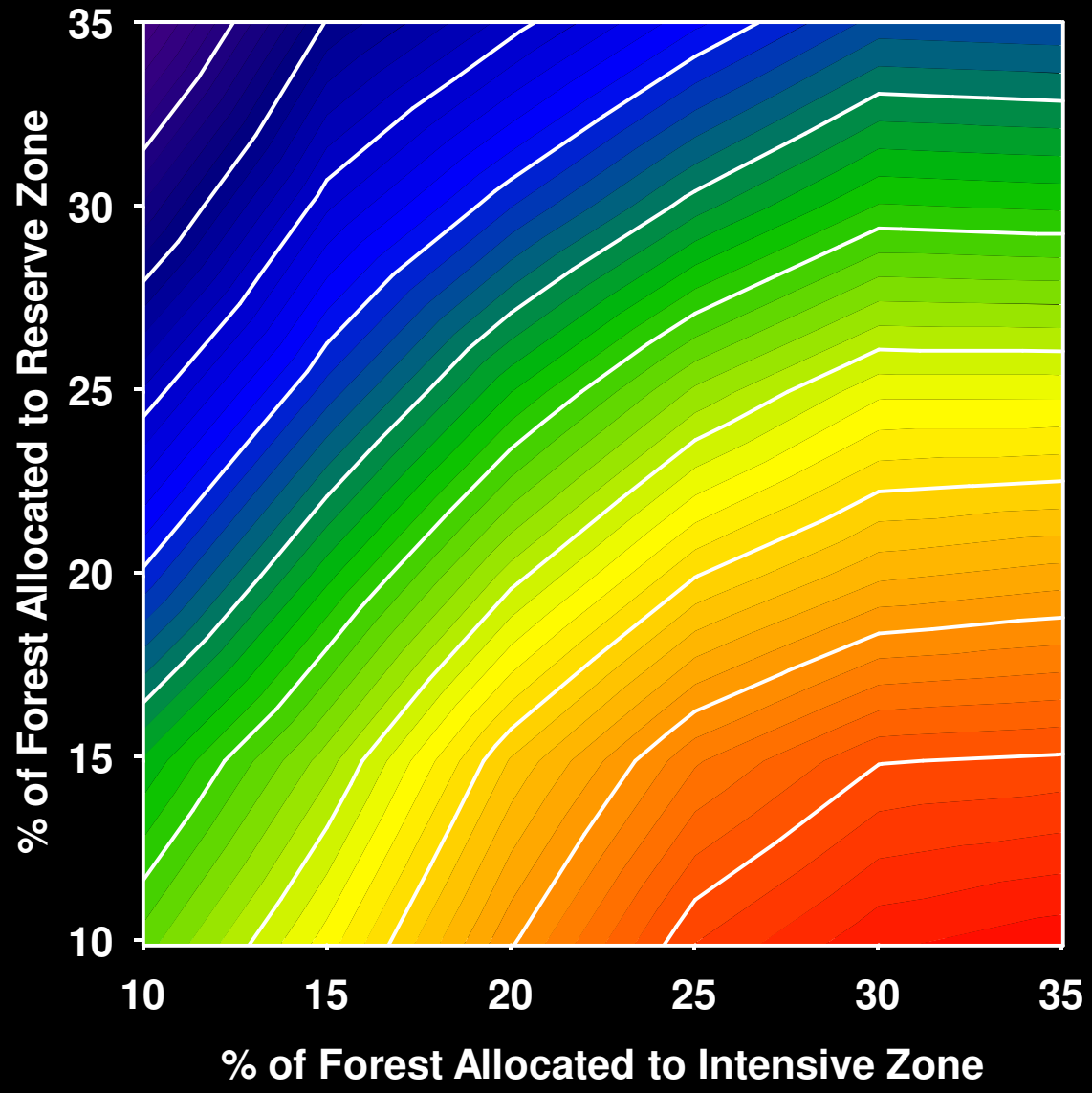




# Results

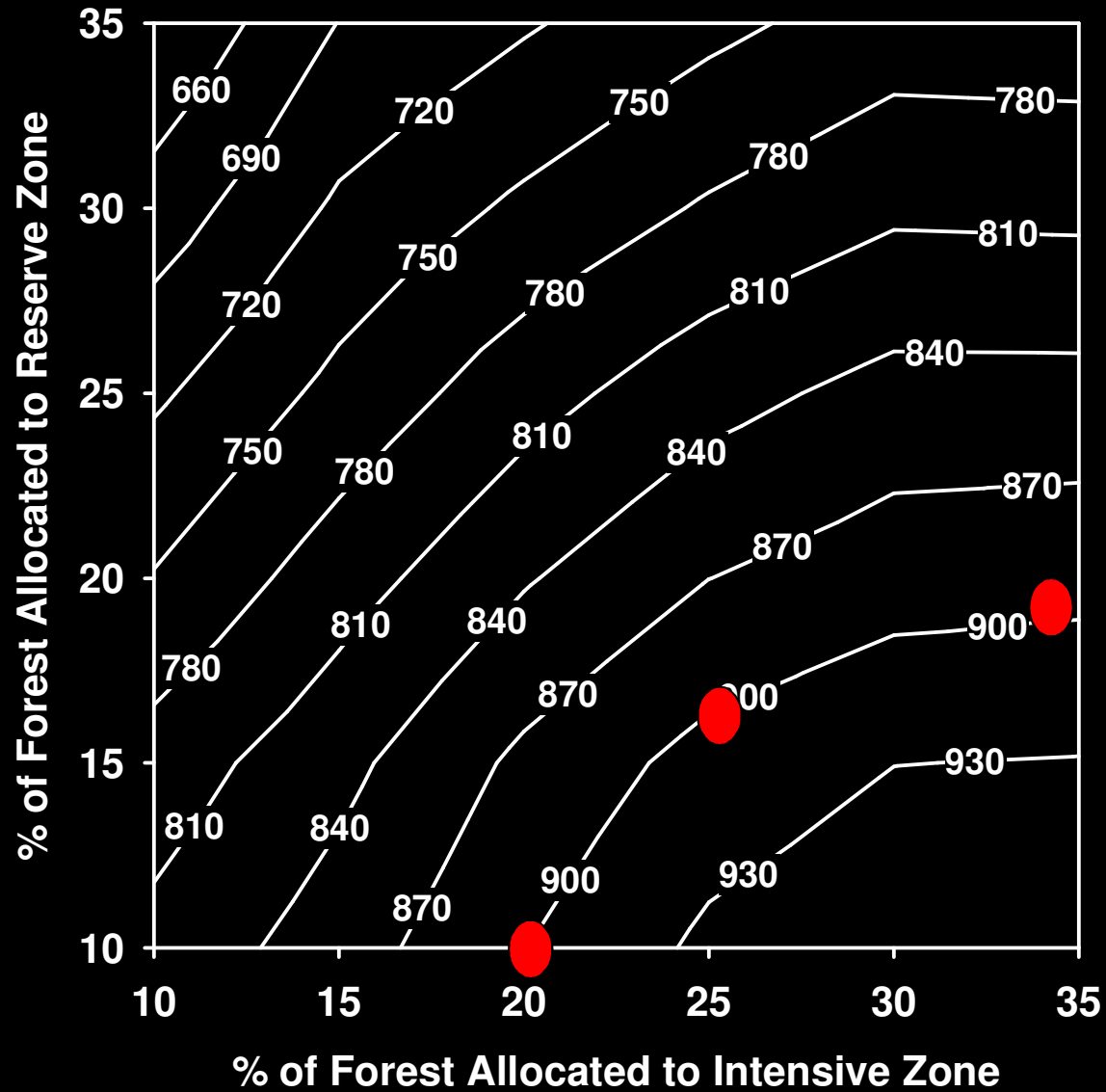


