

Climate Change Adaptation in ESA Recovery Planning



ESA Recovery Plans



- Intended to ensure that recovery efforts target limited resources effectively and efficiently
- Guidance documents that serve as central organizing tool for each species' recovery process
 - Delineate aspects of species' biology, life history, and threats that are pertinent to its endangerment and recovery
 - Identify actions necessary to achieve recovery
 - Identify goals and criteria by which to measure achievement of recovery



Rosetta Stone for ESA Recovery Planning

Open Standards	СС ВМР	ESA Recovery Plans	
Scope	How range shifts and changes in communities affect target selection	Scope of Recovery Plan	
Threats	ID exposure factors ID biophysical impacts Rank CC and non CC threats	Reasons for Listing/ Threat Assessment	
Strategies	ID intervention points on direct and indirect impacts	Recovery Program	

Background

- Status of species
- Description and taxonomy
- Distribution and habitat use
- Critical habitat
- Life history
- Trends and distribution
- Reasons for listing/Threats assessment
- Conservation efforts
- Biological constraints and needs



Background

Recovery Strategy Delineates assumptions and logic underlying the approach identified for the recovery effort



Background

Recovery Strategy

Recovery Goals and Criteria

- Goal or desired outcome for the species (almost always recovery and delisting)
- Component objectives that describe the conditions necessary for achieving the goal
- Metrics for determining when objectives have been reached (including both threat-mitigation and population status objectives)



Background

Recovery Strategy

Recovery Goals and Criteria

Recovery Program

- Recovery actions needed to achieve plan's goals and objectives
- Monitoring actions necessary to track the effectiveness of these actions and status of the species



Background

Recovery Strategy

Recovery Goals and Criteria

Recovery Program

Implementation Schedule

- **Prioritization** for actions
- Action duration, responsible parties, cost estimates



Guidance on Climate Change

Interim Endangered and Threatened Species
Recovery Planning Guidance, Version 1.3

"The question often arises as to whether intractable threats, such as **climate change** or **environmental shifts**, should be included in recovery plans. Although sometimes difficult to address, **all realistic threats** should be identified, i.e., those that are likely to have an effect on the species..."



Can we apply the "Rosetta Stone" framework to improve integration of climate change adaptation into the Recovery Planning Process?



ESA LISTING FACTORS

- Present or threatened destruction, modification or curtailment of the species' habitat or range
- Overutilization for commercial, recreational, scientific or educational purposes
- Disease or predation
- The inadequacy of existing regulatory mechanisms
- Other natural or manmade factors affecting species' continued existence

CLIMATE CONSIDERATION

Determine possible and likely effects of climate change on species and critical habitat



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CLIMATE CONSIDERATION

Determine whether climate change will compound current threats that are responsible for species decline and endangerment



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CLIMATE CONSIDERATION

Determine how human responses to climate change are likely to influence other threats



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CLIMATE CONSIDERATION

Rate threats (including climate exposures) with respect to their impact on recovery



Recovery Program - Recovery Actions

Section describes all actions that will alleviate known threats and restore the species to long term sustainability

CLIMATE CONSIDERATIONS

For highly rated climate threats:

- Identify actions that address climate-related impacts on species numbers, habitat or essential interactions
 - Include actions that intervene on non-climate human activities that compound impacts from climate exposure
 - Include actions that increase resilience or species' ability to respond to impacts from climate exposure
- Prioritize actions that protect/restore recovery units that may be less affected by changes in climate



ESA RECOVERY PLANNING & Climate Adaptation



- Climate considerations can be built into the existing Recovery Planning Framework
- Adaptation becomes part of the process
- Targeting the most appropriate adaptation strategies requires:
 - Climate threats and impacts to be explicitly addressed in Reasons for Listing
 - Rated alongside other threats (currently not required)
 - Ratings used to prioritize actions





