



Healthy Landscapes Program

FRI AGM

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The FRI Healthy Landscape Program

Develop understanding, and tools that allow us to consider landscapes as fully integrated ecosystems, the health of which is the ultimate measure of sustainability.



This is a BIG Idea! ...but not new.

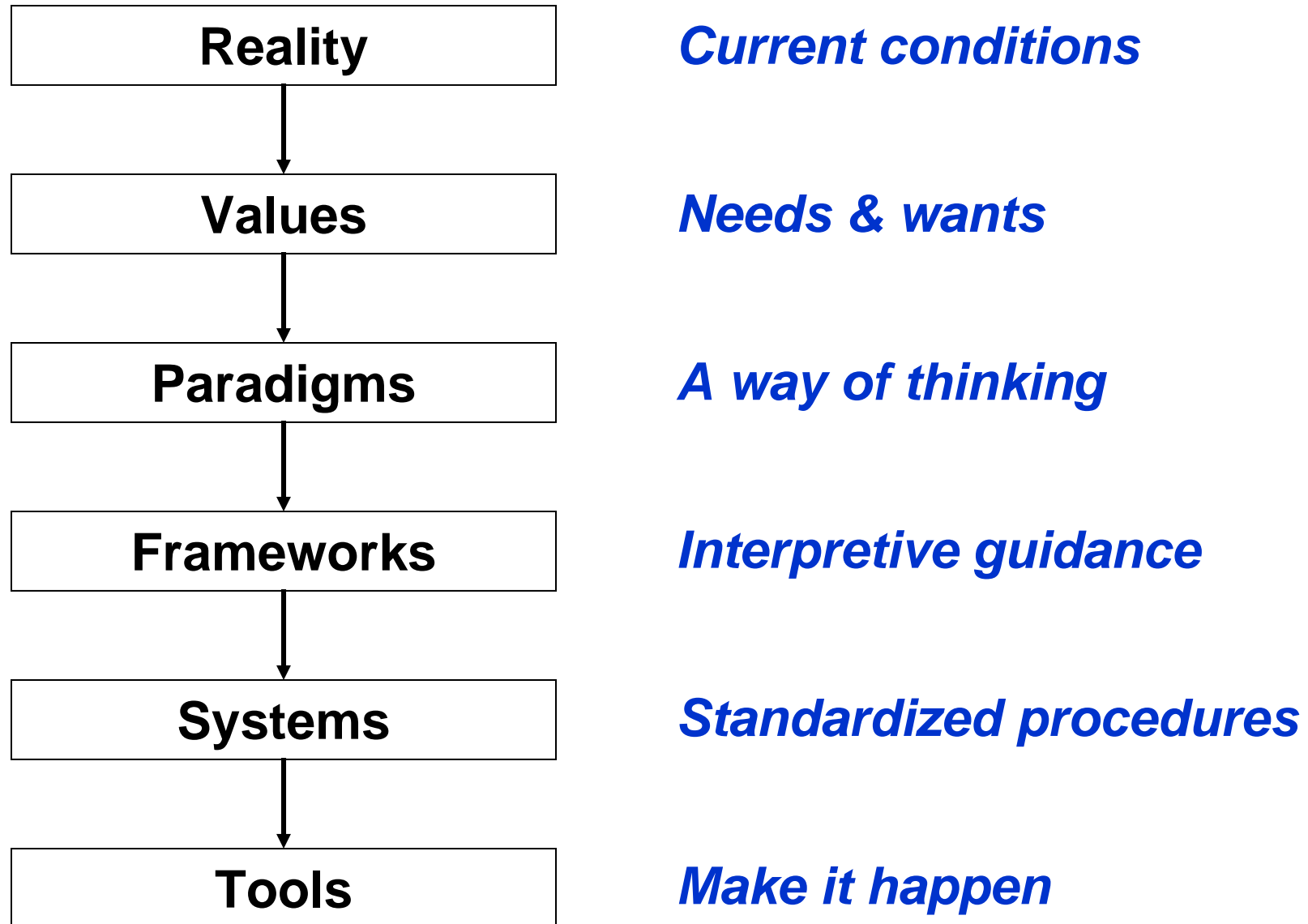
“To avoid national train wrecks, the Clinton administration will shift federal policy away from a single species approach to one that looks at entire *ecosystems.*”

(James Babbitt, ‘97)

