

# Letting Go of Certainties...

*policy development, ecosystem models and junkyard wars*

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# Overview

- Context
  - *Improvement*
- The Issue
  - *Uncertainty*
- The Approach
  - *Adaptive Management*
- Junkyard Wars
  - *Ecosystem models*
- Caveats



# Context

## Forest Management Guide Revision

(d) The intent of the review of the Guides is to ensure that they reflect current scientific knowledge as it applies to Ontario. In considering the need for revisions, amalgamations, or new Guides, in setting priorities, and in determining the appropriate contents of the Guides, the following factors shall be considered:

- (i) the results of applicable scientific research;
- (ii) the results of relevant and appropriate monitoring programs;
- (iii) the advantages and disadvantages of changes to current forest

(iv)

(e) Where

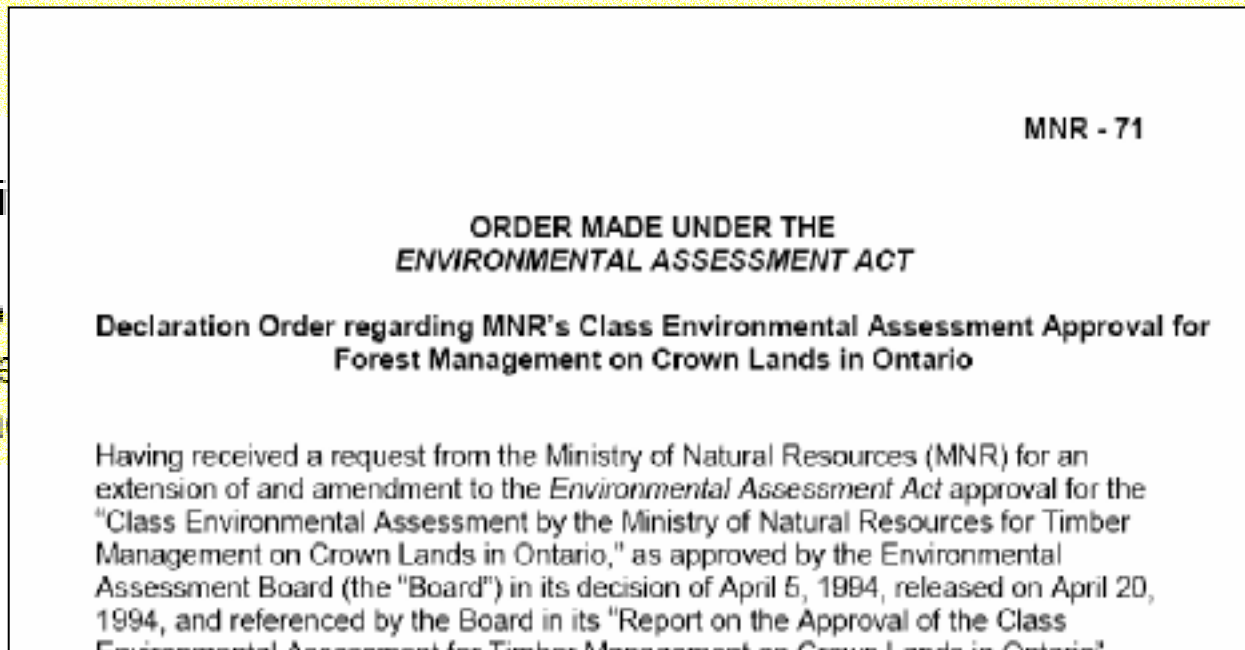
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# Adaptive Management

- **A systematic process for continually improving management policies and practices by learning from the outcomes of research and operational programs.**
- **Results are monitored, and the management practices are changed or adapted as results lead to learning.**
- **The active cooperation of managers and researchers is crucial to the success**



# Management & Science

- Power Management
  - Certainty is the admired reflex
  - Policies can only survive if driven by ideas
  - Decision making

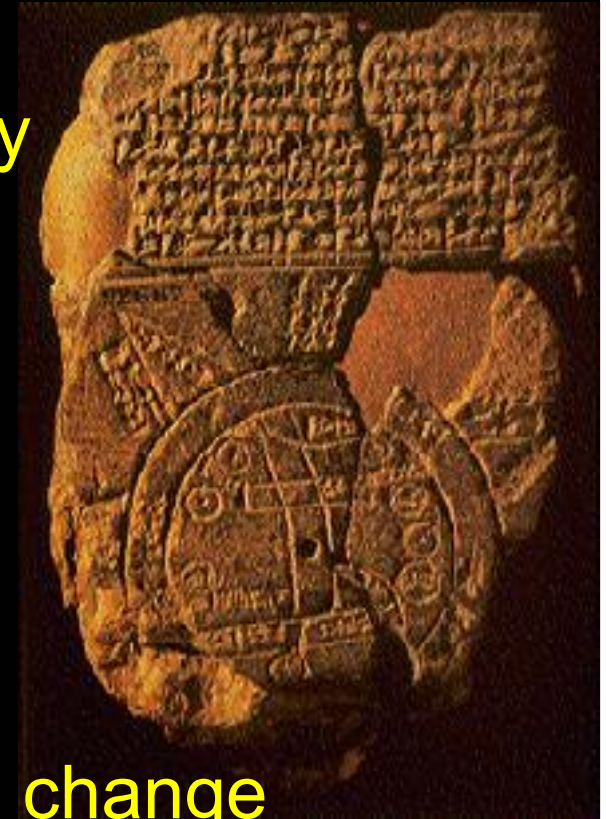
I NEED A LIST OF ALL THE PROBLEMS WE ARE UNAWARE OF AND THE BUDGET NEEDED TO FIX THEM.



