

# Species Status Assessment Framework Introduction March 2016

Draft:  
Subject to revision



# Ground Rules

- Only seeking the best available scientific information from the experts.
- Only seeking expert input on the biological information, not ESA determination.
- Participants are for scientific expertise not agency position.
- Advice will be provided on an individual basis and not from the group.
- Expert meeting is one source of information; all information is public.

# ESA Decision-making Context

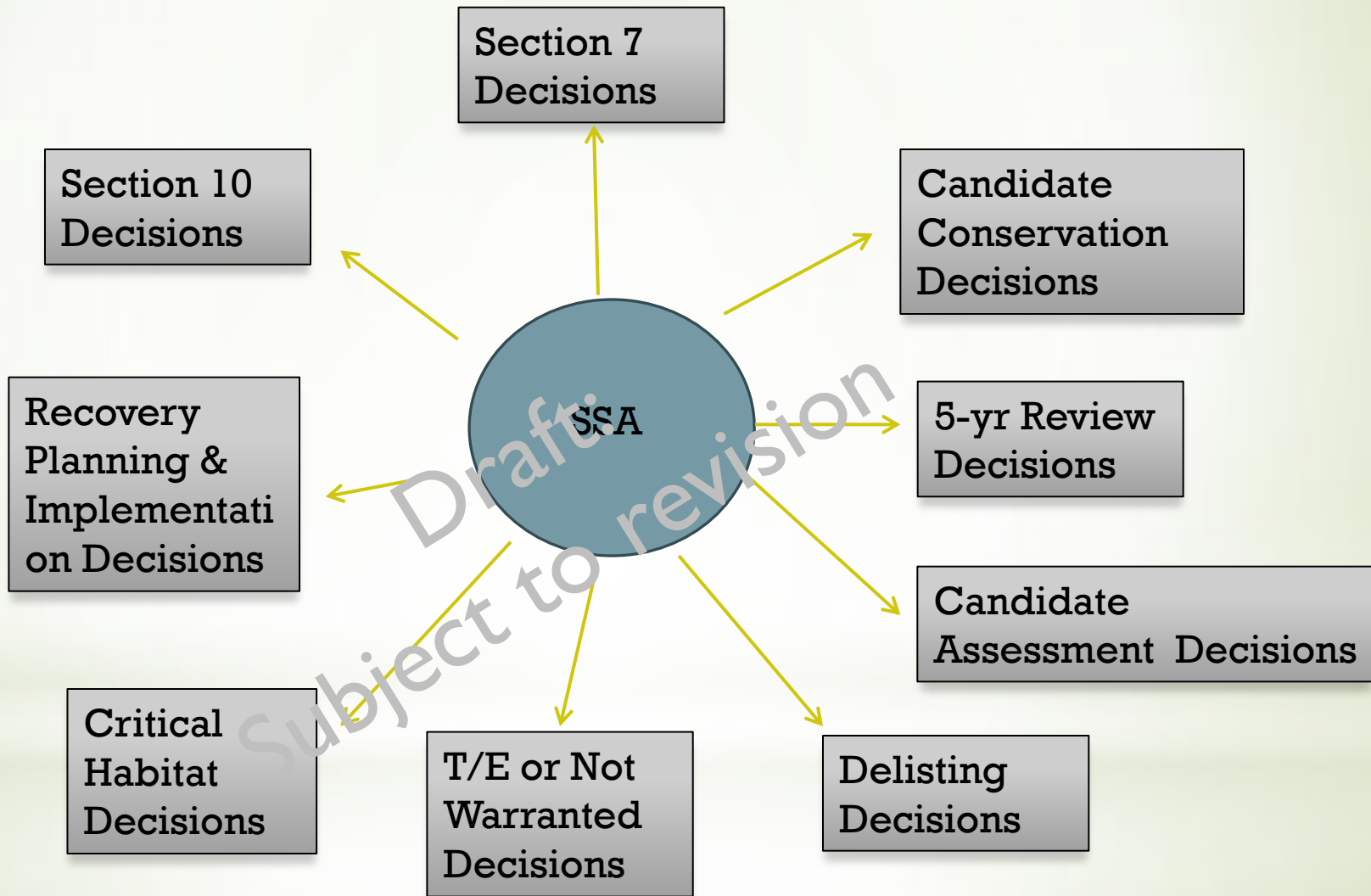
- ESA requires making many decisions
  - Listing/delisting
  - Recovery planning and implementation
  - Consultations
  - Etc.
- Underlying each decision is the biological status of the species
- Historically, species' status developed anew for each decision

