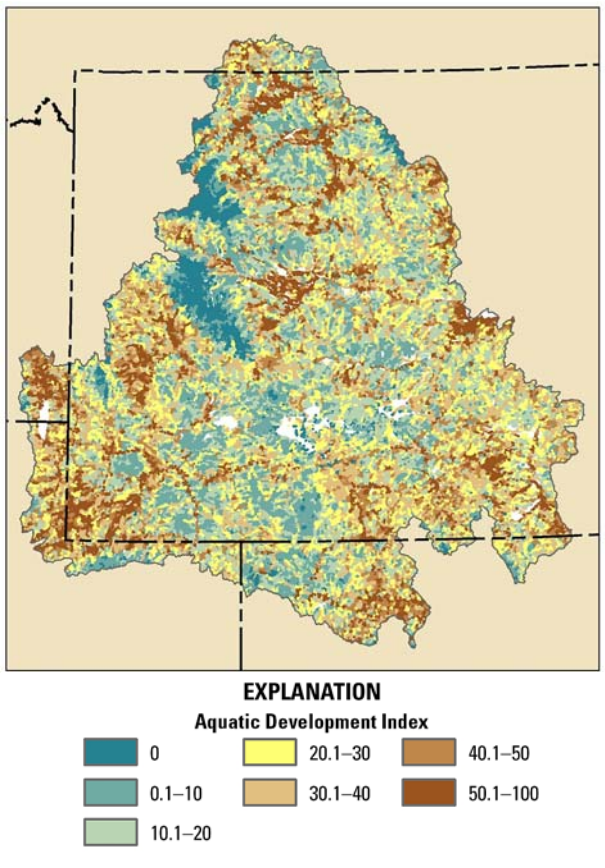
Streams and Rivers

Management Questions

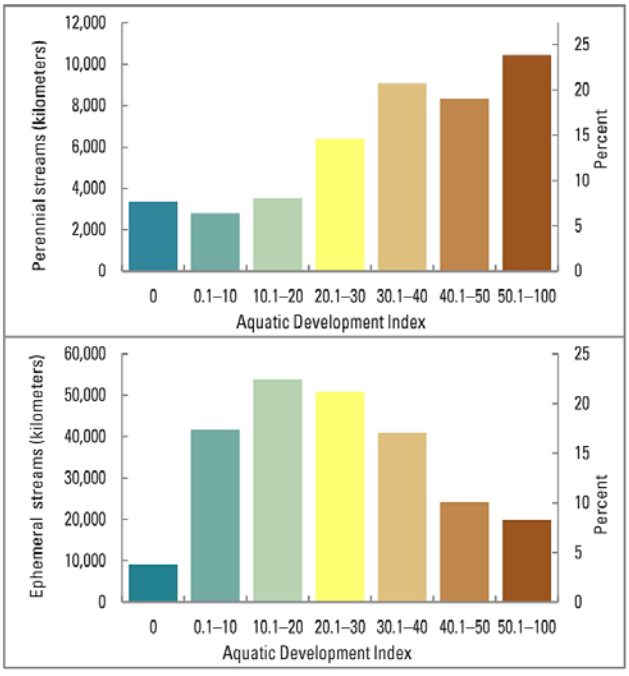
- What is the amount and distribution of streams and rivers, and how does hydroperiod vary?
- Where is woody riparian vegetation present along perennial streams?
- Where does development pose the greatest threat to streams and rivers, and where are the large, relatively undeveloped areas? (Left map below)
- Where has development fragmented streams and rivers, altered flows, and decreased structural connectivity? (Top left map following page)
- Where are streams and rivers with a high proportion of nonnative riparian vegetation?
- Which watersheds have had the most area burned by recent fires?

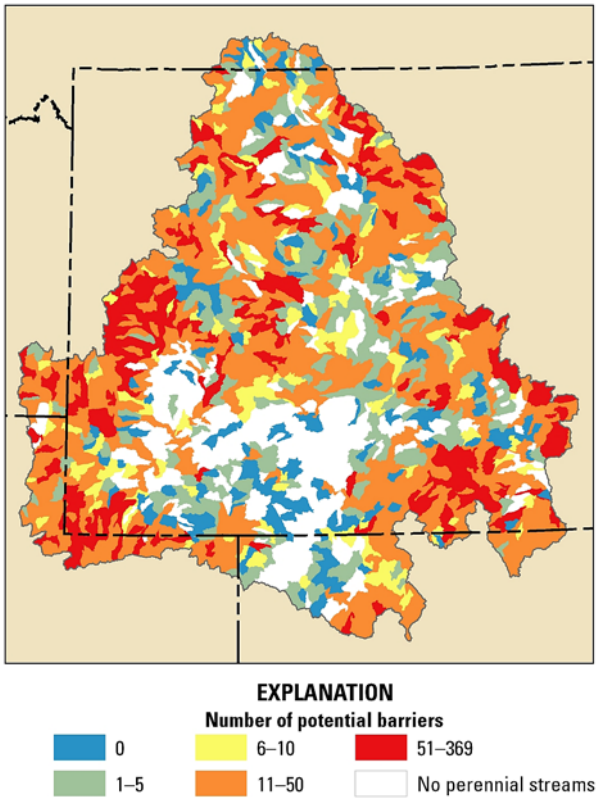
Photo credit: U.S. Fish and Wildlife Service.

