

Measuring environmental change: an innovative solution

Mark Eigenraam
Project Director ecoMarkets – DSE
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Welcome!

- How we define innovation
- Our challenge?
- Our solution?
- Demonstration of EnSym
- Question time

How we define innovation

- Innovation versus invention?
 - > Innovation must be USEFUL
 - > *"Existing idea applied in a new way to deliver new value"*
- **Innovation is doing new things.**
 - > The 'doing' aspect of innovation distinguishes it from invention, which suggests thinking of a new idea but not necessarily its implementation^a.
 - > In the doing, innovation involves tinkering, testing and socialising concepts, relying on relationships between people within and across organisations to make things happen^a.

a) Theodore Levitt, *Creativity is not enough*, 1963

Environment

(clean air, water, habitat)

Water, Carbon

Cap and Trade

Native Vegetation, Carbon

Offsets

River, Estuaries,
Vegetation, Carbon*

Conservation Contracts

Market Economy

(wheat, meat, food, fibre)

National Accounts

(wheat, meat, food, fibre)

Satellite Accounts

River health
Native vegetation
Saline land
Bio-sequestration

Government

NGOs

Private Firms

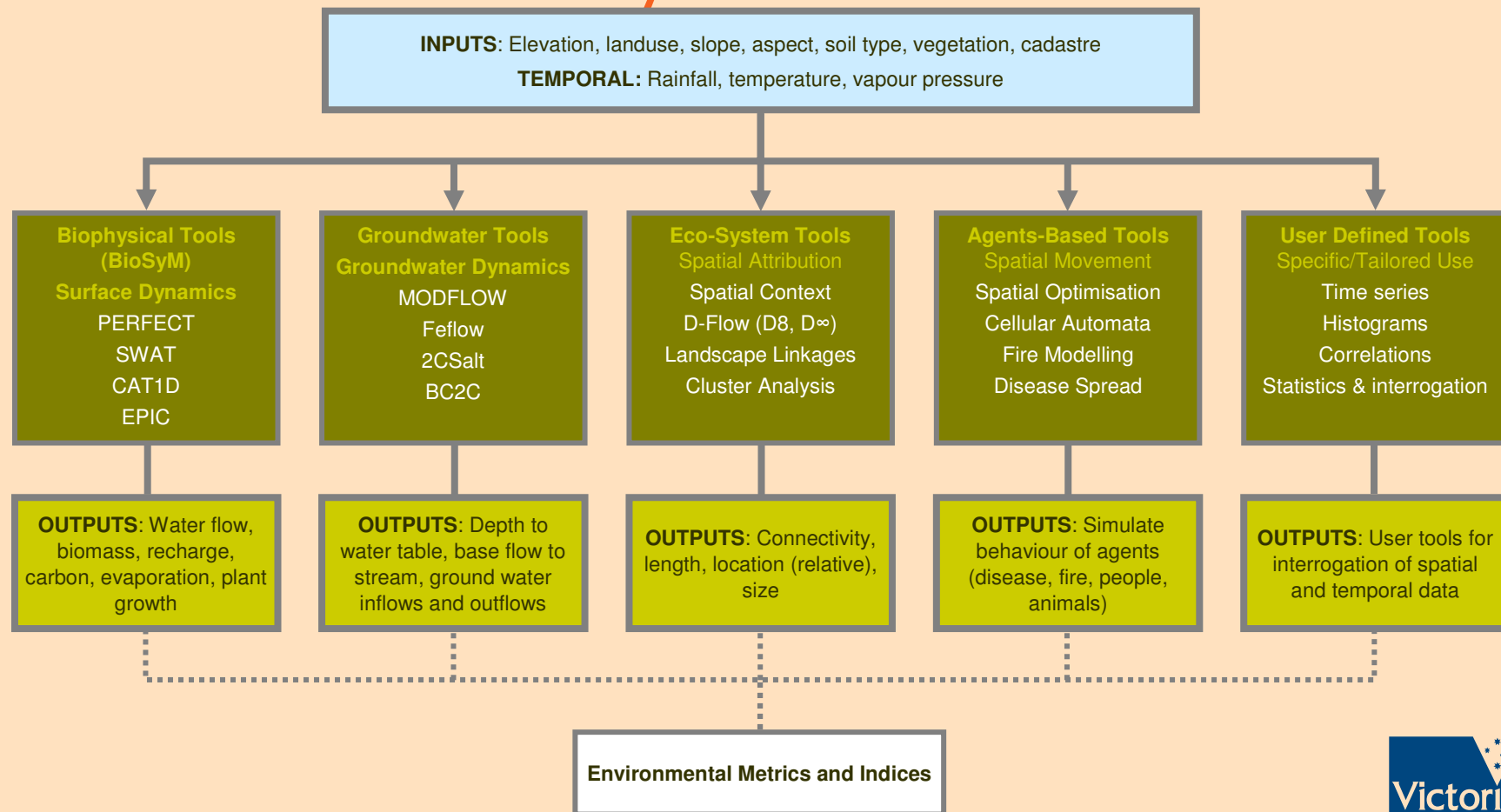
Our challenge?

