**Understanding Sensitivity and Exposure: Vulnerability Assessments**

Directions:Working with a partner or a small group, identify a grassland-dependent species of high conservation or management concern. Consider **sensitivity** across the full life cycle of the species. Place an “X” in the appropriate box in the row according to how you think the factor will affect the species’ vulnerability to climate change. Keep in mind that multiple boxes may be checked to indicate uncertainty in your response.

# Sensitivity to reduced dispersal and movement (DISP)

This factor pertains to known or predicted dispersal or movement capacities and ability to shift location in the absence of barriers as conditions change over time because of climate change.

High Vulnerability: Species is characterized by severely restricted dispersal or movement.

Moderate Vulnerability: Species has some restricted dispersal or movement capability.

Neutral: Species is characterized by good to excellent dispersal or movement capability.

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| --- | --- | --- | --- |
| High | Moderate | Neutral | Comment |
|   |   |  |  |

# Sensitivity to disturbance regimes likely to be impacted by climate change (DIST)

This factor pertains to a species' response to specific disturbance regimes associated with climate change (e.g., fires, floods, or heat waves).

High Vulnerability: Strongly affected by specific disturbances, and climate change is likely to change the frequency, severity, or extent of that disturbance that negatively affects the species.

Moderate Vulnerability: Moderately affected by specific disturbance regime, and climate change may change the frequency, severity, or extent of that disturbance regime that negatively affects the species.

Neutral: Little or no sensitivity to a specific climate-associated disturbance regimes.

|  |  |  |  |
| --- | --- | --- | --- |
| High | Moderate | Neutral | Comment |
|   |   |  |  |

# Sensitivity to changes in resources (DIET)

This factor pertains to the diversity of food types consumed by animal species. Dietary specialists are more likely to be negatively affected than are species that readily switch among different food types.

High Vulnerability: Completely or almost completely (>90%) dependent on one resource during any part of the year that will be impacted by climate change; alternatives to this food resource are not readily available.

Moderate Vulnerability: Completely or almost completely (>90%) dependent during any part of the year on a few climate-vulnerable resources.

Neutral: Diet flexible; during any season species readily switches among multiple food resources according to availability; not strongly dependent on one or a few resources.

|  |  |  |  |
| --- | --- | --- | --- |
| High | Moderate | Neutral | Comment |
|   |   |  |  |

# Sensitivity of distributional shifts to climate change (RANGE)

This factor pertains to the degree to which a species is known to have responded to climate change or variability through range contraction or expansion.

High Vulnerability: Distribution or abundance undergoing major reduction (>70% over past 30 years or three generations) believed to be associated with climate change.

Moderate Vulnerability: Distribution or abundance undergoing moderate reduction (30-70% over 30 years or three generations) believed to be associated with climate change.

Neutral: Distribution and abundance not known to be decreasing with climate change.

|  |  |  |  |
| --- | --- | --- | --- |
| High | Moderate | Neutral | Comment |
|   |   |  |  |

**Sensitivity and Exposure**

What do you think are the greatest climate impacts (**exposure**) affecting your species? (positive or negative)

Plot out the sensitives (using the acronyms, e.g., DISP) that you identified above with the likelihood of exposure.

Sensitivity

Exposure

High

Low

*High vulnerability*

*Low vulnerability*

Low

High

What factors do you think contribute most to the adaptive capacity of your species or ecosystem?

Which of the four categories does your species belong in? Why?

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