How do we create DSS to connect to decision makers?

or

What do DSS need to do to communicate effectively to decision makers?

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DSS support for managers

- **Useful properties of a DSS for a manager:**
  - Rational
  - Transparent
  - Repeatable
  - Broad applicability

- **The big picture**
If we can reason about the problem, we can model it

Why is this important?

- Typical natural resource problems are
  - Large (high dimensional)
  - Abstract (e.g., integrity, resilience, etc.)
  - Complex (e.g., nonlinear, interdependencies)
Transparent solutions

- A DSS should be able to explain its answers in relatively intuitive terms
- A manager should be able to
  - Understand the solution
  - Explain it to superiors and stakeholders
Repeatable solutions

- **Basic property**
  - ✓ Same data – same result

- **Repeatable over time**
  - ✓ New data – consistent results
  - ✓ E.g., adaptive management
  - ✓ A key to performance metrics

- **Prerequisite**
  - ✓ The DSS should be fully self-documenting
Broad applicability

- **DSS development has a long history of “one offs”**
  - Very inefficient
  - Very expensive
  - Each new DSS has a learning curve

- **DSS frameworks**
  - An integrated set of tools
  - A system for building DSS
  - Support for a broad array of problems and scales
The big picture – three questions

- **Assessment**
  - What is the state of the system?
  - This is about interpretation and synthesis
  - Foundational for decision support

- **Strategic planning**
  - Where are the high priority places on the landscape?
  - Logistical considerations of managers matter.

- **Tactical planning**
  - What are the best management alternatives in high priority places.
  - Again, logistics matter.