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Private Conservation Case Study

The Kern River Preserve

Robert J. Smith

A small Valley, some fifteen miles long and a few miles wide, at the southern terminus of the Sierra Nevada Mountains on the southeast corner of the San Joaquin Valley of Central California, harbors an unobtrusive little gem of private stewardship, the Kern River Preserve.[1] Here, in the sleepy, dusty little community of Weldon, in the northeast corner of Kern County, with a population so tiny that there are no numbers for its inhabitants in the AAA Road Atlas, lies the largest contiguous riparian forest remaining in all of California. One of the state's and, indeed the West's, rarest ecosystems or habitat types has been preserved through the years by caring private ownership. The riparian habitat harbors a number of rare wildlife species dependent upon riparian forests. The second-largest population of the California-endangered Western Yellow-billed Cuckoo in the state (and one of the largest in the West), one of the two largest populations of the federal and California-endangered Southwestern Willow Flycatcher in California, and the northern-most California population of Summer Tanager all thrive on these private lands. There are also rare or endangered species of turtles, butterflies and plants on the Preserve.

The South Fork Valley runs east-west, following the course of the South Fork of the Kern River. The Valley lies at an elevation of between 2,600 and 2,700 feet. It is almost entirely surrounded by various spines of the Sierra Nevada, most of which are included within the Sequoia National Forest. The headwaters are to the north, high in the Sequoia's 9-10,000 foot peaks, and the pristine waters first flow south and through the Golden Trout Wilderness and the Dome Land Wilderness before tumbling over a falls and onto the private ranchlands of the Valley. The South Fork flows for about twenty miles until it merges with the larger Kern River which flows south some 50 miles from its source in the 12,000 foot peaks at the south edge of Sequoia National Parkland and through the Golden Trout Wilderness. Most of the north-south reach of the rivers is roadless, and what few roads exist are closed in winter by the Sierra's deep snows. The river then tumbles down through the spectacular Kern River Canyon, through the city of Bakersfield and continues west to end in the remnant marshlands of Buena Vista Lake, Lake Webb, and the Tule Elk State Reserve. Before the massive water use and water diversions of this century, the Central Valley, especially its southern end, once held the

largest system of streams, marshes, lakes, wetlands, floodplains and riparian forests west of the Rockies.

At least it did during the centuries when the Tubatulabal Indians roamed the Kern Valley, and when the first miners entered the Valley in the first few years after 1850 on the heels of the California Gold Rush. During the 1860s, ranchers entered the Valley and carved out homesteads in the broad meadows, wet fields, and grassy hillsides along the South Fork. Ultimately, ranching and hay farming proved more profitable and long lasting than the search for the mother lode. While busy, brawling mining camps were scattered over the mountain sides, the Valley prospered with cattle pastures, hay fields and agricultural crops serving the miners.

One of the first settlers in the Valley was Andrew Brown, who homesteaded the Andrew Brown ranch in the 1860s. In the 1870s Brown built the Valley's first flour mill, which still stands on the property today.

Eventually the mining activity diminished, but ranching continued as a successful and harmonious way of life along the South Fork. Little changed until the late 1940s when the federal Government and the State of California decided that the steep, narrow upper end of the Kern River Canyon would make a spectacular site for a dam and reservoir. Completed in 1953, this federally-funded water project created Lake Isabella, one of the largest reservoirs in California. The lake is now a major recreation area. Boaters, sailors, fishermen and campers, flood the campgrounds at the lake. The water project is run by the U.S. Army Corps of Engineers and the Kern River Water Master. The Corps subsequently transferred 1227 acres at the eastern end of the reservoir to the U.S. Forest Service (USFS) for a wildlife area. The USFS operates the South Fork Wildlife Management Area, which is part of the nation-wide system of "Watchable Wildlife Areas", originated by Sara Vickerman of Defenders of Wildlife and identified by a unique highway signage, with the outline of white binoculars on a brown background, placed by state departments of transportation. In addition to the public campgrounds, tourists utilize the private campgrounds and motels in the area. Nevertheless, the population of the Valley is still relatively small – only several thousand. The 57 mile long drive from Bakersfield up the narrow, winding two-lane road, while a spectacular scenic treat, is harrowing. People have to go out of their way to get there.

Another circumstance that helped preserve the Valley's outstanding riparian forest was that the creation of Lake Isabella only flooded the lowermost few miles of the South Fork of the Kern. Some fifteen miles of magnificent forest still stretched east up the Valley across a series of cattle ranches to where the river tumbled over the cliffs and into the Valley.