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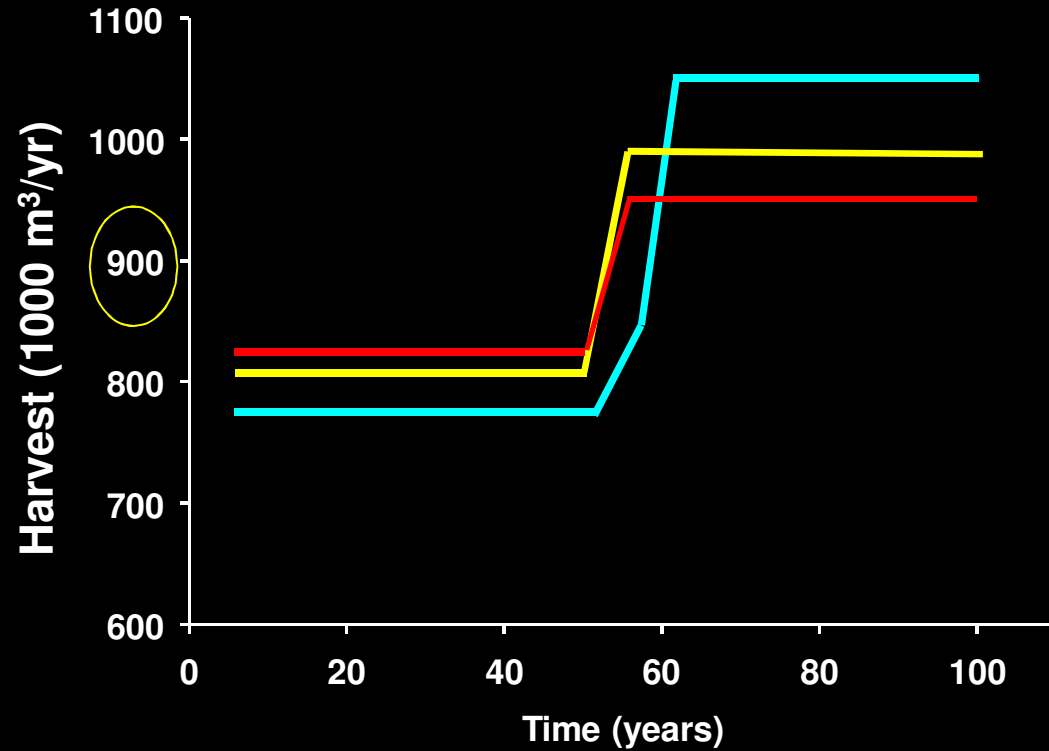
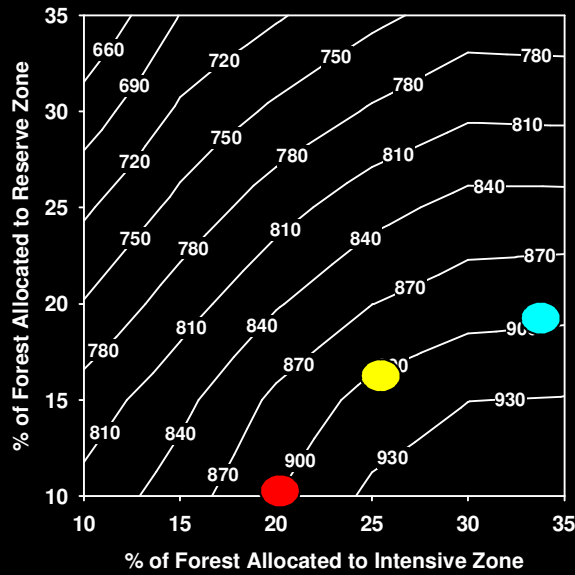


