

INVENTORY OF PLANT SPECIES OF SPECIAL CONCERN
AND THE GENERAL TAXA OF DINOSAUR NATIONAL MONUMENT

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Approximately one-third of Dinosaur National Monument was surveyed in 1987 for rare plants, general flora and high quality vegetation sites. The inventory focused on areas containing habitat with the highest probability of supporting rare plant species south of the Yampa River.

Objectives

Three objectives of the research project will assist park managers in management and protection of rare plants in Dinosaur National Monument:

1. Complete a systematic botanical inventory of the Monument to document threatened, endangered and special concern plant species;
2. Prepare a checklist of the flora of the Monument, compiled from field work, literature and museum sources; and
3. Provide baseline data and management recommendations for use in plant resource and natural area conservation, management and research in the Monument and within the region.

Dinosaur National Monument represents a unique conservation and management opportunity within the Uinta Basin and can be viewed regionally as an island surrounded by areas with similar biological characteristics, but different uses.

Methods

The field inventory began in mid-May and ended in early July. Plant phenology required the inventory to proceed from drier, lower elevation areas to higher elevation, more mesic areas. Two botanists conducted the survey, averaging about 4 square miles per person per field day. Potential habitat within each section was reviewed prior to establishing transect routes using aerial photographs and geologic and topographic

maps. Unusual geologic exposures, topographic conditions, soils, hydrologic regimes, and vegetation having the greatest potential of containing rare taxa were examined in detail. Transects were designed to cover all geologic formations and vegetation types. Areas examined were delineated on 7.5 minute field maps. A base map (1:62500) was prepared showing daily coverage and rare plant and high quality vegetation sites.

Approximately one-third of Dinosaur National Monument was inventoried in 1987 on a section-by-section basis. Areas most likely to contain identified rare plants received inventory focus. Forty-seven (47) target species were included in the 1987 survey.

Standard plant collecting techniques were used. Complete sets of specimens were deposited at Dinosaur National Monument and at the University of Colorado herbarium. A database was developed to accommodate new records generated by the study and existing records from herbaria and literature sources.

