

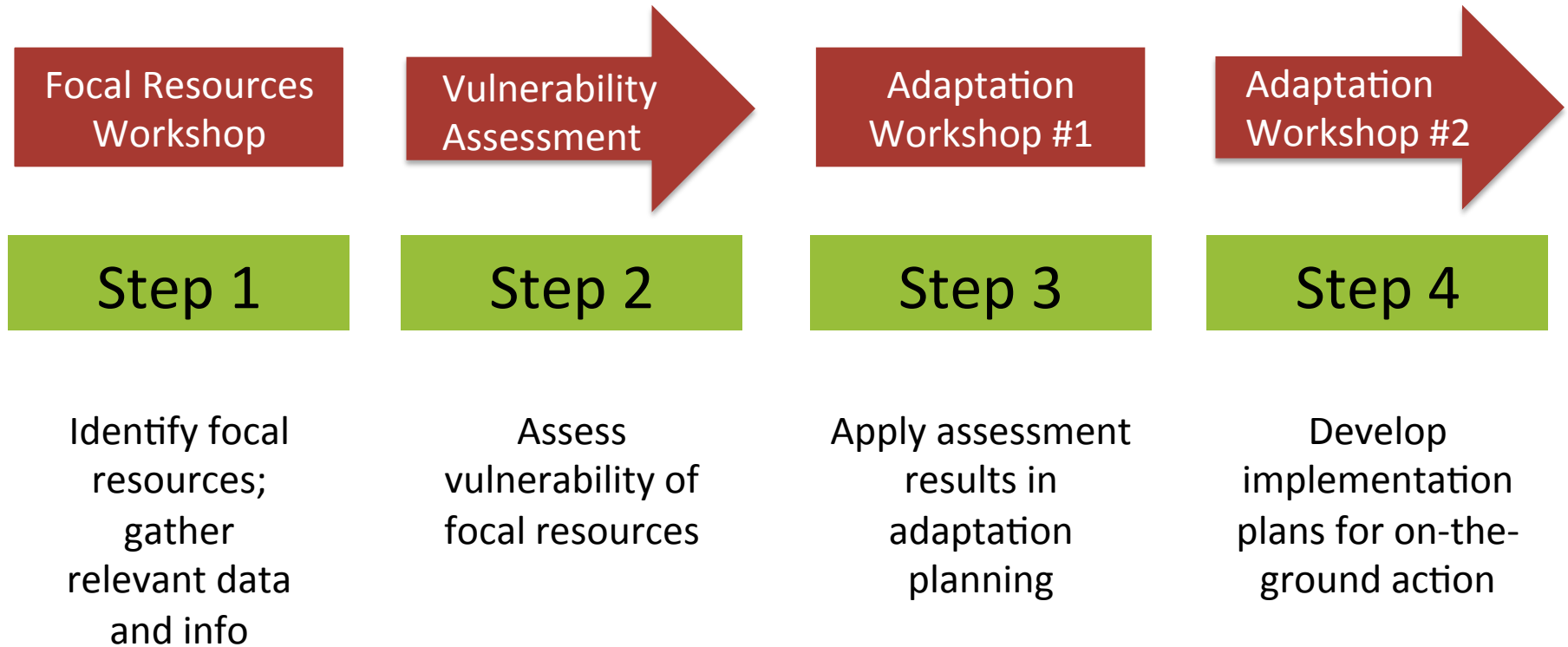
Southern California Climate Adaptation Project

Preliminary Habitat Vulnerability Assessment Results



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Fall 2014: Focal Resources Workshop

