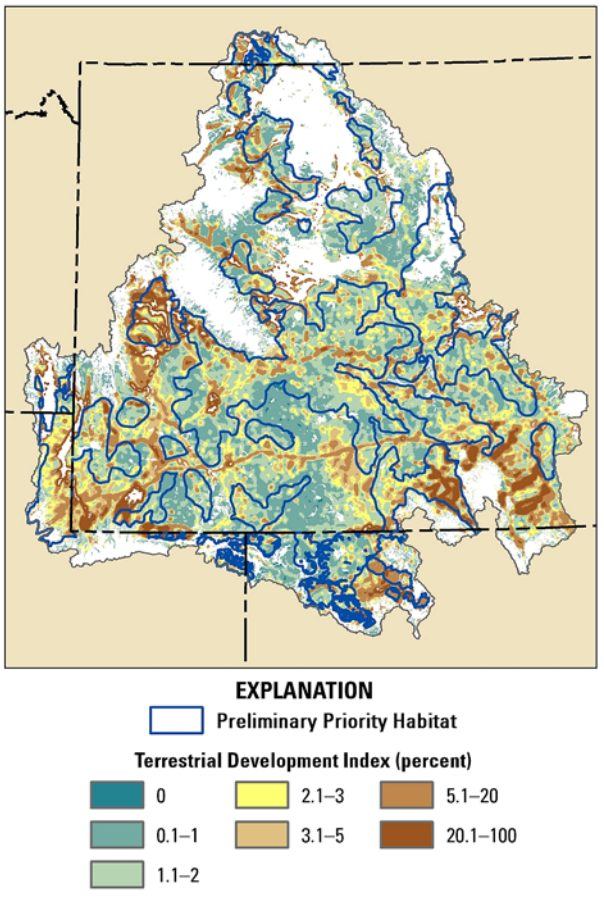
Greater Sage-Grouse

Management Questions

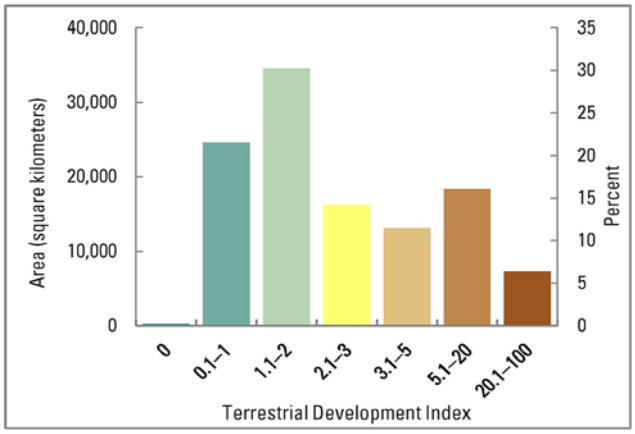
- Where are baseline habitat and Preliminary Priority Habitat for greater sage-grouse, and what is the total area of each?
- Where does development pose the greatest threat to baseline greater sage-grouse ("sage-grouse") habitat, and where are the relatively undeveloped areas? (Left map below)
- How has development fragmented baseline sage-grouse habitat, and where are the large, relatively undeveloped patches?
- How has development affected structural connectivity of sage-grouse habitat relative to baseline conditions?
- Where are potential barriers and corridors that may affect animal movements among relatively undeveloped habitat patches?

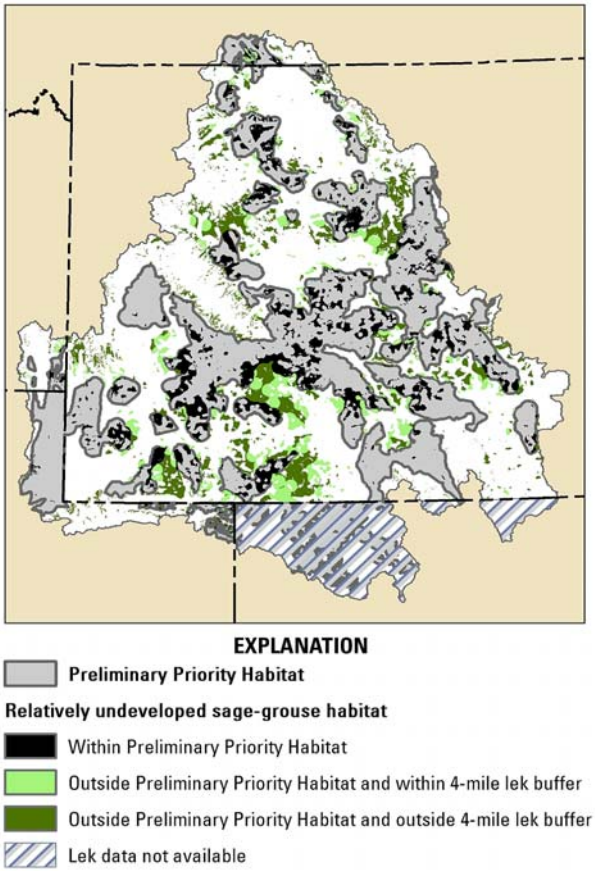
Photo credit: Stephen Ting, U.S. Fish and Wildlife Service.