- Where are streams and rivers currently at risk from low summer flows?
- Where could streams and rivers be at risk from projected shifts in hydrological regimes in 2040?
- How does risk from development vary by land ownership or jurisdiction for streams and rivers?
- Where are the fifth-level watersheds with the greatest landscape-level ecological values? (Top right map following page)
- Where are the fifth-level watersheds with the greatest landscape-level risks? (Center right map following page)
- Where are the fifth-level watersheds with the greatest conservation potential? (Bottom right map following page)



Aquatic Development Index scores for streams and rivers in the Wyoming Basin Rapid Ecoregional Assessment project area.



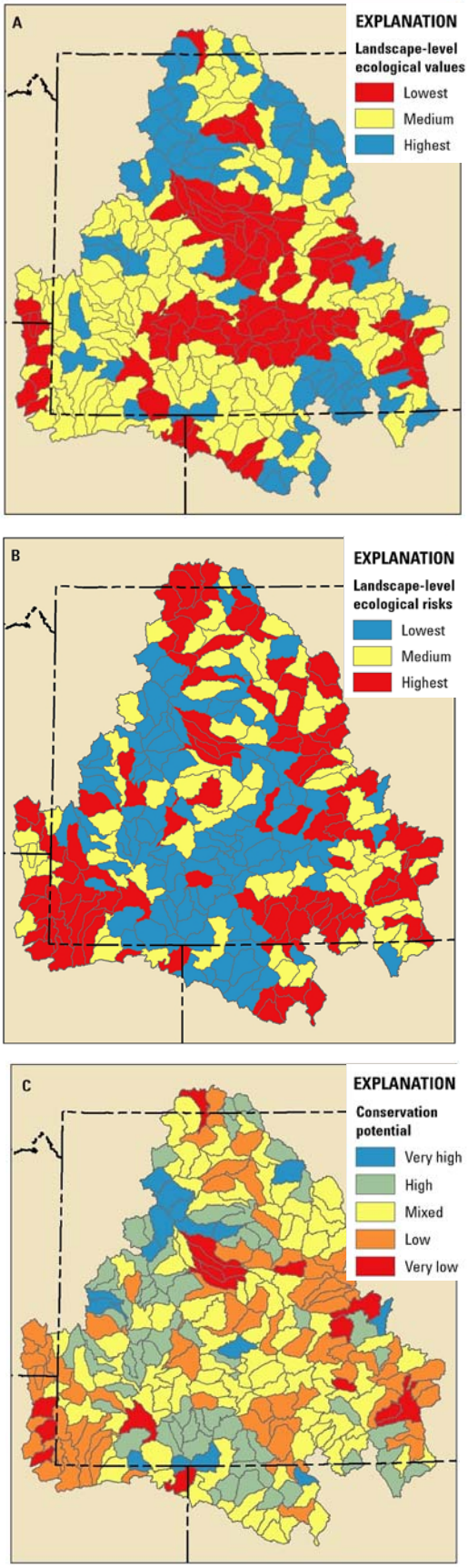


Potential barriers (dams, diversions, and road crossings on streams) in perennial streams summarized by sixth-level watershed.

Summary

In the Wyoming Basin, streams, rivers, and associated riparian habitat account for just 2.3 percent of the landscape, yet they have a disproportionately large influence on many species, both aquatic and terrestrial. Most of these streams and rivers flow through sagebrush steppe, the dominant ecological community in the Wyoming Basin, and are intermittent or ephemeral in nature. There are three large perennial river systems in the Wyoming Basin: the Wind, Bighorn, Green, and North Platte Rivers.

Development poses threats to the hydrology, structural connectivity, and integrity of streams and rivers throughout the Wyoming Basin, especially for perennial systems. The major sources of development are roads and agricultural activities. Many watersheds have a high number and extensive distribution of potential barriers posed by roads and water diversions. Many streams are intermittent in nature and (or) have very low mean flows due to the semiarid nature of this ecoregion, which makes them especially vulnerable to dewatering as a result of diversions and projected climate change.



(*A*) Landscape-level ecological values, (*B*) ecological risks, and (*C*) conservation potential of streams and rivers summarized by fifth-level watershed.