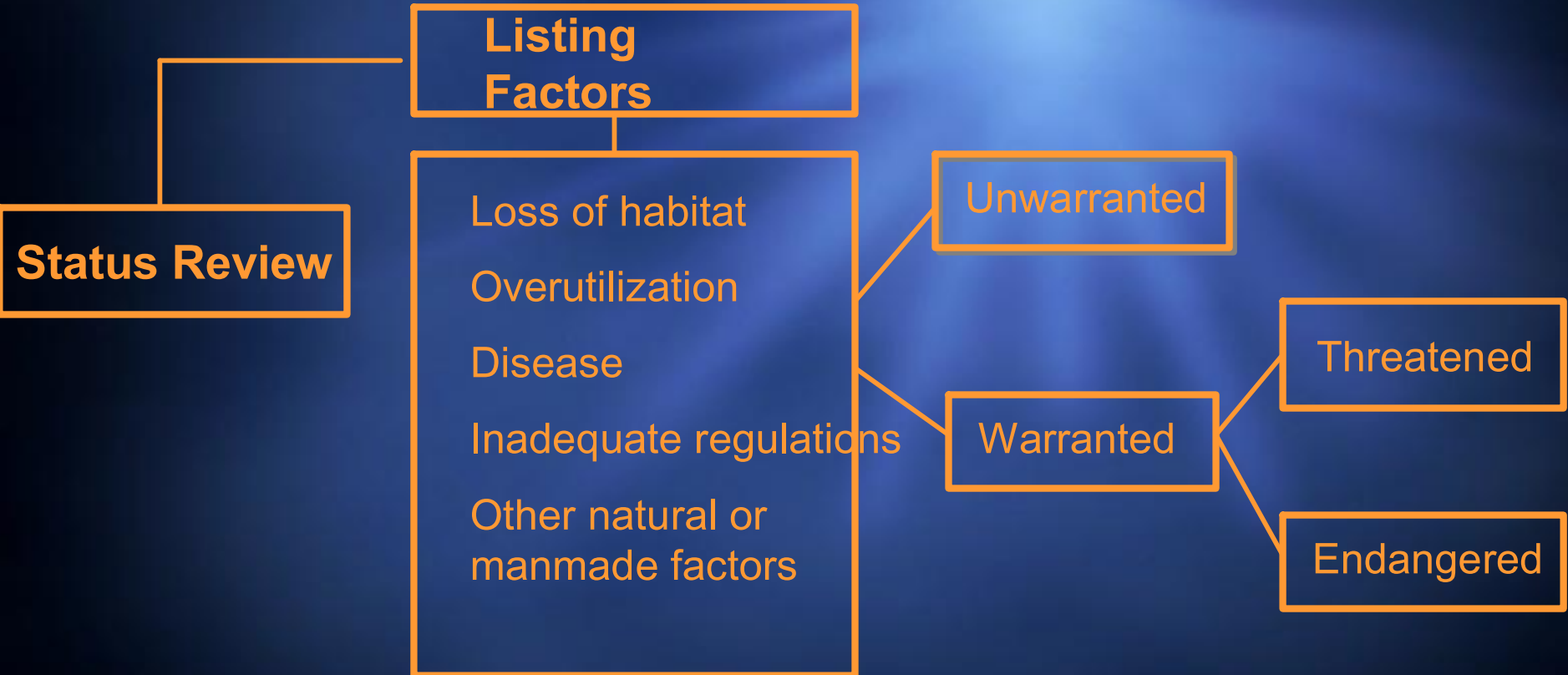
