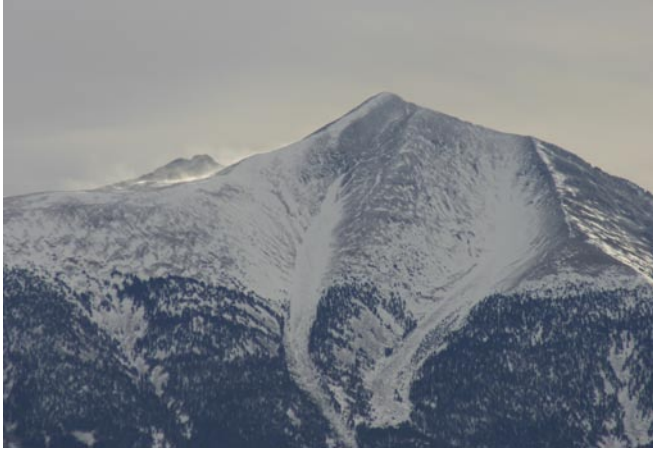


Alpine



Alpine habitat on Wheeler Peak, White Pine County.
Photo by Elisabeth Ammon.

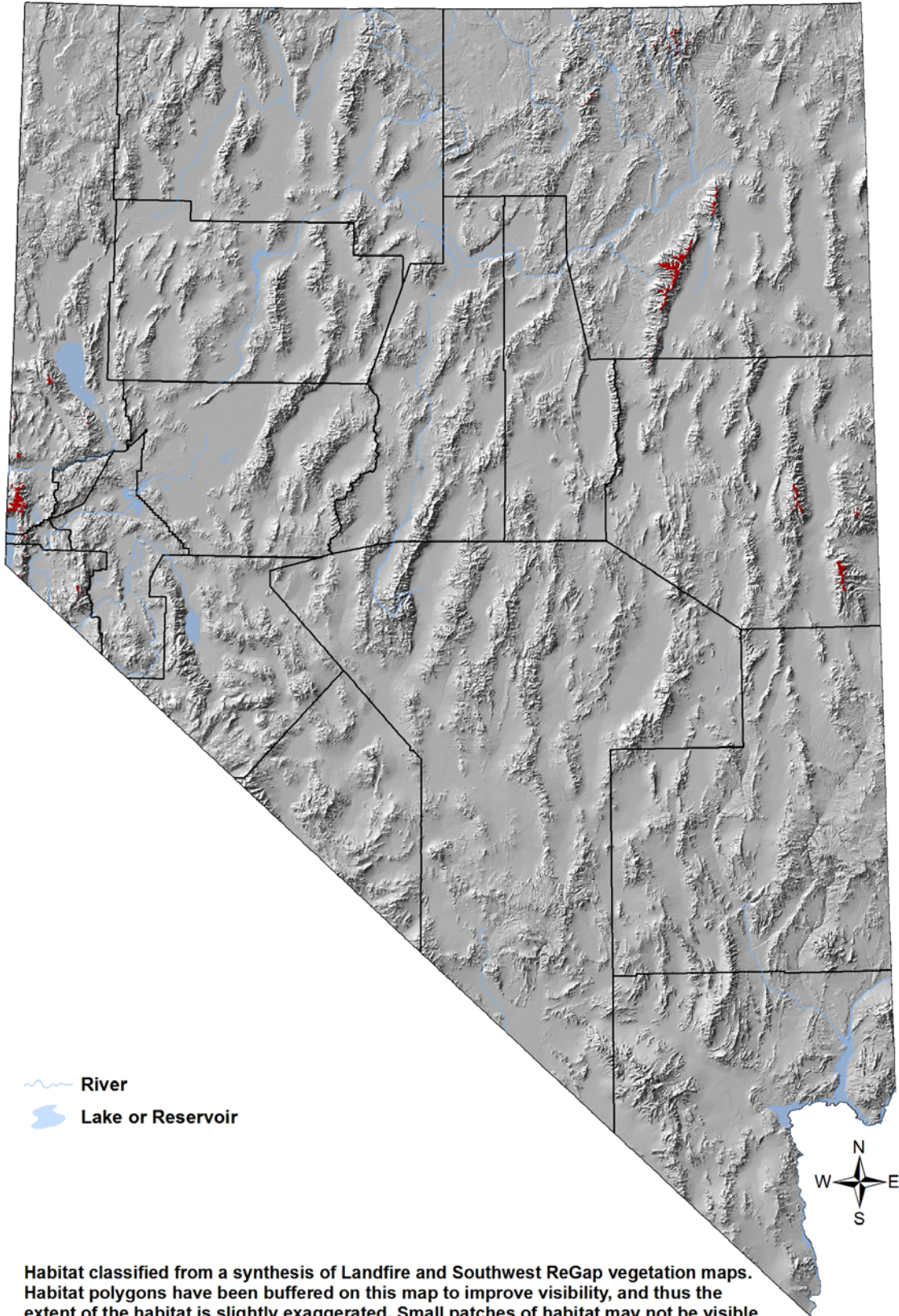
Key Bird-Habitat Attributes

Plant Species Composition	Low-growing shrubs of multiple species, flowering forbs, graminoids; interspersed with snowpockets, cliffs, and talus
Ideal Scale for Conservation Action	Whole patch
Vegetation Structure	Mostly low-growing shrubs, but horizontal diversity (mosaic of different patches) increases value; forbs particularly beneficial
Mosaic	Nearby mesic areas (snowpocket aspen, willows, and streams) increase habitat value Adjacent or embedded cliffs may increase habitat value
Other Features	Abandoned mineshafts, tall cliffs (>30 m [100 ft]), and talus fields add habitat value

Conservation Profile

Estimated Cover in Nevada	789 ha [1,950 ac] < 0.01% of state
Landownership Breakdown	USFS = 70% NPS = 21% BLM = 7% Other = 2%
Priority Bird Species	Black Rosy-Finch
Indicator Species	None
Most Important Conservation Concerns	Climate change (change in precipitation and temperature)
Habitat Recovery Time	50-100 years
Regions of Greatest Conservation Interest	Northeastern and eastern Nevada mountain ranges, Carson Range, Spring Mountains
Important Bird Areas	Carson Range Goshute Mountains Great Basin National Park Jarvis Mountains Mount Grant Northern Snake Range Ruby Mountains Spring Mountains Toiyabe Range

Alpine



Habitat classified from a synthesis of Landfire and Southwest ReGap vegetation maps. Habitat polygons have been buffered on this map to improve visibility, and thus the extent of the habitat is slightly exaggerated. Small patches of habitat may not be visible on this map, and some areas may be misclassified.

Alpine

Overview

