Sensitive Plant Survey

of the

Alcova Gravel Pits,

Natrona County, Wyoming

Prepared for the
Bureau of Reclamation

By

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INTRODUCTION

The Bureau of Reclamation (BuRec) is responsible for the surface management of lands along the banks of the North Platte River in the vicinity of Alcova Reservoir. In 1996, the US Fish and Wildlife Service requested BuRec to survey its lands north of Alcova Dam for potential habitat for the Ute lady's tresses (Spiranthes diluvialis), Wyoming's only listed Threatened plant species under the Endangered Species Act. BuRec contracted with The Nature Conservancy's Wyoming Natural Diversity Database (WYNDD) to conduct a survey of the Alcova area for S. diluvialis and other rare plant species in August, 1996.

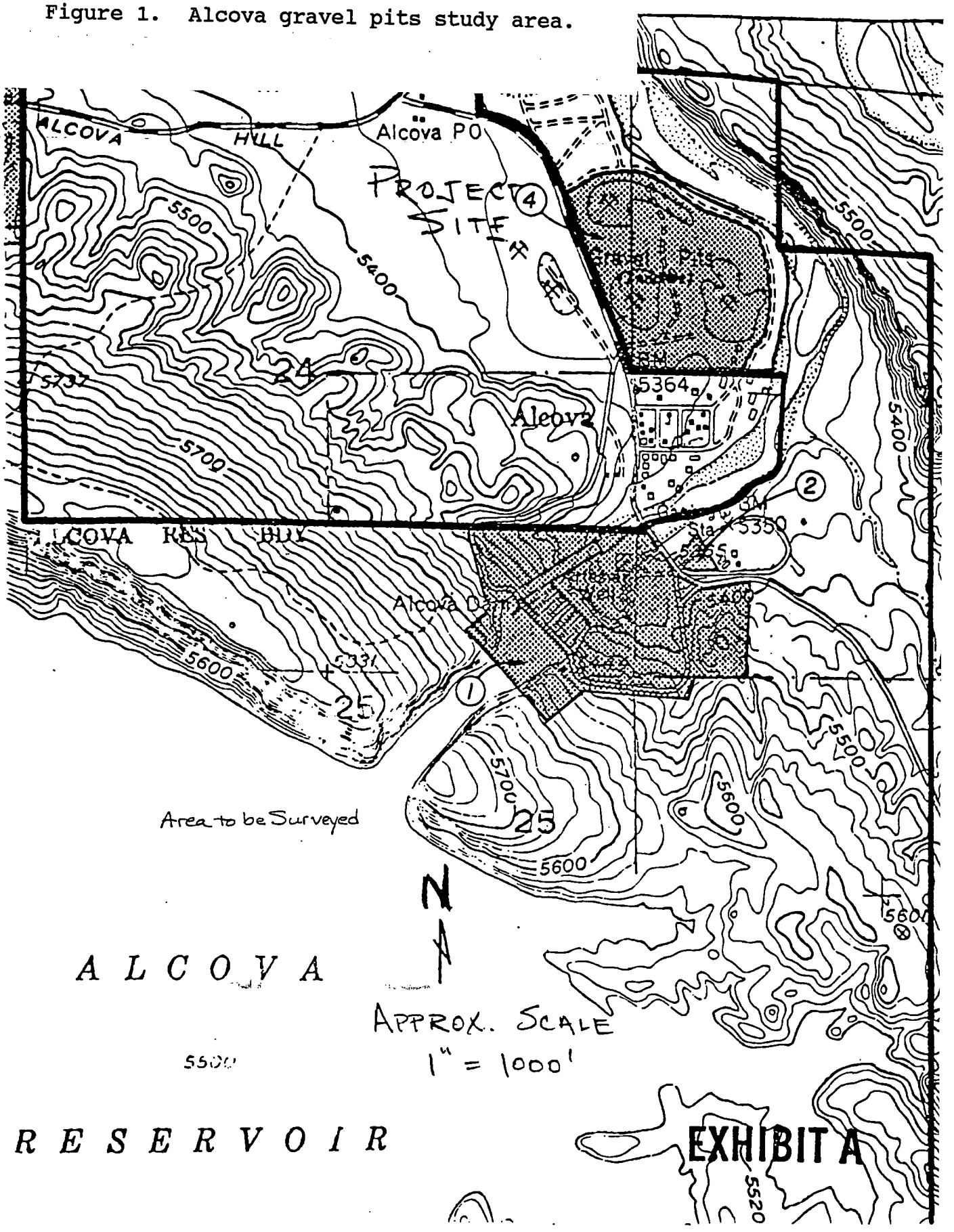
STUDY AREA

The study area is located between the west bank of the North Platte River and the Alcova loop road, approximately 0.25 miles east of Wyoming State Highway 220 and immediately north of the town of Alcova (Figure 1) in Township 30 North, Range 83 West, Section 24 (E2 of NE4) and Range 82 West Section 19 (SW4 of NW4). The entire area is managed by BuRec. Much of the site consists of abandoned gravel pits and associated dirt roads and powerlines.

Ground surveys focused on potential Spiranthes habitat on the banks of the North Platte River and in wet depressions and ponds within abandoned gravel pits. Riverbank vegetation consisted primarily of dense thickets of western snowberry (Symphoricarpos occidentalis), Wood's rose (Rosa woodsii), and silver sagebrush (Artemisia cana var. cana) interspersed with smooth brome (Bromus inermis var. inermis) and basin wildrye (Elymus cinereus). Vegetation of semi-moist areas within the gravel quarries consisted of narrowleaf cottonwood (Populus angustifolia), peachleaf willow (Salix amygdaloides), sandbar willow (S. exigua), and fivestamen tamarisk (Tamarix chinensis) with an understory of Baltic rush (Juncus balticus var. montanus) and creeping bentgrass (Agrostis stolonifera). Areas of permanent, standing water within the quarry pits were dominated by marshes of broadleaf cattail (Typha latifolia), hardstem bulrush (Scirpus acutus), and creeping bentgrass.