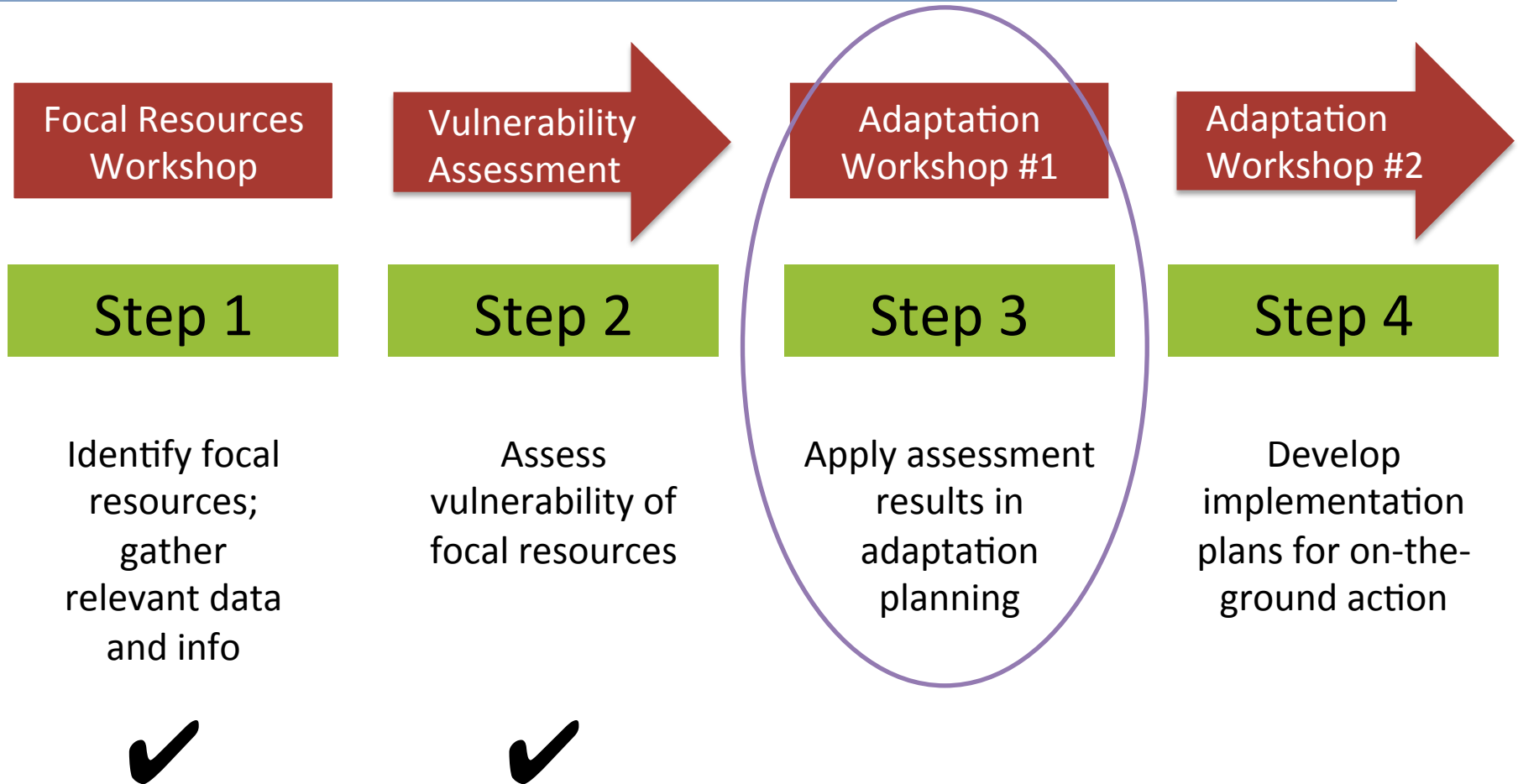


Focal Habitats

- Subalpine
- Conifers
- Pinyon-juniper
- Oak woodlands
- Grasslands
- Chaparral
- Sage scrub
- Rivers & streams
- Low-gradient riparian systems
- Alluvial scrub
- Desert
- Endemics