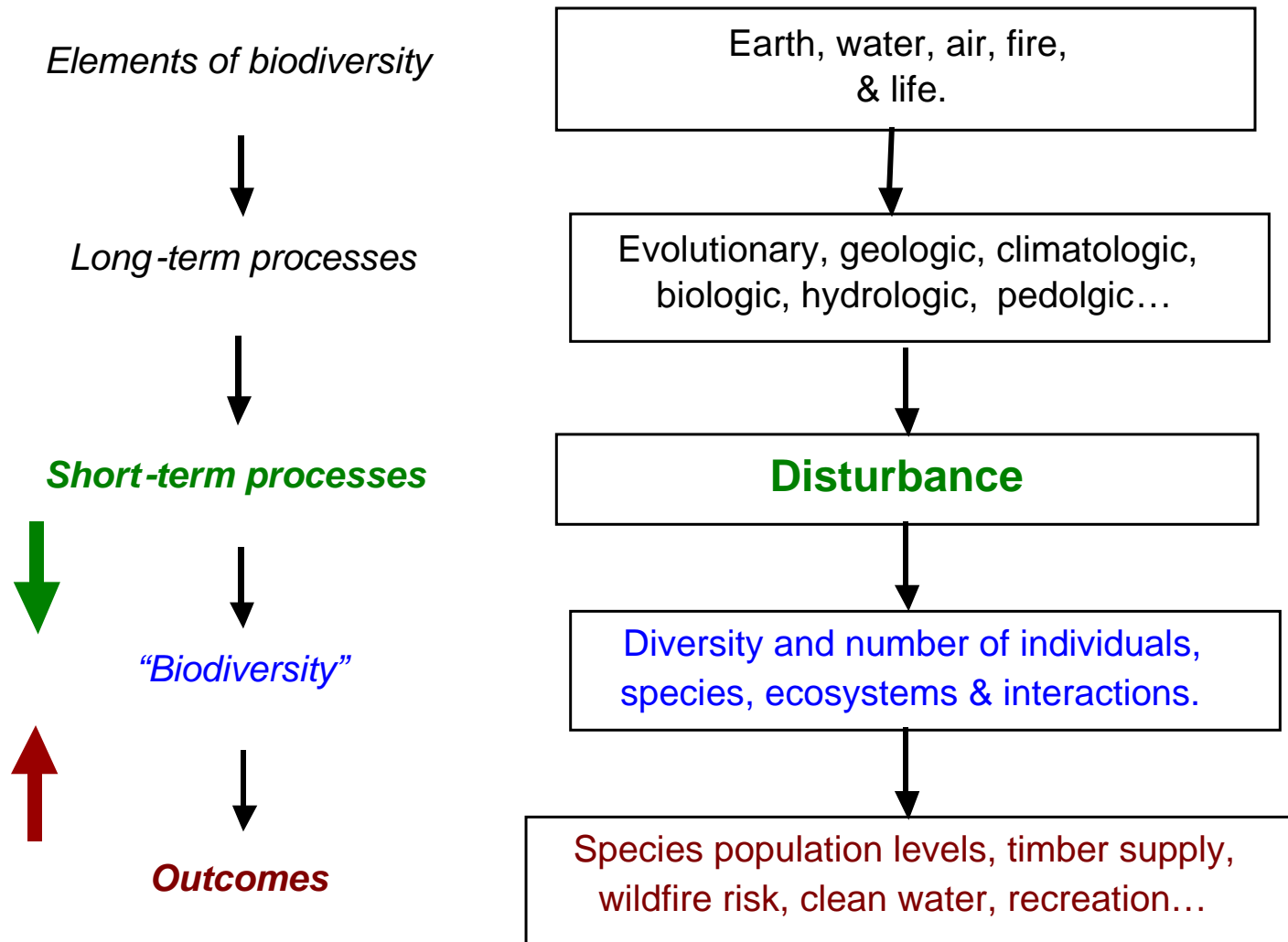
“..cogs and wheels...”

(Aldo Leopold, ‘49)

