

Carnegie State Vehicular Recreation Area

Wildlife Habitat Protection Plan

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INTRODUCTION

Carnegie State Vehicular Recreation Area (Carnegie SVRA) is a 1540-acre facility used primarily for off-highway motor vehicle recreation. In 1999, the State Department of Parks and Recreation, Off-Highway Motor Vehicle Division (OHMVD) acquired approximately 3000-acres of property adjacent to the western boundary of the existing park (the Alameda-Tesla Property). This document describes the current wildlife habitat protection program for the Carnegie SVRA, (including the Alameda-Tesla Property) as required by Public Resources Code (PRC) section 5090.35.

The Wildlife Habitat Conservation Plan (WHPP) is designed to assist resource managers in maintaining and protecting current wildlife populations and their habitats. The WHPP is a three tiered process that includes a baseline inventory of plant and animal species (including special-status species), plant communities (habitats), and soil types; implementing an annual monitoring program; and managing the park to sustain biodiversity. Special-status species populations are identified and monitored to ensure their protection, as well as to identify factors that may contribute to the overall ecological health of the habitats.

PLAN OBJECTIVES

This plan summarizes current information and management practices concerning natural resources within the park. A large component of managing for wildlife species diversity is maintaining the continuity and health of their habitats. Habitat management includes erosion control and other soil conservation measures. Soil erosion and trails conditions are monitored using the Soil Conservation Guidelines (DPR 1991) and OHV activity is managed accordingly.

The WHPP is designed to be dynamic and flexible, providing land managers the ability to adapt management practices to new ecological problems as they arise, change outdated or inappropriate techniques and incorporate new methods and technologies. Newly incorporated changes are monitored and evaluated, and best management techniques are carried forward into subsequent years

PLAN REVIEW PROCESS

To facilitate the adaptive process, this plan is reviewed annually by the Off-Highway Motor Vehicle Recreation Division's Resource Team. Carnegie's Resource Ecologist will revise the plan annually as a result of the data collected and the suggestions of the team. The plan will also be reviewed every five years by a team of resource and wildlife professionals outside the Division.

ENVIRONMENTAL SETTING

LOCATION

Situated approximately 12-miles southwest of Tracy, California, Carnegie SVRA is located on the south side of Corral Hollow Road, and straddles the boundary between Alameda and San Joaquin Counties. Carnegie is located in the foothills of the Hamilton Range and is characterized by steep slopes and sharp ravines. The only level portion of the property is Corral Hollow Creek and floodplain, which varies in width from 300-1100-ft. and runs the length of the park (approximately 2.8-miles).

PREVIOUS USE

Carnegie SVRA was acquired by the Department of Parks and Recreation in 1989. For at least 30 years prior to State acquisition, Carnegie SVRA was operated as a private motorcycle park. Due to the steep and challenging terrain, the primary OHV use is motorcycles, although some ATV riding occurs along the floodplain. Since there were no designated trails prior to state ownership, Carnegie has sustained hard and heavy use, presenting a significant challenge for resource managers and other park personnel. Approximately half of the park is designated as open riding and half as trails only riding.

Adjacent land use includes explosive testing facilities (Lawrence Livermore Laboratory Site 300 on the north, and Stanford Research Institute (SRI) on the southeast) and cattle ranching operations on the south and west. Several smaller (5-100+ acre) residential parcels are located along Corral Hollow Road and the Department of Parks and Recreation OHVD is in the process of acquiring nine of these properties.

The adjoining Alameda-Tesla property has been used primarily for cattle ranching during the past 50 years, and includes the site of the historic Tesla mine. The Tesla mine was operated during the early 1900's for coal and sand mining, but was closed around 1908. The only remaining structures are the mine tailings and a few open adits.

This new property is not currently open for public use, but plans are underway to provide additional off-highway motor vehicle recreation opportunities on this adjoining land. In January 2001, the Final EIR for the Alameda-Tesla property will be presented to the OHV Commission as an amendment to Carnegie SVRA's General Plan. Once the amendment is approved, facilities (i.e., trail system, interpretive signs, picnic areas, bridges, fencing, staging areas, etc.) will be developed.

The Alameda-Tesla property will not be open to the public until all facilities are completed, a process that may take from one to five years. In the meantime, OHMVD is currently working with the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) to develop a comprehensive, multi-species, Habitat Conservation Plan (HCP). Once approved, the HCP will cover both the existing park and the new property and will

describe specific monitoring protocols for the covered wildlife species. Until the HCP is approved and implemented, the WHPP for Carnegie SVRA will have precedence in park natural resource management procedures.

CURRENT USE

In the 1999/2000 year, park visitation reached approximately 110,000, with most of the use occurring on weekends. Currently, OHV use is restricted to daylight hours when personnel are available for patrol. The park and trails are closed at night and during wet weather to prevent trail damage, reduce soil erosion and protect wildlife.

BASELINE SURVEYS AND INVENTORIES

The baseline inventory of plant communities, wildlife populations and wildlife habitats on the Carnegie SVRA was conducted in 1989 (Kutilek, et. al. 1990). The newly acquired Alameda-Tesla property was inventoried as part of the preparation of the Environmental Impact Report (Jones and Stokes 2000). Soils types were characterized and mapped for both properties as part of the baseline inventories.

