

# AN EIGHT-YEAR CENSUS OF BIRDS OF VALLECITO CREEK, ANZA-BORREGO DESERT, CALIFORNIA

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The Anza-Borrego Desert is a western extension of the Colorado Desert in San Diego and Imperial counties, California. Its western portion is dotted with oases and year-round streams that are major attractants for birds. Information about the birds of these habitats is scanty; published information is restricted to annual Christmas Counts in the Borrego Valley [*Am. Birds* 40 (4):979, 1986; 41 (4):1234, 1987; 43 (4): 1130, 1989; 44 (4):955, 1991; 45 (4):961, 1992] and to notes under individual species in Garrett and Dunn (1981) and Unitt (1984). To the best of our knowledge there has never been a regular bird census of a riparian (or any other) habitat in the Anza-Borrego Desert that has covered all seasons and spanned several years. Other southern California desert areas have not been served much better, with the exception of Morongo Valley in the Mojave Desert, where a breeding-bird census has been conducted for many years (Cardiff 1992). In 1984 Massey purchased a winter retreat in Earthquake Valley and was spurred to find a suitable site for regular birdwatching. The area selected was along Vallecito Creek in the southern part of the desert (Figure 1), and birdwatching evolved into the regular monthly counts reported here.

## STUDY AREA AND METHODS

Vallecito Creek originates in the Laguna Mountains in San Diego County, California, and flows east into the Anza-Borrego Desert (Figure 1). Over most of its course surface flow is intermittent, but for a stretch of approximately 2.5 km (1.5 mi) between Mason and Vallecito valleys it is permanent. Water surfaces at Vallecito Wash at 580 m (1900 ft) elevation, then runs through a steep-sided canyon north and east of Campbell Grade on County Highway S-2 (Overland Stage Route). The valley broadens and flattens below the grade, and the stream finally vanishes into a sandy alluvial fan about 12 m (40 ft) lower than where it surfaced. The stretch of the stream from where the gorge begins to widen down to where the water goes underground (Figure 1) was the site of our census from 1985 to 1992.

The study area is vegetated with Colorado Desert Wash Scrub and a blend of Sonoran Creosote Scrub and Sonoran Mixed Woody and Succulent Scrub (Holland 1986). In the upper third of the study area, where the stream is channeled through a narrow gorge, Torrey Mesquite (*Prosopis glandulosa* var. *torreyana*), Catclaw (*Acacia greggii*), Arrowweed (*Pluchea sericea*), Salt Cedar (*Tamarix chinensis*) and saltbushes (*Atriplex* spp.) grow along the banks, and cattails (*Typha latifolia*) and bulrushes (*Scirpus* sp.) grow in patches in the stream itself. In the middle reach, where the gorge broadens, there are several clusters of willows (*Salix* sp.) and a single

## BIRDS OF VALLECITO CREEK

young Fremont's Cottonwood (*Populus fremontii*). Figure 2 was taken in this section. The lower third is a sandy wash along which grow Desert Willows (*Chilopsis linearis*). The stream in this region is slower and choked with Watercress (*Nasturtium officinale*), Wild Celery (*Apiastrum angustifolium*), Stinging Nettle (*Urtica holosericea*), and Cocklebur (*Xanthium strumarium*). On the adjacent hillsides the transition to desert vegetation is abrupt, and Creosote (*Larrea tridentata*), Ocotillo (*Fouquieria splendens* var. *splendens*), several species of cholla (*Opuntia* spp.), and Desert Agave (*Agave deserti*) grow densely.

Rainfall data from 1966 to the present are available from Agua Caliente County Park, located approximately 11.25 km (7 mi) south of the study area. During the study period, total annual rainfall varied from 0.61 cm (0.24 in) in 1988–89 to 21.1 cm (8.29 in) in 1984–85 [average 10.8 cm