- Science
  - Breeds independence, originality and therefore constructive dissent
- Imagination
  - Protects us from the temptation of premature conclusions
- *Creativity requires the courage to let go of certainties*

# Letting Go of Certainties

- Involves
  - changing thoughts about policy
  - an improvement in policy
- Requires
  - conflict
  - new scientific information
  - feedback from environment
  - communication & openness to change
- Uses
  - ecosystem models as negotiating tools



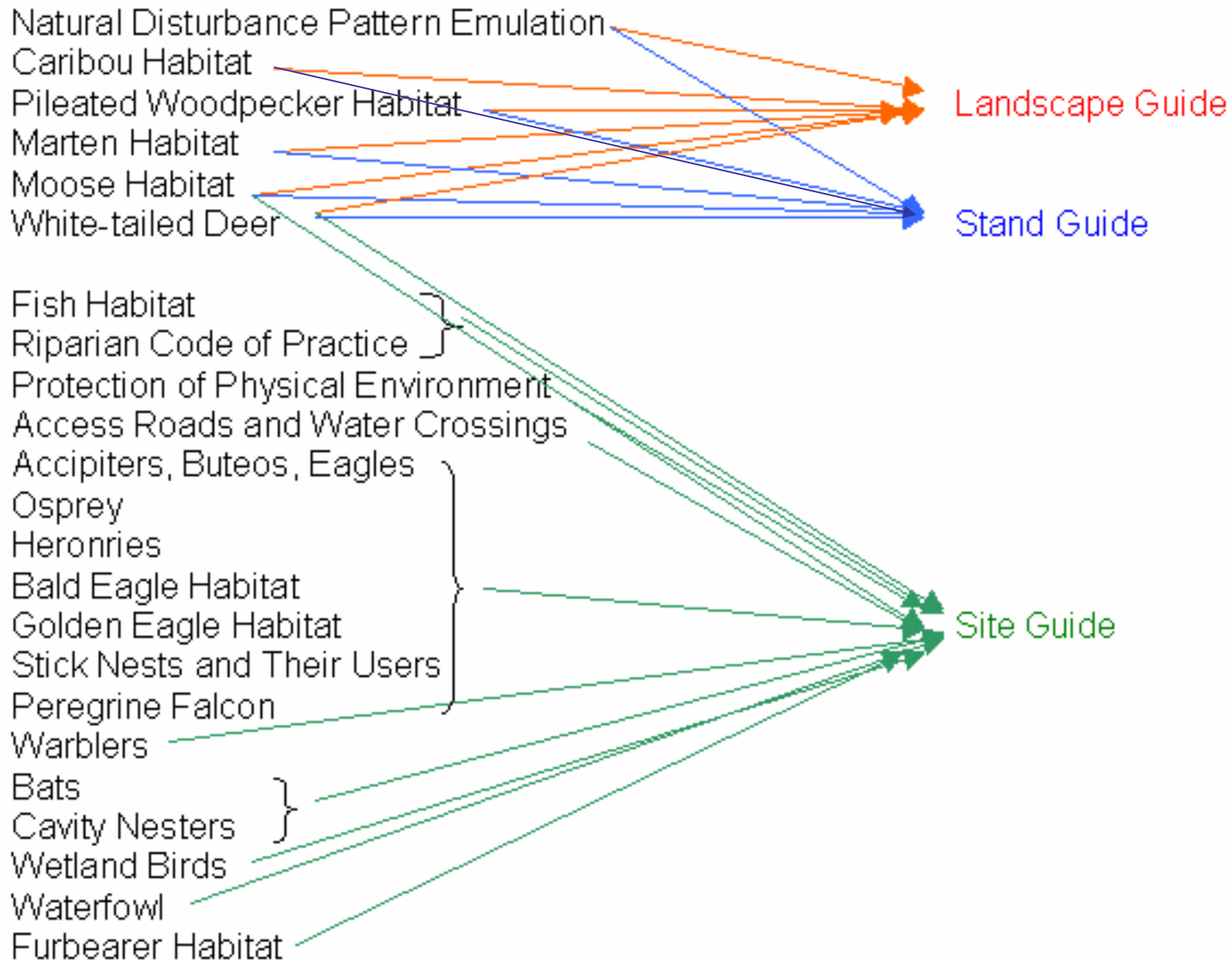
# Changing Thoughts About Policy

- Changing featured species approach
  - Coarse filter/fine filter approach
  - Emulating natural disturbance pattern
- Results of effectiveness monitoring
- New business relationships

