

ABUNDANCE AND DISTRIBUTION OF VASCULAR PLANTS
IN THE BIGHORN CANYON NATIONAL RECREATION AREA

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Objectives

This study began in 1983 and, as originally proposed, has three phases:

1. Floristic survey and herbarium development (1983-84);
2. Vegetation analysis and classification (1984-85); and
3. Conclusion of vegetation analysis and preparation of a vegetation map (1985-86).

Justification for the study was to provide the Bighorn Canyon National Recreation Area (BCNRA) with basic vegetation information that could be helpful in resource management. Very little ecological research had been done in the BCNRA.

Progress Report

Phase 1 has been completed, with approximately 500 plant specimens having been identified, mounted, and deposited in the Herbarium at the Lovell Visitor Center. A 51-page report entitled, "Checklist of vascular plants for the Bighorn Canyon National Recreation Area", has been sent to the Superintendent and is available to other interested persons. The main body of this report was published in the Great Basin Naturalist (Volume 45, pages 734-746). A total of 73 families of vascular plants have been found thus far in the BCNRA, with 320 genera and 656 taxa of specific or subspecific rank. In our report, each species is coded to indicate abundance and habitat. Regional endemics are identified and the status of rare species is discussed.

Phases 2 and 3 will be finished by the end of May, 1987, with the vegetation map now available for distribution. The 1:24,000 black-and-white map shows the location of the following 21 vegetation types:

Marsh
Floodplain meadow

Sagebrush steppe
Juniper woodland

Floodplain shrubland
Floodplain woodland
Creek woodland
Greasewood desert shrubland
Saltbush desert shrubland
Sagebrush desert shrubland
Mixed desert shrubland
Mixed-grass prairie
Basin grassland

Juniper-Mountain mahogany woodland
Mountain mahogany shrubland
Limber pine woodland
Douglas fir woodland
Ponderosa pine woodland
Spruce-fir woodland
Wind-swept plateau
Great Plains shrubland

The map consists of three sheets, one each for the north, middle, and south sections of the BCNRA. Copies are available.

Our vegetation analysis has been completed and the final report is now being written with the title, "Vegetation ecology of the Bighorn Canyon National Recreation Area". The report will be submitted to the BCNRA staff in May, 1987, and will include detailed descriptions of the vegetation types included on the vegetation map, a synthesis of the literature pertaining to the ecology of each vegetation type, our analysis of the important environmental factors causing plant species distribution patterns, and an analysis of the BCNRA vegetation mosaic.

During the summer of 1986 we initiated a more intensive study of the riparian vegetation along the Bighorn and Shoshone Rivers near the south end of the BCNRA. More detailed maps were prepared than were possible previously, and data were collected on the history of flooding and fire, both of which have been very important in structuring the present riparian mosaic. Aerial photos of the Bighorn River were located that date back to the mid-1930's, and these show how the channel has shifted over the years. Streamflow records have been obtained from the U.S. Geological Survey to provide a historical record of burning. This information is being analyzed now, and will comprise the M.S. thesis of Yoshiko Akashi, to be finished in May, 1988.