Adjacent upland areas were also briefly surveyed for rare plant species. These sites consisted of a mosaic of greasewood (Sarcobatus vermiculatus) and big sagebrush (Artemisia tridentata) communities with understories dominated by inland saltgrass (Distichlis stricta), Indian ricegrass (Oryzopsis hymenoides), cheatgrass (Bromus tectorum), and alkali sacaton (Sporobolus airoides).

Figure 1. Alcova gravel pits study area.



RESULTS

No populations of Spiranthes diluvialis nor any other rare plant species tracked by WYNDD (Fertig 1996) were found during a survey of the Alcova gravel pit area on 20 August 1996. A list of common vascular plants of the area is provided in Table 1.

DISCUSSION AND MANAGEMENT RECOMMENDATIONS

Spiranthes diluvialis was first described as a new species in 1984. At that time, it was known from fewer than a dozen locations in eastern Colorado, northern Utah, and eastern Nevada (Sheviak 1984). Due to its limited distribution and high degree of threat from urban development, S. diluvialis was listed as Threatened by the US Fish and Wildlife Service in 1992 (Fertig 1994).

This species is currently known from only two locations in Converse and Goshen counties, Wyoming (Hartman and Nelson 1995). Both populations are found on moist, coarse sand of open creek banks in a narrow zone of riparian vegetation sandwiched between wet cattail marshes and dry prairie grasslands. Common associated species include Agrostis stolonifera, Aster ericoides, Carex nebrascensis, Medicago lupulina, and Melilotus albus (Hartman and Nelson, no date). Other populations in Colorado and Utah are typically found on alluvial soils along moist streambanks, wet meadows, or abandoned stream channels with low, short cover (Fertig 1994).