# Species Status Assessment

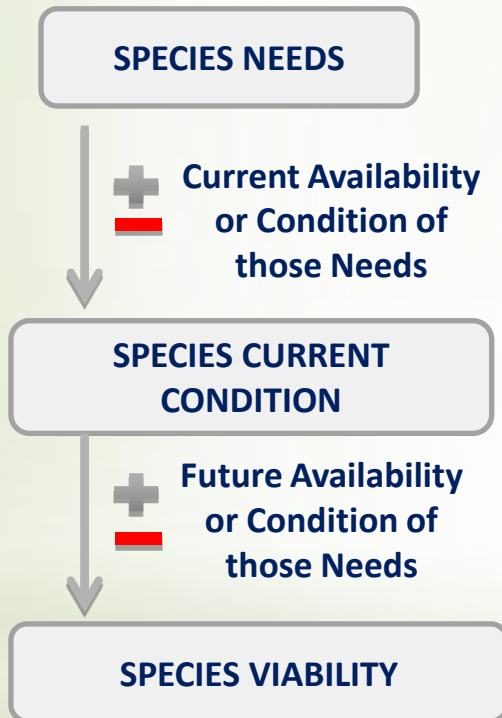
- \* Efficiency
- \* Consistency
- \* Transparency
- \* Separates Science from Policy

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# Foundation for ESA Decisions



# Species Status Assessment Framework



\* **The SSA Framework is a different way of thinking about biological status assessments under the ESA.**

\* **Its purpose is to describe the viability of species in a way that supports our ESA decisions.**

# What is a SSA?

## Biological assessment to inform ESA decisions

### The SSA Framework

Compile information  
on life history and  
ecological relationships  
(*patient history*)

Describe current  
conditions & why  
(*diagnosis*)

Project future  
conditions & decision-  
specific synthesis  
(*prognosis*)

**SPECIES' NEEDS (ECOLOGY)**



**CURRENT SPECIES' CONDITION**



**FUTURE SPECIES' CONDITION  
(VIABILITY)**



# Define Viability?

Viability is the ability of a species to sustain populations in the wild beyond a defined time period.

Viability is not a specific state, but rather can be thought of as a continuous measure of the likelihood that the species will sustain populations over time.