Conservationists and environmentalists in California have been deeply concerned about the loss of riparian habitat within the state and the accompanying disappearance of the plant and

animal species that both make up and depend upon that habitat. As the natural meanders, ox bows and flood plains have been straightened, channelized, rip-rapped, concretized and leveed, and as the rivers have been dammed and Valleys flooded, the unique wildlife species dependent upon riparian habitat have rapidly declined, resulting in many plants and animals being placed on state endangered species lists or on the federal Endangered Species List. The California Riparian Habitat Joint Venture reports that "Riparian habitats . . . have the highest diversity and productivity of landbirds of any terrestrial habitat type in the western United States . . . . Of the landbird species currently listed as endangered, threatened, or of special concern in California, almost half . . . require riparian habitat during some part of their life cycle."[2] Riparian forest habitat is also home to 83 percent of the amphibians, 40 percent of the reptiles, and 42 percent of the mammals that occur in California.

Probably no state has suffered more destruction of its riverine habitat than California, where vast governmental water projects have transformed the natural water flow of the great Central Valley into a man-made irrigation, flood control and water delivery system. Within the private sector, farmers and developers have drained wetlands and cleared riparian vegetation. This is especially true in the San Joaquin Valley, at the southern, warmer and dryer end of the Central Valley. Overall, it has been guesstimated that 90-95 percent of the original one million plus acres of riparian forest and brush in California has been destroyed. The riparian forests of the Central Valley underwent even greater destruction, with only 2-5 percent of the approximately 900,000 acres remaining. While such numbers are always problematic, they certainly underscore the nature of the loss.

In the late 1970s word came that the Andrew Brown Ranch might be coming on the market. The heirs were no longer interested in attempting to eke out a living in the hard scrabble business of cattle ranching. The family sold the property to the Kern County Land and Cattle Company. With the land under new ownership and facing the possibility of development, The Nature Conservancy of California, jumped at the opportunity to acquire it. With funding from Chevron USA, Getty Oil Co. (Texaco), and the W. M. Keck Foundation it purchased the approximately 1,600 acre A. Brown Ranch for $2,500,000.

In 1980 the core ranch was purchased. Thereafter, the Conservancy initiated an active program of land trades with adjacent landowners, initially with the Prince Ranch, just down river, and the Sprague Ranch to the north. With the Prince Ranch, they traded pastureland in front of the preserve, but within their fencelines, and grazing land on hillsides to the south across Rt. 178, for some additional bottomland. Such swaps of large amounts of grassland for smaller amounts of riparian forest brought the Kern River Preserve to its current size of 1,133 acres.

The Kern River Preserve is a long, narrow property encompassing about 4 miles of riverbottom. The west boundary abuts the U.S. Forest Service South Fork Wildlife Area with two parking areas and Watchable Wildlife viewing areas as well as the eastern end of Lake Isabella where the South Fork flows into the reservoir. This is necessarily an unstable area,

including a draw-down zone, as well as a large area fluctuating between drought-driven mud and grass flats and flooded expanses of forest during prolonged wet periods. The eastern end extends upstream into the Onyx Ranch.

The Preserve Headquarters consists of a number of buildings including an office building, a research center, an interpretive center incorporating a museum display and information center, the manager's home, a guest quarters, and equipment buildings and sheds. The office building/visitor center is the original Mountain Hotel which was moved from the Old Kernville town site before the filling of the reservoir. The parking lot holds an information and display board, a log for bird and wildlife sightings, a guest book and a plaque commemorating the establishment of the Preserve and the original donors. Self-guided nature trails, with a printed nature guide and signed trail stops, run through the original bottomland riparian forest zone as well as newly reforested areas.

One of the first actions undertaken was the fencing of the existing riparian forest areas in 1981 and the subsequent reduction and careful management of cattle grazing, including the development of a compatible grazing strategy. Extremely dense understory along the river came back in a short time. The Preserve staff note that on their arrival the riparian vegetation was so thin that it was possible to see traffic on the highway from their headquarters during the summer. But the understory grew back so quickly that in short order a dense curtain shielded the HQ, even in the winter.

Another initial undertaking was a research program, including floral and faunal inventories, and vegetative monitoring. A particular concern was the identification and removal of exotic plant species, which have the potential to crowd out and even replace native species. Four trees that are of special concern are Saltcedar, Giant Cane, Russian-olive and Chinese Tree of Heaven. The first three create such dense stands that they clog stream channels and cause flooding. Saltcedar and Giant Cane also create heavy fuel loads and can become dangerous fire hazards.

In addition to reducing biodiversity through the loss of native plants, stream clogging and fires, alien species often provide far less food, shelter and nesting sites for native wildlife. From the beginning, the Nature Conservancy sought to remove every exotic tree they found in the Preserve.

The managers have worked to develop the trust of neighboring landowners in coordinating efforts to get rid of exotics on their lands as well, thereby reducing the likelihood of their return and maintaining the total biotic integrity of the Valley.

One of the conditions that has made the South Fork Kern River Valley so significant has been the relative absence of invasive, non-native vegetation within the Valley. According to the Kern Valley Resources Conservation District, the Valley ". . . is one of the few remaining areas

in the Southwestern United States where these aggressive weeds have not become firmly entrenched."[3] The extent of the problem is evident by the fact that even the beaches and sandbars in the bottom of the Grand Canyon have been extensively invaded by aliens, with miles upon miles of dense thickets of Saltcedar. Elsewhere in Southern California many of the river forests are now dominated by Giant Cane.

