Species Status Assessment Framework Introduction March 2016

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.

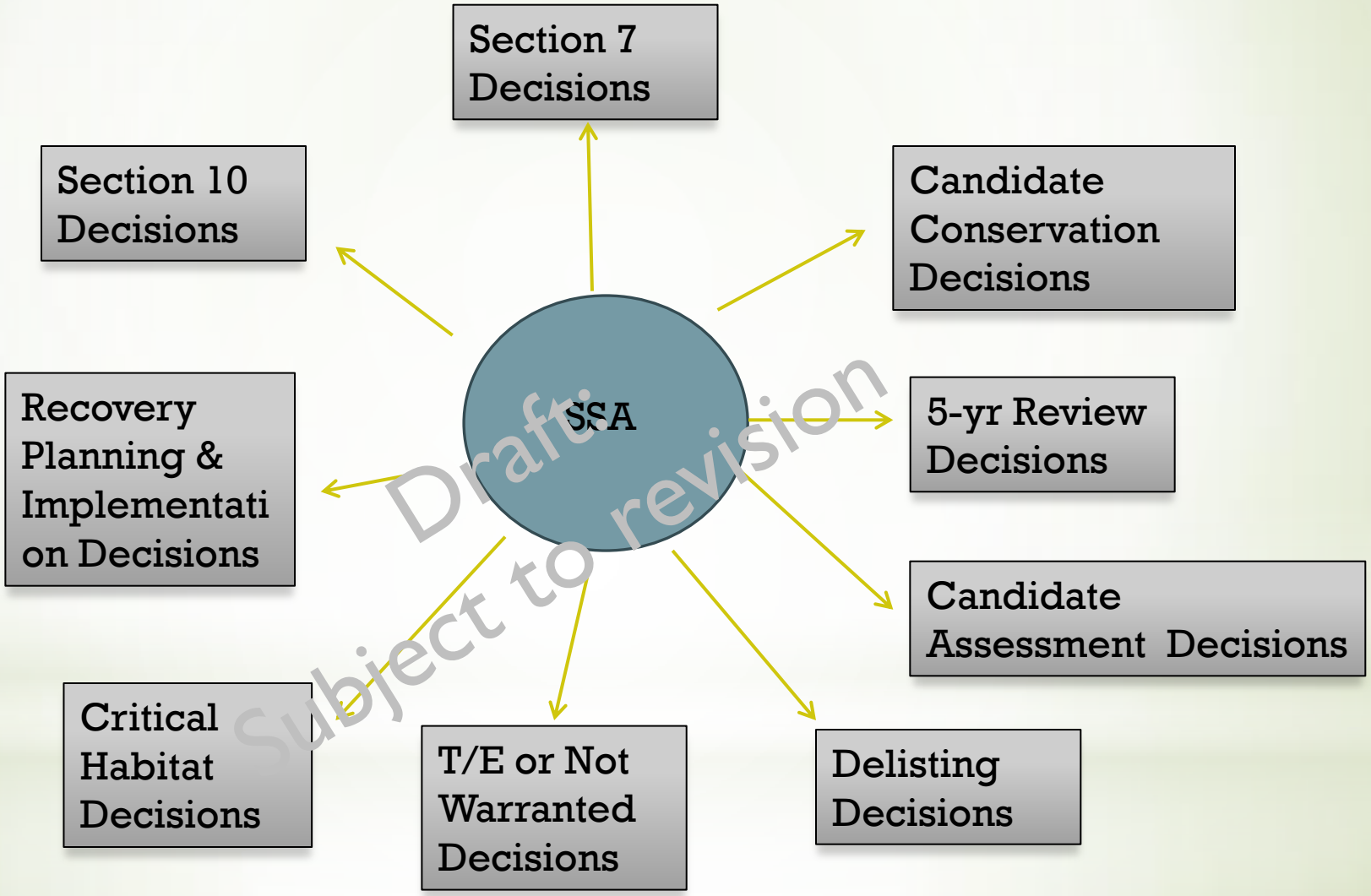
ESA Decision-making Context

- 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

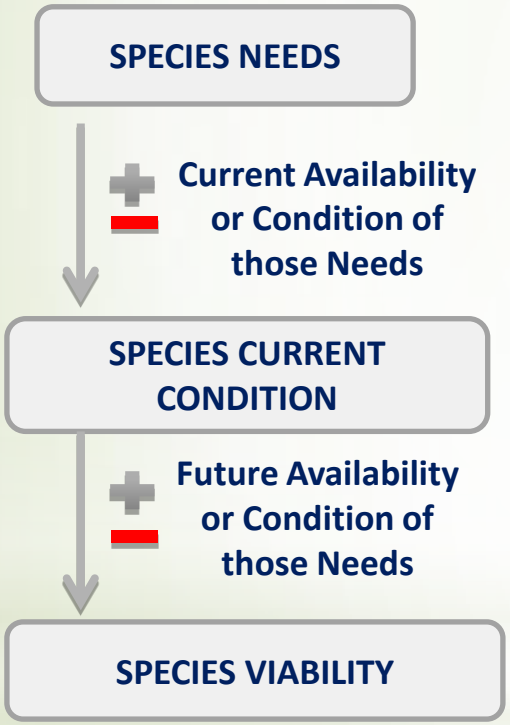
Species Status Assessment

* Efficiency
* Consistency
* Transparency
* Separates Science from Policy

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*)