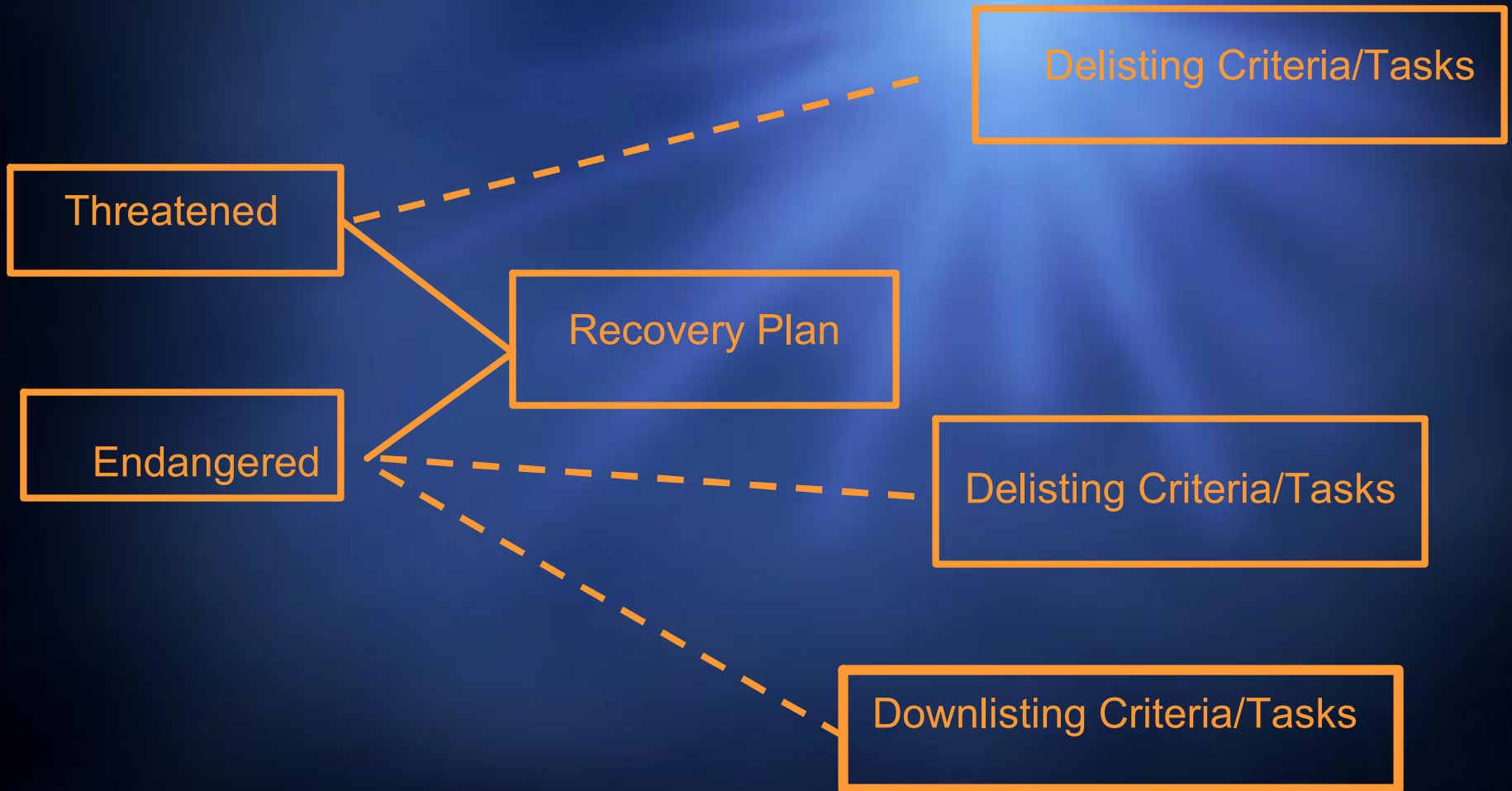


