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RipariaNews

Fall 1994

Newsletter of the Coyote Creek Riparian Station

Volume 9, No. 3

The Birds of Santa Clara County

by Bill Bousman
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Van Denburgh and Barlow— Historical Listers

Increases and declines in our local bird populations have gone on for centuries unrecorded and now, as our own human population increases rapidly, we worry about what effect we are having on these native populations. There are no studies of bird populations in the Santa Clara Valley at the time of first settlement, no Christmas Bird Counts, no breeding bird atlases. Even a century later, in the late 1800s, few people thought much about birds except for what they brought to the table or what they sold for in the market place. For a variety of reasons the study of natural history became an acceptable avocation at the end of the last century and the study of birds was one area that became popular. Egg collecting, in particular, attracted many people, and a carefully crafted display case with various sets of eggs was a feature in some houses of the day. The Cooper Ornithological Club was formed in the 1890s and its first journal was published in 1899. That club, today renamed the Cooper Ornithological Society, still publishes its journal, **The Condor**, now in its 96th year.

John Van Denburgh, who spent time both in Los Gatos and Palo Alto, read a paper in front of the American Philosophical Society on November 17, 1899, where he provided some notes on the land birds of

Santa Clara County (Van Denburgh, 1899). His account is the earliest list of Santa Clara County birds that I'm aware of and it gives us a narrow, hazy window into the last century and the birds that were present at that time. Using our present checklist there are approximately 222 species of land birds that have been recorded in the county. Of these, Van Denburgh noted 104 species in his account.

Van Denburgh's list was essentially an annotated checklist of Santa Clara County land birds (I wish he had done the waterbirds as well). As often happens when checklists are published, others soon added their own contributions. Chester Barlow of Santa Clara was then the editor of the new journal **The Condor** and, in Volume II of that journal, he provided notes on 30 additional species which gave a total of 134 species (Barlow, 1900), approximately 60% of our present total.

Birding was very different then. There were no books equivalent to our modern field guides, nor were the optics of that period any match for what we have today. The majority of birders carried a gun and confirmed difficult identifications with specimens. Considering the lack of knowledge of the time and the nascent technology involved in photography, there was no other way to identify the unusual bird in the field. And consider a trip over Mt. Hamilton to the San Antonio Valley. Our casual drive today of two hours would have required a horseback ride of two or three

Avian Research Group Formed

by Grant Hoyt

The CCRS Board of Directors made a strong commitment to revitalize the bird-banding program when it formed the Avian Research Committee (ARC) at the September 8 Board meeting. Comprised of staff, volunteers and Board members, the committee is expected to re-assess and re-direct banding projects associated with the Station, effective immediately.

A group of concerned banders and staff had met in August to address a growing uneasiness over the status and direction of the banding program, which had been experiencing unsettled times since the departure of Banding Biologist Kristin Shields in June. This *ad hoc* group came up with the idea to form the ARC, and presented its formal proposal, including a request for the hiring of a 75%-time banding biologist, at the September meeting.

The proposal was well-received by the Board, which not only voted to formally establish the ARC but agreed to find funding for the banding biologist position as well. Executive Director Mike Rigney offered to work with staff in identifying and developing outside sources of funding for ARC projects and the banding program. Steve Rottenborn, who played a key role in formulating the proposal to the Board, was appointed Committee Chair, with Mike Rogers, Maryann Danielson and Elsie Richey agreeing to represent the Board on the committee.

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Rufous Hummingbirds Revisited

by Rita R. Colwell

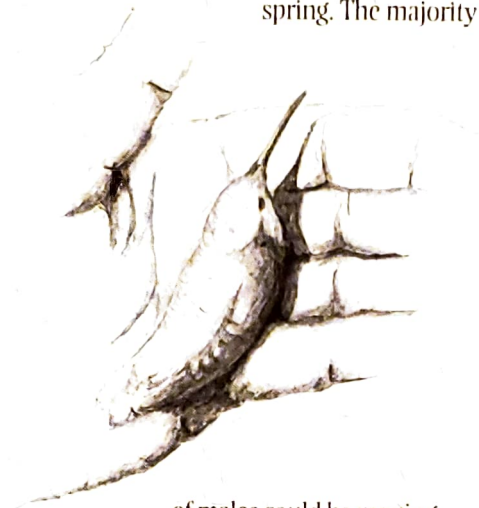
Rufous Hummingbirds are true western birds. They breed in the Pacific Northwest (including parts of Montana and Idaho), north into British Columbia, and the extreme southern tips of Yukon Territories and Alaska. They winter in central to northern Mexico. Even their spring migratory route is strictly western; the main pathway to their breeding territory is up the Pacific coast. The first Rufous Hummingbirds (RUHU) appear in the Bay Area about mid-March. This is the time of year Coyote Creek Riparian Station (CCRS) captures the greatest number of these long-distance migrant hummingbirds.

Variation in the timing of migration through the Bay Area can be seen when two extreme years are examined. The latest peaking spring migration occurred in 1991 (Figure 1) which also happened to be the spring CCRS captured the fewest RUHU's. The year 1993 (Figure 2) had the earliest wave in spring migration, but also showed a curious "triple" peak.

My interest in this tiny long-distance traveler two years ago caused me to look at CCRS' Rufous Hummingbird banding data. I decided to compile the data, and wrote an article for the RipariaNews (Volume 7, No. 3) which summarized four years (1989-1992) of the banding data. The article described one interesting aspect that I discovered: CCRS has banded more female Rufous Hummingbirds each spring than male birds. In the ensuing two years, we have corroborated those findings (Table 1).

Why is this phenomenon occurring? CCRS could be capturing more females than males in the spring for at least two possible reasons. First, differential mortality between

the sexes may be occurring. If males are not surviving as long as females, fewer males would be captured by CCRS on the northward migration. Second, there may be a different migratory route for the sexes in the spring. The majority



of males could be moving northeast of the Bay area; this could be occurring at a gross level. There is no published evidence of which I am aware that documents this occurrence. Differential migration could be occurring at a local level with most of the males using the higher elevations and females using lower elevations as they move toward the breeding grounds. The CCRS banding station site is located approximately at sea level.

If differential migration is occurring, I reasoned, it would be interesting to set up mist nets at a site along the Coast Range and see if the sex ratio would be predominantly male. Conversely, if a persistence of female birds still occurred at the higher elevation, that would be a good indication of decreased male survival.

Late in 1993 I began to organize my project and wrote a grant proposal to defray some of the expenses. Permission was obtained from Midpeninsula Regional Open Space District to place mist nets about a half mile south of Black Mountain (elevation 2810 feet) on Monte Bello Ridge. The site selected overlooked the infamous San Andreas Fault to the west with the main Santa Cruz Mountain range rising on the other side of the fault. The habitat was primarily open grassland/chaparral with widely scattered Coast Live Oaks. Hummingbird feeding plants in the area were Brittle-leaved Manzanita, Pitcher Sage, Chaparral Currant, and Sticky Monkeyflower. I started censusing the area for hummingbirds at the beginning of February 1994 and found only a resident male Anna's Hummingbird squeaking and grating out an unmelodious thin song over his territory and my banding site. On Feb 25, 1994, on a chilly windy afternoon the nets went up, and with the placement of the last net a *scelasphorus* (Allen's/Rufous) male hummingbird zipped overhead, flying northward with utmost hummingbird speed and determination.

