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All-bird Monitoring of Adobe Valley, LLC Properties in Adobe Valley and Environs

2005 Progress Report and Project Recommendations

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EXECUTIVE SUMMARY

In 2005, PRBO Conservation Science (PRBO) continued a second year of bird monitoring in riparian habitats of Adobe Valley LLC properties in Adobe Valley, California. We expanded the program in 2005 to include the monitoring of cliff-nesting species (with a primary focus on raptors) and year-round waterbird surveys at Adobe Reservoir. We continued to collaborate with Bureau of Land Management in conducting Greater Sage-Grouse lek surveys at Indian Meadows.

We documented a total of 122 species and determined breeding status for each in 2004 and 2005. We documented the occurrence of 19 species of conservation concern and 25 California Partners In Flight Bird Conservation Plan focal species.

We calculated an index of total abundance, species richness and species diversity for breeding species at each of the 50 point count stations and for four transects. As in 2004, breeding bird abundance, species richness and diversity were highest at Dexter Canyon and Adobe Creek Lower. Bird indices at Adobe Creek Upper were lower in 2005 than in 2004; bird indices at all other transects were similar between years.

Song Sparrow, Brewer's Blackbird, Brown-headed Cowbird, Warbling Vireo and Yellow Warbler were the most frequently detected species at Dexter Canyon in both 2004 and 2005. At Adobe Creek Upper, we most frequently detected Red-winged Blackbird, Brewer's Blackbird, and Savannah Sparrow. At Adobe Creek Lower Red-winged and Brewers Blackbird and Song Sparrow were the most commonly detected species. Sagebrush and grassland species Brewer's Sparrow, Horned Lark and Sage Sparrow were the most frequently detected species at Adobe Valley. We did not detect any Willow Flycatchers or Greater Sage-Grouse on Adobe Valley LLC properties in 2005.

Cliff and creek surveys confirmed nesting by Prairie Falcon, American Kestrel, Cooper's Hawk, Common Raven, and Long-eared Owl pairs. We also documented Red-tailed Hawk, Turkey Vulture, Northern Harrier, Swainson's Hawk, Peregrine Falcon and Golden Eagle present at Adobe. The diversity of habitats including cliff, sagebrush, aspen, open water, riparian and meadow all contribute to supporting this diversity of raptors and their prey.

We detected 16 waterbird, shorebird or marshland bird species at Adobe Reservoir during the spring and summer, and 13 species during the fall and winter. The species we observed in highest numbers were Mallard, Cinnamon Teal, American Coot, Red-winged Blackbird, Yellow-headed Blackbird and Ring-necked Duck. In 2005, we

observed most of the species using the flooded wetland surrounding the reservoir, and the open water of the reservoir itself.

We found 39 nests for 23 species during incidental nest searches in 2004 and 2005. Cliff and willow-nesting raptors initiated nests in mid to late March, while songbird nests observed with young during June would indicate nest initiation dates of early May to early June. The breeding bird season at Adobe Valley (including nest initiation through fledging young to independence) is mid March through August, with a peak in June.

RECOMMENDATIONS

With the goal of enhancing and protecting breeding bird populations and their habitat, we provide 45 habitat restoration, management, private parcel, species specific and monitoring recommendations. The objectives of these recommendations are to 1. reduce direct disturbance and impacts to birds, and 2. maintain and restore, or minimize impacts to bird habitat. Recommendations are based on results derived from PRBO's breeding bird data collected from Adobe Valley LLC lands in 2004 and 2005, from PRBO's wider bird monitoring efforts in the eastern Sierra Nevada (1998 – 2005), and from a series of Adobe Valley field trip discussions between NRCS, Greenbridges LLC, Adobe Valley LLC, PRBO, California Department of Fish and Game, Bureau of Land Management and John Bair of McBain and Trush. Recommendations labeled "CalPIF RBCP" or "CalPIF SBCP" are taken directly from the California Partners in Flight Riparian or Sagebrush Bird Conservation Plans (RHJV 2004, CalPIF 2005). Results presented in these recommendations are also presented in detail in the Results and Discussion section of this report, or in Heath and McCreedy (2005).

1. Riparian Restoration Recommendations

1.1 Restore riparian characteristics along Adobe Creek with pre-European settlement and current climatic conditions in mind. We realize there will be some "enhancement" of habitats at Adobe Ranch in order to meet several cultural and economic goals of the Adobe Valley project. However, whenever possible, we recommend avoiding the creation of conditions that probably never existed along Adobe Creek before European settlement. Such conditions can be difficult and costly to maintain and might not provide maximum benefit for bird species or hydrologic function. For example, the small WRP project near the small earthen dam along Adobe Creek created a small pond and patches of cattails under the auspices of wildlife habitat creation. While a few ducks and blackbirds use this habitat pond, its benefit to wildlife in the larger context of the Adobe project is minimal, and natural stream function has been damaged. We

recommend restoring Adobe Creek to its proper functioning and dynamic condition which will in turn support riparian breeding songbirds. Ducks and wetland species will benefit more greatly from the larger enhancement projects such as those slated for Adobe Reservoir (see below).

1.2 Manage flows from Adobe Reservoir dam to allow for natural hydrology of Adobe Creek to stay relatively in tact. The restoration and maintenance of hydrologic function on Adobe Creek is largely dependent on the capacity of the upstream Adobe Reservoir to release proper flows and the ability to time these flows appropriately. Riparian conditions such as "tortuous curves", meanders, riparian width and riparian plant recruitment will be encouraged and maintained by peak spring thaw flow events and late summer high base flows at Adobe Creek (J. Bair, pers. comm.). Unless the upstream reservoir dam allows for these high flow events and pulses and maintenance of a high late summer base flow, it may be difficult to meet riparian objectives below the reservoir (J. Bair, pers. comm.).

1.3 Restore riparian vegetative structural diversity. Sites with higher breeding bird species richness were those with multiple vegetation layers both on Adobe Valley LLC lands and at other riparian habitats in the eastern Sierra Nevada (Heath and McCreedy 2005, Heath and Ballard 2005). Typically, sites with intact herbaceous, shrub and tree layers harbor more bird species. Diverse vegetation (in terms of height, structure and species) provides more available nesting substrate and more complex cover and protection from a variety of nest predators (Martin 1992). Additionally, a more diverse vegetative structure may benefit other important elements of avian breeding ecology such as easy access to nesting material, more singing perches or a wider variety of prey items.

1.4 Restore, maintain and encourage willow shrub growth / cover. Willow shrub habitats on Adobe Valley LLC properties harbored a high number of riparian breeding bird species. This same pattern has been demonstrated in mixed willow habitats throughout the eastern Sierra, most notably in lower elevation habitats where aspen typically do not grow (Heath and Ballard 2003). Plant *Salix lutea* (Yellow Willow) and *Salix lucida* (Shiny or Pacific Willow) to complement already regenerating *Salix exigua* (Coyote / Sandbar Willow).

1.5 Restore, maintain and encourage Woods' Rose cover. Woods' Rose (*Rosa woodsii*) habitats do not currently harbor rich or diverse breeding bird communities in Adobe Valley when compared to other riparian habitat types. However, PRBO has demonstrated that sensitive bird species frequently use rose as nesting substrate in the

eastern Sierra Nevada region. For example, the only known Mono Basin breeding territories of the State Endangered Willow Flycatcher are in large Woods' rose patches on Rush Creek, where 100% of all Willow Flycatcher nesting attempts were placed in Woods' rose (McCreedy and Heath 2004, McCreedy 2004b). Additionally, Yellow Warbler (State Species of Special Concern) nest success is higher for nests placed in Woods' rose versus those placed in willow (PRBO unpublished data).

1.6 Place riparian plantings in mixed clumps rather than linear strips along stream banks. Recruitment of riparian vegetation will likely occur on its own if hydrological conditions are in tact, but a few, carefully placed plantings will be needed. Riparian vegetation along Adobe Creek was probably never very wide along the entire stream corridor. Rather, it is more likely that greater riparian width occurred in clumps and patches along meanders and tortuous curves (J. Bair pers. comm.). Further, it is likely that much of the stream only supported 1 – 3 willows in width, while in other locations and conditions, such as those we see near the tortuous curves below the small earthen dam, the riparian can be as wide as 30m. We recommend planting mixed clumps of willow, rose and understory plants at these areas that have the potential for a wider riparian zone, and sparse plantings of willow between larger clumps to encourage a continuous corridor of vegetation.

1.7 Plant or encourage riparian understory species. Riparian habitats with an intact and lush understory support a rich and diverse breeding bird community (Heath and Ballard 2003, Heath and Ballard 2005, Richardson and Heath 2004). We recommend including species such as native monkey flower (*Mimulus*), mugwort (*Artemisia ludoviciana*), lupine (*Lupinus* spp.), and native rushes and sedges (where appropriate) in restoration plantings.

2. Adobe Reservoir Enhancement Recommendations

2.1 Create a diversity of habitats at Adobe Reservoir. A reservoir designed with islands, coves, a variety of water depths, and flooded wetlands will provide a diversity of habitat types for cover, nesting and foraging.

2.2 Create a variety of water depths and mud flats. Artificial and managed water sources, such as is slated for Adobe Reservoir can be managed to optimize foraging habitat for a variety of waterbird species. For example, shorebirds feed in waters < 15 cm, while most prefer water depths < 4 cm. Dabbling ducks are found with shorebirds. Grebes feed in waters < 2 m (Isola et al. 2000).

2.3 Maintain year round flooded *Carex* and *Iris* wetlands around perimeter of open water at Adobe Reservoir. Consider reservoir water depth at peak and low flows and avoid complete submersion or complete draining of *Carex* meadows. This habitat provides nesting substrate for Yellow-headed Blackbirds during late May, June and July. Yellow-headed Blackbirds placed nests 10cm above high water mark, with at least 10cm of *Carex* or *Iris* cover above this. Additionally, this habitat provides important cover for waterfowl broods and adults throughout the year. (see species specific recommendations below).

2.4 Deter parking or driving along reservoir edge or wetland meadow. Parking or driving vehicles (other than what is necessary for restoration activities) near streams, ponds or other wet areas will compact soils and counteract the benefits of restoration activities. We recommend creating a parking/camping area at a drier, upland location, adjacent to the reservoir.

3. Upland Restoration and Recommendations

3.1 *CalPIF SBCP*. Restore uplands in conjunction with riparian restoration. Projects that involve fencing riparian areas should consider getting more "bang for the buck" by including substantial areas of adjacent upland habitat.

3.2 Restore or rehabilitate degraded and disturbed [sagebrush] sites to native plant communities (Paige and Ritter 1999). A loss of sagebrush habitat, both in amount and quality, is thought to be responsible for declines in Greater Sage-Grouse and Brewer's Sparrow. On severely damaged or degraded sites such as is found in the lower Adobe Valley pastures, the restoration of a native and diverse sagebrush plant community may be an expensive, long-term goal. Short of this goal, it may be possible to restore the vegetative structure (e.g. variation in shrub heights, mosaic pattern) to benefit some bird species (Paige and Ritter 1999).

3.3 *CalPIF SBCP*. Use native vegetation in restoration and fire rehabilitation efforts. Federal agencies have policies that dictate a preferential use of native grasses and forbs (Richards et al. 1998). Because of a low availability of commercially available native seed non-native grasses such as crested wheatgrass continue to be widely used. Where possible, local seeds should be collected and grown out which takes planning and long-term commitments from buyers. It is important to strive to use native species whenever possible in restoration efforts because of the tendency of non-native species to form monocultures, or even to become invasive, resulting in vegetative communities having less plant species diversity and lower quality wildlife habitat (Strait 1999).

3.4 *CalPIF SBCP*. Do not disturb soil or use fire in situations where cheatgrass or other invasive plants are present. Evaluate, on a site by site basis, the potential for invasive plant establishment. Even where risk is low, care should be taken to minimize soil disturbance.

4. Management Recommendations

4.1 Stop irrigating meadows adjacent to Adobe Creek to allow for maximum in-stream water flows. (see riparian restoration recommendations).

4.2 Limit management activities (such as controlled burning, livestock grazing, restoration activities and other vegetation disturbance or removal) to the non-breeding season. The breeding season for birds begins prior to the laying of an egg, when pair bonding, nest location choices and nest building take place. Songbirds will take about a month after the first egg is laid to fledge young and another two weeks to advance fledglings to independence. The breeding season for birds on Adobe Valley LLC lands is mid March through August, with most nests initiated in June. Riparian breeding songbirds nest May through August. Sagebrush nesting birds tend to nest two weeks to one month earlier in other regions of the eastern Sierra and Greater Sage-Grouse begin nesting in early to mid April. Hawks, magpies and owls at Adobe begin to initiate nests in mid to late March. To avoid impacts to riparian breeding birds, but to also allow for a larger window of opportunity for construction and restoration activities, we recommend avoiding riparian vegetation disturbance May – August. Additionally, we recommend locating the riparian nests of early nesters Long-eared Owl and magpies and avoiding disturbance of vegetation around owl nests (100m radius buffer) from mid March to early May (see species specific recommendations below).

4.3 Remove livestock grazing from riparian corridors. Our data from Adobe Valley LLC properties demonstrate that sites with multiple vegetation layers and a wider riparian corridor correspond with high bird species richness. Extensive grazing in the riparian zone can lead to decreases in riparian width, lack of understory vegetation and tree recruitment, shrub layer "high-lining" (e.g. the destruction of all foliage within the reach of livestock), and a decrease in herbaceous cover or height. Sensitive species such as Willow Flycatchers and Yellow Warblers have been shown to increase in abundance where livestock grazing has been removed (Taylor and Littlefield 1986, Krueper et al. 2003). In the Mono Basin, Willow Flycatchers have returned to habitats from which they were previously extirpated, most likely as a result of the combination of re-watering, stream morphology restoration, and the removal of livestock grazing form the riparian corridor (McCreedy and Heath 2005). Livestock grazing may also pose an

indirect threat to riparian-dependent bird species by changing nest predator composition and potentially increasing nest predation rates (Ammon and Stacey 1997, Jones and Longland 1999, Meaney et al. 2002).