# Forest Management Guide Consolidation

## Current

## Future



# Adaptive Policy Development



Assessment  
Guide Revision



Policy Options



Uncertainties

Wood & Habitat Supply Pressures

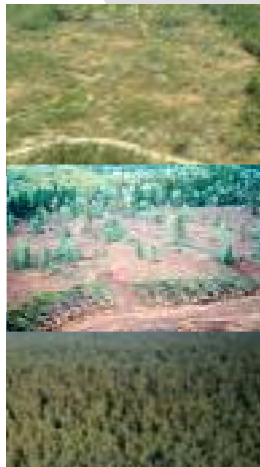
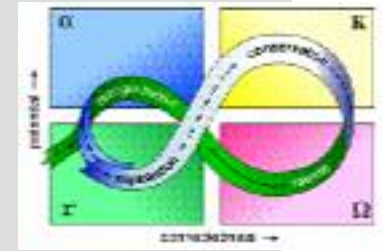
Monitor  
WPMP

evaluative indicators



Models

Research on  
ecosystem-habitat  
relationships



Range of  
management  
actions  
*applied in FMP*

Standards &  
Guidelines  
*Policy*



New Guides  
developed  
Prescriptive  
indicators



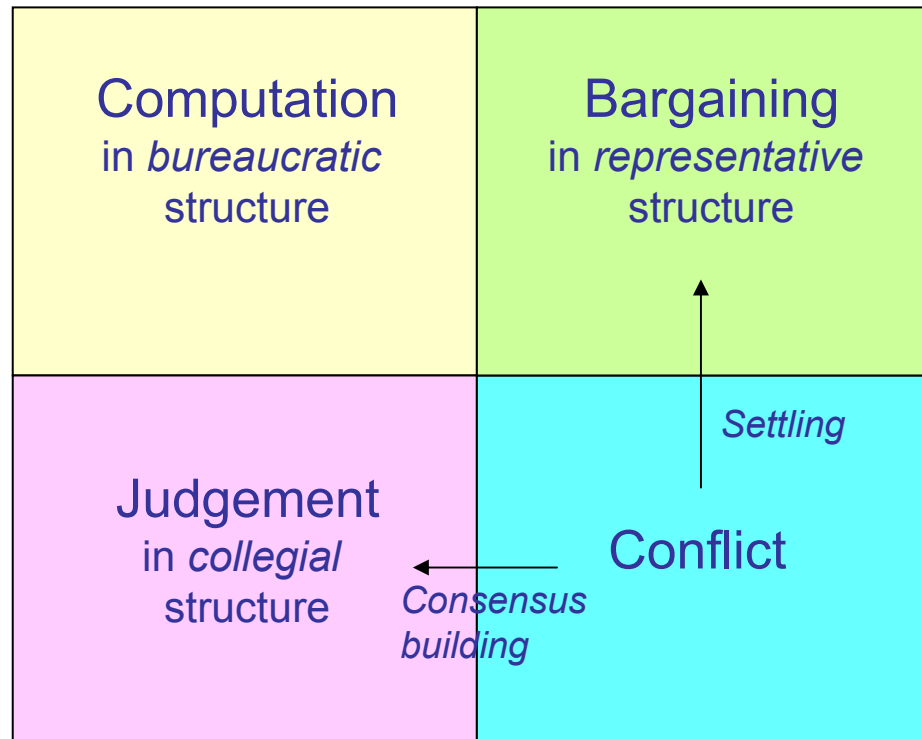
# Policy Options



Preferences about Outcomes  
agree disagree



Beliefs about causation  
agree disagree



# Uncertainties

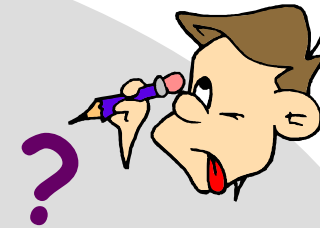
- What forest conditions are required to conserve biodiversity?
  - Early successional stages
  - Late successional stages
  - Snags
  - Dead & Downed Woody Material
  - Riparian
  - Old Growth

# Uncertainties & Models

Input from agency  
public users



Policy Options



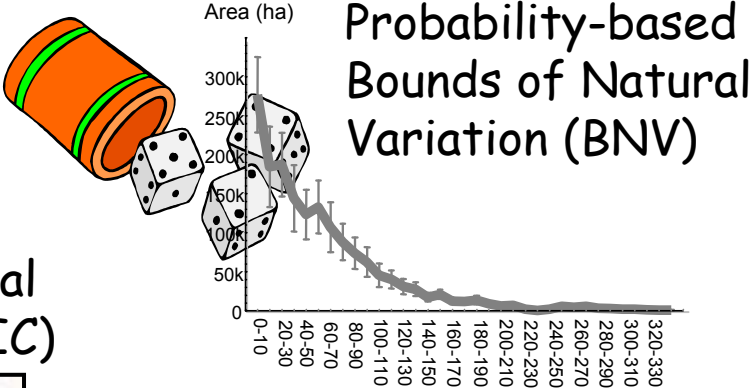
Uncertainties  
how much of X

Models



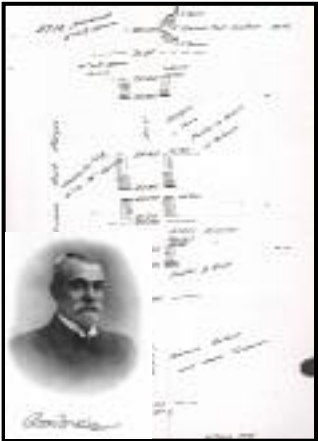
- Facilitate multi-stakeholder participation
- Screen a range of management actions
- Focus uncertainties
- Predict & compare policy outcomes
- UNCERTAINTY IS BOUNDED

# Landscape Modelling Approaches



What might happen?