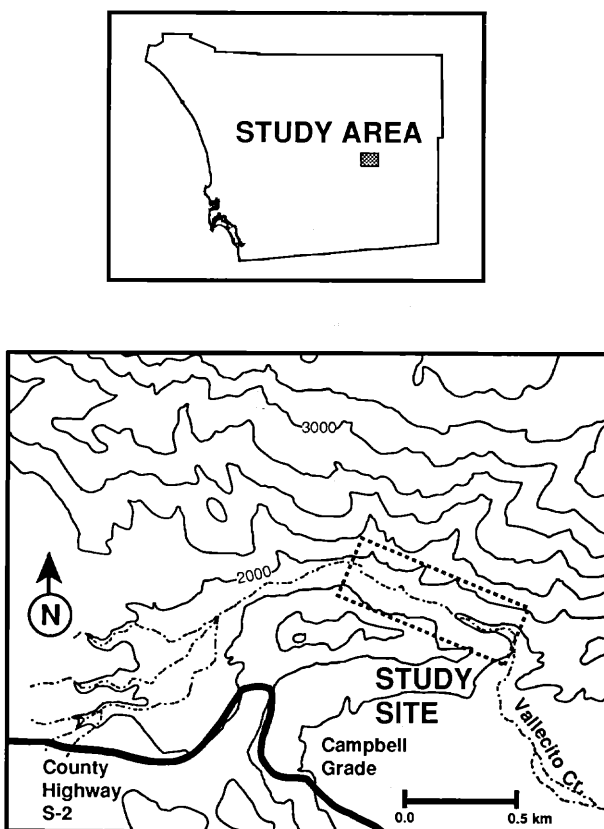


Figure 1. Location of the Vallecito Creek study area. Above, outline of San Diego County; below, section of Vallecito Creek where censusing was done.

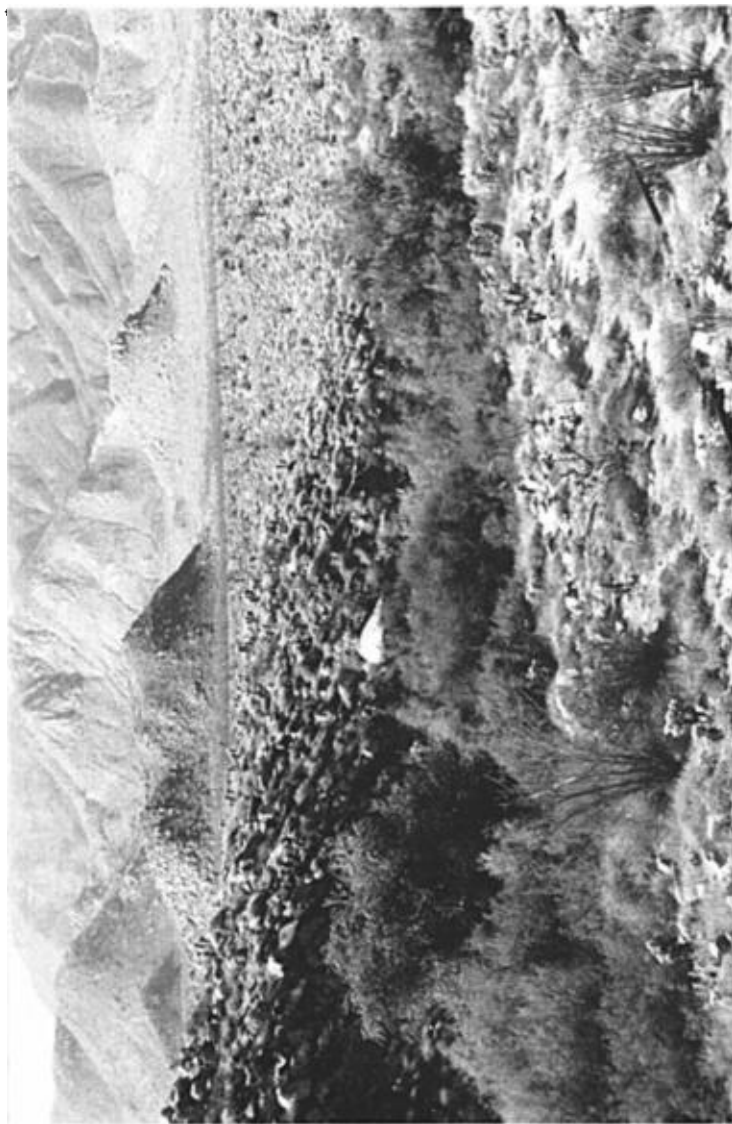


Figure 2. A representative section of the study area on Vallecito Creek. View is south with Vallecito Valley in the middle ground and the Laguna Mountains in the background.

