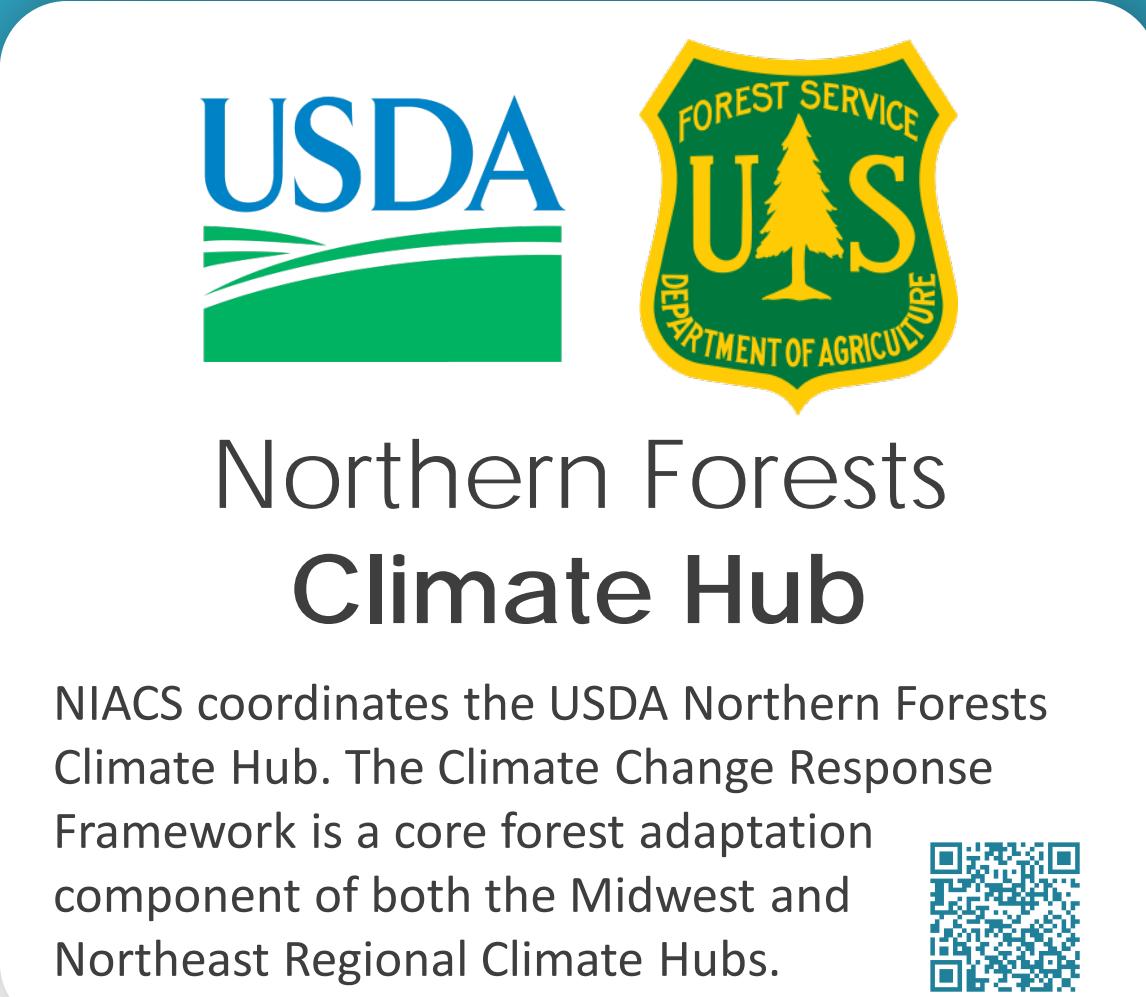


TRANSLATING BROAD CLIMATE CHANGE INFORMATION TO MEANINGFUL SCALES

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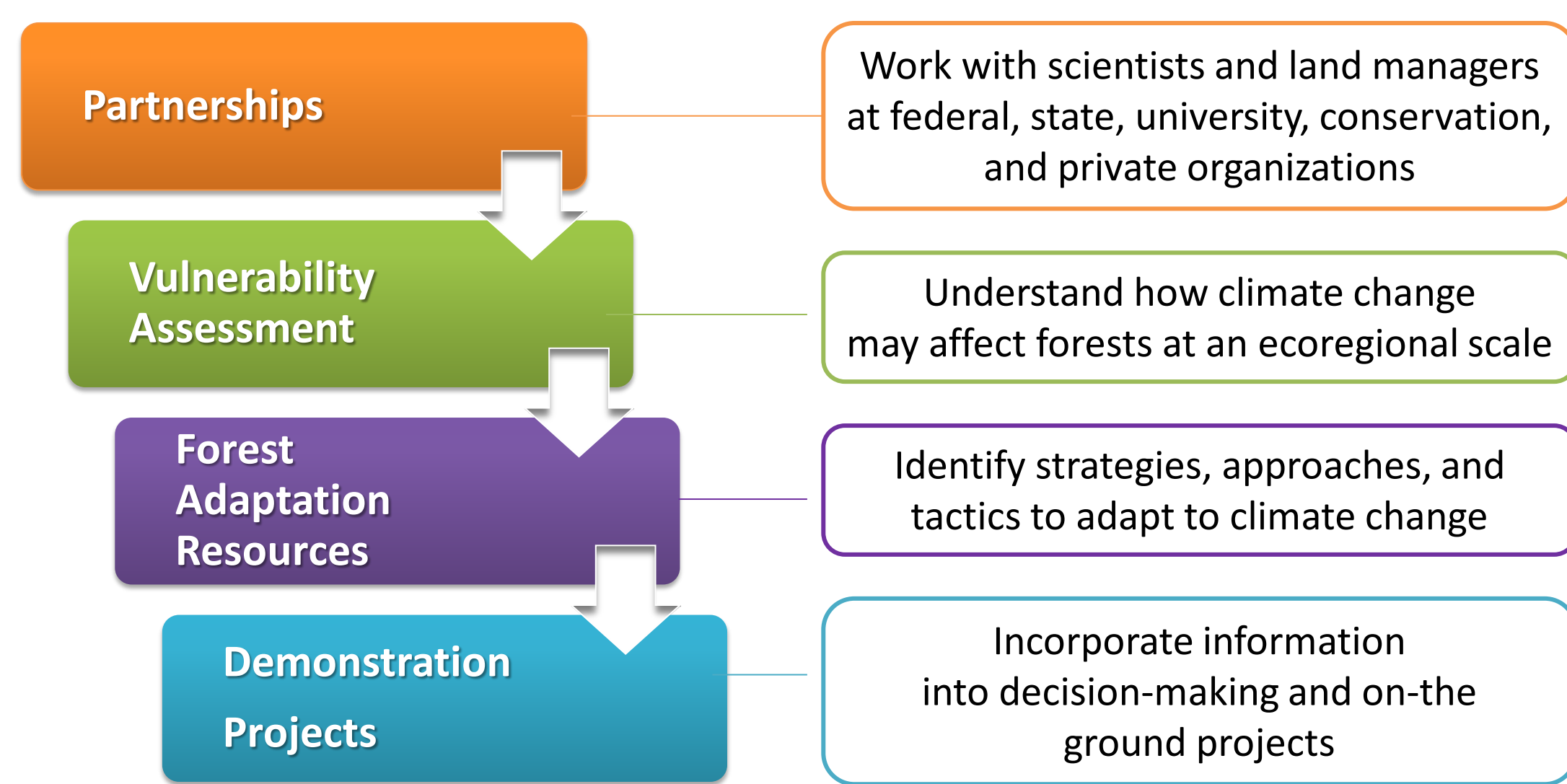
Abstract

Vulnerability assessments synthesize climate change impacts and implications to help inform future management decisions. We developed a vulnerability assessment process at the **ecoregion level**. These assessments fulfill a critical need among managers wanting to consider the effects of climate change on the forests that they manage.