- **Estimate the benefits to the environment from on-ground works**
- We want to know this because:
 - > Approximately 65% of Victoria is in private hands
 - > Recognise landholders are playing a leading role in managing Victoria's environment
 - > Need an evidence-based approach to estimate environmental outcomes as a result of NRM investment
 - > Need to understand the combined impact of individuals actions in the landscape.
 - Need a tool that links paddock or farm scale with catchment scale outcomes.

Our solution? The CMF!

- What is the **Environmental Systems Modelling Platform (EnSym)**?
 - > Framework that models the change to the environment derived from a series of actions in the landscape
 - > Allows multiple scientific models to talk to one-another via a single interface
 - > Draws upon layers of spatial information
 - > Existing scientific models combined into a series of toolboxes
 - Toolboxes provide specific analysis and output/s
 - Toolboxes can be custom built to suit user's needs

EnSym Toolboxes



How the EnSym is currently being used

- Assessing multiple environmental outcomes
 - > As nature intended – connectivity, BioLinks
 - > Estimate the benefit to the environment due to actions in the landscape
 - > Compare apples with oranges across the landscape
 - > Links actions to outcomes - move to paying for outcomes, not actions (long-term contracts)
- EcoTender
 - > Tender for the allocation of conservation contracts

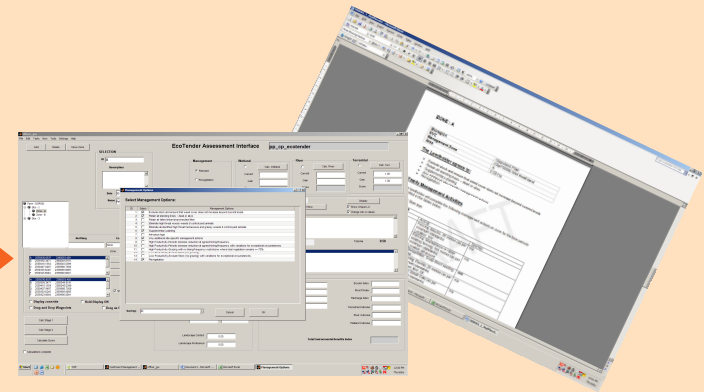
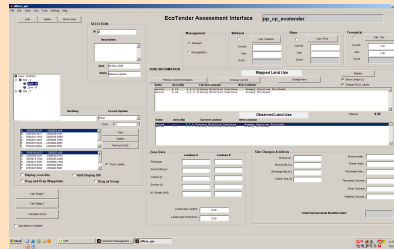
EcoTender & the EnSym



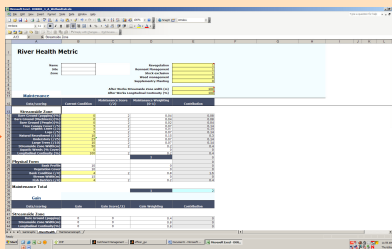
1. Collect data in field



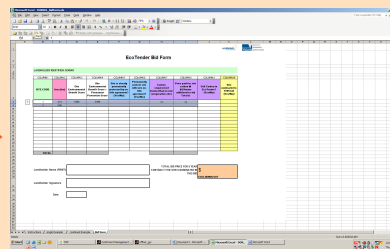
2. Load field data into EnSym



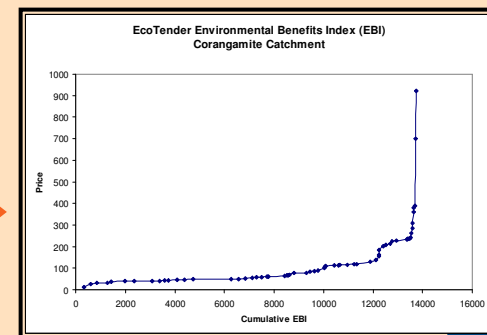
3. Record management actions and create land management plan



4. Calculation of environmental scores



5. Bid sheet sent to landholder



6. All bids loaded into EnSym and ranked

Demonstration of the CMF

- Layers of information
- Spatial Statistics
- Biophysical Modelling – growing plants
- Field Officer interface, scoring & management plans
- Features under development



Summing up: How is the EnSym innovative?

- Invention = individual science models
- Innovation
 - > A framework that allows models to be run in tandem accounting for interactions in the environment
 - > Socialising science – making science accessible as a tool to support NRM business
 - > Relying on relationships between people within and across organisations for successful implementation

Questions?

- Want to know more?
 - > www.dse.vic.gov.au/ecomarkets
 - > customer.service@dse.vic.gov.au
 - > ABC TV's Catalyst: 8pm, Thursday 11 June
 - > mark.e.eigenraam@dse.vic.gov.au