BIRDS OF VALLECITO CREEK

**Table 1** Monthly Distributions of Bird Censuses, Mean Numbers of Species, and Mean Numbers of Individuals along Vallecito Creek, 1985-1992

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Number of visits													
1985	—	—	2	2	—	—	—	—	1	—	4	1	10
1986	1	1	2	2	1	—	—	—	—	2	—	3	12
1987	2	1	3	1	1	—	—	—	1	1	4	—	14
1988	—	2	3	1	1	—	—	—	1	1	1	1	11
1989	2	—	3	1	3	1	—	—	1	1	2	1	15
1990	2	—	2	1	4	—	1	—	—	1	1	2	14
1991	2	2	1	4	3	1	1	—	1	1	2	1	19
1992	2	—	3	1	3	1	—	1	1	—	2	1	15
Totals	11	6	19	13	16	3	2	1	6	9	15	9	111
Mean number of species seen per month													
1985	—	—	24	27	—	—	—	—	23	—	22	21	21
1986	18	17	21	31	21	—	—	—	—	26	—	19	19
1987	21	23	27	23	25	—	—	—	22	18	24	—	—
1988	—	26	27	37	16	—	—	—	15	21	16	16	16
1989	17	—	24	26	25	20	—	—	18	19	21	23	23
1990	23	—	25	32	27	—	13	—	19	22	17	17	17
1991	18	16	30	32	29	22	23	—	19	21	18	18	18
1992	20	—	22	27	28	23	—	11	15	—	19	23	23
Mean number of individuals seen per month													
1985	—	—	130	137	—	—	—	—	88	—	93	92	92
1986	58	106	183	208	138	—	—	—	—	101	—	58	58
1987	72	57	77	88	77	—	—	—	108	35	84	—	—
1988	—	132	133	82	54	—	—	—	86	82	80	43	43
1989	53	—	149	134	95	113	—	—	120	82	80	78	78
1990	107	—	115	158	113	—	46	—	—	43	132	112	112
1991	87	54	116	128	145	140	104	—	59	106	114	66	66
1992	94	—	119	146	130	95	—	20	82	—	101	107	107





## BIRDS OF VALLECITO CREEK

(4.24 in.), standard deviation 3.15]. The seasonal pattern of rainfall was typically bimodal, consisting of a winter rainy period (October to March) and a lesser summer peak (August).

Although drought prevailed most of the eight years, Vallecito Creek flowed vigorously throughout the census period. In the lower canyon, the stream changed course three times after severe winter storms. The first time was just prior to this study, judging from the lack of vegetation along the lower third of the stream when we began our census. In early 1986 and again in 1991 storms altered the streambed in several places. After each change of course, the new streambed was colonized swiftly by Salt Cedar, Cocklebur, Wild Celery, and Watercress, choking it with vegetation within a year. In 1985 there were no willows to be seen along the creek. By 1989 two small clusters had grown tall enough to be visible above the mesquite thickets; by 1992 there were five willow stands, one of which is shown in Figure 2.

Our counts began in March 1985 and continued through December 1992. Table 1 shows the number of counts per month and per year throughout the study. Through 1989 they were made approximately once a month from September through May, with none in the summer months. In 1990 we began more frequent counts during spring migration and the breeding season and extended the count period into June or July. All counts were made in the early morning, starting about 0.5 hr after daylight and ending 1.5–2.5 hr later. We began at the lower end of the creek where it sinks into the sand and followed the stream up into the gorge about 2.0 km (1.2 mi) until the terrain became impassably steep. We patterned our technique after breeding-bird surveys (van Velzen 1972), recording all birds seen and heard. During the breeding season in 1991 and 1992 we recorded our observations by six subsegments, in order to pinpoint the locations of breeding birds and estimate the number of pairs whenever possible.

We located only a few nests, as the preferred habitat for many species was in the dense mesquite thickets of the creekbed where searching was virtually impossible. More often we used territorial behavior (singing and/or displays), the carrying of nesting material, and/or feeding offspring as evidence of nesting.