Climate Change Response Framework

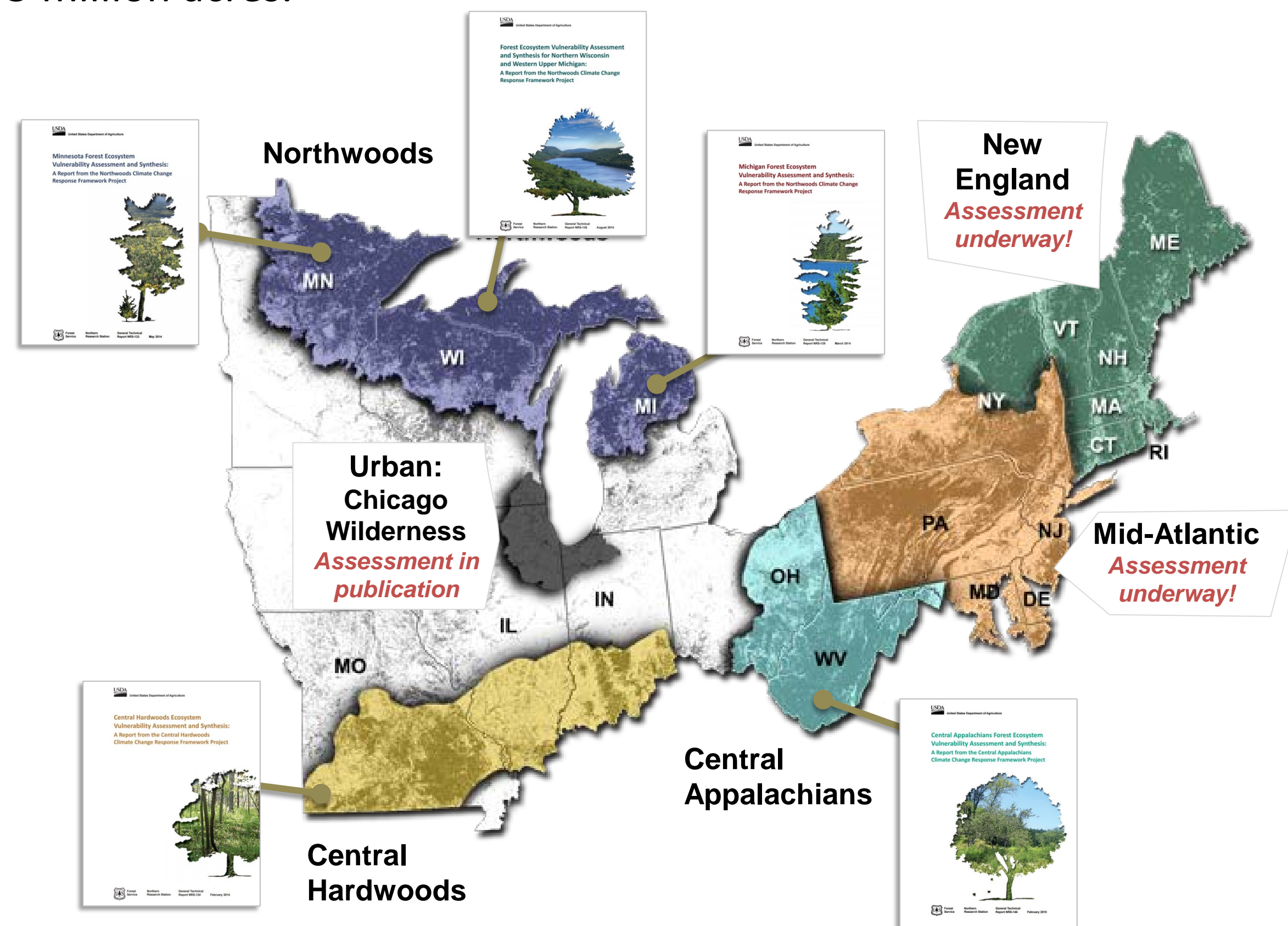
The Framework is a collaborative, cross-boundary approach among scientists, managers, and landowners to incorporate climate change considerations into natural resource management

The Framework has 4 components:



Assessment Areas

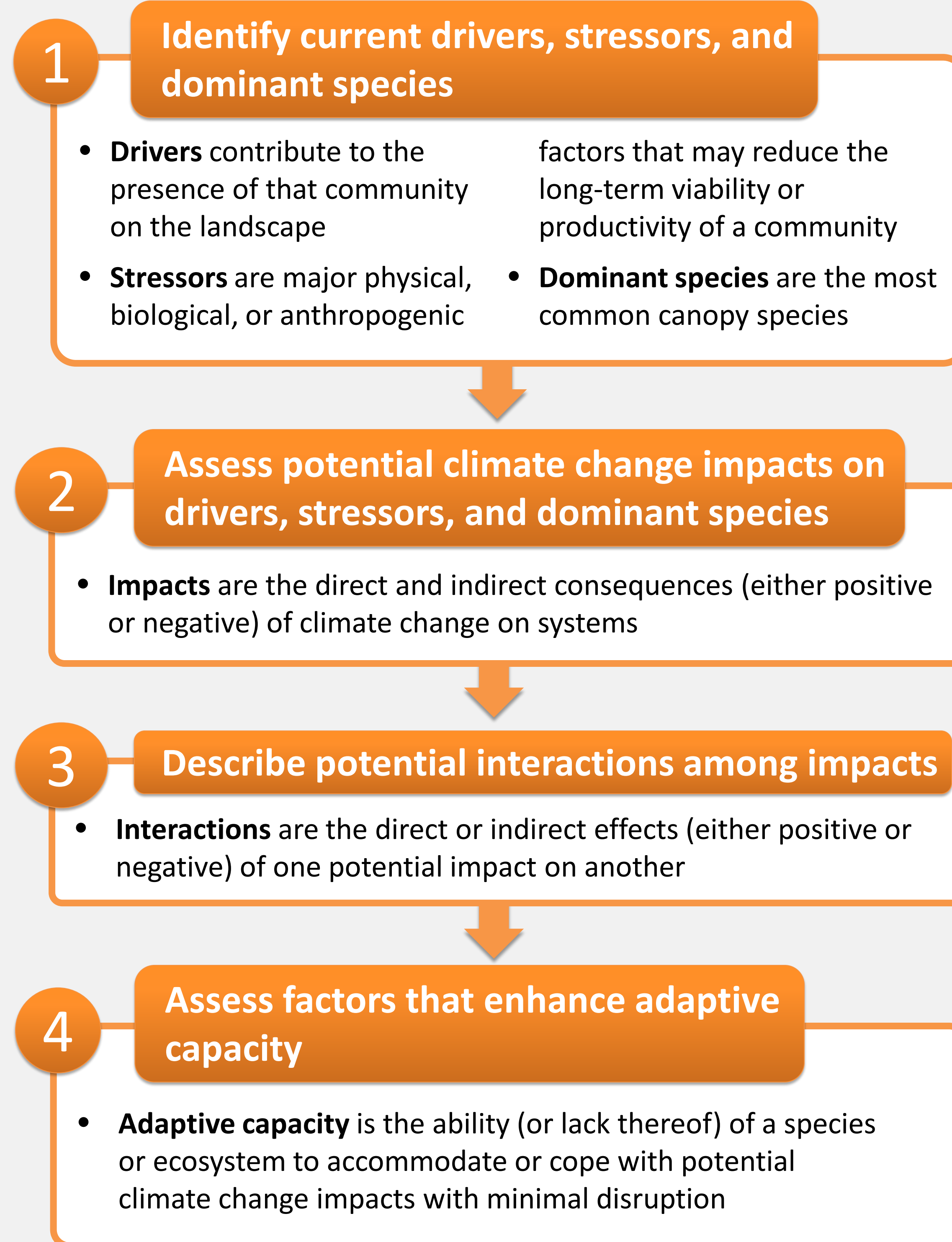
Vulnerability assessments are a key component of the Framework, synthesizing information on climate change to inform future forest management decisions. To date, 5 assessments have been published by the US Forest Service as General Technical Reports, covering more than 135 million acres.