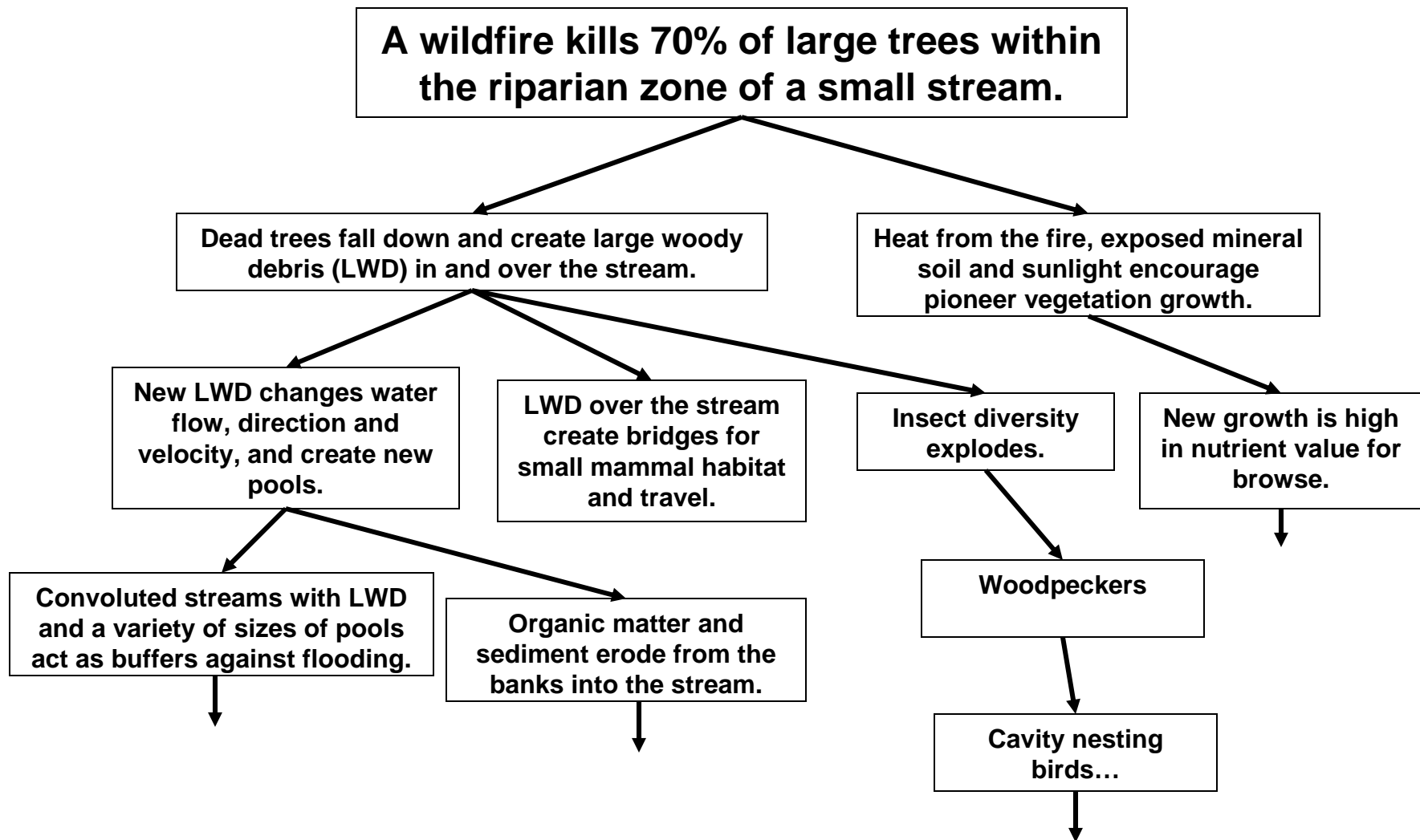
Generalized Management Model



The Idea: How the Natural World Works.



For Example;



A wildfire kills 70% of large trees within the riparian zone of a small stream.

**Disturbance
Pattern**

Dead trees fall down and create large woody debris (LWD) in and over the stream.

New LWD in the stream changes water flow direction and velocity, and create new pools.

Structurally and compositionally diverse aquatic ecosystems filter toxins in water.

The changes to water flow direction and velocity causes organic matter and sediment to erode from the banks into the stream.

**Landscape
Condition
Responses**

These are also social & economic values

Convolved streams with LWD and a variety of sizes of pools act as buffers against flooding.

New LWD over the stream create bridges for small mammal habitat and travel.

**Biological
Responses**

Fish and invertebrate communities need organics for nutrients, fresh sediment for spawning, pools for habitat, and LWD for shade and hiding cover.

Disturbance Patterns

- Type
- Frequency & Periodicity
- Size & Shape
- Severity
- Tendencies

Landscape Condition

- Seral-stage levels
- Old forest patch sizes
- Edge density
- Coarse woody debris
- Suspended sediment & O²...

Biological Consequences

- Fire risk
- MPB risk
- Water quality
- Caribou
- Grizzly bear...

Economic and Social Consequences

- Recreation
- Oil and Gas Extraction
- Clean Water Supply
- Fishing
- Timber Harvesting
- Grazing...

Assumptions:

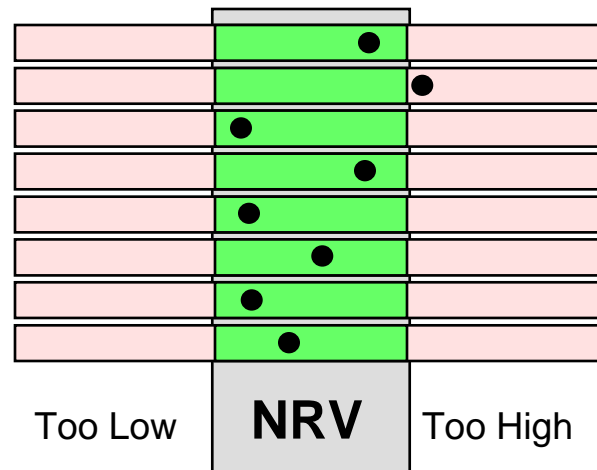
- Landscape health is the ultimate measure of sustainability.
- Disturbance-related patterns (as a proxy for landscape health) can be used as the universal goal of land management.
- A landscape not operating within the natural range is at risk.
- The further you venture beyond NRV, the greater the risk of loss of system health.
- We can differentiate a “healthy” from an “unhealthy” landscape via simple indicators.

Landscape 1 is “Healthier” than Landscape 2

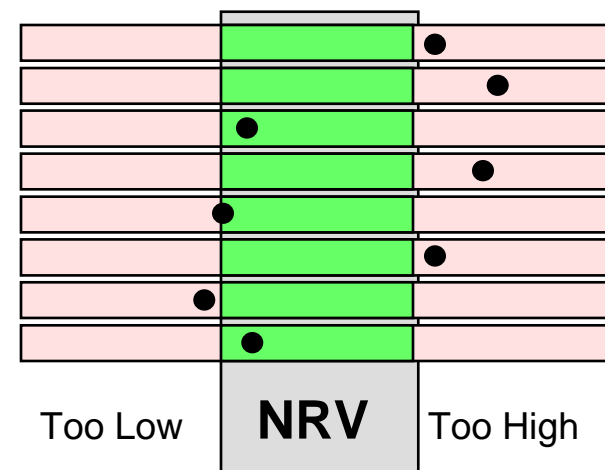
Indicator

Frequency
Duration
Size
Shape
Type
Severity
Response to Veg.
Response to Topog.