ESA Section 4 Listing & Recovery



ESA Section 4

Listing & Recovery

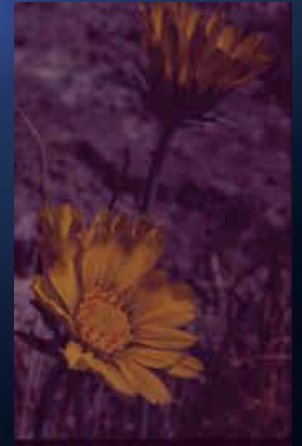


RECOVERY PLAN PURPOSE

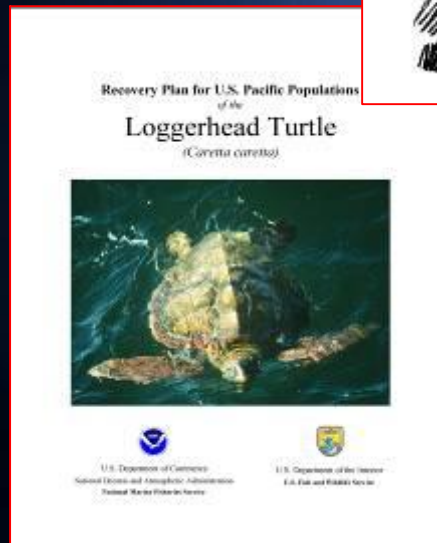
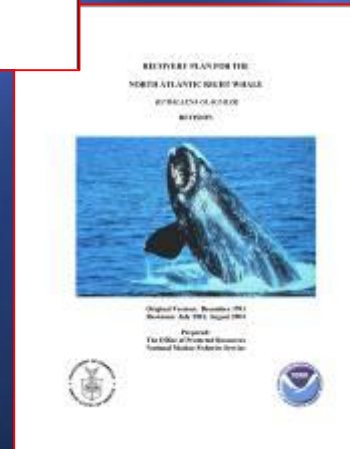
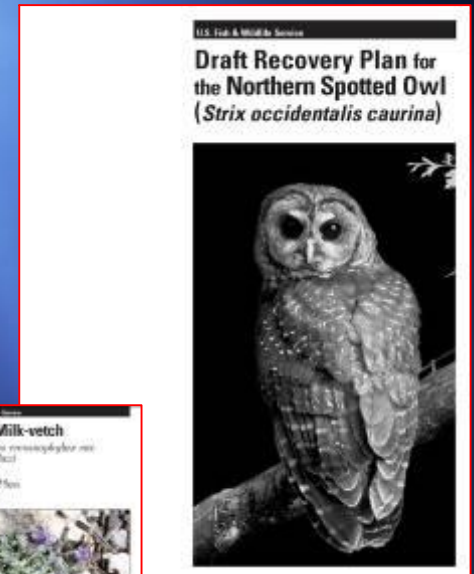
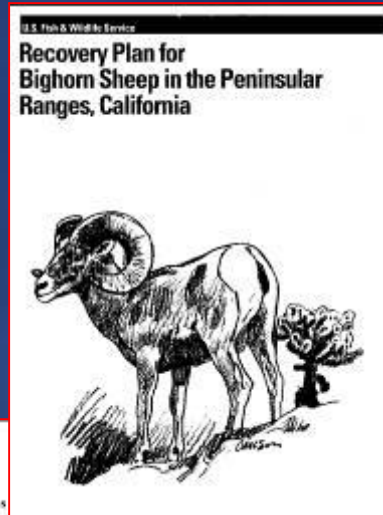
- Recovery Plans are outreach documents
- Describe *how* and *why* background information leads to the recovery strategy, criteria, and actions
- The background section must adequately build the case for recovery criteria and the necessary recovery actions

5 Listing Factors

1. Loss of habitat
2. Overutilization
3. Disease or predation
4. Inadequacy of existing regulatory mechanisms
5. Other natural or manmade factors



TOUR OF A RECOVERY PLAN



MAJOR SECTIONS

- Title Page
- Disclaimer
- Acknowledgements
- Executive Summary
- Table of Contents
- Background
- Recovery Program
- Recovery Implementation
- Literature Cited
- Appendices



BACKGROUND SECTION

- ⊕ Sets the stage to understand the recovery strategy, recovery goals, objectives and criteria, and recovery program
- ⊕ Acquaints the reader with the species, its status and threats
- ⊕ Touches on all relevant research and management information, but is more a review than a dissertation



Background Contents

- Listing Status
- Description and Taxonomy
- Population Trends
- Historical & Current Distribution
- Life History/Ecology
- Habitat Characteristics and Needs
- Reasons for Listing/Threats Assessment
- Ongoing Conservation Efforts
- Biological Constraints & Needs

RECOVERY PROGRAM

This is where it happens!