The challenge for restoration activities on Adobe Valley LLC properties - especially in light of the need to provide project income through grazing leases - will be to manage grazing in a manner that can assist reaching restoration goals, rather than offsetting restoration activities. Proposals to fence off riparian areas from livestock grazing will speed the regeneration of those habitats on Adobe Valley LLC lands, and complete livestock exclusion is recommended for highly degraded riparian areas (see Bellows 2003 for several sources). Carefully managed grazing has been noted as a way to create wildlife habitat in disturbed riparian areas by increasing plant and structural diversity or controlling exotics (Bellows 2003). However, successful managed grazing systems require a thorough understanding of how livestock grazing changes plant communities and an intimate knowledge of the habitat requirements of specific wildlife species (Lunchbaugh 2005).

4.4 *CalPIF SBCP*. Incorporate rotational grazing strategies to minimize effects of livestock. Effective use of rotational grazing practices allows deferring grazing for longer than is usually done during the important nesting months of May and June.

4.5 When managing for healthy riparian habitats, beware of transferring habitat degradation to other habitat types. Riparian habitats harbor the most diverse bird communities of any habitat in western landscapes (Knopf et al. 1988). Paradoxically, these habitats are often the most degraded, altered and threatened (Ohmart 1994). With good reason, riparian habitat has been targeted for local and large-scale restoration and conservation activities, especially in California (e.g. RHJV 2004). However, human induced pressures also threaten the quality and productivity of other habitat types, such as sagebrush in the Great Basin region (Knick et al. 2003). Excluding livestock from riparian areas will assist the regeneration of that habitat, but will transfer grazing impacts to adjacent sagebrush and grasslands. Carefully managing the timing and intensity of grazing in the adjacent sagebrush and grassland habitats will also be necessary, especially if project goals are to return or maintain bird species of conservation concern such as the Greater Sage-Grouse, Northern Harrier, Loggerhead Shrike, Brewer's Sparrow and Sage Sparrow.

4.6 *CalPIF RBCP*. Control and eradicate invasive non-native plant species. Invasive, introduced plants such as cheat grass (*Bromus tectorum*) and tamarisk (*Tamarix* spp.) affect native birds by: 1) competing with native vegetation, thereby eliminating useful foraging and nesting habitat, 2) potentially providing a sub-optimal nesting substrate,

in which nest success could be reduced, and 3) reducing several orders of native insects (NPS 1998).

4.7 *CalPIF SBCP*. Make sure livestock watering tanks are equipped with escape ramps. Make sure livestock watering troughs and tanks have adequate escape ramps for birds and other wildlife (Sherrets 1989).

4.8 CalPIF SBCP. Protect microhabitats of taller sagebrush. Narrow strips of big sagebrush which occur along drainages in valley bottoms and small stands of tall sagebrush within a matrix of shorter stature shrubs can provide nesting habitat to many species of birds including Greater sage-grouse, Loggerhead Shrike, and Gray Flycatcher. In some cases these areas act as magnets for livestock who seek out their shade and use them as scratching posts, ultimately degrading their value.

4.9 Where appropriate, manage for healthy aspen groves. Habitats dominated by aspen are bioregionally important, supporting the most rich, diverse and abundant riparian breeding songbird populations in the eastern Sierra Nevada (Heath and Ballard 2003, Heath and Ballard 2005). Aspen habitats occur on Inyo National Forest lands upstream of Adobe Valley LLC lands in Dexter Canyon. This aspen site supported higher breeding bird species richness than any other site on Adobe Valley LLC lands. Livestock and wild ungulate grazing, conifer encroachment and fire suppression are the leading causes of aspen decline in the Sierra Nevada (D. Burton, Aspen Delineation Project, pers. com.). We do not recommend planting aspen on Adobe Valley LLC lands downstream of Dexter Canyon as conditions appear unsuitable. However, keeping livestock from grazing in existing aspen groves would benefit breeding birds at Dexter Canyon by allowing for aspen regeneration and the maintenance of a healthy herbaceous understory. Richardson and Heath (2004) found that herbaceous cover was positively correlated with breeding bird species richness and abundance in eastern Sierra Nevada aspen groves. Excluding grazing around aspen groves may also allow for aspen to expand in the Canyon.

4.10 Avoid development and management activities that provide forage for Brown-headed Cowbirds. Cowbirds have specific foraging needs which tie them to livestock, agriculture, and residential areas (Rothstein 1980, Goguen and Mathews 1999). Eastern Sierra studies have demonstrated that cowbirds commute up to 7 km between morning riparian breeding grounds and afternoon foraging areas where high concentrations of artificially rich food sources (such as spilled oats or hay) are available (Rothstein et al.1980, Rothstein et al. 1984). Because so little human development exists in the Adobe Valley or Glass Mountain region, it is likely that Adobe Ranch is providing a major foraging area for cowbirds in the region. Because cowbirds are known to commute such

long distances between foraging and breeding areas, it would probably be necessary to remove corrals from Adobe Valley completely in order to assure that they were not influencing cowbird numbers on Adobe Valley LLC riparian breeding areas. If it is necessary that corrals remain on Adobe Valley LLC properties, we recommend making them less attractive to cowbirds by raking and removing manure, hay or grain and keeping them generally clean.

5. Private Parcel Recommendations

The construction of several private residences on the Adobe Ranch could potentially create disturbance and other impacts to the nearby area. Impacts from adjacent developed parcels should not offset wildlife benefits of habitat restoration activities within the WRP's on Adobe LLC lands.

5.1 Avoid construction of human facilities within floodplains and riparian areas. In a report recommending riparian and floodplain setback zones for development in Placer County, California, Jones and Stokes (2005) recommended a setback of the active floodplain plus 30 m to conserve stream and riparian functions, and active floodplain plus 100 m (preferably 200 m) for wildlife conservation purposes.

5.2 Consider impacts of domestic water wells on maintenance of ground water levels necessary for desired restoration.

5.3 Restrict free-roaming domestic pets from adjacent parcels (cats or dogs in particular) within WRP boundaries. The impacts of house cats on birds and other wildlife has been well documented (Coleman and Temple 1996, Soulé et al. 1998, Hawkins et al. 1999).The addition of potentially 5 new top predators to the Adobe ecosystem (if all five parcels are developed and owners have pets) can drastically impact bird populations and offset restoration and habitat benefits to wildlife. Sage-grouse leks and broods are especially susceptible to predation or disturbance by domestic dogs (BLM pers. comm.).

5.4 Restrict / avoid providing forage for Brown-headed Cowbirds in newly developed parcels. See above re: predators. PRBO has documented that bird feeders in remote, suburban or small town settings support as many cowbirds as traditionally reported feeding sites (such as cattle lots, pack stations etc., PRBO data). Cattle gathering areas at Adobe Ranch already support Brown-headed Cowbirds. The addition of new cowbird feeding areas (such as bird feeders) in the Adobe Valley area will increase cowbird

numbers and probably increase parasitism rates on riparian and upland breeding songbirds.

6. Species Specific Recommendations

6.1 *Yellow-headed Blackbird*: protect and maintain breeding colonies. Maintain flooded *Carex* wetlands around perimeter of open water at Adobe Reservoir. Consider reservoir water depth at peak flows and avoid complete submersion of *Carex* meadows during late May, June and July (blackbird breeding season). Yellow-headed Blackbirds placed nests 10cm above high water mark, with at least 10cm of *Carex* or *Iris* cover above this.

6.2 *Waterfowl*: Maintain year round flooded *Carex* wetlands surrounding Adobe Reservoir. The flooded wetlands around the perimeter of Adobe Reservoir, primarily composed of *Iris* sp., *Carex* spp., and *Juncus* spp., provided cover for waterfowl broods; we often observed Mallard, Cinnamon Teal and coot families emerging from or disappearing into the protected flooded wetland areas. This habitat was also used by American Coot for nesting.

6.3 *Greater Sage-Grouse*: return Indian Meadow lek site to pre-irrigation hydrology and condition. During Adobe field trips, some concerns were raised over what effects current irrigation or removal of irrigation will have on the historic sage-grouse lek site at Indian Meadows. Although monitored since 1984, this lek has been inactive since 2000 and the reason for the lek disappearance is unknown. We proposed that irrigation be removed from this meadow because naturally occurring springs and seeps will likely maintain a meadow large enough to support a sage-grouse lek and water can be returned to Adobe Creek.

6.4 *Greater Sage-Grouse*: monitor sagebrush-associated vegetation encroachment at Indian Meadows to ensure that a potential open lek site is maintained. Retain the ability to irrigate this meadow to manage as open meadow / potential lek site if the springs and seeps do not provide enough water.

6.5 *Greater Sage-Grouse:* Do not use barbed-wire fencing and avoid artificial perch sites. Fences in general are considered a hazard to sage-grouse because they offer potential raptor perches, which may increase predation in the area. Barbed wire fences are a particular hazard for sage-grouse because they cannot always see the wires, especially when flying low during low light conditions. BLM Bishop Field Office has documented Greater Sage-Grouse mortality along barbed wire fence lines. They recommend that in areas near sage-grouse strutting grounds, fences should be avoided altogether if possible. If fences are necessary to control livestock, a let-down fence system that can be

laid down during the strutting season (March through May at minimum) is recommended. Away from leks, the benefits of fencing need to be weighed against the hazards. If it is determined that fencing will be beneficial, the fence needs to be designed to be as wildlife friendly as possible. To fence a small area, a log or rail fence might be more visible and less hazardous. If barbed wire is used, from a sage-grouse perspective it should be as low as possible and have as few wires as possible. The BLM's wildlife-friendly barbed wire spacing specifications are: bottom wire 18" from ground, middle wire 28" from ground (10" up from wire below), top wire 40" from ground (12" up from wire below). The bottom wire is high enough to allow pronghorn to crawl under. The top wire is low enough to allow mule deer to leap over. The middle wire should be at least 12" below the top wire to minimize the chance of a deer getting its leg caught between the top and middle wires (J. Fatooh, pers. comm.).

6.6 *Raptors*: maintain a diversity of habitats. Ensuring the ongoing health of the diverse habitat types present at Adobe will help maintain the diversity of raptors currently present. Especially important are the undisturbed cliffs used by several species for nesting. The surrounding habitats are also essential, providing food and cover for prey species including birds, mammals, reptiles and insects.

6.7 *Raptors*: prevent disturbance at cliff nesting sites. This includes disturbance by climbers and other cliff visitors as well as disturbance from future construction activities. Especially important is limiting disturbance at the top of the cliff habitat. Limiting disturbance by vehicle traffic along the road paralleling the Adobe Cliffs may also be necessary if increases in vehicle travel are expected during the breeding season.

6.8 *Raptors*: prevent the direct destruction of nest structures and removal of falcon nestlings for falconry. Clear signage and limited access should be considered to ensure no direct impacts to raptors.

6.9 *CalPIF SBCP Raptors*: Protect isolated trees used by nesting raptors in otherwise open habitats. Large trees in otherwise open grass- or shrub-dominated landscapes can increase breeding diversity of birds greatly and provide nest sites for species such as Ferruginous Hawk and Red-tailed Hawk. These sites are often used perennially, and once identified should be protected from removal and from damage by livestock.

6.10 *Raptors*: use no poisons. Raptors can be secondarily poisoned when other animals eat poisons and are weakened and easy to catch. Physical traps (live or lethal) or direct removal (shooting) should be used if mammals such as rats or mice become pests.

6.11 *Raptors*: reintroduce Peregrine Falcons with caution. The habitat provided at Adobe Ranch is more suited to Prairie Falcons than Peregrine Falcons. The area is drier and supports their preferred prey – Horned Lark and ground squirrels (*Spermophilus* spp.). The reservoir supports ducks and could be attractive to Peregrine Falcons but the planned increase in fishing may interrupt falcon hunting activities and not allow for successful hunting and nesting. With Peregrine Falcons releases occurring at nearby Crowley Lake, the Adobe area will likely be used by Peregrine Falcons if conditions are appropriate. Peregrine Falcon will kill Prairie Falcons, so caution should be used if considering the reintroduction of Peregrine Falcons.

6.12 *Raptors*: maintain ecological balance of nest predators and scavengers. We documented two active Common Raven nests, one near the Ranch buildings at the mouth of Dexter Canyon and one in North Canyon. Ravens can be aggressive towards other species including Prairie Falcon, and compete for nest sites. Raven populations can be artificially supported at higher numbers when allowed to utilize human or stock food sources. Both uncovered cattle feeding operations and human garbage will support additional pairs.

6.13 *Raptors*: consider mitigation measures if alteration of raptor habitat is unavoidable during development. Mitigation measures may include planting replacements trees, building artificial nest structures, or providing undisturbed areas of unaltered habitat.

6.14 *Long-eared Owl*: protect existing stick nest structures (such as those constructed by American Magpies) in willows on Adobe Creek. It is important to not only avoid direct disturbance to nests during the Long-eared Owl nesting season (mid March through early May), but to also maintain suitable nest structures such as those provided by old magpie nests. Long-eared Owls not build their own nests but rely on existing stick nest structures. Several of these nest structures can be found and protected on Adobe Creek, particularly in areas where the owls have been known to breed. We recommend a 100m undisturbed buffer around nests during the breeding season and retaining willows containing stick nests near known historic Long-eared Owl nesting sites.

