THOUGHTSCAPES

PEOPLE, PLACE, POLICY, POTENTIAL

Building Resilience to Uncertainty in Landscape Management in the Postindustrial Age

Chris Perley Thoughtscapes Let's examine how Resilience our landscape systems are – NZ forestry particularly

• What is "resilience"?

• Are we "resilient"?

• How do we become "resilient"?

"..an increasing interest in complexity ...has lead to a growing recognition that real world systems can't be completely designed, controlled, understood or predicted as tradition would have it.

When organisations do succeed, it's frequently been in spite of, not because of, the way they've been lead, organised and structured.

The fact remains that the majority of organisations are still being managed as **if they were simple, linear, equilibrium-seeking, and isolated systems**, whereas

complexity research has decidedly demonstrated that thriving organisations are better understood as complex, nonlinear, farfrom-equilibrium, and in vital contact with multiple environments."

(Goldstein, Allen et al. 2004)



This is *not* an example of *a simple, linear, equilibrium-seeking, and isolated system,* but rather

A complex, nonlinear, system, far-from-equilibrium, and in vital contact with multiple environments



- I'm here to challenge our Ontology The Modern Reductionist Machine view – the way we see the world – what things there are, how that informs our thoughts and actions.
- We live within dynamic, complex, interrelated, adaptive, uncontrollable and uncertain environments. Complex adaptive systems ... where you never do one thing, and you cannot predict with much certainty at all
- You want an analogy?
- Think this

...



What capacities & qualities do you build into this "system" to create resilience for whatever should occur?



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- Think this
- Not this

...



Or do you just trust to the deterministic, predictable Newtonian metrics?



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Command and Control and the Pathology of Resource Management





Resilience is like evolutionary fitness – the ability to cope with inevitable change & surprise.

To foresee (if you are sentient), to take a hit, to vision and to adapt.

To dance within the inevitability of flux.

A clone located in one place is the least resilient you can be, however perfectly suited to that time and place.



OPLE PLACE POLICY POTE

Hollings' Paradigm shift – you have to Think like a Mountain to be wise.

If you presume that a complex adaptive system can be reduced to a few variables, *and* act on that assumption, then you can create a recipe for disaster.

Grand Banks Cod, Industrial Dairy, Industrial Forestry





And not just quantitative variables

- capacities, qualities & morals are vital to the resilience of complex adaptive systems.

Think about the capacities you build into a child.

Certain/Regular/Predictable

Simple/Controllable



Wood growth & Management

Psychological/Social

Chemistry

Mechanics, Road rules

Certain/Regular/Predictable

What is Knowing?

'Knowing' by experience and 'learning by doing' – subjective judgement, Action research, Practical wisdom, Goethe, 4th Generation Evaluation

Multidisciplinary – ability to work with other forms of knowledge, applied science, bring in Humanities

'Knowing' by 'objective' observation of 'facts', statistics, quanta

> Single Disciplinary – analysis – normal science

Transdisciplinary – ability to synthesise connections, identify corollaries, emergence of new properties, post-normal science

Certain/Regular/Predictable



Stockholm Resilience Centre warns of not flattening the edges of the bowl within which the ball can wander.

Within socio-ecological systems build Diversity in location/composition/structure, foresight – looking long & broad, dialogue, decentralisation, social capital, adaptive capacity, thought, ethical principles, a specific expectation of surprise

And there are many potential surprises – not quantifiable risks or open to statistical probabilities. Things just happen. The child is traumatized by a spider.

Holling predicted BC Forestry decline – Only three major species, the proximate agent will be bark beetle, fire etc., but the root cause is a simplified socio-ecological system (community, biophysical, processing/market structures) leading to ecological fragility.

And the regulation and overfishing of the Grand Banks Cod

You wonder what he would have said about NZ industrial dairy – homogeneous, economies of scale, a few centralised mills, milk powder, one major market. Currently imploding.

Insanely simple in a dynamic world.

A clone in one place.



Alfred North Whitehead's "Fallacy of Misplaced Concreteness"

The McNamara Fallacy aka The Quantitative Fallacy – only what can be counted counts. What can't be counted does exist



The NZ Forestry and Agriculture now calls itself "industries". A factory analogy which presumes to shift forestry into some certain, controllable & future knowable space.



This is a false analogy. It's strategically vulnerable.

Forestry has been saved by a series of miracles since 1990.





Our small miracles Privatisations Log price spike Korea rises as Japan declines China rises as Korea declines Whose next to rise? Do we just assume someone will?

ETS

And we're thinking less and less in the "Think Like a Mountain" broad long-term traditions of foresters. We're going down a rabbit hole.

Wider Socio-Ecosystem (Ecosystem Management) – Indigenous Context -Belonging – Maintain Functional Integrity

Wider Intergenerational Multiple-Utility - Anthropocentric "Sustainable Yield"

Forest Estate - Multiple Crops - "Resourcism"

Stand – Single Crop – Integrity of production machine

The RED BOX Stand – Discounted Capital – Whatever makes most short-term money at least cost

I.e. Simplify, only consider \$, quick discounted payback, mine, move

on.

Result: Resilience Decline, Functional Dysfunction, Tipping Point, Watch out Public participation, co-management, motivation, develop value systems (norms of behaviour, social institutions)

Scenario analysis; Adaptive management; monitoring effects, 'Learning by doing'; Action research

Develop biophysical and social diversity, with capacities to foresee, buffer, adapt, cooperate & shape a future; develop Hierarchical-Mechanical, cultures of innovative & initiative, Regulate activities & tasks, encourage difference

measure tasks, control, simplify, CBA, Economic models, Financial analysis

Develop integrated nonhierarchical knowledge systems (science, regional, local) & local governance systems

Simple/Controllable

But we're not following resilience principles. Not really. Not beyond tokenism. Because we have reduced forestry to 'industry'. So we presume regularity and certainty where it doesn't exist.

Hierarchical- S Mechanical, Regulate activities & tasks, measure tasks, control, simplify, CBA, Economic models, Financial analysis

So we do this

Complex/Uncontrollable



Shifts

• Hard Resourcism (mere finance) to Ecosystem Management

Worldview and Ethical Shift

- From tactical decision making to the strategic space that accepts uncertainty all the resilience capacities diversity, social capital etc.
- From Fordist 'Economies of Scale' to 'Economies of Scope' (build system capacities)
 - Single value to multi-function
 - Short-term to intergenerational
 - Homogeneous commodity to diverse value
 - Head Office spreadsheet to local Context
- From scaled centralised 'continuous processing' to many long-chain decentralised 'batch processing' (BC Forestry ???).
- Re-integration of woodlands into landscapes & socialscapes including our own natives
- To different ownership structures? (can corporate financiers, dazzled by a screen, in a cubical, on the 10th floor of a building, in a big city in another country, be anything other than red box?). Change, or risk BC, dairy et al.

Ngā mihi nui