Assignment 3. Resilience Indicators. Due May 19th, 2022.

Objectives

- Explore mechanisms for measuring resilience and transformative capacity
- Learn about the utility/limitations of specific indicators
- Develop a robust suite of indicators to assess multiple dimensions of the scenario (i.e. dimensions that are complementary (not highly correlated) and sensitive to differences between scenarios).

Directions

"Resilience is the magnitude of disturbance that can be tolerated before a socioecological system (SES) moves to a different region of state space controlled by a different set of processes. Resilience has multiple levels of meaning: as a metaphor related to sustainability, as a property of dynamic models, and as a measurable quantity that can be assessed in field studies of SES. The operational indicators of resilience have, however, received little attention in the literature. To assess a system's resilience, one must specify which system configuration and which disturbances are of interest." Carpenter et all. 2001.

In order to complete this exercise your team should have a clear definition of your focal issue, scenario logics and hypothesized differences between the scenarios.

1. Define resilience for your scenarios and focal issue. (0.5 page)

Write one paragraph describing resilience of what system function to what threat for the Seattle region over the next 50 years. Identify potential thresholds.

2. Explore quantitative and qualitative indicators of resilience. How do we use these indicators to monitor, measure resilience or assess the trajectory of the system towards a resilient state. (1 page)

Write a few paragraphs describing how we can assess resilience in the Seattle region. List a number of potential indicators to monitor the selected ecosystem function.

3. Identify 3 potential indicators of resilience for your scenarios. (3 pages)

Select three that are different, relevant, sensitive, compelling, etc. Write a brief summary for each indicator including: overall description, current status and trends, data availability, criteria for selection (reasoning), and relationship to resilience, thresholds and complexity.

4. Construct a table with the following information for each indicator.

- Name
- Source of data
- Short description
- Describe its relevance for this focal issue
- Describe potential limitations of the indicator

5. Hypothesize a direction for each indicator under alternative scenarios. (1-2 pages)

Write a summary describing trajectories and reasoning for the three indicators.