# Module C — Determining Objectives

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# PrOACT

## In this Module, we will:

- Identify concerns and translate them to objectives
- Distinguish fundamental, means, process, and strategic objectives
- Build hierarchies of fundamental objectives
- Develop measurable attributes for your objectives

## Objectives are what you really care about

Well defined objectives are critical in order to:

- Create alternatives
- Compare alternatives
- Choose pertinent information
- Explain your decision to others

All structured decision steps build from here

## Recipe for Good Objectives

1. Articulate concerns and wishes

2. Convert concerns to objectives

3. Structure objectives
   a) Classify objectives
   b) Distinguish fundamental and means objectives
   c) Create objectives hierarchy

4. Create measurable attributes for each objective

5. Repeat as needed

## Step 1: Articulate goals & concerns

**Think about:**

❑ Why is this decision a problem?

❑ Why is it hard to make this decision?

❑ What are the critical concerns?

❑ What's wrong with the current situation?

❑ What's on your wish list?
- What is the best possible outcome for me?
- What would be best possible outcome for others?

❑ What is the worst thing that could happen?

❑ If you do make a decision, what do you want to avoid?

❑ If you don't make a decision, what will happen?

❑ What are you ultimately trying to achieve?

❑ Think of possible solutions & ask "why?"
- How would you explain them to others?
- What is good and bad about these solutions?
- What constraints and guidelines are restricting your choices?

❑ Make concerns (and subsequent objectives) distinct and independent

## Step 2: Convert goals & concerns into objectives

State the objectives as a <u>verb</u> and <u>object</u>

| *Goal or Concern* | *Potential Objective* |
|---|---|
| It's hard to catch bluegills any more | Restore panfish populations |
| Many loons die ingesting lead tackle | Eliminate lead in tackle |
| Ballast water brings invasive species | Prohibit ballast dumping |
| Certain stakeholders feel excluded | Increase communication |
| I won't have enough money for this | Minimize cost |

## Consider this decision…

You are the manager of a National Wildlife Refuge, and are in the process of developing a management plan for an endangered lizard on the Refuge. The species seems to benefit from the disturbance associated with prescribed fire (though your budget for such activities is, of course, limited). Also, the species is susceptible to mortality on roads, but the Refuge receives substantial visitation by bird watchers, some of whom like to travel by car.

Identify your concerns for this decision, and translate these into objectives.
❑ What are you hoping to accomplish?
❑ What do stakeholders want?
❑ What do you or they want to avoid?

| *Concern* | *Potential Objective* |
|-----------|----------------------|
|           |                      |
|           |                      |
|           |                      |
|           |                      |
|           |                      |

## Brainstorming Tips:

- Keep asking questions until your list is complete
    - Push yourself and others to think creatively
- Be succinct and concise
- Revisit, Repeat, Rephrase until it makes sense
- In a group, let individuals write answers first
- If someone is anchored on a favorite alternative, ask why?  That can often reveal something about the underlying objectives.
- Likewise, if someone is terrified of a particular alternative, ask why?  That, too, can often reveal something about the underlying objectives.
- Objective statements may need to be *constructed* from learning about the problem
    - You may have to 'go around some loops' of the SDM track before the objectives are fully clear

## Setting Objectives in the Public Sector

Sources of concerns and objectives
❑Government structure
   Congress
   Current administration
   Judicial system
   Agency
❑General & specific constituencies
   The Public
   Local stakeholders
   Other interested parties

## Government Mandates

Broad outlines and direction, molded by legal and social constraints

➢Developed from:
- Resource management laws
- Regulations
- Guidance and policy
- Legal precedent

➢Should be used to set specific objectives

# Step 3: Structure Objectives

## *Step 3a) Classify Objectives*

Types of Objectives

- Fundamental: the basic reason for caring about the decision (essential)
- Means: influence the achievement of fundamental objectives (not nec essential)
- Process: concern *how the decision is made* rather than what decision is made
- Strategic: *higher level* – objectives covering all decisions made by the organization or person

Process Objectives
- *"…especially in public decisions made by government, both what is chosen and <u>how</u> the alternative is chosen are important.  In other words, the process of decision-making in these situations matters…"*
- ➢ Recognize differences between objectives for what decision to make and objectives for how to make it – the Process Objectives
- o What examples have you encountered and how did you deal with these?

