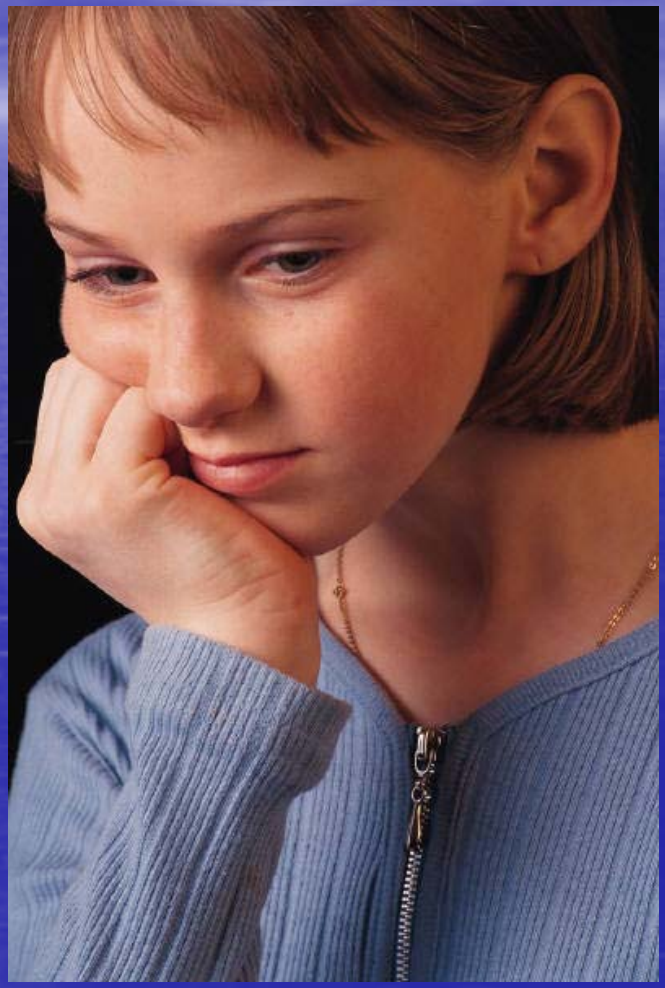
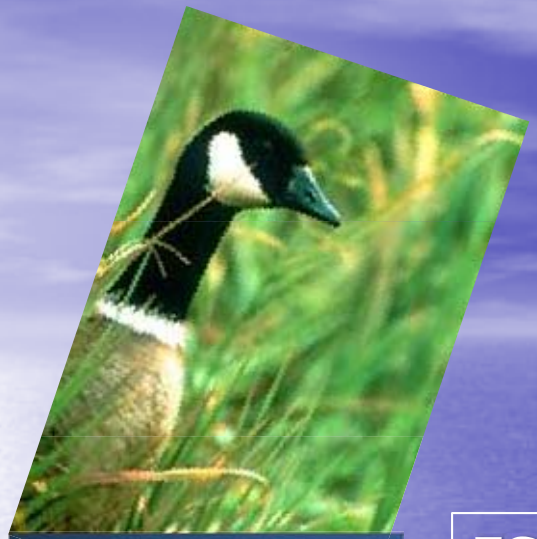
Formulating Recovery Goals, Objectives and Criteria

(when it's not so easy)

WHAT IS RECOVERY ???





Bald Eagle

ESA Definition of "Conserve" – the use of all methods & procedures necessary to bring [listed] species to the point at which the measures provided by the ESA are no longer necessary.

(ESA Section 3)

The process by which the decline of an endangered or threatened species is arrested or reversed, and the threats to its survival are neutralized, so that its long term survival *in nature* can be ensured.

(USFWS Recovery Planning Guidelines)

courtesy of Wiley Miller's NON SEQUITOR

Recovery Plan Required Elements

The ESA requires that recovery plans be developed and implemented for listed species and that each plan incorporate:

- A description of the site-specific management actions to achieve the plan's goal for the conservation and survival of the species;
- Objective, measurable criteria that, when met, result in a determination that the species be delisted; and
- Estimates of the time required and cost to carry out measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

What's in a Recovery Plan?