Ecosystem Vulnerability Assessment Approach

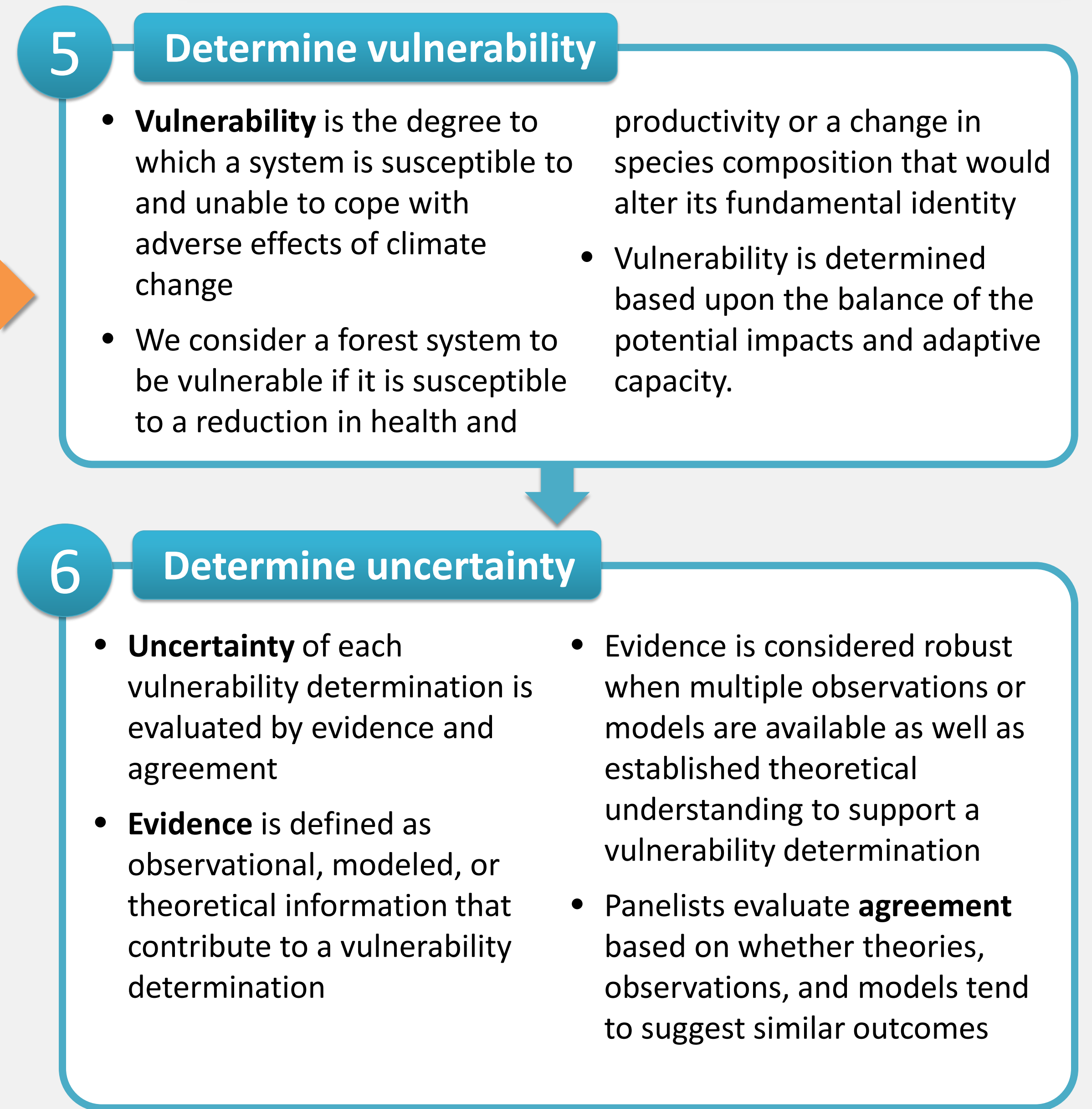
We have developed a 7-step approach that was applied to each assessment area. Panels of experts in climate change impacts on forests, forest ecology, and management were assembled for a two-day workshop in each region.

This process was completed for each ecosystem or forest type in each region.