Pre-Industrial Condition (PIC)

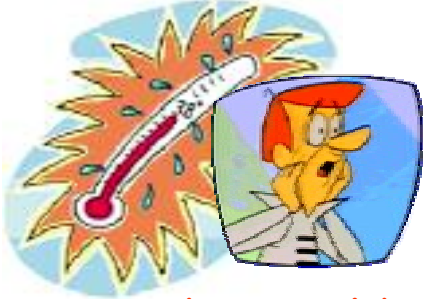


What happened?



Current Forest Condition

Forest response to future climate



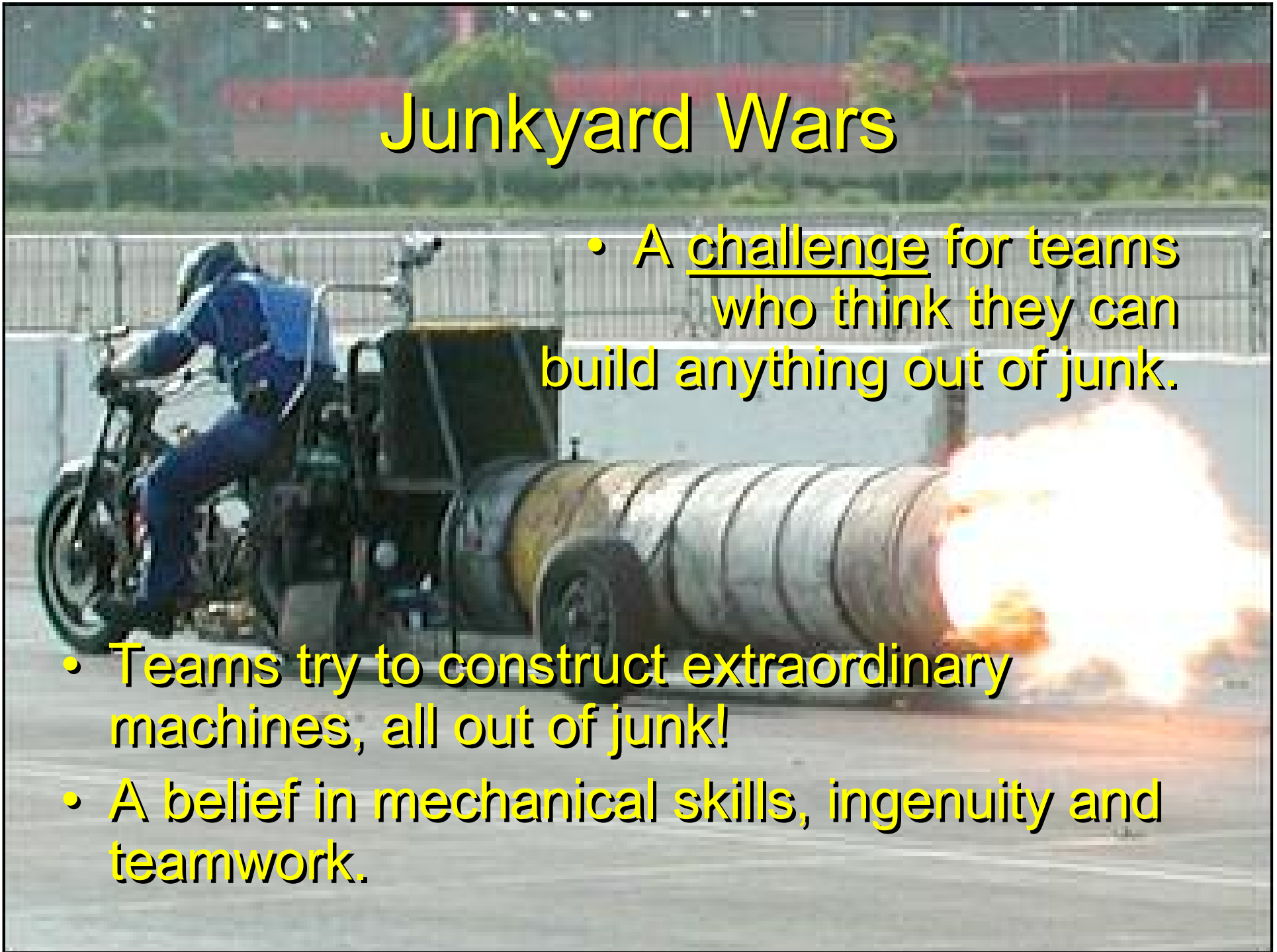
What could happen?

What is happening?

# Junkyard Wars

- A challenge for teams who think they can build anything out of junk.

