



BIGHORN CANYON

Land Use

RESOURCE BRIEF

Importance

Land use is the human use of landscapes, such as agricultural, residential and other developed areas. A change in housing density, and associated roads, can fragment the landscape, decrease the size of the functional ecosystem, reduce connectivity among native habitat patches, isolate species in small patches, and increase the contrast in vegetation structure and function along park boundaries. Such changes outside park boundaries can have major implications to structural and functional ecosystem properties including fire frequency, species distributions, water quality, air quality, habitat fragmentation, soil erosion, and introduction of exotic species.

Status and Trend

Approximately 33% of the land in and surrounding Bighorn Canyon NRA (within 30km) is public land managed by federal agencies. The Crow Indian Reservation comprises nearly 40% of the area. Private lands make up approximately 25% of the area with the remainder of the lands under state or local management (1).

From 1990 to 2010, the population of the six counties near Bighorn Canyon grew by 20% to nearly 240,000 residents (Figure 1; 2, 3). However, most of the population occurs in and near the Billings, Montana, which is approximately 60 km from Bighorn Canyon. From 2000 to 2010, the population of Billings increased from 89,847 to 104,170 (3). Towns closer to Bighorn Canyon also saw population



Agriculture and residential development near Bighorn Canyon.

increases between 2000 and 2010: Fort Smith's population increased from 122 to 166, Lovell's population grew from 2281 to 2360, Powell's population increased from 5373 to 6314 and Cody's population grew from 8385 to 9520 (3).

Agriculture in the area continues to be a significant human use of the landscape. In 2007, the National Agriculture Statistics Service classified between 20-95% of the land within the six counties near Bighorn Canyon as farmland (4). Farmland includes land used for crop and animal production. Between 25-70% of the farmland within the counties was irrigated. In 2007, the National Agriculture Statistics Service classified between 2-20% of the total acreage within the six counties as cropland. Just over 20% of Yellowstone County, Montana was classified as cropland. The three counties in Montana had at least 10% of their area as cropland while the three counties in Wyoming had 2-6% of the county areas identified as cropland (4).

Discussion

While much of the population centers on the Billings, Montana metropolitan area, growth within the census block groups in and near Bighorn Canyon was higher than the regional average from 1990-2010. While population growth projections over the next twenty years for the counties surrounding Bighorn Canyon are modest (~10%; 4), residential development can erode the quality of habitat on private lands. In addition, the spatial configuration of residential development, and associated fences and roads, may create a barrier along migration corridors and fragment landscapes. Changes in agricultural land uses and practices may also affect wildlife habitat and soil erosion.

Citations

(1) USGS 2011 (2) US Census Bureau 2011 (3) NPS 2010 (4) NASS 2007

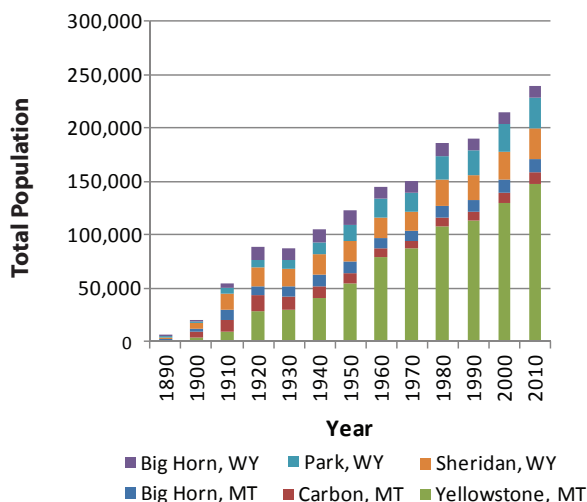


Figure 1. Human population in and surrounding the Greater Yellowstone Area.