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Revision of Species Inventory Checklists for Sandia National Laboratories, Albuquerque Bernalillo County, New Mexico

Final Report

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Abstract

This report revises and updates the 1974 report by W. C. Martin and W. L. Wagner, *Biological Survey of Kirtland Air Force Base (East)*. The biological communities of Kirtland Air Force Base (KAFB) are described with respect to the Biome classification system of Brown (1982), and a standardized system of habitat types is proposed based on biome and soil type. The potential occurrence of State or Federally endangered species is discussed. No species listed as endangered or threatened is known to occur on KAFB, although five are identified as potentially occurring. Updated lists of amphibians, reptiles, breeding birds, mamals, and plants are presented.

MASTER

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1.0 INTRODUCTION

In response to a growing need for baseline information on the biological environment contained within Kirtland Air Force Base (KAFB), Sandia National Laboratories, Albuquerque (SNLA) contracted researchers from the University of New Mexico in the early 1970s to perform a biological survey of the base and prepare species lists of the higher plants and animals likely to occur within its boundary. In addition to the annotated checklists of amphibians, reptiles, birds, mammals, and plants, the resulting report (Martin and Wagner, 1974) provides descriptions of the general physical environment (topography, geology, soils, and climate) on KAFB and a detailed discussion of the floristic affinities of the major plant communities observed during the field surveys. The animal lists in this report are primarily based on literature review. Only the plant list was corroborated by field collections.

Since its release, the biological survey report of Martin and Wagner has been used as the primary source document for descriptions of the biological environment in several subsequent documents, including the Sandia Laboratories Environmental Impact Assessment (Sandia National Laboratories, 1977) and the Strategic Defenses Facility environmental assessment (Department of Energy, 1988). For its time, the biological survey of Martin and Wagner was excellent and thorough. However, since that work was completed, new information has become available which has necessitated its revision.

The most pervasive changes affecting the species lists are changes in accepted taxonomy and nomenclature. Taxonomic change is a continuing process in biology and periodic update of active species lists should be performed. All of the lists in the original report, with the exception of the mammals, required at least some changes in names or taxonomic order. The taxonomic ordering of passerine birds, in particular, has undergone significant changes by the American Ornithologists' Union with the joining of the wood warblers, sparrows, and icterids into one large family, the Emberizidae.

A second area of change over the past fifteen years has been the availability of reference material. Significant references published since 1974 include: The Cacti of the United States and Canada (Benson, 1982), A Handbook of Rare and Endemic Plants of New Mexico (New Mexico Native Plants Protection Advisory Committee, 1984), Soil Survey of Bernalillo County

and Parts of Sandoval and Valencia Counties, New Mexico (Hacker, 1977), and Biotic Communities of the American Southwest - United States and Mexico (Brown, 1982). Two references now published, A Flora of New Mexico (Martin and Hutchins, 1980) and Mammals of New Mexico (Findley et al., 1975) were cited as manuscripts in the original report. The Check-List of the Birds of New Mexico (Hubbard, 1970), cited in the original report, has since been revised and republished (Hubbard, 1978).

Although the primary goal of this report is to update the species lists in the original checklists of Martin and Wagner in accordance with recent changes in accepted taxonomy, other changes have also been made. Based on the current literature, the occurrence of some species, such as the black-tailed prairie dog and pronghorn antelope, is highly improbable on KAFB and these were removed from lists to avoid possible misrepresentation in future reports. Species which were not listed but which appear now to have a higher probability of being present than perhaps originally thought were added to the lists. Information is also provided on the listed threatened and endangered species based on consultation with regulatory agencies and selected references [New Mexico Department of Game and Fish (no date); New Mexico Native Plants Protection Advisory Committee, 1984].

For the amphibians, reptiles, and mammals, a list of species which have a low probability of occurring on KAFB is provided separately from the list of species having a moderate or high probability of occurrence. These are typically species for which the location and habitat conditions of the site are marginal. Until field surveys verify their presence, these low-probability species should not be cited as being present.

Another significant change from the original checklists is the removal of migrant birds. Bird migration presents a difficult problem to the development of a meaningful species inventory. If migrants are to be included, decisions must be made, which are usually highly subjective, as to which are common and which constitute casual or accidental occurrences. The resulting list is usually so inundated with potential winter visitors that it becomes extremely difficult to discern which species are directly dependent on the area for reproduction. The list of birds presented here is composed of those species which are considered to be potential breeders on KAFB.

Finally, an attempt is made in this report to provide the information in a format which can be easily modified and updated by future researchers. The species lists are provided in a tabular format to allow easier transcription, insertion, deletion, reorganization, and other changes required by future changes in taxonomy, field verification, or to suit a special reporting need. Further, an attempt has been made to provide a standardized system of habitat classification. Although to do this for such a broad range of organisms is admittedly prone to oversimplification, its potential usefulness in developing specialized lists for specific habitat types (e.g., "grassland species") far outweigh the problems of generality.

1.1 DESCRIPTION OF THE STUDY AREA

The boundaries of KAFB encompasses an area of about 52,000 acres southeast of Albuquerque, New Mexico (Figure 1.1). This area can be subdivided into two large units which are distinct both politically and ecologically. The western unit is approximately 31,000 acres in size, 90 percent of which is owned by the Air Force and the rest is owned by the Department of Energy (DOE), primarily for use by Sandia National Laboratories, Albuquerque. The eastern unit is approximately 21,000 acres in size and is withdrawn from the Cibola National Forest by agreements with the Air Force and the DOE.

The western unit of KAFB lies on an elevated terrace between the Rio Grande and the Manzano Mountains. This terrace, known as the East Mesa (i.e., lying east of the Rio Grande), is generally flat, with a gentle westward slope of less than 2 percent. Two large arroyos dissect the western unit. Tijeras Arroyo runs southwestward across the northern part of the unit and Arroyo del Coyote runs northwestward through the central part, joining with Tijeras Arroyo before it crosses the western boundary of KAFB (Figure 1.2).

The elevation of the terrace within the western unit ranges from 5200 feet at the bottom of Tijeras Arroyo to approximately 6000 feet at the base of the Manzano Mountains. However, a small outlier range of mountains, known as the Four Hills, lies just within the unit on the east side. The highest peak of the Four Hills rises abruptly above the surrounding plains an additional thousand feet.

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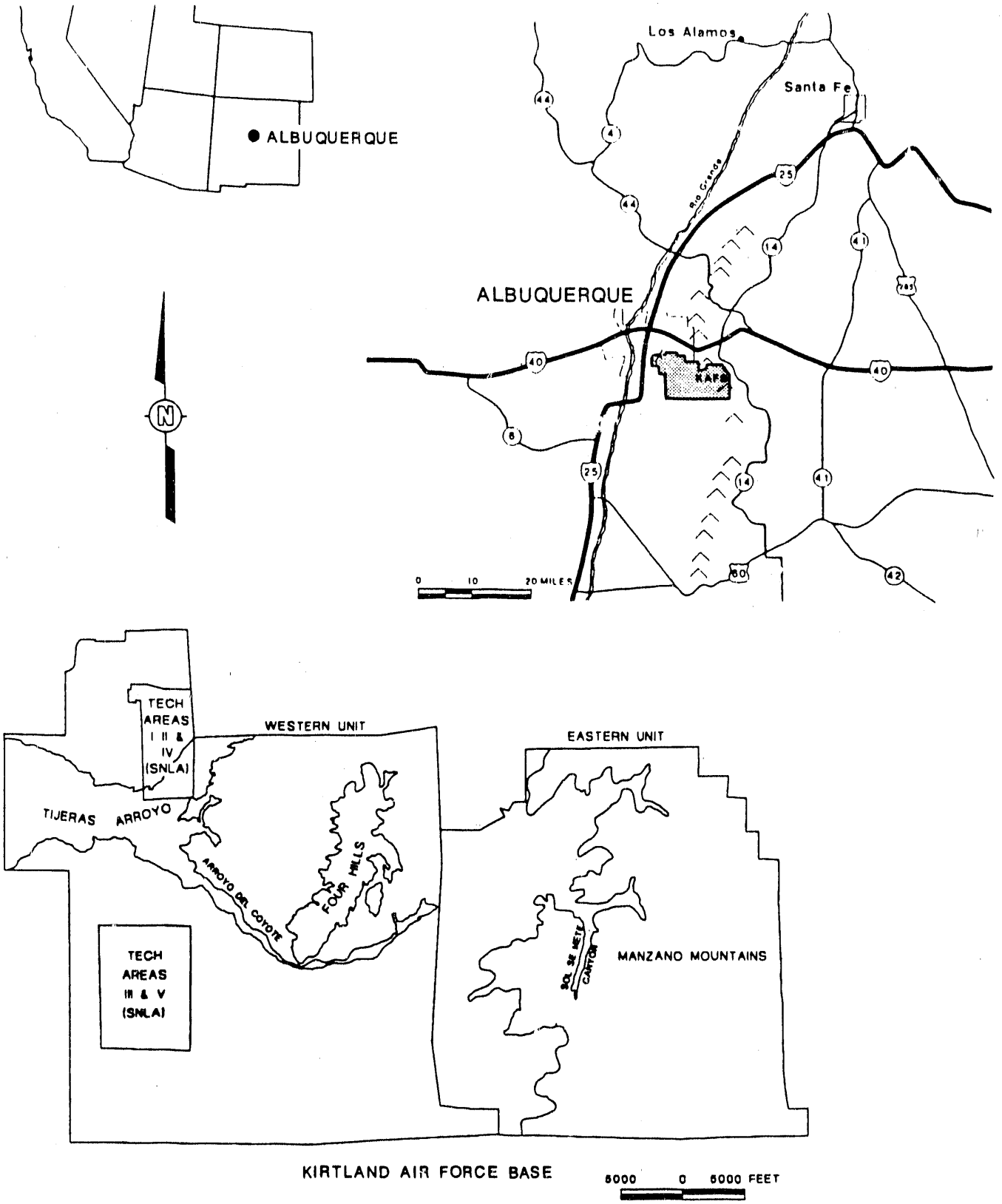