We have included data from a few other sources. In 1986 the creek was included in a census of Bell's Vireos breeding in the Anza-Borrego Desert (Wier and Jones 1986), and from 1989 on it has been surveyed each spring for this species (K. Pluff pers. comm.). Philip Unitt (pers. comm.) occasionally visited the upper end of the canyon, at the east end of Mason Valley and just west of our study site; we have cited some of his observations.

## RESULTS

One hundred and five species were seen during the study; their status and monthly occurrence are shown in Table 2. The number of species per count ranged from 11 (30 Aug 1992) to 37 (30 Apr 1988); the number of birds seen on any one count ranged from 20 (30 Aug 92) to 274 (8 Apr 86). The mean number of species and individuals per month is shown in Table 1.

## BIRDS OF VALLECITO CREEK

Highest counts of both species and individuals were from March to May when spring migrants and summer visitors joined the year-round residents. The lowest number of both species and individuals was on the single count done in August.

Table 3 shows the relative abundance of 15 species seen regularly throughout the census. The most abundant species was the House Finch, seen on 101 of the 109 counts with a range of 2–65 individuals per count; highest numbers were recorded in 1985–86. The California Quail was the second most abundant species, seen on 71 counts in numbers ranging from 1 to 65; Lesser Goldfinches were seen on 66 of 109 counts, with 2–50 individuals per count. Annual variation was frequent, even where populations were small (Phainopepla, Mourning Dove, Black-throated Sparrow). Species with the most stable populations were the Black-tailed Gnatcatcher, Cactus Wren, Rock Wren, California Towhee and White-winged Dove, all of which resided in very small numbers along the creek.

### Year-Round Residents

Many of the 27 year-round residents are common to the coastal slope as well as to the desert; only a few are strictly desert species (see Discussion). For 22 of the 27 year-round residents we found evidence of nesting in the study area (Table 4); all have been previously documented as breeding in the Anza–Borrego Desert (Unitt 1984). We were able to estimate the number of breeding pairs for many species, but some defied counting (Table 4). Three species that are known residents and were sighted regularly gave no indication of nesting along this section of the creek (Black Phoebe, Say's Phoebe, Canyon Wren). Suitable habitat was probably lacking for all but the Canyon Wren, which may have nested and been missed by us. An active Red-tailed Hawk nest was seen in a side canyon northeast of the creek in

**Table 3** Mean Number per Year of Most Common Year-Round Residents at Vallecito Creek in Order of Total Abundance

Species	1985	1986	1987	1988	1989	1990	1991	1992	All years
House Finch	19.5	22.5	7.8	17.0	10.9	15.3	13.7	11.1	14.7
California Quail	2.9	5.3	5.0	6.4	24.0	7.3	10.6	12.8	9.9
Lesser Goldfinch	14.8	16.0	2.8	10.0	2.9	1.4	5.6	4.8	6.8
Phainopepla	4.6	4.2	2.0	5.5	3.1	7.1	9.3	3.7	5.0
Verdin	3.3	6.3	5.1	4.4	5.1	6.1	2.8	3.9	4.5
Mourning Dove	2.6	5.5	1.7	3.0	1.5	1.9	7.5	8.1	4.4
Song Sparrow	1.6	1.9	2.1	4.4	3.6	4.9	4.2	4.0	3.8
Costa's Hummingbird	3.1	3.3	1.6	2.2	3.9	4.4	4.0	5.9	3.7
Black-tailed Gnatcatcher	2.9	3.5	3.4	3.9	4.8	3.9	3.4	3.9	3.7
Cactus Wren	3.5	3.3	2.7	3.2	1.1	1.2	2.5	3.9	2.5
Rock Wren	2.9	2.1	2.5	1.8	1.6	2.1	2.0	1.6	2.0
Black-throated Sparrow	3.0	2.7	3.8	1.0	1.8	10.1	2.6	2.1	2.0
Bewick's Wren	5.5	2.4	2.2	1.6	1.6	0.6	1.0	2.0	1.9
California Towhee	1.7	1.9	1.3	0.5	1.3	1.8	2.0	1.9	1.6
White-winged Dove	0.8	1.2	0.8	1.5	1.3	1.7	2.1	1.7	1.5