Strategic Objectives
- Concern with the effects of this decision
    - On other, linked opportunities
    - Setting precedents
    - On larger mission or mandate or image
- o What examples have you encountered and how did you deal with these?

Fundamental Objectives:  how do you know what's fundamental?
- Must be controllable – alternatives  appropriate to this context actually influence the degree to which this objective is achieved
    - Not too broad or high level to be beyond control with alternatives available for this context
- Must be essential – relevant to every alternative
    - Not too narrow and can't be substituted with something else (e.g., not just one possible means)
- Thus, what is "fundamental" depends on the decision context!

## *Step 3b) Distinguish Fundamental and Means Objectives*

Fundamental and means objectives should be separated to continue the SDM process.
If not…
- Leads to skewed weighting of your objectives
- Limits creative problem solving

Fundamental objectives
- ❑ What is the bottom line?  Fundamental value?
- ❑ What do you really care about in this decision?
  *Example: increase loon populations*

Means objectives
- ❑ What methods will get you to the "ends"?
- ❑ How will you achieve the fundamental value?
  *Example: minimize lead in fishing tackle*

# Getting to Fundamental Objectives

Ask, and keep asking, "Why?"
**WITI** – Why Is That Important?

When your answer is:
- ▪ "*Just because (it is an essential area of concern*"
- ▪ "*It's the law*"
- ▪ "*This is important*"
- ▪ "*Inherent value*"
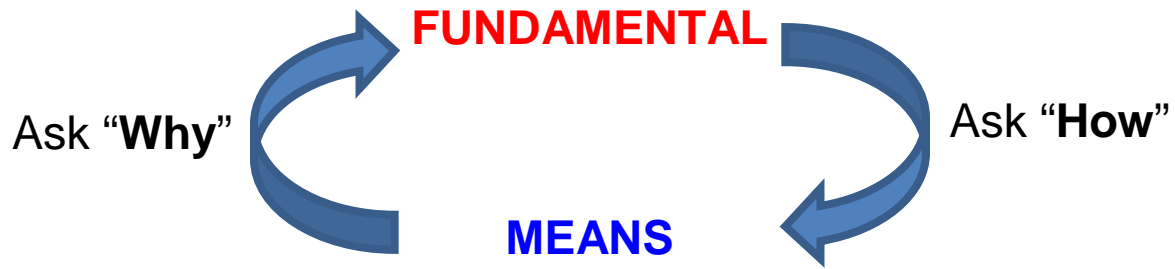
You have reached a fundamental objective.

# Getting to Means Objectives

Ask, and keep asking, "How?"
- How can I address this concern?
- How can I measure success?
- How can I make that stakeholder happy?

The answers may help you find creative alternatives.

**FUNDAMENTAL**

Ask "**Why**"        Ask "**How**"

**MEANS**

## Distinguishing Fundamental & Means Objectives

| *Concern* | *Objectives* |
|---|---|
| Ballast water brings invasive species | Prohibit ballast dumping<br>Minimize invasive species intros<br>Sustain native species |
| You aren't talking with landowners | Increase communication<br>Maximize community engagement<br>Maximize habitat conservation |
| I won't have enough money for this | Minimize cost<br>Maximize conservation within budget |

## Fundamental and Means Objectives are Decision-Specific
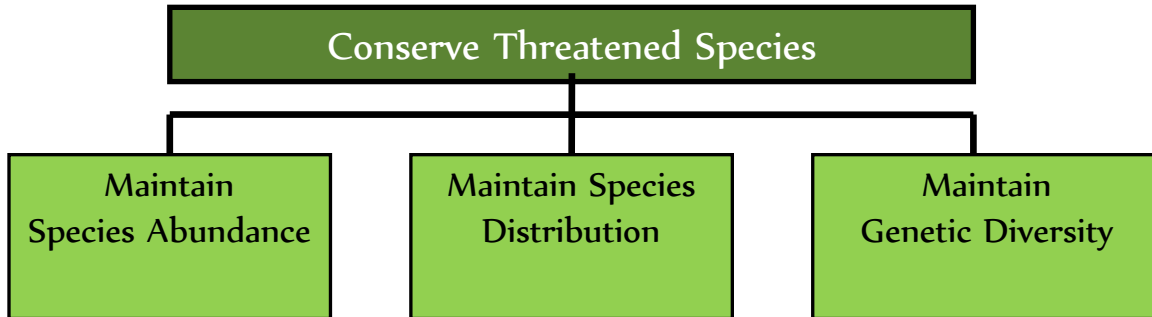
Fundamental and means objectives are decision-specific.
Fundamental objectives are the broadest objectives for that decision.