FIGURE 1.1 LOCATION MAP OF KIRTLAND AIR FORCE BASE AND SANDIA NATIONAL LABORATORIES, ALBUQUERQUE

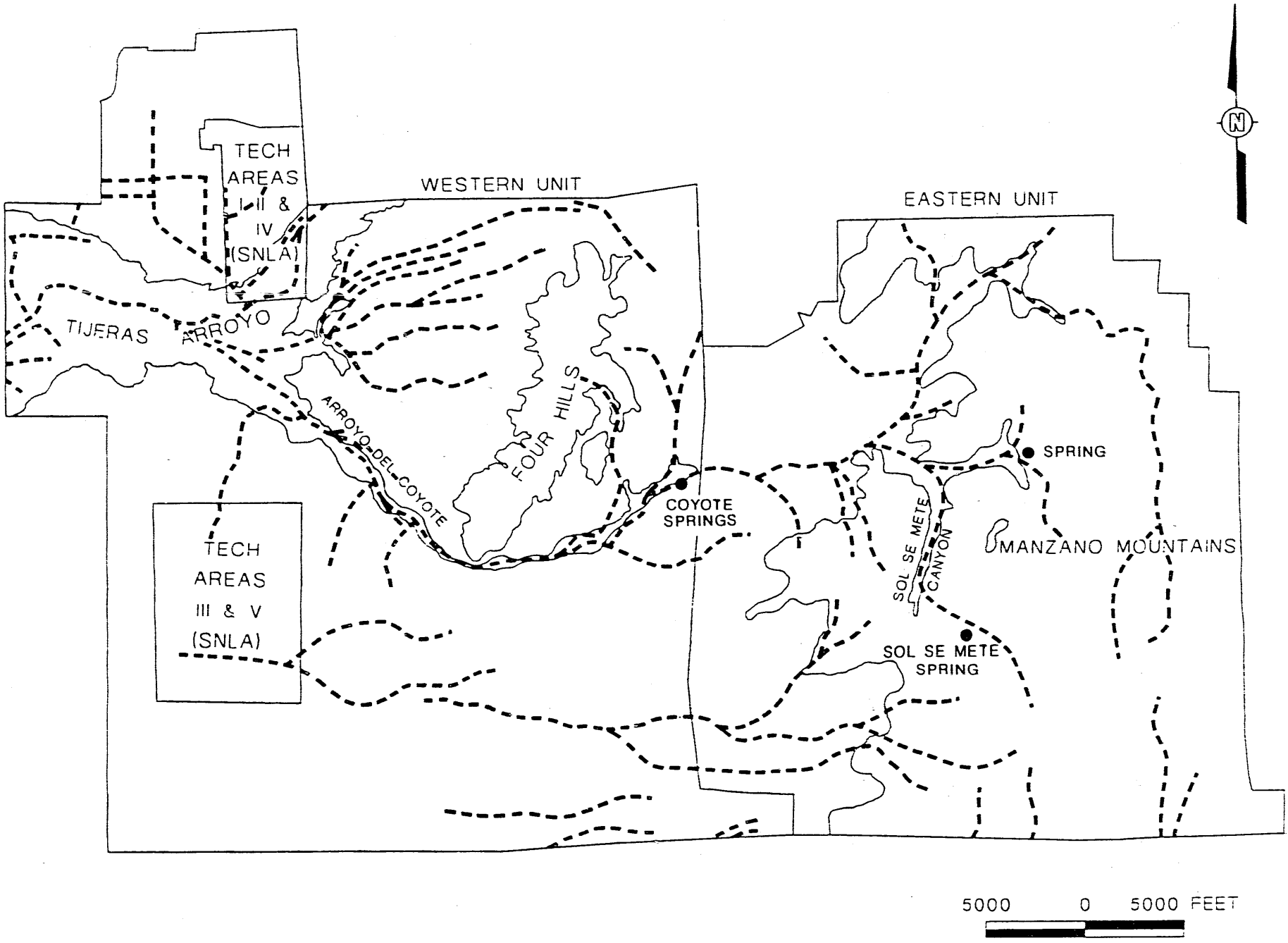

FIGURE 1.2 DRAINAGE PATTERN AND SPRINGS ON KIRTLAND AIR FORCE BASE

The topography of the eastern unit is dominated by the Manzano Mountains. This unit ranges in elevation from about 6000 feet at the southwest corner to nearly 8000 feet at the site of the old Manzano Lookout Tower. The mountains within this unit are highly dissected by canyons, the major ones being Sol de Mete Canyon, Lurance Canyon, Madera Canyon, Bonita Canyon, and David Canyon. This section of low, highly eroded mountains which form a bridge between the main Manzano range to the south and the Sandia range to the north are sometimes referred to as the Manzanita Mountains.

The climate of the area is mild and dry. Average maximum and minimum temperatures on the mesa are 92° and 65°F, respectively, for July and 47° and 24°F, respectively, for January. Average annual rainfall is approximately 8 inches on the mesa and increases to 20 inches in the mountains.

1.2 GEOLOGY AND SOILS

KAFB straddles the eastern edge of the Rio Grande trough, delineated by a series of north-south oriented faults that run through the center of the base. The Manzano Mountains represent a block uplift along three fault lines with steep west-facing slopes of exposed Precambrian metamorphic rock capped with Permian-aged limestones of the Madera and Sandia Formations. These uplifted limestone beds dip gradually eastward, providing the elevated, rolling terrain of the eastern slopes. The Four Hills are a separate uplift block from which the limestone cap has since eroded, leaving the underlying Precambrian granite fully exposed.

Fans of quaternary alluvium from the slopes and canyons of the Manzano Mountains grade into the flat mesa surface, composed of finer alluvial and eolian deposits. These Quaternary sediments are underlain by the Tertiary alluvium of the Santa Fe Formation, which is exposed along the cut-banks of the larger arroyos.

The soils of KAFB have been classified and mapped by the Soil Conservation Service (Hacker, 1977). A generalized soil map of KAFB is presented in Figure 1.3. The flat terrace surfaces are dominated by sandy loam soils. These include the Latene sandy loam, the Wink fine sandy loam, the Madurez loamy fine sand, and the Tome very fine sandy loam. The arroyo bottoms are generally Gila fine sandy loams, while the cut banks on the sides of the arroyo are classified as a hilly Bluepoint-Kokan association soils typified by exposures of the Santa Fe Formation.

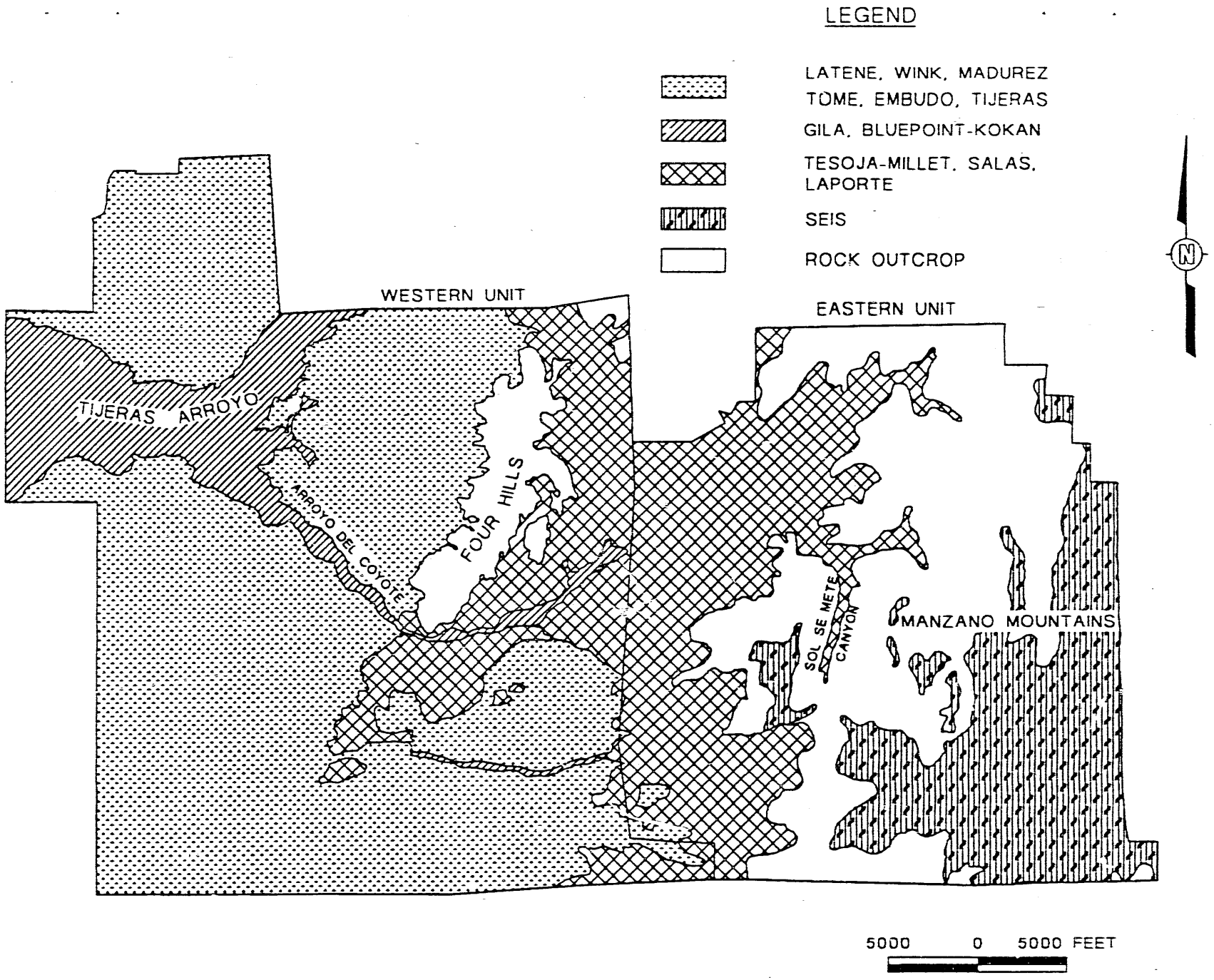

FIGURE 1.3 SOIL MAP OF KIRTLAND AIR FORCE BASE (BASED ON HACKER, 1977)

Nearer to the mountains, the slopes increase and the soils become coarser. On the east side of the western unit, the soils are predominantly the Embudo gravelly fine sandy loam, the Tijeras gravelly fine sandy loam and the Ildefonso gravelly sandy loam.

Alluvial slopes, or bajadas, at the bases of the mountains and within the canyons are dominated by very coarse soils. These include the Tesoja-Millett stony sandy loam and the Salas very gravelly loam complex. Above these soils are parent rock outcrops and shallow, young soils. The eastern slopes of the Manzano Mountains have gentler slopes and are dominated by the cobbly to stony loam soils in the Seis Series derived from weathered limestone.

1.3 BIOLOGICAL COMMUNITY CLASSIFICATION

Classification of the biological communities in this area is difficult due to its location in an area transitional between several major biological regions. In the Environmental Assessment for the Strategic Defenses Facility (Department of Energy, 1988), the biological community of the western unit is classified as the Grama-Galleta Steppe Section of the Colorado Plateau Province, in accordance with the ecoregion system of Bailey (1978). However, as Martin and Wagner (1974) point out, only the Rocky Mountain Woodland community (i.e., the pinyon-juniper association) was found to be truly representative of the community type. The remainder of the vegetation showed floristic influences from the Great Basin desert, the Chihuahuan desert, the desert grassland, and the short-grass prairie.

In this report, the Biome classification system of Brown (1982) is used to classify the biological communities. This system offers several advantages over most community classification systems. The system is specific to the southwest, providing an excellent level of detail for use in New Mexico. It is based on both climatic zone (as a higher level of classification) and species assemblage (which includes both flora and fauna). It is also based on a digitized hierarchical system which can be further subdivided into more detailed levels as needed.

In accordance with this system, KAFB lies near the southern boundary of the Cold-temperate Climatic Zone. Within KAFB, the biological communities of the plains, arroyos, and lower slopes of the Manzano Mountains are dominated by the Great Basin Grasslands Biome;

however, species associated with the Plains Grassland Biome, which dominates east of the Manzano Mountains, are common. Sites with warmer and drier microclimates, such as south and west facing slopes and exposed plains, are expected to show greater biological affinities to the Semidesert Grassland Biome of the Warm-temperate Climatic Zone. Such affinities were found by Martin and Wagner (1974) in Sol de Mete Canyon.

On the coarser soils of the bajadas, especially on the cooler and more moist north and east facing slopes, the cold-temperate grasslands give way to the Great Basin Conifer Woodland Biome, dominated by one-seed juniper (Juniperus monosperma) and Colorado pinyon (Pinus edulis). Elements of the Rocky Mountain Montane Conifer Forest Biome, such as ponderosa pine (Pinus ponderosa), and the Great Basin Montane Scrubland Biome, such as scrub-oaks (Quercus turbinella, Q. grisea, and Q. gambelii), were found in the more mesic locations in canyons and at higher elevations during the surveys by Martin and Wagner (1974).

1.4 HABITAT TYPES

In the species lists contained in this report, an attempt has been made to standardize the habitat classification for each species. The definition of habitat type is based primarily on the soil and biome classifications described above. The categories used are as follows:

Grasslands - Flat terrace surfaces occupied by undisturbed Latene, Wink, Madurez, Tome, Tijeras, Embudo, and Ildefonso soils. These soils are sandy loams to gravelly sandy loams with slopes less than 5 percent. The prevailing biomes are cold-temperate grasslands.

