

# Adaptive Management for Habitat Conservation Plans

## Session objectives

- Understand the purpose of Adaptive Management in HCPs.
- Understand what Adaptive Management is / isn't.
- Understand the use of Adaptive Management.

# Traditional Management

- Conventional wisdom (gut feelings)
- Political and social concerns
- Best current data
- Uninformed trial and error approach
- No framework for evaluating alternatives and incorporating new information

# Adaptive Management

an example of

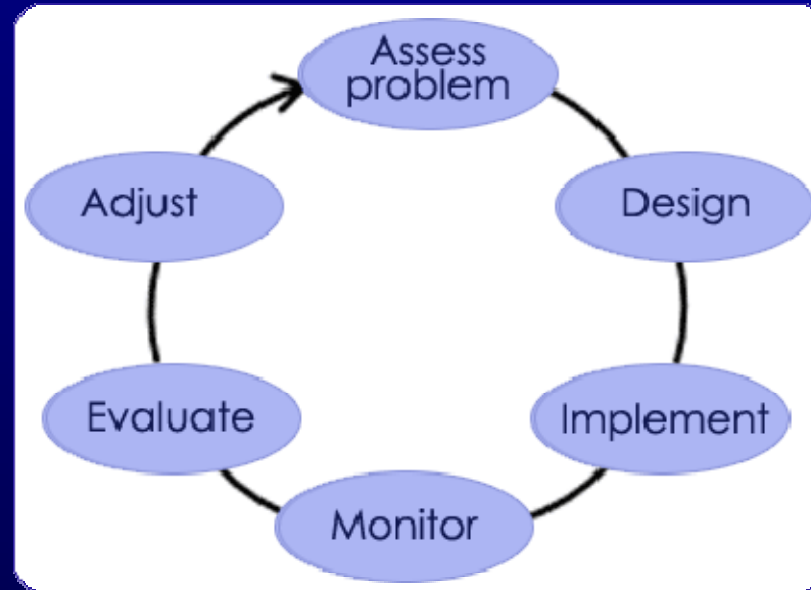
## Structured Decision Making

- Engages relevant stakeholders
- Identifies the problem to be addressed
- Specifies objectives and trade-offs
- Identifies range of decision alternatives
- Specifies assumptions
- Projects consequences of alternative actions
- Identifies key uncertainties
- Measures risk tolerance
- Accounts for future impacts of current decisions

# Adaptive Management

- Acknowledges uncertainty about ecological systems and how they respond to management actions
- Designed to improve understanding of systems to achieve management objectives
- Taking actions according to desired outcomes
- Uses management intervention and follow-up monitoring to improve management decisions