Fall 2014: Focal Resources Workshop

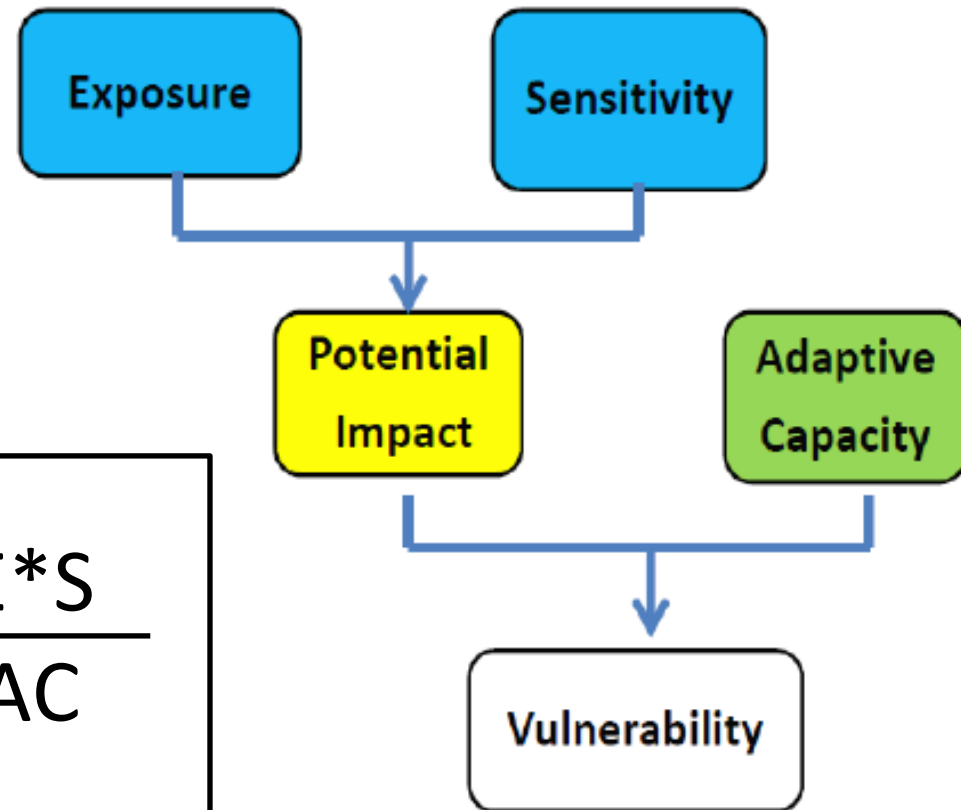


Background: Vulnerability Assessments

Function:
Identify what
resources are **most
vulnerable** and **why**

$$V = \frac{E * S}{AC}$$

Vulnerability Components



Assessing Sensitivity

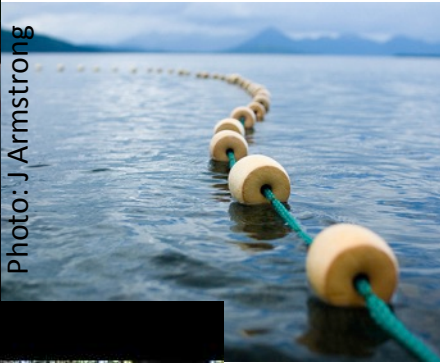
Measure of whether and how a resource is likely to be affected by a given change in climate.

Factors affecting sensitivity of habitats:

- Climate factors
- Disturbance regimes
- Non-climate stressors



Photo: J. Armstrong



Assessing Exposure

Climate Variables	Future Projections
Annual Temperature	↑
Precipitation	Shifts from snow to rain, drier summers/wetter winters
Snowpack	↓
Runoff	↑ winter runoff flood frequency Earlier spring runoff = prolonged & lower summer flows
Climatic water deficit	↑
Groundwater recharge	Variable
Wildfire	↑

Measure of how much of a change in climate or other environmental factor a resource is likely to experience.