Arroyos - Generally limited to the Gila soil of Tijeras Arroyo and Arroyo del Coyote and the adjacent cut banks of the Bluepoint-Kokan association. The prevailing biomes are cold-temperate grasslands, semidesert grassland, and Great Basin riparian wetland.

Woodlands - Areas of well developed pinyon-juniper woodland (Great Basin Conifer Woodland). In this area, woodlands are typically found on the north and east facing slopes of the mountains on all gravelly to rocky soils.

Canyons - Areas within canyons which are more moist than the surrounding slopes due to the concentration of runoff and protection from exposure afforded by the adjacent slopes. Soils are typically Tesoja-Millett stony sandy loam or in the Seis Series. The biomes present may range from Great Basin riparian wetland to the Rocky Mountain Montane Conifer Forest.

Rocky slopes - This is a general term used to indicate a species' affinity to rock outcrops or stony soil at any elevation. Soils are typically in the Salas or Seis Series. Biomes are variable.

Lower slopes - Generally the lower part of the bajadas at the bases of mountains with gravelly to stony loam soils and slopes between 5 and 20 percent. The term "lower" is used in an ecological sense as well as a physical sense. A lower slope may be found at relatively high elevation if the exposure conditions are such that the microclimate is equivalent to that of the lower elevation (i.e., being warmer and drier). These areas are usually transitional between the cold-temperate and semidesert grasslands and the Great Basin Conifer Woodland.

Higher elevations - This term is also used in the ecological sense, meaning an area with sufficient protection from exposure to have a microclimate equivalent to the Rocky Mountain Montane Forest Biome. On the KAFB, this habitat is generally limited to north facing slopes in the upper reaches of canyons. Soils are typically very rocky.

Wetlands - Any area with permanently saturated soil or permanent standing water. Wetlands may occur as a small, isolated unit within any of the major soil types or biomes.

Disturbed ground - Areas on which the natural soil structure has been physically altered by human activity.

Buildings - Areas near or significantly influenced by man-made structures. These can include buildings, power lines, fences, roads, lawns, planted trees, engineered frames, storage tanks, etc.

1.5 PROTECTED SPECIES AND SENSITIVE HABITATS

Both Federal and State laws provide protection to species and distinct subspecies, varieties, and populations which are either in danger of extinction now, or may become so in the near future. Such protection is afforded to any species regardless of taxonomic relationships; current lists of protected species include vertebrates, invertebrates, and plants. In cases where the survival of an endangered or threatened species is closely linked to protection of its habitat, critical habitat status may be conferred to the geographical area containing the habitat.

No species listed as endangered or threatened by the U.S. Fish and Wildlife Service (50 CFR 17.11 and 17.12, as amended through March 14, 1990), the New Mexico Department of Game and Fish (Regulation 657, January 9, 1988), and the New Mexico Energy, Minerals, and Natural Resources Department (NRD Rule No. 85-3, October 28, 1985) are known to occur on KAFB. Five species listed by the state may potentially occur on KAFB. These are:

- Willow Flycatcher (Empidonax traillii extimus) State Endangered Group 2. This is an unlikely breeding species in the canyons and near water.

- Gray Vireo (Vireo vicinior) State Endangered Group 2. This is also an unlikely breeding species in the canyons.

- Spotted Bat (Euderma maculatum) State Endangered Group 2. This species has been reported from Bernalillo County (New Mexico Department at Game and Fish, no date), but is unlikely in the KAFB area.

- Grama Grass Cactus (Pediocactus papyracanthus) State listed endangered plant. Potentially occurring in undisturbed grasslands.

- Pincushion Cactus (Mammillaria wrightii) State listed endangered plant. Potentially occurring in sandy to rocky soils.

No State or Federally listed amphibian, reptile, or invertebrate is expected to occur on KAFB. There are no areas of critical habitat on KAFB.

In addition to the protection of endangered species and critical habitat provided by State and Federal endangered species laws, a general policy of conservation of all nongame fish and wildlife species and their habitats by Federal departments and agencies (to the maximum extent practicable and consistent with their statutory responsibilities) is set forth in the Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901 et seq.). To this end, areas of important and sensitive habitat types, particularly wetlands and riparian zones, should be given special consideration in planning and development activities on KAFB.

Three springs on KAFB provide small areas of natural wetlands (Figure 1.2) The largest of these, Coyote Springs, is confined to an area of only a few acres and consists of several seeps and springs. One of these has been developed into a rock-lined well. The high water table in the area supports a number of Fremont cottonwoods and salt-cedars. Cattails, rushes, and wetland grasses almost completely cover the areas of shallow standing water and permanently moist soil. There are no significant areas of open water at this site.

The other two springs are small and are located in the canyons above Coyote Springs. These have been partially developed and are not associated with significant wetland habitat, although they do provide a water source for local wildlife.

Riparian habitat conditions on KAFB are fair to poor outside of the canyons. Tijeras Arroyo and Arroyo del Coyote are principally vegetated with shrubs such as rabbitbrush (Chrysothamnus spp.). Near the Manzano Mountains, Arroyo del Coyote is densely vegetated with salt-cedar. The canyon bottoms, though not heavily wooded, have a good diversity of shrubs and small trees. The lack of permanent water in these canyons (except at the springs) limits their quality as wildlife habitat.

2.0 LIST OF AMPHIBIANS

No species were deleted from the original lists. The Woodhouse's toad is the most conspicuous addition to this list (Table 2.1). The occurrence of canyon treefrogs on KAFB will depend upon the existence of permanent rocky pools in the canyons. Based on available descriptions, it is uncertain whether adequate habitat exists for this species. Taxonomy and nomenclature in this list follow Smith (1978). Ranges are based on Stebbins (1954).

TABLE 2.1

LIST OF AMPHIBIANS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Salientia			
Family: Pelobatidae			
Spea hammondi hammondi	Western Spadefoot	R	Grasslands/arroyos
Spea bombifrons	Plains Spadefoot	R	Grasslands/arroyos
Family: Bufonidae			
Bufo punctatus	Red-spotted Toad	O	Grasslands/arroyos/canyons
Bufo woodhousei	Woodhouse's Toad	N	Grasslands/arroyos/canyons
Bufo debilis insidior	Plains Green Toad	R	Grasslands/arroyos
Bufo cognatus	Great Plains Toad	O	Grasslands/arroyos
Order: Caudata			
Family: Ambystomatidae			
Ambystoma tigrinum mavortium	Tiger Salamander	R	Arroyos/canyons/wetlands

Status: O = Unchanged from original list R = Renamed N = New species to list

TABLE 2.2

LIST OF AMPHIBIANS WITH A LOW PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Salientia			
Family: Pelobatidae			
Scaphiopus couchi	Couch's Spadefoot	N	Grasslands/arroyos
Family: Hylidae			
Hyla arenicolor	Canyon Treefrog	O	Canyons (near rocky pools)
Family: Ranidae			
Rana pipiens	Northern Leopard Frog	N	Wetlands

Status: O = Unchanged from original list R = Renamed N = New species to list

3.0 LIST OF REPTILES

No species were deleted from the original list. Seventeen species have been added; however, most of these are listed as having a low probability of occurrence (Tables 3.1 and 3.2). The most significant changes are with the whiptail lizards (genus Cnemidophorus). Several species of this genus are parthenogenic, able to reproduce asexually, a characteristic apparently arising from hybridization between sexually reproducing species (Smith and Brodie, 1982). Two species of parthenogenic whiptails, the desert grassland whiptail and the New Mexico whiptail, have been added to the list. The sexually reproducing western whiptail may also occur as a northern outlier population. Taxonomy and nomenclature follow Smith and Brodie (1982). Ranges are based on Stebbins (1954).

TABLE 3.1

LIST OF REPTILES WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Testudines			
Family: Emydidae			
Terrapene ornata	Western Box Turtle	O	Grasslands
Order: Squamata			
Suborder: Lacertilia			
Family: Scincidae			
Eumeces multivirgatus	Many-lined Skink	O	Grasslands
Eumeces obsoletus	Great Plains Skink	O	Grasslands/arroyos/rocky slopes
Family: Teiidae			
Cnemidophorus inornatus	Little Striped Whiptail	O	Grasslands/arroyos/lower slopes
Cnemidophorus uniparens	Desert Grassland Whiptail	N	Grasslands/arroyos
Cnemidophorus exsanguis	Chihuahuan Spotted Whiptail	O	Grasslands/arroyos/lower slopes
Cnemidophorus neomexicanus	New Mexico Whiptail	N	Grasslands/arroyos
Cnemidophorus tessalatus	Colorado Checkered Whiptail	O	Canyons/lower slopes
Family: Iguanidae			
Crotaphytus collaris collaris	Collared Lizard	R	Arroyos/rocky slopes/canyons
Gambelia wislizenii	Longnose Leopard Lizard	N	Grasslands/lower slopes
Uta stansburiana stejnegeri	Side-blotched Lizard	R	Grasslands/arroyos/lower slopes
Urosaurus ornatus schotti	Tree Lizard	R	Canyons/woodlands
Sceloporus undulatus consobrinus	Eastern Fence Lizard	R	Arroyos/canyons/woodlands
Phrynosoma douglassi ornatissimum	Short Horned Lizard	R	All habitats
Holbrookia maculata approximans	Lesser Earless Lizard	R	Grasslands/arroyos
Suborder: Serpentes			
Family: Colubridae			
Thamnophis elegans vagrans	Western Terrestrial Garter Snake	R	Canyons/wetlands
Thamnophis cyrtopsis cyrtopsis	Blackneck Garter Snake	R	Canyons
Diadophis punctatus regalis	Regal Ringneck Snake	N	Canyons/rocky slopes
Rhinocheilus lecontei tessellatus	Longnose Snake	O	Grasslands/arroyos
Heterodon nasicus nasicus	Western Hognose Snake	R	Grasslands/arroyos
Tantilla nigriceps	Plains Blackhead Snake	O	Lower slopes
Hypsiglena torquata texana	Night Snake	O	Lower slopes
Arizona elegans philipi	Glossy Snake	O	Grasslands/arroyos
Elaphe guttata emoryi	Corn Snake	N	Canyons
Pituophis melanoleucus affinis	Bullsnake	R	All habitats
Masticophis flagellum testaceus	Coachwhip	R	Grasslands/arroyos/lower slopes
Masticophis taeniatus taeniatus	Striped Whipsnake	R	Canyons/lower slopes
Salvadora grahamiae	Mountain Patchnose Snake	O	Woodlands
Family: Viperidae			
Crotalus atrox	Western Diamondback Rattlesnake	O	Grasslands/arroyos/lower slopes
Crotalus viridis viridis	Western Rattlesnake	R	All habitats

Status: O = Unchanged from the original R = Renamed N = New species to list

TABLE 3.2

LIST OF REPTILES WITH A LOW PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Testudines			
Family: Kinosternidae			
Kinosternon Flavescens	Yellow Mud Turtle	N	Wetlands
Order: Squamata			
Suborder: Lacertilia			
Family: Teiidae			
Cnemidophorus tigris marmoratus	Western Whiptail	N	Grasslands/arroyos/lower slopes
Cnemidophorus velox	Plateau Striped Whiptail	O	Canyons/lower slopes
Family: Iguanidae			
Phrynosoma cornutum	Texas Horned Lizard	O	Grasslands/arroyos/lower slopes
Phrynosoma modestum	Roundtail Horned Lizard	N	Grasslands/arroyos
Cophosaurus texanus	Greater Earless Lizard	N	Arroyos/lower slopes
Suborder: Serpentes			
Family: Leptotyphlopidae			
Leptotyphlops myopicus	Mountain Blind Snake	N	Canyons/rocky slopes
Family: Colubridae			
Thamnophis sirtalis dorsalis	Common Garter Snake	N	Canyons/wetlands
Thamnophis marcianus	Checkered Garter Snake	N	Canyons/arroyos/wetlands
Gyalopion canum	Western Hooknose Snake	N	Grasslands/arroyos/lower slopes
Lampropeltis getulus splendida	Common Kingsnake	O	Canyons/rocky slopes
Lampropeltis triangulum celaenops	Milk Snake	N	Grasslands/arroyos/canyons
Opheodrys vernalis blanchardi	Smooth Green Snake	N	Canyons
Coluber constrictor mormon	Racer	N	Canyons/arroyos/lower slopes
Family: Viperidae			
Sistrurus catenatus tergeminus	Massasauga	N	Arroyos/lower slopes
Crotalus molossus	Blacktail Rattlesnake	O	Canyons/rocky slopes

Status: O = Unchanged from the original R = Renamed N = New species to list

4.0 LIST OF BIRDS

This list (Table 4.1) attempts to inventory all species which are potential breeders on the KAFB based on descriptions of available habitat types. It has been assumed that there is insufficient standing water for waterfowl breeding. Most deletions from the original list are migrant species. Additions and deletions are based on the breeding ranges described in Hubbard (1978). Taxonomic order is based on Robbins, et al. (1983). Common names follow those of the National Geographic Society (1987).