# Results

*SFjP + Hardwood Harvest- average over 100 years (K m<sup>3</sup>/yr)*



# Results

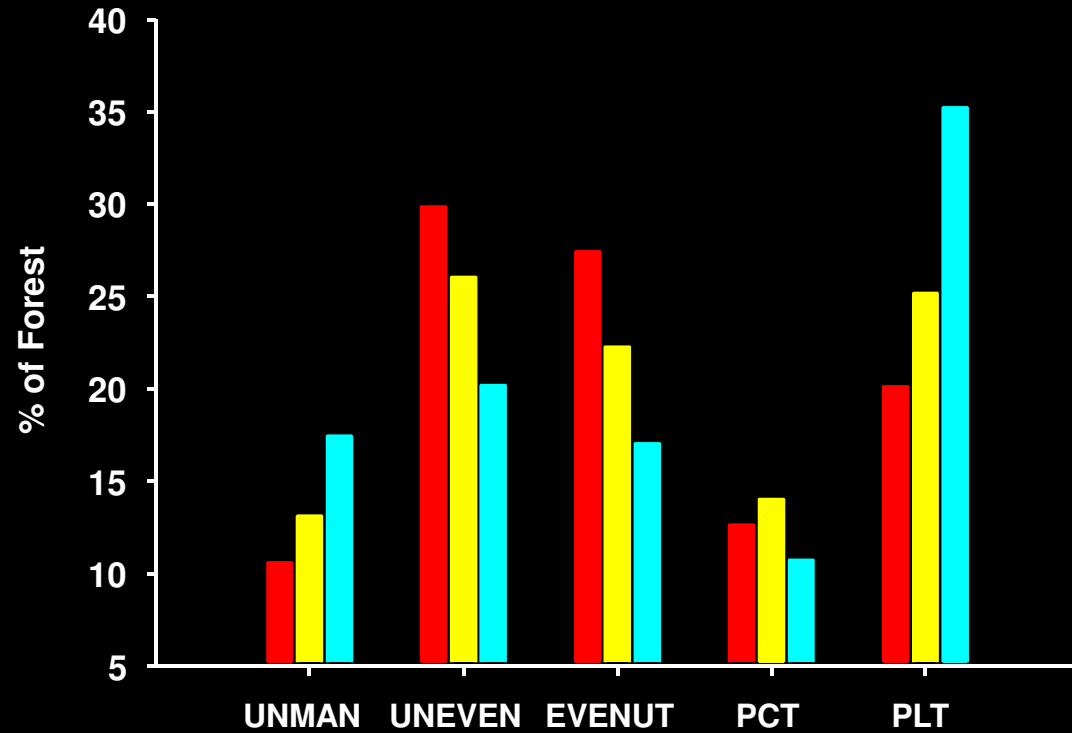
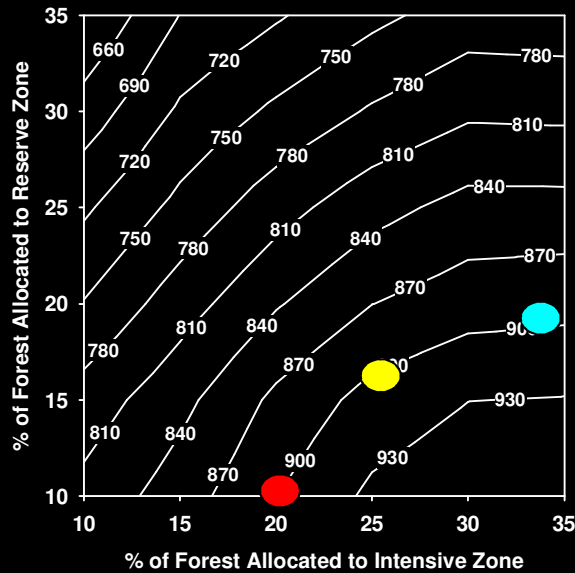


Can maintain average harvest level over time and increase reserves

But...

Results in different harvest timing opportunities

# Results



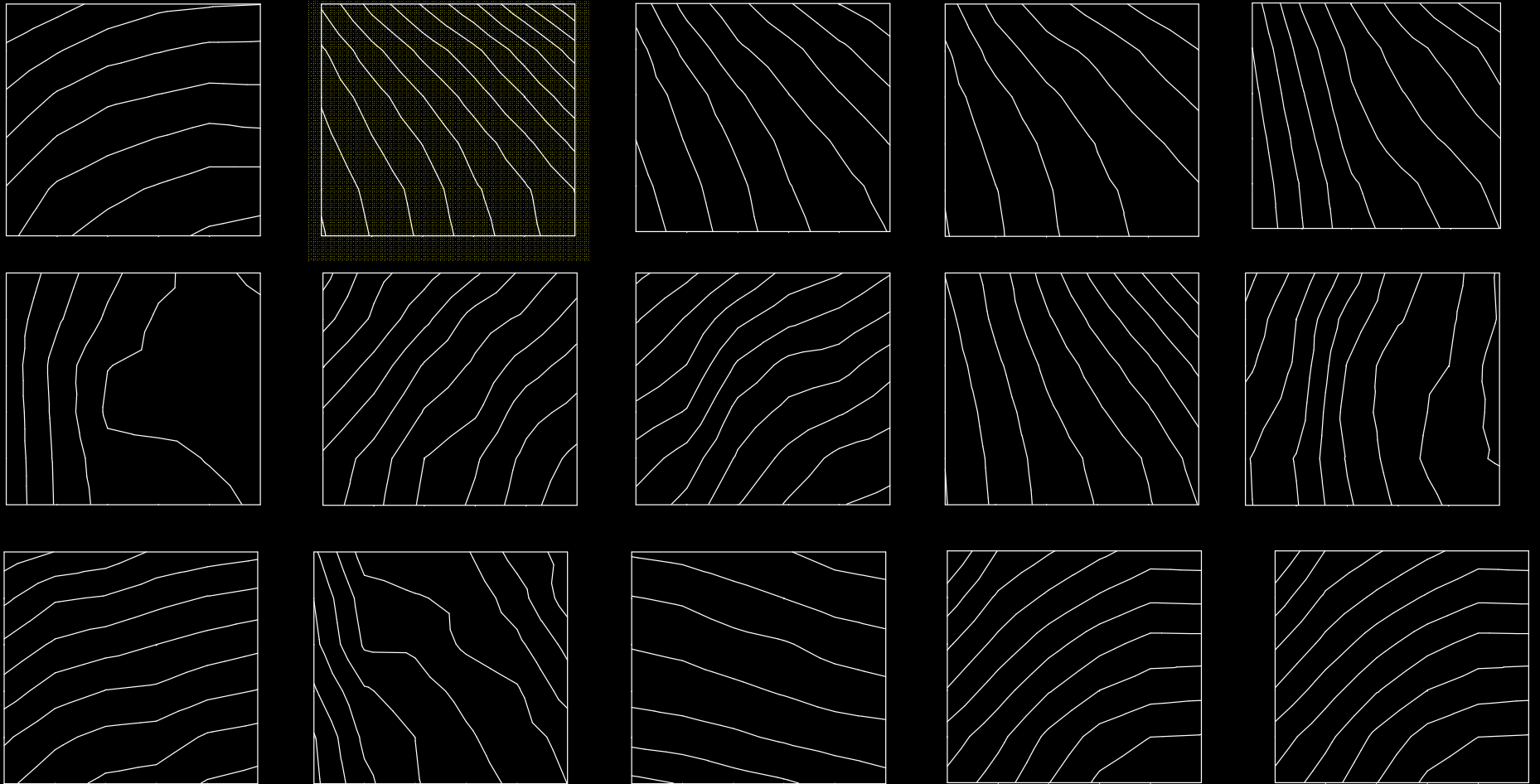
Some allocations result in the same outcome in one respect (harvest)

But..