Landscape 1



Landscape 2

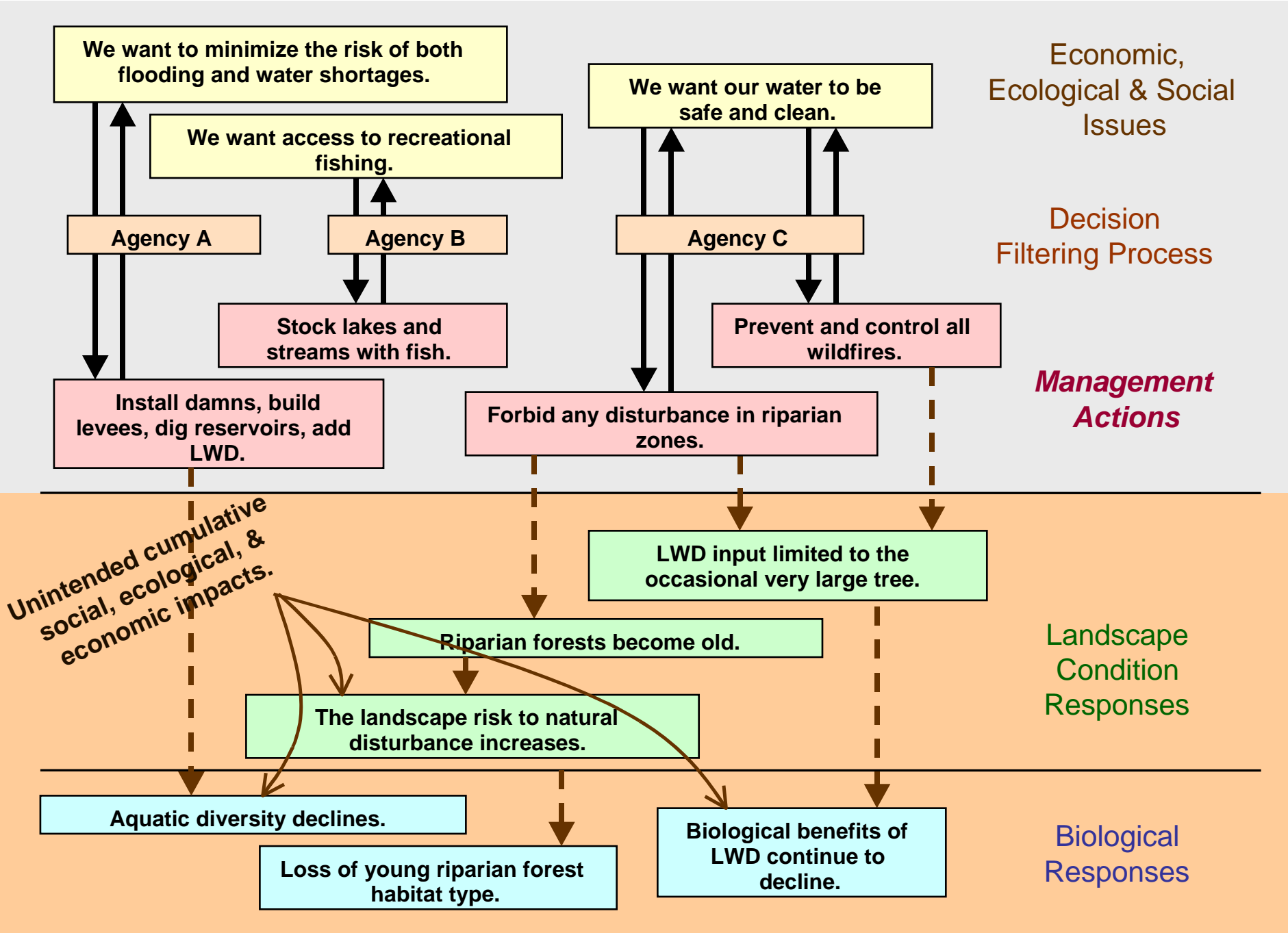


Green = Measurable Historical Range

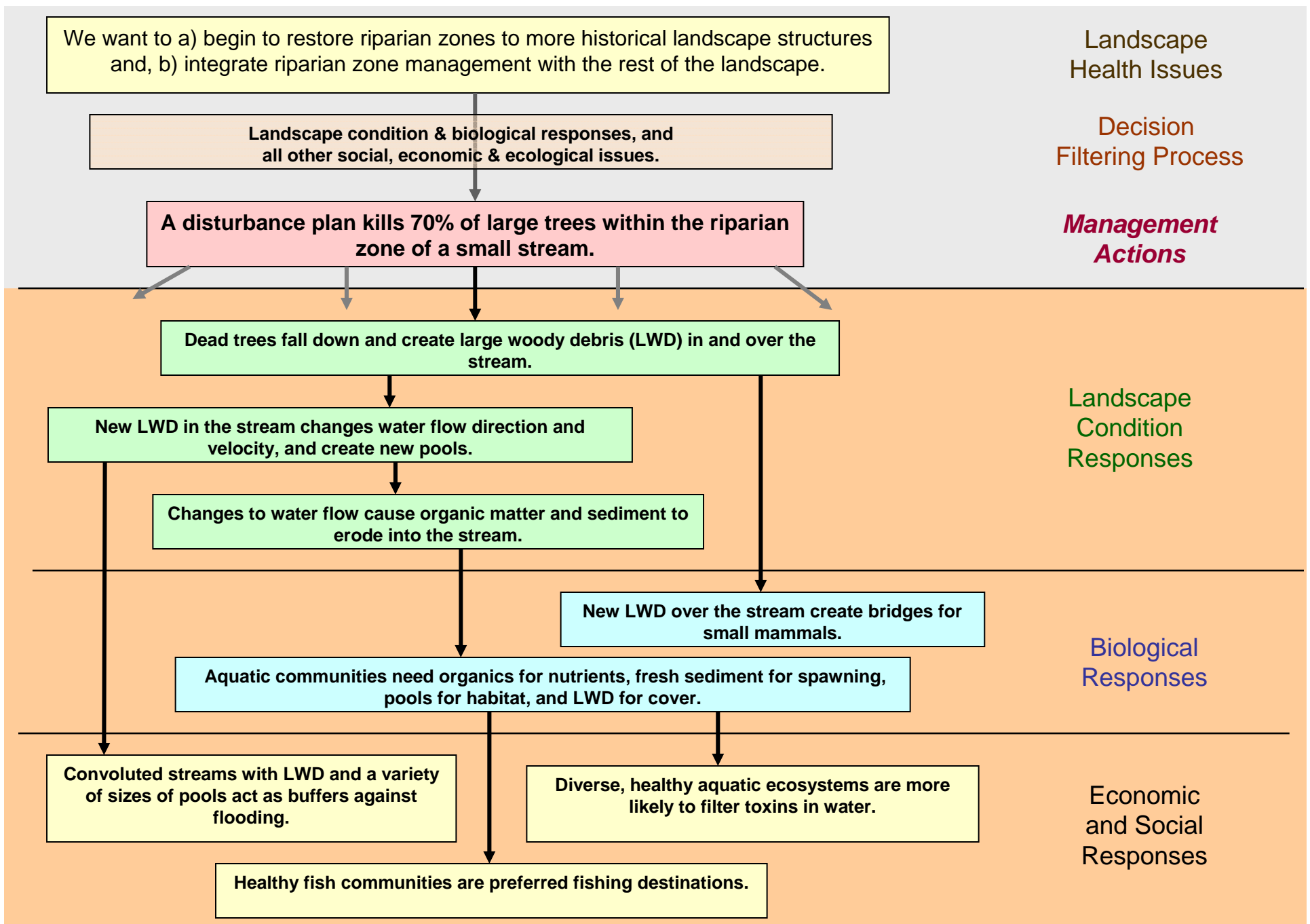