Habitat Restoration and Enhancement

Following the completion of the vegetation inventory, the fencing of riparian habitat to control cattle, and the removal of most of the non-native plant species, the Preserve's staff undertook a very ambitious program of habitat restoration, with plans to replant large areas with natural riparian forest species.

The habitat type in the South Fork Kern River Valley is known as the Great Valley Cottonwood Forest habitat. It is lush in the Valley, growing on the rich, highly mineralized alluvial soils of the floodplain, watered by winter rains and spring floods from snowmelt, plus a high water table. This riparian forest is a dense, tangled mix of taller trees with a shrub understory. It is, however, not a very diverse forest. It consists of only two major tree species: Freemont's Cottonwood and Red Willow. Between the trees are dense stands of Mule Fat, Sandbar Willow, and Stinging Nettle. Other species of interest include Rabbit Brush, Fourwing Saltbush, and Arroyo Willow. Marshes, ponds and other wetlands contain dense stands of Cattail, Tule and Yerba Mansa. Meadows are covered with a wide variety of grasses, including Salt Grass and Alkali Rye Grass. And a strikingly beautiful flower, the Alkali Mariposa Lily, a former candidate species for the federal Endangered Species List, still brightens the wet meadows in May.

The first major revegetation/reforestation effort was at the Dump Field site. This unique experiment in restoring or recreating a long-vanished riparian forest began in the Spring of 1986 under the direction of Dr. Bertin Anderson. Twenty-five acres were planted with 20-inch cuttings, and a drip-irrigation system was created to carry them through the long, hot dry season. The process involves cutting small branches or suckers off trees during January and February and sticking those cuttings directly into the ground. "The trees took root quickly, and growth was explosive. After nearly twelve weeks , the trees were almost six feet tall. The pilot test proved so successful that two more fields totaling 65 acres were planted the following spring. Again, the growth rate averaged over one-half inch a day. The hope is that in a decade the meadows will be filled with . . . tall trees."[4]

Following the extremely successful initial results at reforestation, the Preserve undertook an ambitious expansion of the program, aiming at increasing the overall size of their riparian

forest, thereby substantially increasing the habitat for those species dependent upon that habitat as a breeding site, but also as a migration corridor or stopover site.

The last area replanted was the Colt Restoration Site. They used this area to experiment with a range of tree planting methods, compared to the standard they had first used. They planted cuttings at densities of 120, 240 and 480 trees per acre, to compare survival rates under different levels of crowding, as well as to establish habitat for those bird species requiring much denser forests.

The revegetation effort consisted of planting primarily cottonwood and Mule Fat on the higher flood plain surfaces, and willows on the lower sites. The program, begun in 1986, was completed following the 1993 season, when they had planted all the land they legally could or to which they had access. Nine sites of 20 to 50 acres each, totaling approximately 310 acres were reforested. The standard rate of 120 trees per acre planted on the first approximately 295 acres, with the remaining acreage planted at 240 and 480 trees per acre, resulted in a total of over 40,000 trees having been planted on the Preserve. It has been highly successful. On the best sites survivorship was about 98 percent after the first year. Even on the worst sites it was around 75 percent, and with improved planting techniques from the experimental plots that has increased to 85 percent.

Unique Wildlife in South Fork Valley

The South Fork Valley is special for other reasons than the existence of its stretch of riparian forest. It is absolutely unique within the state for its combination of geography and biota. Five of the six biogeographic regions or provinces that exist in California all meet and overlap in this tiny little Valley. These are the Great Central Valley, the Chaparral/Foothill, the Sierra Nevada, the Great Basin, and the Mojave Desert provinces. Thus the habitat and plants of all those bioregions occur in close proximity and the animal life, especially the avifauna, of these very different areas all mix here.

This is particularly striking for the bird life. Birds characteristic of California's Central Valley, Foothills and Sierra Nevada, mix with less common birds of the Southwest which arrive via the Colorado and Mojave Deserts, as well as with Great Basin species and Eastern birds at their extreme western limits. Thus at least 315 species of birds have been recorded in this one small Valley with an area of only 200 square miles – nearly as many species as have been recorded in some states. As many as 135 species have been recorded as nesting or probably nesting. The bird checklist prepared by the Conservancy and the nearby Kern River Research Center notes that the area's geographical location and its bioregion overlap ". . . in combination with its position on migration pathways, contributes to the amazing diversity of birds found here . . . "[5]

At least three amphibians and ten reptiles have been recorded too. Included is the Western Pond Turtle (*Clemmys marmorata*). This aquatic turtle is the only turtle native to interior California and it was a candidate for listing on the federal Endangered Species List, until the long list of candidate species was substantially reduced on February 27, 1996.

Over 100 species of butterflies have been found in the Valley, with the San Emigdio Blue being one of the rarest. One of the most exciting discoveries since the Preserve was created was the rediscovery of a supposedly extinct species, the Eunus Skipper. Eighty-one of the skippers were located on the Preserve. This high diversity is remarkable for having about half or all the butterflies occurring in the entire state.

