

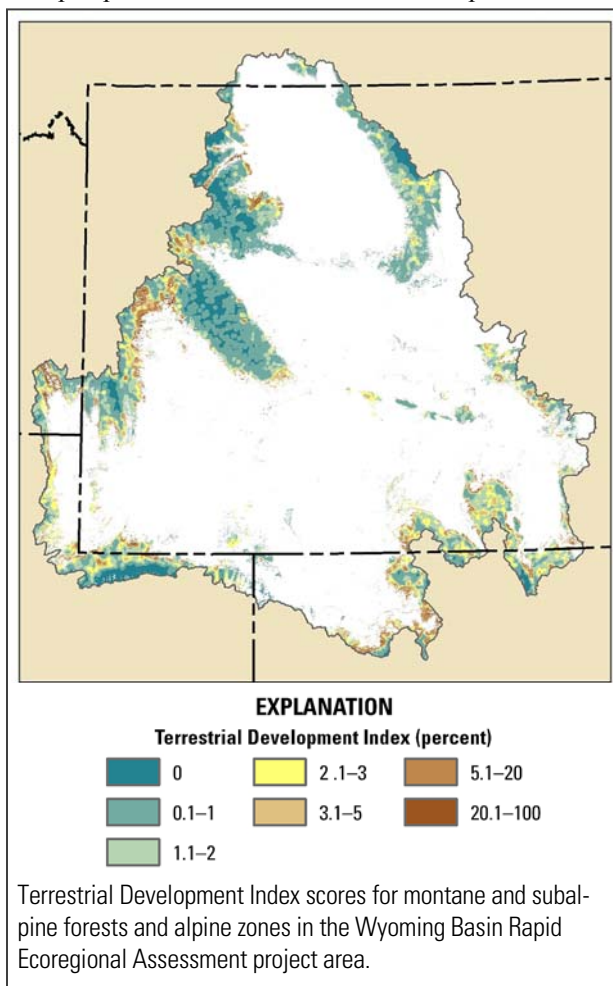
# Montane and Subalpine Forests and Alpine Zones

## Management Questions

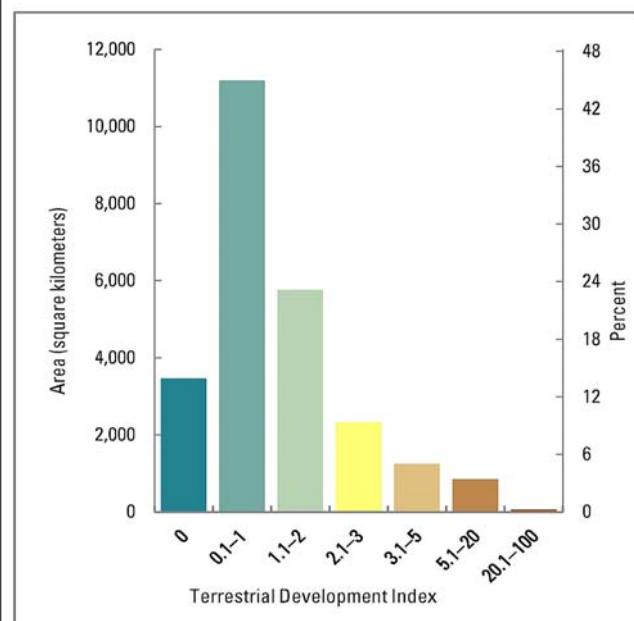
- Where are baseline mountain forests and alpine zones, and what is the total area?
- Where does development pose the greatest threat to baseline mountain forests and alpine zones, and where are the relatively undeveloped areas? (Left map below)
- How has development fragmented baseline mountain forests and alpine zones, and where are the large, relatively undeveloped patches?
- How has development affected structural connectivity of mountain forests and alpine zones relative to baseline conditions?
- Where are potential barriers and corridors that may affect animal movements among relatively undeveloped patches of mountain forests and alpine zones?

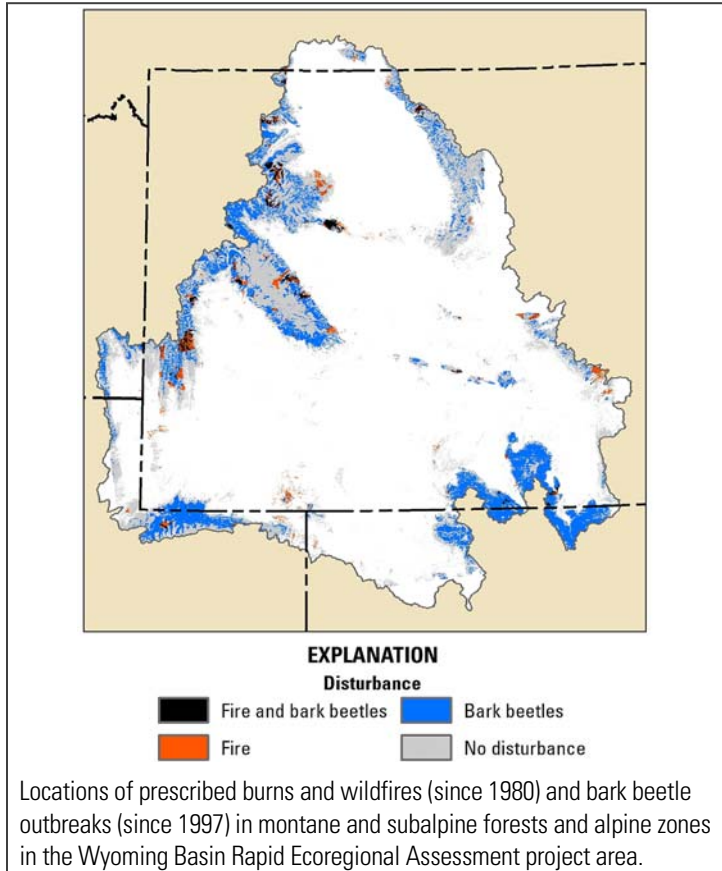


Photo credit: Natasha B. Carr, U.S. Geological Survey.