SPECIES' NEEDS (ECOLOGY)

Describe current conditions & why (*diagnosis*)

CURRENT SPECIES' CONDITION

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

FUTURE SPECIES' CONDITION (VIABILITY)

Define Viability?

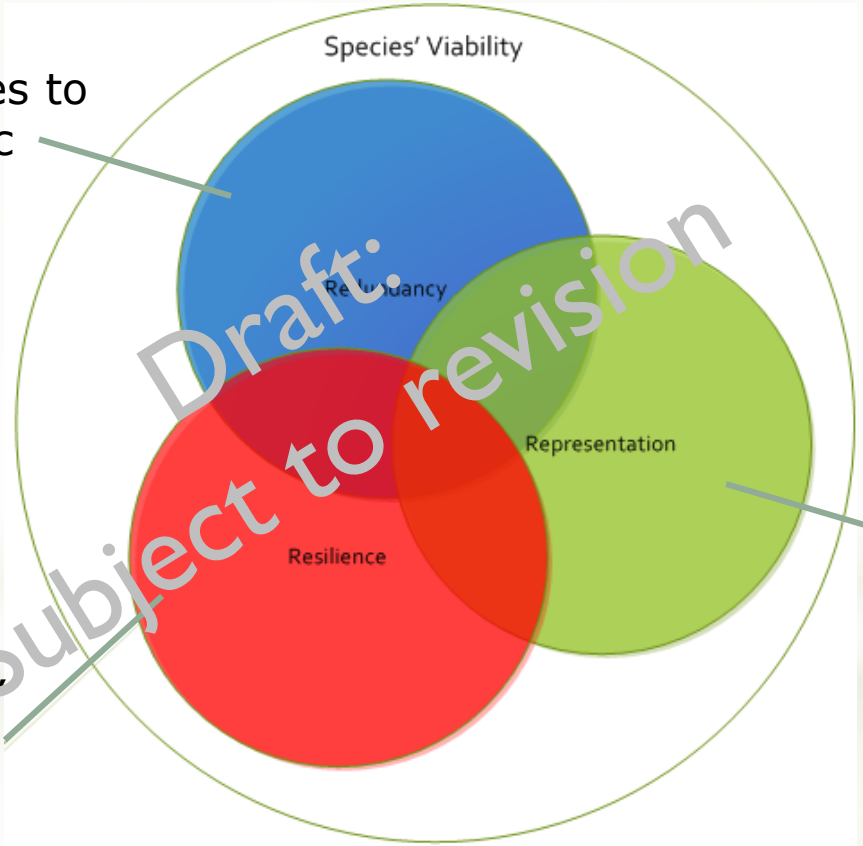
Viability is the ability of a species to sustain populations in the wild beyond a defined time period.

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"