Results

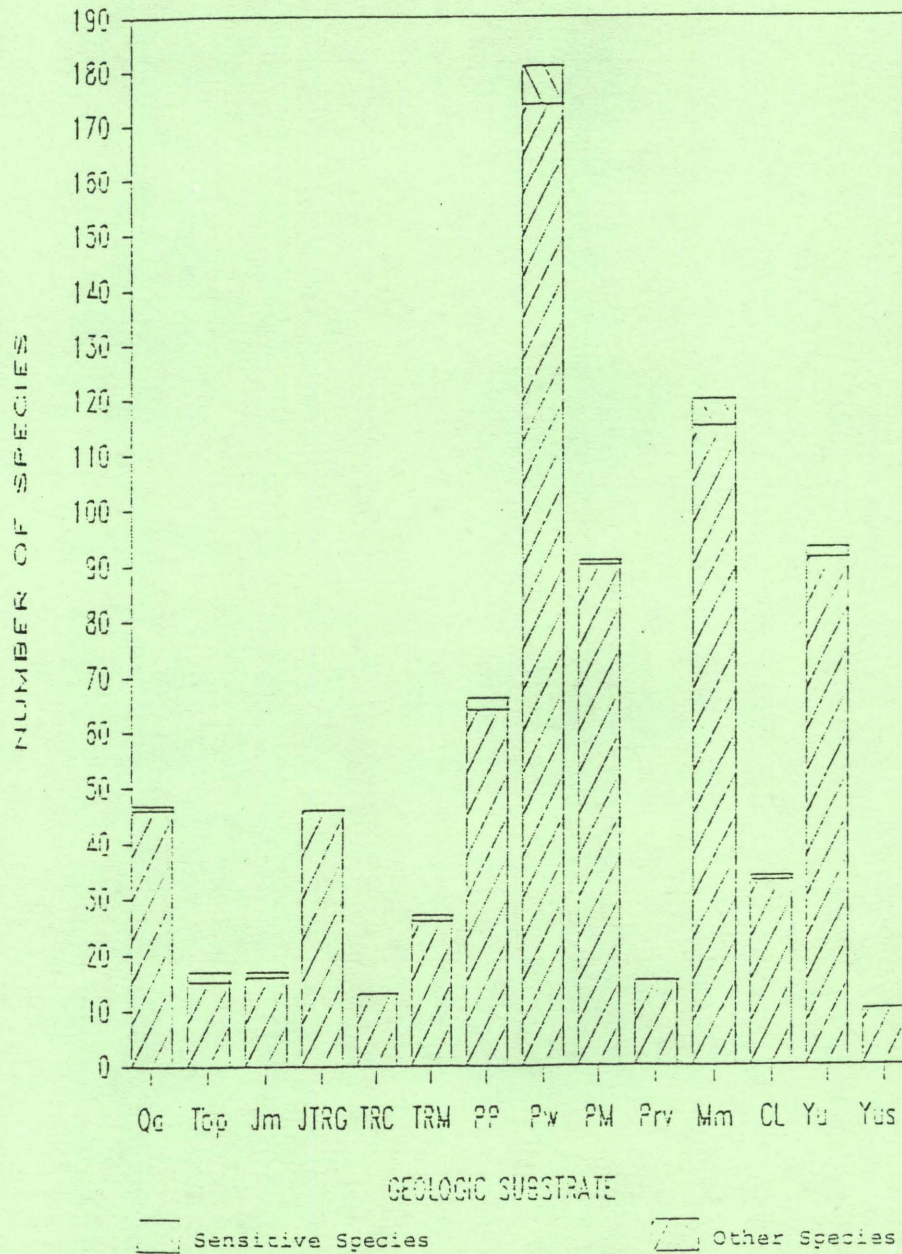
One thousand twenty-six (1026) collections representing 336 taxa were made during the 1987 field season. Sixteen (16) of these taxa are considered of special concern to the State of Colorado. Five (5) of these taxa represent new records for the Monument. Six (6) of these species are rare throughout their range, six (6) are rare in Colorado, three (3) have uncertain status, and one (1) has a limited distribution, but appears secure. Two (2) species found during the 1987 field season, Astragalus hamiltonii and Enceliopsis nudicaulis, are new records for Colorado. Trifolium andimum, Oenothera acutissima, Cirsium owenbyi, Astragalus hamiltonii, and Oxytropis besseyi were found in 1987 and are new records for Dinosaur National Monument.

Dinosaur National Monument lies at the eastern edge of the Uinta Basin, a large natural depression rimmed on the north by the anticlinal uplift of the Uinta Mountains and on the south by the Tavaputs Plateau uplift. A large number of geologic formations are exposed in Dinosaur National Monument, ranging in age from the Precambrian Uinta Mountain group to Quaternary alluvium. The diversity of the landscape, with representative plant communities from the Great Basin and Rocky Mountain ecoregions, is largely due to the geologic and topographic variability in the Monument. Plant collection records were sorted by geologic formation (Figure 1) and by plant community (Figure 2).

Data on several high quality vegetation sites were collected during the inventory. These sites have rich species diversity, a robust understory, and have not been heavily grazed by domestic livestock. Three pinyon-juniper woodlands, a mixed mountain shrubland, and a limestone barren were described during the survey.

FLORA BY GEOLOGIC SUBSTRATE

1987 SURVEY



LEGEND:

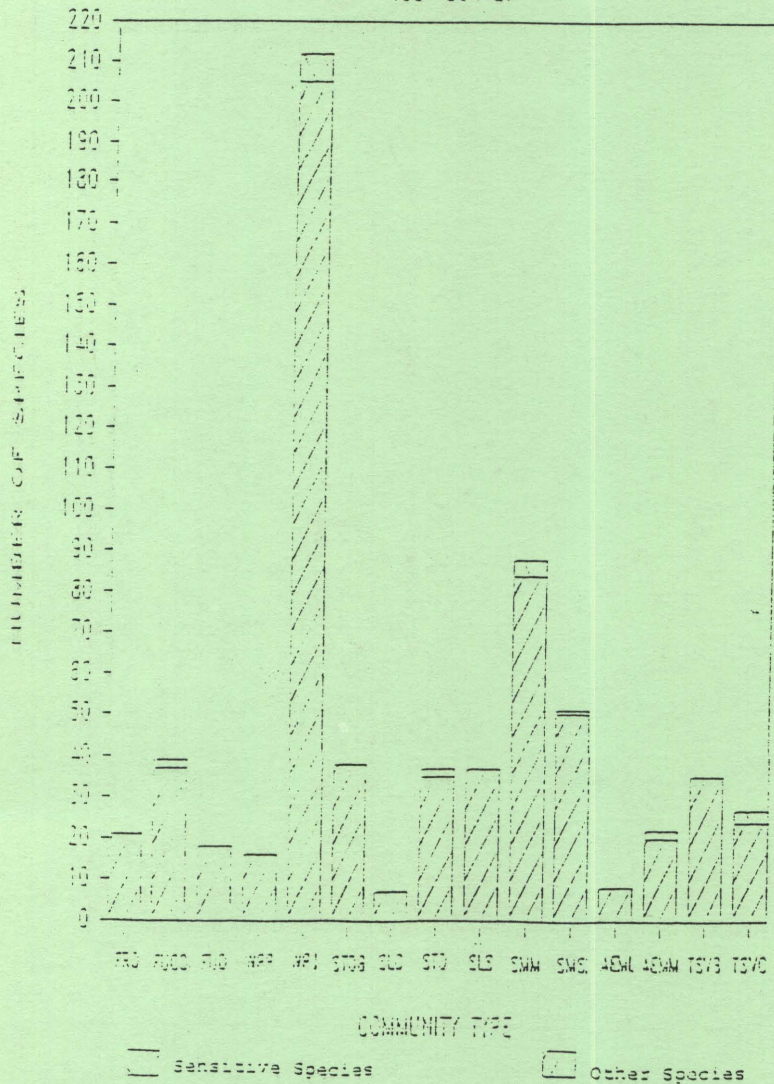
Qa=Alluvium
 Tbp=Browns Park Fm
 Jm=Morrison Fm
 JTRG=Glen Canyon SS
 TRC=Chinle Fm
 TRM=Moenkopi Fm
 PP=Park City Fm

Pw=Weber Fm
 PM=Morgan Fm
 Prv=Round Valley Fm
 Mm=Madison Limestone
 CL=Lodore Fm
 Yu=Uinta Mountain SS
 Yus=Uinta Mountain shale

Figure 1. The number of sensitive plant species and all other plant species collected is totalled for each geologic substrate.

FLORA BY PLANT COMMUNITY

1987 SURVEY



LEGEND:

FRD=riparian deciduous forest
 FUCD=douglas fir forest
 FUD=aspen forest
 WPP=ponderosa pine woodland
 WPJ=pinyon-juniper woodland
 STDB=cold desert bottomland shrubland
 SLC=low elevation riparian shrubland
 STD=tall desert shrublands

SLS=low elevation shrubland
 SMM=mixed mountain shrubland
 SMS=mountain sagebrush
 AENL=low elevation emergent wet
 AENM=montane emergent wetlands
 TSVB=barrens
 TSVC=cliffs

Figure 2. The number of sensitive plant species and all other plant species collected is totalled for each plant community.

Management recommendations for the Monument included a research natural area designation for Johnson Canyon based on its hanging gardens, its habitat for 5 rare plant species, its perennial spring, and its link to the canyon floras of the Colorado River drainage. Most rare plant species require no active management. The effects of domestic livestock grazing should be evaluated for selected rare plant habitats and grazing removed if impacts occur. Grazing should not be attracted to these areas and fire should be limited to natural events. Prescribed burns should be limited until a fire history of the area has been established.

Conclusions

The landscape diversity of Dinosaur National Monument has resulted in a potential richness of rare plant species unrivaled anywhere in the region. Floristic information will enable park managers to protect rare plant species and manage baseline areas to conserve and restore the native ecosystems of the Monument.

Literature Cited

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