BIRDS OF VALLECITO CREEK

**Table 4** Estimated Numbers of Species Nesting at Vallecito Creek

Species	Status <sup>a</sup>	Number of pairs <sup>b</sup>
California Quail	YR	?
White-winged Dove	YR	3-5
Mourning Dove	YR	?
Greater Roadrunner	YR	?
Lesser Nighthawk	SR	1
Anna's Hummingbird	YR	?
Costa's Hummingbird	YR	?
Ladder-backed Woodpecker	YR	1-2
Ash-throated Flycatcher	SR	3
Verdin	YR	5-6
Cactus Wren	YR	5
Bushtit	YR	1-2
Bewick's Wren	YR	5-6
Rock Wren	YR	3
Blue-gray Gnatcatcher <sup>c</sup>	WV	1
Black-tailed Gnatcatcher	YR	3-4
Wrentit	SR	1
Northern Mockingbird	YR	2-3
Phainopepla	YR	7-8
Loggerhead Shrike	YR	1-2
Bell's Vireo	SR	1-4
Common Yellowthroat	YR	3-4
Yellow-breasted Chat	SR	4-7
Blue Grosbeak	SR	2-4
California Towhee	YR	3-4
Black-throated Sparrow	YR	?
Song Sparrow	YR	5-6
Brown-headed Cowbird	SR	?
Hooded Oriole	SR	2
Scott's Oriole	SR	2-3
House Finch	YR	5-6
Lesser Goldfinch	YR	?

<sup>a</sup>YR, Year-round resident; WV, winter visitor; SR, summer resident.

<sup>b</sup>Estimated over the period of the study in which the species nested; not all species nested every year.

<sup>c</sup>See species account.

1991 (R. Theriault pers. comm.), and Common Ravens nested in 1984, at least, farther up the gorge where the creek has carved bluffs out of alluvium in the east end of Mason Valley (P. Unitt pers. comm.).

#### Summer Residents

Migratory species that bred in the canyon arrived in late March or early April and generally remained into September. Estimated numbers of breeding pairs are shown in Table 4. Most winter regularly in Mexico and Central

## BIRDS OF VALLECITO CREEK

America. Scott's Oriole winters as far north as the southern Anza-Borrego Desert (see species account below). The Wren-tit is a chaparral bird that is common on montane slopes less than 8 km (5 mi) south and west, and for which Vallecito Creek is marginal habitat at the eastern limit of its range. In the Anza-Borrego Desert it is resident in the chaparral-desert edge habitat of Culp Valley in the San Ysidro Mountains 24 km (15 mi.) north of our site (M. Gabel pers. comm.) but was heard in our study area only from the breeding season (March) to October.

### Regular Migrants

Spring migration began in February with Orange-crowned Warblers moving north, but most species arrived in late March or April (Table 2). Willow Flycatchers made a late appearance in May, as they do on the coast (Unitt 1984). Our study did not adequately document fall migration, as we generally resumed counts in late September after a summer hiatus. Late August/early September are reportedly the peak period for fall migration in the desert (K. Garrett, P. Unitt, pers. comm.).

### Winter Visitors

Patterns of winter use varied (Table 2). A few species were regular winter residents: Ruby-crowned Kinglet, Blue-gray Gnatcatcher, Lincoln's Sparrow, and White-crowned Sparrow, only the last occurring in large numbers. Most were intermittent visitors, sometimes staying for a month but usually appearing sporadically.

### Occasional Visitors

Twenty-nine species were seen only one to three times, as follows: Snowy Egret, 27 May 1990; Green-winged Teal, 27 Feb 1988; Cinnamon Teal, 5 Mar 1988; Turkey Vulture, 5 Mar 1988, 10 Mar 1990, 7 Apr 1991; Northern Harrier, 14 Nov 1992; American Kestrel, 3 Sep 1989; Sora, 8 Apr 1986, 27 Feb 1988, 5 Mar 1988; Great Horned Owl, 20 Sep 1985, White-throated Swift, 3 Jun 1989; Allen's Hummingbird, 25 and 29 Mar 1989; Red-breasted Sapsucker, 14 Oct 1990; Olive-sided Flycatcher, 27 May 1990; Hammond's Flycatcher, 20 Sep 1985; Vermilion Flycatcher, 28 Dec 1989; Tree Swallow, 15 Oct 1989, 11 Apr 1991, 11 May 1991; Barn Swallow, 30 Apr 1988, 29 Mar 1989; Scrub Jay, 15 Dec 1990; Plain Titmouse, 30 Nov 1987, 27 Feb 1988, 25 Feb 1991; Swainson's Thrush, 11 Apr, 11 May, and 19 May 1991; Hermit Thrush, 25 Mar 1987, 2 Nov 1989, 18 Nov 1990; California Thrasher, 2 Jan 1989; Solitary Vireo, 17 Dec 1986; MacGillivray's Warbler, 11 May 1991; Hermit Warbler, 1 May 1990; Summer Tanager, 23 May 1987, 19 May 1991; Green-tailed Towhee, 8 Apr 1986; Rufous-crowned Sparrow, 23 May 1987; Chipping Sparrow, 7 Nov 1987; Black-chinned Sparrow, 1 Apr 1985, 24 May 1992.