Result in very different forest conditions

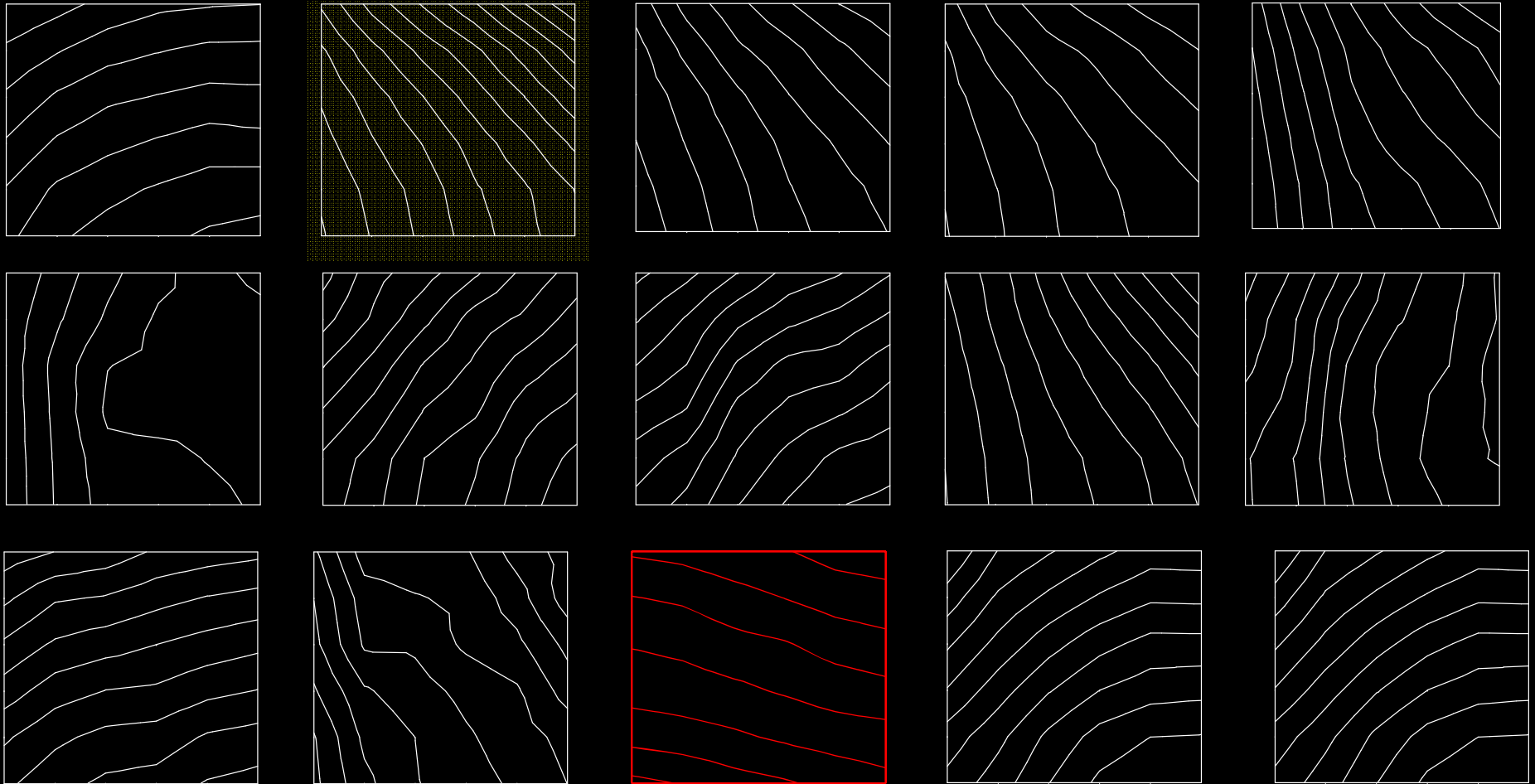
....which in turn will result in very different outcomes in other respects (other values)