7. Monitoring Recommendations

7.1 *CalPIF RBCP*. Managers should seek to incorporate a program of monitoring bird populations to assess avian response to riparian, upland and wetland restoration projects. Monitoring bird population responses to restoration measures is one of the most cost-effective ways of gauging project success. If mistakes are made and practices are harming bird populations, managers can alter their methods and avoid making

similar mistakes in the future. With additional monitoring, a steady feedback loop of management, monitoring, and revision of practices is established.

7.2 *CalPIF RBCP*. Consider reproductive success when monitoring populations and assessing habitat value. The number of young produced (reproductive success) critically influences a bird population's presence, health and sustainability in an area. Low nest success could indicate a nonviable population. Relatively recent, local extirpation and declines of some western songbird species from their historical breeding range appear to be caused by low productivity (Johnson and Geupel 1996, Chase et al. 1997, Gardali et al. 2000, Ballard et al. 2003). Local extirpation may signal the early stages of a process of species extinction. By determining the factors associated with low reproductive success, research may identify which management and restoration actions will help reverse songbird population declines. Monitoring common species has the duel benefit of providing statistical power for analysis, and providing gauges that allow management changes before it is too late.

INTRODUCTION AND BACKGROUND

Adobe Valley LLC (owners) intends to implement a comprehensive plan to restore and enhance riparian, upland, wetland and aquatic habitat on the Adobe Ranch while also enhancing it's economic viability and developing sustainable sources of recreation (Pearce 2005). The Adobe Ranch has been identified by California Department of Fish and Game (CDFG), Inyo National Forest (USFS), Bureau of Land Management (BLM), Audubon California, Eastern Sierra Land Trust, Trust for Public Lands, The Nature Conservancy, and the American Land Conservancy as a conservation priority (e.g. Cooper 2004, BLM, CDFG, USFS pers. coms.). The ranch contains a riparian system and a wide variety of other habitat types, ranging from the high country springs and wet meadows that are the headwaters of the Adobe Creek to the floor of Adobe Valley where the drainage ends in a saline ephemeral lake (Adobe Lake). Over the past 150 years, the ranch has been heavily utilized for a variety of economic purposes including extensive grazing and its value for wildlife has been degraded. Thus, despite the ranch's potential as valuable wildlife habitat, there is much work to be done to achieve that potential.

The owners intend to implement many improvements laid out in the *1995 Draft Plan of the Eastern Sierra focus group of the Intermountain West Joint Venture* (IWJV 1995). In addition, the owners propose to (as in Pearce 2005):

- construct riparian corridor and riparian pasture fencing to facilitate riparian regeneration along Adobe Creek and Dexter Creek.
- enhance Adobe Reservoir to create a mix of open water, islands, shallow water flats, and permanent seasonal wetlands to support a diversity of wildlife and to enhance the well-established German Brown Trout fishery
- remove fencing near the historic Greater Sage-Grouse lek in Indian Meadows
- adapt management regimes to benefit sage-grouse and encourage their return to the ranch
- develop sustainable, wildlife-based recreational revenue to keep ranch in open space (primarily fishing but also potentially hunting, wild mustang watching, bird watching, etc.)
- pursue the potential reintroduction of special status species in cooperation with United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG)
- maintain ranch as viable cattle operation
- improve irrigation management to enhance pasture productivity
- restore existing degraded riparian corridors in order to raise the water table and extend the length of Adobe Creek into Adobe Valley
- maintain the condition of currently healthy-condition riparian zones

- restore former wetland and riparian areas in the lower Adobe Valley
- consolidate ranch ownership; trade high country isolated parcels with USFS for acreage between Dexter Canyon, Reservoir, and Indian Meadows parcels
- establish permanent monitoring transects throughout the project areas, undertake baseline bird monitoring and conduct ongoing monitoring as the improved management and restoration projects are implemented

To accomplish many of the proposed actions and goals, the ranch owners have entered into two Wetland Reserve Programs (WRP) and two Environmental Quality Incentive Programs (EQIP) with the Natural Resources Conservation Service (NRCS) to date. WRP 1 and 2 total 1,646 acres along Adobe Reservoir, Adobe Creek and in Adobe Valley. The EQIP projects total 9,500 feet of riparian fencing and two livestock watering facilities in Dexter Canyon and 15,840 feet of riparian fencing and two livestock watering facilities on Adobe Creek (Pearce 2005).

Greenbridges LLC and Adobe Valley LLC approached PRBO Conservation Science (PRBO) in 2004 to conduct baseline documentation of current breeding bird use of the Adobe Valley properties. The NRCS contracted PRBO to continue this work in 2005. The intention is for PRBO to continue to monitor sites established in 2004 in order to assess bird responses to riparian restoration and habitat enhancement projects on Adobe Valley LLC property. PRBO will also provide consultation and review of the restoration and enhancement projects. The monitoring and consultation is intended to help ensure the success of the project's goals to improve riparian and upland bird habitat on Adobe Valley LLC properties. Specific objectives of the baseline bird monitoring project and the status of their completion are stated in Table 1.

Table 1. Objectives proposed for 2005 PRBO bird monitoring study on Adobe Valley LLC lands.

Objective	Completed?
To conduct breeding season avian surveys in current and potential riparian and wetland habitats at Adobe Valley, Adobe Creek and Dexter Canyon, Mono County, California in order to determine bird species occurrence, richness, diversity and breeding status.	YES
To conduct targeted Willow Flycatcher surveys at Dexter Canyon in order to determine presence / absence, breeding status, density and nest site selection of this State Endangered Species.	YES

-continued next page -

Table 1 – continued. Objectives proposed for 2005 PRBO bird monitoring study on Adobe Valley LLC lands.

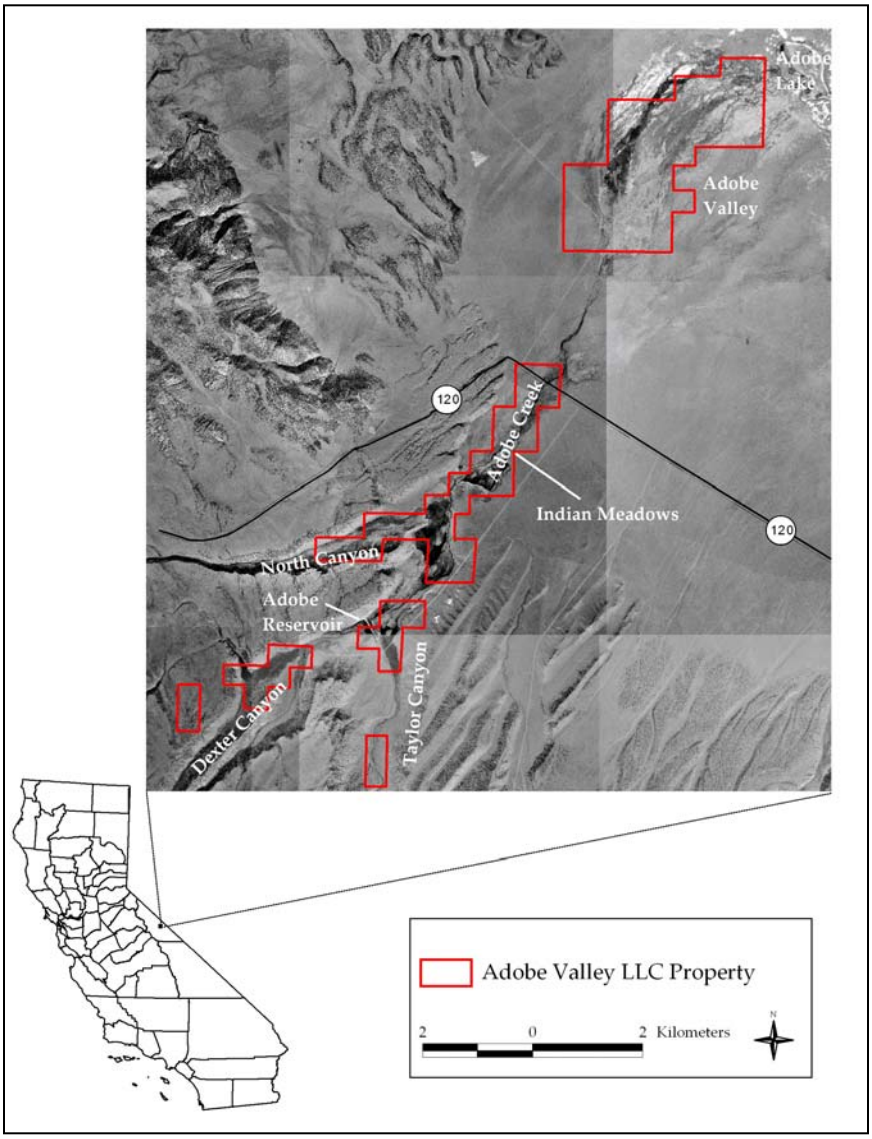
Objective	Completed?
To conduct year round waterfowl and shorebird surveys at Adobe Reservoir and newly created shallow ponds to monitor changes in those bird communities due to restoration efforts.	YES, ONGOING
To coordinate with existing Greater Sage-Grouse surveys conducted by the Bureau of Land Management (BLM) and United States Geological Service (USGS) in the Adobe Valley and environs to determine Sage Grouse presence / absence and status on and around Adobe Valley LLC properties. In particular, we will monitor the historic Adobe Lek site, which has been unoccupied for several years.	YES
To collect data during and after proposed restoration or management activities, in order to compare with baseline data collected in 2004.	YES, ONGOING
To use bird monitoring results to document the potential effects of restoration and management on riparian and upland breeding birds.	YES, ONGOING
To provide Adobe Valley LLC restoration and management efforts with data and experience- based recommendations on breeding bird habitat requirements, thus providing the data component of the Adaptive Management Feedback Loop.	YES, ONGOING

METHODS

Study Area

The study area was located within Adobe Valley LLC properties along Adobe Creek and Dexter Creek, and in Adobe Valley, Mono County, California (37.56° N, 118.41° W, Figure 1). Adobe Valley lies in the east and central portion of the county and is bounded by the Adobe Hills and Antelope Mountains to the north, Benton Range to the east, Glass Mountains to the south, and the Granite and Cowtrack Mountains to the west. Dexter Creek flows northeast out of the Granite Mountains, joins Adobe Creek, and continues northeast into the Adobe Valley.

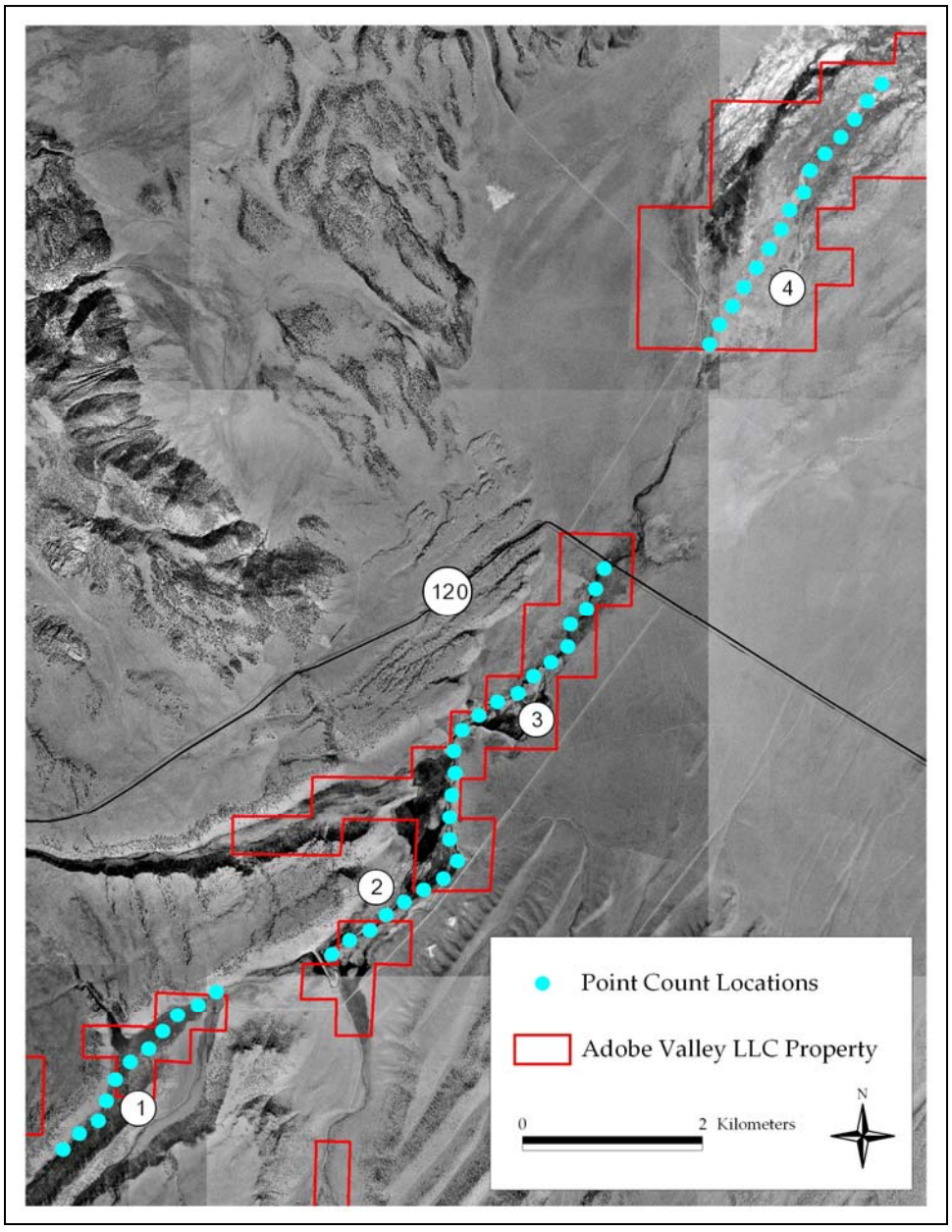
Figure 1. Study area, 2004 - 2005.