|  | Fundamental | Means |
|---|---|---|
| Decision 1 | Increase loon populations | Minimize lead in tackle |
| Decision 2 | Conserve Biodiversity of NE Region | Increase loon populations |

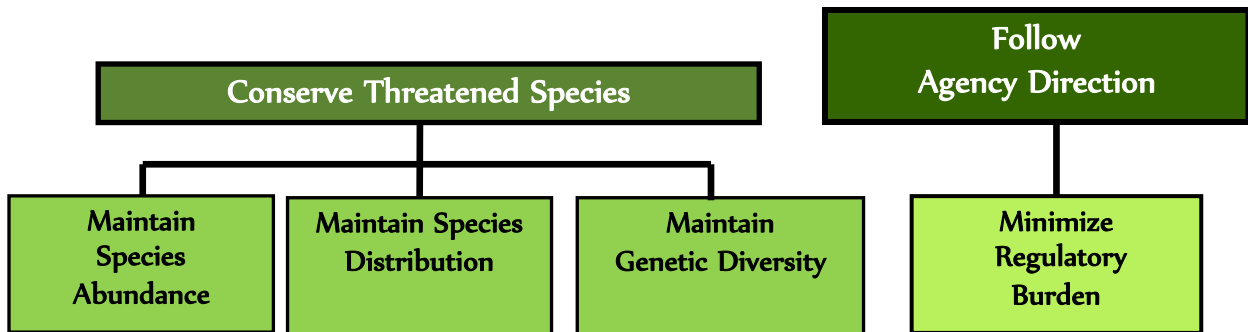## *Step 3c) Create Objectives Hierarchies*

Fundamental objectives may be parts of a broader, more fundamental objective

```
┌─────────────────────────────────────────────┐
│          Conserve Threatened Species         │
└─────────────────────────────────────────────┘
     │                    │                  │
┌──────────┐      ┌──────────────┐    ┌──────────────┐
│ Maintain │      │Maintain Species│   │   Maintain   │
│ Species  │      │  Distribution  │   │Genetic Diversity│
│ Abundance│      │                │   │              │
└──────────┘      └──────────────┘    └──────────────┘
```

To sort out the hierarchy among fundamental objectives, ask:
**"Is this part of something larger?"**

Another decision context may add fundamental objectives
Hierarchies help focus on *controllable* objectives

```
     ┌───────────────────────────────┐        ┌───────────────────┐
     │  Conserve Threatened Species  │        │       Follow       │
     └───────────────────────────────┘        │  Agency Direction  │
       │           │            │             └───────────────────┘
┌──────────┐ ┌──────────────┐ ┌──────────────┐         │
│ Maintain │ │Maintain Species│ │  Maintain  │   ┌──────────────┐
│ Species  │ │ Distribution │ │Genetic Diversity│ │   Minimize   │
│ Abundance│ │              │ │              │   │  Regulatory  │
└──────────┘ └──────────────┘ └──────────────┘   │    Burden    │
                                                 └──────────────┘
```

## Desired Properties of an Objectives Hierarchy

1. Complete. Don't leave out any areas of concern.
2. Non-redundant. As we'll see later, redundant objectives lead to "double counting."
3. Concise. Focus on the core issues.
4. Specific. Each objective should be specific enough so the consequences are clear and attributes can be readily defined.
5. Understandable. The objectives do not suffer from linguistic uncertainty.

