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A BOTANICAL SURVEY IN GRAND TETON NATIONAL PARK: PLANTS USED BY NATIVE AMERICANS

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INTRODUCTION

For the first time, in Grand Teton National Park (GTNP) an ethnobotanical plant collection, archaeological and historic site reports, and the literature of early plant usage have been integrated into one document.

RESULTS

The total botanical collections yielded 49 families, with 119 species (Appendix A*). The literature search produced a count of 328 ethnobotanically important taxa for GTNP. This count of 328 was reduced to 281 taxa, and of these 149 collections were made. Twenty-three species were collected more than once, one of these in the Scrophulariaceae, Castelleja miniata, is a hybrid cross with C. sulphurea, a first time collection, per B. Ernie Nelson of the Rocky Mountain Herbarium. One hundred seventy-nine taxa on the list were not encountered or, have no collection history in GTNP.

Table 1. 22 plant families from two periods in GTNP, found in both 2004-2005 collections (Appendix C*), and in excavations from 23 hearths (Appendix A*).

* Appendix is available upon request. Contact UW-NPS through our website www.uwyo.edu/wnps

Published by Wyoming Scholars Repository, 2005
Table 2. Thirty-four plant families from 23 excavated archaeological sites in GTNP. These 34 families have 22 families identical with the 2004-2005 collections, and thus have a commonality of 65%. Archaeological data is in Appendix A*.

The archaeological data generated a synthesis of 319 genera in 34 families. These are included in Appendix A*. Cultural continuity is exhibited by the comparisons of the archaeological and 2004-2005 collections in Table 2. The listing of so many of these taxa in the ethnobotanical literature, as traditionally useful plants, agrees with the evidence of plant use between 10,000 years BP and up until 100 years ago. The archaeological reports were also mostly unusable as a collection resource, having only three genera with species identified. These archaeological sources have been included as evidence of Native American plant use in this region.

Twenty-two families are common to both the archaeological sites and in the 2004-2005 GTNP collection (Table 3). This represents 45% (22/49 = .448) in common with the archaeological plant analysis and 65% (22/34 = .647) in common with the 2004-2005 plant collection (Table 2).

The plant uses by tribe, and if available, the part of the plant used with its preparation, are listed in Appendix C*. The information on usage is incomplete for many plants, the Native American tribal elders with this knowledge may not have passed it to younger individuals, and it became lost before it could be written down. Included in Appendix C* are plants searched for but not located or collected. Appendix D* contains a vocabulary from Appendix C*, some of it is antiquated terminology by nature of the time and resource, but it is included for those employing plants for the indicated use per the literature.

* Appendix is available upon request. Contact UW-NPS through our website www.uwyo.edu/uwnps
reports for this study began with 328 taxa. Fifteen percent of this original plant collection list was excluded from my collecting efforts, reducing species sought to 281. The following four classifications address these exclusions.

1. Genus with no species specified. When more than one species occurs in a genus these were excluded.

2. Misidentification of genus and/or species by untrained individuals.

3. Incomplete synonymic trail of antiquated names to modern binomials.

4. Two taxa have no record of modern collection in GTNP (Dom 2001). These are archaeological pollen, *Quercus*, and *Ephedra* (Larson 1995).

The assumption is that these species were well within the annual migration and trade range of Shoshone hunter-gatherers (Shimkin 1947). Edibles, medicinals, ceremonial, or utilitarian plants could have been transported into GTNP, prepared in a roasting pit, and consumed at that time, leaving only pollen as evidence (Adams 2006).

A compiled list of plants and their uses came from earlier travelers, ethnographers, explorers and the photographer Edward Curtis in the 1800s. Early botanists or those with some formal botanical training provided out-dated binomials or colloquial common plant names. These archaic names have changed through the years; most of them have a lineage to follow into currently usable Linnaean nomenclature.

Archaeological data from twenty-three sites, including testing by shovel, auger, or major excavation, were unusable as a collection resource, because only three genera had specific species identified. These archaeological sources have been included as evidence of early Native American use of plants in GTNP. These are included in Appendix B*.

Considerations of why there are not more than twenty-two taxa in common between the prehistoric and the 2004-2005 collections may include reasons of seasonal gathering practices, the availability of plants to collect when people were present, seed bearing species dependency on annually fluctuating moisture levels, and the possibility of taxa becoming locally extinct through global change. Prehistoric hearths may not have been discovered due to the water levels of Jackson Lake being too high, or fire and regrowth of vegetation covering the sites, or hearths simply not being inventoried. The age of archaeological sites 48TE509 and 48TE1039 indicate occupation during the Altithermal period in ethnobotanical history.

Ethnobotanical plants in and around GTNP are listed in Appendix C*. All of these plants were recorded as being used by, or present with the tribes, as referenced by their authors. Some plants may have been transported into GTNP (Shimkin 1947, Adams 2006, Reher 2004, Waldman 2000), as *Quercus* and *Ephedra* do not have a recorded history of growing in GTNP. *Quercus* is located in Carbon, Crook, and Campbell Counties in the State of Wyoming, Gallatin County in Montana and Uintah, Duchesne, Wasatch, Salt Lake, Davis, Weber and Cache Counties in Utah (USDA Plants Database). *Ephedra* has never been collected in the State of Wyoming Dorn (2001), but is reported to grow in Sweetwater County, Wyoming (USDA, Plants Database). These two plant taxa are from the Henn Site, (Larson 1995). Including those plants not found in GTNP, but reported in the literature as hearth contents, is important to illustrate the migration of peoples, the possibility of trade patterns, their understanding of plants, and their ways of living.

Botanical and ethnographic literature was compiled first, then, the addition of macrofloral and microfloral data gleaned from archaeological site reports and finally a plant collection from GTNP was included. By recognizing the traditional ways of plant use from the archaeological and literary records and using these same grounds for collecting, an old connection between culture and conservation is honored. Tribes of people returned yearly for plants and did not cause their extinction. Modern man needs to learn this lesson in so many areas of his life.

**LITERATURE CITED**


Cummings, L.S. 1988. Pollen and Macrofloral Analyses of Four Sites around Jackson Lake,
Wyoming. 1987 Field Season


* Appendix is available upon request. Contact UW-NPS through our website www.uwyo.edu/uwnps