- Recovery Strategy
- Recovery Units (if appropriate)
- Recovery Goal
- Recovery Objectives
- Recovery Criteria
- Recovery Action Outline
- Recovery Action Narrative
- Implementation Schedule



Klamath Sucker Recovery Team

Purpose & Goals

Provide technical guidance to develop:

- Recovery Strategy
- Recovery Units (if appropriate)
- Recovery Goal
- Recovery Objectives
- Recovery Criteria
- Recovery Action Outline
- Implementation Schedule

The Recovery Strategy

Link the facts and assumptions in the Introduction/Background section to the proposed Recovery Tasks



Recovery Strategy

Primary focus of recovery effort

- Major considerations and assumptions that lead to this focus
- Over-arching objectives, criteria, and/or actions
- A hierarchy of priority needs
- The delineation of, and rationale for, recovery units, if used
- Other important considerations or contingencies

Recovery Goal

Goal = desired outcome

The goal of the recovery process for a given species is to create conditions such that the species is no longer endangered or threatened and can be **DELISTED**

Recovery Objectives I

The *parameters* which, when taken together, characterize the conditions under which a species may be downlisted or delisted. May include:

- Demographic parameters
- Threat reduction or elimination parameters
- Other vulnerabilities or biological parameters

Objectives II

Biological objectives should link to the species' status and trends and incorporate fundamental conservation principles:

Representation - genetic & ecological diversity

Resiliency – sufficient population size

Redundancy – sufficient number of populations

This should add up to to X probability that the species will persist over a specified time period

Objectives III

Threats-based objectives should link directly (via the recovery strategy) to the priority concerns identified through the threats description & assessment in the Background section of the recovery plan



ESA Mandated Criteria

Sec. 4(f)(1)(B)

“to the maximum extent practicable ...
incorporate in each plan ...

(ii) objective, measurable criteria which, when
met, would result in a determination ... that the
species be removed from the list”

Recovery Criteria

Criteria: **Specific values (or measures)** for the parameters, needed to determine that a species has achieved its downlisting or delisting objectives. May include:

1. **Demographic/Genetic/Trend** measures
2. **Threat** reduction or elimination measures

Scope of Criteria

Criteria pertain to the full range of the listed entity – be it a species, subspecies – with the following provisos:

- If Recovery Units have been delineated, criteria must be developed for each unit.
- For multi-species or ecosystem recovery plans, criteria must be developed for each listed entity.

Viability Criteria

Examples:

- Abundance level or N_e population size
- Survival and reproductive/recruitment rates
- Measures for heterozygosity, allelic diversity
- Stable or increasing trends (terms defined) for x amount of time
- Defined distribution pattern



Threats-Based Criteria I

E.g., an objective, measurable, threat-based recovery criterion

- Addresses one of the 5 listing factors
- Describes what that factor would look like if sufficiently abated, or what needs to be done to achieve such abatement
- Explicit and unbiased

What If...

Recovery criteria cannot be determined?