Several species known to reside year-round in the Anza-Borrego Desert (Great Horned Owl, White-throated Swift, California Thrasher) we saw only rarely in our study area. Philip Unitt (pers. comm.) noted three species not seen by us: Barn Owl (*Tyto alba*), 4 on 11 Oct 1983, 3 on 2 Sep 1984, 1

## BIRDS OF VALLECITO CREEK

on 6 Oct 1984; Violet-green Swallow (*Tachycineta thalassina*), 2 on 2 Sep 1984; Northern Waterthrush (*Seiurus noveboracensis*), 1 on 2 Sep 1984.

### Species Accounts

Species for which new information on occurrence or nesting has resulted from our data, or needing consideration in greater depth, are discussed below.

*Sora*. We heard the Sora only three times and only in winter (Table 2) and have called it an occasional visitor. Although less frequently heard than the Virginia Rail, it may be a more regular visitor at the upper end of the canyon than our data reveal, as P. Unitt (pers. comm.) noted it there on 11 Oct 1983 and 2 Sep 1984.

*Great Horned Owl*. An uncommon resident of the western Colorado Desert, this owl was seen in the study area only once by us and once by P. Unitt (2 May 1992). No breeding habitat suitable for this species exists along the creek.

*Lesser Nighthawk*. The nighthawk breeds in the eastern Colorado Desert, most abundantly in the Salton Sea and Colorado River regions (Garrett and Dunn 1981), but in the Anza-Borrego Desert there is very little documentation of its nesting. Moderate numbers apparently breed in the mesquite bosque of Borrego Valley (A. Morley, pers. comm.) but not in other similar habitats such as Clark Dry Lake (M. Gabel pers. comm.) or Hawk Canyon (Evans pers. obs.). A pair bred in a side canyon at the south end of our study area in 1989, 1991, and 1992. On 1 Jul 1991 they engaged in distraction displays in response to our presence, indicating they had young. They were still present in September when the surveys resumed, but not from October to February.

*White-throated Swift*. A resident in Hawk Canyon and at other sites in the Anza-Borrego Desert where there are steep-walled canyons that provide crevices for roosting, the swift was seen only once over our study area.

*Costa's Hummingbird*. Abundant from December to June in many areas of the desert, this species' numbers are much diminished in summer and autumn. However, some birds are found all year in the southern and southeastern desert areas of San Bernardino, Riverside and Imperial counties (Baltosser 1989), and one or two individuals were present on many of our counts from September to November, evidence that some individuals remain through their nonbreeding season. In Borrego Springs, Costa's Hummingbirds are present year round where there are irrigated gardens with blooming plants and dependable feeding stations (A. Morley pers. comm.). We have seen the species in all months except August, and thus consider it a year-round resident. The population is much augmented in December, and large numbers have been seen on recent Anza-Borrego Desert Christmas Counts (82 in 1990, 80 in 1991). Breeding starts in December; display flights were seen by us on 28 Dec 1985 and 17 Dec 1986.

*Vermilion Flycatcher*. Although seen only once in our study area, Vermilion Flycatchers nested at Butterfield Ranch RV Park about 5 km (3 mi.) west of the study area in 1984 (*American Birds* 38:1062, 1984) and probably since. They are seen occasionally on Christmas Counts in Borrego Valley.

*Ash-throated Flycatcher*. This species was seen during spring migration 1985-1989 but we did not do enough counts in May and June to document nesting. From 1990 on, two to six individuals remained throughout the breeding season. From their spacing along the creek we estimated three breeding pairs.

