Washington Connected Landscapes Project: Identifying priority areas for climate-connectivity conservation

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WHC WG created habitat connectivity models for focal species under current conditions.

Where should we be conserving connectivity in a changing climate?

Spatial data layers
A few simple assumptions

- Species will need to cross climatic gradients
- ...and avoid developed areas
- Present-day climate gradients will be conserved
Climate Gradient Corridors

- Connect warm areas to cool
Climate Gradient Corridors

- Connect warm areas to cool
  1. Large, natural patches
  2. Differ in temperature
  3. Relatively near to each other
Climate Gradient Corridors

• Connect warm areas to cool
• With corridors that:
  1. Avoid areas of heavy land use
Climate Gradient Corridors

- Connect warm areas to cool
- With corridors that:
  1. Avoid areas of heavy land use
  2. Minimize changes in temperature
Statewide Climate Gradient Corridor Network

Patch Temperature
Mean Annual Temperature Degrees C

Corridors
Normalized Cost Distance

High
Low

WHC WG 2011, Nuñez et al. 2013
Gradual changes in temperature along linkages
Corridor network provides climatic stepping stones
Climate Gradient Corridor Products
Columbia Plateau Climate-Gradient Corridor Network
Climate gradient corridor pinch-points
Climate gradient corridor barriers

Barrier Impact / Restoration Improvement Score

- High
- Moderate
- Low
- Cores
- Temperature-plus-LI Network
Focal Species and Climate-Gradient Linkage Pinchpoints

Focal Species and Climate-Gradient Linkage Barriers
Vision for a Climate-Connected Columbia Plateau
Climate Gradient Corridors

- A coarse-filter approach for promoting climate-driven movement
- Recommend integrating with other conservation values and ground-truthing via empirical observation
- Automated tools are available to support future analyses
Thank you