Alpine birds and their habitats have been studied very little in Nevada and, therefore, not much is known about their conservation needs. Traditionally, few land uses have occurred in Nevada's alpine zone due to difficult access, long periods of snowpack, and low productivity of alpine vegetation. Similarly, major disturbance regimes such as fire play little or no role in maintaining alpine vegetation. As a result of its short growing season and cold temperatures, alpine vegetation requires an enormous recovery time after destruction, which is estimated here at 50-100 years. A well-developed layer of forbs and grasses is probably critical to wildlife using alpine areas, which either depend on these plants directly, or depend indirectly on the insects supported by them. Alpine areas in Nevada are fairly small and isolated in comparison to some other western states. The only Priority species designated for this habitat, the Black Rosy-Finch, is documented from only the larger alpine patches, and thus our emphasis for monitoring and conservation are Nevada's larger alpine areas, specifically those that occur in the Carson Range, the Ruby Mountains, the Snake and Schell Creek ranges, and the Jarbidge Range. However, it is worth noting that smaller alpine areas in central Nevada have received very little monitoring effort, a situation that should be rectified. To a large degree, Alpine habitat is naturally protected by its relative inaccessibility, but some areas may be used for recreation and mining activities, which should be monitored to determine whether conservation action is necessary. The primary threat that we currently recognize is climate change, which threatens to eliminate alpine areas due to warming trends. The Black Rosy-Finch is the only Priority species whose nesting is restricted to the alpine tundra, and it is therefore an often-cited bellwether species for gauging the impacts of climate change in the West.