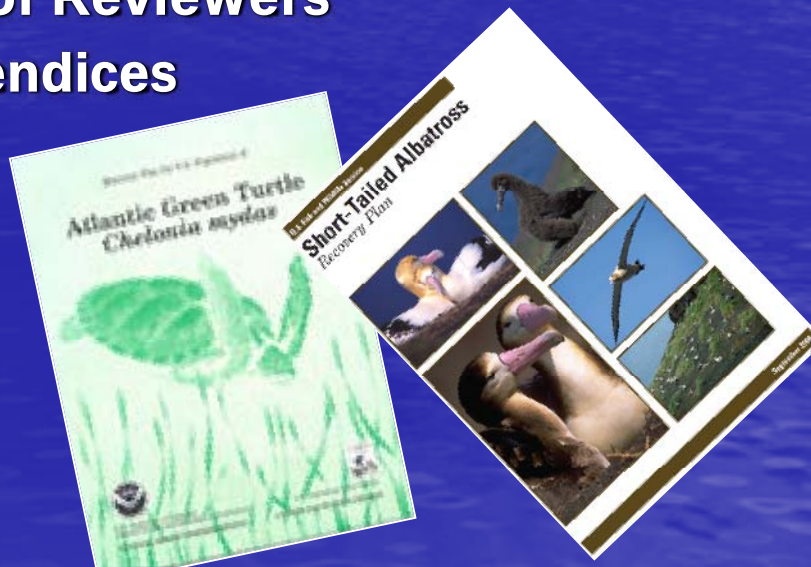
- Title Page
- Disclaimer
- Acknowledgements
- Executive Summary
- Table of Contents
- **Part 1. Background**
  - Description /Taxonomy
  - Distribution/Population trends
  - Habitat Characteristics
  - Life History/Ecology
  - Reasons for Listing
  - Ongoing Conservation Efforts
  - **Strategy for Recovery**
- **Part 2. Recovery**
  - Recovery Goal, Objectives and Criteria
  - Task (Action) Narrative

Literature Cited

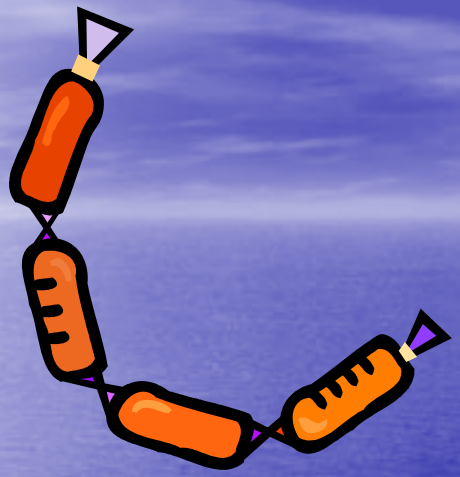
- **Part 3. Implementation**
- Implementation Schedule

List of Reviewers

Appendices



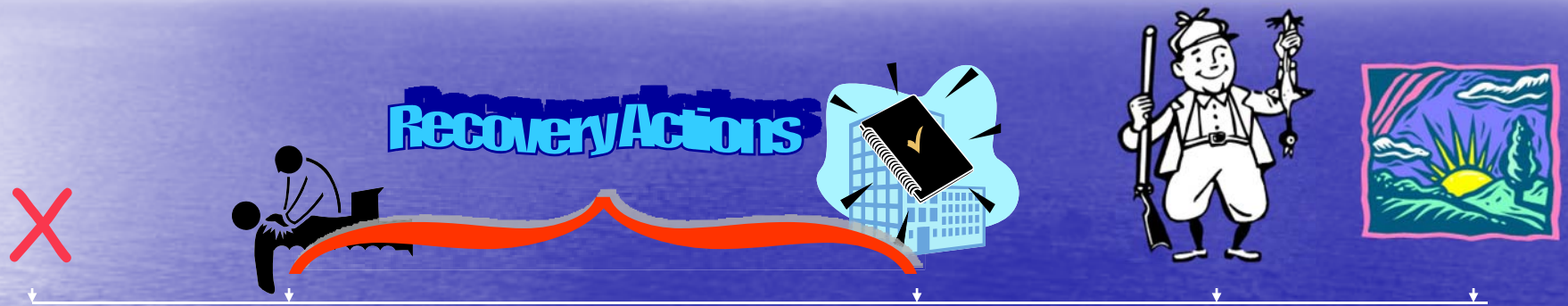
Recovery Strategy



Often overlooked, but key. Links the facts threats analyses, life history traits etc. in the Background to the objectives, criteria & tasks.

- Encapsulates and synthesizes the pertinent information from the Introduction/Background
- Lays out a structured, logical approach to recovery based on this information
- Justifies the recovery approach

CONTEXT OF RECOVERY



Extinct E/T Recovered Harvestable Historic

Functional in Ecosystem

Species' Status

Recovery Goals

Current Practice: Goal = Rulemaking thresholds

Reclassify (for Endangered species)

- no longer "...in danger of extinction throughout all or a significant portion of its range..." (3(6)), but not out of the woods yet (still "in danger of becoming endangered")

Delist

- "...measures provided pursuant to this Act are no longer necessary..." (definition of "conserve" in 3(3))

Is Delisting *Always* the Ultimate Goal?