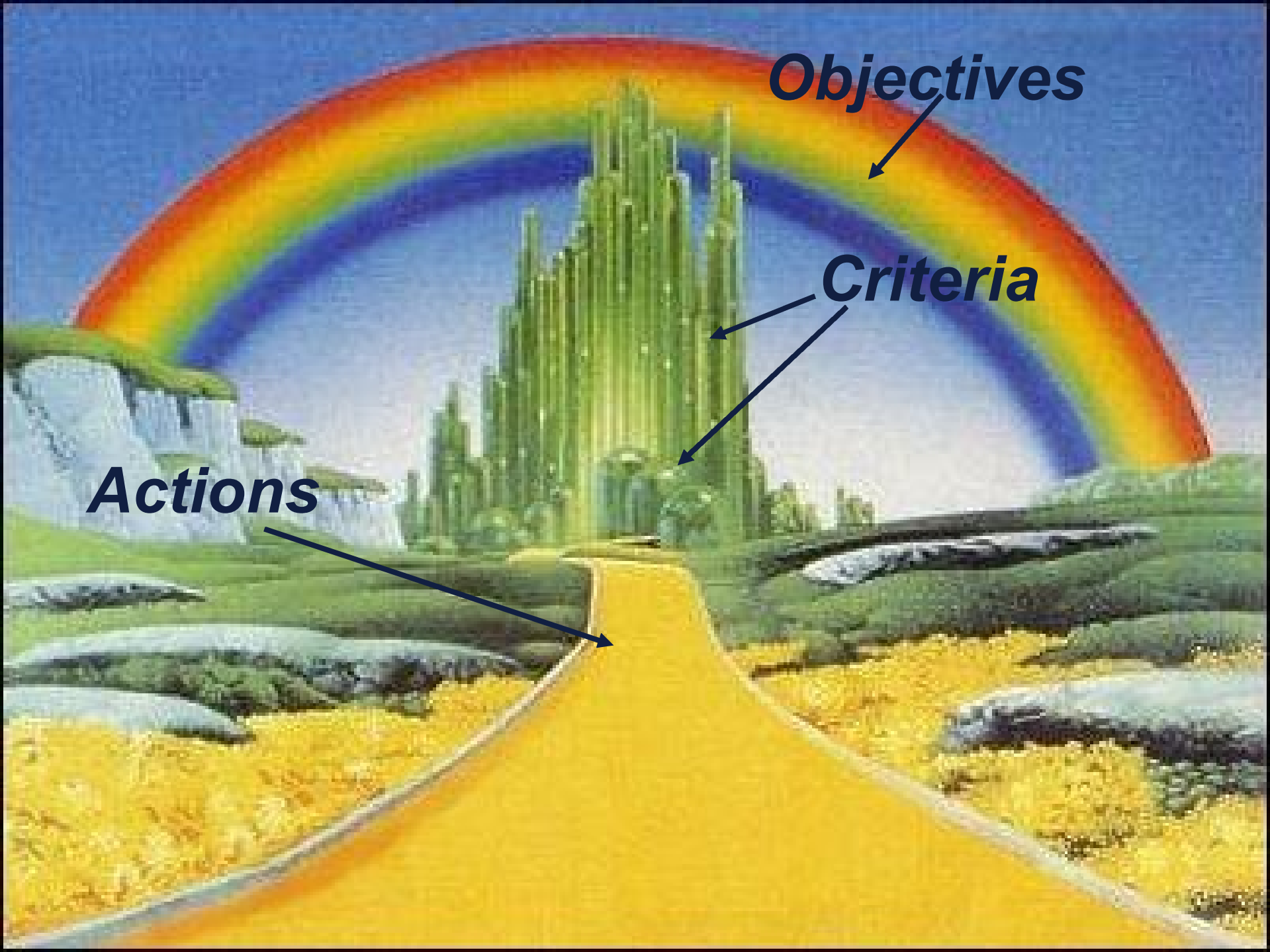
INTERIM CRITERIA may be used when objective, measurable criteria *cannot* be developed, in which case:

1. Provide near-term targets that will suffice until better criteria can be developed
2. Explain in the plan and for the record why criteria cannot be determined at this time
3. Specify the actions needed to develop objective, measurable criteria, and provide a timeline for completing those actions and revisiting the criteria

What if...Uncertainty

How to address...

- # Stochastic model
 - ⊕ Sensitivity analysis to test importance of factor
- # Range of known data
- # Estimate range of unknown data



Objectives

Criteria

Actions

Recovery Actions (Tasks)

Given well written recovery criteria, prepare concise, action-oriented, and fundable recovery actions that are:

- ⊕ Explicitly related to threats identified in background



STEPDOWN FORMAT



1.0
 1.1
 1.2
 1.2.1
 1.2.2
 1.2.2.1
 1.2.2.2
2.0
 2.1
 2.1.1
 2.1.2
2.2

- Stepdown format is used to organize recovery plan actions from broad to specific.
- Skeletal stepdown outline is not required, but is often helpful for reader orientation, especially in complicated outlines.
- Only “innermost” actions will appear in the Implementation Schedule.

Recovery Tasks

Define in fundable units

1.1. Quantitatively Define Habitat Use

1.1.1. Larval habitat use

1.1.2. Juvenile habitat use

1.1.3. Spawning habitat use

Division of tasks is relevant to the number of needed studies

Implementation Schedule

Draws all recovery actions together into a succinct table, which:

- Estimates costs and can be used to obligate funds
- Prioritizes recovery actions
- Allows tracking of accomplishments
- Identifies (doesn't compel or require) responsible parties
- Establishes initial timeframe for recovery actions

That's All...Whew!