Perhaps the most incredible level of diversity is among the mammals. This small Valley is home to about 115 species, the highest number north of southern Mexico.[6] Among the common mammals that occur are Raccoon, Black Bear, Bobcat, Mountain Lion, Coyote, Gray Fox, Mule Deer, Long-tailed Weasel, Dusky-footed Wood Rat, and a number of species of ground squirrels and other small rodents. Although the South Fork Valley has many beaver dams and ponds, Beaver is not native to the area. It was introduced into the upper Kern drainages by the California Department of Fish and Game and then either migrated downstream or was carried by spring floods.

The same remarkable level of diversity also occurs with plants, with some 2000 species having been catalogued – about one-third of the state's total.

One of the main reasons for establishing the Kern River Preserve (other than protecting its large stretch of riparian habitat) was to maintain and protect the populations of rare and vanishing species in the Valley. A number of species on the federal and California Endangered Species Lists occur on the Preserve and over 40 species are listed as Species of Special Concern by the California Department of Fish and Game in its California Natural Diversity Data Base or have been on the National Audubon Society's Blue List for California.

The number one species of concern was the Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*), which breeds in dense streamside habitat throughout the West and winters in South America. It was once an abundant species when hundreds of thousands of acres of riparian habitat stretched from the Lower Colorado River north through the San Joaquin and Sacramento Rivers into the Valleys of Oregon and Washington to southern British Columbia. In 1865 noted California ornithologist James G. Cooper noted them in the trees lining downtown Sacramento streets. About 1900 some 40 nests were discovered in downtown Los Angeles. At the turn of the century, when California still had at least a million acres of riparian forestland, there may have been a minimum population of 70,000 breeding pairs in the state.[7]

In 1988 it was estimated that the California population had been reduced to no more than 300 birds and possibly as few as 100, or less. The largest population existed along the Sacramento River at the northern end of the Central Valley, which had undergone less transformation to intensive agriculture. However, that population is highly dispersed because the remnant riparian forest is fragmented. The second largest population was along the South Fork of the Kern River. Another population remains along the Lower Colorado River, which forms the California-Arizona border. Smaller pockets of birds still occur in a few of the remaining fragments of riparian forest left in other parts of the state. North of the Sacramento Valley, most of the birds had disappeared from their remaining haunts, possibly because the original corridor of suitable or preferred habitat stretching from Mexico to Canada had been so reduced and fragmented that the birds were unable to successfully migrate north or the remnant breeding habitat was too small or degraded to permit successful nesting.

With populations so low and the bird so imperiled, it was listed as an endangered species on the California Endangered Species List. In the early to mid-1980s, it was estimated that 16 or 17 cuckoos summered along the South Fork. One of the first steps that the Preserve took was to protect and improve the existing habitat, by fencing cattle out of the sensitive riparian habitat, trading dry upland grazing areas to adjoining ranches for more of their river forests, and removing non-native vegetation. The second, more ambitious and more difficult plan was to begin the reforestation program in an attempt to increase the acreage of riparian forest and increase the available nesting habitat sufficiently to double the cuckoo population.

The Yellow-billed Cuckoo is unusual in being one of the latest arriving spring migrants from the Neotropics. Indeed, it does not arrive in the Kern River Valley until summer, in June. In addition to being a late nester, it synchronizes its nesting in any area to coordinate with its major source of food, often late-appearing caterpillars. It also feeds on katydids, other insects, and along the South Fork of the Kern a favorite food is the common one to two inch long Pacific Treefrog which lives on streamside vegetation. It can also adjust its egg clutch size to match the available food supply/weather conditions, so that in years with optimal weather and food supplies it will produce more offspring. It is also reputed to expel late-hatching young from the nest if food supplies drop to insure the survival of the first-hatched. Because of this extreme sensitivity to local conditions and food supplies, the cuckoo has also evolved the shortest known time period of any bird from egg-laying to fledging of the young.[8] They are also very flexible as to when and where they breed, without the high site fidelity of many species.

Throughout the 1970s and 1980s cuckoo populations continued to drop, and by 1990 some authorities stated that fewer than 45 pairs were believed to remain in California.[9] Because of their sensitivity to local nesting conditions, and with both a small population and greatly reduced habitat, the species' population can rapidly fluctuate up and down. From about nine pairs in the early to mid-1980s, the population dropped to three pairs in 1988. The low count for the cuckoo was in 1991 when there were only two pairs on the Preserve. This was followed by a rapid increase to 13 pairs in 1991 and 24 pairs in 1992 and 1993. However, it is

probable that this did not represent an increase in the overall population but was instead a result of a fire which burned through the Bill Williams River National Wildlife Refuge area along the Colorado River in Arizona. It is thought that the extensive habitat destruction forced the cuckoos north into the Kern.