PLANT COMMUNITIES

The following plant communities (habitat types) were identified on the properties:

Blue Oak Woodland

The blue oak (*Quercus douglassi*) woodland community grows sparingly on the lower hills of the unit near the drainage's and in denser stands on the north-facing steeper slopes. It occurs extensively on many of the steep slopes in the southern portion of the park properties. Blue oaks are the dominant trees, however associated trees include buckeye (*Aesculus californica*), especially near the base of slopes on more moist sites, and California juniper (*Juniperus californica*). Both trees are minor associates, and make up less than 5 percent of the woodland trees. The understory is comprised of annual grasses and forbes, including wild oats (*Avena* sp.), brome (*Bromus* sp.), and fiddlehead (*Amsinckia* sp.)

Central Coastal Sage Scrub

This scrub community is widespread on steep slopes in the northern portions of the canyons. It is geographically and environmentally intermediate between the Northern Coastal Scrub and Coastal Sage Scrub. The stands are usually quite dense, lack the grassy openings of Northern Coastal Scrub and have greater crown cover than the Coastal Sage Scrub. There are few herbaceous species.

The dominant shrubs include California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), and malacothamnus (*Malacothamnus fremontii*). These occur in mixed stands, but often one species is dominant and occasionally, one species may be locally absent. Coastal sagebrush is the most prevalent shrub in the grassland fringe areas.

Scrub associates include nightshade (*Solanum* sp.), yerba santa (*Eriodictyon* sp.), goldenbush (*Ericameria* sp.), and bush monkeyflower (*Mimulus aurantiacus*). In most areas, scrub species composition has more characteristics of coastal areas, including poison oak (*Toxicodendron diversilobum*), blue elderberry (*Sambucus mexicana*), gooseberry (*Ribes* sp.), and toyon (*Heteromeles arbutifolia*).

Annual Grassland

This is the most widespread plant community throughout the Carnegie SVRA and the Alameda-Tesla property. It is the predominant community throughout the lower, northern half of the properties, and along the south-facing and more gradually sloped hillsides and ridges of the upper elevations. Annual grassland is dominated by annual forbs, many of which have showy flowers. Common species include brome, wild oats, fescue (*Festuca* sp.), lupine (*Lupinus* sp.), filaree (*Erodium* sp.), fiddleneck, and blue dicks (*Dichelostemma capitatum*).

Valley and Foothill Riparian Habitat

The riparian community consists of water-loving plants that occur in narrow-strips along drainage courses. This plant community consists mainly of shrubby thickets, with few associated herbaceous species. The riparian communities occur mainly in the major tributaries that feed into Corral Hollow Creek and in the low, river scours of Corral Hollow. A small grove of cottonwood trees (*Populus fremontii*) occurs in the eastern end of Carnegie and is supported by subsurface water most of the year. The portion of Corral Hollow Creek that occurs on the Alameda-Tesla property also supports mature cottonwoods and some Western sycamores (*Platanus racemosa*).

The dominant shrub in the canyon riparian areas is the desert olive (*Forestiera pubescens*). These stands of desert olive may represent the northernmost limit of this species' geographic range. A minor, but common associate of desert olive, is western golden current (*Ribes aureum*). Small stands of willows (*Salix* sp.) occur in isolated pockets throughout the area. Both elderberry and poison oak are occasionally found in the riparian areas.

SPECIAL-STATUS PLANTS

Several special-status plants are known to occur in the project area, including large-flowered fiddleneck (*Amsinkia grandiflora*), big tarplant (*Blepharizonia plumosa* subsp. *plumosa*), showy madia (*Madia radiata*), Mt. Diablo buckwheat (*Eriogonum truncatum*) and diamond-petaled poppy (*Eschscholzia rhombipetala*).

To date, no special status plants have been documented on the existing Carnegie SVRA. Extensive surveys for special-status plants were conducted as part of the Alameda-Tesla EIR

(Jones and Stokes 2000). During these surveys, two special-status plant species: big tarplant and rayless ragwort (*Senecio aphanactis*) were documented on the Tesla property. Neither plant has listing status under the State or federal Endangered Species Acts, but both are designated 1B species on the California Native Plant Society's list (CDFG 2000). List 1B species meet the definition of rare or endangered species under Section 15380(d) of the CEQA guidelines and must be addressed during CEQA reviews.

The rayless ragwort has not been documented in northern California since 1933, so this population is an important discovery. Little is known about this species. Historically, it was associated with barren, rocky or sandy soils within grasslands or coastal sage scrub habitats (Jones and Stokes 2000).

Two populations of big tarplant were also found on the Tesla property. Big tarplant grows in annual grasslands, often on soils with high clay content. It is typically found on north-facing slopes, generally near the ridge-tops. Prior to these surveys, there were 17 known populations of this plant in the interior Mount Hamilton and Mount Diablo foothills (Jones and Stokes 2000).

Special-status plant populations are mapped in the FEIR (Jones and Stokes 2000) and their locations have been protected in the design of the proposed new facilities. We plan to develop a special-status plant monitoring program similar to the program used by the National Park Service. The monitoring program will be in place prior to opening up the new properties to recreational use.

