

# Combining fisheries approaches with household utility models for improved resource management

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# Sustainable resource use – a mixed record



Pile of plains bison skulls, 19<sup>th</sup> Century, and fisheries bycatch, 20<sup>th</sup> Century



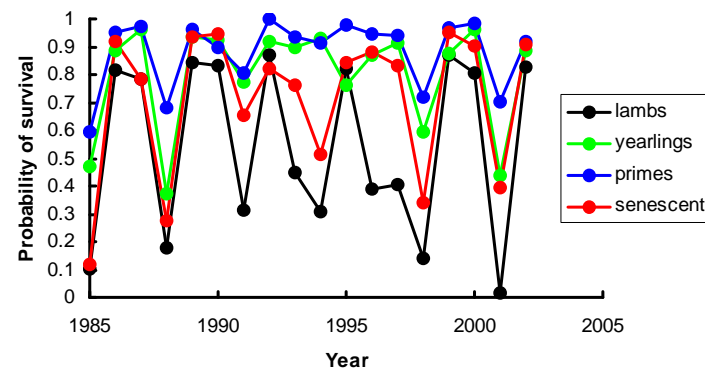
c Sharklife

# Why the failures?

- Lack of understanding of the system (all components, biological, economic and social)
- Management rules ineffective due to inadequate implementation and lack of compliance
- Lack of learning and experimentation
- Different disciplines do not inform each other
- Research and practice do not inform each other

# Researchers tend to...

- Develop models for sustainable use, and present them in the scientific literature
- But then move on, and don't participate in implementation of their recommendations
- So don't validate their assumptions or learn from the outcomes to improve models



# Managers tend to...

- Base their management actions on their own experience at the site level, rather than experimenting or taking ideas from the literature
- Manage reactively rather than strategically

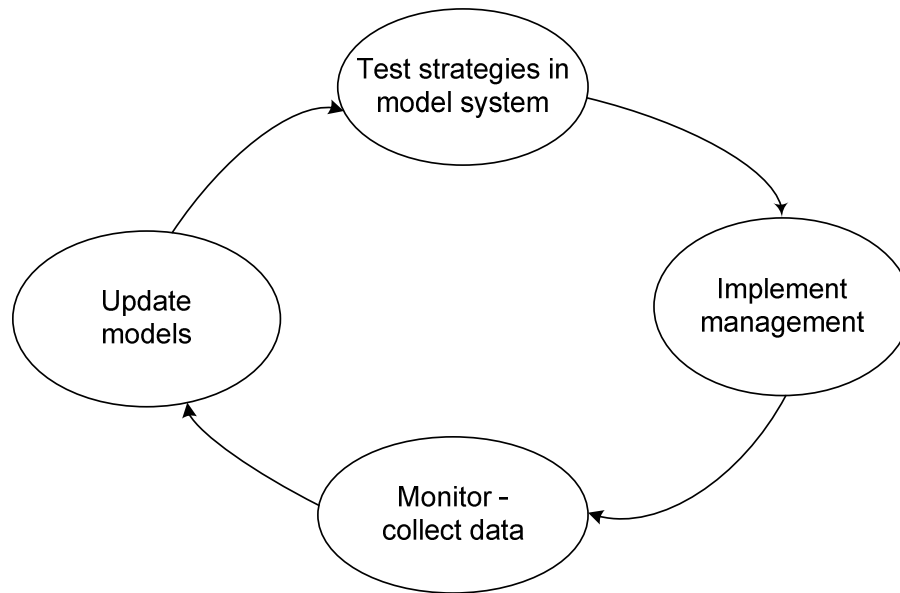


## Neither tend to...

- Set clear objectives for management and measures of success that can be reported against
- Work through assumptions, trade-offs and multiple objectives before intervening
- Evaluate the success of interventions through baseline studies and comparison to counterfactuals
- Work together

# Adaptive management - where science and action should, in theory, interact

Passive adaptive management – learning from outcomes of actions



Active adaptive management – experimental approach; setting out to learn

# Active adaptive management

- Much liked by scientists, virtually never implemented in practice
- Too risky, short-term costs, not ideal for highly dynamic systems, stakeholders unconvinced



One example - adaptive learning for fish pond stocking in Lao PDR  
Kai Lorenzen, [www.aquaticresources.org](http://www.aquaticresources.org)



# Fisheries science – where research and management do meet

- Management failures and highly uncertain biology, with large commercial value and government interest
- Leading to a far greater focus on scientific advice genuinely informing practice
- A new and potentially useful framework emerged – **management strategy evaluation**



c. David Csepp, NOAA

# Management Strategy Evaluation

- First developed in 1980s by the Scientific Committee of the International Whaling Commission, to find robust and precautionary management strategy for whaling
- Never implemented, but idea caught on in fisheries (not in other field of resource management)
- Like Adaptive Management in a virtual world...

