

# Elements of a Vulnerability Assessment

# Goals

Goal 1. *Be able to identify, recognize, and discuss the different components of vulnerability and how they are measured.*

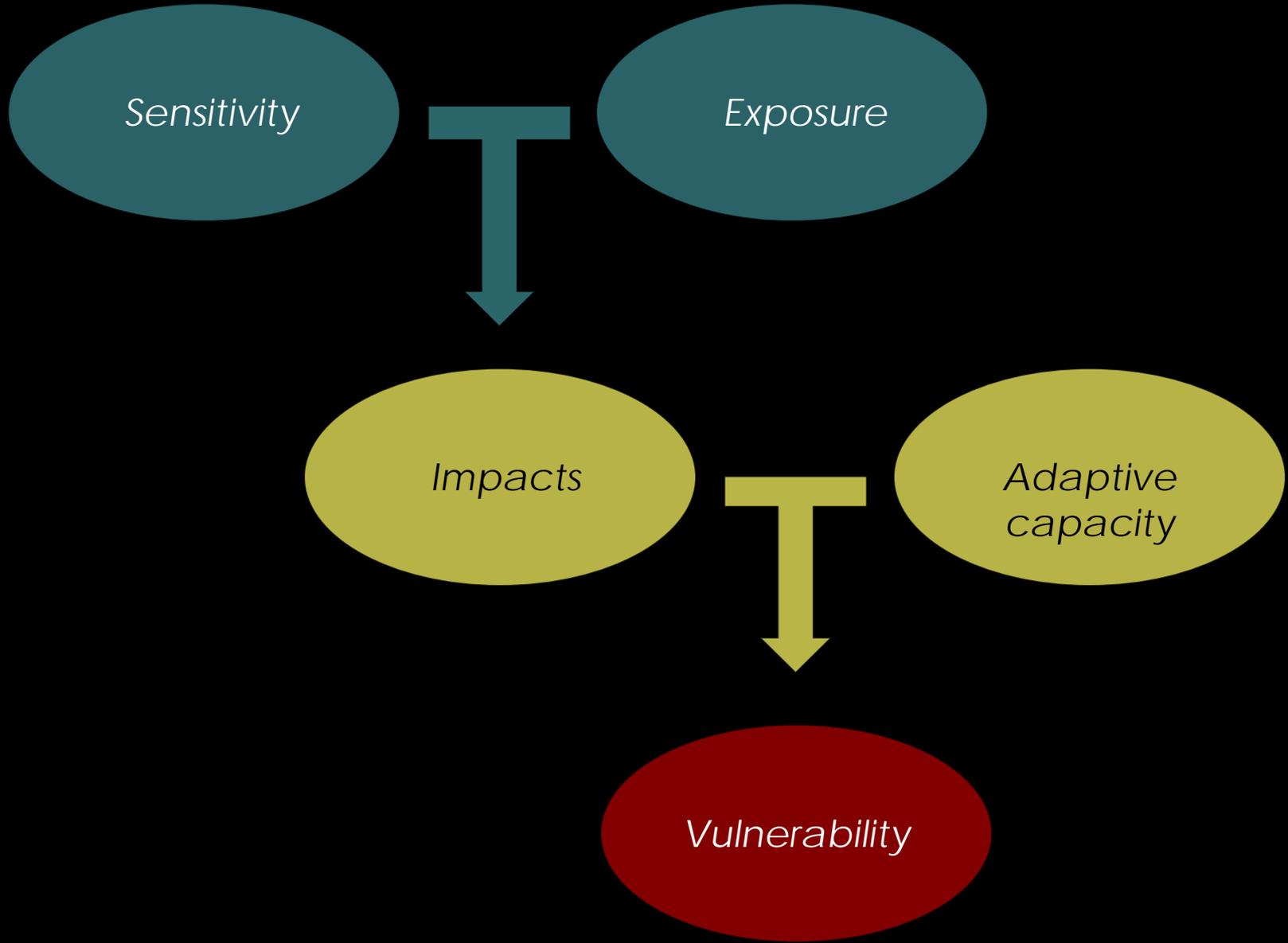
Goal 2. *Recognize how to assess those components by comparing the data, tools, and models used in the assessment.*

# Vulnerability

**Sensitivity** – the degree to which the persistence or functioning of a species or system is dependent on climate or factors driven by climate

**Exposure** – the magnitude of the change in climate or climate driven factors that the species or system in question will likely experience

**Adaptive capacity** – the degree to which a species or system can change or respond to address climate impacts



*Sensitivity*

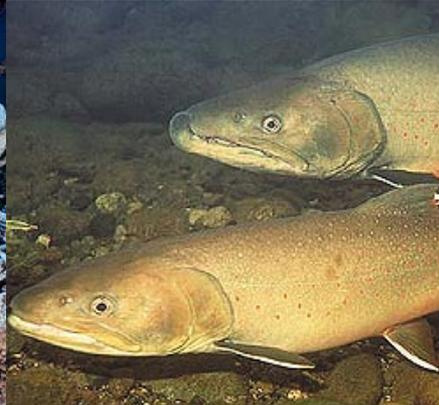
*Exposure*

*Impacts*

*Adaptive  
capacity*

*Vulnerability*

# Sensitivity



# Sensitivity of species



# Species' Sensitivities to Climate Change

Physiological sensitivity



# Species' Sensitivities to Climate Change

Physiological sensitivity

Sensitive habitats and  
disturbance regimes



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Sensitive habitats and  
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Interspecific interactions