- Where have mountain forests been disturbed by recent fires and bark beetle outbreaks, and what is the total area of forest affected by each disturbance? (Top left map following page)
- What are the potential distributions of mountain forests and alpine zones in 2030?
- How does risk from development vary by land ownership or jurisdiction for mountain forests and alpine zones?
- Where are the townships with the greatest landscape-level ecological values? (Top right map following page)
- Where are the townships with the greatest landscape-level risks? (Center right map following page)
- Where are the townships with the greatest conservation potential? (Bottom right map following page)

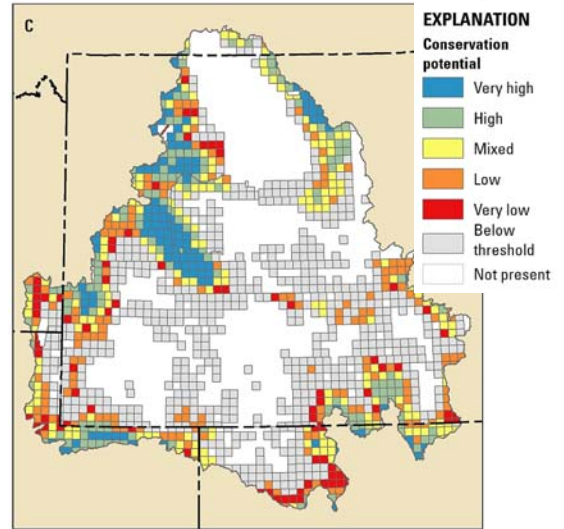
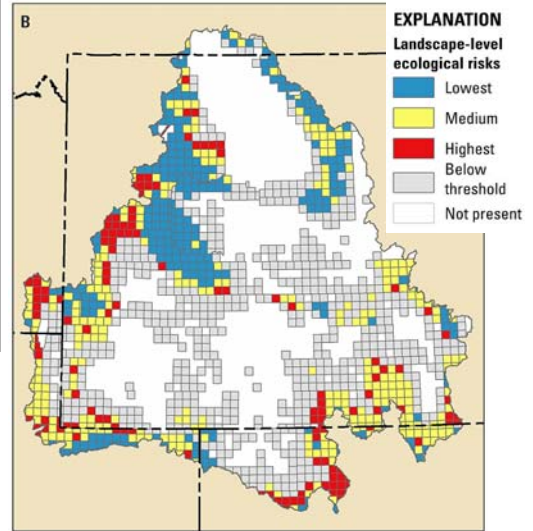
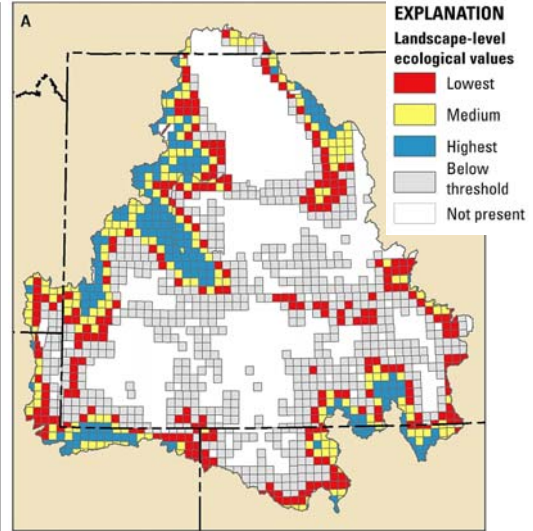




### Summary

Mountain forests and alpine zones are patchily distributed and cover about 14 percent of the Wyoming Basin. This is the least developed ecological community, as only 4 percent has a Terrestrial Development Index (TDI) score of >5 percent. Development (roads, energy, and agriculture) has fragmented and decreased structural connectivity. All relatively undeveloped areas (TDI ≤1 percent) occur in patches <5,000 square kilometers (1,930 square miles). Patches are naturally discontinuous, but development has reduced structural connectivity, especially at lower elevations. Relatively undeveloped patches that are highly connected are associated with large mountain ranges. Some relatively undeveloped areas occur in locally isolated mountain ranges.

Recent bark beetle outbreaks have affected nearly half of the mountain forest community. The isolated nature of some forests and time required for some tree species to reach sexual maturity could result in long recovery times. Wildlife species that depend on or have mutualistic relationships with tree species in these habitats could be negatively affected. The distribution of bioclimatic conditions conducive for mountain forests is projected to shift upslope in most mountain ranges and become nearly absent in the Granite Mountains by 2030. Alpine conditions are projected to contract by 2030.



(A) Landscape-level ecological values, (B) ecological risks, and (C) conservation potential of montane forests and alpine zones summarized by township.