# Results



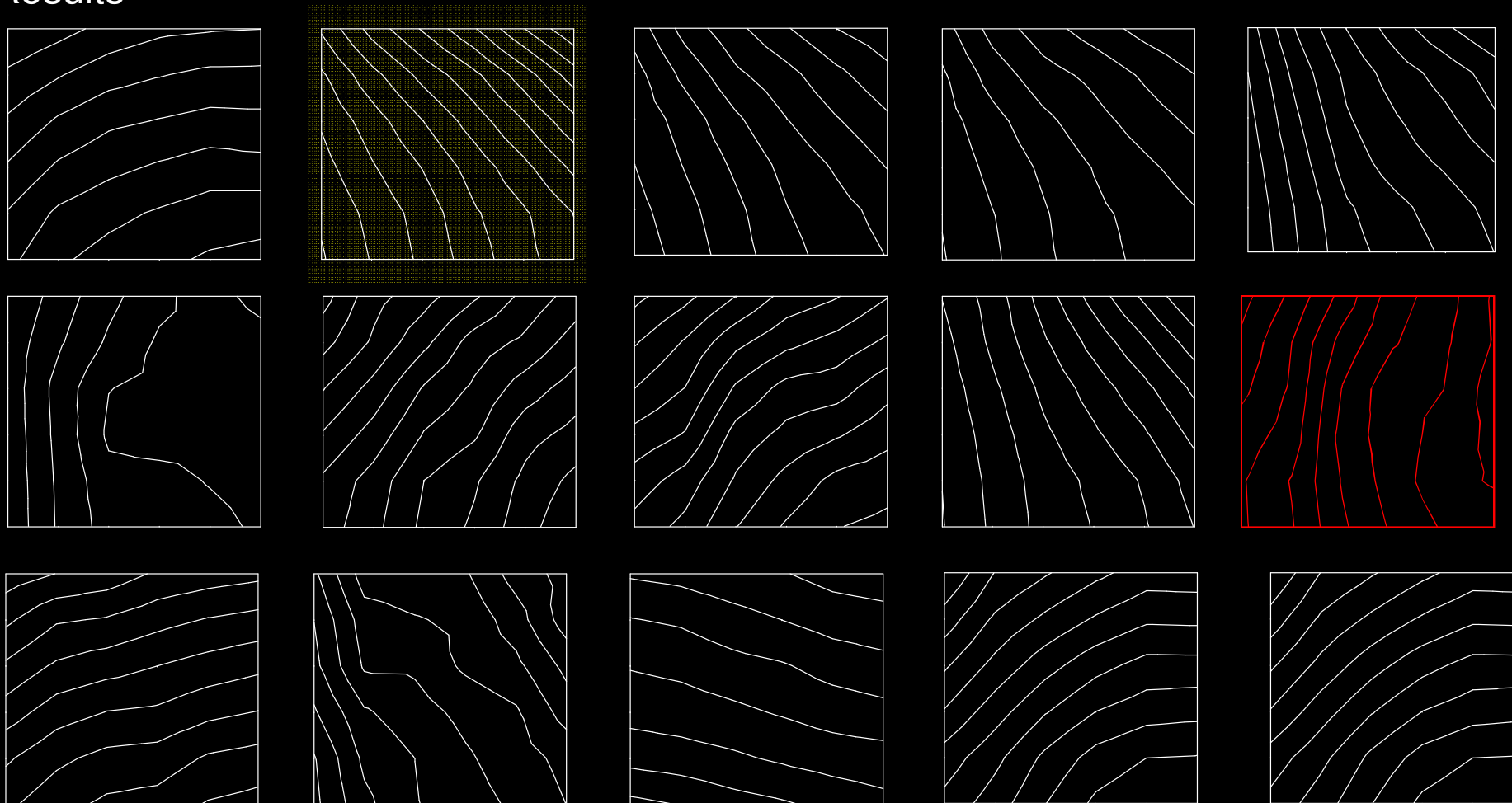
*....each fits into 1 of 4 categories*

# Results



*Horizontal- most sensitive to changes in reserve*

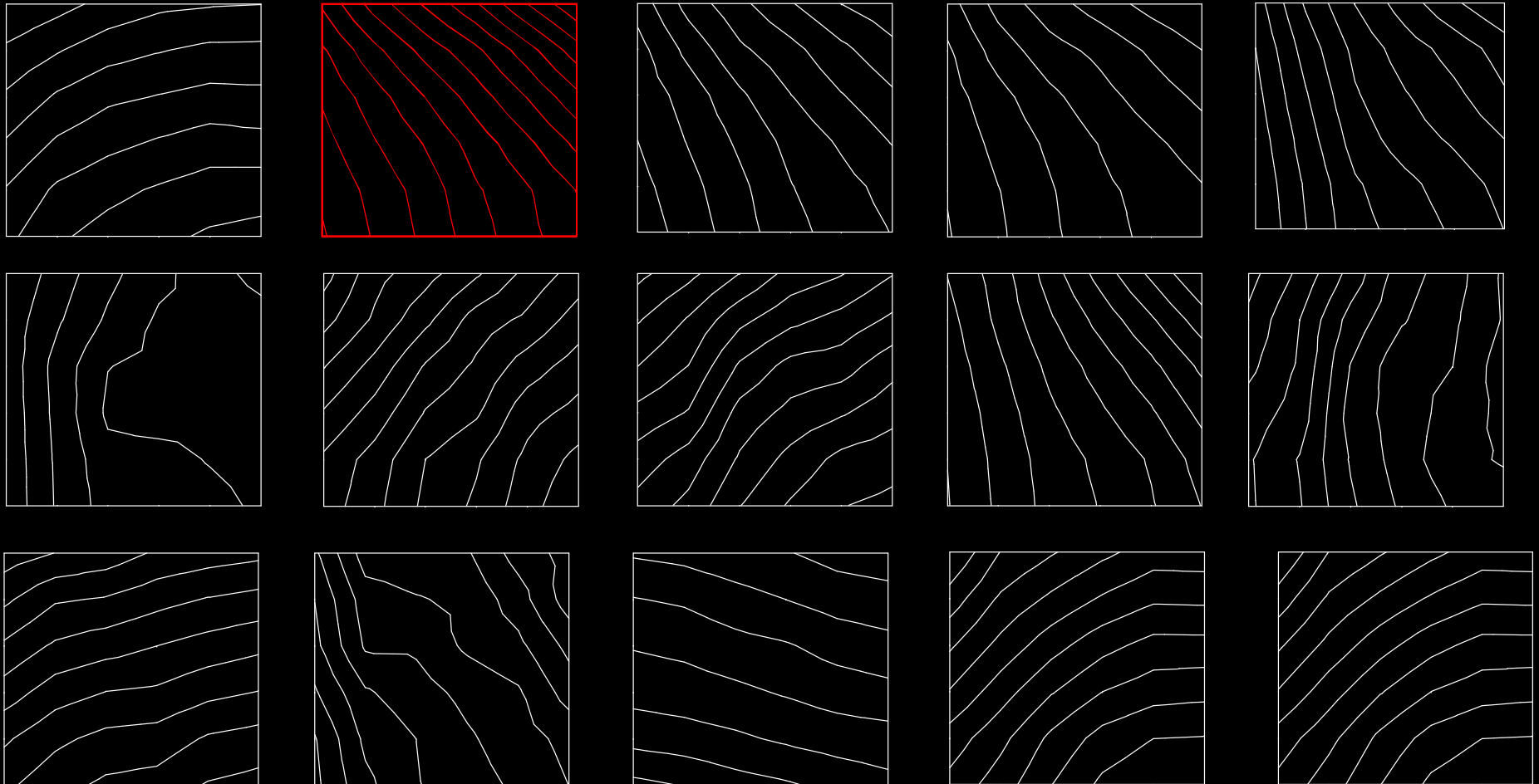