TABLE 4.1

LIST OF POTENTIAL BREEDING BIRDS FOR KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Falconiformes			
Family: Cathartidae			
Cathartes aura	Turkey Vulture	O	All habitats
Family: Accipitridae			
Aquila chrysaetos	Golden Eagle	O	Rocky slopes/grasslands
Circus cyaneus	Northern Harrier	O	Canyons/woodlands
Accipiter striatus	Sharp-shinned Hawk	O	Canyons/woodlands
Accipiter cooperii	Cooper's Hawk	O	Canyons
Accipiter gentilis	Northern Goshawk	O	Canyon./higher elevations
Buteo jamaicensis	Red-tailed Hawk	O	Rocky slopes/grasslands
Buteo swainsoni	Swainson's Hawk	O	Grasslands/lower slopes
Buteo regalis	Ferruginous Hawk	O	Woodlands/grasslands
Family: Falconidae			
Falco sparverius	American Kestrel	O	All habitats
Falco mexicanus	Prairie Falcon	O	Rocky slopes/grasslands
Order: Galliformes			
Family: Phasianidae			
Callipepla squamata	Scaled Quail	O	Grasslands/arroyos
Order: Charadriiformes			
Family: Charadriidae			
Charadrius vociferus	Killdeer	N	Grasslands/arroyos/disturbed ground
Charadrius montanus	Mountain Plover	N	Grasslands/arroyos/disturbed ground
Family: Scolopacidae			
Actitis macularia	Spotted Sandpiper	N	Wetlands/arroyos
Order: Columbiformes			
Family: Columbidae			
Columba fasciata	Band-tailed Pigeon	O	Canyons/higher elevations
Zenaida macroura	Mourning Dove	O	All habitats
Order: Cuculiformes			
Family: Cuculidae			
Coccyzus americanus	Yellow-billed Cuckoo	N	Canyons
Geococcyx californianus	Greater Roadrunner	O	Grasslands/arroyos/lower slopes
Order: Strigiformes			
Family: Tytonidae			
Tyto alba	Barn Owl	O	All habitats.

Status: O = Unchanged from the original list N = New species to list

TABLE 4.1
(CONTINUED)

LIST OF POTENTIAL BREEDING BIRDS FOR KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Strigiformes (continued)			
Family: Strigidae			
Asio otus	Long-eared Owl	O	Canyons/woodlands
Bubo virginianus	Great Horned Owl	O	All habitats
Strix occidentalis	Spotted Owl	N	Canyons/higher elevations
Otus kennicottii	Western Screech-owl	O	Canyons/woodlands
Otus flammeolus	Flammulated Owl	N	Canyons
Glaucidium gnoma	Northern Pygmy-owl	O	Canyons/higher elevations
Aegolius acadicus	Northern Saw-whet Owl	N	Canyons/higher elevations
Athene cunicularia	Burrowing Owl	O	Grasslands/arroyos
Order: Caprimulgiformes			
Family: Caprimulgidae			
Caprimulgus vociferus	Whip-poor-will	N	Canyons/woodlands
Phalaenoptilus nuttallii	Common Poorwill	O	Grasslands/rocky slopes
Chordeiles minor	Common Nighthawk	O	Grasslands/rocky slopes
Order: Apodiformes			
Family: Apodidae			
Aeronautes saxatalis	White-throated Swift	O	Canyons
Family: Trochilidae			
Archilochus alexandris	Black-chinned Hummingbird	O	Canyons/woodlands
Selasphorus platycercus	Broad-tailed Hummingbird	O	Canyons/higher elevations
Order: Piciformes			
Family: Picidae			
Colaptes auratus	Northern Flicker	O	Woodlands
Melanerpes erythrocephalus	Red-headed Woodpecker	N	Canyons/higher elevations
Melanerpes formicivorus	Acorn Woodpecker	N	Canyons/higher elevations
Melanerpes lewis	Lewis' Woodpecker	O	Canyons/woodlands
Sphyrapicus thyroideus	Williamson's Sapsucker	O	Canyons
Sphyrapicus nuchalis	Red-naped Sapsucker	O	Canyons/woodlands
Picoides pubescens	Downy Woodpecker	O	Canyons/higher elevations
Picoides villosus	Hairy Woodpecker	O	Canyons/higher elevations
Picoides scalaris	Ladder-backed Woodpecker	O	Woodlands
Order: Passeriformes			
Family: Tyrannidae			
Tyrannus tyrannus	Eastern Kingbird	N	Canyons/woodlands
Tyrannus verticalis	Western Kingbird	O	Grasslands/arroyos/buildings
Tyrannus vociferans	Cassin's Kingbird	O	Canyons/woodlands
Myiarchus cinerascens	Ash-throated Flycatcher	O	Woodlands
Contopus sordidulus	Western Wood-pewee	O	Canyons/woodlands
Sayornis nigricans	Black Phoebe	N	Canyons/wetlands
Sayornis saya	Say's Phoebe	O	Canyons/wetlands
Empidonax traillii	Willow Flycatcher	N	Canyons
Empidonax difficilis	Western Flycatcher	O	Canyons/woodlands
Family: Alaudidae			
Eremophila alpestris	Horned Lark	O	Grasslands

Status: O = Unchanged from the original list N = New species to list

TABLE 4.1
(CONTINUED)

LIST OF POTENTIAL BREEDING BIRDS FOR KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Passeriformes (continued)			
Family: Hirundinidae			
Tachycineta bicolor	Tree Swallow	N	Canyons/woodlands/wetlands
Tachycineta thalassina	Violet-green Swallow	O	Canyons/woodlands/wetlands
Riparia riparia	Bank Swallow	N	Canyons/woodlands/wetlands
Stelgidopteryx serripennis	Northern Rough-winged Swallow	O	Canyons/woodlands/wetlands
Hirundo pyrrhonota	Cliff Swallow	O	Canyons/woodlands/wetlands
Hirundo rustica	Barn Swallow	O	Buildings
Family: Corvidae			
Aphelocoma coerulescens	Scrub Jay	O	Woodlands/canyons
Gymnorhinus cyanocephalus	Pinyon Jay	O	Woodlands
Cyanocitta stelleri	Steller's Jay	O	Higher elevations
Corvus brachyrhynchos	American Crow	O	Buildings
Corvus corax	Common Raven	O	Canyons/higher elevations
Family: Paridae			
Parus inornatus	Plain Titmouse	O	Canyons/woodlands
Parus gambeli	Mountain Chickadee	O	Canyons/woodlands
Family: Aegithalidae			
Psaltriparus minimus	Bushtit	O	Canyons/woodlands
Family: Sittidae			
Sitta carolinensis	White-breasted Nuthatch	O	Canyons/higher elevations
Sitta pygmaea	Pygmy Nuthatch	O	Canyons
Family: Certhiidae			
Certhia americana	Brown Creeper	O	Canyons/higher elevations
Family: Troglodytidae			
Troglodytes aedon	House Wren	O	Canyons/woodlands
Thryomanes bewickii	Bewick's Wren	O	Canyons/arroyos/woodlands
Catherpes mexicanus	Canyon Wren	O	Canyons
Salpinctes obsoletus	Rock Wren	O	Canyons/rocky slopes
Family: Muscicapidae			
Regulus calendula	Ruby-crowned Kinglet	O	Canyons/woodlands
Polioptila caerulea	Blue-gray Gnatcatcher	O	Canyons/woodlands
Sialia mexicana	Western Bluebird	O	Canyons/woodlands
Sialia currucoides	Mountain Bluebird	O	Canyons/woodlands
Catharus guttatus	Hermit Thrush	O	Canyons/woodlands
Turdus migratorius	American Robin	O	Canyons/higher elevations
Family: Mimidae			
Mimus polyglottos	Northern Mockingbird	O	All habitats
Toxostoma curvirostre	Curve-billed Thrasher	N	Grasslands/lower slopes
Toxostoma bendirei	Bendire's Thrasher	N	Grasslands/lower slopes
Toxostoma dorsale	Crissal Thrasher	O	Grasslands/lower slopes
Family: Laniidae			
Lanius ludovicianus	Loggerhead Shrike	O	All habitats
Family: Sturnidae			
Sturnus vulgaris	European Starling	O	Buildings

Status: O = Unchanged from the original list N = New species to list

TABLE 4.1
(CONTINUED)

LIST OF POTENTIAL BREEDING BIRDS FOR KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Passeriformes (continued)			
Family: Vireonidae			
Vireo vicinior	Gray Vireo	N	Canyons
Vireo solitarius	Solitary Vireo	O	Canyons/woodlands
Vireo gilvus	Warbling Vireo	O	Canyons
Family: Emberizidae			
Subfamily: Parulinae			
Vermivora virginiae	Virginia's Warbler	O	Canyons/woodlands
Dendroica coronata	Yellow-rumped Warbler	O	Canyons/woodlands
Dendroica nigrescens	Black-throated Gray Warbler	O	Canyons/woodlands
Dendroica graciae	Grace's Warbler	N	Canyons/woodlands
Dendroica petechia	Yellow Warbler	O	Canyons/woodlands
Oporornis tolmiei	MacGillivray's Warbler	O	Canyons/woodlands
Wilsonia pusilla	Wilson's Warbler	O	Canyons/woodlands
Geothlypis trichas	Common Yellowthroat	N	Canyons/woodlands/wetlands
Icteria virens	Yellow-breasted Chat	O	Canyons/wetlands
Subfamily: Thraupinae			
Piranga ludoviciana	Western Tanager	O	Canyons/woodlands
Piranga rubra	Summer Tanager	N	Canyons/woodlands
Piranga flava	Hepatic Tanager	O	Canyons/woodlands
Subfamily: Cardinalinae			
Pheucticus melanocephalus	Black-headed Grosbeak	O	Canyons/woodlands
Guiraca caerulea	Blue Grosbeak	O	Canyons/woodlands
Passerina cyanea	Indigo Bunting	O	Canyons/woodlands
Passerina amoena	Lazuli Bunting	O	Canyons/woodlands
Subfamily: Emberizinae			
Pipilo Chlorurus	Green-tailed Towhee	O	Canyons/woodlands
Pipilo erythrophthalmus	Rufous-sided Towhee	O	Canyons/higher elevations
Pipilo fuscus	Brown Towhee	O	Grasslands/arroyos/lower slopes
Melospiza melodia	Song Sparrow	O	Canyons/wetlands
Chondestes grammacus	Lark Sparrow	O	Grasslands/arroyos/lower slopes
Amphispiza bilineata	Black-throated Sparrow	O	Grasslands/arroyos/lower slopes
Aimophila ruficeps	Rufous-crowned Sparrow	O	Grasslands/arroyos/lower slopes
Spizella passerina	Chipping Sparrow	O	Canyons/woodlands
Spizella atrogularis	Black-chinned Sparrow	O	Canyons/woodlands
Subfamily: Icterinae			
Sturnella neglecta	Western Meadowlark	O	Grasslands/lower slopes
Agelaius phoeniceus	Red-winged Blackbird	N	Wetlands (cattail marshes)
Molothrus ater	Brown-headed Cowbird	O	All habitats
Quiscalus quiscula	Common Grackle	N	Buildings
Quiscalus mexicanus	Great-tailed Grackle	N	Buildings
Icterus parisorum	Scott's Oriole	O	Canyons/woodlands
Icterus galbula	Northern Oriole	O	Canyons/woodlands
Family: Fringillidae			
Carduelis psaltria	Lesser Goldfinch	O	Grasslands/arroyos
Carpodacus mexicanus	House Finch	O	All habitats
Family: Passeridae			
Passer domesticus	House Sparrow	O	Buildings

Status: O = Unchanged from the original list N = New species to list

5.0 LIST OF MAMMALS

Three species were deleted from the original list as being highly unlikely: the black-tailed prairie dog, the hooded skunk, and the pronghorn antelope. Six species were added to the primary list (Table 5.1) and fourteen are suggested as potentially occurring, but with a low probability (Table 5.2). All changes are based on Findley, et al. (1975).