Not Necessarily!

If delisting is not foreseeable, the RP Goal could be

Long-term stability within threatened classification

This conclusion should not be used lightly, and should be well-justified. The statute is clear we are to identify the actions and criteria that ***will*** lead to recovery.

For threatened species…

Conditions for "up-listing" from Threatened to Endangered may be included.

- Deterioration in population status *and/or* increase in threats
- Criteria should indicate that the species meets the definition of "endangered"
- While not a recovery goal, there may be situations in which it's valuable to have triggers for "uplisting" to endangered in the recovery plan (e.g., if current trends are negative)

How will we know when goals have been met?

- Identify clearly articulated objectives and measurable criteria in the recovery plan, which mark changes in the species' demographic status and threats.

Objectives and Criteria

Objectives are discrete targets which, when taken together, comprise the conditions under which a species may be delisted. Objectives are the "What"

Criteria describe the precise standards for measurement to determine that a species has achieved its recovery objectives and may be delisted. Criteria are the "How."

Objectives

can use qualitative terms like:

- Protect current distribution
- Restore sufficient habitat
- Reduce human interactions
- Maintain genetic fitness
- Improve demographic conditions
- Assure the long-term viability...

(Verb-Object)

Both Objectives and Criteria may be framed in terms of:

- Demography - status, trends, distribution, and population structure, processes and dynamics;
- Threats – changes to 5 factors (threats) needed to support recovered status

Demography-based Objectives

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

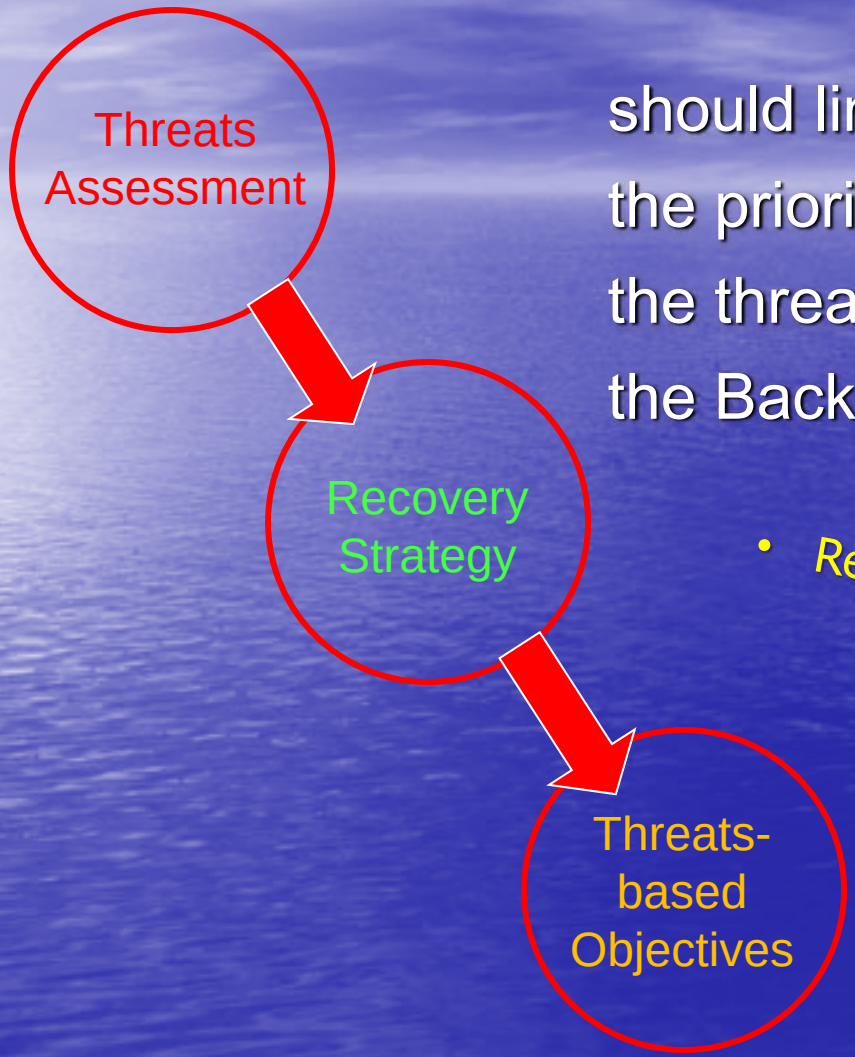
- Representation - genetic & ecological diversity
- Resiliency – sufficient population size
- Redundancy – sufficient number of populations

Improve demographic conditions

• Maintain genetic fitness

Assure the long-term viability…

Threats-based Objectives



should link (via the recovery strategy) to the priority concerns identified through the threats description & assessment in the Background section of the plan.