During the Monte Bello project, mist nets were open four days a week, usually from 0800 until 1200, with point counts for birds seen and heard at three points each time the nets were open. Opportunistic observations of any hummingbird sighted in the area were also noted. Weather conditions were recorded, and it is interesting to look back at the extreme climatic fluctuations that occurred during that time. The third of March recorded a high of 82 degrees F and no wind. The temperature on Mar 12 was 61 degrees F with a 20 mph wind blowing out

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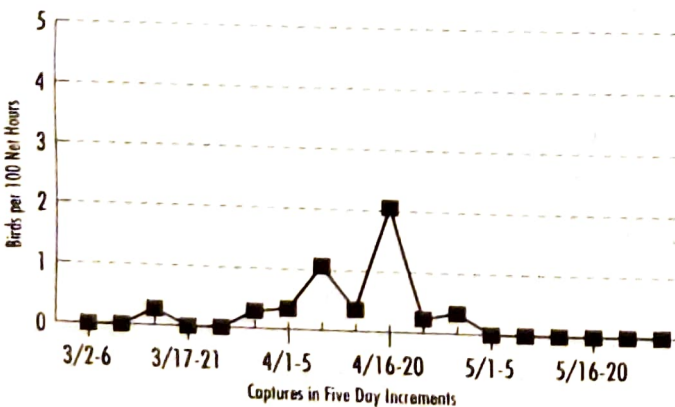


Figure 1. 1991 Spring Migration

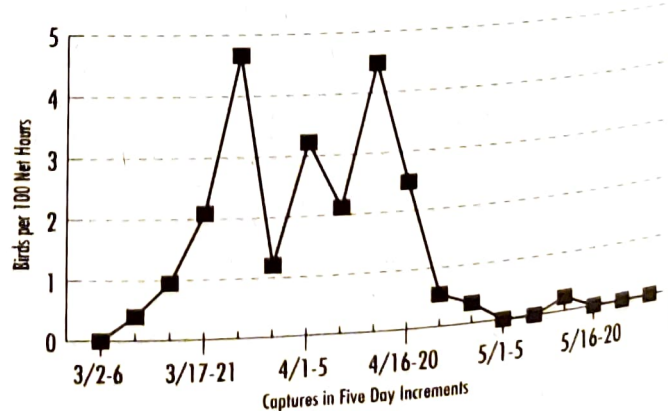


Figure 2. 1993 Spring Migration

Post-Release Study of Rehabilitated Raptors

by Karen Hoyt

As I was finishing up a day of bird banding in the fall of 1989, CCRS founder Dick Mewaldt posed a question that started me on an exciting project. We had been discussing another of my ongoing bird-related activities, the rehabilitation of birds of prey. Dr. Mewaldt's query to me went something like this: "Are you returning animals to the wild that can and do succeed in both survival and reproduction?" At the time all I could answer was that I didn't know.

After discussing the possibility of banding my rehabilitated birds, we developed a protocol for a CCRS-sponsored project to do just that. My work with the raptor team for Wildlife Rescue of Palo Alto gave me access to a large number of injured and orphaned birds of prey, many of which were rehabilitated and released. Now, five years and 160 banded hawks, falcons, and owls later, I have accumulated several band returns that have changed my answer from "I don't know" to "I have a good idea that some of them have survived and reproduced." The following are

examples of some of the more noteworthy recoveries.

My first band return was from a second year (SY) female Red-tailed Hawk that had been rescued in Santa Cruz and transferred to Wildlife Rescue in Palo Alto. It had come in with symptoms of poisoning on Jun 5, 1990 and was released at Windy Hill in Portola Valley on Jul 13, 1990 after being held for 38 days. A full year later, Jul 25, 1991, the band was recovered from the bird's carcass found along a roadside in Kingsbury Gulch in eastern Oregon. Clearly this bird not only survived, but traveled a great distance and was alive through the breeding season.

My second band return came two years later in 1993. Another Red-tailed Hawk, this time a SY male, had the misfortune of being brought down by a storm into a local school yard. This bird would probably have been fine and returned to the sky, but a group of youths stoned the waterlogged raptor. Before citizens and police could intervene it had sustained serious injuries. Cuts and gashes all over the body healed quickly, but the broken toes on both feet required lengthy rehabilita-

tion. Could a hawk survive and hunt with toes that had been broken? This one did. It was released in Portola Valley Mar 21, 1993 after being held for 40 days. The band return came in from Walla Walla Washington, where the bird was found dead on Sep 9, 1993. Walla Walla is almost due north of Kingsbury Gulch, Oregon—did this hawk follow a route similar to the SY female?

Other returns include a hatching year (HY) female Cooper's Hawk that came in with a concussion from a collision with a car on California Ave. in Palo Alto. Released in Portola Valley, it promptly flew back to Palo Alto and flew inside another car with its lunch (Rock Dove), not 24 hours after being released! Unfortunately, upon entering the moving car it injured a wing so badly that it had to be euthanized. A HY male Cooper's Hawk that was raised in captivity from a nestling after its nest was trimmed from a tree was recovered alive and in good condition after becoming entangled in landscaper's tree netting five miles away from its release site 30 days after release. This bird was released again in the same area after a brief rehabilitation.

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Rufous Hummingbirds Revisited

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of the northwest. But the biggest shock was a snow storm that blew in on Mar 22 when the recorded temperature was 32 degrees F! I had arrived shortly before 0800 and the skies looked nasty—heavy leaden-colored clouds bearing down over the ridge. As I waited to see what the weather would do, the stiff northwestern wind grew stronger and suddenly sheets of white snow were moving laterally through the area. It quickly started collecting on the ground, on the flow-

ing manzanita, on the closed, rolled mist nets, on my glasses—everywhere. I could not help but think of the plucky male Rufous Hummingbird I had banded just two days before on Mar 20. He was the first RUHU I banded at Monte Bello and he was obviously intent on reaching a desirable breeding territory as quickly as possible.

The project ended suddenly on Apr 16 two weeks before my scheduled completion date when, upon arrival at the site, I discovered that one of the nets had been vandalized. The eight-week project had yielded seven Rufous Hummingbirds banded, two males and five females in an effort of 409.5 net hours. Thirty-seven hummingbirds were censused. A total of sixty-four birds of sixteen species were banded, including Wrentits, California Thrashers, and one beautiful adult male Western Bluebird.

The 1994 Monte Bello project marked the start of an effort to answer a specific question about the Rufous Hummingbird: Is there a different migration route for the male and female birds, or are the male birds not living

as long as the females? I certainly was a witness to the reality of one tiny male pushing onward quickly (too quickly?) and perhaps encountering severe weather along the way. Is this a consideration as to why there are apparently fewer males sampled than females? Next spring I hope to continue the hummingbird project to try to answer some of these questions. I will be specifically looking for a secure site in the Diablo Range to the east of CCRS.

I greatly appreciate banding help received during the project from Chris Otahal, Kristin Shields, Vicki Silvas-Young, Tom Goodier, Mike Cropper, Lynn Cropper, Marty Sidor, Karen Hoyt, Irene Beardsley, and Maryann Danielson. I extend special thanks to Scott Terrill for his guidance, expertise and advice, and to the Midpeninsula Regional Open Space District for permission to use the area. Grant funding was received from the Wilson Ornithological Society and the Chicago Zoological Society. The Bob Hess Memorial Fund allowed the purchase of an electronic balance to accurately weigh the tiny birds. 

Year	Total No. Captured	Male	Female	M:F Ratio
1989	95	44	51	1:1.16
1990	38	14	24	1:1.71
1991	18	4	14	1:3.5
1992	38	11	27	1:2.45
1993	92	17	75	1:4.41
1994	65	17	48	1:2.82

Table 1. Spring Male/Female Rufous Hummingbird sex ratios at CCRS

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days in the year 1900 working south from Livermore. Even Gilroy, which couldn't have been more than a day's ride for Van Denburgh, was beyond his compass.

The lack of field guides and good optics was compensated, to a degree, by the smallness of the birding community and its close ties with the museum specialists of the day, such as Joseph Grinnell. Thus, every birder knew every other birder and usually had a chance to discuss recent findings at meetings of the Northern Section of the Cooper Ornithological Club. Grinnell, in particular, was an expert on subspecific variation within western bird species and his interest was reflected in this small group of birders who religiously used trinomials for those birds that were not monotypic species.