Point Counts

Study design. In 2004, we established point count transects along most streamside habitats and, within rabbitbrush (*Chrysothamnus* spp.) / pasture habitats slated for stream morphology restoration, in Adobe Valley LLC properties (Figure 2, Table 2).

Figure 2. Point Count locations, 2004 – 2005. Circled numbers correspond to point count transect id's listed in Table 2.



PRBO biologists chose starting points to all transects in order to contain the total survey transect within Adobe Valley LLC lands. Further, using a Garmin II-Plus Receiver, we

established points randomly at 250m intervals along the existing or proposed stream channels regardless of changes in riparian type or condition. We established 11 - 15 points per transect for a total of 50 independent point count stations (Table 2).

Table 2. Point count transects, 4-letter transect codes, number of points, and census dates, 2005. ID number corresponds to circled numbers Figure 1.

ID	Transect	4-letter code	# points	Visit 1	Visit 2	Visit 3
1	Dexter Canyon	DEXT	11	June 4	June 17	June 29
2	Adobe Creek Upper	ACUP	12	June 4	June 15	June 28
3	Adobe Creek Lower	ACLO	12	June 3	June 14	June 28
4	Adobe Valley	ADVA	15	June 2	June 13	June 23

Censuses. PRBO biologists trained in distance estimation and familiar with songs and calls of local birds conducted all point count censuses. We censused all stations 3 times during the songbird breeding season (June 1 – June 30, Table 2), and spaced each of the 3 visits at least 10 days apart. We used the Variable Circular Plot (VCP) point count method and followed general guidelines outlined in Ralph et al. (1993) and Rosenstock et al. (2002). We used a precision range finder to determine distances to each bird and recorded detections in increments of 10m out to 50m, in 25m increments out to 100m, and combined all detections beyond 100m. We recorded all birds and type of initial detection (visual, song or call). To minimize observer bias, we used 2 -3 different observers for the three censuses. Additionally, we conducted points in one direction (e.g., 1 through 12) for one or two censuses and in the opposite direction (e.g., point 12 through 1) for one census in order to minimize the effects of time of day on detection rates. We conducted censuses from within 30 minutes after local sunrise until approximately 4 hours later, and did not conduct counts in excessively windy or rainy conditions. Point locations are presented in Appendix 1.

Willow Flycatcher Broadcast Acoustical Surveys

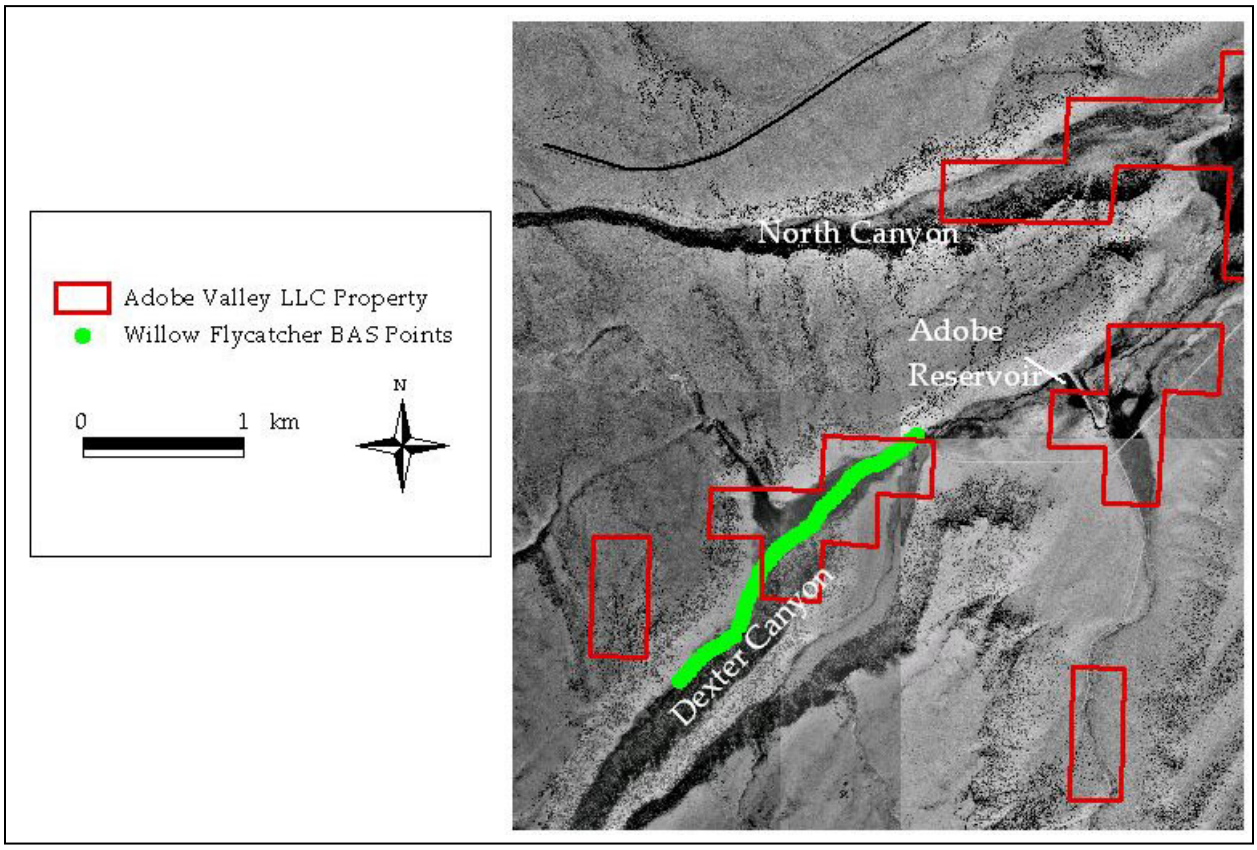
We conducted all Willow Flycatcher surveys under US Fish and Wildlife Service Permit # TE807078-8 and an MOU with CDFG. Because restoration activities have not yet been initiated and because we only detected Willow Flycatcher in Dexter Canyon in 2004, we only performed Willow Flycatcher surveys at Dexter Canyon in 2005 (though other stream sections were covered by point counts in 2005). Following Bombay et al. (2000), we conducted Willow Flycatcher (*Empidonax traillii*) Broadcast Acoustical Surveys (BAS) at 50 stations at Dexter Canyon and repeated surveys three times at each station over the course of the breeding season (Table 3, Figure 3). BAS station locations are in Appendix 2.

BAS were conducted with a JVC Portable Disc Player (XL-P33) and Sony Portable Speaker (SRS-A27), using a mixture of Willow Flycatcher song, calls, and male/female interactions (recordings provided by the Southern Sierra Research Station). The surveyor broadcasted four Willow Flycatcher song vocalizations, and waited two minutes after each broadcast for a response. Vocalizations were broadcast twice at each point on each visit. At stations near high-quality habitat, additional vocalizations (calls and interactions) were broadcast if no Willow Flycatchers were detected after initial song broadcasts.

Table 3. Transect name, number of stations and dates of Willow Flycatcher Broadcast Acoustical Surveys, 2005.

Survey Transect	# points	Visit 1	Visit 2	Visit 3
Dexter Canyon	50	June 14	July 1	July 16

Figure 3. Willow Flycatcher Broadcast Acoustical Survey (BAS) stations, 2005.



In addition, a PRBO biologist thoroughly searched for Willow Flycatchers between BAS stations, noting all additional bird species present and locating as many active nests (for all bird species) as possible. All-species observations and nest searching were continued on return walks to the car.

Cliff-nesting Raptor Surveys

We conducted cliff surveys between April and August 2005 (Table 4). With high powered binoculars and spotting scope, we systematically scanned the approximately 9 km (4 mi.) of cliffs overlooking the length of Adobe Creek on Adobe Valley LLC properties. We timed our surveys during suspected early nest occupancy and just after egg hatch in order to determine presence / absence and breeding status of cliff-nesting raptor species. We divided the surveyed regions into four general cliff areas: Dexter Canyon, Adobe Ranch, Adobe Cliffs and North Canyon (see Figure 5, page 34). We also searched for Long-eared Owl nests on Adobe Creek in areas where the species had been seen in previous years.

Table 4. Raptor surveys at Adobe Valley LLC lands, 2005. Location names correspond with Figure 5, page 34.

Survey Date	Dexter Canyon	Adobe Ranch	Adobe Cliffs	North Canyon	Adobe Creek
April 23		X			X
April 24	X	X	X		
April 25			X	X	X
June 4	X	X	X		
June 9		X	X		
June 11		X	X		
June 13	X				
June 14			X		
June 16			X		
July 22			X	X	

We followed guidelines suggested by the Santa Cruz Predatory Bird Research Group (http://www2.ucsc.edu/scpbrg/). We were prepared to conduct four hour watches at each cliff segment once per month, April - July to conclusively determine absence but no significant stretches of cliffs lacked activity. We focused our observations on active nests and conducted regular nest checks to determine success or failure. Observations of copulation events, females incubating eggs, food delivery to nests, and the presence of nestlings or fledglings all factored into our assessment of breeding status.

Adobe Reservoir Surveys

We conducted bird counts at Adobe Reservoir during twenty visits April 23 – November 14, 2005 (Table 5). We performed three surveys per month during high use periods of spring and fall migration and breeding season (10 days apart in each of April, May, June, July, August, September, and October), and one survey per month during low use periods of winter (November). Surveys will continue once per month through the winter of 2005 / 2006 and results for those months will be reported in 2006. We documented the species and number of all birds in or adjacent to the reservoir. We recorded habitat types (open water, shallow water edge, flooded wetland, dam and riparian at reservoir outlet). When possible, we determined whether individuals were adults or hatch year birds. We completed all counts by 1000 with the exception of the April 23 count (1300). Count duration was a minimum of 5 minutes and a maximum of 50 minutes. We found there was no relationship between the total number of birds detected and the duration of the count ($P > 0.05$).

Table 5. Dates of Adobe Reservoir waterbird surveys, 2005.

Month	Visit 1	Visit 2	Visit 3
April	--	--	April 23
May	May 10	May 19	May 30
June	June 11	June 28	June 29
July	July 11	July 22	July 31
August	August 9	August 17	August 30
September	September 13	September 22	September 30
October	October 10	October 21	October 31
November	November 14	--	--

Nest Finding

We found nests before, after and between point counts, vegetation assessments (in 2004) and BAS in order to confirm breeding status and to gather incidental information on cowbird parasitism and nesting phenology. With the exception of raptor nests (described above), nests were not monitored or revisited to determine outcome.

Geographic Data

All survey locations and most sightings of Federal or State Threatened and Endangered and California Bird Species of Special Concern were GPS'd with a Garmin II-Plus

Receiver. Coordinates of special status species will be submitted to the California Natural Diversity Database.

Statistical Analysis and Definitions

Breeding species diversity, richness and total abundance: Using PointCnt 2.79 (Ballard 2004), we summarized by-point species richness and abundance for breeding species detected within 50m during point counts and summed over 3 visits. We excluded all non-breeding migrant species. We further limited the breeding species to those that were best assessed with the point count protocol. Thus we removed non-territorial species, and species whose territories are typically so large that we could not assure independence of individual observations among points. Nocturnal species were also excluded. Excluded species included all Common Ravens, Clark's Nutcrackers, nighthawks, swallows, swifts, ducks, shorebirds, and raptors.

Breeding species diversity: The transformed Shannon-Wiener index of biological diversity, denoted N_1 (MacArthur 1965, Krebs 1989). This index of diversity is usually highly correlated with bird species richness, but also takes the number of individuals of each species into account. Higher scores on the Shannon-Wiener index indicate higher species richness and more balanced numbers of individuals of each species added. Expressed mathematically:

$$N_1 = e^{H'} \text{ and } H' = \sum_{i=1}^{i=S} (p_i)(\ln p_i)(-1)$$

Where S = total species richness and p_i is the proportion of the total numbers of individuals for each species (Nur et al. 1999). High index scores indicate both high species richness and more equal distribution of individuals among species.

Breeding species richness: Number of breeding species.

Total abundance: Number of individuals of all breeding species combined.

Relative abundance: We calculated the mean number of individuals detected for each breeding species by transect, averaged over 3 visits. We used all detections within 50m. Because few species are 100% detectable, such calculations underestimate true density. Therefore results should be considered an index of abundance (relative abundance).

All statistical calculations were performed using Stata 8.0 (Stata Corp. 2003). Significance was assumed at $P < 0.05$.

Breeding Status

We determined breeding status for all species encountered on the study site in 2004 and 2005. We used observations recorded before, during, and after project setup, point count censuses, BAS and vegetation assessments. We ranked species by site following four criteria of the Riparian Habitat Joint Venture breeding scale, modified from breeding bird atlas criteria (see http://www.prbo.org/calpif/criteria.html.):

No evidence of breeding: Species not detected during breeding season, or species known not to breed within the general study area.

Possible breeding: Species encountered singing or acting territorial only once during the breeding season (in suitable habitat).

Probable breeding: Singing individual encountered on 2 or more different days of standardized censuses (at least one week apart); territorial behavior noted more than once at the same location; pair observed in courtship behavior.

Confirmed breeding: distraction display; nest building (except woodpeckers and wrens); nesting material or fecal sack being carried by adult; dependent juveniles with adults; active territory observed on at least three days (at least one week apart); active nest observed.