# Results



*Vertical- most sensitive to changes in intensive*

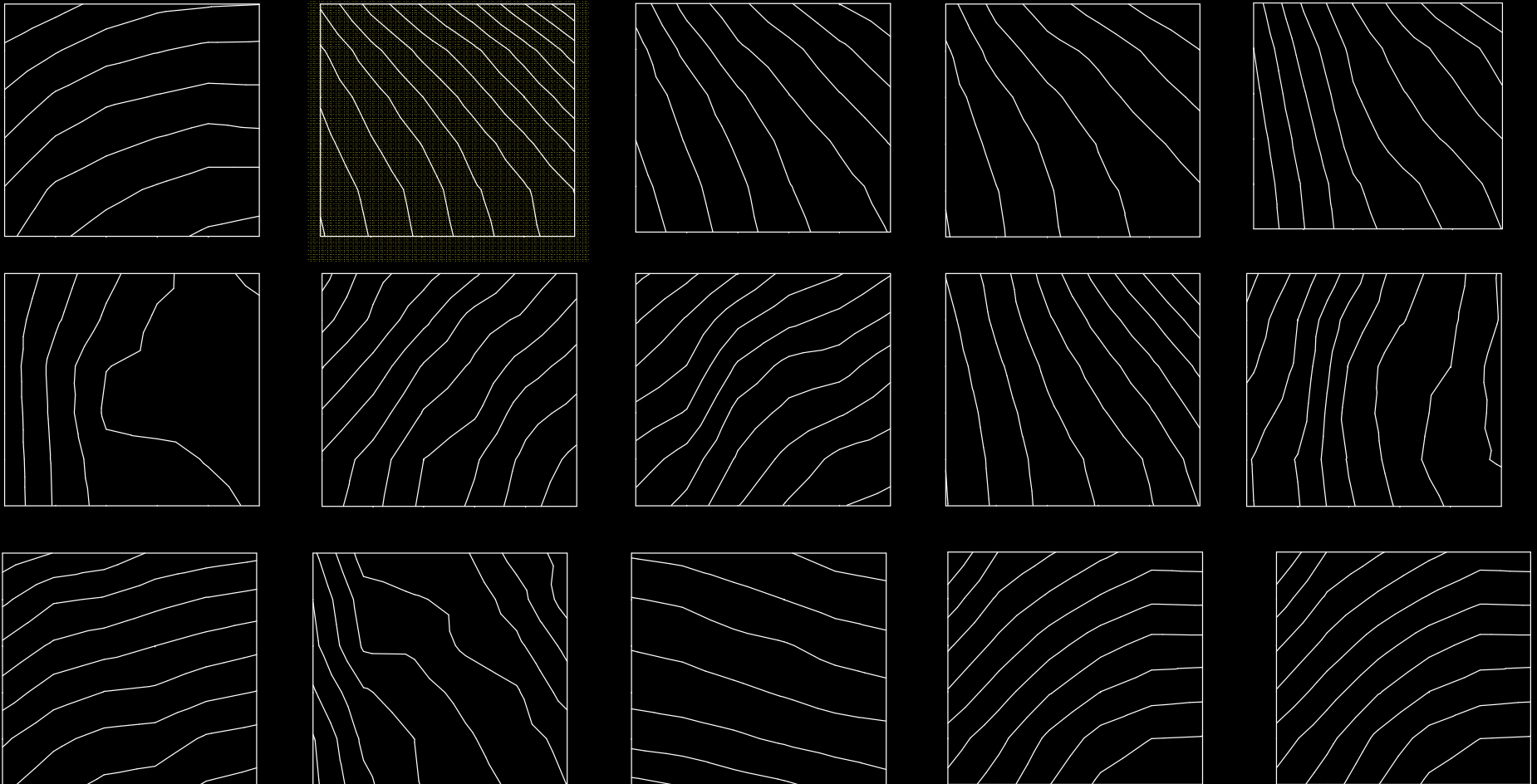


# Results



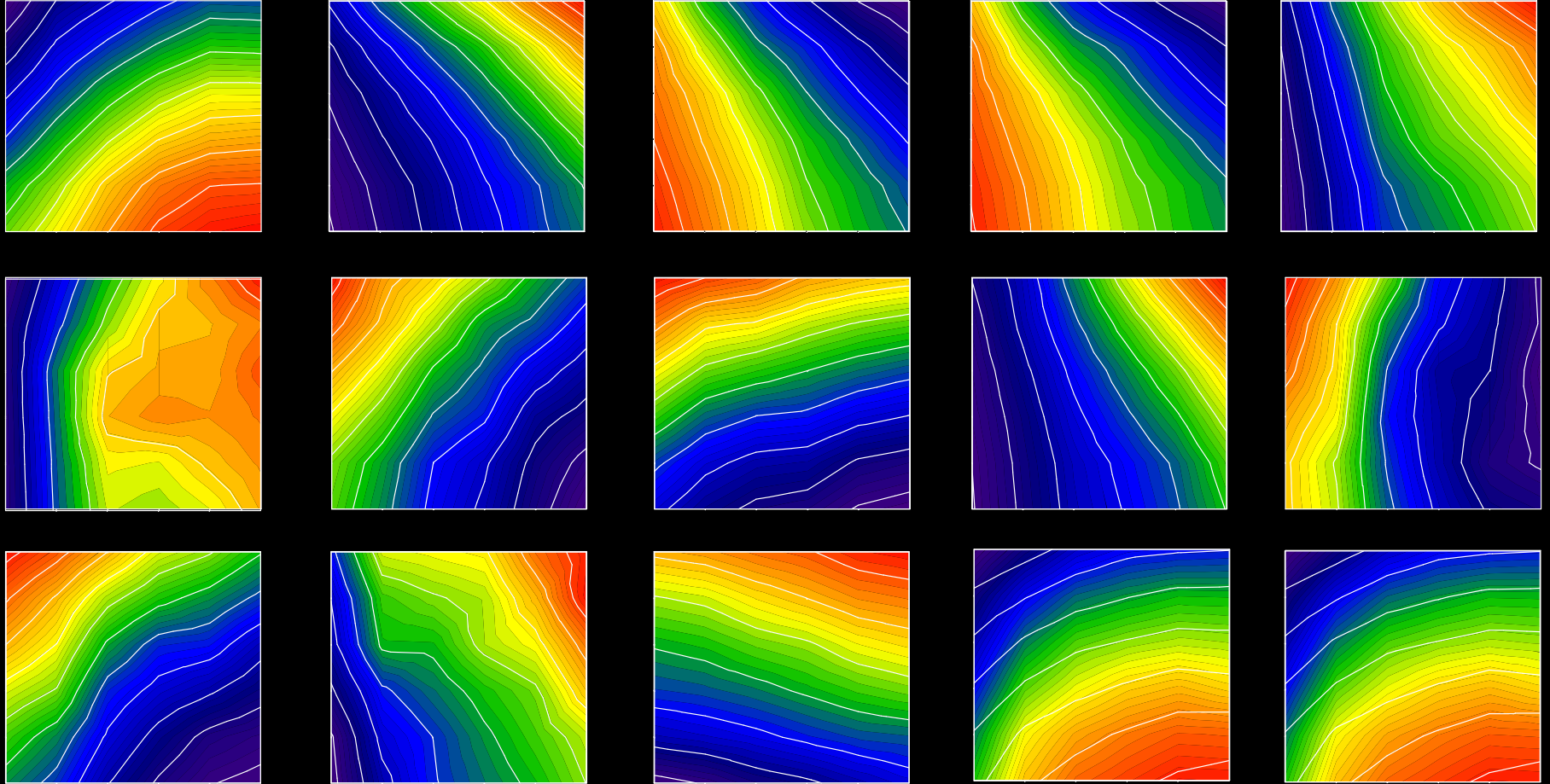
*135°-315° - most sensitive to changes in extensive*