EXOTIC PLANT SPECIES

The exotic pest plants of greatest concern at Carnegie SVRA are: yellow star thistle (*Centaurea solstitialis*) and Russian thistle (*Salsola tragus*). These species have shown themselves to be very invasive and programs for their control are being developed and will be implemented. Additional exotic plants detected at Carnegie include black mustard (*Brassica nigra*), red brome (*Bromus rubens*), soft chess (*Bromus mollis*), cheat-grass (*Bromus tectorum*), bluegrass (*Poa annua*), and foxtail (*Festuca megalura*).

Yellow star thistle is an invasive non-native plant that has spread throughout the West. Because it can form a dense monoculture, and provides little to no habitat value for wildlife, it is causing problems to many land managers. DPR resource ecologists are working with local agencies to develop an integrated yellow star thistle eradication program. The program will likely include some combination of integrated pest management, prescribed burning, selective grazing or mowing. Implementation of these management tools will result in an increase in native plant species and a decrease in density of the exotics.

WILDLIFE

Listed Wildlife Species

Surveys to date have documented habitat for, or the presence of, five federally designated Threatened, Endangered or Candidate species on the Carnegie SVRA and the Alameda-Tesla property. Table 1 presents these species, their listing status and their occurrence on site. The following discussion summarizes the habitat requirements and known occurrence data of federally designated species on the SVRA and adjoining properties.

Table 1. Threatened and Endangered Species

Name	Listing Status	Occurrence
Valley elderberry longhorned beetle <i>Desmocerus californicus dimorphus</i>	FT	Host plant confirmed on site
California red-legged frog <i>Rana aurora draytonii</i>	FT, CSC	Confirmed on site
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT, CT	Potential habitat present
California tiger salamander <i>Ambystoma californiense</i>	FC, CSC	Confirmed on site
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE, CT	Potential habitat present

Listing Designations:

FT: Federal Threatened

FE: Federal Endangered

FC: Candidate for listing

CT: California Threatened

CE: California Endangered

CSC: California Species of Special Concern

Valley Elderberry Longhorn Beetle (VELB)

While not observed on site, the host plant for the VELB, the California elderberry (*Sambuca californicus*), is found in two isolated locations on both the Carnegie SVRA and the Alameda-Tesla Properties. Section 9 of the Endangered Species Act prohibits activities that result in “take” of listed species. Take is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” The term harm includes adverse impacts on habitat.

Measures to protect the habitat for this species include closing existing trails near the elderberry shrubs, restoring habitat, and completing trail surveys to ensure that trails are located at least 20 feet from the outer canopy of any elderberry shrub. All field staff will be trained in the identification of the shrub.

The condition of all elderberry plants will be surveyed each year. Plants will be measured, and surveys will determine the presence of exit holes potentially used by VELB. The existing shrub conditions will be qualitatively compared to the previous year's condition. The Resource Ecologist will work with maintenance and visitor services staff to ensure the survival of the current shrubs and create conditions to allow the germination and growth of new shrubs.

California Red-legged Frog

Corral Hollow Canyon is within the proposed critical habitat area for the California red-legged frog (USFWS 1999). Red-legged frogs have been observed in sediment ponds and stock ponds throughout both properties, and protection of these sites is a priority for the park. Known breeding ponds will be fenced off to prevent access by motorcycles and cattle, and trails relocated to divert traffic away from drainage's and potential upland habitats. Since many of the ponds are seasonal, annual surveys will be conducted to monitor breeding sites.

California tiger salamander

A federal candidate for listing and a California species of special concern, California tiger salamander have been observed within and around the Carnegie unit by park staff and others (Kutilek et al. 1991). It is assumed that all suitable ponds in the Carnegie unit provide potential habitat for the California tiger salamander. Salamander larvae were detected in 14 ponds in the SVRA in 1998 (Davidson and Trenham 1998, Jones & Stokes 2000a). All stockponds (except Ponds 2a and 2b, which do not retain sufficient water), portions of Corral Hollow where there is pool habitat, and adjacent surrounding upland habitats up to 1.6 km from a pond within the SVRA are considered suitable habitat for tiger salamanders (Jones & Stokes 2000a).

Alameda Whip Snake

The Alameda whipsnake is listed as Threatened under the California and federal Endangered Species Acts. Critical habitat has been designated for the Alameda whipsnake (U.S. Fish and Wildlife Service 2000a). Carnegie SVRA is located in Critical Habitat Unit 5, Sunol-Cedar Mountain Unit. Suitable habitats include the Central Coastal Sagebrush Scrub and adjacent grassland areas. Swaim (2000) conducted a habitat assessment for this species for both the Carnegie SVRA and the Alameda-Tesla property, mapped suitable habitats, identified core areas and buffer zones. This data was used in preparation of the Final EIR and will be used in the development of the HCP that will cover all properties.

San Joaquin Kit Fox

The Carnegie SVRA is within the northern range of the San Joaquin kit fox and is managed accordingly. Extensive surveys for this species were conducted by CDFG during 1998, however, no kit fox or kit fox sign were observed. The Carnegie SVRA and the Alameda-Tesla properties provide a habitat corridor for this species that is linked to the East Bay foothills. No groundbreaking activities are allowed in the park without consultation with USFWS and conducting preconstruction surveys in accordance with the Survey Protocols for San Joaquin Kit Fox (USFWS 1997).

Wildlife Species of Concern

In addition to the five state and/or federally listed species, Carnegie SVRA and the Alameda-Tesla properties provide suitable habitat for a large number of species of special concern (CDFG 2000). Table 2 lists these species and their known occurrence records in the area.