RESULTS AND DISCUSSION

Bird species composition, distribution and breeding status.

We detected and determined breeding status for 122 species within the study area in 2004 and 2005 (Appendix 3).

Species of concern

In 2005 we detected 19 species that occur on one or more of the following lists: California State Threatened, California State Endangered, California Department of Fish and Game Special Animals (CDFG SA), California Bird Species of Special Concern, USFS Region 5 Inyo National Forest Sensitive Species, USFWS Birds of Conservation Concern for the Great Basin Conservation Region, or the World Conservation Union Special Survival Commission Red List (Table 6). We submitted all CDFG SA species detected during 2004 (197 records) to CDFG's Natural Diversity Database and will submit 2005 records in the winter of 2005. See Heath and McCreedy (2005) for 2004 sightings.

Table 6. Listed species detected at Adobe Valley, 2005. Scientific names listed in Appendix 3. TL = species listed specifically for this time or location (r = rookery, n = nesting, c = colony, w = wintering, u = unspecified).

Common Name	TL	ST	SE	CDFG SA	CDFG BSSC	USFS R5 INF SS	USFWS BCC BCR 9	IUCN
Great Blue Heron	r			X				X
Great Egret	r			X				X
Black-crowned Night-Heron	r			X				X
Northern Harrier	n			X	3rd			X
Cooper's Hawk	n			X				X
Swainson's Hawk	n	X		X		X	X	
Golden Eagle	nw			X			X	X
Peregrine Falcon	n			X			X	X
Prairie Falcon	n			X			X	X
California Gull	nc			X				X
Long-eared Owl	n			X	2nd			X
Rufous Hummingbird	n			X				X
Red-breasted Sapsucker	n			X				

- continued next page -

Table 6. – continued-

Common Name	TL	ST	SE	CDFG SA	CDFG BSSC	USFS R5 INF SS	USFWS BCC BCR 9	IUCN
Loggerhead Shrike	n			X	2nd		X	X
Horned Lark**	u							X
Yellow Warbler	n			X	2nd			X
Brewer's Sparrow	n			X			X	X
Sage Sparrow	u						X	
Yellow-headed Blackbird	n			X	3rd			X

** Full species for IUCN status, coastal subspecies for CCDF BSSC

ST = State Threatened, SE = State Endangered, CDFG SA = CDFG Special Animals, IUCN = The World Conservation Union Special Survival Commission Red List (CDFG 2005); CA BSSC = California Bird Species of Special Concern draft list, 2005 and priority # (CDFG & PRBO 2005); R5 INF SS = USDA Forest Service Region 5 Inyo National Forest Sensitive Species (USFS 2001); USFWS BCC BCR9 = U.S. Fish and Wildlife Service Birds of Conservation Concern, Great Basin Bird Conservation Region (9, USFWS 2002).

Great Blue Heron. Detected at Adobe Reservoir April 23, 24 & 25, and June 14, and at Adobe Valley June 23. Shuford and Metropolis (1996) observed this species in the Adobe Reservoir Atlas block. Both their and our sightings represented individuals, not rookeries.

Great Egret. Observed at Adobe Reservoir on April 23. Shuford and Metropolis (1996) did not detect this species within any of their Glass Mountain Atlas blocks.

Black-crowned Night-Heron. Observed one individual on June 3 and June on our Adobe Valley Lower point count transect (Figure 2). Shuford and Metropolis (1996) did not detect this species.

Northern Harrier, *Cooper's Hawk*, *Swainson's Hawk*, *Golden Eagle*, *Peregrine Falcon*, *Prairie Falcon* and *Long-eared Owl* accounts are presented in the raptor results section of this report (page 33).

California Gull. We detected a single individual soaring high overhead from Dexter Canyon on June 14. The nearest nesting colony for this species is on the islands of Mono Lake.

Red-breasted Sapsucker. Detected throughout June and once in late April in Dexter Canyon. Shuford and Metropolis (1996) confirmed breeding in Dexter Canyon.

Loggerhead Shrike. Detected in sagebrush habitats adjacent to Adobe Creek in late April and June and in Adobe Valley during our point counts in June. We detected an average of one individual per visit on our Adobe Creek Lower point count transect (see Table 11). Shuford and Metropolis (1996) confirmed breeding adjacent to Adobe Creek.

Horned Lark. Our second highest detected species on the Adobe Valley transect, where we detected an average of 10 individuals per visit (see Table 12). Shuford and Metropolis (1996) confirmed breeding in Adobe Valley.

Yellow Warbler. We detected an average of 4.33 individuals per visit in Dexter Canyon (see Table 9). We detected a few individuals on Adobe Creek, but do not suspect breeding there at this time. Yellow Warblers have been shown to respond quickly to restoration efforts (Krueper et al. 2003, Taylor and Littlefield 1986), and we expect them to be a good indicator species of early riparian restoration efforts at Adobe. Shuford and Metropolis (1996) observed this species in Dexter Canyon where it probably bred and along Adobe Creek where it possibly bred.

Brewer's Sparrow. The most common species detected on the Adobe Valley transect, where we detected 11.67 individuals per visit (see Table 12). We also detected this species in sagebrush habitats adjacent to Adobe Creek. Shuford and Metropolis (1996) found this species in 97.3% of Atlas blocks.

Sage Sparrow. Present in higher numbers at Adobe Valley in 2005 than in 2004, when we detected 7 individuals per visit (versus 1 individual per visit in 2004, Table 12). We also detected this species along Adobe Creek Lower in small numbers. Shuford and Metropolis (1996) confirmed breeding in the region of our Adobe Valley transect.

Yellow-headed Blackbird. We found four Yellow-headed Blackbird nests in the flooded *Carex* spp. and *Iris* sp. fields of the southwestern end of Adobe Reservoir. We also suspect nest locations along the reservoir's northern edge. They began building nests and laying eggs in late May. Their nests were typically built 10cm above the knee-deep reservoir flood water and constructed around stems of *Iris* sp. or *Carex* spp.. Our maximum Yellow-headed Blackbird count during the breeding season at Adobe Reservoir was 10 pairs. We also detected 39 individuals in mid September. This probably included adults and juveniles. Shuford and Metropolis (1996) detected this species in lower Adobe Valley, but not at Adobe Reservoir.

California Partners In Flight Bird Conservation Plan focal species

We detected 8 riparian, 5 coniferous forest, 3 grassland and 9 sagebrush California Partners In Flight (CalPIF) Bird Conservation Plan focal species within the study area (Table 7). Focal species are not necessarily sensitive or of concern, but are listed under the assumption that if a landscape is managed to meet the focal species' needs, other species will benefit. Several of the focal species are also still relatively common enough

Table 7. California Partners In Flight riparian, sagebrush, coniferous forest or grassland Bird Conservation Plan focal species detected within the study area, 2004 and 2005.

Common Name	Riparian	Sagebrush	Coniferous Forest	Grassland
Northern Harrier				X
Willow Flycatcher	X			
Gray Flycatcher		X		
Loggerhead Shrike		X		
Warbling Vireo	X			
Horned Lark		X		
Tree Swallow	X			
Brown Creeper			X	
Sage Thrasher		X		
Yellow Warbler	X			
Mac Gillivray's Warbler			X	
Common Yellowthroat	X			
Wilson's Warbler	X			
Western Tanager			X	
Green-tailed Towhee		X		
Brewer's Sparrow		X		
Vesper Sparrow		X		
Sage Sparrow		X		
Savannah Sparrow				X
Fox Sparrow			X	
Song Sparrow	X			
Dark-eyed Junco			X	
Black-headed Grosbeak	X			
Western Meadowlark		X		X
Yellow-headed Blackbird				

[1] RHJV 2004, Chase and Geupel 2005, CalPIF 2000, CalPIF 2002, CalPIF 2005

in California to provide adequate sample sizes for trend monitoring, determining habitat relationships or estimating demographic parameters – all factors that can assist in the management of healthy bird populations (RHJV 2004, Chase and Geupel 2005, CalPIF 2000, CalPIF 2002, CalPIF 2005).

Breeding status of the focal species was submitted for inclusion into the CalPIF statewide database to assist in documenting the most current California breeding distribution for these species. Distribution maps for the focal species are periodically updated by CalPIF in order to incorporate the most current data. See http://www.prbo.org/calpif/livemaps.html for the most current and interactive California distribution maps for all CalPIF riparian and coniferous focal species and http://cain.nbii.gov/prbo/calpifmap/ for the study site database in which Adobe Valley has been included.

Breeding Bird Abundance, Species Richness and Species Diversity

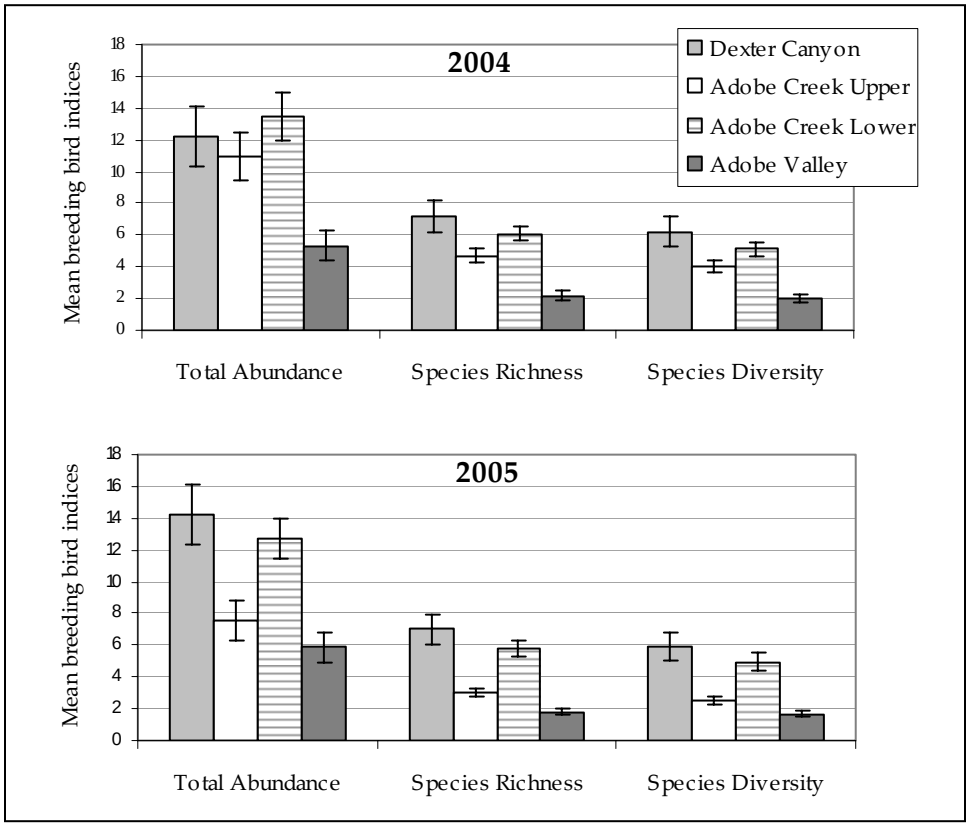
By-transect breeding bird abundance, species richness and diversity were highest at Dexter Canyon and Adobe Creek Lower (Table 8). Transects had similar species richness and diversity in 2004 and 2005, with the exception of Adobe Valley Upper, where we detected much fewer bird species and individuals than in 2004.

Table 8. By transect species abundance, richness and diversity for breeding birds detected within 50m of point count stations, summed over 3 visits and over all points in transect, 2004 & 2005.

	Tot. Abundance		Species Richness		Species Diversity	
	2004	2005	2004	2005	2004	2005
Dexter Canyon	135	156	26	24	17.67	15.41
Adobe Creek Upper	132	90	17	9	8.55	5.04
Adobe Creek Lower	168	153	22	21	13.81	11.12
Adobe Valley	80	88	7	5	4.04	3.25

We account for the varying number of points within each transect by also providing a mean by point, by transect value for each transect. Even with this corrected value, Dexter Canyon and Adobe Creek Lower had the highest breeding bird indices in both 2004 and 2005 (Figure 4).

Figure 4. Mean by-point, by-transect species abundance, richness and diversity and standard error for breeding bird species detected within 50m of point count stations, 2004 & 2005.



Species composition and abundance

Song Sparrow, Brewer's Blackbird, Brown-headed Cowbird, Warbling Vireo and Yellow Warbler were the most frequently detected species at Dexter Canyon in both 2004 and 2005 (Table 9). This array of ground, shrub and canopy nesters reflects the diversity of nesting sites available for riparian birds at Dexter Canyon. In the context of our Eastern Sierra – wide riparian bird monitoring program, we consider Dexter Canyon a "hot spot" for riparian breeding bird because it supports a diversity of riparian associated species.

Table 9. Mean number of breeding bird detections per visit, by species, at Dexter Canyon, 2004 & 2005. Number of individuals detected within 50m, during 5-minute point counts, summed over the 11 point transect, mean of three visits.