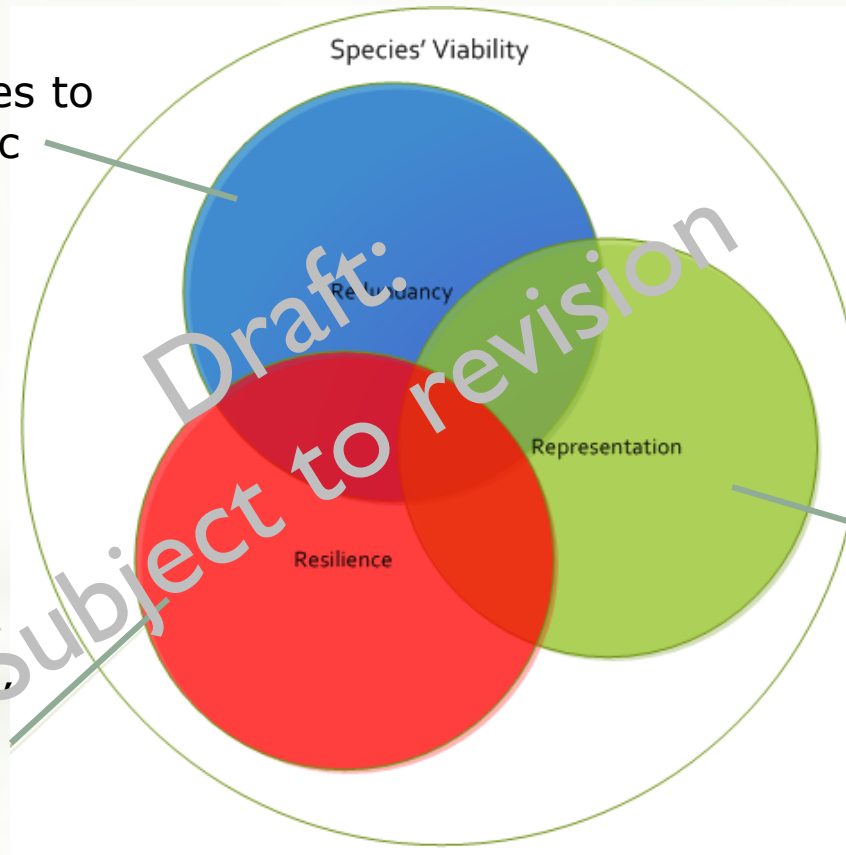




# What is viability?

## Principles of Resiliency, Representation & Redundancy “3Rs”

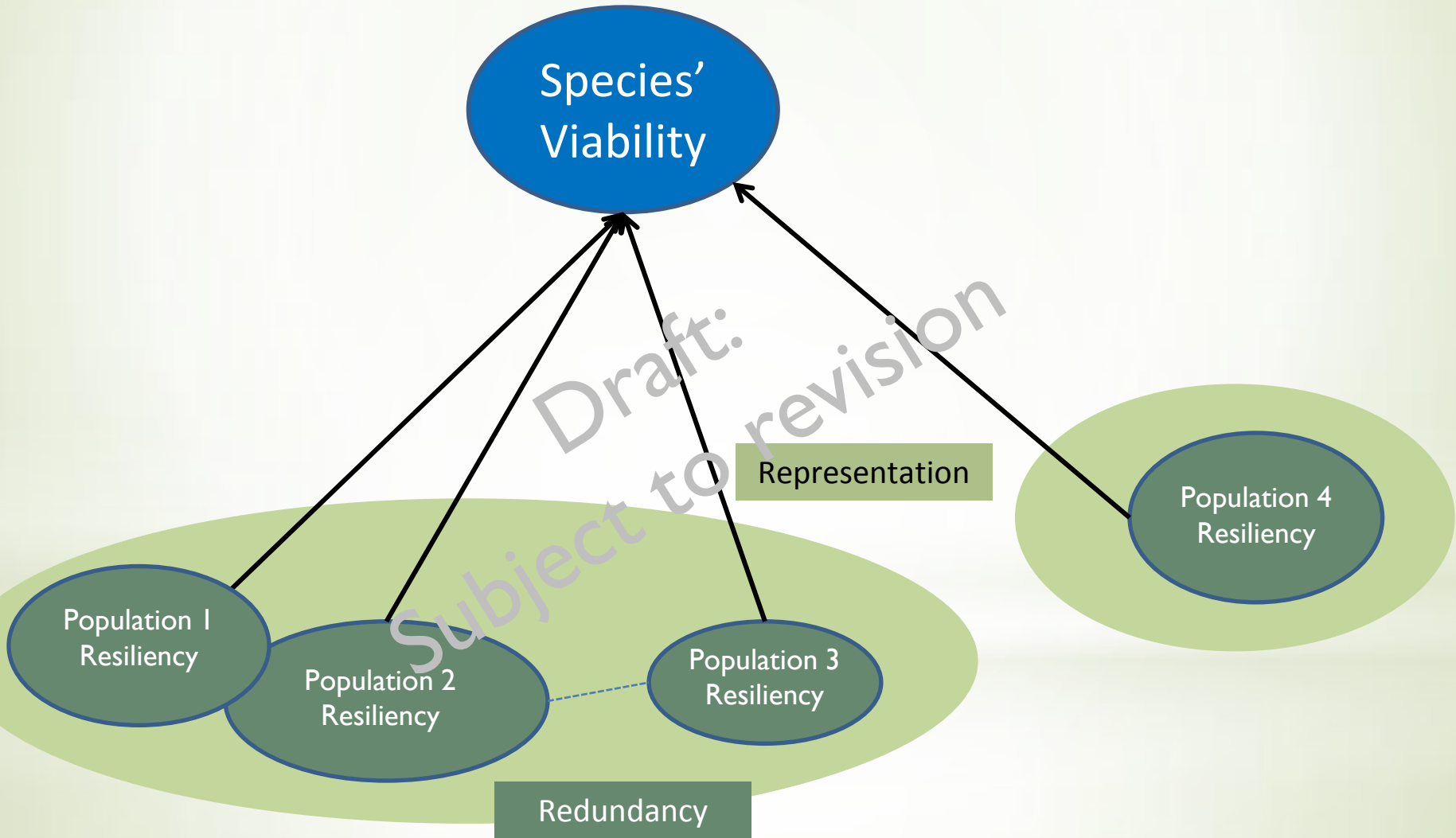
“the ability of a species to withstand catastrophic events”