Most of the increased population nested just off the Preserve property in the adjacent downstream USFS South Fork Wildlife Area. Some 20 pairs nested there in dense natural regeneration of willows which had occurred at the upper end of Lake Isabella during the prolonged drought that occurred through the 1980s and into the early 1990s. A natural volunteer forest had reestablished itself in the rich sediments that had settled in the draw-down area. The birds were nesting in the Gooding's Willows.

However, in 1995 only 18 pairs nested along the South Fork and in 1996 there were 16 pairs. The long-awaited end of the drought had occurred. But while this may have been a boon to much of California's man-made and natural environment, the heavy fall and winter rains and the heavier spring snowmelt began to refill the reservoir – flooding the huge thickets of willow and cottonwood that had grown up during the late 1980s. This severely curtailed and reduced breeding habitat.

This underscored the importance of the habitat restoration program that had been undertaken on the Preserve. The maximum number of breeding pairs sustained on the Preserve in its early years was nine, which was less than half the number estimated by conservation biologists as necessary to maintain a viable breeding population. One of the goals in the reforestation project was to create sufficient habitat to support a population of twenty pairs. Each pair requires a minimum of 40 acres for foraging habitat. Since 1991 the population on the Preserve and the adjacent South Fork has averaged about 19 pairs.

While there were at least 650 acres of natural riparian forest on the Preserve, it was in a long narrow band along the South Fork and thus not deep enough to provide prime habitat. It was hoped that widening the existing forest through replanting would substantially increase the carrying capacity of the Preserve. Planting both willow and cottonwood was necessary not only to replicate the existing forest, but also to meet the ecological needs of the cuckoos. The birds nest in the dense willow thickets, but they forage for caterpillars, other insects and treefrogs in the cottonwoods. The first proof of the success of the reforestation project came in 1995 when the first Yellow-billed Cuckoo was located nesting in a restoration site that had been replanted in 1991. In 1996 cuckoos nested in two restoration sites. There are now a total of five to six pairs with three to four nests in the restoration sites. This underscored the speed with which restoration could be achieved.

The other significant species dependent upon the Kern River Preserve is the Southwestern Willow Flycatcher (*Empidonax traillii extimus*), which is now listed as endangered on both the federal and California Endangered Species Lists. "Nesting in willow

thickets near rivers, streams, lakes, and montane meadows throughout much of California, Willow Flycatchers were once the most common flycatcher in the state . . . the species has been reduced to perhaps two hundred breeding pairs. A small population continues to return in the spring from wintering grounds in Mexico and Central America, but recent studies indicate that the Willow Flycatcher has been eliminated from virtually all of its former lower-elevation habitats in the state. There is no record of breeding in the Central Valley in the past several decades. The largest remaining population is along the South Fork of the Kern River near Weldon, where thirty to forty pairs have nested on The Nature Conservancy's Kern River Preserve."[10] In 1993, 1994 and 1995 there were 34 pairs of Willow Flycatcher nesting on the Preserve.

A major threat to many small Neotropical migrant songbirds, especially those that are already undergoing population declines because of habitat loss or other causes, is egg parasitism by the Brown-headed Cowbird. The cowbird does not build a nest, incubate its own eggs, or care for its young. Instead it lays its eggs in the nests of other, usually smaller species. Upon hatching, cowbirds usually manage to survive at the expense of the host species. Before pre-European settlement, cowbirds were probably relatively uncommon and most closely associated with the huge bison herds of the Great Plains and other areas. However, it is now a ubiquitous species associated with short grass habitats, both natural and manmade all across the United States. These include golf courses, airports, harvested grain fields, pasture lands, suburban lawns and school grounds.

In the California Department of Fish and Game book on the state's threatened and endangered species, the authors note: "Declines of the Willow Flycatcher in the marginal habitats that remain in Yosemite Valley and other Sierra Nevada locations coincided with increased populations of . . . Brown-headed Cowbirds, which lay their eggs in nests of flycatcher and other species. Some adult flycatchers raise the young cowbirds at the expense of their own chicks, which either starve or are ejected from the nest by the larger and more aggressive young cowbirds. At the Kern River Preserve the majority of flycatchers have abandoned invaded nests and begun new nests."[11]

While the latter action by the flycatchers is an often effective defense response by the host species (Yellow Warblers will often build a second layer over the bottom of the existing nest holding the cowbird egg), it clearly works best when there are many hosts and few cowbirds. Otherwise, the cowbirds can outlast the flycatchers until its either too late in the season for successful nesting, the flycatchers give up, or they don't recognize the cowbird eggs and are successfully parasitized.

The most effective way of solving the cowbird problem is to undertake a massive cowbird eradication program. Large chicken coop-like cages are constructed out of wire mesh and a few cowbirds are trapped and placed in the cage/trap together with some water and bird seed. The trapped cowbirds emit mating callnotes when flocks of cowbirds are flying overhead, and these birds are decoyed to the trapped birds and food. They can enter the trap through a

one-way entrance, and when the cage is sufficiently filled the cowbirds can be channeled into a bag and then killed. When this is repeated continuously before and during the breeding season, a substantial percentage of the resident cowbirds can be eliminated – giving the target songbirds a chance to nest successfully.