It is hard not to believe that the difficulties that these early birders faced were, in some cases, insurmountable. Van Denburgh gives a hint of this when he cites Rufous Hummingbird as a breeding species and never indicates the presence of Allen's Hummingbird. He may very well have obtained a specimen of Rufous Hummingbird during migration and never realized that the females he saw nesting were of a different genus. Barlow's additions clearly indicate that Allen's Hummingbird was found as both a migrant and a nesting species, but he does not correct Van Denburgh's mistake. Van Denburgh's confusion of Tree and Violet-green Swallows is so out of place with the rest of his accounts that I wonder if this was not just a typesetter's error. He notes the Tree Swallow as breeding on the west side of the valley "quite abundantly in holes in white oaks" while the Violet-green Swallow is an irregular summer visitant and he was unaware of any breeding records.

Of the birds we now consider very rare or vagrant, Van Denburgh's and Barlow's lists include Swainson's and Rough-legged Hawks, Yellow-billed Cuckoo, Long-eared Owl, Red-naped Sapsucker, Purple Martin, Canyon Wren, Townsend's Solitaire, Mountain Bluebird, MacGillivray's Warbler, Yellow-breasted Chat, Green-tailed Towhee, Sharp-tailed Sparrow, Yellow-headed Blackbird, Cassin's Finch, and Evening Grosbeak. What of the birds they missed? None of the birds we term common are missing from their lists, but of the fairly common species they make no mention of Brown Creeper

or Brown headed Cowbird. Of our uncommon species they make no mention of Common Raven or Hooded Oriole.

Van Denburgh's and Barlow's lists provide us a fascinating glimpse of the past and there is much food for thought here, although the lack of quantitative data makes for a less nourishing repast than I would like. Reading their combined lists makes clear that we have gained many species through urbanization. Van Denburgh took a specimen of a Northern Mockingbird at Stanford on February 17, 1893, "the only one I have seen." American Robins were noted as common migrants and wintering birds. Van Denburgh states that he had never seen an American Crow in the county but reported that Mr. J. M. Hyde had found them near Gilroy. It seems likely that both the crow and the raven have increased in the last century as they have adapted to our ways and our refuse.

The sadder part of reading their lists is to find what we have lost. Barlow noted that Willow Flycatchers breed commonly along the creeks flowing into San Francisco Bay. They build their nests in young maples along the creeks. Yellow-billed Cuckoo was also considered a common breeding species along the creek bottoms and Yellow-breasted Chats were considered "not uncommon." In discussing the passerines that nest in wetlands reference is made repeatedly to the marshes south of San Jose where, for instance, the Yellow-headed Blackbird "breeds in considerable numbers."

There is much more available material on the birds of Santa Clara County, especially in the pages of **The Condor** during the first half of this century. Any scholarly work on the birds of this county must thoroughly examine that literature. But for a checklist of the birds we need only concern ourselves with recent times as a checklist must reflect the current distribution, not the past. I will finish this topic with a wistful comment by Van Denburgh on change and the Western Meadowlark: "This was formerly a very common resident in

all parts of the valley, but of late years the converting of grain fields into orchards has resulted in a great restriction of its territory." What would Van Denburgh think of those orchards today, gone to silicon?

Wood Duck and Dabblers

This column looks at two of the duck genres: *Aix*, which in this hemisphere includes only the Wood Duck, and *Anas*, which is one of the most plentiful of the duck genres with ten species occurring in the county. I show the distribution of these eleven species in Figure 1 where the thick line means common or abundant, the medium line means fairly common, the thin line refers to uncommon, the dashed line is for rare, and the dotted line is for extremely rare. Solid circles are used to represent an accidental or vagrant occurrence. A double asterisk behind the species name indicates that it breeds each year, while a single asterisk shows that breeding has occurred at least once in the last twenty or so years. The distributional data for our more common species is based on unpublished Charleston Slough census data.

To a degree we take for granted these local duck populations. Four of these species nest regularly in the county and four more are irregular breeders. Recent atlas work in Marin and Monterey counties (Shuford, 1993 and Roberson and Tenney, 1993) reveals how uncommon these species, except for the Mallard, are along the central coast.

Wood Duck is a widespread, but uncommon resident species in the county. During the atlas period we recorded breeding in 39 of the 165 5 km blocks in the county with most records from the Diablo

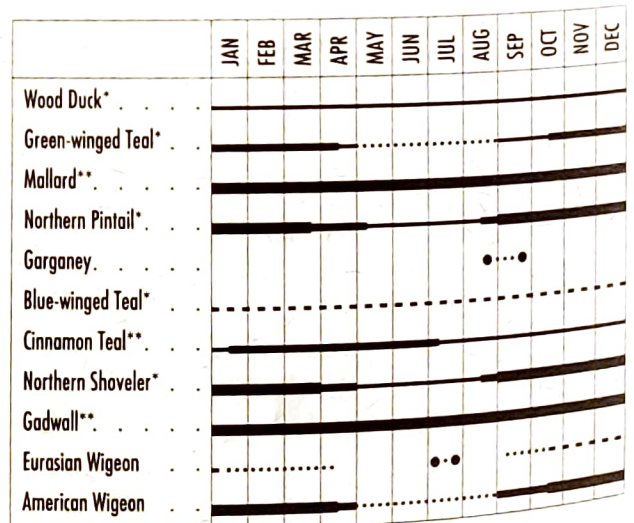


Figure 1. Distribution of *Aix* and *Anas* ducks in Santa Clara County.

Range and the west side of the Santa Cruz Mountains south of Coyote. In general, this species is attracted to streams and stock ponds where there are suitable nesting cavities nearby and low disturbance. On occasion, however, it has nested in urban areas where nest boxes have been placed. Birds appear to be resident year around in areas where they nest. However, we do occasionally find large concentrations of birds in the winter months and I assume that these are wintering birds that have withdrawn from their breeding areas to the north. Some examples include: 76 on Almaden Reservoir on Dec 19, 1992 (Ann Verdi), 58 in San Antonio Valley Dec 22, 1983, and 57 at Monte Bello OSP Mar 27, 1981 (both Bill Bousman). This species was greatly reduced in numbers towards the end of the last century so that by 1915 it was considered rare, but by mid-century its numbers had mostly recovered (Grinnell and Miller, 1944).

Green-winged Teal is a fairly common wintering species, mostly along the bay, and occasionally a few birds will overwinter. On the Palo Alto Summer Bird Count (SBC) we have recorded at least one bird in 9 of 14 counts. A female was seen with six young Jul 8-15, 1983 at Moffett Field (Bill Bousman) and this species undoubtedly has bred in the county in other years. No proof of nesting was obtained, however, during the extensive field work of the atlas years.

Males of the Eurasian race, *Anas crecca crecca*, are recorded nearly every winter. The earliest date I have is Dec 1, 1993 along Permanente Creek (Steve Rottenborn) and the latest is Apr 27, 91 on Crittenden Marsh (Peter Metropulos). The latter bird was associating with a female.

The most widespread of our dabbling ducks is the ubiquitous Mallard. This bird is common throughout the year, although its numbers never match some of the winter-resident species. We found this bird breeding in 88 of the 165 atlas blocks from 1987 to 1993. Tolerant of humans, it will nest almost anywhere it can find a bit of cover and some nearby water. Near our urban centers it appears to adapt readily to supplemental feeding and interbreeds freely with feral duck populations. The gene flow in the resulting populations is beyond our ken. Birds appear largely resident and there is no significant difference in numbers based on the Palo Alto Christmas Bird Count (CBC) and SBC data.

