

5 Key Points About Models

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Point (1): Every scientific investigation has implicit in it an underlying model

- that imbeds the investigator's assumptions and highlights the hypotheses to be investigated
- Were it not so, there would be no way to focus the investigation on key questions of interest
- In fact, the whole field of experimental design can be seen as a highly structured exercise in scientific modeling.

Point (2): Every management strategy has implicit in it an underlying model

- that imbeds the manager's understanding of the resource being managed
- Were it not so, there would be no way to determine what to manage, or how
- In fact, choosing management actions is always guided by a model in the manager's head about what outcomes to expect
- The model may not be explicit, but it's always there
- Otherwise, management would be nothing more than a random coin toss.

Point (3): Models can take many forms

- Sometimes
 - A simple diagram will suffice
 - Or a verbal description of the resource
 - Or a physical model
 - Or nothing more than one's intuitive concept of the resource
 - Or a more formal mathematical model
- But in any and all cases, the model, whatever its form, is used to
 - Capture assumptions
 - Express one's understanding about the system under investigation.

Point (4): There is no “right” model of a resource system

- For some applications models may be simple, or may be complicated
- For some they may be general, or may be tailored specifically to the resource system
- May require only limited technical detail, or may require a lot
- Which kind of model to use, and what its attributes need to be, come down to
 - the nature of the management problem
 - the scale of the management problem
 - the available or needed knowledge about the management situation

Point (5): If you think about modeling broadly, you can see that you use models most every day

- To help organize your thoughts about resource problems
- To focus your attention on what needs to be done
- To anticipate the results of your management actions
- To recognize what's known, and what's not known but needed
- The trick of course, is to use models smartly, to help with your decision making and not hinder it