Mary Whitfield, the wife of the Preserve's manager, Reed Tollefson, is a Willow Flycatcher specialist. She has been studying them since 1989 and completed her masters degree on the species. She is now extending that into a long-term study of the bird.

One of her management/recovery tools for the flycatcher has been a fairly extensive cowbird trapping program, which has now been carried out for four years. There are a number of signs that the cowbird trapping program is working successfully. The rate of parasitism, which initially was running at 60 to 70 percent, has now dropped to below 20 percent. Nesting success, nests that fledged young, increased from about 26 percent to 48 percent. This has also resulted in a rising average number of young birds fledged per nest. In 1996, although the number of nesting pairs was down, parasitism dropped to 11 percent, nesting success rose to 69 percent, and an all-time high number of 58 young fledged. With more young birds heading south in the fall, there should begin to be more adults returning to nest in the spring.

The reforestation project with its 310 new acres of riparian habitat has also begun to be utilized by the Southwestern Willow Flycatchers, one pair of which has begun to nest in and others to forage in the new growth willows. The combination of reforestation on the Preserve, in addition to the natural regeneration that has occurred at the head of the Lake Isabella reservoir, has created a much larger riparian habitat magnet for riparian species. Together with the declining population of cowbirds in the Valley, this may result in an unexpected increase in a number of important non-target species.

The Yellow Warbler (*Dendroica petechia*), a small songbird that is heavily dependent on willow thickets and which is commonly parasitized by cowbirds, has been declining in California and is listed as a Species of Special Concern by the State Department of Fish and Game. In the early 1900s the ornithologist, Grinnell, found it one of the most common breeding birds in the Valley. But in the first censuses by the Preserve staff in the early 1980s, no more than 20 pairs were counted. However, following reforestation and regeneration, and especially since the cowbird trapping, the warbler has rebounded strongly to 50-100 pairs.

Other species at least somewhat dependent upon riparian habitat include the Yellow-breasted Chat, an uncommon breeder; the Summer Tanager, an uncommon nester, which is at the northern limits of its range in the state and was found nesting in a restoration site for the first time this year; and a rare spring and summer visitor from the Southwest, the Vermillion Flycatcher, which first nested in the Valley in 1996. All of these birds should benefit from the habitat restoration. The Brown-crested Flycatcher, another Southwestern species which is a rare nester at the extreme northern limits of its range, is a hole nester and will not directly benefit

until the new trees become large enough to develop natural cavities or to be drilled by woodpeckers.

One of the most intriguing developments may be the impending natural reintroduction of the Least Bell's Vireo (*Vireo bellii pusillus*) which is listed as endangered on both the federal and California Endangered Species Lists. This is another small songbird which was once common in dense riparian willow thickets from the Mexican border to northern California along coastal streams, Central Valley streams and desert streams. However, the combination of rapid loss of riparian habitat together with a fairly rapid increase in cowbird populations led to its early decline. The Department of Fish and Game's study concluded that "By 1920 biologists reported that it was difficult to find a . . . vireo's nest that was not parasitized by cowbirds. To conserve this subspecies, restoration and protection of riparian habitat and effective annual cowbird control will be necessary."[12]

That, of course, is precisely what is being done on the Kern River Preserve. Although there are historical records of the vireo as recently as the 1950s in the South Fork Kern Valley, there had been no sightings for years. But then over the last few years there has been first a spring sighting, then a winter sighting, another this spring and this summer there was a lone singing male present for at least a month – all on the Preserve. There were additional recent sightings in other parts of the Valley. Although it is not known which subspecies was sighted, the Least is undergoing a rapid population increase to the east and south in San Bernardino, Riverside, Orange and San Diego counties following extensive cowbird control. This small number of sightings after the long hiatus may be the advance wave of a colonization of the Valley.

Now that the Kern River preserve has completed its riparian habitat restoration project, its acreage consists of about 650 acres of natural riparian forest, 310 reforested acres, 28 acres of wetlands, 98 acres of agricultural land and 46 acres of uplands. The 960 acres of cottonwood/willow forest on the Preserve is a substantial part of the total of 3,318 acres of riparian forest in the entire South Fork Valley. One of Tollefson's goals with the restoration project is to build up populations of the species of concern on the Preserve so that their integrity is not compromised by natural fluctuations in the reservoir water levels and so that people will be able to accept the fact that occasionally cuckoos and flycatchers will be displaced by high spring runoff.

Developing a Good Neighbor Policy

One of the initial priorities of the Preserve's board and managers was the development of a good relationship with neighboring landowners, ranchers and farmers, as well as townspeople from the local communities. Initially, and understandably, there was considerable apprehension about the Preserve. The Nature Conservancy, with its multi-millions of dollars of

corporate and foundation funding, its movie stars, and old-wealth patrons, was seen as an intruder to the Valley's close-knit, conservative farming and ranching community.