“the ability of a species to adapt to changing environmental conditions”

“the ability of the species' populations to withstand annual environmental variation & stochastic events”

# Viability and 3Rs



# What is viability?

Viability for a species is the ability of the species to maintain multiple (redundancy), self-sustaining populations (resiliency) across the species' ecological settings (representation).

SSA process is intending to characterize the likelihood that a species will sustain populations over time.



# Stage 1: Species' Ecology

## What are the ecological requirements?

### Individual level

- What are the life history needs for individuals of each life stage?
  - breeding, feeding, and sheltering needs to successfully survive and reproduce

### Population level

- What are the demographic and habitat needs of a healthy population (stable or positive population growth; resilience)
  - demography – vital rates
  - habitat – type, quantity, & quality

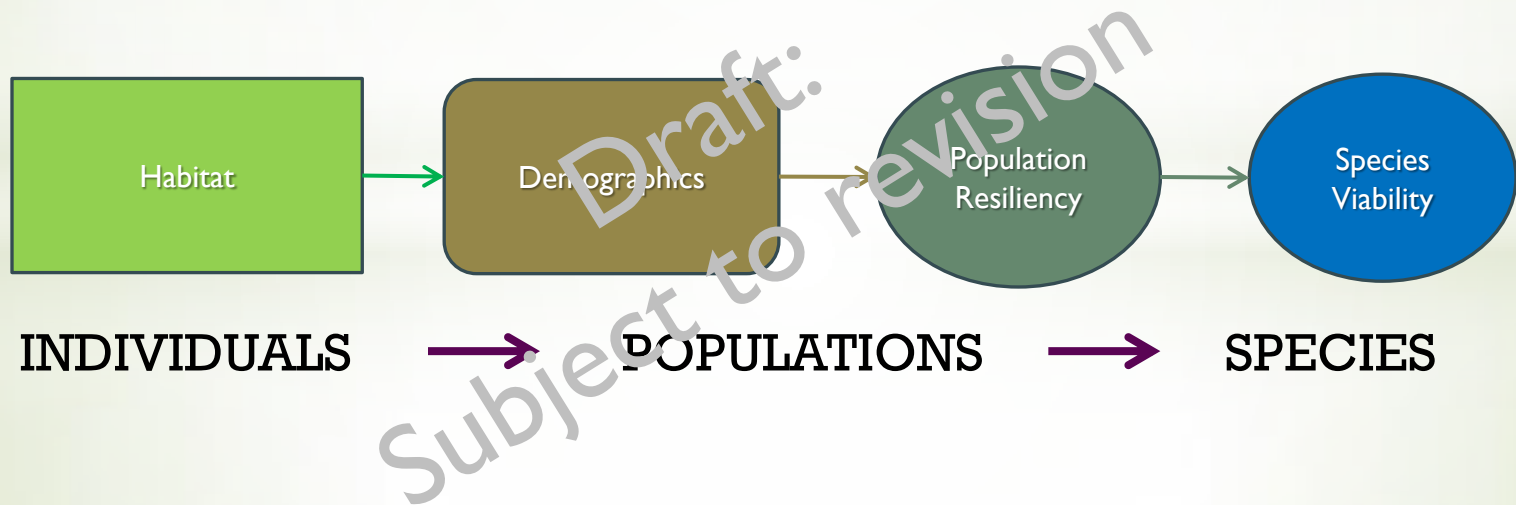
### Species level

- What is needed to sustain populations into the future in terms of:
  - number and distribution of healthy populations (redundancy)
  - populations in all of the species' ecological settings (representation)



# Stage 1: Species' Ecology

**What are the ecological requirements?**



# Stage 2: Current Species' Condition

**What is the current condition of the species?  
(and historical condition)**

How many populations historically and now?  
Where the populations are/were distributed?  
How healthy are the populations currently?



# Stage 2: Current Species' Condition

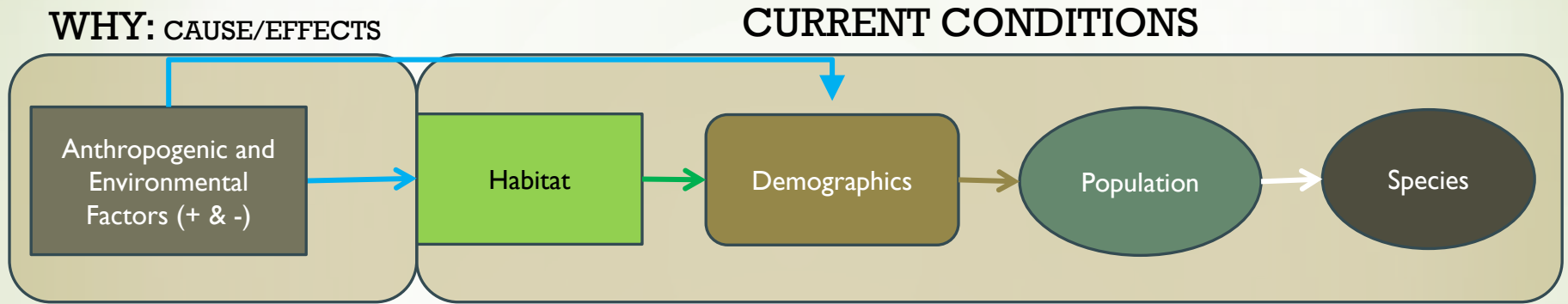
**What is missing or diminished?**

**and Why (causes) and  
Consequences (effects)?**

- How has the species' resiliency, redundancy, or representation changed relative to the past?
- What are the hypotheses or possible explanations for these changes?