The Alcova quarry site differs in several key environmental characteristics from areas known to contain populations of Spiranthes diluvialis. Soils in the gravel pit wetlands are strongly alkaline and poorly drained, differing significantly from the coarse gravels and alluvium utilized elsewhere by this species. Steep riverbank sites along the North Platte are mostly unsuitable for this species due to soil chemistry and dense plant cover. Other areas within the study site are either too dry or have too much cover to provide suitable habitat for S. diluvialis. It is unlikely that S. diluvialis is present at the Alcova site and no special precautions need to be taken for its management.

Table 1.

Vascular Plants of the Alcova Gravel Pit Site

The following species list is based on a survey conducted by the author on 20 August, 1996. Nomenclature follows Dorn (1992) for scientific names and Soil Conservation Service (1994) for common names. Family acronyms are based on the first three letters of the family name and follow the taxonomy of Dorn (1992).

Scientific Name	Common Name	Family
	1. Trees	
Elaeagnus angustifolia	Russian olive	ELA
Fraxinus pennsylvanica	Green ash	OLE
Populus angustifolia	Narrowleaf cottonwood	SAL
Populus deltoides	Eastern cottonwood	SAL
Salix amygdaloides	Peachleaf willow	SAL
Ulmus pumila	Siberian elm	ULM
	2. Shrubs	
Artemisia cana var. cana	Silver sagebrush	AST
Artemisia frigida	Fringed sagewort	AST
Artemisia tridentata var. tridentata	Big sagebrush	AST
Atriplex canescens var. canescens	Fourwing saltbush	CHE
Chrysothamnus nauseosus var. graveolens var. nauseosus	Rubber rabbitbrush	AST
Chrysothamnus viscidiflorus var. viscidiflorus	Green rabbitbrush	AST
Gutierrezia sarothrae	Broom snakeweed	AST
Krascheninnikovia lanata	Winterfat	CHE
Rhus trilobata	Skunkbush sumac	ANA
Ribes aureum	Golden currant	GRO
Rosa woodsii	Wood's rose	ROS
Salix exigua var. exigua	Sandbar willow	SAL
Sarcobatus vermiculatus	Greasewood	CHE
Shepherdia argentea	Silver buffaloberry	ELA
Symphoricarpos occidentalis	Western snowberry	CPR
Tamarix chinensis	Fivestamen tamarisk	TAM
Yucca glauca	Soapweed yucca	AGA

3. Forbs

Alyssum desertorum	Desert madwort	BRA
Ambrosia acanthicarpa	Flatspine burr ragweed	AST
Apocynum cannabinum	Indianhemp	APO
Artemisia campestris var. scouleriana	Northern sagewort	AST
Asclepias speciosa	Showy milkweed	ASC
Aster ascendens	Chile aster	AST
Aster falcatus var. commutatus	Cluster aster	AST
Astragalus bisulcatus	Twogrooved milkvetch	FAB
Astragalus missouriensis	Missouri milkvetch	FAB
Astragalus sericoleucus	Silky milkvetch	FAB
Atriplex subspicata	Saline saltbush	CHE
Bassia hyssopifolia	Fivehorn smotherweed	CHE
Camelina microcarpa	Littlepod falseflax	LIN
Centaurium exaltatum	Desert cantaury	GEN
Chaenactis douglasii	Douglas' dustymaiden	AST
Cirsium arvense	Canada thistle	AST
Cirsium canescens	Prairie thistle	AST
Cirsium pulcherrimum	Wyoming thistle	AST
Clematis ligusticifolia	Western white clematis	RAN
Conyza canadensis	Canadian horseweed	AST
Cryptantha celosioides	Butte-candle	BOR
Dalea candida var. oligophylla	White prairie clover	FAB
Descurainia sophia	Tansymustard	BRA
Erigeron sp.	Fleabane	AST
Eriogonum microthecum var. effusum	Slender buckwheat	PLG
Euphorbia glyptosperma	Ribseed sandmat	EUP
Glycyrrhiza lepidota	American licorice	FAB
Grindelia squarrosa	Curlycup gumweed	AST
Helianthus petiolaris	Prairie sunflower	AST
Heterotheca horrida	Bristly goldaster	AST
Iva axillaris	Povertyweed	AST
Kochia scoparia	Common kochia	CHE
Lactuca oblongifolia	Blue lettuce	AST
Lactuca serriola	Prickly lettuce	AST
Lepidium perfoliatum	Clasping pepperweed	BRA
Lygodesmia juncea	Rush skeletonplant	AST
Machaeranthera canescens	Hoary aster	AST
Maianthemum stellatum	Starry false Solomon's seal	LIL
Medicago lupulina	Black medic	FAB
Melilotus albus	White sweetclover	FAB
Melilotus officinalis	Yellow sweetclover	FAB
Mentha arvensis	Wild mint	LAM
Mirabilis linearis	Narrowleaf four-o'clock	NYC
Oenothera pallida var. trichocalyx	Pale evening primrose	ONA