- Reduce human interactions
- Protect current distribution
- Restore sufficient habitat

Criteria are the ‘punch-line’ of the plan. They must be:

OBJECTIVE AND MEASURABLE

Objectivity

Take a cue from the Information Quality Act:

Objectivity means ensuring that information is unbiased. It involves two elements: presentation and substance.

- Present criteria accurately, clearly, and completely. Explicitly state assumptions and *uncertainties*.
- Ensure that criteria are developed in an unbiased fashion, based on sound analysis of the species' biological and threats status.

Measurability…

Provides a standard whereby two biologists (or lawyers or judges!!) will have an identical recognition of when a criterion has been met

Demography Criteria Example:

The **short-tailed albatross** may be delisted under the following conditions:

- The total breeding population of short-tailed albatross reaches a minimum of 1000 pairs; (population totaling 4000 or more birds); AND
- The 3-year running average growth rate of the population as a whole is ≥6% for ≥7 years; AND
- At least 250 breeding pairs exist on 2 island groups other than Torishima, each exhibiting ≥6% growth for ≥7 years; AND
- A minimum of 75 pairs occur on a site or sites other than Torishima and the Senkaku Islands.

Threats Criteria Examples:

Draft Northern Spotted Owl RP – Revised 2010 – **Continued Maintenance and Recruitment of Spotted Owl Habitat:** There is no net loss in nesting/ roosting or foraging habitat throughout the range, as measured by effectiveness monitoring efforts or other reliable habitat monitoring programs.

Mt. Graham Red Squierrel RP(2011 Revision) A mosaic of at least 80 percent of the range, or 6,400 ha (15,815 ac), of the Mount Graham red squirrel meets the criteria for habitat, and management agreements among USFWS, Coronado National Forest, and Arizona Game and Fish Department are in place and being implemented to protect this habitat indefinitely. (Listing Factors A, D, and E)

- *Threats criteria should reflect the threats addressed in 5-factor analysis in final Rule listing the species*

Five Factors ESA Sec 4(a)(1)

A. The present or threatened destruction, modification, or curtailment of its habitat or range POBE: Sea Ice Habitat change (22 pages in FR)

B. Overutilization for commercial, recreational, scientific, or educational purposes POBE: Harvest (3 pages in FR)

C. Disease or predation POBE: N/A?

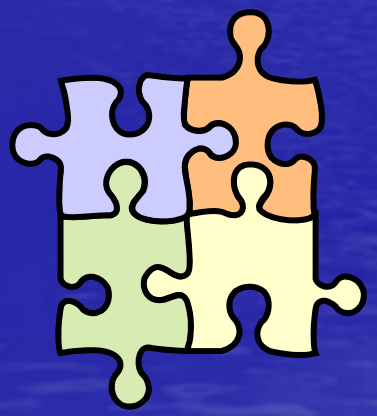
D. The inadequacy of existing regulatory mechanisms POBE: NA

E. Other natural or manmade factors affecting its continued existence POBE: Contaminants, shipping Other?

Criteria Development: Recovery Units

Recovery units may be delineated for widely distributed species. They may be useful for maintaining the extent of historical distribution, or if threats differ in different portions of the range.

If Recovery Units have been delineated, criteria must be developed for each unit.



What if there's a high degree of

Uncertainty?

If the state of knowledge is at issue, uncertainty can be built directly into the criteria by identifying confidence limits and indicating a need for future refinement. Tasks should be developed that will fill the information gaps.

Interim Criteria

…may be used when objective, measurable criteria *cannot* be developed

- These are used very rarely and MUST be explained in administrative record (and in the Plan).
- RP must provide near-term targets that will suffice until better criteria can be developed
- Explain in the plan why criteria cannot be determined at this time
- Specify the actions needed to develop objective, measurable criteria, and provide a timeline for completing those actions and revisiting the criteria

A Helpful Mnemonic

Recovery criteria should be SMART

Specific

Measurable

Achievable

Realistic

Time-referenced

Final thoughts

- Development of criteria is an iterative process; it can, and should, be revised as new information indicates.
- Criteria shouldn't mislead the public – they should reflect where uncertainty exists and where we might anticipate significant change as we get new information.
- Thoughtfully designed criteria can lead to identification of effective recovery actions.