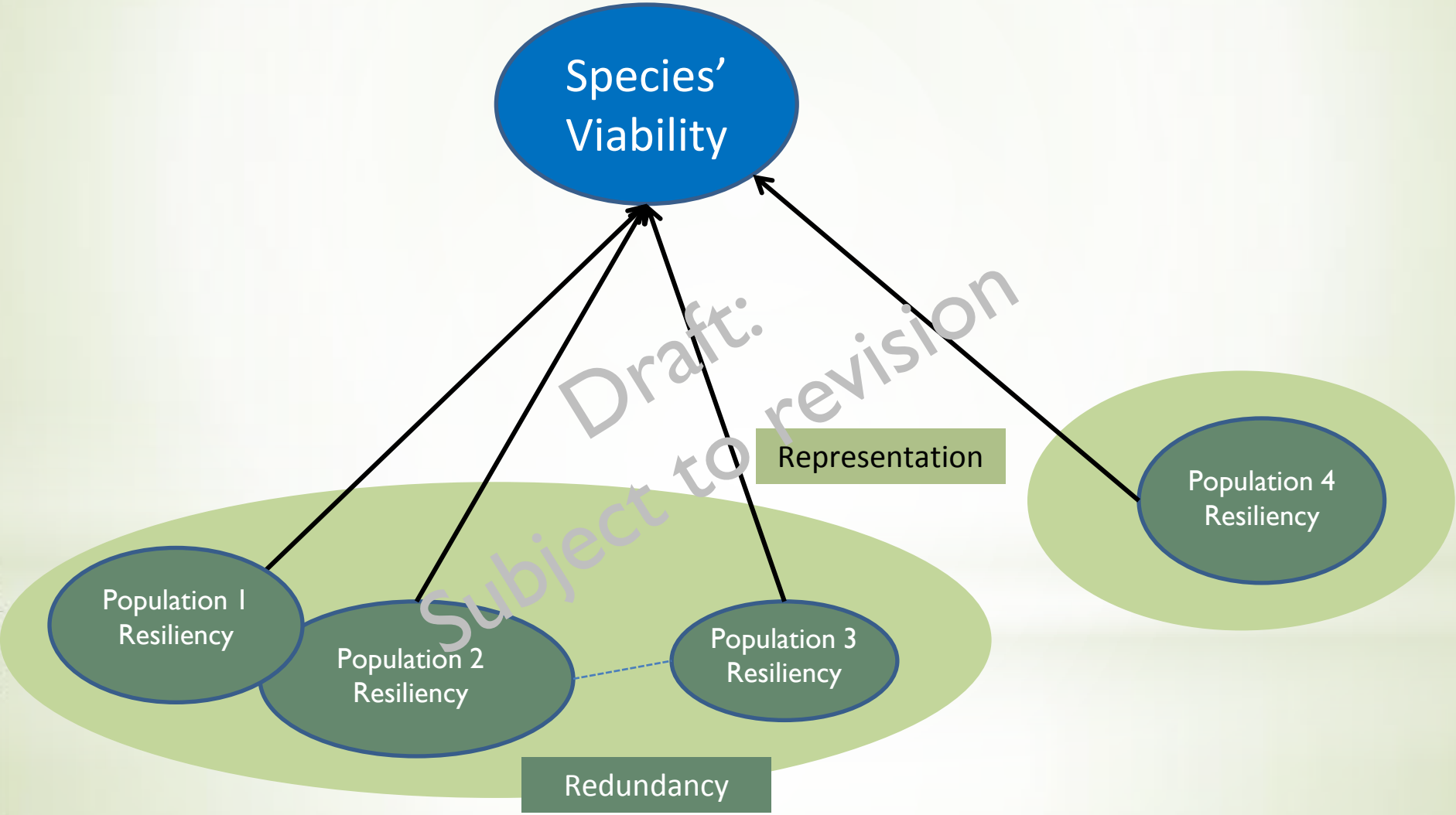
"the ability of a species to withstand catastrophic events"



"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

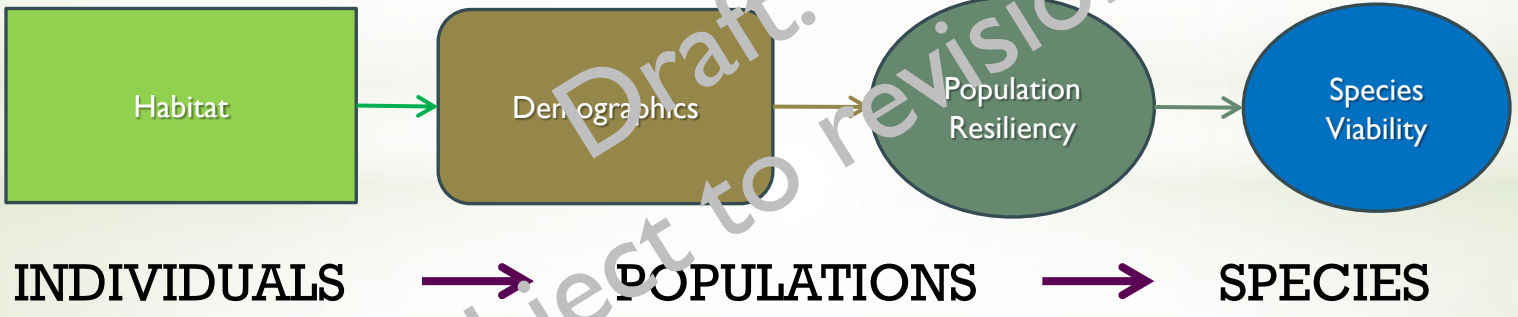
- What are the demographic and habitat needs of a healthy population (stable or positive population growth; resilience)
  - demography – vital rates
  - habitat – type, quantity, & quality

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?