## Results



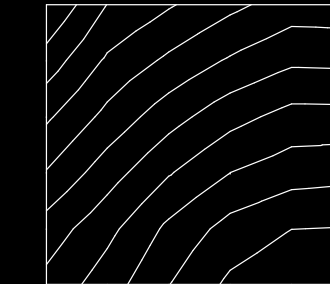
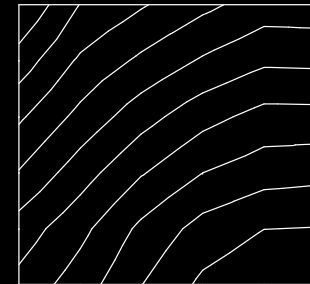
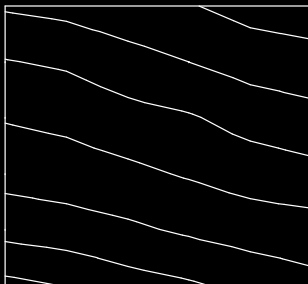
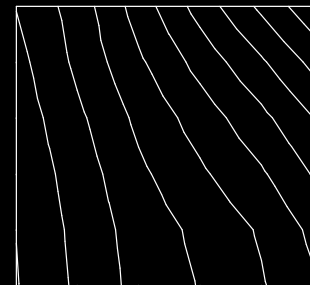
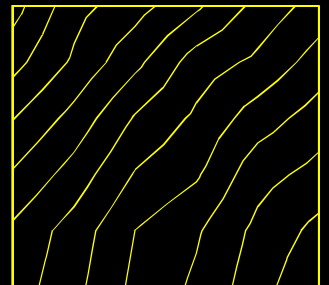
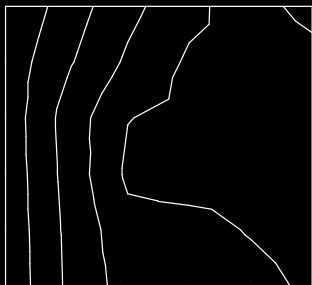
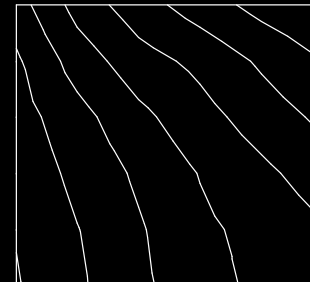
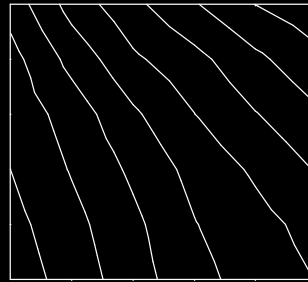
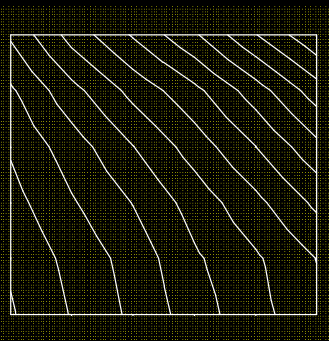
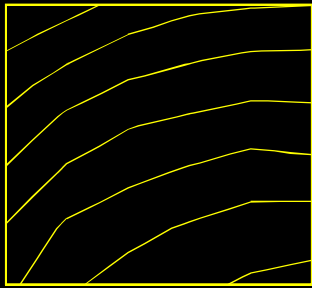
*Ability to control any value by changing the area allocated to the Triad zone to which that value is most sensitive*

## Results



*Changing the allocation to increase one value will result in a reduction in another*