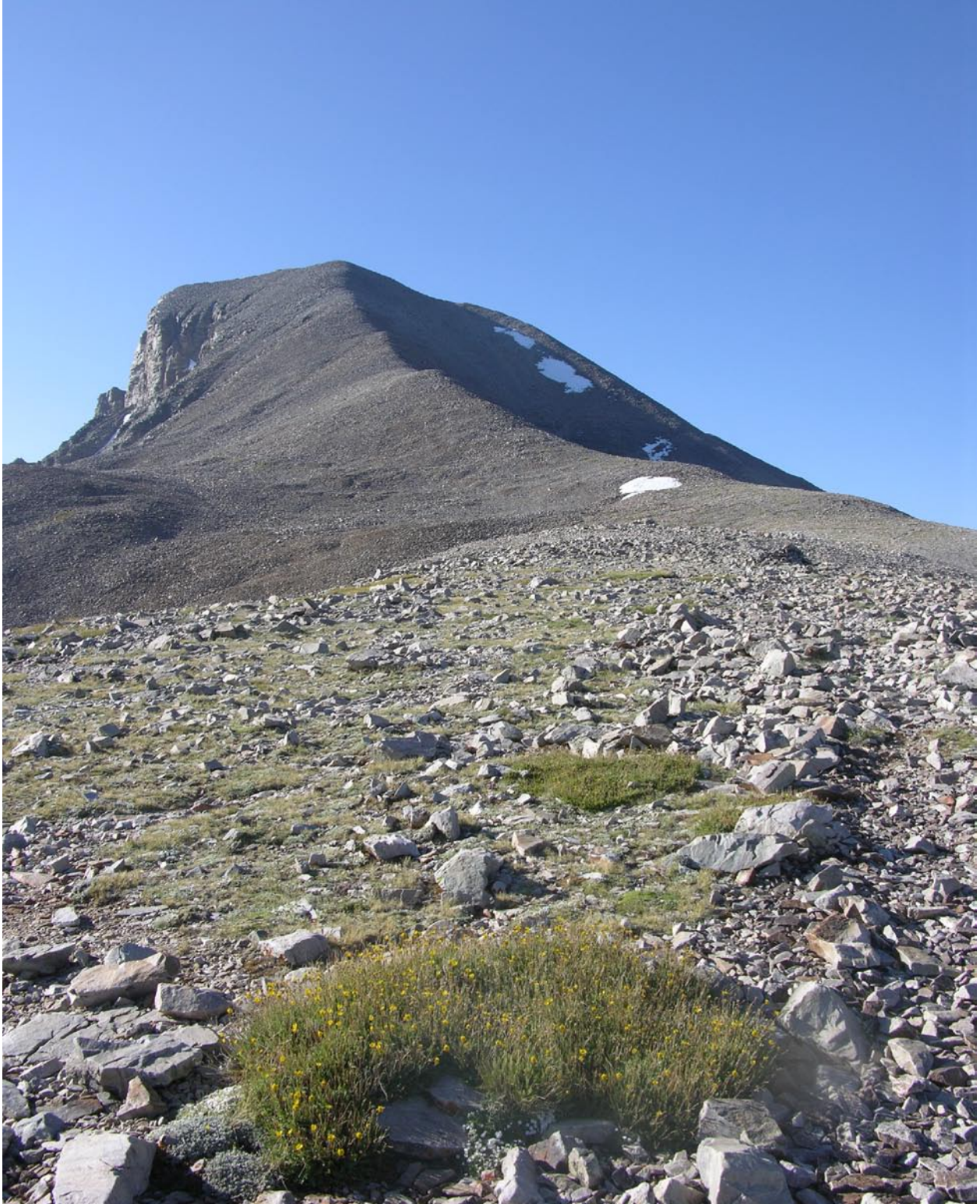
Main Concerns and Challenges

The following top two concerns were identified in our planning sessions for Alpine habitat in Nevada:

- Change in precipitation and snowmelt related to climate change
- Change in temperature related to climate change

Because alpine tundra is adapted to long snowpack periods and very short growing seasons, an increase in temperature and reduction in snowfall are clear threats to this vegetation and to the bird species that are most closely tied to it. In contrast to other habitat types in Nevada, alpine zones do not have the potential recourse of shifting their distribution upward in elevation. The only local actions that are possible to mitigate this threat are to avoid compounding threats (such as heavy recreational uses) where possible.

Alpine



Alpine habitat, Wheeler Peak, White Pine County. Photo by John Boone.