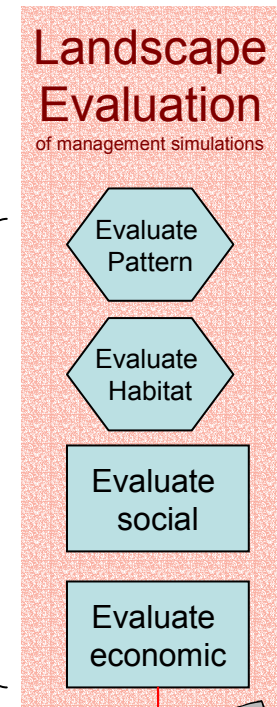
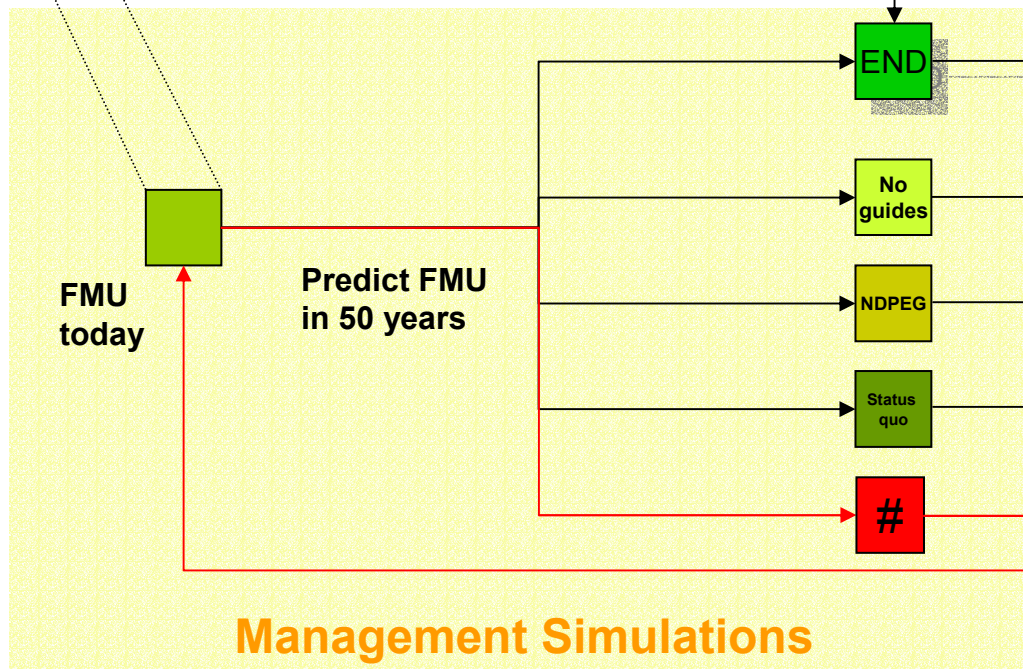
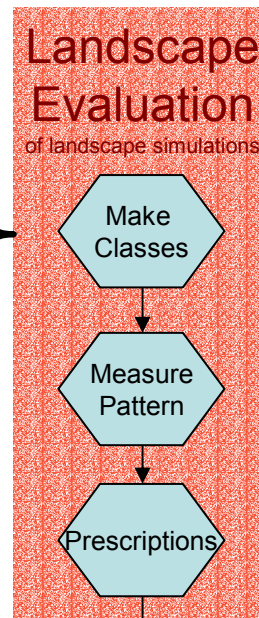
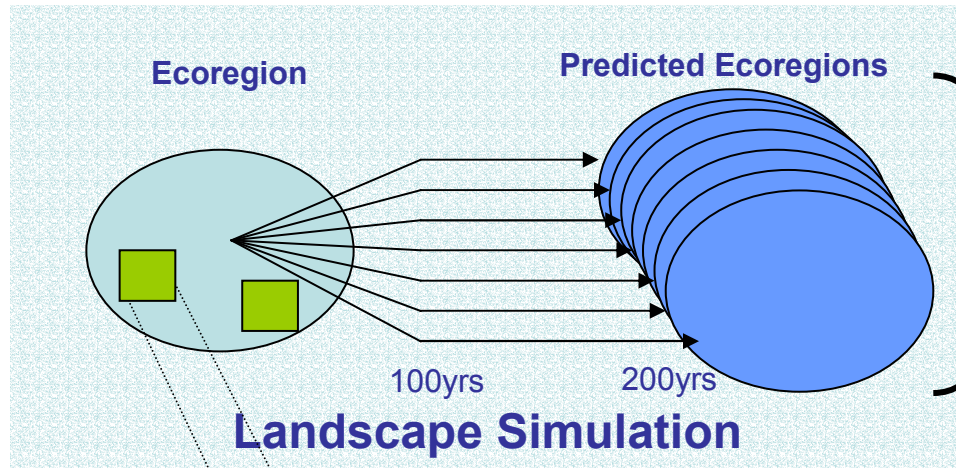
- Teams try to construct extraordinary machines, all out of junk!
- A belief in mechanical skills, ingenuity and teamwork.