Objectives Hierarchies – Ends-Means Network
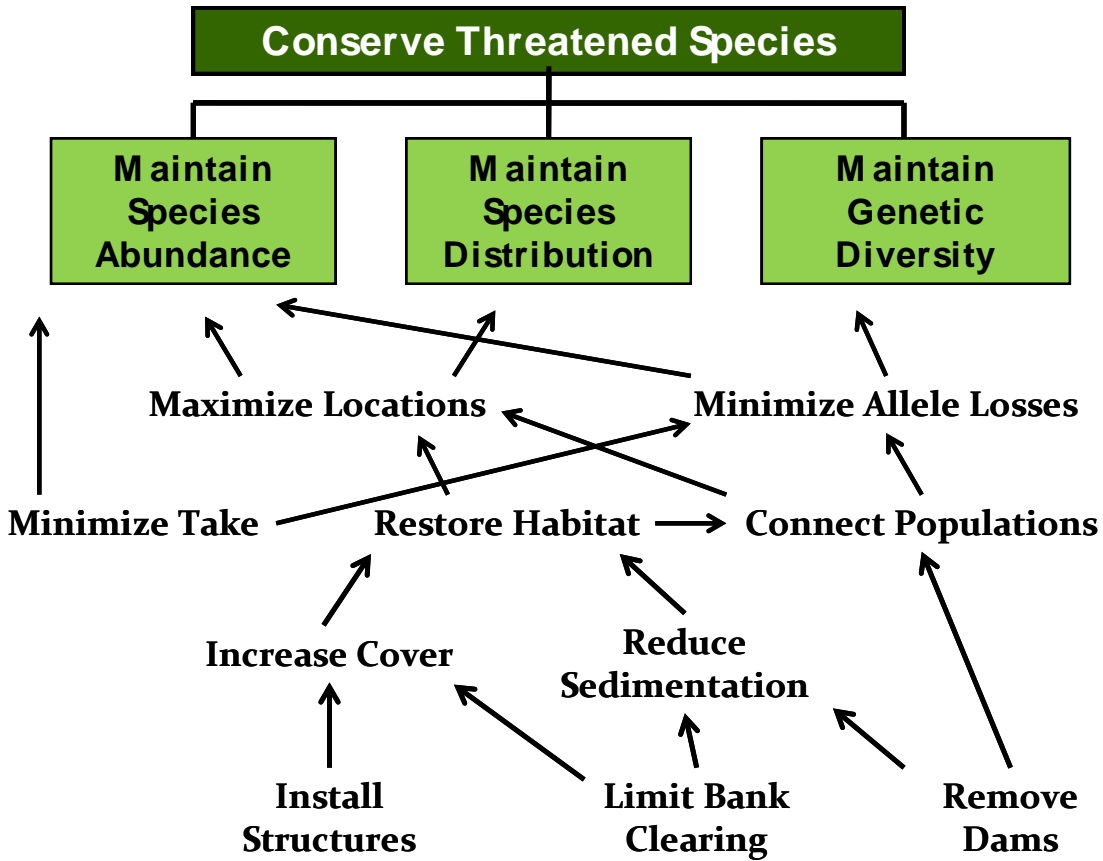
# Back to your endangered lizard problem...

Problem: You are trying to develop a management plan for this species on a National Wildlife Refuge.

**Revisit your objectives on Page C-3 and circle your fundamental objectives.**

## Step 4. Create Measurable Attributes

Attributes are how you measure performance

You need to write attributes for *fundamental* objectives that are at the *lowest* level of the objectives hierarchy.

Attributes provide the evaluation criteria for how well your alternatives serve your objectives.

- *units you use to <u>measure</u> the <u>consequences</u> (outcomes) of decision alternatives*

$$Attribute \ = \ Performance \ Measure \ = \ Criterion$$

An attribute includes:
- Content (what you'll measure)
- Preferred direction of the measured content (increase or decrease)
- The aspiration: maximize (or minimize), seek a particular threshold, or seek a particular level of change?

Example:
- Objective: Establish a reproducing plant population
- Measurable attribute: 3-year mean flowering stems density (stems/m$^2$)
- Preferred direction: Increase
- Aspiration: Maximize

## Desired Characteristics of Measurable Attributes:

- Unambiguous - Clear relationship to fundamental objectives

- Direct - Clearly related to the consequences of interest

- Comprehensive - Cover full range of possible outcomes

- Operational - Suitable information available

- Understandable - Readily understood and easily communicated

(for USFWS Refuges, this is analogous to SMART objectives: **S**pecific, **M**easurable, **A**chievable, **R**esults-oriented, **T**ime-fixed)