Table 2. Other Special-Status Wildlife Species

Name	Listing Status	Occurrence
Foothill yellow-legged frog <i>Rana boylei</i>	Species of Special Concern	Confirmed on site
Western spadefoot toad <i>Scaphiopus hammondi</i>	Species of Special Concern	Confirmed on site
California horned lizard <i>Phrynosoma coronatum frontale</i>	Species of Special Concern	Suitable habitat present
Western pond turtle <i>Clemmys marmorata</i>	Species of Special Concern	Confirmed on Alameda-Tesla Property
Cooper's hawk <i>Acciper cooperi</i>	Species of Special Concern	Suitable habitat present
Golden eagle <i>Aquila chrysaetos</i>	Species of Special Concern	Observed on site, no confirmed nesting
Northern harrier <i>Circus cyaneus</i>	Species of Special Concern	Suitable habitat present
Prairie falcon <i>Falco mexicanus</i>	Species of Special Concern	Observed-no suitable nesting habitat
Western burrowing owl <i>Athene cunicularia hypugea</i>	Species of Special Concern	Confirmed on site-winter records
California horned lark <i>Eremophila alpestris</i>	Species of Special Concern	Confirmed on site
Loggerhead shrike <i>Lanius ludovicianus</i>	Species of Special Concern	Confirmed on site
Yellow warbler <i>Dendroica petechia</i>	Species of Special Concern	Potential habitat on site
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	Species of Special Concern	Confirmed on site

Source: CNDDDB, 2000

Foothill yellow-legged frog

The foothill yellow-legged frog historically occurred in most Pacific drainage's from the Oregon border to the San Gabriel River drainage in Los Angeles County. The current distribution of the foothill yellow-legged frog is the Coast Range and the Transverse Mountains in Los Angeles County. This species is also found along the western side of the Sierra Nevada and in most of northern California west of the Cascade crest (Jones & Stokes 2000b). Introduced predatory aquatic species such as fish and bullfrogs, poorly timed water releases from reservoirs, and decreased waterflows that force adults to move into permanent pools where they are more susceptible to predation have contributed to the decline of this species throughout the rest of its range (Jones & Stokes 2000b).

Habitat requirements for the foothill yellow-legged frog are shallow, flowing streams with at least cobble-size substrate. Breeding and egg-laying typically follows periods of high flow discharge resulting from winter rainfall, usually from late March to early June (Jennings and Hayes 1994). Metamorphosis occurs roughly 15 weeks after oviposition, typically between July and September. Following metamorphosis, juveniles show a marked differential movement in an upstream direction (Jennings and Hayes 1994). Foothill yellow-legged frogs are thought to take two years to reach adult size. Seasonal movements and behavior of adults is essentially unknown (Jennings and Hayes 1994).

Foothill yellow-legged frogs were observed in the upper portion of Corral Hollow Creek in the Alameda-Tesla unit (Jones & Stokes 2000a). Based on the habitat requirements of this species, this is the only area providing suitable habitat on the SVRA. Approximately 40% of suitable habitat occurs on SVRA and the remainder is on private land.

Currently, management for this species is primarily directed towards identifying and protecting seasonal breeding habitats at Carnegie SVRA. Amphibian surveys are conducted during the winter and spring to locate and monitor breeding ponds and pools. Temporary fencing will be erected around known breeding areas and will remain in place for the duration of the breeding season.

Western spadefoot toad

Western spadefoot toads breed in vernal pools and quiet streams with sandy or gravelly substrate (Stebbins 1987). Spadefoot toads spend the dry season in small mammal burrows or in burrows they excavate themselves. Chiefly a nocturnal species, spadefoot toads may emerge from their underground retreats with the first heavy rains to breed. The breeding season lasts from January to May throughout much of California. Western spadefoot toads require pools that last at least three weeks to breed and metamorphose successfully (Jennings and Hayes, 1994). Little is known about the life history requirements of this species, especially what defines suitable habitat, seasonal movements and longevity.

Western spadefoot toads are known to occur in the region, and have been observed at Carnegie SVRA. Amphibian surveys of the Alameda-Tesla property in 1998 (Davidson and Trenham) detected western spadefoot toads breeding in pond #12. Currently, management for this species is primarily directed towards identifying and protecting seasonal breeding habitats at Carnegie

SVRA. Amphibian surveys are conducted during the winter and spring to locate and monitor breeding ponds and pools. Temporary fencing will be erected around known breeding areas and will remain in place for the duration of the breeding season.

California horned lizard

California horned lizards are distributed throughout Central California. The range of this subspecies extends from Marin County in the north, throughout the Central Valley and south to about San Luis Obispo County. Horned lizard populations have declined throughout its range as a result of habitat destruction from urbanization and agricultural development (Jennings 1988). California horned lizards are found in a variety of habitats associated with sandy soils, including scrub, grassland, riparian, woodland, and open coniferous forest where soils are friable for digging (Stebbins 1985). Horned lizards are relatively sedentary, relying upon their cryptic coloration to escape predators. The lizards often remain motionless, partially buried in the sand until imminently threatened.

Western pond turtle

The western pond turtle is the only turtle native to California. It was historically found in most Pacific slope drainages between the Oregon and Mexican borders. The species is still found in most suitable habitats west of the Sierra-Cascade crest in California, but trends show populations to be declining (Jones & Stokes 2000a).