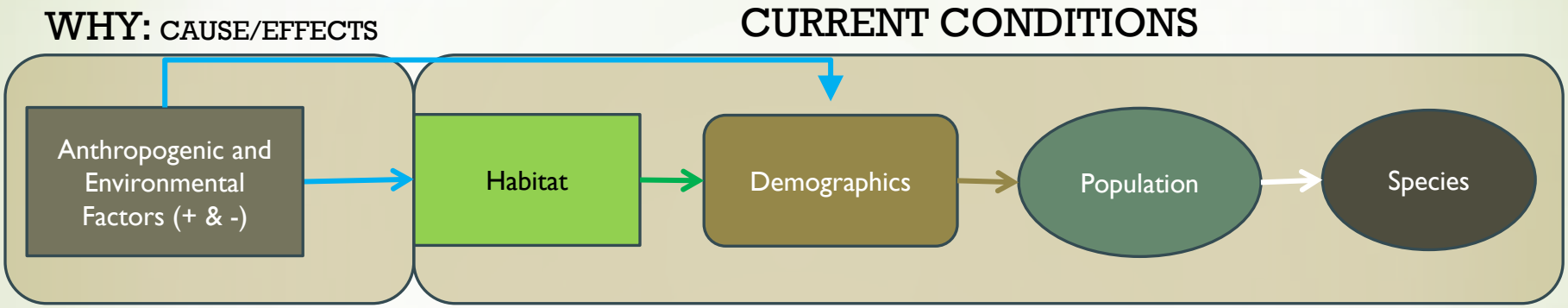
Stage 2: Current Species' Condition

What is missing or diminished?

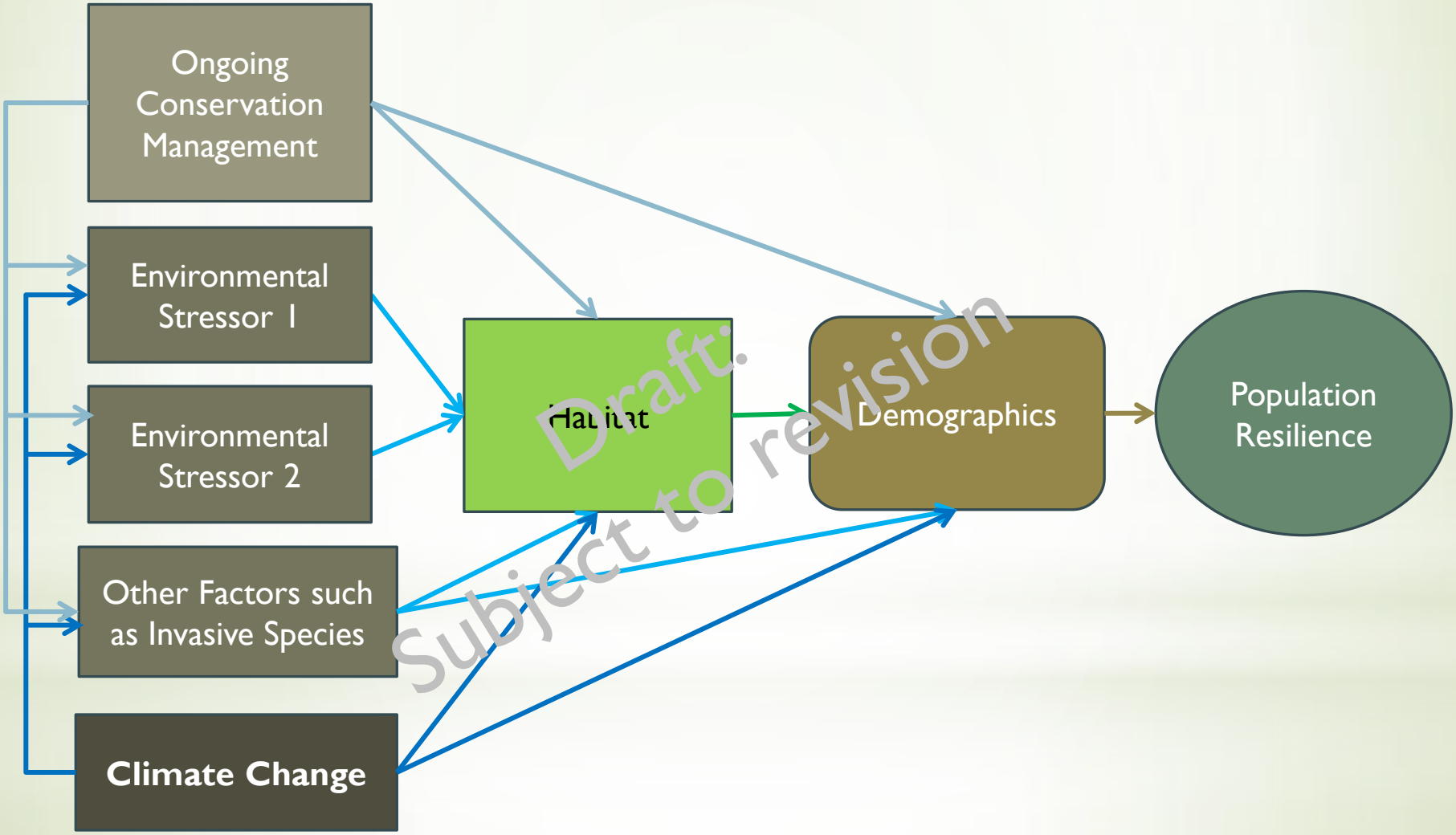
and Why (causes) and Consequences (effects)?