The first manager and his wife, Rick and Connie Hewett, remarked that at first the local ranchers "figured we were part of a fanatical environmental group. There was definitely a wait-and-see skeptical part." But gradually, by sitting down and talking with the locals, they won the ranchers' trust. The Hewetts spelled out the goals of the Preserve, allowed winter grazing on the Preserve, and traded grazing lands for riparian forestland. When Reed Tollefson arrived as manager in 1991, he began to work with landowners to identify and remove non-native vegetation.

Another early effort was to capitalize on the existence of the Preserve to bring ecotourism into the Valley in order to prove that nature could pay its way along with the boating, fishing, rafting, kayaking and winter skiing.

The preserve has developed some special wildlife viewing weekends. Hewett, who was a butterfly enthusiast, initiated an annual Kern River Butterfly Count, which was held in June and run in conjunction with the local chapter of the Xerces Society. The Valley is especially rich in butterflies, with over one hundred species having been identified in the immediate area. Eventually the count was discontinued. But in 1996 biologists at the Kern River Research Center reorganized the count and plan to make it an annual event.

The Kern Valley Bioregions Festival is held on the last weekend of April to coincide with the peak of the spring bird migration and the early blooming wildflowers. Events include birding field trips, night time owling trips, bird banding demonstrations, visits to the riparian restoration sites, and a wildlife art show. Between 500 and 600 people attended this year's, filling motels in Kernville and bringing overflow to surrounding towns. Restaurants catered to the visitors and at least one opened early to accommodate early-rising birders. The Festival is cosponsored by the Kern River Research Center, the local Audubon Society, the Kernville Chamber of Commerce, and government agencies.

On the last weekend in September, the Preserve runs the Kern River Valley Turkey Vulture Festival. The largest known migration of Turkey Vultures north of Mexico passes through the Valley each fall during September and October, with an annual average count of 29,000 birds. This has been called "…one of the truly phenomenal avian spectacles in California…" The Preserve and scientists and volunteers associated with the nearby Kern River Research Center conduct vulture and hawk counts daily for the two months. In addition to the vultures, small numbers of 16 other species of raptors have been tallied.

The Preserve has a busy schedule of activities, including birding and nature walks within the preserve, visits to nearby sites, bird netting and banding demonstrations and tours through the revegetation sites.

The Festival is run in conjunction with the Kernville Chamber of Commerce and there are tours of the Kern Valley Museum and the Kern River Fish Hatchery, where the beautiful Golden Trout are raised for restocking of the Kern River. Additionally, local restaurants get into the spirit of the weekend with such specials as Buzzard Burgers, Turkey Vulture Tacos and Deep Fried Buzzard Eggs. In 1996, over 300 people came from around the state to participate in the second annual Festival.

The Preserve also serves as the base for two different counts in the annual National Audubon Society Christmas Bird Count, a nationwide program which Audubon began in 1900. Each count area is a fixed 15-mile diameter circle, in which all species and numbers of each observed are counted during a single 24-hour day. The initial Kern River Valley count, which includes the western third of the Preserve, was undertaken in 1979. The 1986 count, which was held on January 4, had 23 participants. The count total was 117 different species and 12,148 individuals. More recently the South Fork Valley count was started, which includes the eastern two-thirds of the Preserve and the upper end of the South Fork.

In addition to the special weekends, the Preserve also draws a steady regular flow of visitors of about 1,000 a year. However, as the fame of the Preserve widens, about the extent of its riparian habitat and especially the rare, threatened and endangered species associated with that habitat, increasing numbers of visitors are expected. Much of the community feels that the Preserve has been a positive addition to the Valley, and the motels like birders because they are clean and quiet and out all day.

Conclusion

The Kern River Preserve represents an example of an interesting combination of caring, self-interest motivated private stewardship by landowners over the course of a century, merged with a more recent fifteen-year effort at habitat and species preservation by a conservation organization. Both the cattle ranchers and hay farmers who homesteaded the Valley one hundred and thirty years ago and the wealthy and well-funded conservationists who arrived on the scene fifteen years ago to purchase the Preserve have demonstrated outstanding examples of private conservation.

Over a century's intensive cattle grazing, haying and farming, home, barn and fence building in the tiny South Fork of the Kern Valley left intact the largest contiguous stretch of riparian forest in the entire state of California. This is a remarkable testimonial to the care by the generations of ranchers in the Valley. The three or four generations of ranchers did not overgraze their lands, destroy their meadows, or eliminate their riparian forests. Extreme environmental diatribes to the contrary, cattle grazing can be compatible with wildlife management goals.

Both the Kern River Preserve's first manager, Rick Hewett, and its current manager, Reed Tollefson, are aware of the fact that if natural habitats are going to be altered, cattle ranching with grazing of natural habitat and its irrigated meadows, alfalfa fields and hay fields is probably among the least disruptive land uses. The local ranchers have been careful stewards of their own lands. They can ill afford to overgraze them or degrade them. And since they own and live on the lands they can quickly see any possible trouble spots and take corrective actions if necessary.

