



# Structured Decision Making

National Conservation Training Center

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## What is Structured Decision Making (SDM)?

“A formalization of common sense for decision problems which are too complex for informal use of common sense” (Ralph Keeney 1982).

SDM is a method for analyzing a decision by breaking it into components. It helps identify where the impediments are, focusing efforts on them and providing an array of analytical tools for dealing with the impediments.

Two key elements:

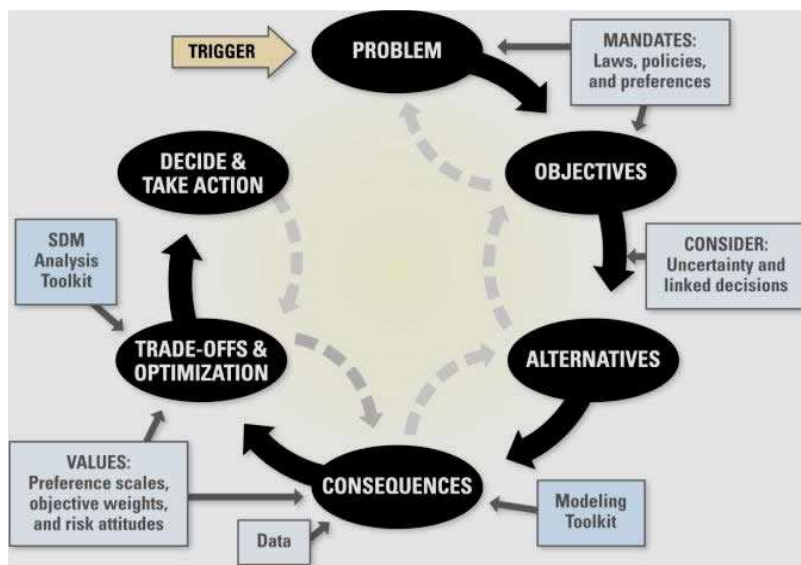
Problem decomposition: breaks the problem into components, separating science and policy

Values-focused: objectives are discussed first, in contrast to intuitive decision-making which usually skips to alternatives

Benefits of SDM are decision processes that are

Deliberative, thorough, robust to uncertainty (more likely to achieve the objectives)

Transparent, explicit, able to be documented, replicable (more likely to be accepted by others)



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## Structured Decision Making in the USFWS

Structured decision making has been applied in all branches of the Service to various degrees over the past twenty years. Endangered species have included structured assessment of extinction risks for listing decisions, as well as identification of optimal recovery actions. The National Conservation Training Center has been working with USGS through the Refuge Cooperative Research Program to develop application of structured decision making to adaptive management on refuges. In addition, the Comprehensive Conservation Planning (CCP) and Habitat Management Planning (HMP) process designed as structured decision processes. In the Migratory Bird Program, structured decision making is deeply embedded in many of the recovery decisions, especially for waterfowl harvest.

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## About the Structured Decision Making Curriculum

NCTC and the USGS Patuxent Wildlife Research Center have led development of a curriculum to build capacity in structured decision making. This includes both instructor-led courses and hands-on experiential workshops that address real decision problems. Offerings range from a class to advanced training in developing expertise as a decision analyst. We also have a mentoring program designed to build core competency in the delivery of SDM and provide experiential opportunities for in-depth training in applying decision analytic methods. program.

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## What is Adaptive Resource Management (ARM)?

Adaptive resource management is a special case of SDM, for decisions that recur and for which uncertainty is an impediment. ARM recognizes that, in some cases, it is rational to pursue knowledge in the short-term to better manage the resource in the long term.

The questions below provide the criteria for using an ARM approach:

Is the decision recurrent?

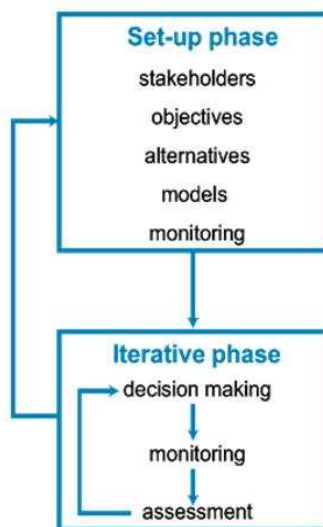
Do we need to learn? Is there structural uncertainty that matters in terms of management decisions?

Can we learn? Can a monitoring be implemented that provides information to discriminate among alternative hypotheses or models?

Can we adapt? Is there an ability to change the management strategy in response to what is learned?

Michael C. Runge (2011) An Introduction to Adaptive Management for Threatened and Endangered Species. *Journal of Fish and Wildlife Management* Vol. 2, No. 2, pp. 220-233.

The U.S. Department of the Interior's Adaptive Management Technical Guide and Applications Guide are available for download [here](#).



Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2009. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management U.S. Department of the Interior, Washington, DC.

Williams, B. K., and E. D. Brown. 2012. Adaptive Management: The U.S. Department of the Interior Applications Guide. Adaptive Management Working Paper U.S. Department of the Interior, Washington, DC.

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