Western pond turtles have been observed in Corral Hollow Creek in the Alameda-Tesla unit. Ponds 3, 5, and 12 are considered suitable habitat because of their proximity to Corral Hollow Creek. No western pond turtles have been observed in any other ponds on the SVRA. The lack of turtles at the other ponds may be because the dispersal capability of the species limits its ability to colonize the other ponds.

Cooper's hawk

A year-round resident in California, Cooper's hawks tend to be associated with open deciduous and mixed woodland habitats and riparian areas (Grinnell and Miller 1944). They typically nest in densely wooded areas with a well-developed understory and groundcover, frequently near riparian areas (Johnsgard 1990).

The Carnegie SVRA is unlikely breeding habitat for Cooper's hawks due to the amount of human disturbance, however, suitable nesting habitats are found adjacent to the park property (especially the Connelly Ranch) and on the Alameda-Tesla unit. Cooper's hawk surveys will be conducted on the Alameda-Tesla property prior to any recreational use. Bi-annual raptor surveys will be conducted on state properties to ensure protection of active nesting and important foraging areas

Golden eagle

Designated a species of Special Concern in California (CDFG 2000), golden eagles are found throughout the state in suitable habitats. They are usually associated with open rolling foothill or coast range terrain, where grassland habitats support suitable prey species (i.e., ground squirrels and black-tailed jackrabbits) (Grinnell and Miller 1944). Golden eagles typically build huge

nests in tall trees that afford a view of the territory. They also commonly nest on tall cliffs and transmission towers.

There are no confirmed breeding locations within either Carnegie or the Alameda-Telsa property, however, goldens are known to nest nearby and juveniles are frequently observed during the spring and summer months. Bi-annual raptor surveys will be conducted on state properties to ensure protection of active nesting and important foraging areas.

Northern harrier

Northern harriers (harriers) occur in small numbers and breed in suitable habitats throughout California (Grinnell and Miller 1944). The wintering population is much larger than the summer population, as those birds that breed further north seek refuge in more temperate climates. Harriers are a characteristic species of marshland habitats, but also occur in grassland habitats along the coast and in the Central Valley. They usually nest on the ground in shrubby vegetation near marshy areas (Zeiner, et al. 1990).

Harriers have been observed foraging in grassland habitats along Corral Hollow Canyon, but to date, there has been no breeding observations in the Carnegie SVRA or the Alameda-Tesla properties. Bi-annual raptor surveys will be conducted on state properties to ensure protection of active nesting and important foraging areas.

Prairie falcon

Prairie falcons are uncommon residents of open county habitats throughout the western United States, including California. While occasionally observed in the area, there is no suitable nesting habitat for this species on either Carnegie or the Alameda-Tesla properties. Bi-annual raptor surveys will be conducted on state properties to ensure protection of active nesting and important foraging areas.

Western burrowing owl

Designated a Species of Special Concern in California and by the Fish and Wildlife Service, the burrowing owl has been a candidate for listing under the federal Endangered Species Act (CDFG 2000). Burrowing owls generally occur in flat, open grasslands and deserts below 100 m (300 ft.) in California, but have been documented in at elevations as high as 1500m (Grinnell and Miller 1944). The most important characteristics of burrowing owl habitat are suitable burrows for nesting and roosting. Burrowing owls rarely dig their own burrows, relying instead upon fossorial mammals (i.e., badgers and ground squirrels) to dig burrows and dens that the owls can use for nesting and roosting. Population declines can be attributed to efforts to exterminate fossorial mammals and intense urban and agricultural development of suitable grassland habitats.

There are no known breeding records from the Carnegie SVRA, however, burrowing owls have been occasionally observed on Carnegie SVRA. Bi-annual raptor surveys will be conducted on state properties to ensure protection of active nesting and important foraging areas, and preconstruction surveys will occur prior to any ground disturbance in grassland habitats.

California Horned Lark

The California horned lark is one of eight subspecies of horned larks that breed in California (Grinnell and Miller 1944). The California horned lark is designated CDFG Species of Special Concern and is restricted in range to the California coast and western portions of the San Joaquin Valley (Grinnell and Miller 1944). Horned larks prefer short grass or patches of bare ground for both foraging and nest sites (Bent 1942). While very rare in parts of its range, horned larks are common to abundant along the eastern foothills of the Coast Range. California horned larks have been observed throughout the area, especially along the access roads and other areas of bare ground and sparse vegetation on the Alameda-Tesla property. No specific management efforts are planned for this species at this time.

Loggerhead shrike

Loggerhead shrikes are designated a federal Species of Concern by the USFWS and are a California Species of Special Concern (CDFG 2000). They are relatively common breeding residents and migrants found throughout open habitats across most of the United States (Kaufman 1996). In recent decades, loggerhead shrike populations have declined in many areas, and they are essentially gone from the northeastern region of the United States (Kaufman 1996). In the western region of the United States, including California and Nevada, the shrike population appears to be stable.

Shrikes are most often found in open habitats, including wooded foothills, sagebrush and grassland communities with scattered trees. Shrike nests are active from March through June (Grinnell and Miller 1944) and are protected under the MBTA. Shrikes are commonly observed along the open grassland and scrub habitats along Corral Hollow Road. No specific management efforts are planned for this species at this time.