TABLE 5.1

LIST OF MAMMALS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Insectivora			
Family: Soricidae			
Notiosorex crawfordi	Desert Shrew	N	Grasslands/arroyos/lower slopes
Order: Chiroptera			
Family: Vespertilionidae			
Myotis yumanensis	Yuma Myotis	N	All habitats (below 7000')
Myotis lucifugus	Little Brown Myotis	O	All habitats
Myotis auriculus	Southwestern Myotis	N	Canyons
Myotis thysanodes	Fringed Myotis	O	Canyons
Myotis volans	Long-legged Myotis	O	All habitats
Myotis californicus	California Myotis	N	All habitats
Myotis leibii	Small-footed Myotis	O	All habitats
Lasionycteris noctivagans	Silver-haired Bat	O	All habitats
Eptesicus fuscus	Big Brown Bat	O	Canyons/higher elevations
Lasiurus cinereus	Hoary Bat	O	All habitats
Plecotus townsendii	Townsend's Big-eared Bat	O	Canyons/woodlands
Antrozous pallidus	Pallid Bat	O	All habitats (below 7200')
Family: Molossidae			
Tadarida brasiliensis	Brazilian Free-tailed Bat	O	All habitats
Order: Lagomorpha			
Family: Leporidae			
Sylvilagus floridus	Mountain Cottontail	N	Woodlands/canyons
Sylvilagus auduboni	Desert Cottontail	O	Grasslands/arroyos
Lepus californicus	Black-tailed Jack Rabbit	O	Grasslands/arroyos
Order: Rodentia			
Family: Sciuridae			
Eutamias quadrivittatus	Colorado Chipmunk	O	Rocky slopes/canyons
Ammospermophilus leucurus	White-tailed Antelope Squirrel	N	Grasslands/lower slopes
Ammospermophilus interpres	Texas Antelope Squirrel	O	Rocky slopes/arroyos/canyons
Spermophilus spilosoma	Spotted Ground Squirrel	O	Grasslands/arroyos
Spermophilus variegatus	Rock Squirrel	O	Canyons/rocky slopes
Cynomys gunnisoni	Gunnison's Prairie Dog	O	Grasslands
Family: Geomyidae			
Thomomys bottae	Botta's Pocket Gopher	O	All habitats (in deep, friable soil)
Family: Heteromyidae			
Perognathus flavus	Silky Pocket Mouse	O	Grasslands/lower slopes
Perognathus intermedius	P[illegible] Pocket Mouse	O	Rocky areas
Dipodomys ordii	[illegible]'s Kangaroo Rat	O	Grasslands
Dipodomys spectabilis	[illegible]nner-tailed Kangaroo Rat	O	Grasslands
Dipodomys merriami	Merriam's Kangaroo Rat	O	Lower slopes

Status: O = Unchanged from original list R = Renamed N = New species to list

TABLE 5.1
(CONTINUED)

LIST OF MAMMALS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Rodentia (continued)			
Family: Cricetidae			
Reithrodontomys megalotis	Western Harvest Mouse	O	All habitats
Peromyscus maniculatus	Deer Mouse	O	All habitats
Peromyscus leucopus	White-footed Mouse	O	Grasslands/arroyos/lower slopes
Peromyscus boylii	Brush Mouse	O	Woodlands/canyons
Peromyscus truei	Pinyon Mouse	O	Woodlands
Peromyscus difficilis	Rock Mouse	O	Rocky slopes/canyons
Onychomys leucogaster	Northern Grasshopper Mouse	O	Grasslands/arroyos
Neotoma micropus	Southern Plains Woodrat	O	Grasslands/arroyos
Neotoma albigua	White-throated Woodrat	O	Rocky slopes/canyons
Family: Muridae			
Mus musculus	House Mouse	O	Buildings
Family: Erethizontidae			
Erethizon dorsatum	Porcupine	O	Arroyos/canyons/woodlands
Order: Carnivora			
Family: Canidae			
Canis latrans	Coyote	O	All habitats
Vulpes macrotis	Kit Fox	O	Grasslands/arroyos
Urocyon cinereoargenteus	Gray Fox	O	Canyons
Family: Procyonidae			
Bassariscus astutus	Ringtail	O	Canyons/rocky areas
Procyon lotor	Raccon	O	Canyons
Family: Ursidae			
Ursus americanus	Black Bear	N	Canyons/higher elevations
Family: Mustelidae			
Mustela frenata	Long-tailed Weasel	O	All habitats
Taxidea taxus	Badger	O	Grasslands/arroyos
Mephitis mephitis	Striped Skunk	O	All habitats
Family: Felidae			
Lynx rufus	Bobcat	O	All habitats
Felis concolor	Mountain Lion	O	Canyons/higher elevations
Order: Artiodactyla			
Family: Cervidae			
Odocoileus hemionus	Mule Deer	O	All habitats

Status: O = Unchanged from original list R = Renamed N = New species to list

TABLE 5.2

LIST OF MAMMALS WITH A LOW PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Order: Insectivora			
Family: Soricidae			
Sorex vagrans	Vagrant Shrew	N	Higher elevations
Sorex nanus	Dwarf Shrew	N	Higher elevations
Order: Chiroptera			
Family: Vespertilionidae			
Pipistrellus hesperus	Western Pipistrelle	N	Grasslands/arroyos
Euderma maculatum	Spotted Bat	N	Canyons (possibly lower habitats)
Family: Molossidae			
Tadarida macrotis	Big Free-tailed Bat	N	All habitats
Order: Rodentia			
Family: Sciuridae			
Sciurus Aberti	Abert's Squirrel	N	Higher elevations
Family: Geomyidae			
Pappogeomys castanops	Yellow-faced Pocket Gopher	N	Grasslands
Family: Heteromyidae			
Perognathus hispidus	Hispid Pocket Mouse	O	Lower slopes
Family: Cricetidae			
Reithrodontomys montanus	Plains Harvest Mouse	N	Arroyos/wetlands
Peromyscus eremicus	Cactus Mouse	N	Lower slopes
Onychomys torridus	Southern Grasshopper Mouse	N	Lower slopes
Sigmodon fulviventer	Tawny-bellied Cotton Rat	N	Arroyos (dense grass)
Neotoma mexicana	Mexican Woodrat	N	Canyons/higher elevations
Microtus mexicanus	Mexican Vole	O	Canyons/higher elevations
Family: Zapodidae			
Zapus princeps	Western Jumping Mouse	N	Arroyos (dense grass)
Order: Carnivora			
Family: Mustelidae			
Spilogale gracilis	Western Spotted Skunk	O	Arroyos/canyons/rocky slopes

Status: O = Unchanged from original list R = Renamed N = New species to list

6.0 LIST OF PLANTS

Few species of plants were added to the original list and none were deleted except by taxonomic recombination (Table 6.1). The list of cacti is based on Benson (1982). All other changes are based on Martin and Hutchins (1980).

TABLE 6.1

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Class: Filicineae	Ferns		
Family: Polypodiaceae			
Cheilanthes eatonii Baker	Eaton's Lip Fern	C	Rocky slopes
Pellaea fendleri (Kunze) Prantl	Zigzag Cliffbrake	H	Rocky slopes
Pellaea longimucronata Hook.	Cliffbrake	H	Rocky slopes
Woodsia mexicana Fee	Woodsia	C	Woodland
Class: Gymnospermae	Gymnosperms		
Family: Ephedraceae			
Ephedra nevadensis Wats.	Rough Joint-fir		
var. asper (Engelm.) L. Benson		H	Grasslands/lower slopes
Ephedra viridis Cov.	Green Joint-fir	H	Grasslands/lower slopes
Ephedra torreyana Wats.	Mormon Tea	C	Grasslands/lower slopes
Family: Pinaceae			
Pinus edulis Engelm.	Colorado Pinyon	C	Canyons/rocky slopes
Pinus ponderosa Laws.	Ponderosa Pine		
var. scopularum Engelm.		C	Canyons/higher elevations
Family: Cupressaceae			
Juniperus scopulorum Sarg.	Rocky Mountain Juniper	C	Canyons/higher elevations
Juniperus monosperma (Engelm.) Sarg.	One-seed Juniper	C	Lower slopes/rocky slopes/canyons
Class: Angiospermae	Angiosperms		
Subclass: Monocotyledoneae	Monocots		
Family: Typhaceae			
Typha latifolia L.	Cattail	C	Wetlands
Family: Poaceae			
Aristida divaricata Humb.& Bonpl.	Poverty Three-awn	H	Disturbed ground
Aristida adscensionis L.	Six-weeks Three-awn	C	Grasslands
Aristida arizonica Vasey	Arizona Three-awn	H	Grasslands
Aristida glauca (Nees) Walp.	Reverchon Three-awn	C	Rocky slopes
Aristida wrightii Nash	Wright's Three-awn	H	Grasslands
Aristida fendleriana Steud.	Fendler Three-awn	C	Grasslands/lower slopes
Aristida purpurea Nutt.	Purple Three-awn	H	Grasslands/lower slopes
Aristida longiseta Steud.	Red Three-awn	C	Grasslands/lower slopes
Oryzopsis micrantha (Trin.& Rupr.) Thurb.	Littleseed Ricegrass	C	Woodlands
Oryzopsis hymenoides (R.& S.) Ricker	Indian Ricegrass	C	Grasslands/lower slopes
Stipa neomexicana (Thurb.) Scribn.	N. Mexico Porcupinegrass	H	Canyons/rocky slopes
Stipa scribneri Vasey	Scribner Needlegrass	C	Canyons/rocky slopes
Stipa comata Trin.& Rupr.	Needle-and-thread	H	Canyons/rocky slopes
Piptochaetium fimbriata (H.B.K.) Hitchc.	Pinyon Ricegrass	H	Woodlands
Phleum pratense L.	Timothy	H	Canyons
Muhlenbergia pungens Thurb.	Sandhill Muhly	H	Grasslands
Muhlenbergia torreyi (Knuth) Hitchc.	Ring Muhly	H	Grasslands
Muhlenbergia arenicola Buckl.	Sand Muhly	C	Grasslands
Muhlenbergia porteri Scribn.	Bush Muhly	C	Grasslands/arroyos/lower slopes
Muhlenbergia arenacea (Buckl.) Hitchc.	Ear Muhly	H	Grasslands
Muhlenbergia asperifolia (Nees& Mey.) Parodi	Scratchgrass	C	Arroyos
Muhlenbergia sinuosa Swallen	Marsh Muhly	H	Canyons
Muhlenbergia richardsonis (Trin.) Rydb.	Mat Muhly	H	Arroyos
Muhlenbergia wrightii Vasey	Spike Muhly	C	Rocky slopes
Muhlenbergia montana (Nutt.) Hitchc.	Mountain Muhly	C	Rocky slopes
Muhlenbergia monticola Buckl.	Mesa Muhly	C	Rocky slopes
Muhlenbergia pauciflora Buckl.	New Mexican Muhly	C	Rocky slopes