Alpine

Not To Scale

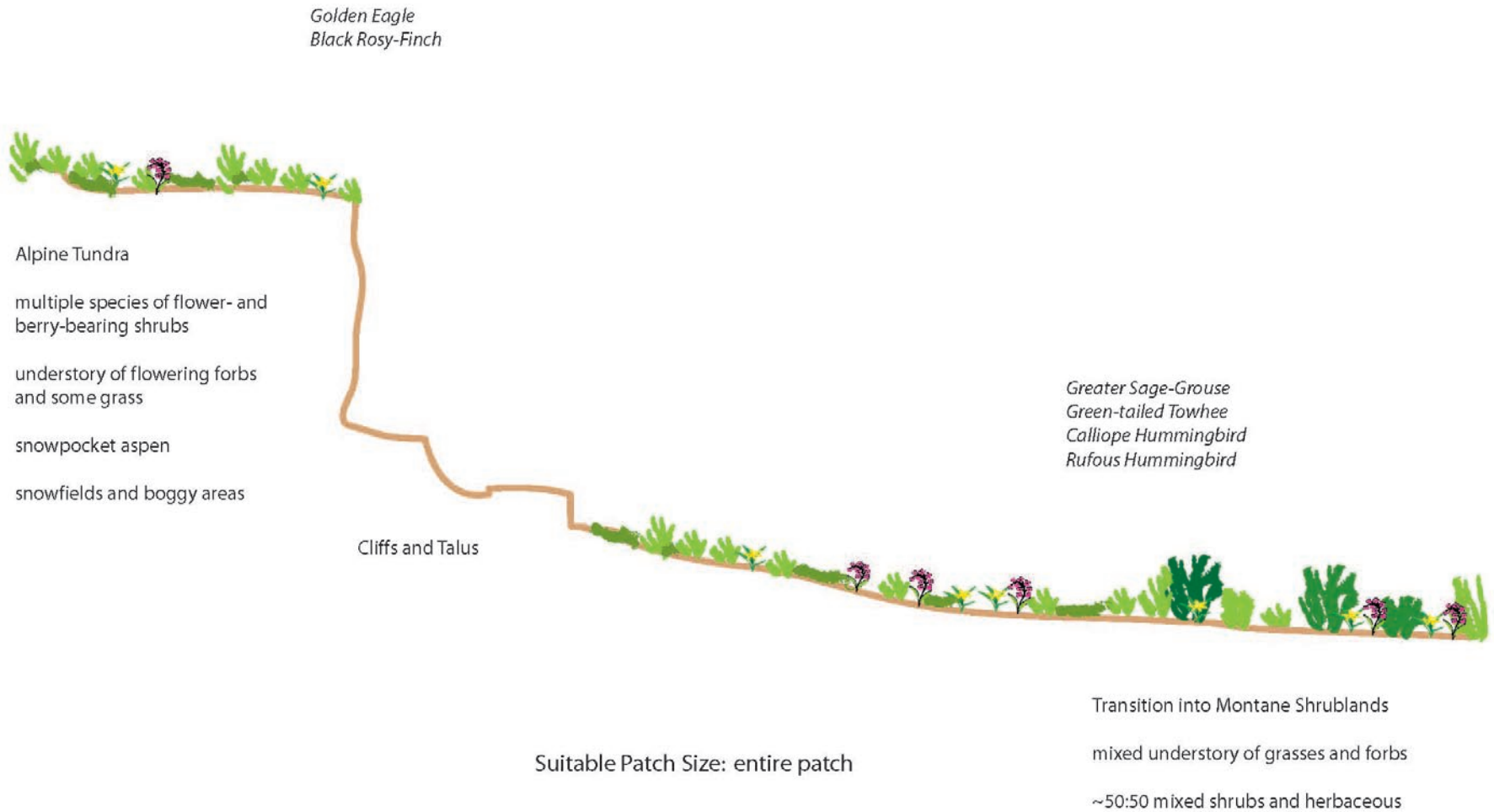


Figure Hab-2-1: Idealized alpine landscape to maximize the number of alpine associated priority bird species.

Alpine

Conservation Strategies

Habitat Strategies

- **Manage at the scale** of the whole mountaintop's alpine zone, if possible, with connectivity to adjacent habitat types (Coniferous Forest, Montane Shrubland, Montane Riparian, Aspen). High shrub species diversity, high patch type diversity that includes talus, snowpocket wetlands, and snowfields, and a healthy forb, grass, moss, and lichen component all benefit priority bird species and their prey
- Proximity to **water** (riparian areas, springs, wet meadows), and presence of **cliffs** (> 30 m [100 ft]) tall raise the priority level of a site for bird conservation

Research, Planning, and Monitoring Strategies

- **Monitor changes** in Nevada's alpine communities in a changing climate. Mitigation options are probably very limited in Nevada, but research and planning that explores mitigation opportunities, particularly in a regional context, is a high priority
- **Expand the Nevada Bird Count program** to include coverage of alpine tundra for long-term monitoring of climate change effects

Public Outreach Strategies

- **Promote public understanding of climate change** effects through additional outreach, using alpine tundra landscapes and the Black Rosy-Finch as bellwether cases.
- Encourage **low-impact recreational uses** of alpine tundra