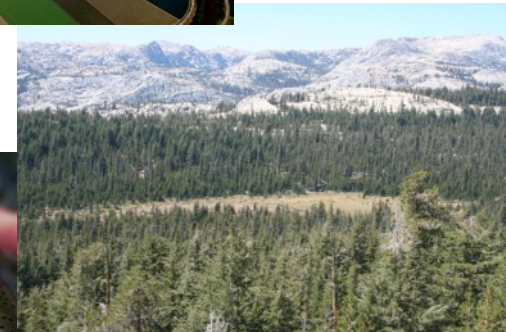
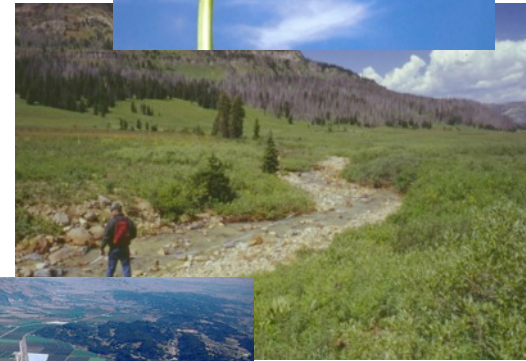


Assessing Adaptive Capacity

Ability to accommodate or cope with climate change impacts with minimal disruption.

Factors affecting adaptive capacity of habitats:

- Extent, status, habitat continuity, landscape permeability
- Resistance and recovery
- Diversity
- Management potential



Degree of change a resource is likely to experience

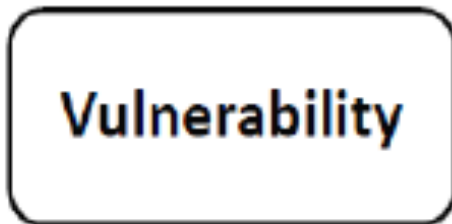
Whether and how a resource reacts to climate change