## Three types of Attributes
1. Natural:  objective can be directly measured

2. Constructed:  sliding or relative scale; requires interpretation

3. Proxy: natural attribute that is highly correlated with the objective, but does not directly measure it

## Natural Attributes

Minimize number of sick days → # of sick days
Maximize popcorn sales → $ of sales
Maintain reproductive success → # of fledglings

# Constructed Attributes

1. Minimize Wetland Development Impacts

   The impacts of development projects can be rated using a scale of 0 to 5 (described below), with 5 being the greatest impact.

   | | |
   |---|---|
   | **0** | No loss of riparian areas and $\geq$ 300 acres estuary restored |
   | **1** | No loss of riparian areas and $<$ 300 acres estuary restored |
   | **2** | No loss of riparian areas and no loss of estuary |
   | **3** | Loss of $<$ 300 acres riparian area and $<$ 300 acres of estuary |
   | **4** | Loss of $<$ 300 acres riparian area and $\geq$ 300 acres of estuary |
   | **5** | Loss of $\geq$ 300 acres riparian area and $\geq$ 300 acres of estuary |

2. Infant APGAR scores - Five factors are evaluated:
   1. activity and muscle tone
   2. pulse (heart rate)
   3. grimace response ("reflex irritability")
   4. appearance (skin coloration)
   5. respiration (breathing rate and effort)

   Each is scored on a scale of 0 to 2 (2 is best).
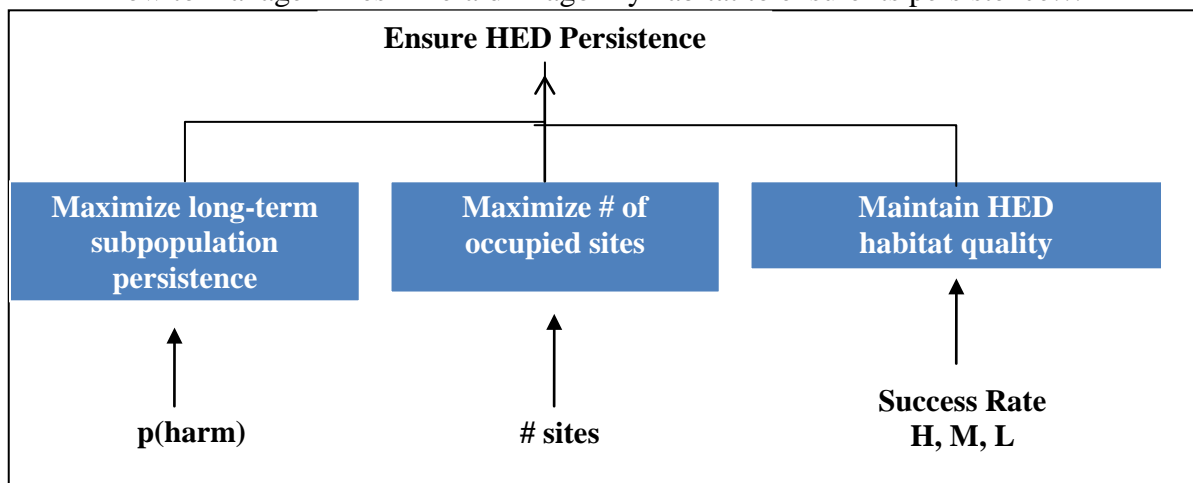   Scores are added for the total APGAR score; $>$ 7 is a healthy baby.

# Proxy attributes

Minimize student boredom → # of yawns
Maintain genetic diversity → % of natural range preserved
Maintain reproductive success → # of acres of nesting habitat

# Example of Attribute Types

How to manage Hines Emerald Dragonfly habitat to ensure its persistence…



What type of attribute?

_____      _____      _____

## Lizard management…

Describe measurable attributes for 3 of your fundamental objectives and determine attribute type.

| *Fundamental Objective* | *Attribute* |
|---|---|
|  |  |
|  |  |
|  |  |

## Step 5 Repeat

- o  You may have to go around the SDM track before the objectives are fully understood.
- o  Experiment with your objectives in a tentative decision process, asking,


- ❑  Can these distinguish among alternatives?
- ❑  Are they really <u>distinct</u> and <u>independent</u>?  Any excess or redundant?
- ❑  Could you be comfortable with a decision reached with these objectives?
- ❑  Could you explain your choice to others & the public?
- ❑  If not, what's missing?