Northern Pintail is one of our common wintering ducks. Numbers drop off rapidly in March, but a few birds always remain during the summer and, not infrequently, nest. During the atlas we found this species nesting in only five blocks — four along the bay plus on San Felipe Lake in San Benito County. This species has been undergoing a population decline in North America but numbers have been fairly stable in the South Bay over the last few decades as indicated by CBC data.

Why anyone would get excited about drab female ducks or males in eclipse plumage is beyond most people, but the female (?) Garganey that showed up in August of 1992 in the Mountain View Forebay created in tense excitement. Peter Metropulos found this bird on Aug 19, 1992 and after studying it extensively that day and the next he called the Rare Bird Alert and birders and telescopes became common around the forebay as people sought good vantage points to study this drab Eurasian vagrant who, it seemed, could sleep undisturbed for hours. Of the four written descriptions I have, three considered the bird to be a female based on the upper wing pattern (the fourth observer was unwilling to sex the bird). However, in **American Birds** (AB 47:144), the bird was reported as a male so we must wait for the report of the California Bird Records Committee for the basis of this determination. The last date the bird was seen was Sep 22, 1992 (AB 47:144).

Blue-winged Teal are rare in the county. I show the yearly distribution of this species based on records since 1980 in Figure 2 while Figure 3 shows the distribution by year over the same period. There is reduction in the number of sightings in late July and August when the males are in their eclipse plumage but, in general, this duck is found in the county throughout the year. Most of our records are of birds along the bay, either in bayside impoundments or in streams entering the bay. Exceptions include a record from a pond on Tully Road on, May 26, 1951 (M. Miller and L. Robbins; Sibley, 1952) and a pair, possibly three birds, on San Felipe Lake and north of the lake on this side of the county line May 28-Jun 11, 1991 (Bill Bousman). Although paired birds were found in the spring during the atlas years we never obtained proof of nesting. The only nesting record we have for the county is of 8 young accompanied by an adult pair in the Palo Alto Flood Control Basin May 21,

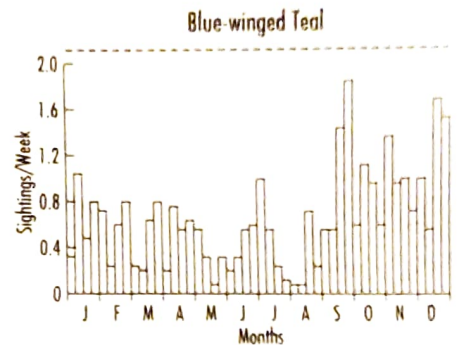


Figure 2. Blue-winged Teal yearly distribution of sightings (1980-1993).

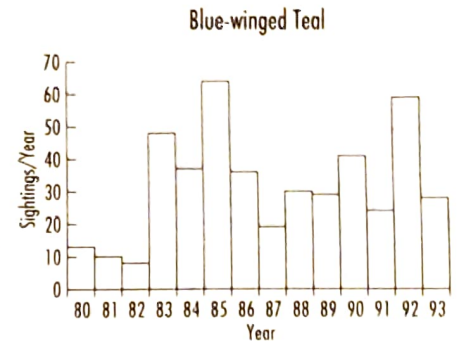


Figure 3. Blue-winged Teal yearly distribution, 1980-93, in sightings.

1974 (Bob Yutzky; AB 28:846). Grinnell and Miller (1944) considered this teal to be common in northeastern California, but rare in the rest of the state. The earliest record I have for the county is a male found by Charles Sibley a half-mile southwest of Alviso on Apr 6, 1951 (Sibley, 1952).

Cinnamon Teal are fairly common in Santa Clara County but their status is not completely clear. The distribution shown in Figure 1 is based on Charleston Slough data and shows a reduction in numbers during the winter which is the generally accepted distribution of this species for Northern California (Grinnell and Miller, 1944; McCaskie et al., 1979). However, our Palo Alto count circle data show that this duck is found in significantly higher numbers in winter (0.32 birds/party-hour, n=5, in winter compared to 0.12 birds/party-hour, n=5, in summer). Perhaps, this is simply a case of birds dispersing during the breeding season outside of the count circle. During the atlas period we found this species breeding in nine atlas blocks (5% of the total), both along the bay and in the Diablo Range. This species differs from other members of its genus because of its strong neotropical flavor with a number of sedentary populations near the equator and a population that breeds in the southern reaches of South America

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during the austral summer with a return to the tropics in the austral winter (our summer).

Our most abundant wintering duck is the Northern Shoveler. The western pond at the Sunnyvale Water Pollution Control Plant (WPCP) is a safe refuge for this species during the hunting season, and a leisurely walk around this pond in December will show many thousands of birds of obvious intelligence while the adjacent, hunter-infested salt ponds are barren. This species makes a chuckling sound as it feeds which is noticeable at this time of year. Numbers taper off in April, but a few birds remain throughout the summer and they probably breed in most years. During the atlas we found this species breeding in two bayside blocks, on Calaveras Reservoir, and on San Felipe Lake. These birds return still in their eclipse plumage and the numbers once again build in September to their winter highs. Like the other pothole-breeding ducks this species has been undergoing a decline in recent years, but this decline is not shown in the CBC data obtained in the South Bay in the last two decades. Palo Alto CBC totals in recent years have ranged from 4,000 to 18,000 birds, but in 1983 we counted over 83,000 birds—the most we have ever counted for any species on a local Christmas count.

Compared to our other ducks the Gadwall's plumage is a case of understated elegance. It is a common resident species and, although its breeding population is centered at the edge of the South Bay, it does breed in a number of locations in the Diablo Range and along the valley floor. During the atlas we found it nesting in 18 of the 165 blocks in the county. This is our most common nesting duck and in favored areas along the bay its numbers can be substantial. Two hundred and twenty-eight adults and 618 ducklings were censused on Crittenden Marsh on Jun 11, 1982 when water conditions were ideal (Bill Bousman; AB 36:1012). A total of 1400 were counted at the same location Aug 24, 1986 (David Suddjian). In the last few years, the Sunnyvale WPCP appears to have hosted the largest concentrations and five hundred adults and 106 ducklings were recorded there Jul 24, 1993 (Steve Rottenborn). At mid-century this species was considered fairly common

in the Central Valley (Grinnell and Miller, 1944), but in the bay area it was decidedly rare and individual sightings were considered noteworthy (Sibley, 1952).

The Eurasian Wigeon is an abundant duck in the old world, but rare in the new. In the county it is a rare wintering species as indicated in Figure 4 which shows the distribution over the year. Figure 5 shows the number of winter sightings over the last 14 winters and, unlike Blue-winged Teal, there appears to have been a noticeable increase in wintering birds in the last half dozen years. This bird has overwintered in the county at least once. A drake was seen in the Palo Alto Baylands Jul 8 and 24, 1979 (Joe Morlan, Steve Bailey; AB 33:893); the first summer record for the Northern California region. Fall birds normally show up in the last week or two of September. A male in the Palo Alto FCB Sep 9, 1985 (David Suddjian) is the earliest record I have for the county, while another male at the same spot on Apr 26, 1993 (Steve Rottenborn) is the latest record. This species was apparently encountered fairly regularly in the last century (Grinnell and Miller, 1944), but it has been much more rare in the early parts of this century (Sibley, 1952). The first record of its occurrence in the county is of a single bird in the Palo Alto Baylands Nov 12, 1972 (Dave DeSante et al.; AB 27:114). This species is found for the most part along the bay, but there are a dozen or two records away from the bay, mostly in the various water district Groundwater Recharge Facility ponds, but also on Calaveras Reservoir and Grant Lake in the Diablo Range.