Species	2004	2005	Species	2004	2005
Calliope Hummingbird	2.67	0.67	Audubon's Warbler	0.33	0.67
Red-breasted Sapsucker	0.00	0.67	MacGillivray's Warbler	0.00	0.67
Red-shafted Flicker	0.33	0.00	Western Tanager	1.33	0.33
Dusky Flycatcher	1.67	1.33	Spotted Towhee	1.33	2.00
Western Wood-Pewee	0.00	1.00	Savannah Sparrow	1.00	0.67
Warbling Vireo	2.00	5.33	Fox Sparrow	1.00	2.33
Steller's Jay	0.33	0.00	Song Sparrow	8.00	6.67
Western Scrub-Jay	0.33	0.00	Black-headed Grosbeak	0.67	1.00
American Magpie	0.33	0.00	Lazuli Bunting	0.67	0.67
Mountain Chickadee	0.67	0.00	Red-winged Blackbird	3.00	4.33
Bushtit	1.33	0.33	Western Meadowlark	1.33	0.33
House Wren	2.67	2.00	Brewer's Blackbird	5.00	6.67
American Robin	1.00	3.67	Brown-headed Cowbird	3.67	5.67
Orange-crowned Warbler	1.00	0.33	Lesser Goldfinch	0.33	0.33
Yellow Warbler	3.00	4.33			

At Adobe Creek Upper, we most frequently detected Red-winged Blackbird, Brewer's Blackbird, and Savannah Sparrow (Table 10). The majority of species detected at Adobe Creek Upper were sagebrush or grassland associated species.

Table 10. Mean number of breeding bird detections per visit, by species, at Adobe Creek Upper, 2004 & 2005. Number of individuals detected within 50m, during 5-minute point counts, summed over the 12 point transect, mean of three visits.

Species	2004	2005	Species	2004	2005
Loggerhead Shrike	0.33	0.00	Savannah Sparrow	7.00	6.67
Bushtit	2.67	0.00	Song Sparrow	4.00	2.67
Blue-gray Gnatcatcher	0.33	0.33	Red-winged Blackbird	10.67	9.67
Mountain Bluebird	0.33	0.00	Western Meadowlark	3.00	1.00
Sage Thrasher	1.33	0.67	Yellow-headed Blackbird	0.67	0.00
Green-tailed Towhee	0.33	0.00	Brewer's Blackbird	10.33	8.33
Brewer's Sparrow	0.33	0.33	Brown-headed Cowbird	0.33	0.33
Vesper Sparrow	0.67	0.00	House Finch	0.33	0.00
Sage Sparrow	1.33	0.00			

The most frequently detected species at Adobe Creek Lower included Red-winged and Brewers Blackbird and Song Sparrow (Table 11). The species composition was similar to that found on the upper reaches of Adobe Creek, and was primarily comprised of sagebrush and grassland associated species.

Table 11. Mean number of breeding bird detections per visit, by species, at Adobe Creek Lower, 2004 & 2005. Number of individuals detected within 50m, during 5-minute point counts, summed over the 12 point transect, mean of three visits.

Species	2004	2005	Species	2004	2005
Morning Dove	0.00	0.67	Green-tailed Towhee	4.67	1.67
Red-shafted Flicker	0.33	0.33	Spotted Towhee	0.00	2.67
Say's Phoebe	1.00	0.00	Brewer's Sparrow	0.33	1.33
Loggerhead Shrike	1.67	1.00	Vesper Sparrow	0.67	0.33
Pinyon Jay	1.00	0.00	Sage Sparrow	1.33	0.67
American Magpie	3.33	2.33	Savannah Sparrow	5.33	8.33
Bushtit	2.33	0.00	Song Sparrow	3.67	4.33
Bewick's Wren	1.33	0.33	Black-headed Grosbeak	0.00	0.67
Blue-gray Gnatcatcher	2.00	1.33	Red-winged Blackbird	15.00	15.00
Mountain Bluebird	1.67	0.00	Western Meadowlark	1.00	2.33
American Robin	0.00	0.33	Yellow-headed Blackbird	0.00	0.67
European Starling	0.33	0.00	Brewer's Blackbird	3.67	4.33
Yellow Warbler	0.67	0.00	Brown-headed Cowbird	2.67	2.00
Common Yellowthroat	0.00	0.33			

Brewer's Sparrow, Horned Lark and Sage Sparrow were the most frequently detected species at Adobe Valley (Table 12). This was not surprising given that the Adobe Valley transect was comprised entirely of rabbitbrush and grassland vegetation.

Table 12. Mean number of breeding bird detections per visit, by species, at Adobe Valley, 2004 & 2005. Number of individuals detected within 50m, during 5-minute point counts, summed over the 15 point transect, mean of three visits.

Species	2004	2005
Say's Phoebe	0.33	0.00
Horned Lark	9.33	10.00
Sage Thrasher	1.00	0.33
Brewer's Sparrow	10.00	11.67
Vesper Sparrow	4.67	0.33
Sage Sparrow	1.00	7.00
Western Meadowlark	0.33	0.00

Willow Flycatchers

We did not detect Willow Flycatchers during surveys in 2005. Our first survey date was June 14 in 2005 (a week later than in 2004), and surveys may have occurred after migrating Willow Flycatchers passed through Dexter Canyon (Heath and McCreedy 2004).

Potential Willow Flycatcher habitat appears to exist at the Adobe Valley LLC site, particularly upstream of the reservoir in Dexter Canyon. Several authors have noted the importance of riparian shrub cover to nesting Willow Flycatchers in California (McCreedy 2004b, Bombay et al. 2003, King and King 2003). In addition, McCreedy and Heath (2004) have detailed the importance of Woods' Rose at nearby Rush Creek, Mono County. Significant willow and rose cover exists at Dexter Canyon, and several bird species that coexist with nesting Willow Flycatchers at Rush Creek nest at Dexter Canyon, including Dusky Flycatchers, Warbling Vireos, Yellow Warblers, Song Sparrows, and Black-headed Grosbeaks. Given the recovery of nearby Willow Flycatcher populations (McCreedy 2004a), Dexter Canyon may present additional habitat for breeding Willow Flycatchers in the future.

Cliff and raptor survey results

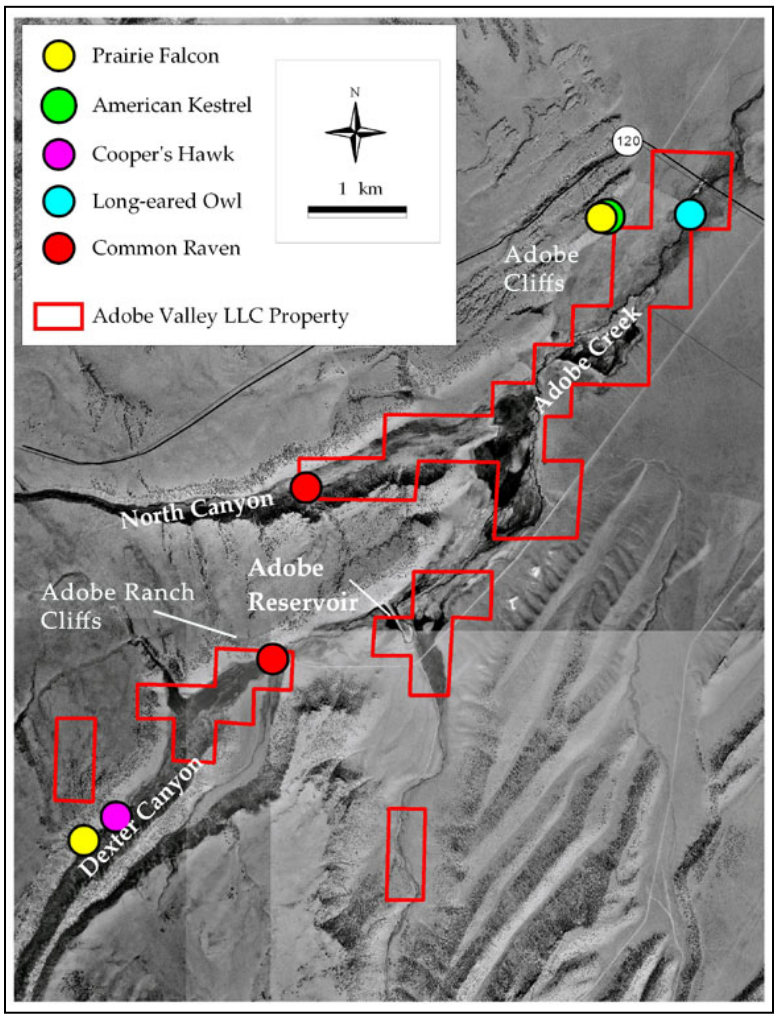
The diversity of habitats at Adobe, including cliff, sagebrush, aspen, open water, riparian and meadow all contribute to supporting a diversity of raptors and their prey. We observed 10 raptor species, in addition to Common Ravens, during raptor cliff surveys, point counts, Adobe Reservoir surveys or specific Long-eared Owl nest searches (Table 13).

Table 13. Raptor species (also Common Raven) detected on Adobe Valley LLC properties, 2005. Breeding status and scientific names for all raptors and associated species are presented in Appendix 3.

Turkey Vulture	American Kestrel
Northern Harrier	Peregrine Falcon
Cooper's Hawk	Prairie Falcon
Red-tailed Hawk	Long-eared Owl
Swainson's Hawk	Common Raven
Golden Eagle	

We found 7 raptor and raven nests or nest sites at Adobe (Figure 5).

Figure 5. Raptor nests at Adobe Valley LLC properties, 2005.



Seven of the raptor and owl species we observed (Northern Harrier, Cooper's Hawk, Swainson's Hawk, Golden Eagle, Peregrine Falcon, Prairie Falcon, Long-eared Owl) are special status species (Table 6, page 25) and we provide a brief species account for each below:

Northern Harrier. Detected soaring over Adobe Reservoir and environs August 9, 17 and October 12. This species typically nests on the ground in sagebrush and grassland habitats, and could potentially breed at Adobe. Shuford and Metropolis (1996) classified them as possible breeders at Adobe Reservoir.

Cooper's Hawk. We located one nest 16m high in Quaking Aspen (*Populus tremuloides*) in Dexter Canyon (Figure 5). The female was sitting on the nest June 4 and June 13 – she could have been incubating eggs or brooding small young. Additional nesting pairs of this species are possible on the Ranch but were not confirmed. Shuford and Metropolis (1996) detected them in the Indian Meadows area.

Swainson's Hawk. Observed flying over the Adobe Cliff area April 24 and near our Adobe Creek Upper transect on June 15. Shuford and Metropolis (1996) did not detect this species at Adobe Valley, Creek or Reservoir. This species generally nests in trees (e.g. cottonwoods) adjacent to alfalfa fields in the eastern Sierra. Known nesting sites in Mono and Inyo County include Hammil, Chalfant and Owens Valleys (ca. 20 - 70 km away respectively). It is unknown if this species would nest at the Ranch, and we did not observe any breeding behaviors.

Golden Eagle. We observed a pair of adult Golden Eagles flying over Adobe Ranch April 23, and individuals on June 11 and 16. At this time, there was an active cliff nest just west of Benton Hot Springs, approximately 17 km southeast of Adobe. The hunting territories for this species are extensive and the ranch is likely within the hunting range of the Benton pair. Eagles often have alternate nest sites within their territory, so it is possible that they would nest on the Ranch property sometime in the future (Kochert et al. 2002). Conservation of larger mammal prey species such as rabbits will encourage continued eagle use of this area. Shuford and Metropolis (1996) estimated that roughly five pairs nested within their Glass Mountain study area.

Peregrine Falcon. A juvenile Peregrine Falcon was observed August 9 perched and flying low near the meadow adjacent to Adobe Creek. It is possible this species could nest at the Ranch in the future, although we did not observe nesting behavior during our surveys in 2005. It is confirmed nesting ca. 37 km away at Owens River Gorge. This species will attack and sometimes kill Prairie Falcon adults and fledglings, so careful consideration should be given before either population is manipulated (Steenhof 1998). Shuford and Metropolis (1996) did not observe this species in the Adobe Valley area.

Prairie Falcon. We observed this species frequently at Adobe Cliffs and in Dexter Canyon. Although we assume nesting by the Prairie Falcon pair on the Adobe Cliffs, no young or feeding visits were observed. We observed the pair copulating in late April and observed the female sitting on a rock shelf that resembled a nest site on several occasions in June. We suspect this pair nested but failed before nestlings were visible or any young fledged. We were unable to confirm the timing of nesting although the copulation in April would predict a potential hatching date of about May 29 and fledging date around July 7 (Steenhof 1998).

We are uncertain of the status of the adult Prairie Falcon observed on the cliffs in Dexter Canyon. Given the large amount of whitewash on the Dexter Canyon cliffs, the area is frequently used either for roosting and may be used for nesting. Heath and McCreedy (2005) observed individuals begging near the Dexter Canyon site in 2004 and Shuford and Metropolis (1996) confirmed breeding there as well. Additional surveys may clarify the current status of Prairie Falcons in this area.

Long-eared Owl. We located one nest in yellow willow (*Salix lutea*) on Adobe Creek on April 23. We found the nest during hatch, and eggs were probably laid about March 28 (Marks et al. 1994). The 3 young were never seen on subsequent surveys and may have only survived a brief time. The fledge date would have been about May 14. We observed this species in the same location in 2004 (Heath and McCreedy 2005). Shuford and Metropolis (1996) confirmed breeding status for this species along Adobe Creek and in Dexter Canyon in the early 1990's. This species eats small mammals and utilizes existing stick nest structures. Additional nesting pairs of this species are possible on the Ranch but were not confirmed.

We also located one active American Kestrel and two active Common Raven nests (Figure 5). All three nests were located in cliff habitat. We did not observe breeding behaviors for Red-tailed Hawk and Turkey Vulture though habitat is available for each at Adobe.