# Adaptive Decision Making

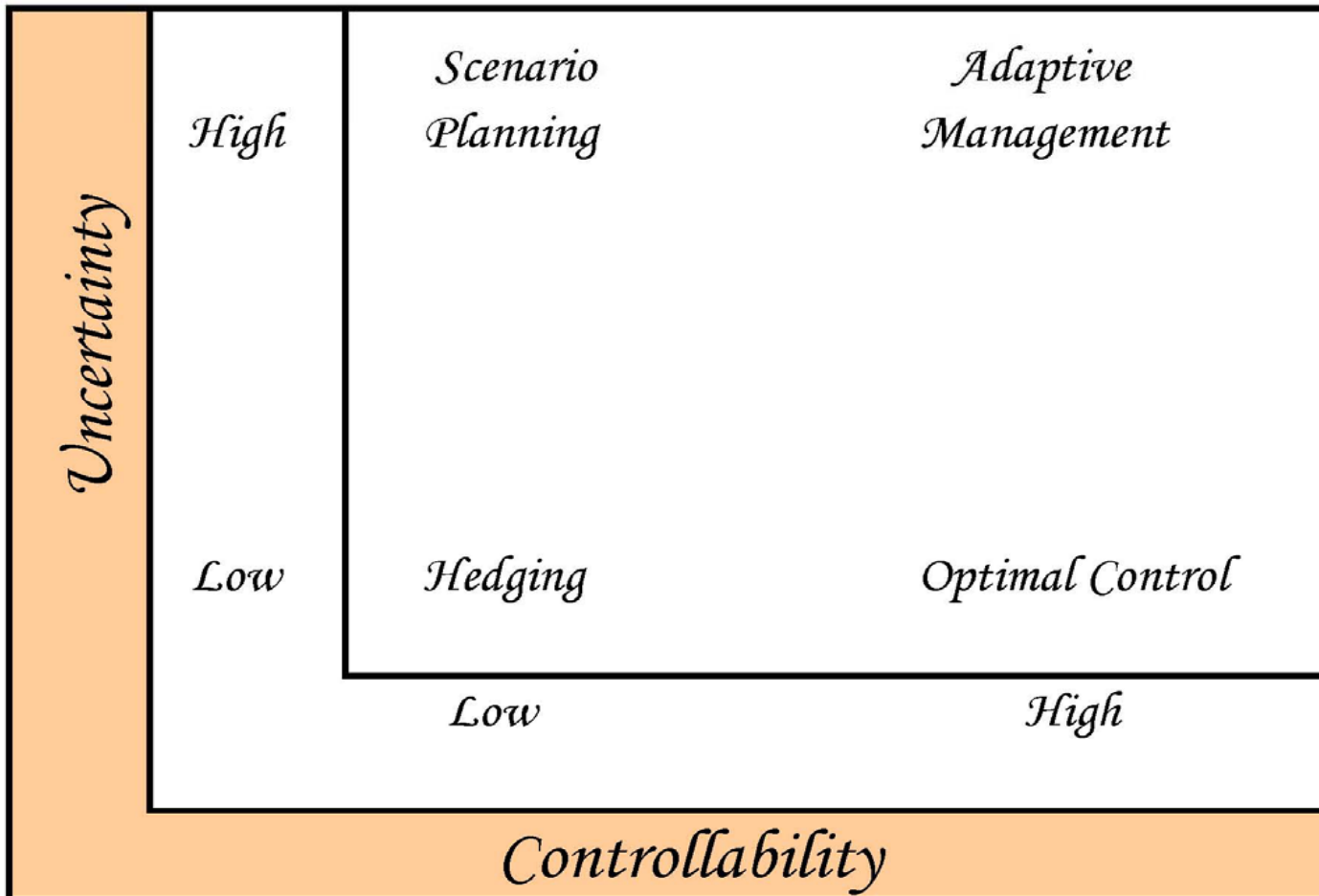


- Decisions are guided by mgmt objectives
- Monitoring tracks system response
- New information improves understanding
- Decisions are adjusted based on improved understanding

# Adaptive Management

Adaptive management is most useful when:

- the consequences of management are uncertain, but
- objectives are clear and the potential for management intervention is high.



# Adaptive Management

- Uncertainty can be expressed as a set of testable models
- A monitoring system can be established to reduce uncertainty

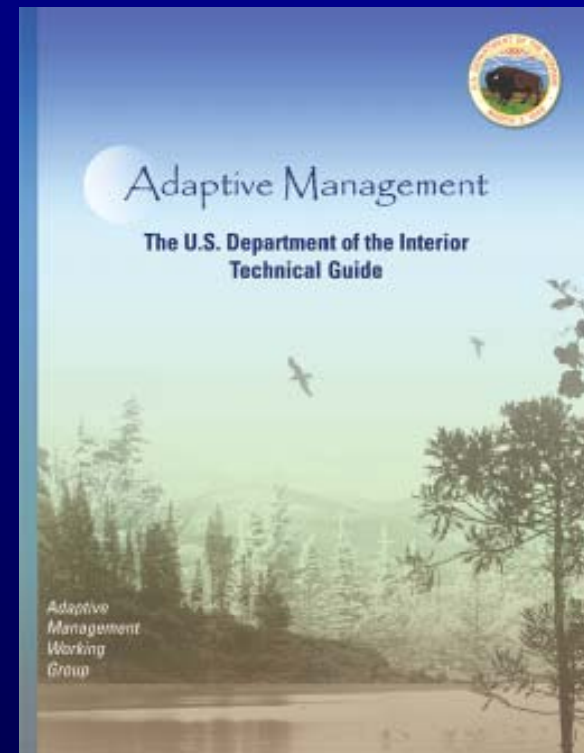
## Design Elements

- Habitat features used by covered species
  - E.g., Vegetation structure and composition
- Threats
  - E.g., ORVs, non-native species
- Natural Processes
  - E.g., Nutrient Cycling



# Adaptive Management and HCPs

- Not required for all HCPs and covered species
- Compatible with No Surprises and Changed Circumstances
- Few examples in HCPs
- Applications include:
  - Restoration
  - Invasive species control



# Benefits of Adaptive Management

- Provides flexibility in the face of uncertainty
- Is learning based
- Specifies what actions to be taken – and when
- Encourages long-term collaboration among stakeholders
- Promotes optimal decision-making with available information