Yellow warbler

Yellow warblers are summer residents, occurring in California from mid-April to mid-August. Their preferred habitats are riparian plant associations of willows, cottonwoods, and other riparian shrubs and trees (Grinnell and Miller 1944). The numbers of breeding yellow warblers have declined in most lowland coastal areas of California (Zeiner, et al. 1990). To date, there have been no records of yellow warblers occurring at Carnegie SVRA and there is little suitable habitat. No specific management efforts are planned for this species at this time.

Townsend's big eared bat

Townsend's big-eared bats (Townsend's) are found throughout California where suitable mines or caves serve as roosting habitat (Brown and Pierson 1996). Townsend's big-eared bat requires roosting, maternity, and hibernacula sites with little human disturbance. The bat may use separate sites for night, day, hibernation, or maternity roosts (Zeiner et al. 1990). Females congregate in nursery colonies in spring, using caves, mine tunnels, or abandoned buildings as maternity sites. All known maternity roosts are within approximately 91.4 m of a stream or riparian system and are warm in temperature. Unlike many bat species that roost in crevices, Townsend's big-eared bat will roost hanging only from walls and ceilings and requires a relatively large, open space that permits extended flight in the roost. Hibernation and roosting

sites include buildings, mine tunnels, and caves that are structurally similar to maternity sites, except that they often have lower ceilings (Jones & Stokes 1996).

Surveys conducted during 1998 at the Tesla mine site confirmed the presence of this species. Since Townsend's are highly sensitive to disturbance at the roost sites, the Tesla mine site will be evaluated for a bat-gate and trails will be located away from this area.

HABITAT MONITORING PROGRAM

During the spring of 1995, an extensive Wildlife Habitat Monitoring System was designed for Carnegie SVRA that was based upon the work by Kutilek, et al. (1990). This system monitors vegetation, mammals, birds, reptiles, and amphibians using the most current protocols on paired plots (riding versus non-riding areas) throughout the varied habitats found at Carnegie SVRA. In addition to these standardized methods, the HMS includes photomonitoring, use of a geographic information system (ARCVIEW GIS), and aerial photos to detect and manage ecological changes.

The HMS provides the tools to maintain an accurate species inventory, to recognize the presence of any rare or listed species, and to monitor population trends. If a Threatened or Endangered species is located within the SVRA, or if one of the above mentioned Species of Special Concern is upgraded to Threatened or Endangered, a management/protection plan for that specific species will be formulated as a multi-agency project. The monitoring program will remain in place indefinitely in order to determine long-term trends in habitat health within the park.

VEGETATION MONITORING

Kutilek et al. (1990) designated 40 monitoring plots for sampling the various plant communities in the riding and non-riding areas. A subset of eight of these original plots has been annually monitored since in 1995. These plots are located in each of the three major habitat types: annual grassland, blue oak savannah and coastal sage scrub. Three control plots are located on the SRI property—an area off-limits to the public. Vegetation plots are monitored each spring for species diversity, evenness, and relative abundance. These indices are compared to previous year's data in order to determine trends in habitat health. Methodology is based upon the recommendations of the CNPS, using point-intercept techniques for low-growing plants and relevés for chaparral communities.

Point-intercept transect: A 50 meter long tape is laid along the center of the plot and secured at both ends. The observer uses a 1 meter length of steel roundbar to sight along a vertical line at every 0.5 meter interval from the 0.5 meter to the 50 meter mark. Each species intercepted by the vertical line is tallied by vegetation layer. A total of 100 points along the transect are thus sampled.

WILDLIFE MONITORING

Monitoring of mammals, birds, reptiles, and amphibians is done annually using the most current survey protocols. Techniques for monitoring wildlife include time-constrained searches for herptiles, night spotlight surveys and sooted track plates for large mammals, live-trapping for small mammals, and point-count surveys for birds. The on-going monitoring allows the biological species inventory list to be updated annually, and assists in prescribing proper wildlife habitat management. Potential impacts on both common and special-status species will be evaluated each year. The monitoring program will remain in place indefinitely in order to determine long-term trends in habitat health within the SVRA.

If a Threatened or Endangered species is located within the SVRA, or if one of the above mentioned Species of Special Concern is upgraded to Threatened or Endangered, a management/protection plan for that specific species will be formulated between a multi-agency project. Development of a Multi-species Habitat Conservation Plan is underway and the HCP will detail specific monitoring protocols required by CDFG and USFWS. The HCP should be completed during the year 2001-2002. The following section discusses the methods currently used for wildlife habitat and population monitoring.

Bird Sampling Protocol

Bird population monitoring surveys are conducted twice a year in the fall (migration) and spring (breeding) when birds are most active. All sampling is conducted between the hours just prior to sunrise through mid-day, from approximately 6:00 a.m. to 12:00 p.m. In each plot, a 0.5 km long transect is walked, using the variable-circular plot method (Reynolds et al. 1980). Five station points, approximately 50 m apart, are established along the transect. At each station, the observer listens and watches for bird activity for a period of ten minutes. Each individual sighting or vocalization is recorded by noting species and distance in meters to its location, from the station point. Any birds flushed or heard during transit from one station to the next are recorded with distances measured from the upcoming station. The transect starting point is located at the center stake of the sampling plot, with the direction of the transect decided by the observer. This technique will determine species compositions, density, and diversity.