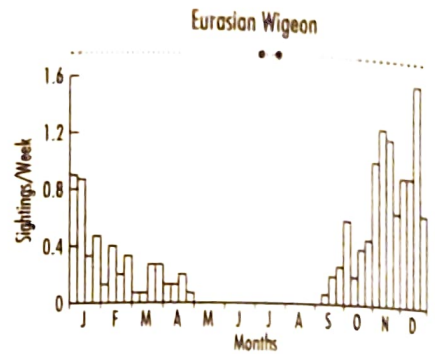


Figure 4. Eurasian Wigeon yearly distribution of sightings (1980-1993).

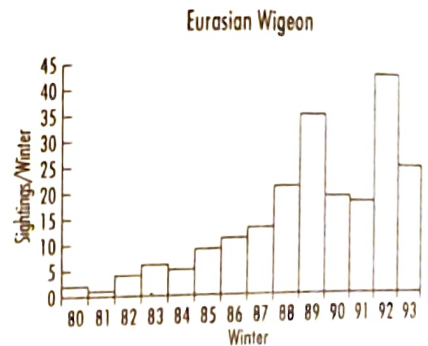


Figure 5. Eurasian Wigeon winter distribution, 1980-94, in sightings.

The American Wigeon, the New World equivalent of the Eurasian Wigeon, is a common wintering duck in the county and is found in many locations, not just along the bay. Unlike our other common wintering species, this duck is much more rare during the summer. We encounter few overwintering birds and there is no evidence of nesting. This species has always been a common wintering duck in California (Grinnell and Miller, 1944). 🌿

Acknowledgments

Gloria Heller and Steve Rottenborn are thanked for their courtesy in obtaining copies of Van Denburgh's paper.

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The 1994 Spring Season

by Bill Bousman

We banded every day during the months of March through May except for May 7. I have tabulated the passage dates of our regular spring migrants in Table 1 using data I recorded from the Summary Board for new captures.

Our five most common migrants this spring were, in rank order, **Swainson's Thrush** (SWTH), **Wilson's Warbler** (WIWA), **Orange-crowned Warbler** (OCWA), **Rufous Hummingbird** (RUHU) and **Pacific-slope Flycatcher** (PSFL). This pattern is very similar to recent springs. Although the numbers of new captures can be misleading, as the data are not normalized, it is interesting to note that the 20 **Warbling Vireos** (WAVI) we banded were the highest spring total we have had, the 115 OCWA were our second highest total for that species, and both the RUHU and SWTH numbers were the third highest we've had. Most migrants tended to be a bit late this spring. The median passage for WAVI was several days late, while PSFL was five days late. The rest of the species were within four



days of their median passage dates, but only the **Yellow Warbler** (YWAR) was early. For YWAR it is interesting to see how rapid the migration was—80% of the birds were captured over just an eleven day period.

Arrival dates for our summer resident species and departure dates for the wintering species are shown in Table 2. **Black-chinned Hummingbirds** (BCHU) were four days early while our other summer residents were late. Note that a re-captured **Bullock's Oriole** (BUOR) was netted on Apr 13 which is early for the creek. The last dates we banded some of our wintering species were fairly typical. The departure dates for both **Ruby-crowned Kinglets** (RCKI) and **Myrtle**

Warblers (MYWA), however, were a bit late.

It was a good spring for some of our seldom-seen migrants. We banded a single **Calliope Hummingbird** (CAHU) on May 4 which fell right on the median date of our previous ten records.

An **Olive-sided Flycatcher** (OSFL) on Apr 28 was our eighth spring record while **Western Wood-Pewees** (WEWP) banded on May 18 and 27 were close to the numbers we usually encounter. **Hammond's Flycatcher** (HAFL) showed up once again with two banded on Apr 18. The median date for our previous 13 records is Apr 22.

A single **House Wren** (HOWR) on Apr 18 was not unexpected. A **Black-throated Gray Warbler** (BTYW) was banded on Apr 16, two days earlier than the median date for the species. A **Townsend's Warbler** (TOWA) on May 18 was the latest spring migrant we've had at the station, although

Table 2. Arrival and Departure Dates for Spring 1994

Species	Arrival Date	Departure Date
BCHU		Apr 20
ALHU		Feb 26
WIWR		Apr 7
RCKI		May 11
HETH		May 10
MYWA		Apr 25
AUWA		Apr 18
BHGR	May 4	
FOSP		Apr 15
LISP		Apr 27
GCSP		May 11
PSSP		Apr 27
GASP		Apr 30
BUOR	Apr 26	

they are frequently found at higher elevation in the last week in May. A **Yellow-breasted Chat** (YBCH) banded on May 9 was a treat, as always. We netted only one **Western**

Continued on page 11

Table 1. Spring 1994 - New Capture Data

Species	No.	First	10th %	50th %	90th %	Last
RUHU	67	Mar 14	Mar 29	Apr 13	May 1	May 10
PSFL	53	Mar 27	Apr 17	May 14	May 31	Jun 7
ATFL	4	May 18		May 23		Jun 8
SWTH	295	Apr 21	May 6	May 18	May 27	Jun 8
WAVI	20	Apr 5	Apr 27	May 18	May 21	May 29
OCWA	115	Feb 27	Apr 11	Apr 27	May 11	May 20
YWAR	40	May 5	May 14	May 21	May 25	Jun 8
MGWA	3	Apr 13		May 8		May 18
WIWA	183	Mar 18	25 Apr	May 10	May 21	May 25

Post-Release Study of Rehabilitated Raptors

Continued from page 3

Two rehabilitated Red-tailed Hawks have remained near their release sites and have been identified by bands on the left leg. One came in as a HY female with a broken leg sustained during fledging and was rehabilitated and released on Aug 29, 1993 at Arastradero Preserve in Palo Alto. A year later, it is alive and well, being regularly observed killing ground squirrels on Stanford Campus, a mere 2 miles from its release site. (A persistent observer was able to read the leg band while the hawk mantled its prey.) The second Red-tailed Hawk is an adult that

successfully fledged young this year from a nest on Stanford campus. (While its band has not yet been read in the field, the proximity to release site, plumage, and band placement very likely identify it as one of five Red-tails rehabilitated and released in the area.)

These and other band recoveries give insight into the original questions regarding the survival of rehabilitated birds, and suggest that breeding is probable. What about the other species banded and released? Out of 50 Barn Owls released locally not one

band has been recovered. Other questions arise—how long did it take the first two Red-tails to travel up to Oregon and Washington? Did the HY male travel in the spring when he was released or did he linger in the Bay Area? Did the HY male Cooper's stay in the area for a month or leave and return?

I spent time in the field this fall tracking transmitter-tagged raptors via radio telemetry in a Golden Gate Raptor Observatory study. Using this technology I hope to look at these questions and others next year under special permits through CCRS.

The Brown-headed Cowbird in Santa Clara County

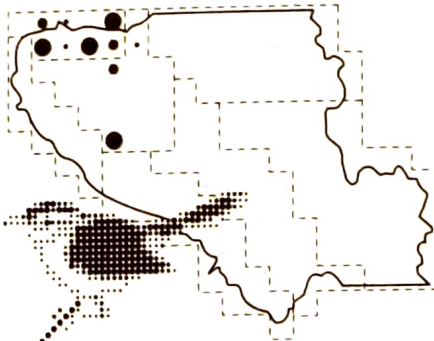
by Michael M. Rogers

The **Brown-headed Cowbird** has received much attention from biologists because of its negative impact on several neotropical migrants, especially riparian species like the Willow Flycatcher and Bell's Vireo, which have become more susceptible to the cowbird's parasitism owing to fragmentation of riparian habitat and exposure to nearby cattle ranching. Despite this, our atlas results suggest that we may not have known as much about the status and distribution of this species in Santa Clara County as we had thought.