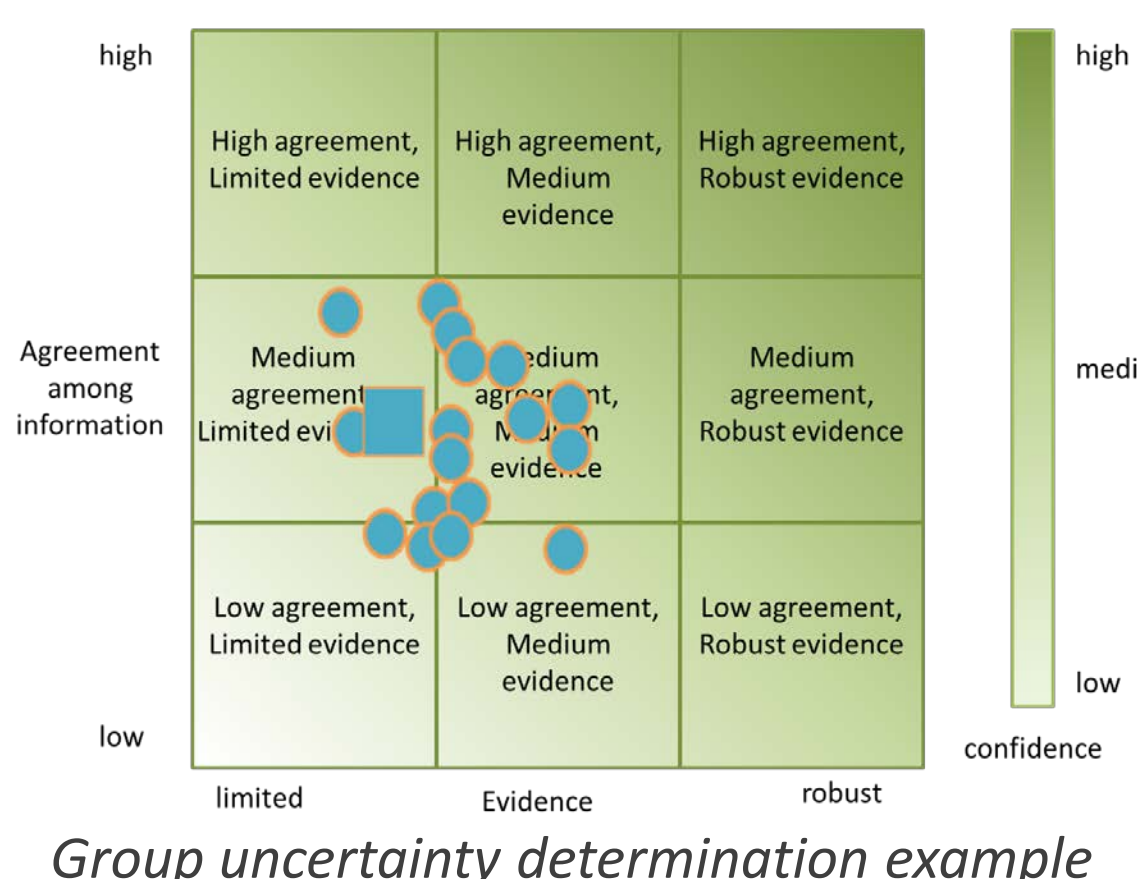
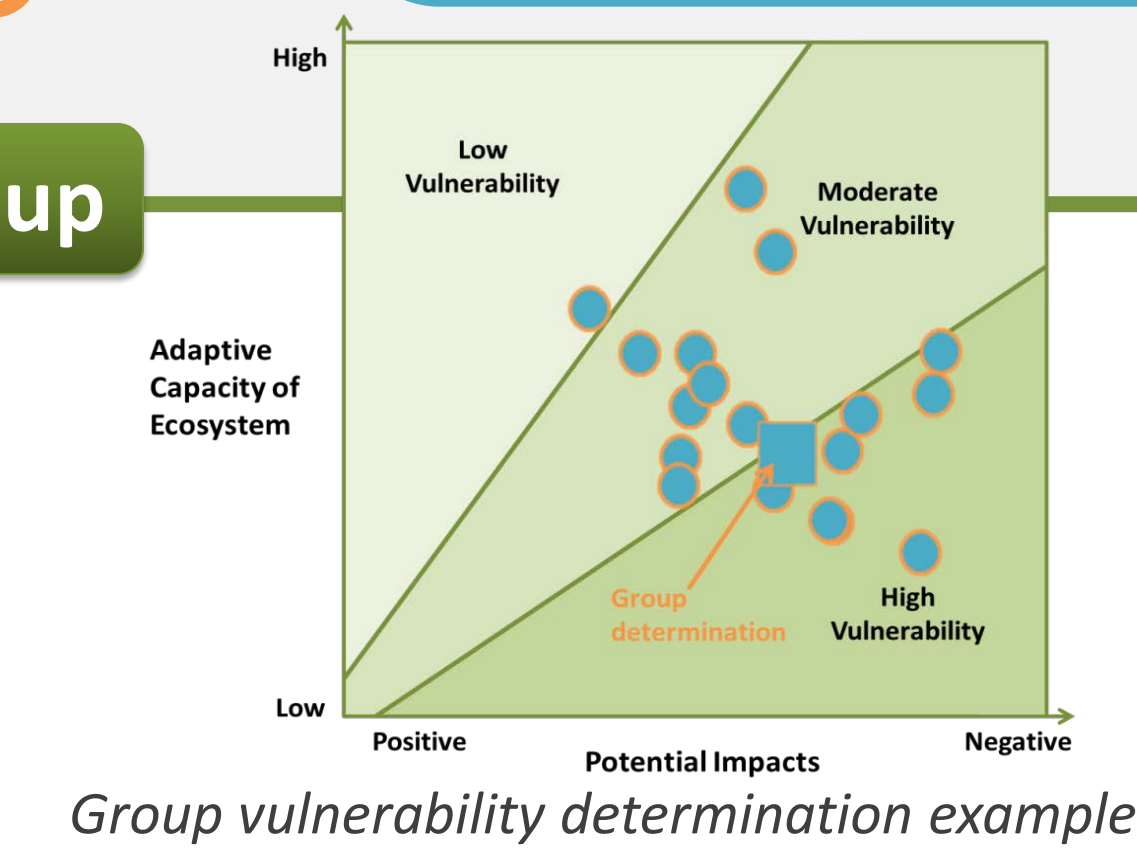
Collaboration Color Key