In addition to monitoring selected sites, biannual surveys will be conducted for nesting raptors. Surveys will be conducted by road and on foot. Every attempt will be made to locate and monitor all active nesting territories within the SVRA. Active nests will be monitored throughout the breeding season for productivity.

Reptile and Amphibian Sampling Protocols

Amphibian and reptile surveys are typically conducted every year in early spring or during the peak condition or activity period (i.e. late winter and early spring for amphibians and summer months for reptiles). In each of the animal sampling plots, permanent 200 m long, 15 m wide belt

transects will be established for reptile and amphibian sampling. These transects begin at the center post in each plot and run in the four cardinal directions (i.e., north, south, east, west). Amphibians and reptiles are sampled by time-constrained searches of these transects. Each transect is searched by one observer for 20 minutes, turning over small rocks, logs, and other debris, concentrating the search around the bases of shrubs and trees. Animals caught or seen are identified and recorded, and when possible, their sex is determined. The plots are surveyed once in the morning at approximately 8:00 a.m., and once in the afternoon, at approximately 3:00 p.m.

All potential amphibian breeding habitat is monitored for species diversity and trends. Ponds are surveyed during daylight hours to determine the species using the site as breeding habitat and to monitor the condition of each pond for changes that could impact its value as amphibian breeding habitat. Dipnets will be used to capture and identify amphibian larvae. One dipnet sample is collected every 15 paces along the edges of large ponds, and a minimum of 30 samples should be taken at each pond. If all species potentially present are detected in fewer than 30 samples, then further sampling is unnecessary. In addition, two nocturnal surveys will be conducted at each pond. The observer approaches quietly to a distance of about 10 meters, stops and listens for calls for at least 5 minutes. The ponds are then searched with flashlights to identify species and monitor numbers of breeding adults.

Small Mammal Sampling Protocol

The information gained from monitoring rodents and small mammals is valuable for understanding the abundance of larger predators and raptors. Live trapping is utilized to assess diversity and abundance of small mammal species on the study plots and is conducted in the spring months every two years.

On each plot, 50 Sherman live-traps are set out in two roughly parallel transects of 25 traps per transect with a 10-m interval between trap stations. Traps are baited with peanut butter and mixed birdseed and set late in the afternoon. They are checked shortly after sunrise the next morning, and closed for the remainder of the day to avoid trap mortality for any diurnal species that may be present. This protocol is followed for three consecutive nights for each of the study plots. Captured animals are identified, measured, checked for reproductive condition, hair-clipped, and released.

Large Mammal Sampling Protocols

Large mammals (i.e., black tailed deer, tule elk, coyote, bobcat, etc.) are surveyed annually by night spotlighting (Kutilek, et al. 1991). Surveys are generally conducted on three consecutive nights in June. The designated routes include all habitat types. Night spotlighting is carried out beginning one hour after dark from a 4-wheel drive truck driven at 5 to 8 miles per hour (mph). Two observers stand in the bed of the truck, sweep the surrounding area with 400,000 candle-power spotlights, and record all animals observed. Track plates, and/or infrared camera stations may also be used to survey for larger mammals.

PHOTO MONITORING

In addition to the direct animal and vegetation monitoring, various photographic monitoring surveys are also carried out at Carnegie SVRA. Every three years aerial photos are taken of the entire park and biannually a ground-based photo monitoring survey will be conducted at ten, high visitor-use, locations throughout the SVRA. These photo-monitoring programs have proven to be valuable tools for monitoring changes in vegetation cover over time. Both of these programs will be maintained at their current frequencies, indefinitely. In addition a satellite-imagery monitoring program should be adopted for Carnegie SVRA as soon as it becomes technologically feasible.

GEOGRAPHICAL INFORMATION SYSTEM

The Geographical Information System (GIS) is also utilized in the Habitat Monitoring System at Carnegie SVRA. A spatial database has been built for Carnegie SVRA (using ARCVIEW GIS) and is continually being refined and updated. This database includes layers such as vegetation types, soils types, unique natural and cultural resource areas, and roads and trails. The habitat monitoring points have been mapped with a Global Positioning Unit and added to the GIS files so their locations are permanently stored. The GIS is used to map the locations of special-status species observations, areas of special habitat value, and the spread or reduction of invasive plant species. The expansion of technology based monitoring within the SVRA should be adopted whenever possible.

SOILS MONITORING SYSTEM

A document titled the “Soil Conservation Guidelines and Standards for Off-Highway Vehicle Recreation Management” was approved in 1991. This document defined a generic soil loss standard for OHV areas:

Off-highway motor vehicle areas and trails will be maintained in a condition that will allow for feasible rehabilitation by natural resource managers (California Department of Parks and Recreation 1991).

The proposed soil loss monitoring procedures for the Carnegie SVRA is based on an assessment of revegetation potential, as defined in the PRC (“...restoration of...plant communities, and the plant covers comparable to those on surrounding lands or at least those which existed prior to off-highway motor vehicle use.” Section 5090.11). The following describes the steps to be used in the assessment.

- A DPR resource specialist will train staff to conduct trail condition surveys. The staff will be trained to identify different types of erosion, map them, and fill out standardized data sheets.