As most birders know, the Brown-headed Cowbird is somewhat of a slouch when it comes to parental responsibilities. Rather than spending its own time and effort in raising a brood of youngsters, it seeks out a host species, often smaller than itself, and lays eggs in these birds' nests. The egg-laying is timed to coincide with egg-laying by the host species, but since the cowbird eggs hatch sooner, the cowbird youngster gets quite a head start on the host's own young. The young of the host species usually starve when the cowbird takes all the food brought by the parents and may even be pushed out of the nest by the young cowbird. Given that a female cowbird may lay single eggs in a dozen nests, many have pointed to this species as a primary cause for the decline of several neotropical migrants.

The Brown-headed Cowbird can be found at any time of year in Santa Clara County, but its abundance and visibility greatly increase during the breeding season. In winter a few cowbirds can usually be found in blackbird flocks throughout the county, but they generally constitute a small

Santa Clara County



Breeding Bird Atlas

fraction of such flocks and we have come close to missing this species on several Palo Alto Christmas counts. During the last few days of February and the first few days of March, singing male Brown-headed Cowbirds begin to increase in number in our urban areas. Soon they can be found on television antennas in every neighborhood, competing for the attention of the more nondescript females. By the end of July the males singing becomes less frequent, and cowbirds can be hard to find in August, when they are often congregating with other blackbirds. As noted in the previous column discussing Humane Society records, dependent young cowbirds are still about in August—I watched a California Towhee feed a young cowbird at the Alviso Marina on Aug 26 this year! In late August and September, young males molt into their adult plumage, resulting in plumages consisting of a strange patchwork of black and tan. Numbers seem to swell again somewhat during September, October, and early November as migrants from further north move through with other blackbirds.

Many birders are probably familiar with the song given by the male Brown-headed Cowbird in the urban parts of Santa Clara County. I have transcribed this two-note whistled song as a drawn-out, descending "tsew" or "tseoo", followed by a shorter, rising "tsit" or "tset". The song is loud and is about what one would expect from a bird of this size. People familiar with this song may be surprised to drive over to the San Antonio Valley and encounter male Brown-headed Cowbirds delivering quite a different song. These birds give a high, thin, tinkling "pee tee

didilee" or "see dee piddilee" that sounds more like the tinkling of a goldfinch than the voice of a "blackbird".

Figure 1 shows the breeding distribution of Brown-headed Cowbird in Santa Clara County as determined by our breeding bird atlas project. Large black dots indicate confirmed breeding, medium-sized dots indicate probable breeding, and small dots indicate possible breeding (the simple presence of this species in a block is taken to indicate possible breeding). What is remarkable about this map is that there is a clear region between the Santa Clara Valley and the interior of the Diablo Range where Brown-headed Cowbirds were not found despite extensive atlas coverage. What is even more interesting is that this area without cowbirds corresponds to the boundary between the two different song dialects! Our urban birds penetrate into the foothills of the Diablo Range and can be found in lower elevation areas like the south end of Calaveras Reservoir. The birds of the interior of the Diablo Range are often found in association with cattle ranching operations and have been confirmed breeding to 3000 feet elevation and higher. As expected, the host species in these two very different areas of the county differ. Whereas urban birds are often reared by California Towhees or House Finches, I typically find young cowbirds being fed by Blue-gray Gnatcatchers and Warbling Vireos in the Diablo Range. The gap between "urban" and "interior" birds consists of a band of atlas blocks that is roughly parallel to the western edge of the Diablo Range. From north to south, these blocks contain the Arroyo Hondo, Mt. Hamilton and Mt. Isabel, San Felipe Valley and the San Felipe Hills, large portions of the various branches of Coyote Creek in Henry Coe State Park, and Gilroy Hot Springs.

The atlas blocks are 5-kilometer squares, and the presence of cowbirds anywhere in that square results in a dot for that block in Figure 1. Thus the actual gap between the two song types may be even wider than indicated. For instance, the population mentioned above near the southern end of Calaveras Reservoir is in the southwest corner of block 0545. Only a single high-flying bird was seen in the eastern portion of this block between the Calaveras Reservoir birds and the blocks with no cowbirds to the east. Also,

Continued on page 9

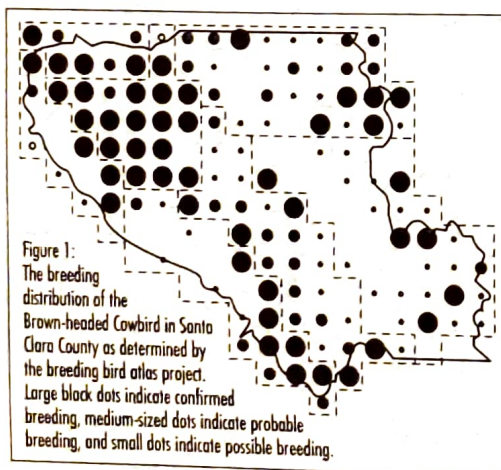


Figure 1:
The breeding distribution of the Brown-headed Cowbird in Santa Clara County as determined by the breeding bird atlas project. Large black dots indicate confirmed breeding, medium-sized dots indicate probable breeding, and small dots indicate possible breeding.

The Brown-headed Cowbird in Santa Clara County

Continued from page 8

the presence of dots in Figure 1 gives no idea about the abundance of the species. The single solid dot (indicating confirmed breeding) in block 1045 (middle of the top row of the map) resulted from a single dependent fledgling being located in a Red-winged Blackbird colony in this block. Despite two years of extensive field work in this block, no adults were ever located; clearly the species is scarce here! Unfortunately, the lack of records of singing adult males in this block does not allow us to determine which song type is associated with this breeding record.

Differences in song and distribution often indicate that different species or subspecies are involved. A look in Grinnell and Miller's "The Distribution of the Birds of California," however, indicates that all our cowbirds supposedly belong to the "Dwarf Brown-headed Cowbird" subspecies. The only other subspecies found in California, the "Nevada Brown-headed Cowbird," occurs in the Great Basin areas east of the Sierras (although "intergrades" found in the San Joaquin and Owens Valleys have been proposed to be of a separate subspecies by some). Could our atlas results be suggesting something different? Perhaps further research sparked by our atlas results will lead to some new conclusions! ✨

Avian Research Committee

Continued from page 1

One of the committee's first tasks will be to examine current banding efforts and determine how to make better use of data now being collected. The other main priority will be to develop new banding studies to answer specific questions regarding bird biology and riparian habitat use. An emphasis on publication of results in established journals will be stressed as the ARC directs the course of future research at CCRS.

Committee Chairman Rottenborn is enthusiastic about the ARC's role in guiding the bird-banding program toward some exciting new projects while maintaining valuable ongoing work. "We'll take a careful, retrospective look — working with and building on data that have been collected over the last ten years — and then make the next step, which is to ask specific questions raised by the prior data."

Recoveries of Banded Birds

The Bird Banding Laboratory in Laurel Maryland has notified us of the recovery of several birds banded by CCRS volunteers:

Cooper's Hawk 614-77770 — was raised in captivity by Wildlife Rescue personnel because the nest tree had been cut down. The hawk was banded by Karen Hoyt and released in Portola Valley on Jul 29, 1993. It was brought into the Peninsula Humane Society a month later because it had become entangled in netting covering a fruit tree. The bird was thin but in good health.

Puget Sound White-crowned Sparrow 1501-78186 — banded by Rita Colwell on Oct 16, 1991 and recovered in Surrey, British Columbia, (near Vancouver) on Jul 6, 1993.

Red-shouldered Hawk 987-08347 — was a HY bird when it was captured and banded by Kristin Shields on Aug 20, 1992. It was the first capture of that species at CCRS. Its recovery was reported by a homeowner in San Jose when the bird flew into a window on Apr 29, 1994.