- 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



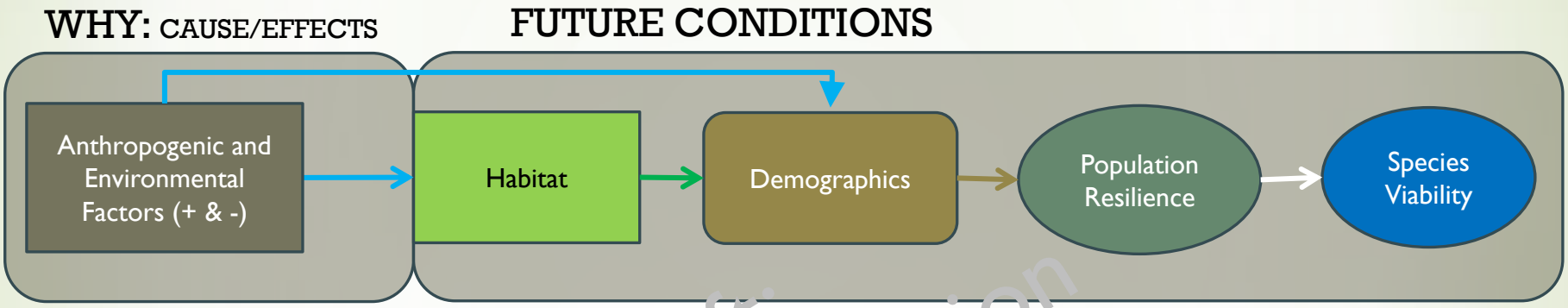
Stage 3: Species' Future Condition

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?

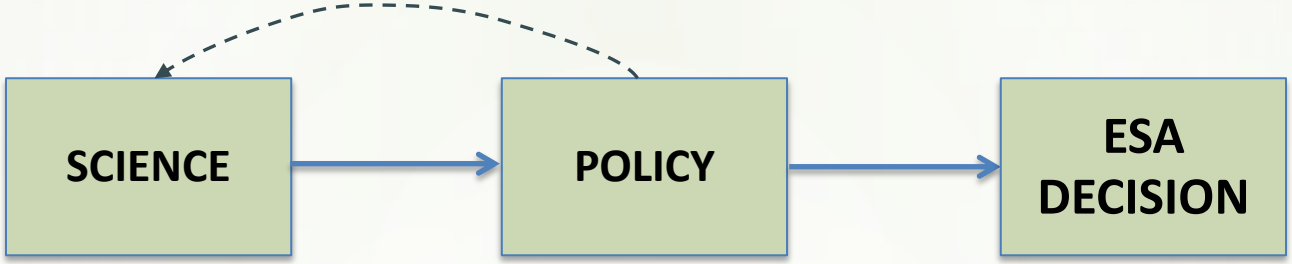
- Bringing it all together (synthesis) to answer "so what does it mean to the species?".
- How will the species respond to the future scenarios?
- How will the species' viability change over time?
- What is the underlying uncertainty in this assessment?

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	*Historical and Current Factors*	Scenarios of environment and conservation	Projected future species' condition (change in viability over time) & the implications
- Life Stages	Breeding, Feeding, Sheltering		*Future Risk Factors*		
Populations	Demography & Habitat				
Species	Number, Distribution and Diversity of Populations				

Science vs. Policy



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

Foundation for ESA Decisions