Ability to accommodate or cope with climate change impacts



$$V = \frac{E * S}{AC}$$

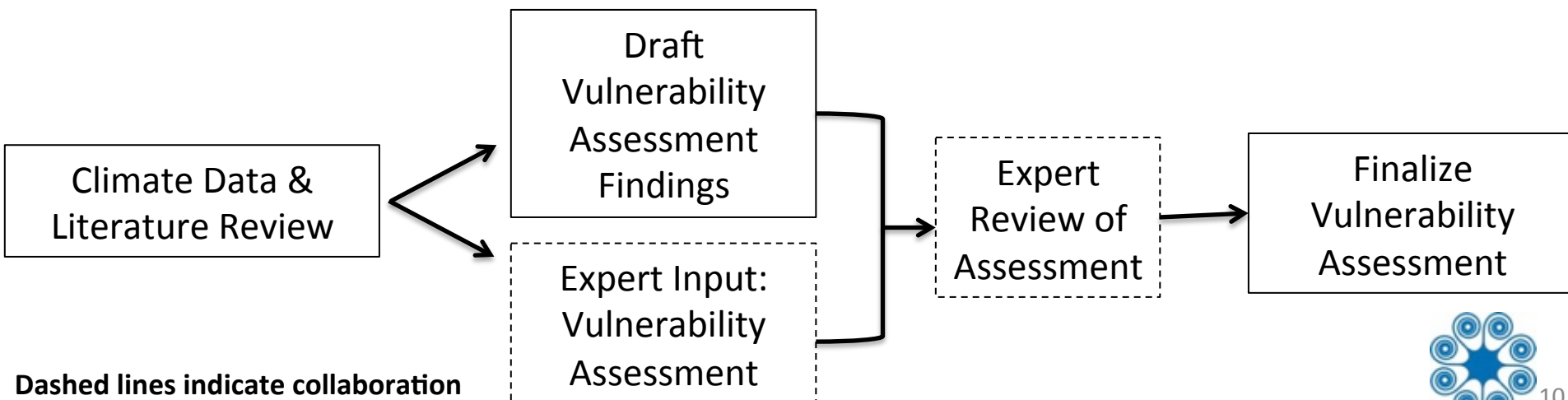


Vulnerability Assessment Process

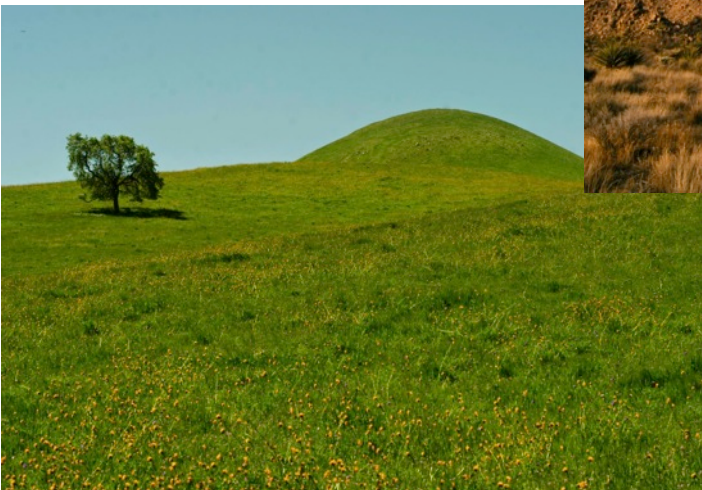
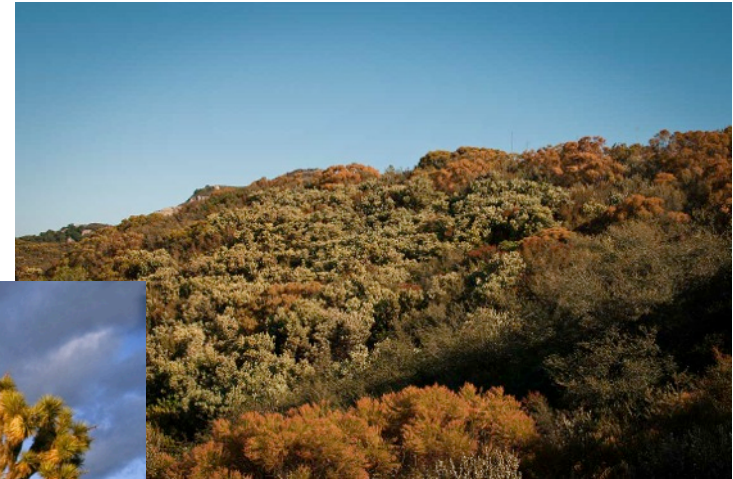
Goal:
Evaluate vulnerability of selected resources to climate and non-climate stressors using literature review, spatial climate info & expert input

Process:

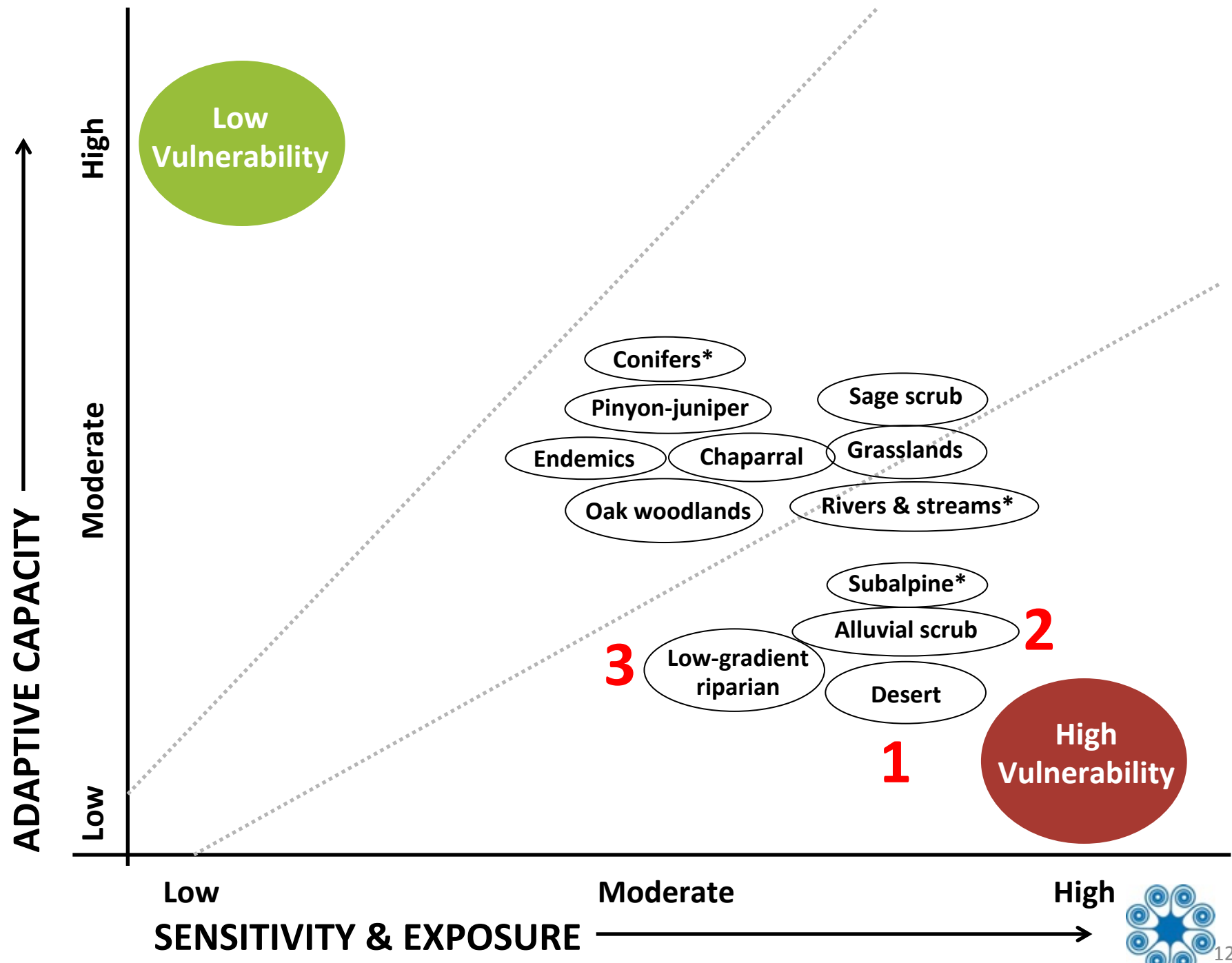
1. Literature review & gather climate data into draft narrative
- 2a. Send vulnerability assessment survey to ~3-5 topic experts
- 2b. Send draft narrative to ~3-5 topic experts for review
3. Finalize assessment



Preliminary Habitat VA Results



Preliminary Vulnerability Assessment Findings



Preliminary Habitat VA Trends



Climate Stressors and Disturbance Regimes

- Precipitation variability and soil moisture
- Drought
- Air temperature and extreme heat events
- Wildfire

Non-Climate Stressors

- Invasive species
- Land use conversion



Adaptive Capacity

- + Decent species diversity
- + Provide many ecosystem services
- Fragmented and currently degraded



Habitat Vulnerability Assessment: Next Steps

1. On-going process - we need more expert input!
 - Critical: subalpine, conifers
 - Highly needed: pinyon-juniper, riparian, rivers and streams, chaparral
 - Need 1 more reviewer: alluvial scrub, desert, endemics
2. Webinar (Fall 2015) to present finalized results
3. Anticipated products:
 - Full vulnerability assessment report
 - Updated 2-page briefings



Acknowledgements



CONSERVATION
BIOLOGY
INSTITUTE



A big thank you to our habitat experts!



Introduction to Vulnerability Assessment Review Activity

Goal:

- Review vulnerability information & identify gaps
- Explore and integrate spatial considerations

Resources available:

- 2-page vulnerability briefing
- Draft vulnerability assessment
- Climate projections
- Table of relative habitat vulnerabilities



Introduction to Vulnerability Assessment Review Activity

Process:

- 2 rounds of reviews (30 minutes each)

Habitat groups:

- Jessi – pinyon-juniper, desert
- Rachel – rivers and streams, riparian, alluvial scrub
- Jessica – chaparral, sage scrub
- Whitney – grasslands, oak woodlands, endemics
- Sarah – subalpine, conifers