Red = Beyond Historical Range

Black Dots = Current (point, range)

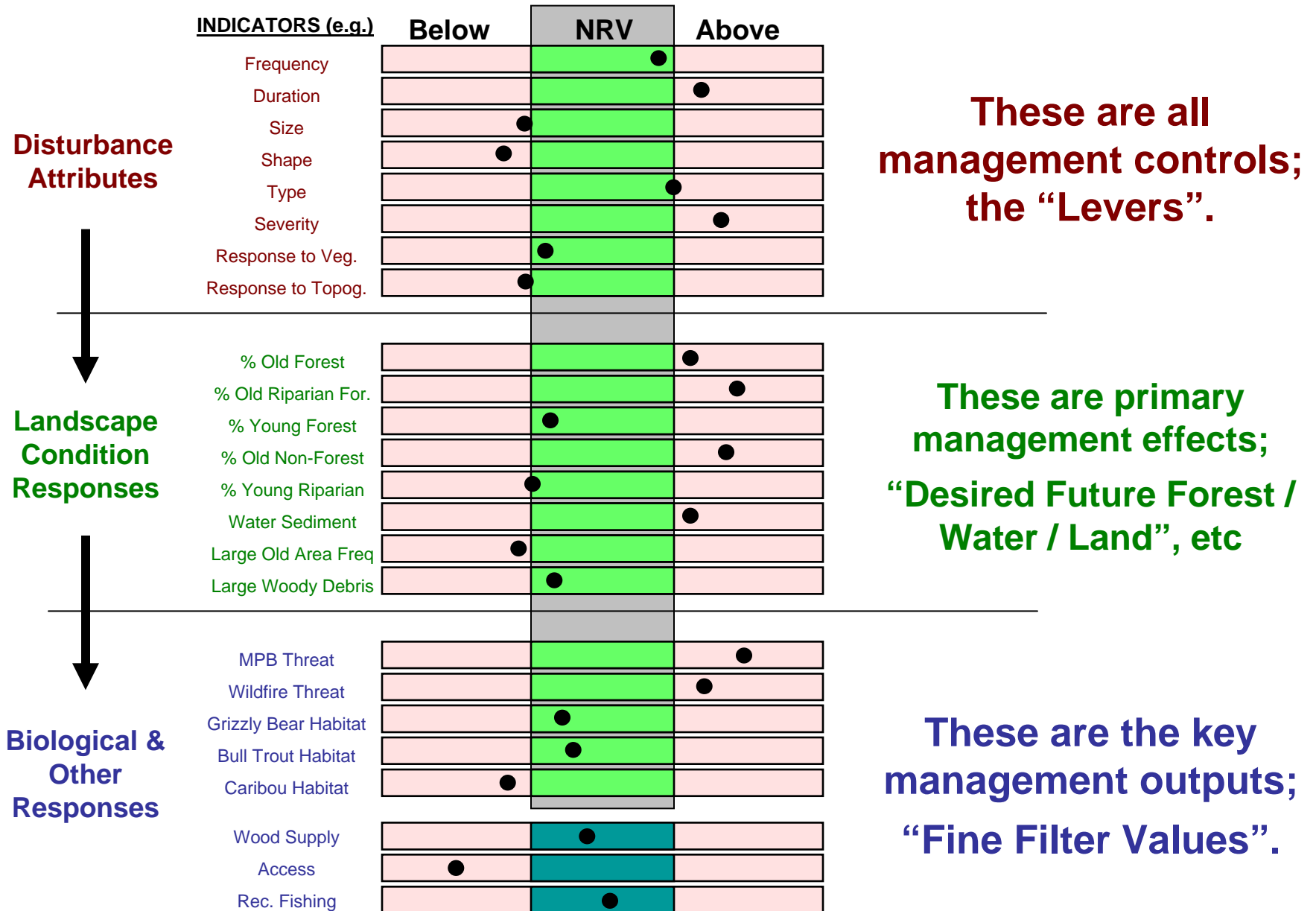
Example of the Traditional Land Management Process.