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Location and range



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Phenology



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Additional stressors



# Species sensitivity: Atlantic Croaker example

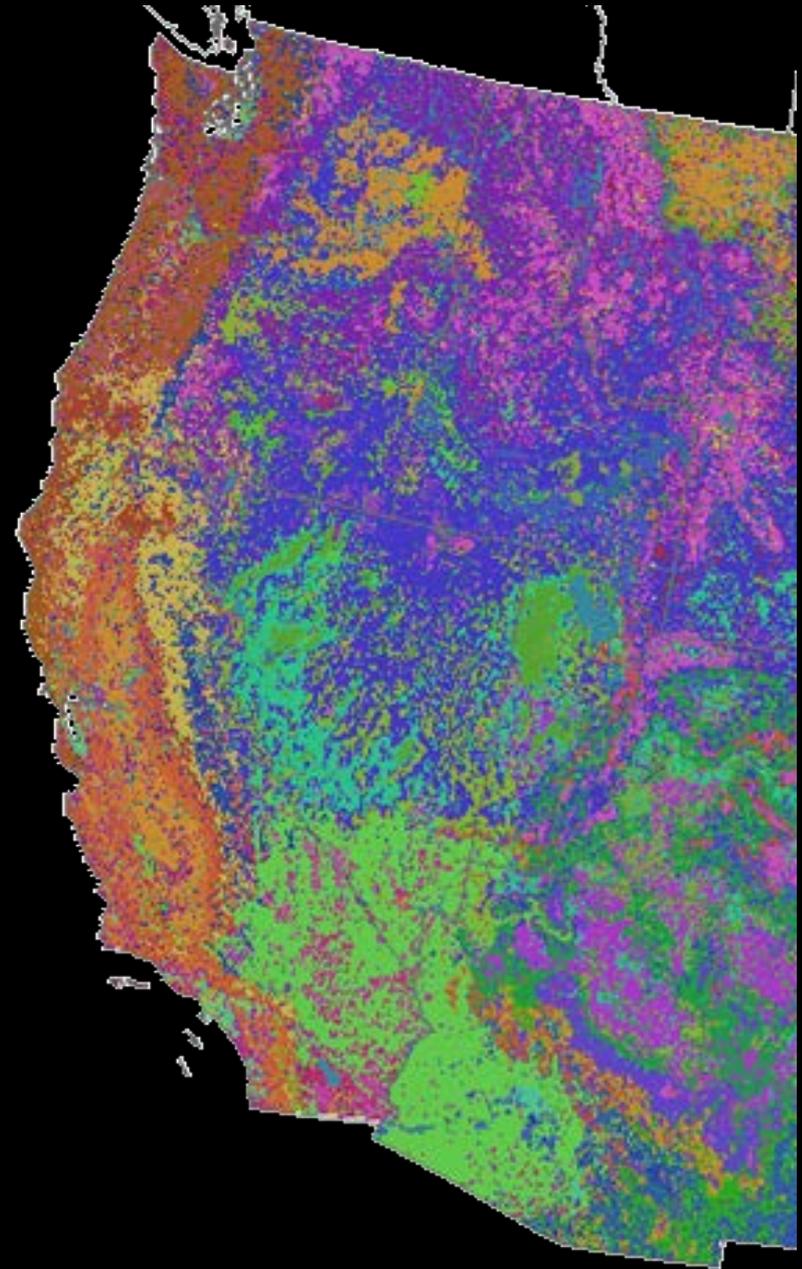


# Sensitivity of Ecological Systems



# System sensitivities to climate change

Climate breadth



# System sensitivities to climate change

Climate breadth

Sensitivities of important species



# System sensitivities to climate change

Climate breadth

Sensitivities of important species

Disturbance regimes



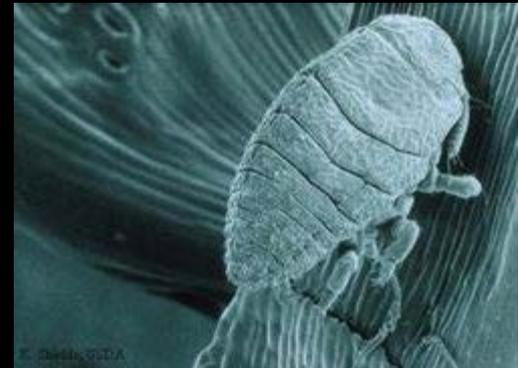
# System sensitivities to climate change

Climate breadth

Sensitivities of important species

Disturbance regimes

Other stressors



# System sensitivity: Coral Reef example



# Activity 1. Assessing sensitivity