

Resource Management Consultations & Structured Decision Making Workshops

Biological Monitoring Team, Region 3 and Region 5

Do you have a natural resource management issue or critical decision on your station that you'd like help with? Perhaps you have multiple stakeholders and partners that disagree on the best approach to the problem. Or, you are applying the best science available, but you think there might be a better approach. Maybe you are aware of other stations that share this particular management issue and you would like to get together with them to discuss it. Did you know that you can request an Adaptive Management or Structured Decision-Making consultation from your Regional Refuge Biologist (RRB)?

What's a consultation and how do I request one?

To begin the process, simply contact your Regional Refuge Biologist and discuss the specifics of your issue, including; the resource significance of the issue at the refuge, frequency that the decision must be made, available refuge resources to address the issue, and any controversy or stake-holder involvement. The Regional Refuge Biologist and BMT will then discuss each of the issues identified by refuges. For those refuge issues that are appropriate for either Structured Decision-Making (one time decision) or Adaptive Resource Management (repeated decisions at specified time-steps) the RRB will request the refuge to complete a *Consultation or Workshop Request* form. As the consultation proceeds, this form will evolve into either a SDM decision document or an Adaptive Management action plan.

What types of problems warrant a consultation?

Any natural resource management issue can be addressed in a consultation, but generally you will consider decisions that have resisted simple solutions. We especially encourage you to consider:

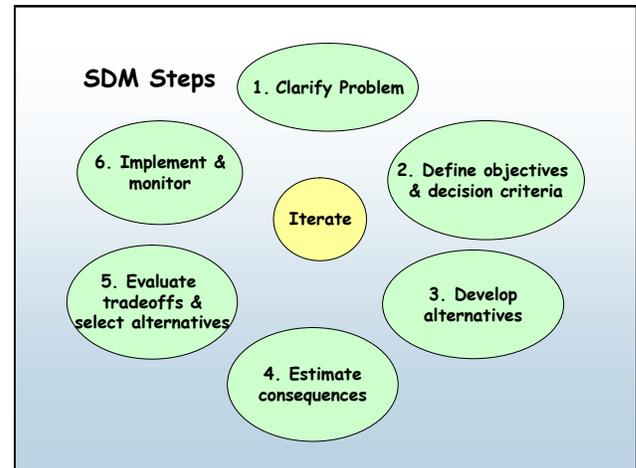
- Issues important at your station (tied to high priority CCP or HMP objectives),
- Issues involving controversial or risky management decisions,
- Problems that incur significant operating costs or staff time,
- Decisions made frequently, and
- Situations involving high uncertainty about the results of management actions.

How will my request be processed?

The station Project Leader needs to approve submission of the consultation request. When the RRB receives your request form, he/she will contact the refuge to begin planning the Consultation. The RRB may identify other stations with similar problems. A determination will be made if SDM or ARM is appropriate to address the issue. SDM uses small group workshops to get agreement about how to structure and address the problem.

What is Structured Decision Making?

SDM is an organized approach to identifying and evaluating creative alternatives and making defensible choices in difficult decision situations. SDM is designed to deliver insight to decision makers about how well their objectives may be satisfied by alternative courses of action, how risky some alternatives are relative to others, and what the core trade-offs or choices are.



Steps in the structured decision making process.

What happens if we decide to hold a workshop?

Workshops are usually 2-4 days in length, and ideally involve 6-8 people, sometimes as many as 15. A core planning team of about 3 people prepare for the meeting & invite participants. The meetings are usually held at a Refuge Station. Key people to consider inviting to the workshop include the people who make the management decisions, scientists and biologists with expertise about problem, people with the skills & resources to follow through with addressing the problem, and often a consultant/coach/modeler with specialized skills in applying SDM. The workshops tend to go more smoothly if led by a facilitator trained in SDM and if at least some of the participants have had SDM training.

What happens at the workshop?

The first step in good decision making involves defining what question or problem is being addressed and why, identifying who needs to be involved and how, establishing scope and bounds for the decision, and clarifying the roles and responsibilities of the decision team. The core planning team discusses these issues and comes up with a briefing document that is distributed to the workshop participants ahead of the workshop.

The core of SDM is a set of well defined objectives and evaluation criteria. Together they define "what matters" about the decision, drive the search for creative alternatives, and become the framework for comparing alternatives. The

briefing document is a starting point for discussion and describes the first steps in the SDM process (stakeholders, problem definition, objectives).