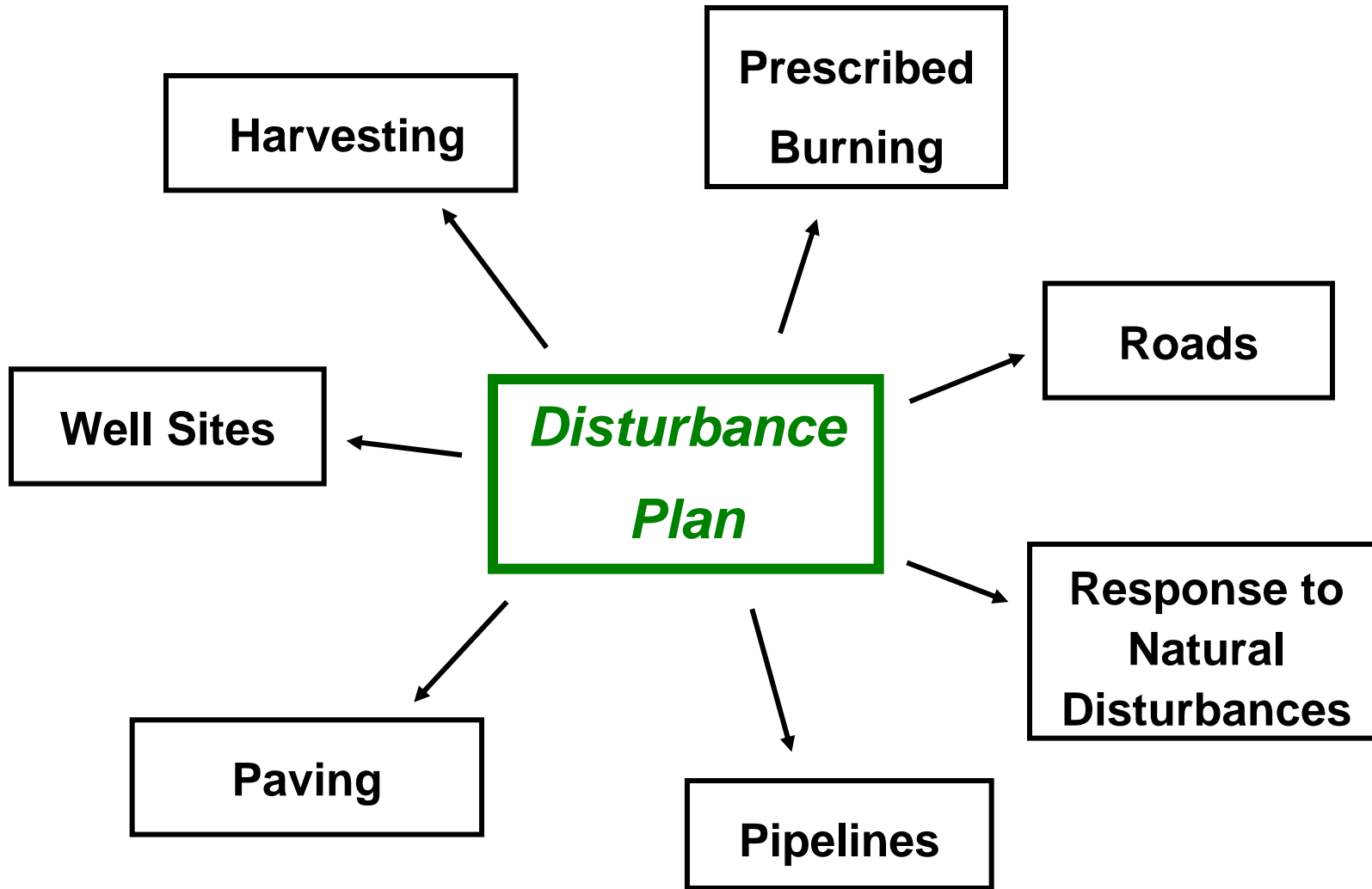


Example of a Healthy Landscape Management Process.