- Staff will inventory trails and map eroded/unvegetated areas. Features to be mapped include depths of incision/gully erosion within trail treads; sheet, rill, gully, and mass movement erosion of cut and fill slopes and other use areas; incision and headcutting of drainage ways receiving runoff from trails and other use areas; and other use-related erosion areas.
- A DPR resource specialist will review the data collected by staff to determine which trail segments or erosion sites should be inspected in the field. Following the field evaluation, the erosion features will be prioritized for treatment. The priorities will be based on the severity of the erosion feature, cost, and the risk to other sensitive resources. The severity of the erosion feature will be rated considering the type (rill, sheet, gully, or mass movement) and extent (length, depth, width). The cost of rehabilitation increases geometrically as the severity of erosion feature increases. The risk will consider impacts on other sensitive resources (i.e., water quality, endangered species habitat) public safety, and the presence of material high erosion hazards that will exacerbate an existing problem.
- The list of priorities will be reviewed by the Division Management Team and submitted for funding.

SOIL LOSS MONITORING SCHEDULE

Soil loss Monitoring at Carnegie SVRA will be conducted between September 1 and October 30 each year. The assessment will be completed by November 30 of each year. The first complete soils survey since state acquisition was completed in 1999 by DPR staff. This document summarized the trail condition throughout the SVRA (ranking designated trails from good to needing rehabilitation as per the DPR Soils Standards) and documented the numerous problems facing resource managers for this park. For example, there are hundreds of unauthorized trails throughout the park, due in part to rider's lack of environmental awareness, lack of patrol staff and history of being an "open" riding area. This report has reinforced our awareness that habitat restoration will be a process that, by necessity, will involve increased and continuing rider education, controlling access by whatever means necessary, and ultimately, increasing staffing.

NON-ATTAINMENT OF SOIL LOSS STANDARD

In the event of non-attainment of the soil loss standard in a given part/segment of a recreation area, that part/segment will be temporarily closed and repaired to prevent accelerated erosion until it is capable of meeting the standard (California Department of Parks and Recreation 1991). If it is determined that the soil loss standard and habitat protection plans are not being met in an area, the department shall direct the division to close the area and rehabilitate the area where it is feasible.

Our goal is to have fully functional soils monitoring system in place during this coming year (2001). Currently, Carnegie inventories the trail system monthly to check for trouble spots and the equipment operator devotes one day a week to trail rehabilitation. Trails are temporarily closed during wet weather to prevent damage and reduce soil erosion. There are currently about 40 miles of designated OHV trails and fire roads on Carnegie

ANNUAL REPORT

A habitat monitoring report is prepared that summarizes the monitoring results and compares these results to previous years' data. Comparing one year to another does not, alone, provide useful information; but over time, the cumulative monitoring data will assist us in determining trends in wildlife populations and diversity that may be related to habitat quality. In addition to the habitat monitoring data, the annual report includes a summary of abiotic factors occurring in the park that may positively or negatively impact wildlife and habitats (i.e., visitor use, resource management projects, park maintenance projects, weather conditions). The annual report also contains a synopsis of all projects and inventories accomplished that year that aid in the fulfillment of the Wildlife Habitat Protection Plan. The report will include the results of soils monitoring surveys and trail inventories, as well as plans to remediate any problem areas.

MANAGEMENT STRATEGIES AND ACTIONS

A District Resource Management Team made up of the District Superintendent and the District Resource Ecologist will review the Habitat Monitoring Annual Report upon its completion. The purpose of this review will be to determine if the Habitat Monitoring Matrix within the report shows a significant degradation in any habitat, species or area, from the previous year. A "significant degradation" is defined as a greater than ten percent decline in the average of the indices used in the matrix. For example the vegetation matrix uses Diversity, Evenness, Percent Cover and Percent Exotics as its indices. If a particular habitat, species or area, shows a significant negative impact or degradation the District Resource Management Team will institute an Area Specific Intensified Monitoring Program or Research Project to determine the cause of the degradation. During this process the area will be closed to all recreation by whatever means necessary. If the cause of the habitat degradation is determined to be related to park activities, policies or practices, the damaging activity will be stopped or modified to reduce the negative effects on the habitat in question. If the damaged habitat can be repaired or restored, a restoration project will be initiated. If the damaged habitat cannot be restored, a mitigating project will be initiated.

SENSITIVE AREAS

Working with the Superintendent, the Resource Ecologist will map and designate sensitive habitats throughout the park. Sensitive areas may include riparian corridors, ponds, known locations of special-status plants, or other unique features. These areas will be monitored

monthly by park personnel for signs of degradation, and will receive special protection in controlling use patterns to reduce recreational impacts.

EXOTIC PEST PLANT ERADICATION PROGRAM

Using the data collected from the HMS surveys, the spread of existing exotics can be monitored and new invaders can be detected. The District Resource Ecologist is responsible for updating and prioritizing the exotic pest plant list annually. Once the target species are identified a weed management strategy is developed to facilitate removal of the selected species.

PRESCRIBED BURNING

At this time, no prescribed fires have been used for exotic plant control or other resource management practices, however, in the future this may become an option.

WILDFIRE MANAGEMENT

Wildfire management within Carnegie SVRA has been addressed in a Wildfire Management Plan. This plan is updated as needed (the most recent update in 2001). As stated in this plan “Management of unwanted fires on State Park System lands is more than prevention, pre-suppression, preparedness, and suppression. It is the Department’s goal to prevent all unwanted human-caused fires. Given that some unwanted fires will occur, it becomes the responsibility of the Department to minimize damage to the park resources from the fires themselves and from all suppression activities.”

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