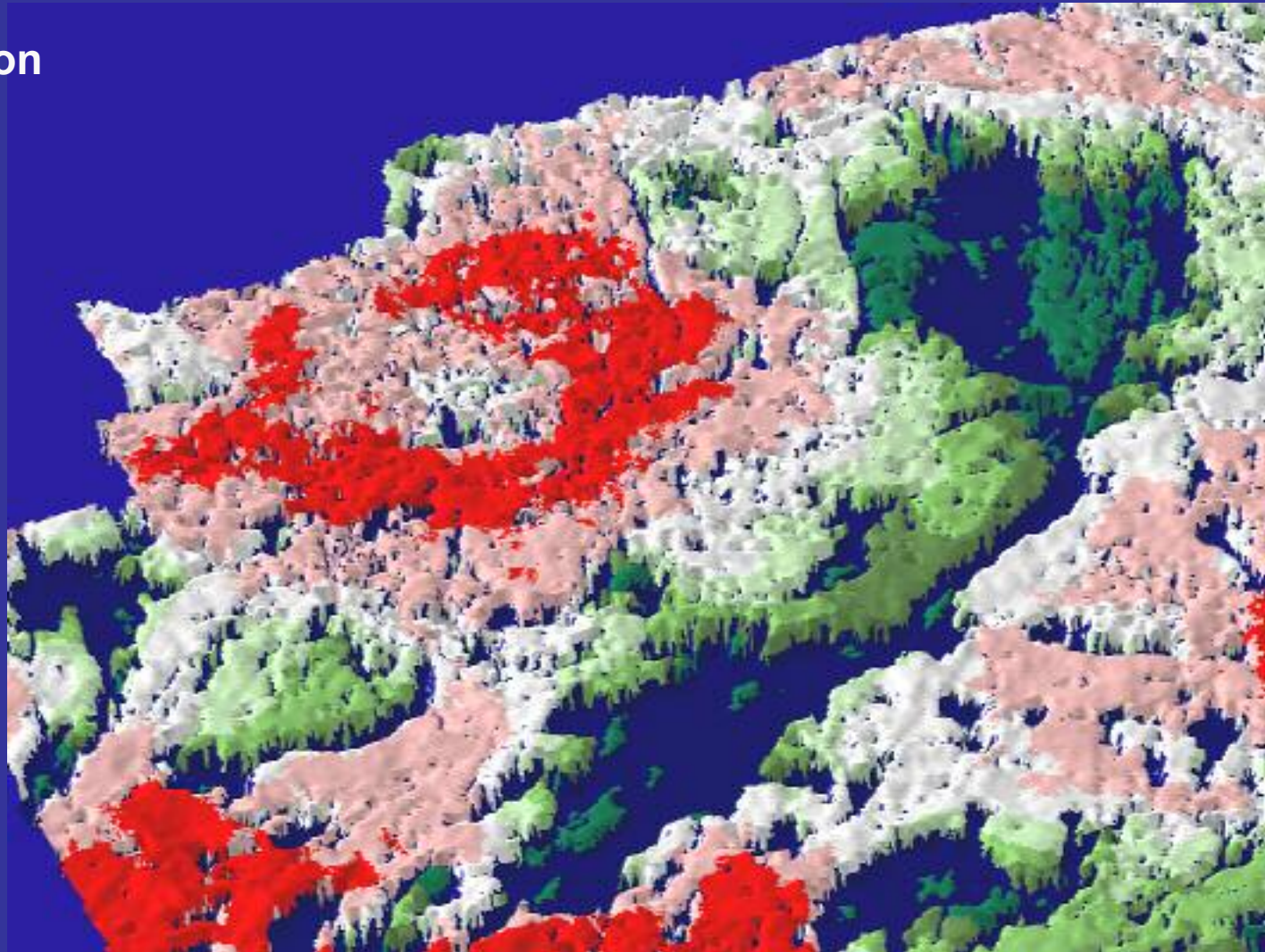
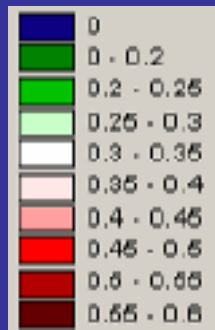
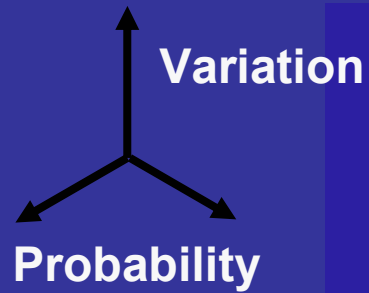
# The Right Team

- Power brokers
- Leaders
- Organizers
- Imaginers
- Doubters
- Subversives
- Passengers