*Marsh Wren*. One or two Marsh Wrens were present in the winter months (Oct-Mar) until 12 Mar 1989, but we have not noted them since.

## BIRDS OF VALLECITO CREEK

*California Thrasher*. Primarily a resident of chaparral, this species finds its eastern limit at the western edge of the desert, where it is uncommon (Garrett and Dunn 1981, Unitt 1984). Although we saw it only once in the study area, P. Unitt (pers. comm.) has noted it along the upper portion of the creek fairly regularly.

*Blue-gray Gnatcatcher*. The species was present during the winter from October to April. On 1 Apr 1985 we observed a pair building a nest in an *Atriplex* shrub on the edge of the creek; on the next visit a week later the nest was completed but abandoned. We have classified the Blue-gray Gnatcatcher as a wintering bird, as it nests at our site and elsewhere in the Anza-Borrego Desert only sporadically. There have been no sightings in the study area in late spring or summer.

*Wrentit*. We first heard a Wrentit on 7 Apr 1991; it was singing steadily on the desert slope on the north side of the gorge. It was present on subsequent visits until July and so we presume it nested; we heard it again in October. One was in the same location in the spring of 1992. Desert vegetation covers the slope, including agave, ocotillo, barrel and cholla cacti, uncommon habitat for a chaparral bird.

*Bell's Vireo*. A singing male was first heard on 28 Mar 1988, and shortly another male established a territory farther up the creek. The species has bred every subsequent year, with one pair in 1989, four in 1990, one in 1991, and four in 1992. The rapid and dense growth of mesquite, Mulefat (*Baccharis salicifolia*), and willows along the creek have created excellent breeding habitat for the vireo. Additional pairs were found on all surveys in Vallecito Wash, up the canyon beyond the study area (K. Pluff pers. comm.).

*Yellow-breasted Chat*. On 30 Apr 1988, three chats were vocalizing in three discrete locations along the creek, and by May there were apparently four pairs in residence. In subsequent years the number of territorial males was four in 1989, three in 1990, seven in 1991, and one in 1992. Chats are obligate riparian breeders, in southern California being found mostly in the coastal lowlands. While migrants have been observed in the Anza-Borrego Desert, there has been no previous confirmation of them as a summer resident there away from Coyote Creek, 52 km (32 mi.) to the north (Unitt 1984).

*Blue Grosbeak*. Although Blue Grosbeaks were seen during spring migration in 1986 and 1987, we were not certain of nesting until 1989 when several pairs were present throughout May. In subsequent seasons two to four pairs bred along the creek, and juveniles were present in early July. The species' breeding in the Anza-Borrego Desert has not been previously confirmed (Unitt 1984).

*Brown-headed Cowbird*. Cowbirds are residents of the Anza-Borrego Desert but occurred in our study area during the breeding season only and are listed as a summer resident in Table 2. They were present from April to June, with one to five individuals seen on any one visit. To protect Bell's Vireos from parasitism, in 1991 Anza-Borrego Desert State Park personnel began trapping cowbirds in Vallecito County Park approximately 8 km (15 mi.) southeast. Many cowbirds were caught, but their numbers on our counts did not change. A pair of Black-tailed Gnatcatchers was observed feeding a cowbird chick on 21 May 1988.

*Hooded Oriole*. Although Hooded Orioles prefer to nest in palm trees or tall cottonwoods, neither of which is found in the study area, we have strong evidence that they nested in 1991 and 1992. Before 1991, they had been seen early in April but not in May or later. In 1991 one to three birds were present until early July, always in the same two locations in dense mesquite thickets. In 1992 from one to five birds were seen in April and May; on 24 May an adult male and two juveniles were seen foraging in a Desert Willow. We estimate two breeding pairs.

## BIRDS OF VALLECITO CREEK

Scott's Oriole. The first sighting in our records was of a male on 3 June 1989, the only sighting for the year. In 1990 a male was heard on 25 March; by mid-April there were two pairs present; on 7 July 3 birds were seen. In 1991 one to four birds were seen from March through July, and one was present in November. In 1992 two or three pairs nested, and six individuals were seen in early September. Migratory patterns of Scott's Orioles are not well understood (Unitt 1984), but there is some overwintering in Borrego Valley, as a few are regularly seen on Christmas Counts. They also winter in the lower desert, where five were seen on 31 December 1992 on the loop trail out of Mountain Palm Springs about 32 km (20 mi.) southeast of the study area (Massey pers. obs.). Small numbers (up to 7 in 1992-1993) have been seen regularly in winter in Ocotillo, Imperial Co., approximately 48 km (30 mi.) southeast (K. Garrett, S. von Wehrhoff, pers. comm.).