Greater Sage-Grouse lek counts

We did not detect sage-grouse during our study. This species is currently a Bird Species of Special Concern (CDFG and PRBO 2005). The Mono Basin Greater Sage-Grouse (which would include any Adobe Valley population) has recently been re-petitioned for federal listing (Sivas 2005); rulings of previous petitions found the population not warranted for listing as federally Endangered or Threatened (USDI 2005). Bureau of Land Management Bishop Field Office has been conducting lek counts at Adobe Lek (at Indian Meadows) and Gaspipe Lek (near Gaspipe Springs, ~ 13 km from our study area) since 1984 and 1990 respectively. Their results are provided here:

There are only two known sage-grouse leks within the boundaries of BLM's Granite Mountain Management Area, which lies between Long Valley and the Bodie Hills. There are no telemetry data for these leks and it is unknown whether they are associated with each other or with other populations (BLM data, J. Fatooh pers. com.). Male sage-grouse numbers at Adobe Lek were highest in 1984 and have dropped

precipitously until 2001 when no males were recorded (Table 6). The Gaspipe Lek was first discovered in 1990 and numbers have fluctuated over the years, dropping as low as one male and increasing to as high as 16 males (in 2005).

Table 14. Number of males counted at Adobe and Gaspipe Greater Sage-Grouse leks, 1984 – 2005. Data for both leks begin with the year of their discovery. Data provided by BLM Bishop Field Office. -- = lek not surveyed, 0 = no sage-grouse present.

Year	Adobe Lek	Gaspipe Lek
1984	16	--
1985	15	--
1986	15	--
1987	15	--
1988	12	--
1989	7	--
1990	9	10
1991	12	6
1992	10	2
1993	6	6
1994	9	3
1995	3	6
1996	6	3
1997	3	2
1998	2	1
1999	4	6
2000	2	15
2001	0	11
2002	0	9
2003	0	8
2004	0	10
2005	0	16

Bird Use of Adobe Reservoir

We detected 16 waterbird, shorebird or marshland bird species at Adobe Reservoir during the spring and summer (Table 15) and 13 species during the fall and winter (Table 16). The species we observed in highest numbers on any given single count were Mallard, Cinnamon Teal, American Coot, Red-winged Blackbird, Yellow-headed Blackbird and Ring-necked Duck. We confirmed breeding for Mallard, American Coot, Yellow-headed Blackbirds and Cinnamon Teal.

Table 15. Number of birds using Adobe Reservoir during spring and summer months, 2005.

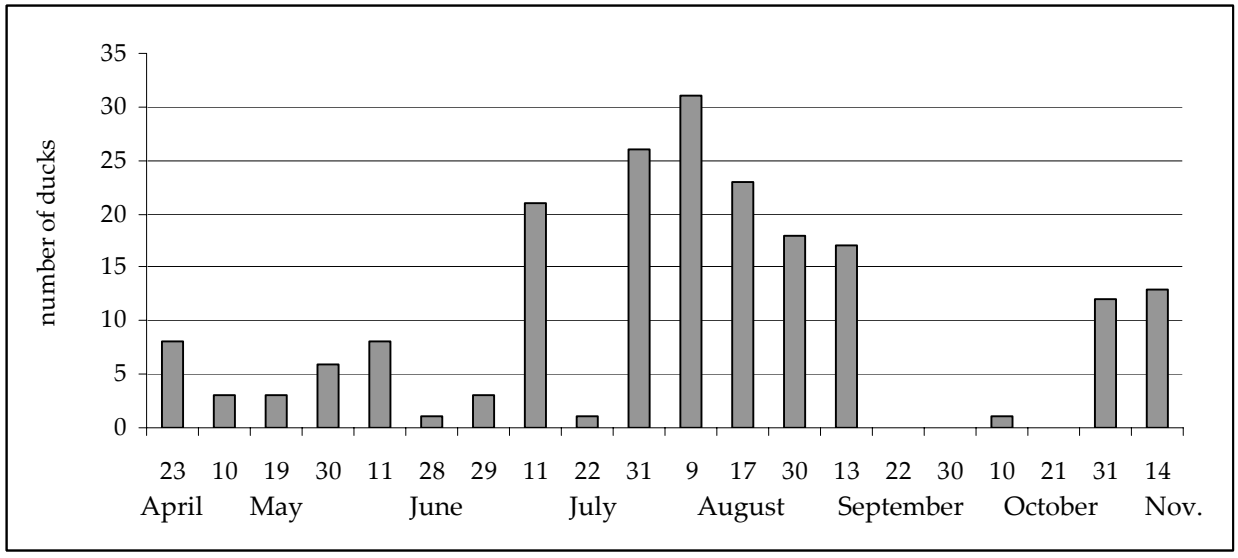
Species	23-Apr	10-May	19-May	30-May	11-Jun	28-Jun	29-Jun	11-Jul	22-Jul	31-Jul	9-Aug
Pied-billed Grebe	0	1	1	0	0	0	0	0	0	0	0
Great Blue Heron	0	0	0	0	0	0	0	1	0	0	1
Great Egret	1	0	0	0	0	0	0	0	0	0	0
Gadwall	1	0	0	0	0	0	0	0	0	0	0
Mallard	4	1	0	0	4	0	0	2	0	13	12
Cinnamon Teal	0	0	1	0	2	1	0	11	1	0	3
Northern Pintail	2	0	0	0	0	0	0	0	0	0	0
Green-winged Teal	0	1	1	3	0	0	0	0	0	0	0
Ruddy Duck	0	0	0	0	0	0	1	0	0	0	1
Sora	0	1	0	1	0	1	1	0	0	0	0
American Coot	1	1	1	3	2	0	2	8	0	13	15
Killdeer	0	0	0	0	0	0	0	0	0	0	2
Wilson's Snipe	0	0	0	0	1	0	0	0	0	0	0
Red-winged Blackbird	2	4	3	3	15	0	1	4	8	0	20
Yellow-headed Blackbird	0	9	20	8	7	7	7	13	8	2	1
Brewer's Blackbird	0	2	2	0	0	0	2	0	0	0	0

Duck numbers on the reservoir peaked during summer months, which primarily reflected the young of the year (Figure 6). Ring-necked Ducks arrived at the end of October, and accounted for the majority of the observations in October, whereas a diversity of species, including Gadwall, Mallard, Northern Pintail and American Coot represented the April observations (Tables 15 and 16). We did not observe ducks on the reservoir through much of September and early October (with the exception of one American Wigeon on October 10).

Table 16. Number of birds using Adobe Reservoir during fall and winter months, 2005.

Species	17-Aug	30-Aug	13-Sep	22-Sep	30-Sep	10-Oct	21-Oct	31-Oct	14-Nov
Great Blue Heron	1	0	0	0	0	0	0	0	0
American Wigeon	0	0	0	0	0	1	0	0	0
Mallard	8	2	2	0	0	0	0	0	3
Cinnamon Teal	1	0	0	0	0	0	0	0	0
Northern Shoveler	0	0	2	0	0	0	0	0	0
Green-winged Teal	0	3	1	0	0	0	0	0	1
Ring-necked Duck	0	0	0	0	0	0	0	10	8
Lesser Scaup	0	0	1	0	0	0	0	1	0
American Coot	14	13	11	0	0	0	0	1	1
Killdeer	0	1	0	0	0	0	0	0	0
Red-winged Blackbird	8	55	0	0	3	3	0	0	0
Yellow-headed Blackbird	1	0	39	11	0	0	0	0	0
Brewer's Blackbird	0	0	0	2	0	0	0	0	0

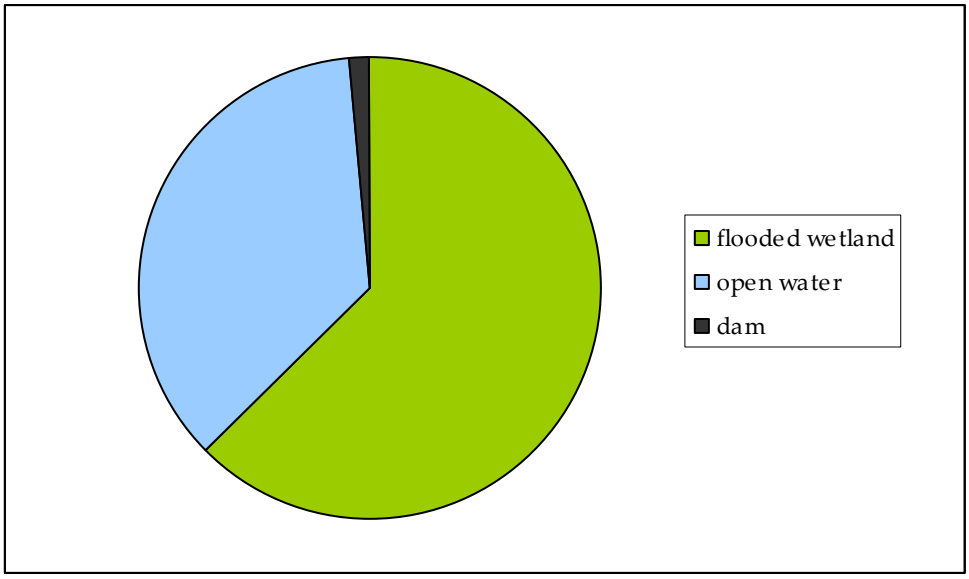
Figure 6. Timing and number of ducks detected during Adobe Reservoir surveys, 2005.



In 2005, we observed most of the species using the flooded wetland surrounding the reservoir, and the open water of the reservoir itself (Figure 7). Because the reservoir contained more water than it did in 2004, no shallow water edge or mudflat habitats were present during our survey. We therefore did not observe any shorebirds or

shallow waders (in 2004 we only observed Black-necked Stilts, McCreedy and Heath (2005)). The flooded wetlands, which were primarily composed of *Iris* sp. and *Carex* spp., provided cover for broods; we often observed Mallard, Cinnamon Teal and coot families emerging from or disappearing into the protected flooded wetland areas. This habitat was also used by Yellow-headed Blackbird and American Coot for nesting. Sora and Wilson's Snipe also used the shallower or unflooded areas of *Carex* and likely nested there; we detected the former during half of the spring and summer reservoir counts (Table 15).

Figure 7. Habitat use by birds at Adobe Reservoir, blackbirds excluded 2005.



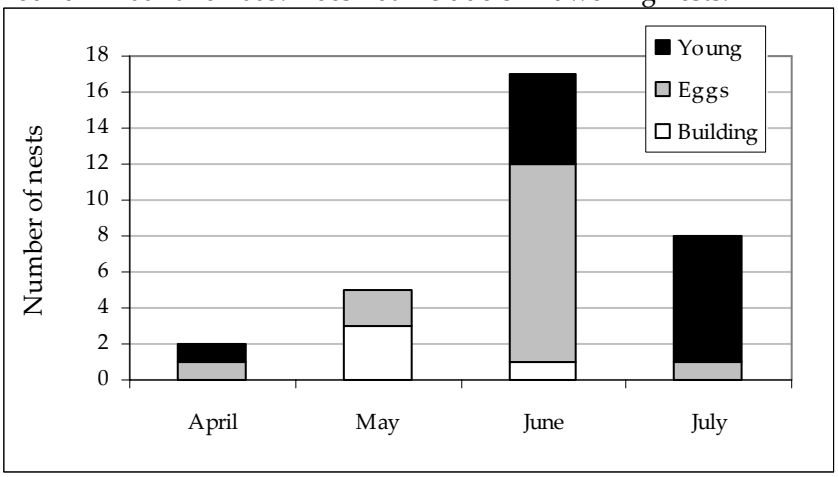
Nesting phenology

We found 39 nests for 23 species during incidental nest searches in 2004 and 2005 (Table 17). The breeding bird season for riparian breeding birds at Adobe Valley (which includes nest initiation through fledging young to independence) is mid March through August, with a peak in June (Figure 8). Songbird nests observed with young during June would indicate nest initiation dates of early May to early June. Active April nests included Long-eared Owl and American Magpie; the owl nest was initiated in late March. Other raptor species (Prairie Falcon, American Kestrel) initiated nests in March as well, though cliff nests are not included if Figure 8.

Table 17. Incidental nests found on and around Adobe Valley LLC properties, 2004 – 2005. * = nests located on cliffs.

	Adobe Creek	Adobe Reservoir	Adobe Valley	Dexter Canyon	North Canyon
Cooper's Hawk	--	--	--	1	--
American Kestrel	1*	--	--	--	--
Prairie Falcon	1*	--	--	1*	--
American Coot	--	1	--	--	--
Long-eared Owl	1	--	--	--	--
Red-breasted Sapsucker	--	--	--	1	--
Western Wood-Peewee	--	--	--	2	--
Dusky Flycatcher	--	--	--	2	--
Loggerhead Shrike	1	--	--	--	--
Warbling Vireo	--	--	--	2	--
American Magpie	1	--	--	--	--
Common Raven	--	--	--	1*	1*
Cliff Swallow	--	--	--	3	--
House Wren	--	--	--	1	--
American Robin	--	--	--	2	--
European Starling	--	--	1	1	--
Yellow Warbler	--	--	--	3	--
Green-tailed Towhee	1	--	--	--	--
Brewer's Sparrow	--	--	1	--	--
Savannah Sparrow	1	--	--	--	--
Song Sparrow	1	--	--	3	--
Yellow-headed Blackbird	--	4	--	--	--
Brewer's Blackbird	--	--	--	2	--
Total	6	5	2	25	1

Figure 8. Dates of nests at various stages. Based on incidental nests found in 2004 and 2005. Does not include cliff dwelling nests.



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Appendix 1. Point count locations, UTM Nad83, Zone 11, 2004 and 2005.