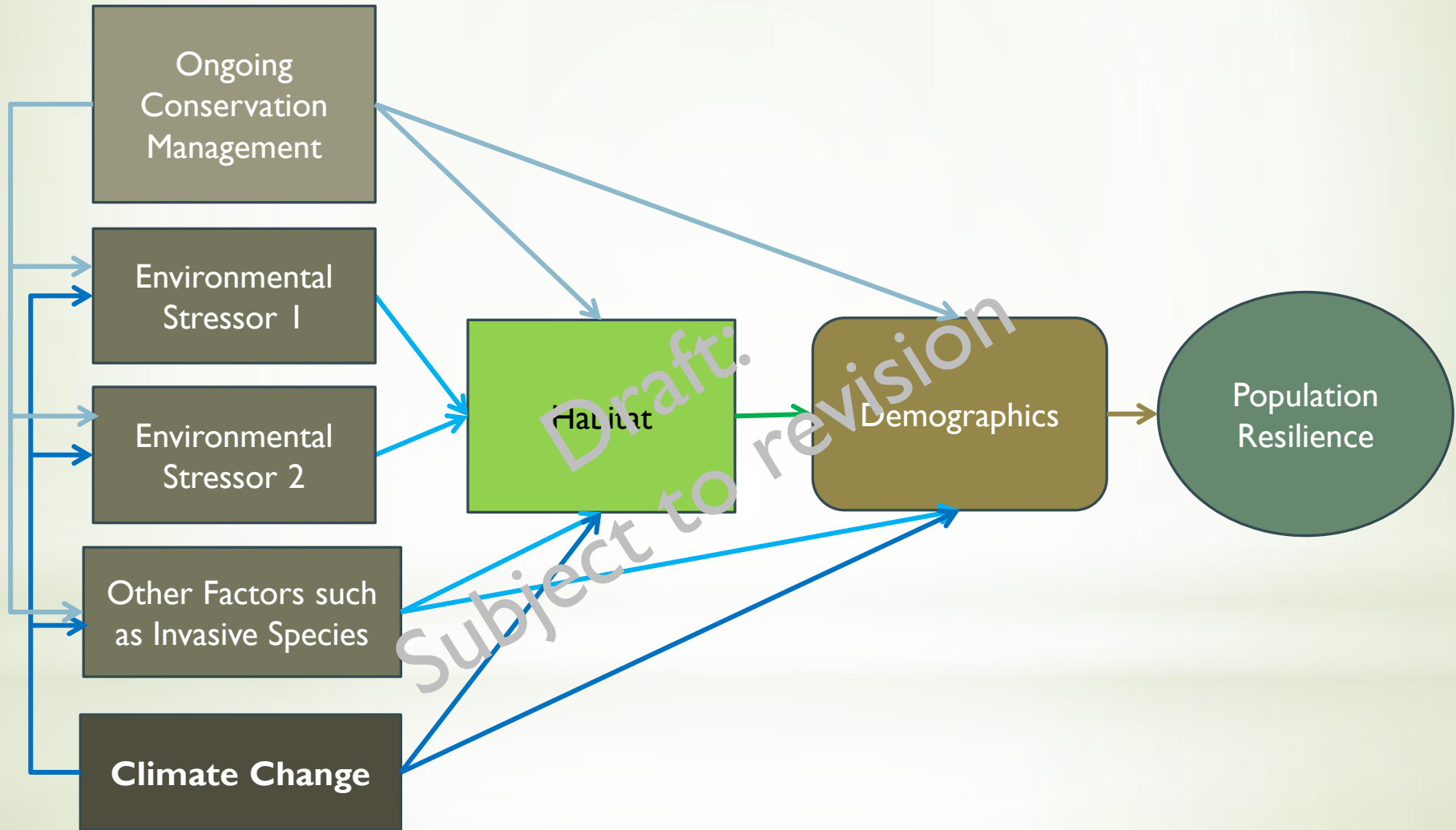


# Stage 2: Current Species' Condition





# Stage 2: Current Species' Condition



# Stage 3: Species' Future Condition

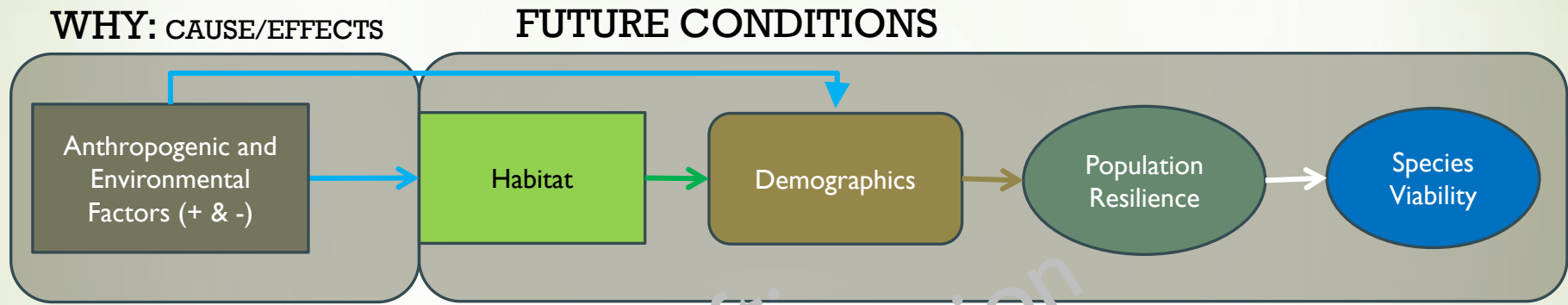
**What will the future look like?**

**Why (causes) and Consequences (effects)?**

- Predictive stage – what is the species' future condition?
- What factors will be in play?
- What are the plausible scenarios of the environment and conservation?



# Stage 3: Future Species' Condition



# Stage 3: Species' Future Condition

## What are the implications for the species?

- Bringing it all together (synthesis) to answer “so what does it mean to the species?”.
- How will the species respond to the future scenarios?
- How will the species' viability change over time?
- What is the underlying uncertainty in this assessment?

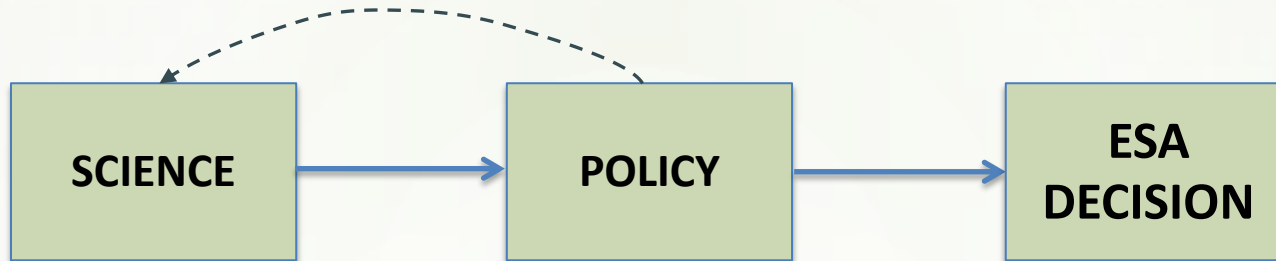


# SSA Framework

Stage 1 → Stage 2 → Stage 3

SCALE	NEEDS (ECOLOGY)	CURRENT CONDITION	FACTOR ANALYSIS (WHY)	FUTURE SCENARIOS	FUTURE CONDITION
Individuals	Life History	Current species' condition	<i>Historical and Current Factors</i> <i>Future Risk Factors</i>	Scenarios of environment and conservation	Projected future species' condition (change in viability over time) & the implications
- Life Stages	Breeding, Feeding, Sheltering				
Populations	Demography & Habitat				
Species	Number, Distribution and Diversity of Populations				

# Science vs. Policy



Decision Elements	Risk Profile – Analysis	Risk Tolerance – Policy
<b>Process</b>	<b>SSA Framework</b>	<b>ESA Decision Making</b>
<b>Who</b>	<b>Team of Biologists</b>	<b>Decision Makers</b> (FWS Management)
<b>How</b>	<b>SSA Framework</b> (Scientific Analysis of Biological Information)	<b>Application of Legal Standards</b> (Societal Values)
<b>When</b>	<b>Throughout the SSA Analysis</b>	<b>AFTER the SSA Analysis</b>
<b>Outcome</b>	<b>Viability Characterization</b>	<b>ESA Decision</b> (Policy Judgment)

# Foundation for ESA Decisions