Status: C = Confirmed by collection (Martin and Wagner, 1974) H = Hypothetical

TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Poaceae (continued)			
Blepharoneuron tricholepis (Torr.) Nash	Pine Dropseed	H	Woodlands
Sporobolus flexuosus (Thurb.) Rydb.	Mesa Dropseed	C	Grasslands
Sporobolus cryptandrus (Torr.) Gray	Sand Dropseed	C	Grasslands
Sporobolus airoides Torr.	Alkali Sacaton	C	Arroyos
Sporobolus contractus Hitchc.	Spike Dropseed	C	Grasslands/arroyos
Lycurus phleoides H.B.K.	Wolftail	H	Rocky slopes
Polypogon monspeliensis (L.) Desf.	Rabbitfoot Grass	C	Wetlands
Koeleria cristata (L.) Pers.	Junegrass	H	Woodlands/canyons
Scleropogon brevifolius Phil.	Burro Grass	C	Grasslands
Enneapogon desvauxii Beauv.	Spike Pappusgrass	C	Grasslands/arroyos/lower slopes
Tridens pulchellus (H.B.K.) Hitchc.	Fluffgrass	C	Grasslands/disturbed ground
Tridens pilosus (Buckl.) Hitchc.	Hairy Tridens	C	Grasslands
Munroa squarrosa (Nutt.) Torr.	False Buffalo Grass	C	Grasslands
Eragrostis cilianensis (All.) Link	Stinkgrass	C	Disturbed ground
Eragrostis mexicana (Horem.) Link	Mexican Lovegrass	H	Disturbed ground
Eragrostis pilosa (L.) Beauv.	India Lovegrass	C	Disturbed ground/rocky slopes
Distichlis stricta (Torr.) Rydb.	Desert Saltgrass	C	Arroyos
Poa pratensis L.	Kentucky Bluegrass	C	Canyons/arroyos
Bromus polyanthus Scribn.	Foothills Brome	H	Canyons/rocky slopes
Bromus japonicus Thurb.	Japanese Chess	C	Disturbed ground
Bromus tectorum L.	Downy Chess	C	Disturbed ground
Bromus anomalus Rupr.	Nodding Brome	H	Canyons
Festuca octoflora Walt.	Six-weeks Fescue	H	Grasslands/arroyos
Festuca arizonica Vasey	Arizona Fescue	H	Canyons/rocky slopes
Cynodon dactylon (L.) Pers.	Bermuda Grass	C	Arroyos/canyons/disturbed ground
Chloris virgata Swartz.	Feathery Fingergrass	C	Disturbed ground
Chloris verticillata Nutt.	Windmill Grass	C	Disturbed ground
Schedonnardus paniculatus (Nutt.) Trel.	Tumble Grass	C	Grasslands
Bouteloua aristidoides (H.B.K.) Griseb.	Needle Grama	C	Grasslands/disturbed ground
Bouteloua barbata Lag.	Six-weeks Grama	C	Grasslands/disturbed ground
Bouteloua hirsuta Lag.	Hairy Grama	H	Grasslands
Bouteloua curtipendula (Michx.) Torr.	Side-oats Grama	C	Canyons/rocky slopes
Bouteloua gracilis (H.B.K.) Lag.	Blue Grama	C	Grasslands/lower slopes
Bouteloua eriopoda (Torr.) Torr.	Black Grama	C	Grasslands
Hilaria jamesii (Torr.) Benth.	Galleta	C	Grasslands/arroyos/lower slopes
Agropyron smithii Rydb.	Western Wheatgrass	C	Arroyos
Agropyron pseudorepens Scribn.	False Quackgrass	H	Arroyos/canyons
Agropyron trachycaulum (Link) Malte	Slender Wheatgrass	H	Arroyos
Hordeum jubatum L.	Foxtail Barley	C	Disturbed ground
Sitanion hystrix (Nutt.) J.G. Smith	Squirreltail	C	Grasslands/arroyos/lower slopes
Elymus canadensis L.	Canada Wild Rye	C	Arroyos/canyons
Andropogon scoparius Michx.	Little Bluestem	H	Rocky slopes
Andropogon barbinodis Lag.	Cane Beardgrass	H	Grasslands/arroyos/lower slopes
Sorghum halepense (L.) Pers.	Johnson Grass	C	Arroyos/canyons
Cenchrus echinatus L.	Sandbur	C	Disturbed ground
Setaria verticillata (L.) Beauv.	Bur Bristlegrass	C	Disturbed ground
Setaria viridis (L.) Beauv.	Green Bristlegrass	C	Arroyos/disturbed ground
Setaria macrostachya H.B.K.	Plains Bristlegrass	C	Arroyos/canyons/rocky slopes
Panicum capillare L.	Witchgrass	C	Arroyos/canyons
Panicum obtusum H.B.K.	Vine Mesquite	H	Arroyos
Echinochloa crusgalli (L.) Beauv. var. mitis (Pursh) Peterm.	Barnyard Grass	C	Wetlands/Disturbed ground
Digitaria sanguinalis (L.) Scop.	Crabgrass	C	Arroyos/canyons/disturbed ground

Status: C = Confirmed by collection (Martin and Wagner, 1974) H = Hypothetical

TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Cyperaceae			
Cyperus fendlerianus Boeckel.	Fendler Flatsedge	H	Wetlands
Cyperus esculentus L.	Yellow Nutgrass	H	Wetlands
Eleocharis montana (H.B.K.) Roem.&Schult.	Mountain Spikerush	H	Wetlands
Scirpus americanus Pers.	Three-square	C	Wetlands
Family: Juncaceae			
Juncus balticus Willd.	Wire Rush		
var. montanus Engelm.		C	Wetlands
Juncus saximontanus A. Nels.	Rocky Mountain Rush	C	Wetlands
Juncus torreyi Cov.	Torrey Rush	C	Wetlands
Family: Liliaceae			
Yucca baccata Torr.	Banana Yucca	C	Rocky slopes
Yucca glauca Nutt.	Soapweed Yucca	C	Grasslands
Nolina microcarpa Wats.	Bear Grass	C	Canyons/rocky slopes
Asparagus officinalis L.	Asparagus	H	Arroyos/disturbed ground
Allium macropetalum Rydb.	Onion	H	Canyons
Allium cernuum Roth	Nodding Onion	H	Canyons/higher elevations
Subclass: Dicotyledoneae	Dicots		
Family: Saururaceae			
Anemopsis californica (Nutt.) Hook. & Arn.	Yerba Mansa	C	Wetlands
Family: Salicaceae			
Salix exigua Nutt.	Coyote Willow	H	Arroyos/wetlands
Populus fremontii Wats.	Fremont Cottonwood	C	Arroyos/wetlands
Family: Fagaceae			
Quercus gambelii Nutt.	Gambel Oak	C	Canyons/higher elevations
Quercus turbinella Greene	Shrub Live Oak	C	Rocky slopes
Quercus grisea Liebm.	Gray Oak	C	Rocky slopes
Family: Ulmaceae			
Celtis reticulata Torr.	Netleaf Hackberry	H	Arroyos
Ulmus pumila L.	Siberian Elm	C	Arroyos/disturbed ground
Family: Loranthaceae	Mistletoes		
Phoradendron juniperinum Engelm.	Juniper Mistletoe	C	Woodlands (on junipers)
Arceuthobium divaricatum Engelm.	Dwarf Mistletoe	H	Woodlands (on pinyons)
Family: Polygonaceae			
Eriogonum abertianum Torr.	Wild Buckwheat	H	Grasslands/woodlands
Eriogonum annuum Nutt.	Annual Wild Buckwheat	H	Grasslands/lower slopes
Eriogonum polycladon Benth.	Sorrel Wild Buckwheat	C	Arroyos/disturbed ground
Eriogonum jamesii Benth.	Antelope-sage	H	Grasslands/woodlands
Eriogonum wrightii Torr.	Wright's Wild Buckwheat	C	Grasslands/woodlands
Rumex hymenosepalus Torr.	Canaigre	C	Arroyos/disturbed ground
Rumex mexicanus Meisn.	Dock	H	Arroyos/disturbed ground
Polygonum convolvulus L.	Black Bindweed	H	Arroyos/disturbed ground
Polygonum aviculare L.	Knotweed	C	Disturbed ground/wetlands

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TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Chenopodiaceae			
Salsola kali L.	Russian Thistle		
var. tenuiflora Tausch.		C	Disturbed ground
Eurotia lanata (Pursh) Moq.	Winterfat	C	Grasslands/arroyos/rocky slopes
Atriplex canescens (Pursh) Nutt.	Four-wing Saltbush	C	Grasslands/arroyos
Chenopodium botrys L.	Jerusalem Oak	H	Disturbed ground
Chenopodium album L.	Lamb's Quarters	C	Disturbed ground
Chenopodium incanum (Wats.) Heller	Gray Goosefoot	C	Grasslands/lower slopes
Chenopodium fremontii Wats.	Fremont Goosefoot	C	Lower slopes
Kochia scoparia (L.) Roth	Summer Cypress	C	Disturbed ground
Family: Amaranthaceae			
Amaranthus graecizans L.	Prostrate Pigweed	C	Disturbed ground
Amaranthus hybridus L.	Pigweed	H	Disturbed ground
Amaranthus powellii Wats.	Pigweed	C	Disturbed ground
Amaranthus retroflexus L.	Green Amaranth	H	Disturbed ground
Acanthochiton wrightii Torr.		H	Grasslands/lower slopes
Tidestromia lanuginosa (Nutt.) Standl.		C	Grasslands/arroyos
Family: Nyctaginaceae			
Oxybaphus linearis (Pursh) Robins.			
var. linearis		C	Woodlands/arroyos
Mirabilis multiflora (Torr.) Gray	Four O'Clock	C	Woodlands
Mirabilis oxybapholdes Gray	Four O'Clock	C	Woodlands/arroyos
Family: Aizoaceae			
Mollugo verticillata L.	Carpetweed	H	Disturbed ground
Family: Portulaceae			
Portulaca oleracea L.	Common Purslane	C	Disturbed ground
Family: Caryophyllaceae			
Stellaria longifolia Muhl.	Chickweed	C	Canyons/higher elevations
Family: Berberidaceae			
Berberis repens Lindl.	Creeping Mahonia	C	Canyons/rocky slopes
Berberis haematocarpa Wooton	Red Barberry	H	Canyons/rocky slopes
Family: Fumariaceae			
Corydalis aurea Willd.	Golden Corydalis		
subsp. occidentalis (Engelm.) G. Ownbey		H	Canyons/rocky slopes
Family: Brassicaceae			
Draba cuneifolia Nutt.	Whitlow Grass	H	Arroyos/rocky slopes
Erysimum capitatum (Dougl.) Greene	Western Wallflower	C	Grasslands/arroyos/rocky slopes
Descurainia sophia (L.) Webb.	Tansy Mustard	C	Disturbed ground
Descuriania obtusa (Greene) O.E.Schultz	Tansy Mustard	H	Canyons
Sisymbrium altissimum L.	Tumble Mustard	C	Disturbed ground
Sisymbrium irio L.	London Rocket	C	Disturbed ground
Rorippa nasturtium-aquaticum (L.)Schinz&Thell.	Water Cress	C	Wetlands
Dithyrea wislizenii Engelm.	Spectacle Pod	H	Grasslands/arroyos/disturbed ground
Lepidium montanum Nutt.	Peppergrass	C	Arroyos/canyons/rocky slopes
Lepidium medium Greene	Peppergrass	H	Grasslands/arroyos/disturbed ground
Capsella bursi-pastoris (L.) Medic.	Shepherd's Purse	H	Grasslands/arroyos/disturbed ground
Thlaspi alpestre L.	Wild Candytuft	H	Canyons/higher elevations
Lesquerella fendleri (Gray) Wats.	Bladderpod	C	Arroyos/rocky slopes