At the workshop, a range of creative policy or management alternatives designed to address the objectives is developed. Alternatives should reflect substantially different approaches to the problem or different priorities across objectives, and should present decision makers with real options and choices.

At this stage, the consequences of the alternatives are estimated using the evaluation criteria (modeling). Although the SDM process often delivers “win-wins”, most decisions will still involve trade-offs of some kind and hence will require value-based choices. SDM is not a black box; the emphasis is on group deliberations and collaborative decision making.

How much time will it take us to implement the decisions made at the workshop?

This is difficult to answer, depending upon the timing and effort involved in making the decision and how many people are involved. The last step in the decision process involves identifying mechanisms for monitoring to ensure accountability with respect to on-ground results and prioritizing research to improve the information base for future decisions. If the management decision will not be repeated, monitoring may be fairly simple but essential.

What happens if the same decisions are made every year, or repeated over time or space?

If the same or a similar decision will be made repeatedly and ongoing monitoring of outcomes is needed, the process is called adaptive management (AM); AM is a special type of SDM. The objectives, strategies, and monitoring priorities are brought together in an AM framework and a monitoring system is devised to inform future decisions. AM focuses on learning and adapting, through partnerships of managers, scientists, and other stakeholders who learn together how to create and maintain sustainable ecosystems.

There are lots of definitions of AM, what’s our definition?

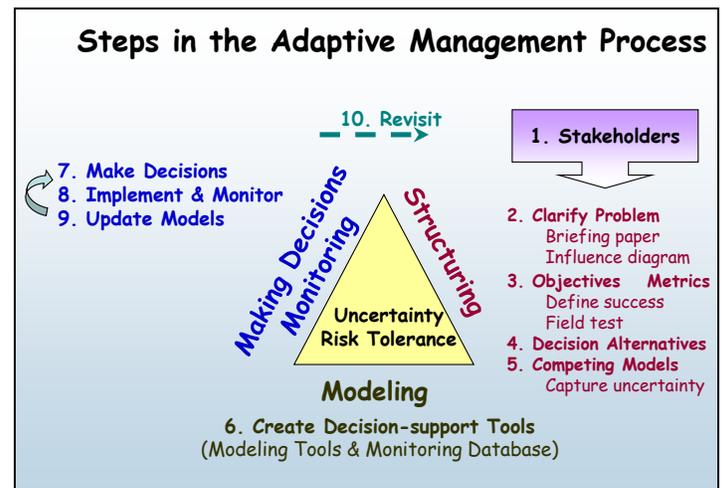
AM is a flexible decision making process that can be adjusted as outcomes from management actions and other events become better understood. When there is uncertainty about the outcomes of management, competing models capture that uncertainty and make predictions about how the system will react. By monitoring the system’s reaction to management and comparing the result against the predictions of each of the competing models, we can discern over the long run which of the candidate models produces better predictions and then favor that model in future decisions. (adapted from DOI Technical Guide and Kendall 2001).

What additional steps are needed to implement AM?

AM is most useful on Refuges when there is considerable uncertainty about which land management strategies will achieve the stated objectives. This uncertainty is translated into competing models; the predictions of these models are

compared against actual monitoring data. Competing models represent different ideas about how the system will respond to management. At each time step, monitoring information is used to update the system, compare the models, and rank the effectiveness of the management strategies. Managers are free to select among the entire set of strategies. This differentiates AM from experimental or controlled research where an established study design and treatment schedule must be followed.

Refuges have been learning more about AM in several field-based projects, in cooperation with the U.S. Geological Survey (USGS) and other partners. Some of the problems include impoundment management, grassland management, restoration of shrublands, and management of various invasive plant species (See Fact Sheet on Adaptive Management).



How much time does adaptive management require?

Because both management and monitoring are repeated, the level of effort tends to be greater than with one-time decisions. The more stations and people involved, the more time is required (like most projects!). We are learning more about the process and the time involved through the pilot case studies mentioned above.

How can I get training in SDM and AM?

NCTC offers courses in SDM, modeling, and advanced courses in AM and focused case studies. Check their course catalog for scheduled classes. <http://training.fws.gov/>

For further information contact:

Melinda Knutson
Wildlife Biologist, Biological Monitoring Team
U.S. Fish and Wildlife Service
Upper Midwest Environmental Sciences Center
2630 Fanta Reed Rd.
La Crosse, WI 54603
PH 608-781-6339
FAX 608-783-6066
E-mail: melinda_knutson@fws.gov
BMT website: <http://www.fws.gov/bmt/>