- Collaborative effort to evaluate results of downscaled climate projections, habitat suitability models, landscape process models, and panelists' expertise
- Determined by each panelist based on information compiled in steps 1-4
- Determined by the group consensus



7 Determine vulnerability and uncertainty as a group

- Panelists indicate their individual determinations on a 2-dimensional space
- Individual ratings are discussed among the group, and the group reaches a determination of vulnerability by consensus
- The group vulnerability determination is placed into one of five categories: *Low, Low-Moderate, Moderate, Moderate-High, and High*
- The group uncertainty determination is made in a similar fashion, with ratings for both evidence and agreement falling into one of five categories



| Community Type | Potential Impacts | Adaptive Capacity | Vulnerability | Confidence |
|-------------------------|-------------------|-------------------|---------------|--|
| Barrens | Moderate | High | Low | Medium-high agreement; Medium evidence |
| Closed Woodland | Positive | High | Low | Medium agreement; Limited evidence |
| Open Woodland | Positive | High | Low | Medium agreement; Medium to Limited evidence |
| Dry-Mesic Upland Forest | Moderate | High | Low-Moderate | Medium to high agreement; Medium evidence |
| Flatwoods | Slightly Positive | Moderate | Low-Moderate | Medium agreement; Limited to medium evidence |
| Glade | Slightly Positive | Moderate | Low-Moderate | Medium to high agreement; Medium evidence |
| Mesic Bottomland Forest | Moderate | Moderate | Moderate | Medium agreement; Medium to limited evidence |
| Wet Bottomland Forest | Slightly Negative | Moderate | Moderate-High | Medium agreement; medium to limited evidence |
| Mesic Upland Forest | Negative | Low | High | Medium-high agreement; medium evidence |

Example vulnerability and uncertainty determination for community types in the Central Hardwoods region.