Opuntia polyacantha var. polyacantha	Plains prickly pear	CAC
Oxytropis sericea	Silvery crazyweed	FAB
Pediocactus simpsonii	Simpson hedgehog cactus	CAC
Phacelia hastata	Silverleaf phacelia	HYD
Phlox hoodii	Spiny phlox	PLM
Polanisia trachysperma	Clammyweed	CAP
Polygonum aviculare	Prostrate knotweed	PLG
Polygonum lapathifolium	Curlytop knotweed	PLG
Potentilla anserina	Silverweed cinquefoil	ROS
Ranunculus macounii	Macoun's buttercup	RAN
Rumex crispus	Curly dock	PLG
Rumex venosus	Veiny dock	PLG
Salsola australis	Russian thistle	CHE
Sisymbrium altissimum	Tall tumblemustard	BRA
Sonchus uliginosus	Sow-thistle	AST
Sphaeralcea coccinea	Scarlet globemallow	MAL
Taraxacum officinale	Common dandelion	AST
Toxicodendron rydbergii	Western poison-ivy	ANA
Tragopogon dubius	Yellow salsify	AST
Typha latifolia	Broadleaf cattail	TYP
Verbena bracteata	Bigbract verbena	VER
Xanthium strumarium var. canadense	Canada cockleburr	AST

4. Graminoids

Agropyron cristatum var. cristatum var. desertorum	Crested wheatgrass	POA
Agrostis stolonifera	Creeping bentgrass	POA
Alopecurus arundinaceus	Creeping meadow foxtail	POA
Bouteloua gracilis	Blue grama	POA
Bromus inermis var. inermis	Smooth brome	POA
Bromus tectorum	Cheatgrass	POA
Carex lanuginosa	Woolly sedge	CYP
Carex nebrascensis	Nebraska sedge	CYP
Carex stenophylla	Narrowleaf sedge	CYP
Distichlis stricta	Inland saltgrass	POA
Echinochloa muricata var. microstachya	Rough barnyard grass	POA
Elymus canadensis var. canadensis	Canada wildrye	POA
Elymus cinereus	Basin wildrye	POA
Elymus elymoides	Bottlebrush squirreltail	POA
Elymus lanceolatus var. lanceolatus	Streambank wheatgrass	POA
Hordeum jubatum	Foxtail barley	POA
Juncus balticus var. montanus	Baltic rush	JUN
Juncus compressus	Roundfruit rush	JUN

Juncus nodosus	Jointed rush	JUN
Monroa squarrosa	False buffalograss	POA
Muhlenbergia asperifolia	Alkali muhly	POA
Oryzopsis hymenoides	Indian ricegrass	POA
Poa pratensis	Kentucky bluegrass	POA
Poa secunda var. elongata	Sandberg bluegrass	POA
Puccinellia nuttalliana	Nuttall's alkaligrass	POA
Scirpus acutus	Hardstem bulrush	CYP
Spartina gracilis	Alkali cordgrass	POA
Sporobolus airoides	Alkali sacaton	POA
Sporobolus cryptandrus	Sand dropseed	POA
Stipa comata	Needle-and-thread	POA

5. Ferns and Fern Allies

Equisetum arvense	Field horsetail	EQU
Equisetum laevigatum	Smooth horsetail	EQU

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