Looking back…….moving forward

AALC Science Management Meeting

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Manager vs. Scientist

operate with different frameworks

Science and management….at odds?

Scientist	Manager
basic/applied	applied
complex	simple
changing	static
rapid	slow
understanding	guidance
publication/impact	expenditure/effectiveness
Individual-based	Organisation-focused
question-driven	outcome-driven
imprecise knowledge	management needing certainty
generality	precise
lags	now

One example: …… different cogs

Clementsian ecology …….. climax communities and equilibrium systems

Non-equilibrium communities

Alternative stable states, novel ecosystems, state and transition models, resilience

These differences matter

- **Fuel Reduction Burning and biodiversity**……no quick solution

Integrating these different purposes

- **Common purpose** – what is the problem?
  - 1st order questions *vs.* 2nd & 3rd order
- **Accept uncertainty** – management is adaptive
- **Develop working model of system** – state and transition approach
- **Develop effective partnerships** - expert and user knowledge integration

One clear need

- Developing 'tools' to help make **decisions**
  - *which weeds to control and why*
  - *what species to translocate and where*
  - *how much fox control and for how long*
- Engagement outside of 'normal' sphere of ecosystem management – earth and life sciences →→ modellers, social scientists

Textbook *Adaptive Management* cycle

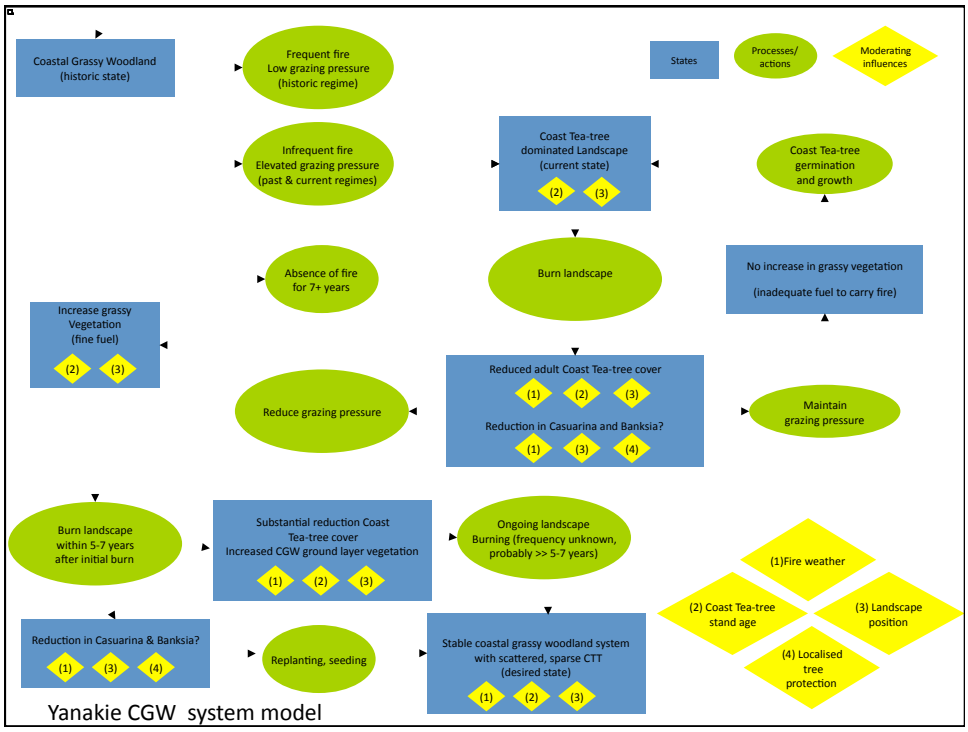
- State **objectives**
- **Predict** ecosystem response to different actions based on current knowledge
- Decide and implement **actions**
- **Monitor** outcomes
- **Revise** activities in light of new information

State and Transition Models

- Ecosystems can consist of a set of discrete **states** defined by structure, composition, function
- Changes (or **transitions**) between states can occur
- **Transitions** are triggered by natural events (e.g. weather, fire) or by management actions (e.g. grazing, restoration interventions)

YANAKIE ISTHMUS: 1960 - 2008

Photos courtesy of
J. Whelan, Parks Vic



Yanakie CGW system model

Natural Heritage Trust

Government of South Australia

australian wildlife conservancy

Birds Australia Gluepot Reserve

Victoria Department of Sustainability and Environment

Lower Murray Darling CMA

Murray Mallee Partnership

Australian Government Land & Water Australia

mallee

Parks Victoria

Deakin

La Trobe University

acra

Organising (first order) question

- What are the **properties of habitat mosaics** produced by **fire** that enhance the persistence of a **broad range of taxonomic groups** (birds, mammals, reptiles, key invertebrates and plants) in **eucalypt-dominated mallee habitats** across three states (VIC, SA, NSW)?

Integrating science & management matters

Genetic rescue in *Burrymus parvus* at Mt Buller

- **builds** on population structure/genetic work going back to 1980s
- **uses** long-term monitoring to detect trend
- **identifies** a conservation crisis
- **proffers** a solution

Outcome: a chance to maintain Pygmy Possums in their natural habitat