- Where are sage-grouse leks at risk from expansion of juniper woodlands?
- Where have recent fires occurred in baseline sage-grouse habitat, and what is the total area burned per year?
- What is the potential risk from West Nile virus currently and in 2050?
- Where is relatively undeveloped sage-grouse habitat within 6.4 kilometers (4 miles) of leks that falls outside of the Preliminary Priority Habitat designation? (Top left map following page)
- How does risk from development vary by land ownership for sage-grouse habitat?
- 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)



Terrestrial Development Index scores for baseline greater sage-grouse habitat in the Wyoming Basin Rapid Ecoregional



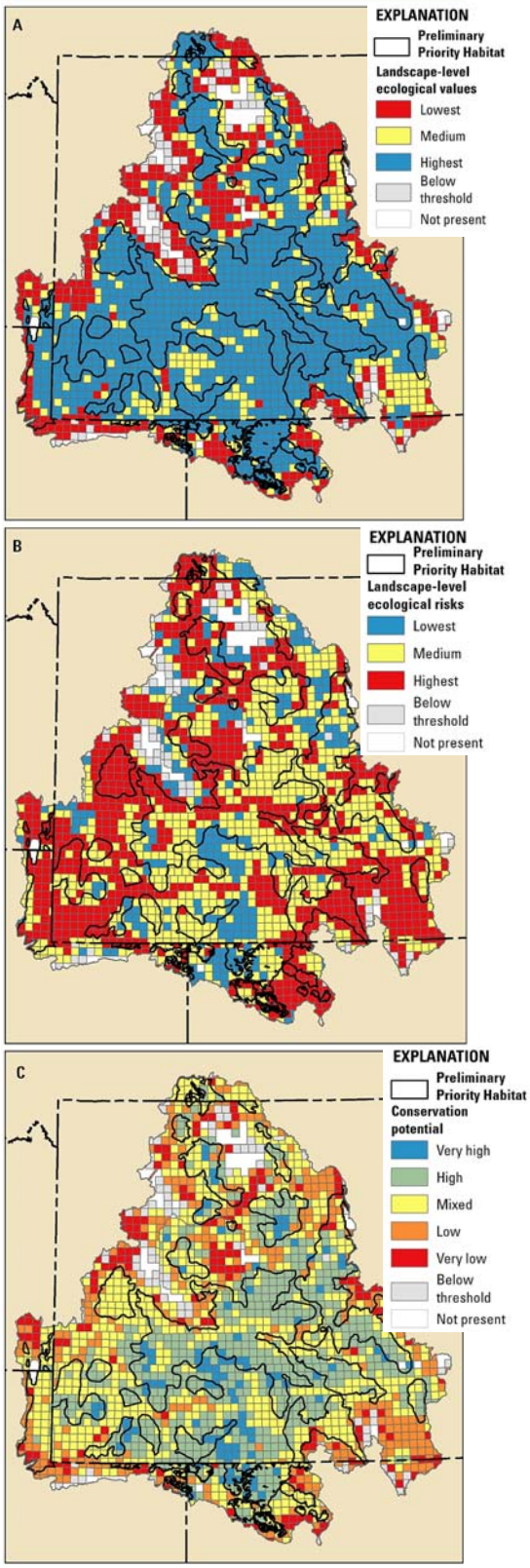


Relatively undeveloped greater sage-grouse habitat in relation to 6.4-kilometer (4-mile) lek buffers and Preliminary Priority Habitat designation in the Wyoming Basin Rapid Ecoregional Assessment project area.

Summary

Greater sage-grouse habitat, once widely distributed and highly connected throughout the Wyoming Basin, has seen increased fragmentation and decreased structural connectivity of baseline habitat due to agricultural conversion, roads, and energy development. Although 66 percent of baseline habitat has low terrestrial development (≤3 percent) only 23 percent is relatively undeveloped (≤1 percent). Relatively undeveloped patches are all <5,000 square kilometers (2,000 square miles), compared to baseline conditions in which most habitat patches exceed 109,069 square kilometers (42,111 square miles). Regional connectivity for baseline habitat occurs at an interpatch distance of 0.3 kilometers (0.2 miles) compared to 3.8 kilometers (2.3 miles) for relatively undeveloped areas. Some of the largest relatively undeveloped areas do not have Preliminary Priority Habitat designation. Such areas lacking protected status may serve as potential sage-grouse conservation sites.

Potential future risks to sage-grouse include continued energy development. Projections based on climate change scenarios indicating an increased risk of habitat loss and West Nile virus, and potential for the loss of additional habitat from widespread fires.



(*A*) Landscape-level ecological values, (*B*) ecological risks, and (*C*) conservation potential of greater sage-grouse habitat summarized by township.