The Kern River Preserve Trail Guide notes "Well-managed ranches and farms are land uses which are compatible with this Preserve. Pastures and fields provide additional habitat and food to many species of wildlife. Furthermore, agricultural areas act as buffers between the Preserve and areas with more intensive human uses. This reduces undesirable human-wildlife interactions such as road kills."[13]

While the Preserve has fenced some of its sensitive riparian habitat to protect it from continuous grazing, some 250 acres of the Preserve are leased out to neighbors for cattle grazing and farming. This includes 98 acres of agricultural land, 46 acres of uplands, and varying amounts of natural riparian forest on the bottomlands, even including areas with Willow Flycatcher habitat, which is grazed in the winter. This is mainly winter grazing and the ranchers pay competitive grazing fees. Occasionally cattle are brought in for short periods of time to reduce thatch and encourage new growth of grasses and wild flowers or brought in to graze down small areas that are possible fire hazards.

The Preserve's managers have stated that they want the ranchers and farmers to stay because they are far more compatible neighbors than would be intensive crop farming or subdevelopment of the land for ranchettes or condos. Furthermore, cattle ranching in the Valley is comparatively soft on the land, and fields and meadows are kept in relatively low-value crops such as hay grasses and alfalfa which do not require heavy chemical applications and also help prevent soil erosion during floods. Reed Tollefson stated, "This Preserve is part of a landscape

The Valley is estimated to have had up to 1,975 more acres of forest before settlement, about 40 percent larger than now, with many open wet meadows, marshes and savannahs. Thus the clearing for grazing lands and hay production and homesteads still left the substantial swath of magnificent riparian forest running the entire length of the Valley. The ranchers owned it and they cared for it. Because they wanted to protect their water supplies, the high water table and their lush meadows, they had reason to maintain the forests and prevent erosion and gullying and desiccation of the Valley. By succeeding at being good stewards, they also conserved much of the other biotic resources and diversity in that lush riparian forest. The fact that The Conservancy jumped at the opportunity to purchase the land is a testimonial to the stewardship of the Valley's ranchers.

The Conservancy, by coming in to purchase the old Andy Brown Ranch when it came on the market, guaranteed that much of the unique riparian forest and its wildlife would be preserved. Indeed, they went beyond that to actually take active and highly successful steps to expand and improve upon the existing forest and wildlife association, thereby demonstrating what can be done by going beyond mere preservation into active restoration ecology.

As the California Department of Forestry and Fire Protection noted: "Restoration is a new science, the process of intentionally altering a site to re-establish a defined, native, historic ecosystem. The goal of this process is to replicate the structure, function, diversity, and dynamics of that particular ecosystem. While preservation and conservation are the first choices in wildland protection, restoration is a valuable tool when loss or degradation of habitat has already occurred. With more people added to the state's population every day, California will turn increasingly to restoration as a way to maximize habitat available to wildlife."[14]

For the magnificent example of the private success story on the Kern River Valley, we owe a debt of thanks to the Valley's rancher-landowners as well as to the more recent owners and managers of the Kern River Preserve.

This case study was written by Robert J. Smith, senior environmental scholar at the Competitive Enterprise Institute and the Center for Private Conservation.

Much of this case study is based upon personal interviews and telephone conversations with Kern River Preserve staff Reed Tollefson and Lynn Overtree, and South Fork ranchers Bruce Hafenfeld and David Prince. Interviews and phone conversations were also held with other local ranchers, small business owners, landowners, and government agency officials. Interpretations and conclusions are, of course, solely the author's.

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ENDNOTES

[1]The Kern River Preserve, P.O. Box 1662, Weldon, CA 93283, 619-378-2531. Reed Tollefson, Manager; Lynn Overtree, Assistant Manager.

[2] California Riparian Habitat Joint Venture leaflet, n.d.

[3] Kern Valley Resources Conservation District leaflet, n.d.

[4] Dwight Holing, "Kern River: Riparian Repaired," *California Wild Lands: A Guide to the Nature Conservancy Preserves* (San Francisco: Chronicle Books, 1988), p.120.

[5] "A Checklist of Birds of the Kern River Valley, California," Kern River Research Center and Kern River Preserve, September 1, 1995.

[6] Kern River Research Center Fieldnotes, Winter 1996, Vol. 5, No. 1, p.1.

[7] *California Wild Lands*, p. 125

[8] Ibid, p. 125-126.

[9] Peter Steinhart, *California's Wild Heritage: Threatened and Endangered Animals in the Golden State* (California Department of Fish and Game/California Academy of Sciences/Sierra Club Books, 1990), p. 47.

[10] Steinhart., p. 33.

[11] Ibid.

[12] Steinhart, p. 67.

[13] Kern River Preserve Trail Guide, n.d.

[14] California Department of Forestry and Fire Protection leaflet, n.d.