## DISCUSSION

Many permanent residents showed fairly wide fluctuations in numbers over the 8 years of the study (Table 3). House Finches and Lesser Goldfinches were much more abundant in 1985-1986 than from 1987 on. California Quail numbers jumped fourfold in 1989. Mourning Doves were most abundant in 1991-92, Phainopeplas in 1990-1991, Black-throated Sparrows in 1990. These fluctuations reflect the cyclic nature of breeding success; good years for some species were poor years for others.

Before 1988 we saw little evidence of breeding by migratory birds. Recovery and new growth of the vegetation following flooding in the winter of 1984-1985 apparently reached a critical level that year. Since then the migratory breeding-bird population has increased almost yearly, in terms of both species and number of individuals.

We found Northern Mockingbirds and Loggerhead Shrikes to be remarkably quiet. The song of the mockingbird was almost never heard, only the call notes; the shrikes rarely vocalized at all. A plausible explanation is that the resident population of each species is so small (1-3 pairs) that the need for territorial behavior is diminished; at other desert sites with larger populations (e.g., Clark Dry Lake) we have found them much more vocal.

Vallecito Creek has both the climate and the vegetation of a desert riparian community, but its location on the western edge of the desert has strongly influenced its avifaunal composition. Many year-round residents are species found predominantly along the coastal slope or in chaparral (e.g., California Quail, Bushtit, Bewick's Wren, California Towhee, Song Sparrow). Several species are at the eastern limit of their breeding range at this location (California Quail, Wrentit, California Towhee). Only a few species are considered strictly desert denizens (White-winged Dove, Ladder-backed Woodpecker, Verdin, Black-tailed Gnatcatcher, Black-throated Sparrow, and Scott's Oriole). Many occasional and winter visitors are coastal species whose preferred habitat is only a few miles away (Scrub Jay, Plain Titmouse, Rufous-sided Towhee, Rufous-crowned Sparrow, Purple Finch) and are exhibiting short-distance dispersal. The avian inhabitants of the Vallecito Creek riparian woodlands are thus predominantly extensions of coastal populations.

## BIRDS OF VALLECITO CREEK

### SUMMARY

From 1985 to 1992 we censused birds along Vallecito Creek, a riparian woodland between Mason and Vallecito valleys, Anza-Borrego Desert, San Diego County, California. The creek flowed vigorously through this period despite the concurrent drought. It changed course just before the initiation of the study and several times during the study period as a result of winter storms. Proliferation of vegetation along new stream courses was paralleled by increases in variety and numbers of breeding birds. The 105 species recorded encompassed 27 permanent residents and 9 summer residents. Although the site lies in the desert, its location makes it the eastern margin of the range of several coastal species, and its avifauna in general consists of extensions of coastal populations. Only six species are considered restrictively desert species.

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### LITERATURE CITED

- Baltosser, W. H. 1989. Costa's Hummingbird: Its distribution and status. *W. Birds* 20:41-62.
- Cardiff, E. A. 1992. Desert riparian-freshwater marsh. Breeding bird census. *J. Field Ornithol.* 63:96.
- Garrett, K., and Dunn, J. 1981. *Birds of Southern California: Status and Distribution.* Los Angeles Audubon Soc., Los Angeles.
- Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Calif. Dept. Fish and Game, 1416 Ninth St., Sacramento, CA 95814.
- Unitt, P. 1984. The birds of San Diego County. *San Diego Soc. Nat. Hist. Memoir* 13.
- Van Velzen, W.T. 1972. Breeding-bird census instructions. *Am. Birds* 26:1007-1010.
- Wier, H., and Jones, B. L. 1986. A survey of the birds of riparian habitats: Anza-Borrego State Park, San Diego County, California. Westec Services, Inc., 5510 Morehouse Dr., San Diego, CA 92121.

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