Status: C = Confirmed by collection (Martin and Wagner, 1974) H = Hypothetical

TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Capparidaceae			
Cleome serrulata Pursh	Rocky Mountain Bee-plant	H	Arroyos/rocky slopes
Polanisia trachysperma Torr.& Gray	Clammyweed	C	Arroyos
Family: Saxifragaceae			
Fendlera rupicola Gray	Cliff Fendlerbush	C	Canyons/rocky slopes
Philadelphus microphyllus Gray	Mock-orange	C	Canyons
Ribes cereum Dougl.	Wax Currant	H	Canyons/higher elevations
Family: Rosaceae			
Prunus virginiana L. var. melanocarpa (A. Nels.) Sarg.	Western Black Chokecherry	H	Canyons
Rosa Woodsii Lindl.	Woods' Rose	C	Canyons
Fallugia paradoxa (D. Don.) Endl.	Apache Plume	C	Arroyos
Cercocarpus montanus Raf.	Alder-leaf Mountain Mahogany	C	Canyons/rocky slopes
Family: Fabaceae			
Calliandra humilis Benth.	False Mesquite	H	Lower slopes
Hoffmanseggia jamesii Torr.& Gray	Rush Pea	C	Grasslands
Psoralea lanceolata Pursh	Lemon Scurfpea	H	Grasslands/arroyos/woodlands
Psoralea tenuiflora Pursh	Slender Scurfpea	H	Grasslands/arroyos/lower slopes
Dalea formosa Torr.	Feather Indigobush	H	Grasslands/arroyos
Dalea leporina (Ait.) K.& P.	Pea Bush	H	Grasslands/arroyos
Dalea scoparia Gray	Broom Indigobush	H	Grasslands/arroyos
Dalea nana Torr.	Dwarf Indigobush	H	Grasslands/arroyos
Medicago sativa L.	Alfalfa	C	Disturbed ground
Medicago lupulina L.	Black Medic	C	Disturbed ground
Melilotus albus Desr.	White Sweet Clover	C	Disturbed ground
Melilotus officinalis (L.) Lam.	Yellow Sweet Clover	C	Disturbed ground
Lotus wrightii (Gray) Greene	Deer Vetch	H	Woodlands
Astragalus missouriensis Nutt.	Missouri Milkvetch	H	Grasslands/arroyos/rocky slopes
Astragalus amphioxys Gray	Crescent Milkvetch	H	Grasslands/arroyos/rocky slopes
Astragalus humistratus Gray	Ground Milkvetch	H	Grasslands/arroyos/rocky slopes
Astragalus nuttallianus Nutt.	Nuttall Milkvetch	H	Arroyos/rocky slopes
Astragalus flexuous Dougl. ex Hook.	Locoweed	H	Grasslands/arroyos
Astragalus crassicarpus Nutt.	Ground Plum	H	Grasslands/arroyos
Astragalus emoryanus (Rydb.) Cory	Emory Milkvetch	H	Grasslands/arroyos/rocky slopes
Astragalus mollissimus Torr.	Woolly Locoweed	H	Grasslands/arroyos/rocky slopes
Astragalus lentiginosus Dougl. ex Hook. var. diphysus (Gray) Jones	Blue Locoweed	H	Arroyos/rocky slopes
Astragalus allochrous Gray	Hassayampa Milkvetch	H	Grasslands/arroyos/rocky slopes
Petalostemum candidum (Willd.) Michx.	White Prairie Clover	H	Grasslands/arroyos/lower slopes
Robinia neomexicana Gray	New Mexico Locust	C	Canyons
Oxytropis lambertii Pursh	Lambert Locoweed	H	Grasslands/arroyos/rocky slopes
Family: Geraniaceae			
Geranium caespitosum James	Purple Geranium	C	Canyons/rocky slopes
Erodium cicutarium (L.) L'Her.	Red-stem Filaree	C	Grasslands/arroyos/disturbed ground
Family: Oxalidaceae			
Oxalis stricta L.	Yellow Woodsorrel	H	Canyons
Family: Linaceae			
Linum lewisii Pursh	Western Blue Flax	C	Grasslands/arroyos

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TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Zygophyllaceae			
Tribulus terrestris L.	Goathead	C	Disturbed ground
Kallstroemia californica (Wats.) Vail var. brachystylis (Vail) K.& P.	California Caltrop	H	Grasslands/arroyos/lower slopes
Kallstoemia hirsutissima Vail	Hairy Caltrop	C	Grasslands/arroyos
Kallstroemia parviflora Norton	Caltrop	H	Grasslands/arroyos/lower slopes
Family: Rutaceae			
Ptelea trifoliata L. subsp. angustifolia (Benth.) V.L. Bailey	Narrow-leaf Hoptree	C	Canyons
Family: Simaroubaceae			
Ailanthus altissima (Mill.) Swingle	Tree-of-Heaven	C	Arroyos/canyons
Family: Polygalaceae			
Polygala alba Nutt.	White Milkwort	H	Arroyos
Family: Euphorbiaceae			
Euphorbia stictospora Engelm.	Spurge	H	Grasslands/arroyos/lower slopes
Euphorbia serpyllifolia Pers.	Thymeleaf Spurge	H	Grasslands/arroyos/lower slopes
Euphorbia fendleri Torr.& Gray	Fendler Spurge	C	Grasslands/arroyos/lower slopes
Euphorbia revoluta Engelm.	Spurge	H	Grasslands/arroyos
Euphorbia exstipulata Engelm.	Spurge	C	Grasslands/arroyos
Euphorbia dentata Michx.	Spurge	H	Grasslands/arroyos
Euphorbia lurida Engelm.	Spurge	C	Canyons
Croton texensis (Klotzsch) Muell. Arg.	Doveweed	C	Grasslands/disturbed ground
Tragia stylaris Muell. Arg.	Noseburn	C	Canyons
Family: Anacardiaceae			
Rhus trilobata Nutt.	Skunkbush	C	Canyons/rocky slopes
Family: Vitaceae			
Vitis arizonica Engelm.	Canyon Grape	C	Canyons
Parthenocissus inserta (Kerner) K. Fritsch	Virginia Creeper	C	Canyons
Family: Malvaceae			
Malva neglecta Wallr.	Common Mallow	H	Disturbed ground
Sphaeralcea grossulariaefolia (Hook.&Arn.) Rydb. var. pedata (Torr.) Kearney	Globemallow	C	Grasslands/arroyos/lower slopes
Sphaeralcea leptophylla (Gray) Rydb.	Silvery Globemallow	H	Rocky slopes
Sphaeralcea coccinea (Pursh) Rydb.	Red Globemallow	C	Grasslands/arroyos/lower slopes
Sphaeralcea subhastata Coult.	Globemallow	C	Grasslands/arroyos/lower slopes
Sphaeralcea incana Torr.	Globemallow	C	Grasslands/arroyos/lower slopes
Sphaeralcea fendleri Gray	Fendler Globemallow	H	Grasslands/arroyos/lower slopes
Sphaeralcea angustifolia (Cav.) G. Don	Globemallow	H	Grasslands/arroyos/lower slopes
Family: Tamaricaceae			
Tamarix pentandra Pall.	Salt-cedar	C	Arroyos
Family: Loasaceae			
Mentzelia pumila (Nutt.) Torr.& Gray var. multiflora (Nutt.) Urb.& Gilg.	Stickleaf	C	Arroyos/disturbed ground

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TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Cactaceae			
Opuntia imbricata (Haw.) DC.	Tree Cholla		
var. imbricata Gravelly		C	Grasslands/arroyos/lower slopes
Opuntia clavata Engelm.	Club Cholla	C	Grasslands
Opuntia polyacantha Haw.	Plains Prickly Pear		
var. polyacantha		H	Grasslands/lower slopes
var. rufispina (Engelm.& Bigel.) L. Benson		H	Woodlands
var. juniperina (Brit.& Rose) L. Benson		H	Grasslands/woodlands
var. trichophora (Engelm.& Bigel.) Coult.		H	Grasslands/woodlands
Opuntia erinacea Engelm.& Bigel.	Prickly Pear		
var. utahensis (Engelm.) L. Benson		H	Woodlands
Opuntia macrorhiza Engelm.	Plains Prickly Pear		
var. macrorhiza		H	Grasslands/woodlands
Opuntia phaeacantha Engelm.	Prickly Pear		
var. phaeacantha		H	Woodlands
var. major Engelm.		H	Grasslands/lower slopes
var. discata (Grif.) Benson & Walkington		C	Grasslands/woodlands
var. wootonii (Grif.) L. Benson		H	Grasslands
Echinocereus triglochidiatus Engelm.	Red-flowered Hedgehog Cactus		
var. melanacanthus (Engelm.) L. Benson		C	Grasslands/woodlands/canyons
var. neomexicanus (Standl.) Standl.		H	Grasslands/woodlands/canyons
var. gonacanthus (Engelm.& Bigel.) Boiss.		H	Woodlands/canyons
var. triglochidiatus		C	Woodlands/canyons
Echinocereus fendleri Engelm.	Hedgehog Cactus		
var. fendleri		H	Grasslands/woodlands
Pediocactus simpsonii (Engelm.) Britt.& Rose	Simpson's Pediocactus		
var. simpsonii		H	Grasslands/arroyos/lower slopes
Pediocactus papyracanthus (Engelm.) L. Benson	Grama Grass Cactus	H	Grasslands/arroyos/lower slopes
Neolloydia intertexta (Engelm.) L. Benson	Pineapple Cactus		
var. intertexta		H	Lower slopes
Coryphantha vivipara (Nutt.) Britt.& Rose	Pincushion Cactus		
var. radiosa (Engelm.) Backe.		H	Grasslands
var. arizonica (Engelm.) W.T. Marshall		C	Woodlands
Mammillaria heyderi Muhlenp.	Pincushion Cactus		
var. melacantha (Engelm.) L. Benson		H	Lower slopes
Mammillaria wrightii Engelm.	Pincushion Cactus		
var. wrightii		H	Arroyos/lower slopes
Family: Elaeagnaceae			
Elaeagnus angustifolia L.	Russian Olive	C	Arroyos/canyons
Family: Onagraceae			
Gaura coccinea Nutt.	Scarlet Gaura		
var. coccinea		H	Grasslands/lower slopes
Oenothera coronopifolia Torr.& Gray	Evening Primrose	H	Rocky slopes
Oenothera albicaulis Pursh.	Evening Primrose	H	Arroyos/disturbed ground
Oenothera pallida Lindl.	Pale Evening Primrose		
subsp. runcinata (Engelm.) Munz		H	Grasslands/arroyos/rocky slopes
Family: Apiaceae			
Cymopterus fendleri Gray	Chimaya	H	Arroyos/canyons/lower slopes
Aletes acaulis (Torr.) Coult.& Rose		C	Canyons/rocky slopes
Family: Primulaceae			
Androsace septentrionalis L.	Rock Jasmine		
var. puberulenta (Rydb.) Knuth		C	Canyons/rocky slopes