Black-headed Grosbeak 952-20382 — was a SY male when banded on Apr 28, 1992 by Chris Otahal. The bird was recovered on May 30, 1994 in St. Helena, CA. ✨

Instant Gratification

On Sep 10, 1994, a HY **Western Flycatcher** (WEFL) was recaptured at CCRS (1980-38391). Bander Gerry Ellis noted that it was banded on the "wrong" leg. CCRS policy is to band the left leg as long as it is not injured, and in this case, no injury was evident. The WEFL was processed and released.

Later, when it was again recaptured, Gerry mentioned the band to Day Chief Rita Colwell. "Wheels began turning" in Rita's mind. A quick check revealed that the band was not in the series distributed to CCRS. On a hunch, Rita called the banding lab at Point Reyes Bird Observatory (PRBO). YES! It was one of their bands, and the bird was banded on Sep 8, only two days prior! That's a 60-70 mile trip, as the WEFL flies, in no more than 48 hours! It is also noteworthy that it weighed 9.0 grams at PRBO and 9.4 grams at CCRS.

It is a special kind of instant gratification to get such quick feedback in a banding program. And thanks to the foresight of Dr. Richard Mewaldt, who established the left leg banding policy to differentiate "our" birds, we were able to notice this individual.

Perhaps this bird will find its way into a mist net somewhere else down the coast, maybe in Mexico, or visit CCRS again in the future. Long-term gratification wouldn't be so bad either. We can only hope! ✨

Rottenborn described some other broad goals to be considered by the ARC:

1) To study extremely important ecological problems and enable CCRS to have a greater impact on the state of riparian conservation.

2) To increase publication of papers and articles. While some projects may be ongoing over many years, others might be completed in one or two. The resulting increase in the number of scientific papers produced by CCRS will enhance the reputation of CCRS as a research station, increasing chances of obtaining future grants.

3) To apply for grants directed toward specific questions, and fund some projects with smaller grants. CCRS can then either apply for large or small grants, and with a more clearly defined research program and better publication record, the chances of obtaining grants will increase.

4) To encourage banders to know and understand exactly what the result of their efforts will be. This will enhance bander morale and interest, increase the potential for communication between CCRS staff and banders, and give banders the opportunity to increase their own knowledge of some scientific topics relevant to their work.

The committee held its first formal meeting in late September to discuss goals, policies, and research projects, both ongoing and future. The proceedings of this important new group will be reported regularly in *RipariaNews*. Other ARC members are CCRS staffers Chris Otahal, Rita Colwell, Chris Fischer and Charles Preuss, and volunteers Karen Hoyt, Vicki Silvas-Young, Lisa Brown, Gerry Ellis, Marian Fricano and Zona Walcott. ✨

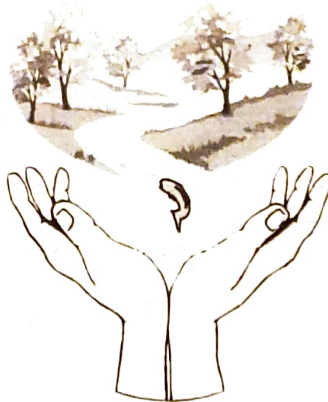
CCRS Forges New Ties With CA Fish and Game

by Chris Fischer

Stream Inventory Program Manager

The Coyote Creek Riparian Station is entering into an exciting new relationship with the California Department of Fish and Game's Natural Heritage Division. Under the terms of a Memorandum of Understanding, CCRS will begin reporting observations of certain plants and animals encountered through the Banding Program. Stream Inventory and other wildlife monitoring programs. These data will be entered into the statewide Natural Diversity Data Base (NDDDB) and in return CCRS has been granted access to this remarkable store of information.

The NDDDB tracks the location and condition of rare and sensitive plants, animals and natural communities. The Department of Fish and Game has developed a list of these "special" native flora and fauna, and many of these species live in and migrate through our local riparian corridors. Some of the listed species we will be on the lookout for include Yellow-breasted Chat, Dusky-footed Woodrat, Chinook Salmon and California Red-legged Frog. Much of the length of our intact riparian forests will fall into listed categories for natural communities, so careful documentation of the location and condition of these habitats will significantly enhance NDDDB information in our area.



Community Creek Watch

In most cases the volunteers who observe the organism in question will be asked to fill out part of the survey form. Information on how this is to be accomplished will be available from your field leader (for Stream Inventory folks) or the CCRS banding staff. We promise to keep this paperwork load as light as possible. Ken Hashagen, the Coordinator for the Data Base project, has expressed excitement on the part of his staff that CCRS volunteers are interested in collaborating in this important project. CCRS is excited, too!

Animals listed as "special" species by California Natural Diversity Data Base. Each time CCRS staff and volunteers observe one of these animals, CCRS will report the encounter along with data on exact location, associated habitat description, age and breeding information and associated impacts or threats. Photographs and sketches are also encouraged.

Birds	Sharp-shinned Hawk	Vaux's Swift	Fish
Common Loon	Swainson's Hawk	Bank Swallow	Chinook Salmon
Western Grebe	Golden Eagle	California Horned Lark	Summer Steelhead
Clark's Grebe	White-tailed Kite	Willow Flycatcher	Speckled Dace
American White Pelican	Northern Harrier	Loggerhead Shrike	Amphibians
California Brown Pelican	Osprey	Tri-colored Blackbird	California Tiger Salamander
Double-crested Cormorant	Bald Eagle	Yellow Warbler	California Red-legged Frog
Great Blue Heron	Merlin	Common Yellowthroat	Foothill Yellow-legged Frog
Great Egret	Peregrine Falcon	Yellow-breasted Chat	Western Spadefoot Toad
Snowy Egret	California Black Rail	Alameda Song Sparrow	Reptiles
Western Least Bittern	California Clapper Rail	Mammals	Western Pond Turtle
Black-crowned Night Heron	Western Yellow-billed Cuckoo	Dusky-footed Wood Rat	California Horned Lizard
White-faced Ibis	Burrowing Owl	American Badger	
Cooper's Hawk	Long-eared Owl		

Gearing up the Guadalupe

Stream Inventory work on the Guadalupe River watershed has hit high gear, with ten teams and over fifty volunteers collecting data weekly and seasonally. Seven new teams are being added this fall: Bird Censuses on Guadalupe and Los Gatos, Profile Surveys on Alamitos, Los Gatos and Guadalupe, and Vegetation Teams on Los Gatos and Calero Creeks. Bird censusers are also needed for Calero; we hope to start that team by the end of October.

The Guadalupe River watershed is at a critical juncture, as proposals regarding construction projects, salmon populations, and restoration plans are being considered. The Stream Inventory data may play an important role in the outcome of these decisions. If you have been considering getting involved in the Inventory, now is the time!

H₂O Chemistry Milestones

Congratulations to all those water quality testing volunteers on Alamitos, Guadalupe, Calero, Los Gatos, Saratoga, and Stevens Creeks who have contributed to collecting a year's worth of data! Special thanks to Cynthia Lipford and Chris Bloxam for tremendous efforts in coordinating the volunteers and data collection on these creeks!

Tuesday Talks

Thanks to generous gifts of time from local experts, interested volunteers and staff have been treated to entertaining and educational evenings at McClellan Ranch the second Tuesday of each month. These opportunities will continue through the fall, on the following schedule. Please feel free to join us! We meet from 7 to 9 p.m. in the Audubon offices at 22221 McClellan Road in Cupertino.

November 8 Sexual Differences in Wilson's Warbler Migration

Chris Otahal will present his published paper "Sexual Differences in Wilson's Warbler Migration" based on CCRS bird banding data.

December 13.