# Implementation

1. Involve & ensure stakeholder commitment
2. Identify SMART objectives
3. Management actions selected from a set of available options
4. Identify models
5. Design and implement monitoring plans
6. Decision-making
7. Follow-up monitoring
8. Assessment
9. Iteration – cycle back to step 6

# Adaptive Management Pitfalls

- Few good examples on a small scale
- Requires long-term commitment
  - Shielded from budget fluctuations
- “Learning” organizations are rare

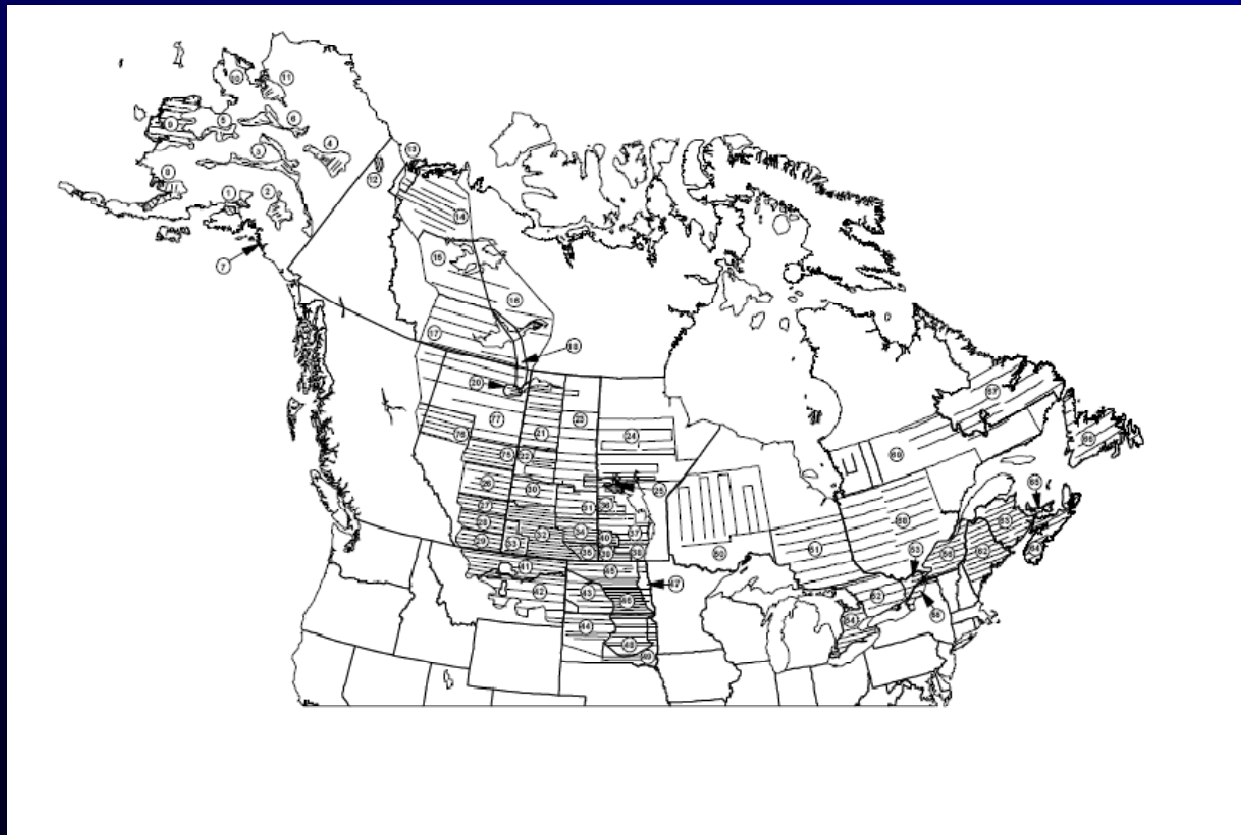
# Limitations

Adaptive management is not appropriate for:

- single-time decision making.
- if monitoring information is unavailable to decision makers.
- if there are irresolvable conflicts about objectives or decision alternatives.
- if management interventions cannot influence system behaviors in ways that affect management returns.
- if there is not a commitment to sustained funding for monitoring and assessment.

# Well-known Examples of Active Adaptive Management

- Glenn Canyon Dam
- North American waterfowl harvest



# Suggestions

- Seek opportunities for monitoring for within the context of management decisions
  - E.g., adaptive management, restoration
- Careful attention to parameter choice will help ensure cost effectiveness and relevance
- Changed circumstances may require informed changes to the program





Questions?