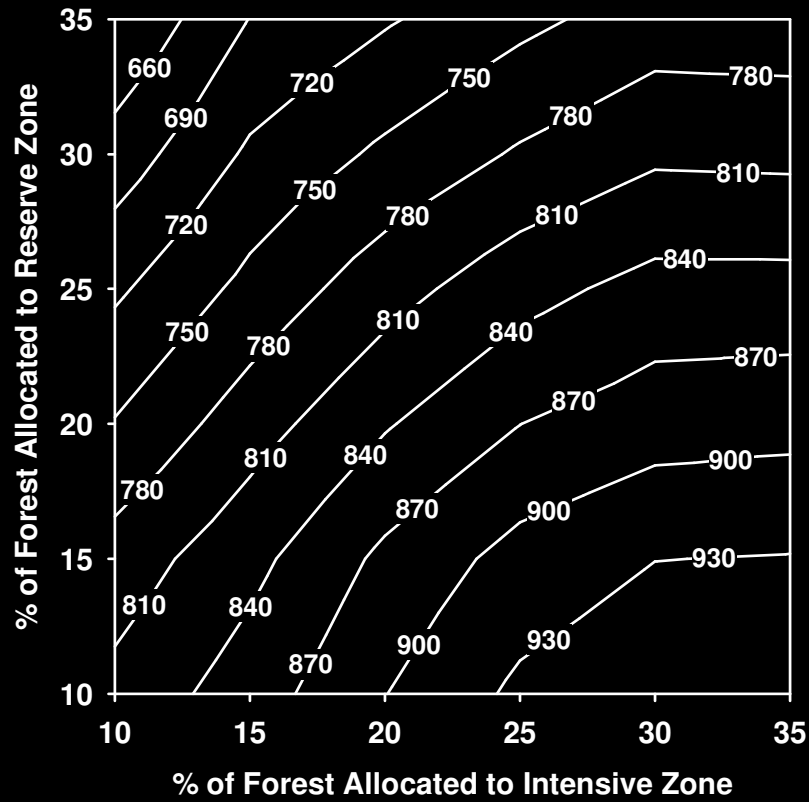
# Results



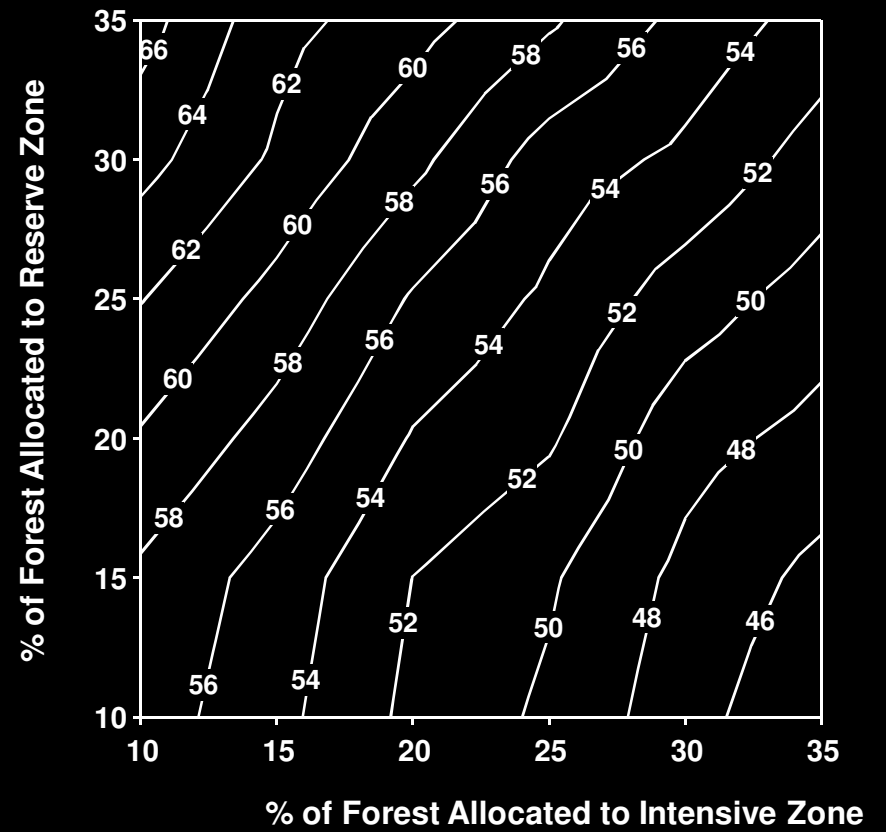
*45°-225° - equally sensitive to changes in intensive + reserve*

# Results

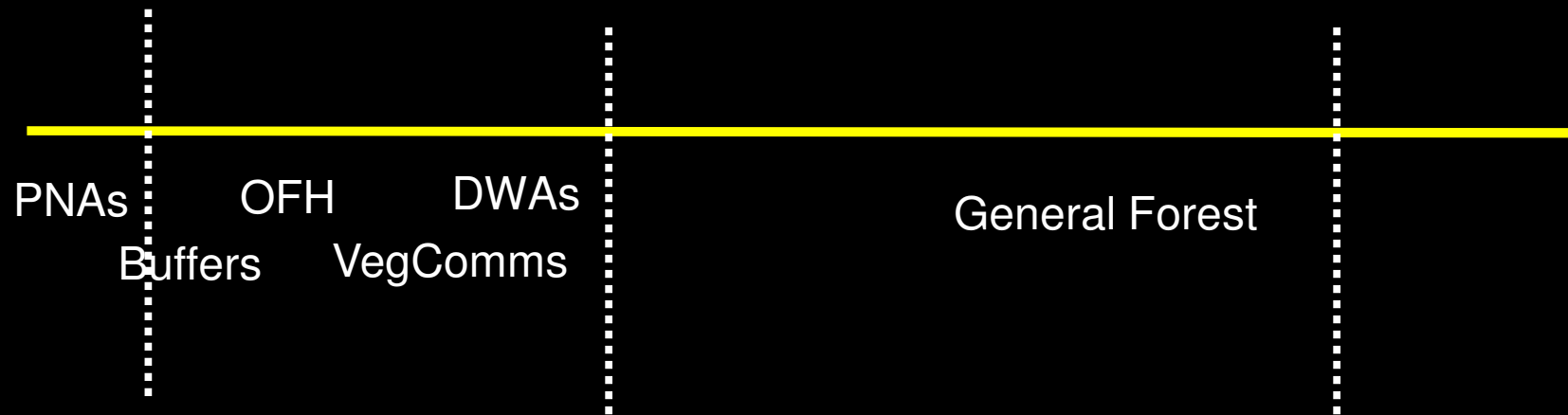
*average harvest*



*% old forest @ yr 50*



Provides a clear and effective description of management?



Should/how can this be more *clearly described*?

Could we have more productive discussions about forest management if it were?

Values are provided with higher certainty in some parts of the forest?

➤ A *favorable* part of Triad is the commitment

- Investment opportunities, etc.
- Long-term unharvested benchmarks

➤ An *unfavorable* part of Triad is the commitment

- Risky?
- Irreversible?

➤ More people getting *more of what they want*?

➤ More people getting *what they want with more certainty*?

## Closing

- Conceptually, Triad approach has **gained lots of interest**.
- How **different** is it from what we do now?
- If different, might it be a **better approach**?
- If different, what would have to **change**?
- What would be the main **benefits/advantages**?
- What would be the main **costs/disadvantages**?



# Thanks!

Sustainable Forest Management Network

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Dr. Dave MacLean

Dr. Thom Erdle

Dr. Tom Beckley