Station	Utme	Utmn	Station	Utme	Utmn
DEXT01	346552	4193206	ACLO15	349470	4196284
DEXT02	346352	4193054	ACLO16	349677	4196436
DEXT03	346125	4192944	ACLO17	349906	4196533
DEXT04	345958	4192763	ACLO18	350077	4196720
DEXT05	345803	4192568	ACLO19	350273	4196875
DEXT06	345598	4192424	ACLO20	350455	4197051
DEXT07	345433	4192231	ACLO21	350488	4197300
DEXT08	345332	4191995	ACLO22	350667	4197470
DEXT09	345245	4191773	ACLO23	350765	4197698
DEXT10	345035	4191636	ACLO24	350863	4197923
DEXT11	344852	4191460			
			ADVA01	352031	4200415
ACUP01	347839	4193626	ADVA02	352142	4200635
ACUP02	348037	4193781	ADVA03	352284	4200840
ACUP03	348258	4193890	ADVA04	352412	4201049
ACUP04	348440	4194059	ADVA05	352553	4201264
ACUP05	348640	4194206	ADVA06	352692	4201475
ACUP06	348854	4194338	ADVA07	352826	4201689
ACUP07	349078	4194463	ADVA08	352920	4201915
ACUP08	349228	4194660	ADVA09	353079	4202109
ACUP09	349146	4194900	ADVA10	353145	4202351
ACUP10	349144	4195150	ADVA11	353311	4202537
ACUP11	349169	4195400	ADVA12	353485	4202722
ACUP12	349204	4195646	ADVA13	353644	4202918
			ADVA14	353782	4203122
ACLO13	349192	4195892	ADVA15	353942	4203316
ACLO14	349284	4196120			

Appendix 2. Willow Flycatcher Broadcast Acoustical Survey points, UTM Nad83, Zone 11, 2005.

Station	Utme	Utmn	Station	Utme	Utmn
WIFL61	346553	4193206	WIFL87	345558	4192394
WIFL62	346506	4193175	WIFL88	345528	4192358
WIFL63	346470	4193136	WIFL89	345497	4192317
WIFL64	346431	4193102	WIFL90	345461	4192281
WIFL65	346388	4193080	WIFL91	345432	4192233
WIFL66	346353	4193055	WIFL92	345413	4192188
WIFL67	346309	4193027	WIFL93	345391	4192144
WIFL68	346263	4193006	WIFL94	345371	4192099
WIFL69	346213	4192989	WIFL95	345347	4192050
WIFL70	346165	4192967	WIFL96	345331	4191993
WIFL71	346125	4192945	WIFL97	345315	4191945
WIFL72	346087	4192910	WIFL98	345298	4191896
WIFL73	346054	4192874	WIFL99	345277	4191849
WIFL74	346024	4192834	WIF100	345245	4191776
WIFL75	345988	4192798	WIF101	345206	4191748
WIFL76	345957	4192764	WIF102	345167	4191721
WIFL77	345918	4192728	WIF103	345120	4191696
WIFL78	345881	4192696	WIF104	345075	4191669
WIFL79	345856	4192651	WIF105	345033	4191636
WIFL80	345826	4192609	WIF106	344999	4191603
WIFL83	345722	4192509	WIF107	344963	4191567
WIFL84	345677	4192484	WIF108	344928	4191528
WIFL85	345636	4192453	WIF109	344891	4191496
WIFL86	345598	4192423	WIF110	344853	4191460

Appendix 3. Breeding status of all species detected on Adobe Valley LLC properties, Adobe Valley and environs, 2004 – 2005.

Common Name	Latin Name	Dexter Canyon	North Canyon	Adobe Reservoir	Adobe Creek	Adobe Valley
Pied-billed Grebe	*Podilymbus podiceps*	~	~	2	2	~
Great Blue Heron	*Ardea herodias*	~	~	0	~	~
Great Egret	*Ardea alba*	~	~	0	~	~
Black-crowned Night-Heron	*Nycticorax nycticorax*	2	~	~	2	~
Turkey Vulture	*Cathartes aura*	0	~	0	0	0
Wood Duck	*Aix sponsa*	~	~	~	0	~
Gadwall	*Anas strepera*	~	~	2	~	~
American Wigeon	*Anas americana*	~	~	0	~	~
Mallard	*Anas platyrhynchos*	2	~	1	2	~
Blue-winged Teal	*Anas discors*	~	~	~	0	~
Cinnamon Teal	*Anas cyanoptera*	~	~	1	3	~
Northern Shoveler	*Anas clypeata*	~	~	0	~	~
Northern Pintail	*Anas acuta*	~	~	0	~	~
Green-winged Teal	*Anas crecca*	~	~	3	2	~
Redhead	*Aythya americana*	~	~	2	~	~
Ring-necked Duck	*Aythya collaris*	~	~	0	~	~
Lesser Scaup	*Aythya affinis*	~	~	0	~	~
Ruddy Duck	*Oxyura jamaicensis*	~	~	0	~	~
Northern Harrier	*Circus cyaneus*	2	~	0	2	~
Sharp-shinned Hawk	*Accipiter striatus*	2	~	~	~	~
Cooper's Hawk	*Accipiter cooperii*	1	~	~	~	~
Red-tailed Hawk	*Buteo jamaicensis*	2	~	~	~	0
Swainson's Hawk	*Buteo swainsoni*	~	~	~	0	~
Golden Eagle	*Aquila chrysaetos*	2	~	0	~	~
American Kestrel	*Falco sparverius*	~	~	0	2	0
Peregrine Falcon	*Falco peregrinus*	~	~	0	0	~
Prairie Falcon	*Falco mexicanus*	1	~	~	1	~
California Quail	*Callipepla californica*	2	~	~	~	~
Sora	*Porzana carolina*	~	~	2	2	~
Virginia Rail	*Rallus limicola*	~	~	2	2	~
American Coot	*Fulica americana*	~	~	1	~	~
Killdeer	*Charadrius vociferus*	2	~	2	1	2
Black-necked Stilt	*Himantopus mexicanus*	~	~	0	~	~

Confirmed Breeding – 1 Probable Breeding – 3 Possible Breeding – 2 No Evidence of Breeding – 0 Not Detected - ~

Appendix 3. Breeding status of all species detected on Adobe Valley LLC properties, Adobe Valley and environs, 2004 – 2005.

Common Name	Latin Name	Dexter Canyon	North Canyon	Adobe Reservoir	Adobe Creek	Adobe Valley
Wilson's Snipe	*Gallinago delicata*	2	~	2	2	~
Wilson's Phalarope	*Phalaropus tricolor*	~	~	~	0	~
California Gull	*Larus californicus*	0	~	~	~	~
Caspian Tern	*Sterna caspia*	~	~	0	~	~
Band-tailed Pigeon	*Columba fasciata*	~	~	~	0	~
Mourning Dove	*Zenaida macroura*	2	~	~	2	2
Long-eared Owl	*Asio otus*	~	~	~	1	~
Common Nighthawk	*Chordeiles minor*	~	~	0	2	2
White-throated Swift	*Aeronautes saxatalis*	2	~	~	2	~
Calliope Hummingbird	*Stellula calliope*	3	~	~	~	~
Rufous Hummingbird	*Selasphorus rufus*	0	~	~	~	~
Belted Kingfisher	*Ceryle alcyon*	2	~	2	~	~
Red-breasted Sapsucker	*Sphyrapicus ruber*	1	~	~	~	~
Hairy Woodpecker	*Picoides villosus*	2	~	~	~	~
Red-shafted Flicker	*Colaptes auratus*	3	2	~	2	~
Western Wood-Pewee	*Contopus sordidulus*	1	~	~	0	0
Willow Flycatcher	*Empidonax traillii*	0	~	~	~	~
Gray Flycatcher	*Empidonax wrightii*	2	~	~	~	~
Dusky Flycatcher	*Empidonax oberholseri*	1	~	~	~	~
Say's Phoebe	*Sayornis saya*	2	~	2	1	2
Western Kingbird	*Tyrannus verticalis*	~	~	~	0	~
Loggerhead Shrike	*Lanius ludovicianus*	~	~	~	1	2
Warbling Vireo	*Vireo gilvus*	1	~	~	~	~
Steller's Jay	*Cyanocitta stelleri*	2	~	~	~	~
Western Scrub Jay	*Aphelocoma californica*	3	~	~	~	~
Pinyon Jay	*Gymnorhinus cyanocephalus*	2	2	0	0	~
Clark's Nutcracker	*Nucifraga columbiana*	2	0	0	0	~
American Magpie	*Pica hudsonia*	1	~	~	1	2
Common Raven	*Corvus corax*	1	1	0	2	2
Horned Lark	*Eremophila alpestris*	0	~	0	2	1
Tree Swallow	*Tachycineta bicolor*	~	~	0	~	~
Violet-green Swallow	*Tachycineta thalassina*	2	~	2	2	0
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	2	~	3	2	~

Confirmed Breeding – 1 Probable Breeding – 3 Possible Breeding – 2 No Evidence of Breeding – 0 Not Detected - ~

Appendix 3. Breeding status of all species detected on Adobe Valley LLC properties, Adobe Valley and environs, 2004 – 2005.

Common Name	Latin Name	Dexter Canyon	North Canyon	Adobe Reservoir	Adobe Creek	Adobe Valley
Cliff Swallow	*Petrochelidon pyrrhonota*	1	~	0	2	~
Barn Swallow	*Hirundo rustica*	~	~	0	~	~
Mountain Chickadee	*Poecile gambeli*	3	~	~	~	~
Bushtit	*Psaltriparus minimus*	1	~	~	2	~
White-breasted Nuthatch	*Sitta carolinensis*	2	~	~	~	~
Pygmy Nuthatch	*Sitta pygmaea*	2	~	~	~	~
Brown Creeper	*Certhia americana*	2	~	~	~	~
Rock Wren	*Salpinctes obsoletus*	2	2	2	2	
Canyon Wren	*Catherpes mexicanus*	~	~	~	2	~
Bewick's Wren	*Thryomanes bewickii*	1	~	~	3	~
House Wren	*Troglodytes aedon*	1	~	0	~	~
Marsh Wren	*Marsh Wren*	~	~	2	~	~
Ruby-crowned Kinglet	*Regulus calendula*	0	0	~	~	~
Blue-gray Gnatcatcher	*Polioptila caerulea*	2	2	~	3	2
Mountain Bluebird	*Sialia currucoides*	2	~	0	3	~
Townsend's Solitaire	*Myadestes townsendii*	2	~	~	~	~
American Robin	*Tudus migratorius*	1	~	~	0	~
Sage Thrasher	*Oreoscoptes montanus*	~	~	~	1	1
European Starling	*Sturnus vulgaris*	1	~	0	1	1
American Pipit	*Anthus rubescens*	~	~	0	~	~
Orange-crowned Warbler	*Vermivora celata*	3	~	0	~	~
Northern Parula	*Parula americana*	0	~	~	~	~
Yellow Warbler	*Dendroica petechia*	1	~	~	2	~
Audubon's Warbler	*Dendroica coronata auduboni*	2	~	0	~	~
Black-and-white Warbler	*Mniotilta varia*	0	~	~	~	~
American Redstart	*Setophaga ruticilla*	0	~	~	~	~
Prothonotary Warbler	*Protonotaria citrea*	0	~	~	~	~
Mac Gillivray's Warbler	*Oporornis tolmei*	3	~	~	~	~
Common Yellowthroat	*Geothlypis trichas*	~	~	0	2	~
Wilson's Warbler	*Wilsonia pusilla*	0	~	~	0	~
Western Tanager	*Piranga ludoviciana*	2	~	~	~	~
Green-tailed Towhee	*Pipilo chlorurus*	3	2	~	1	2
Spotted Towhee	*Pipilo maculatus*	3	2	~	2	~
Chipping Sparrow	*Spizella passerina*	2	~	~	~	~

Confirmed Breeding – 1 Probable Breeding – 3 Possible Breeding – 2 No Evidence of Breeding – 0 Not Detected - ~

Appendix 3. Breeding status of all species detected on Adobe Valley LLC properties, Adobe Valley and environs, 2004 – 2005.

Common Name	Latin Name	Dexter Canyon	North Canyon	Adobe Reservoir	Adobe Creek	Adobe Valley
Brewer's Sparrow	*Spizella breweri*	2	2	2	3	1
Vesper Sparrow	*Pooecetes gramineus*	2	~	0	3	3
Sage Sparrow	*Amphispiza belli*	~	~	0	1	1
Savannah Sparrow	*Passerculus sandwichensis*	3	~	0	1	2
Fox Sparrow	*Passerella iliaca*	1	~	~	~	~
Song Sparrow	*Melospiza melodia*	1	~	3	1	2
Lincoln's Sparrow	*Melospiza lincolnii*	~	~	0	0	~
White-crowned Sparrow	*Zonotrichia leucophrys*	~	~	0	~	~
Dark-eyed Junco	*Junco hyemalis*	~	~	0	~	~
Black-headed Grosbeak	*Pheucticus melanocephalus*	1	~	0	2	~
Lazuli Bunting	*Passerina amoena*	3	~	~	~	~
Red-winged Blackbird	*Agelaius phoeniceus*	3	~	3	1	3
Western Meadowlark	*Sturnella neglecta*	1	~	0	1	3
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	2	~	1	1	~
Brewer's Blackbird	*Euphagus cyanocephalus*	1	~	3	1	2
Great-tailed Grackle	*Quiscalus mexicanus*	~	~	2	~	~
Brown-headed Cowbird	*Molothrus ater*	1	~	~	1	2
Bullock's Oriole	*Icterus bullockii*	2	~	~	0	~
Cassin's Finch	*Carpodacus cassinii*	2	~	~	~	~
House Finch	*Carpodacus mexicanus*	2	~	0	2	~
Pine Siskin	*Carduelis pinus*	2	~	~	~	~
Lesser Goldfinch	*Carduelis psaltria*	2	~	~	~	~

Confirmed Breeding – 1 Probable Breeding – 3 Possible Breeding – 2 No Evidence of Breeding – 0 Not Detected - ~