Break for Holiday Madness. No Talk scheduled. ✨

Coyote Creek Riparian Station Statement of Activities

For the Year Ended December 31, 1993

Revenue and Support

<i>Revenue</i>		
Dues	\$10,317.29	
Class Fees	150.00	
Income on Cash Investments	1,236.84	
Gain on Current Investments	767.16	12,471.29
<hr/>		
<i>Support</i>		
Unrestricted Donations	\$5,653.58	
Trailers Received in prior years as gifts	2,000.00	
Net Support from Bandathon	1,426.50	
Reimbursements from Other Organizations	708.33	
Hardman Foundation Grant	521.53	
IBM Grant for Laser Printer	2,014.00	
<i>Restricted Support for Programs</i>		
Amphibian Surveys	14,149.43	
Revegetation at CCRS	180.44	
S. C. Co. Stream Inventory	46,231.26	
StreamKeeper Program	11,029.65	
Lower Coyote Creek Water & Wildlife Monitoring	51,836.13	
Miscellaneous Projects	78.00	135,828.25
<hr/>		
Total Revenue and Support		<u><u>143,300.14</u></u>

Expenses

<i>Program Services</i>		
Long-term Wildlife Monitoring	\$16,527.32	
Regional Conservation Action Newsletter	4,182.31	
Educational Activities	6,101.29	
Other Program Expenses	3,480.58	
Amphibian Surveys	9,838.03	
Revegetation at CCRS	521.53	
S. C. Co. Stream Inventory	34,469.03	
StreamKeeper Program	11,275.27	
Lower Coyote Creek Water & Wildlife Monitoring	25,306.95	
Miscellaneous Projects	156.56	111,858.87
<hr/>		
<i>Fundraising</i>		
Salaries and Payroll Taxes	\$1,132.51	
T-shirt/Sweatshirts	770.54	
Building Fund	1,130.43	3,033.48
<hr/>		
<i>General and Administrative Expenses</i>		
<i>Operation Overhead</i>		
Administrative and Office Payroll	\$17,465.00	
Payroll Taxes	1,743.91	
Books, Subscriptions, Memberships	363.94	
Computer Software	443.93	
Conferences and Meetings	456.01	
Fees and Bank Charges	498.25	
Insurance - Liability	370.00	
Insurance - Workers' Comp.	1,375.32	
Office Supplies	2,688.68	
Postage	969.48	
Small Office Equipment	301.96	
Repairs and Maintenance	129.68	
Telephone	1,435.71	
Utilities	1,800.73	30,042.60
<hr/>		
Other Expenses		464.96
Tax Penalties		
<hr/>		
Total Expenses		<u><u>145,399.91</u></u>

The Birds of Santa Clara County

Continued from page 7

Tanager (WETA) this spring, a bird on May 25, which is late. Two **Lazuli Buntings** (LAZB) were captured, one on May 14, and the second on May 30. A **Chipping Sparrow**, banded on May 18, is only our second spring record. Similarly, our second record of a **Swamp Sparrow** (SWSP) was obtained on Apr 20 following an amazing SWSP winter in the Valley. Two **White-throated Sparrows** banded on Apr 17 and a late bird on Apr 27 finished off the spring list of rarities. 🌟

Excess of Revenue and Support over Expenses	2,900.23
Fund Balance at Beginning of Year	39,686.32
Fund Balance at December 31, 1993	<u><u>\$42,586.55</u></u>

Corporate Donations Help Programs Grow

by Michael Rigney

CCRS has been fortunate to receive substantial corporate support this past year. First, the **Hewlett-Packard Bay Area Contributions Program** provided us with an HP Vectra computer and a Scanjet IIcx. This computer will be used primarily for our Stream Inventory database and related geographic information systems mapping chores. The computer is a high speed IBM-type personal computer with a large hard disk for storing our equally large map files. The scanner will help us turn topographic maps and aerial photographs into usable image overlays for our electronic maps. This system will enable us to visually represent our habitat information collected along Santa Clara County's creeks and rivers and maintain our geographic reference points. We would like to thank the employees of Hewlett-Packard for helping obtain this grant and especially Wayne Dexter, our grant sponsor.

One of the keys to our stream inventory program is our ability to accurately locate our

sampling areas on an electronic base map of a given watershed. In order to accomplish this task we use the latest in space age technology (literally data from space). Called the Global Positioning Satellite (GPS) system, this system of 24 stationary satellites sends signals to ground-based sensing units which, in turn, yield precise location information. Through all of last year we have made extensive use of equipment loaned to us by the Santa Clara Valley Water District. Unfortunately, the equipment was being used quite often by District personnel and it was becoming increasingly difficult to resolve schedule conflicts.

One of our stream inventory volunteers, Tom Moutoux, through a friend Barbara Thomas, then an employee of one of the largest manufacturers of GPS equipment manufacturers, introduced our program to one of the corporation's founders. In July, Mr. Robert Trimble and Company founder Charles Trimble of Trimble Navigation donated a GeoExplorer hand-held satellite receiver, cables, adapters and all the software

necessary to run this sophisticated hardware, to Stream Inventory coordinator Chris Fischer. The donation of this equipment will insure the continuation of the high degree of accuracy demanded of our inventory by the various agencies which will be using our data.

On September 13 the Board of Directors of the David and Lucile Packard Foundation awarded CCRS its first major foundation grant for the continuation of our successful stream inventory project. This grant was sorely needed since anticipated follow-up funding from the EPA did not materialize. We would like to thank Conservation Program Officer Jeanne Sedgwick for her support throughout the grant review process. It is hoped that with Packard Foundation backing, our chances for future grant monies will increase.

A heartfelt thank you to all those individuals and organizations that were instrumental in helping CCRS's riparian research and restoration programs grow and prosper! 🌿

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 Dr. Scott Terrill, Research Director (vol.)
 Chris Fischer, Community Creek Watch Program Coordinator
 Charles Preuss, Community Creek Watch Program Associate
 Karen Cotter, StreamKeeper Coordinator
 Grant Hoyt, RipariaNews Editor (vol.)

New Members

We welcome the following new members:

Robert Long	Lorrie Tanabe-Nolley
Richard Gehrler, Jr.	Diane Kodama
Debra Matuszak	Chloe Silverman
Monique Imberski	Katherine Korotaj
Jared Verner	Taylor Lyen
Annuschka & Anjuli Deb	Jenn Barg
Shalese Huang	Marcelino Madrigal
Tom Kopley	Christina Garcia
Pat Stroup	Connie Garrett
William Kent	Yeng Fang
Dolly Gallagher	Lisa Lacabanne
Howard Friedman Family	Lisa Sager
Bronwyn Lewis	Jeff Davis—Ventana
Mack Zardkoohi	Wilderness Sanctuary

CCRS Membership

Member	\$20 annually
Senior or Student	\$15 annually
Family	\$25 annually
Supporting	\$35 annually
Sustaining	\$90 annually
Corporate	\$500 annually
Life	\$600
Patron	\$3,000*

* Life and Patron categories can be single payments or 4 quarterly installments.

Life membership payments and 10% of all other membership payments and general contributions go toward long-term support of CCRS activities. We acknowledge memorial contributions in *RipariaNews*. We welcome bequests including those of real property.

Coyote Creek Riparian Station (CCRS) is a nonprofit California membership corporation with United States and California tax exempt status. CCRS is dedicated to research on and the restoration of riparian and wetland habitats.

CCRS operates in cooperation with the Santa Clara Valley Water District, San Jose-Santa Clara Water Pollution Control Plant, U.S. Fish and Wildlife Service, California Department of Fish and Game, and the San Francisco Bay National Wildlife Refuge.

RipariaNews is published quarterly for the information of our CCRS membership; the personnel of the several cooperating federal, state, and local agencies; and other organizations and individuals concerned with the flora and fauna of riparian and wetland habitats. Design and layout courtesy of Aplin, Uno & Chibana, Mountain View, CA.

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