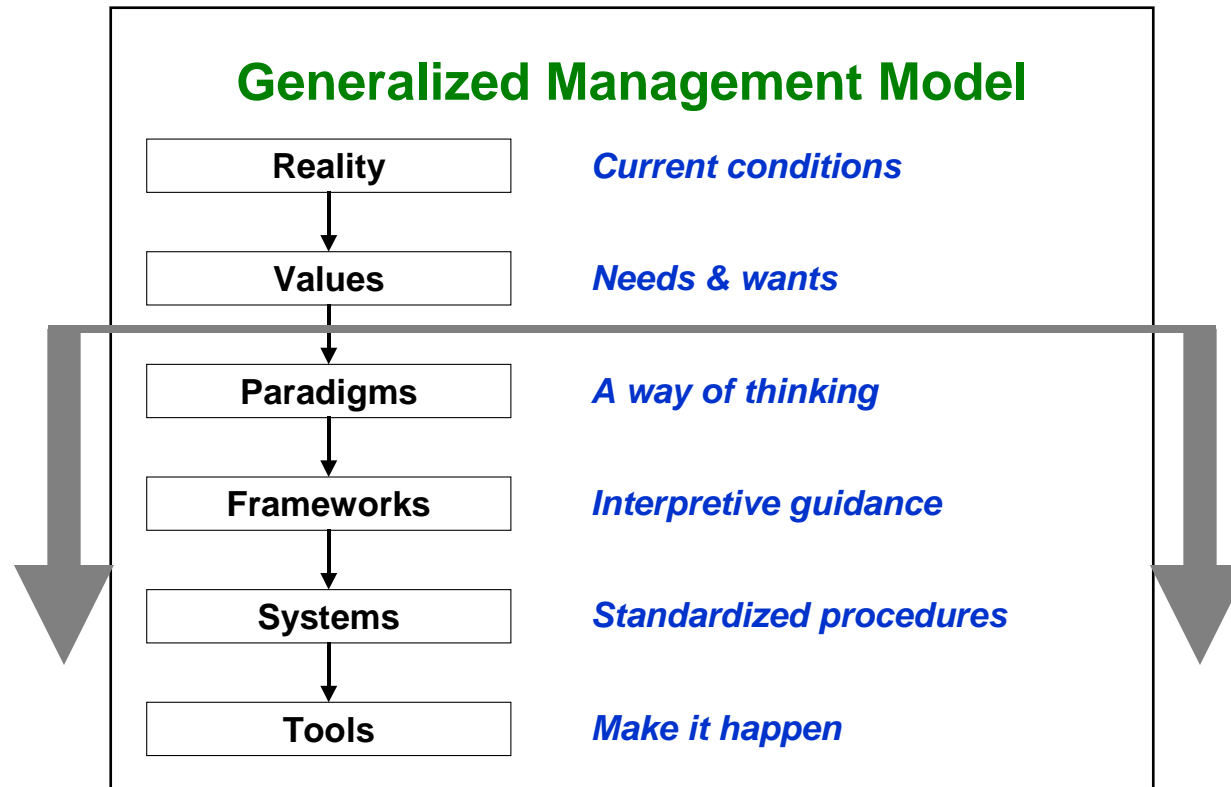
The HL Three Box Model





Project #1:

Flesh it out.



D.W. Andison, L. Van Damme, D. Hebert, T. Moore, R. Bonar, S. Boutin, and M. Donnelly. 2009. The healthy landscape approach to land management. Foothills Research Institute Natural Disturbance program, Hinton, Alberta. January, 2009.

Project #2:

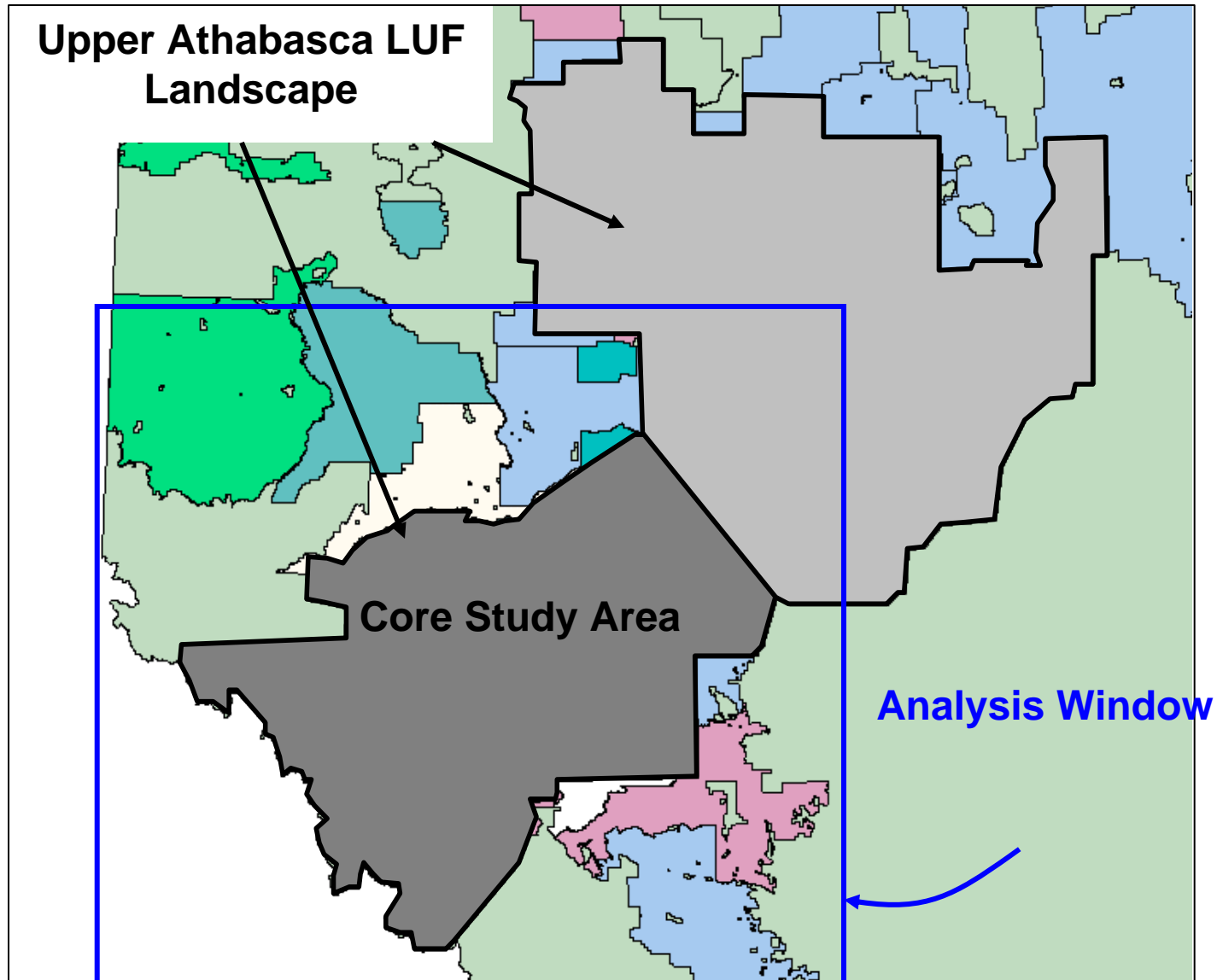
Talk, share, & help interpret.