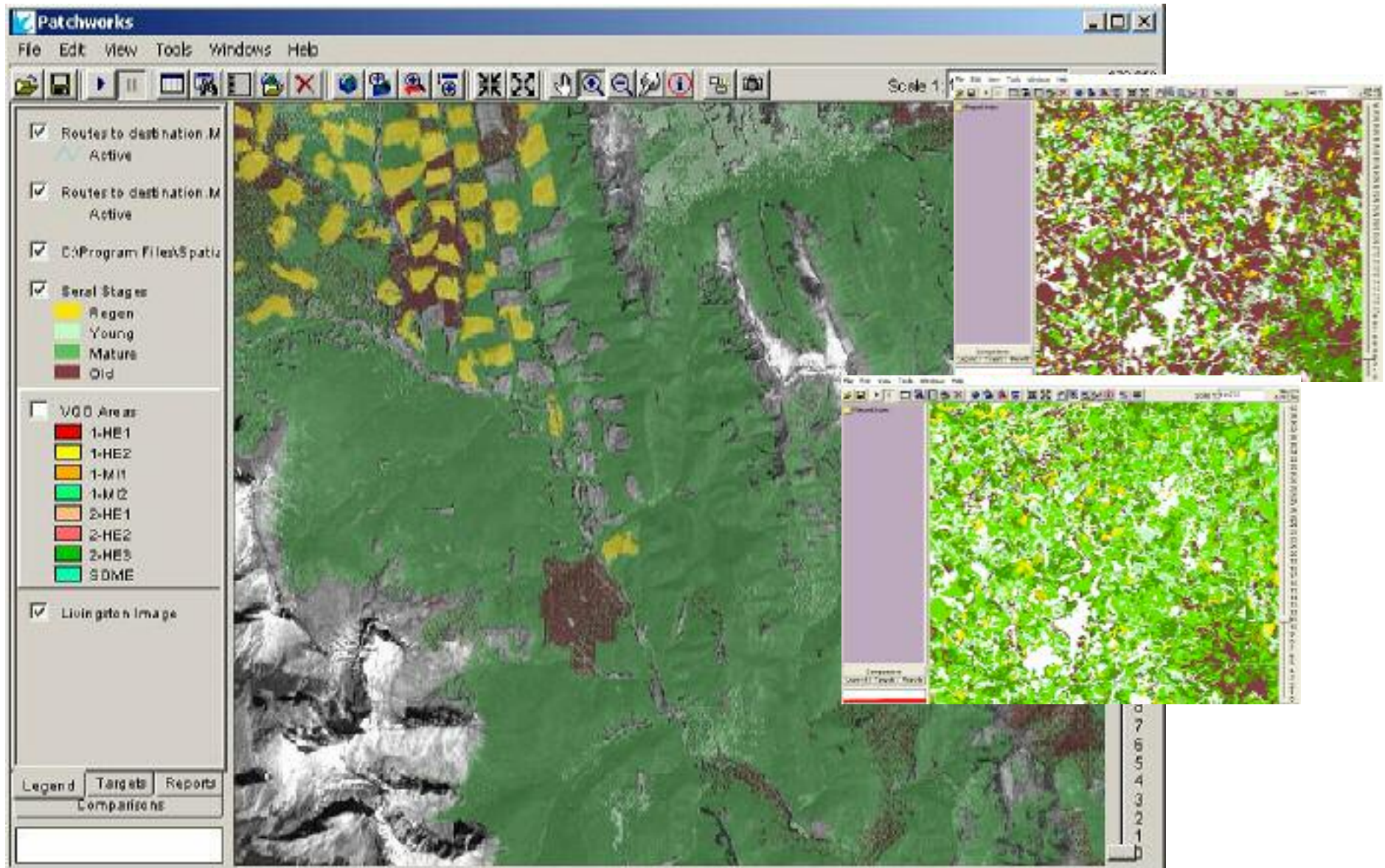
# Models: Landscape Simulation



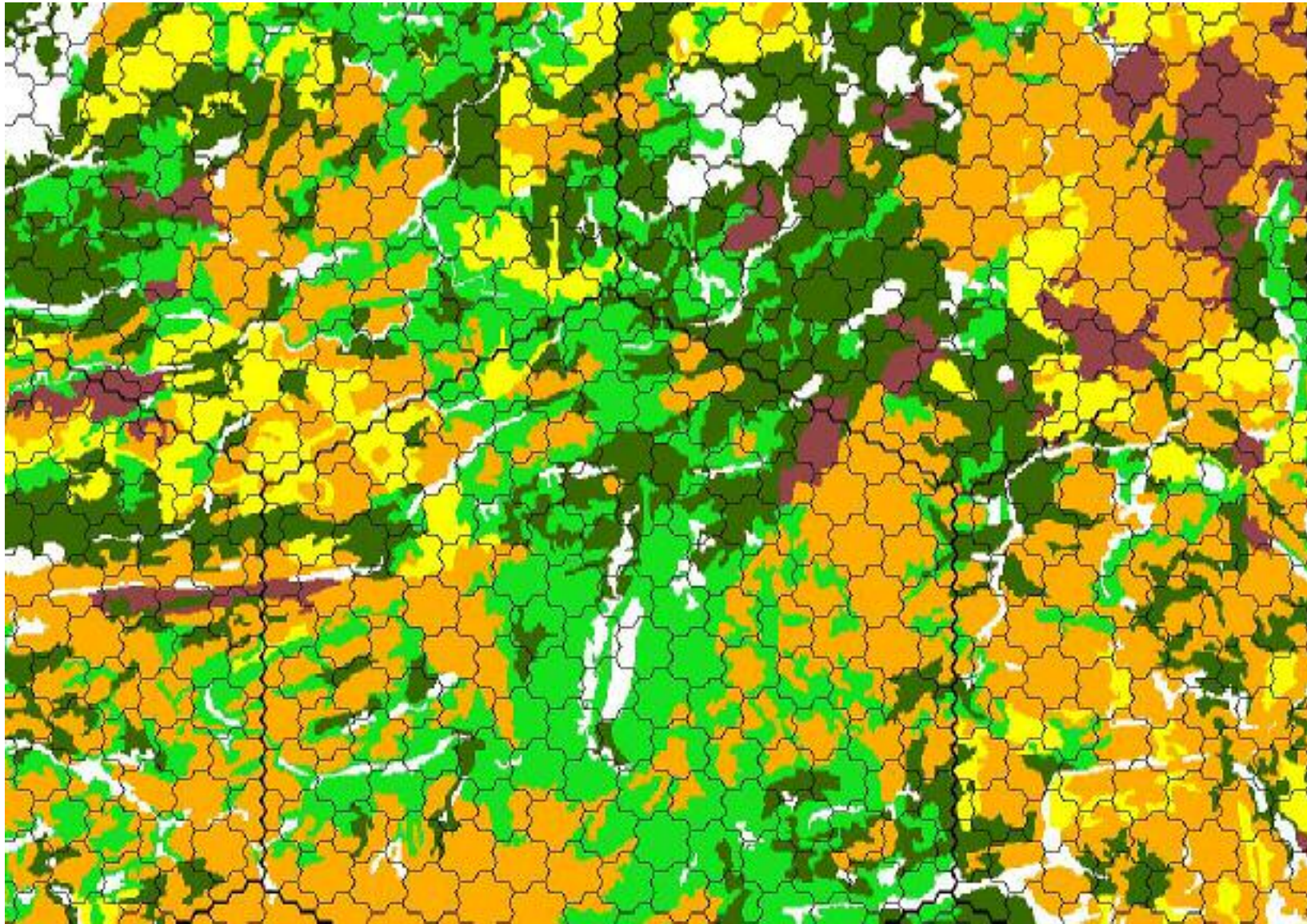
BFOLDS output

0 20 km

# Management Simulation



# Evaluating Landscapes

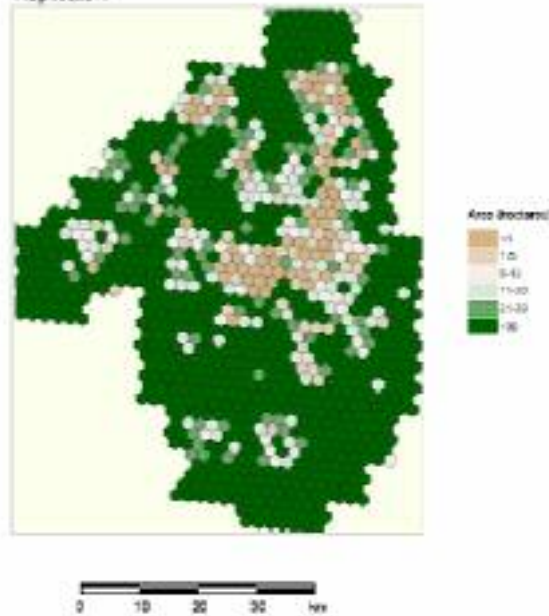


# Landscape Evaluation

Duck Mountains Patchworks Output

Total Area of Mature Hardwood Forest

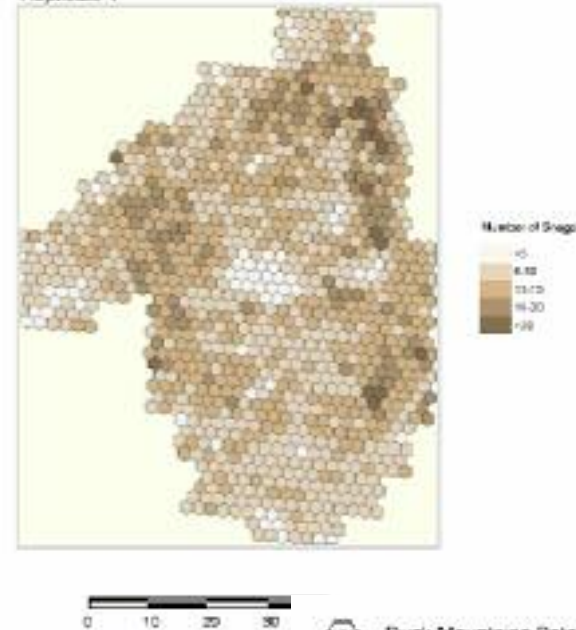
Replicate 1



Duck Mountains Patchworks Output

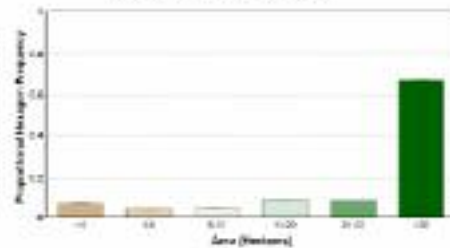
Average Number of Snags

Replicate 1



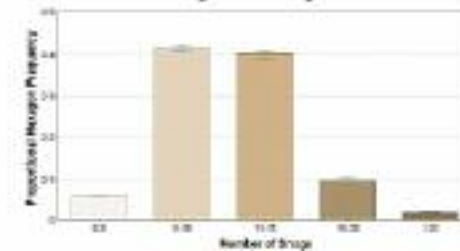
Duck Mountains Patchworks Output

Total Area of Mature Hardwood Forest



Duck Mountains Patchworks Output

Average Number of Snags



# Effectiveness Monitoring *Where Do We Learn?*



# Challenges to Adaptive Management

- Belief that certainty is necessary
  - in form of regulation
- Adaptive management as a threat to process research interests
  - complete knowledge unachievable
- Inaction viewed as rationale choice
  - as a reaction to conflict

# Alternative Approach to Policy Development