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TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Oleaceae			
Menodora scabra Gray	Rough Menodora	H	Arroyos/lower slopes
Forestiera neomexicana Gray	New Mexico Olive	H	Canyons
Family: Asclepiadaceae			
Asclepias asperula (Dcne.) Woodson	Antelope Horns		
subsp. capricornus Woodson		C	Grasslands/arroyos/lower slopes
Asclepias viridiflora Raf.	Green Milkweed	H	Rocky slopes
Asclepias subverticillatus (Gray) Vail	Poison Milkweed	C	Grasslands/arroyos/disturbed ground
Asclepias latifolia (Torr.) Raf.	Broad-leaved Milkweed	C	Grasslands/arroyos/lower slopes
Family: Convolvulaceae			
Cuscuta megalocarpa Rydb.	Dodder	H	Grasslands/woodlands
Evolvulus pilosa Nutt.		H	Grasslands/woodlands
Ipomoea hirsutula Jacq. F.	Morning Glory	C	Disturbed ground
Ipomoea costellata Torr.	Morning Glory	C	Arroyos/lower slopes
Convolvulus sepium L.	Hedge Bindweed	H	Disturbed ground
Convolvulus arvensis L.	Field Bindweed	H	Disturbed ground
Family: Polemoniaceae			
Ipomopsis longiflora (Torr.) V. Grant	Gilia	H	Grasslands/arroyos
Ipomopsis aggregata (Pursh) V. Grant	Skyrocket	H	Canyons/rocky slopes
Gilia rigidula Benth.			
subsp. acerosa (Gray) Wherry		H	Grasslands/rocky slopes
Family: Hydrophyllaceae			
Nama hispidum Gray			
var. hispidum		H	Arroyos/canyons
Phacelia corrugata A. Nels.	Scorpionweed	H	Grasslands/arroyos
Phacelia crenulata Torr.	Scorpionweed	H	Grasslands/rocky slopes
Family: Boraginaceae			
Lappula redowskii (Hornem.) Greene	Stickweed	C	Disturbed ground
Lithospermum incisum Lehm.	Puccoon	H	Grasslands/rocky slopes
Cryptantha crassisepala (Torr.& Gray) Greene	Plains Hiddenflower	H	Grasslands/arroyos/rocky slopes
Cryptantha jamesii (Torr.) Payson			
var. multicaulis (Torr.) Payson		H	Grasslands/arroyos/lower slopes
Family: Verbenaceae			
Verbena bipinnatifida Nutt.	Dakota Vervain	C	Arroyos/rocky slopes
Verbena ambrosifolia Rydb.	Vervain	H	Arroyos/lower slopes
Verbena wrightii Gray	Vervain	C	Arroyos/lower slopes
Verbena macdougalii Heller	New Mexico Vervain	C	Canyons/higher elevations
Verbena bracteata Lag.& Rodr.	Vervain	C	Grasslands/arroyos/disturbed ground
Family: Lamiaceae			
Hedeoma drummondii Benth.	False Pennyroyal	C	Grasslands/arroyos/rocky slopes
Salvia reflexa Hornem.	Rocky Mountain Sage	C	Canyons/woodlands
Marrubium vulgare L.	Common Horehound	C	Canyons

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TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Solanaceae			
Datura meteloides DC.	Indian-apple	C	Arroyos/disturbed ground
Datura stramonium L.	Jimsonweed	H	Arroyos/disturbed ground
Physalis virginiana Mill.	Groundcherry	H	Arroyos/disturbed ground
Physalis hederaefolia Gray			
var. hederaefolia		C	Arroyos/disturbed ground
var. cordifolia (Gray) Waterfall		C	Canyons/rocky slopes
Solanum elaeagnifolium Cav.	Horse Nettle	C	Disturbed ground
Chamaesaracha conioides (Moric.) Britt.		H	Grasslands/arroyos
Chamaesaracha coronopus (Dunal) Gray		H	Grasslands/arroyos
Family: Scrophulariaceae			
Maurandya antirrhiniflora Humb.&Bonpl.exWilld.	False Snapdragon	H	Grasslands/arroyos/rocky slopes
Penstemon barbatus (Cav.) Roth	Scarlet Beardtongue	C	Canyons/rocky slopes
Penstemon ambiguus Torr.	Cow Tobacco	H	Grasslands/arroyos
Penstemon jamesii Benth.	Beardtongue	C	Grasslands/lower slopes
Mimulus glabrata H.B.K.	Monkeyflower		
var. fremontii (Benth.) Grant		C	Canyon (springs)
Cordylanthus wrightii Gray	Clubflower	C	Rocky slopes
Castilleja integra Gray	Indian Paintbrush	C	Rocky slopes
Family: Martyniaceae			
Proboscidea parviflora (Woot.) Woot.& Standl.	Devil's Claw	H	Grasslands/arroyos
Family: Plantaginaceae			
Plantago purshii Roem.& Schult.	Woolly Indian-wheat	H	Grasslands/rocky slopes
Plantago major L.	Rippleseed Plantain	C	Disturbed ground
Plantago lanceolata L.	Buckhorn Plantain	C	Disturbed ground
Family: Cucurbitaceae			
Cucurbita foetidissima H.B.K.	Buffalo Gourd	C	Grasslands/disturbed ground
Family: Asteraceae			
Stephanomeria pauciflora (Torr.) A. Nels.	Wire Lettuce	C	Grasslands/woodlands
Tragopogon dubious Scop.	Goat's Beard	C	Arroyos/disturbed ground
Lactuca serriola L.	Prickly Lettuce	C	Disturbed ground
Taraxacum officinale Weber	Dandelion	C	Disturbed ground
Sonchus asper (L.) Hill	Sow Thistle	C	Disturbed ground
Malacothrix fendleri Gray	Desert Dandelion	H	Grasslands/arroyos/rocky slopes
Perezia nana Gray	Dwarf Desert-holly	H	Arroyos
Cirsium neomexicanum Gray	New Mexican Thistle	C	Grasslands/arroyos/disturbed ground
Cirsium ochrocentrum Gray	Santa Fe Thistle	C	Grasslands/arroyos/lower slopes
Arctium minus (Hill) Burnh.	Burdock	H	Disturbed ground
Xanthium strumarium L.	Cocklebur		
var. canadense (Mill.) Torr.		C	Disturbed ground/wetlands
Ambrosia artemisiifolia L.	Common Ragweed	H	Disturbed ground
Ambrosia psilostachya DC.	Western Ragweed	H	Arroyos/canyons
Franseria acanthicarpa Hook.&Cov.	Burweed	C	Grasslands/arroyos/disturbed ground
Eupatorium herbaceum (Gray) Greene	Thoroughwort	C	Canyons/rocky slopes
Kuhnia chlorolepis Woot.& Standl.	False Boneset	C	Grasslands/rocky slopes
Brickellia brachyphylla Gray	Bricklebush	C	Arroyos/canyons/rocky slopes
Brickellia californica (Torr.& Gray) Gray	California Bricklebush	C	Canyons/rocky slopes
Brickellia grandiflora (Hook.) Nutt.	Bricklebush	C	Canyons/rocky slopes
Grindelia aphanactis Rydb.	Gumweed	C	Disturbed ground
Gutierrezia sarothrae (Pursh) Britt.& Rusby	Snakeweed	C	Grasslands/disturbed ground
Gutierrezia microcephala (DC.) Gray	Little-head Snakeweed	H	Grasslands/disturbed ground
Chrysopsis villosa (Pursh) Nutt. ex DC.	Hairy Golden Aster	C	Grasslands/arroyos/lower slopes

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TABLE 6.1
(CONTINUED)

LIST OF PLANTS WITH A MODERATE TO HIGH PROBABILITY OF OCCURRENCE ON KAFB

SCIENTIFIC NAME	COMMON NAME	STATUS	HABITAT
Family: Asteraceae (continued)			
Solidago canadensis L.	Canada Goldenrod	H	Arroyos/canyons
Solidago occidentalis (Nutt.) Torr.& Gray	Western Goldenrod	H	Arroyos/canyons
Solidago spathulata DC.	Dwarf Goldenrod		
var. neomexicana (Gray) Cronq.		C	Canyons
Haplopappus spinulosus (Pursh) DC.	Spiny Goldenweed		
subsp. spinulosus		C	Disturbed ground
subsp. australis (Greene) Hall		C	Disturbed ground
Haplopappus gracilis (Nutt.) Gray	Goldenweed	H	Grasslands/arroyos
Haplopappus heterophyllus (Gray) Blake	Rayless Goldenrod	C	Grasslands
Townsendia exscapa (Richards.) Porter	Townsend's Aster	H	Grasslands/lower slopes
Townsendia formosa Greene	Townsend's Aster	C	Woodlands/canyons
Conyza canadensis (L.) Cronq.	Horseweed	C	Arroyos/canyons/disturbed ground
Erigeron divergens Torr.& Gray	Spreading Fleabane	H	Disturbed ground/lower slopes
Leucelene ericoides (Torr.) Greene	White Aster	H	Grasslands/arroyos/lower slopes
Aster commutatus (Torr.& Gray) Gray	Aster	C	Arroyos/disturbed ground
Aster hesperius Gray	Purple Aster		
var. wootonii Greene		C	Canyons/wetlands
Baccharis wrightii Gray	Wright's Baccharis	H	Arroyos/canyons
Chrysothamnus nauseosus (Pall.) Britt.	Rabbitbrush		
var. bigelovii (Gray) H.& C.		C	Grasslands/arroyos/rocky slopes
var. latisquamens (Gray) H.& C.	Rabbitbrush	C	Grasslands/arroyos/rocky slopes
Senecio douglasii DC.	Threadleaf Groundsel		
var. longilobus (Benth.) L. Benson		C	Grasslands/arroyos
Senecio multicapitatus Greenm.	Shrub Groundsel	C	Grasslands/woodlands/canyons
Artemisia bigelovii Gray	Bigelow Sagebrush	C	Woodlands
Artemisia filifolia Torr.	Sand Sagebrush	C	Grasslands/arroyos
Artemisia dracunculus L.	False Tarragon	C	Arroyos/canyons
Artemisia frigida Willd.	Estafiata	H	Arroyos/lower slopes
Artemisia ludoviciana Nutt.	Louisiana Wormwood		
subsp. ludoviciana		H	Woodlands
subsp. albula (Woot.) Keck	Wormwood	C	Woodlands
subsp. mexicana (Willd.) Keck	Mexican Sagebrush	C	Woodlands
Dyssodia acerosa DC.	Dogweed	H	Rocky slopes
Baileya multiradiata Harv.& Gray	Desert-marigold	C	Grasslands/lower slopes
Psilostrophe tagetina (Nutt.) Greene	Paper Daisy	C	Grasslands/arroyos
Hymenoxys argentea (Gray) Parker	Bitterweed	C	Rocky slopes
Hymenoxys richardsonii (Hook.) Cockll.	Colorado Rubberweed		
var. floribunda (Gray) Parker		H	Rocky slopes
Flaveria campestris J.R. Johnston		C	Grasslands/arroyos
Hymenopappus filifolius Hook.	White Ragweed		
var. cinereus (Rydb.) I.M. Johnst.		C	Grasslands/arroyos/rocky slopes
Gaillardia pinnatifida Torr.	Blanketflower	C	Grasslands/arroyos
Bahia dissecta (Gray) Britt.	Yellow Ragweed	C	Grasslands/arroyos/rocky slopes
Melampodium leucacanthum Torr.& Gray	Plains Blackfoot	C	Grasslands/lower slopes
Parthenium incanum H.B.K.	Mariola	C	Rocky slopes/arroyos
Engelmannia pinnatifida Torr.& Gray	Engelmann Daisy	H	Grasslands/lower slopes
Berlandiera lyrata Benth.		C	Grasslands/rocky slopes
Zinnia grandiflora Nutt.	Rocky Mountain Zinnia	C	Grasslands/lower slopes
Sanvitalia abertii Gray		C	Grasslands/arroyos
Thelesperma megapotamicum (Spreng.) Kuntze	Hopi Tea	C	Grasslands/arroyos/disturbed ground
Ratibida tagetes (James) Barnh.	Prairie Coneflower	H	Arroyos/disturbed ground
Verbesina enceliodes (Cav.) Benth.& Hook.	Crownbeard	C	Grasslands/lower slopes
Helianthus annuus L.	Annual Sunflower	C	Grasslands/arroyos/disturbed ground
Helianthus petolaris Nutt.	Prairie Sunflower	C	Grasslands/arroyos/disturbed ground
Viguiera dentata (Cav.) Spreng.	Goldeneye	C	Woodlands/canyons

Status: C = Confirmed by collection (Martin and Wagner, 1974) H = Hypothetical

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