- CEMA and LARP
- WPAC's
- IMAGINE
- ...

Alberta's Land Use Framework

- Vision: “*The peoples of Alberta work together to respect and care for the land as the foundation for our economic, environmental and social well-being.*”
- “Supported by a land stewardship ethic”.
- One of 3 Desired Outcomes: Healthy ecosystems and environment.

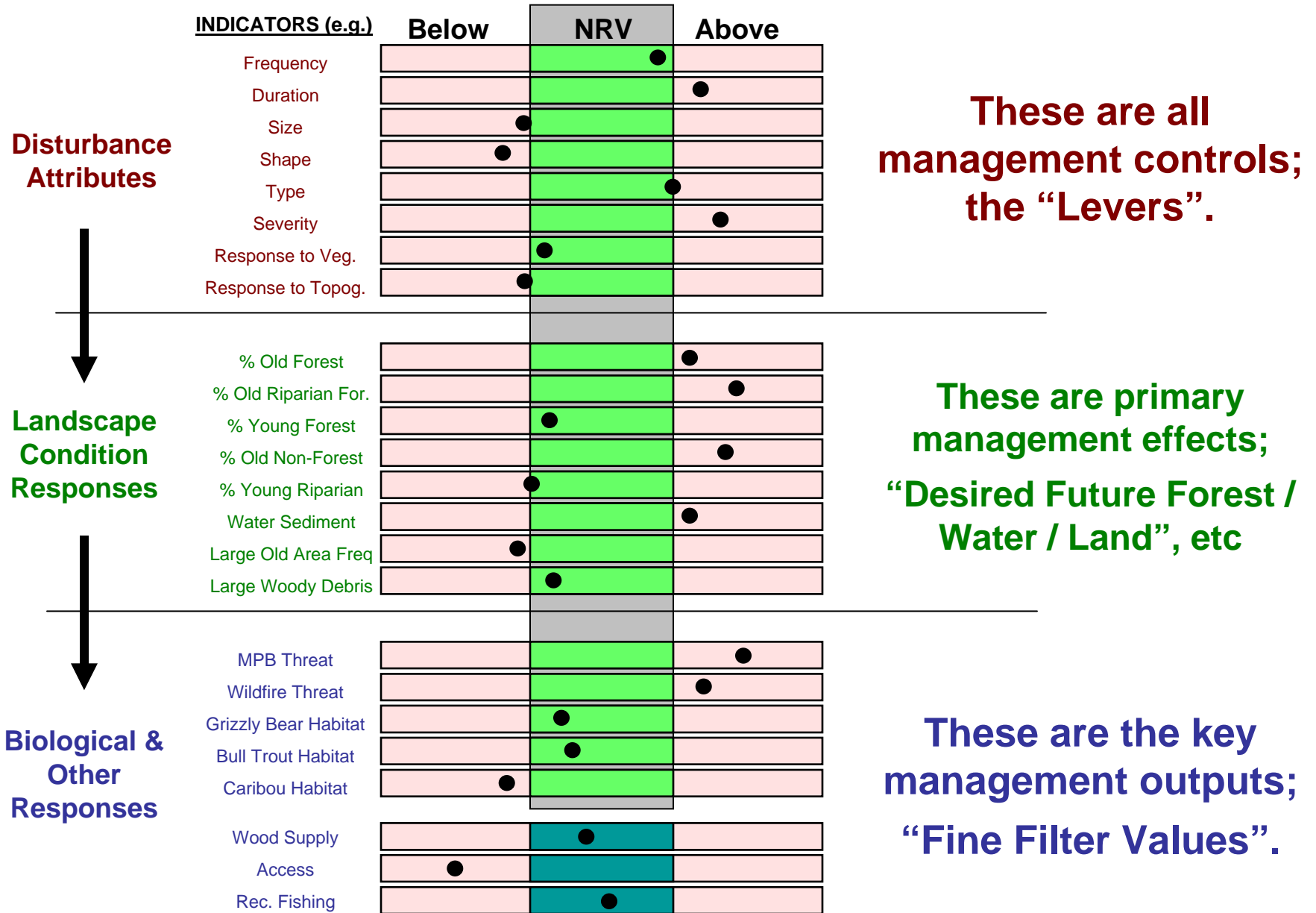
Project #3: The Upper Athabasca HL Project



May 27 HL Project Partnership Meeting

- Hinton Wood Products
- Alberta Newsprint Co.
- Jasper National Park
- Alberta SRD – Forest Mgmt.
- Alberta SRS – Land Use Planning group
- Foothills Forest Products
- Weyerhaeuser Company
- Talisman Energy
- Alberta Environment
- Sundre Forest Products
- Foothills Land Mgmt Forum
- Alberta Energy
- Coal Valley
- Shell
- Alberta SRD – Forest Protection
- Alberta Tourism Parks and Recreation
- Alberta SRD – Oil Sands Branch
- Miller Western Forest Products
- Foothills Research Institute
- (Canfor)
- So far....

Future Projects: Support The Three Box Model





Questions?

