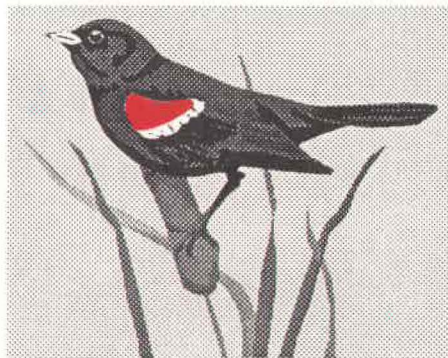


Breeding Status, Distribution, and
Habitat Associations
of the
Tricolored Blackbird
(*Agelaius tricolor*)
1850-1989



PREPARED FOR:
U.S. Fish and Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

PREPARED BY:
Edward C. Beedy
Susan D. Sanders
Debra Bloom

IN COOPERATION WITH:



Jones & Stokes Associates, Inc.
2600 V Street, Suite 100
Sacramento, CA 95818-1914

June 1991

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2600 V Street, Suite 100
Sacramento, CA 95818-1914
916/737-3000

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Summary

The tricolored blackbird (*Agelaius tricolor*) is a highly colonial and nomadic species that is largely endemic to the lowlands of California; it also occurs sparsely in Oregon and northwestern Baja California. The colony sizes and overall populations of tricolors have declined dramatically throughout their historical range as their preferred wetland habitats have been lost. Studies conducted in the 1970s indicated a population decline of at least 50% since the 1930s. Until the present study was undertaken, no rangewide analysis had been conducted of the tricolor's status and distribution since the mid-1970s.

The purpose of this report is to describe the current and historical trends in the tricolor's breeding distribution and abundance and to assess the factors contributing to any observed changes in their populations. Another purpose is to determine whether the data justify a petition to the U.S. Fish and Wildlife Service (USFWS) to list the tricolor as a threatened or endangered species.

We conducted this study by reviewing all published literature on the species, compiling and analyzing unpublished breeding records in existing databases, contacting field ornithologists for unpublished observations of breeding colonies, and conducting field surveys in the Sacramento and San Joaquin Valleys. Comparative analyses of tricolor populations focused specifically on the 1930s, 1970s, and 1980s, because these were the only decades in which systematic observations were made throughout the tricolor's range.

The overall breeding distribution of tricolors in California has remained relatively constant from historical to present times. Colony size, however, has declined dramatically over this century. In the 1930s, colonies with 300,000 individuals were reported. Currently, no colonies with more than 10,000 individuals are known to exist. Sixty years ago, at least 62% of the colonies had between 1,000 and 10,000 adults, and almost 12% had more than 10,000 adults. In contrast, during the 1980s, 67% of the colonies had fewer than 1,000 adults, and fewer than 3% had more than 10,000 adults.

Drastic declines in the population size have accompanied the drop in colony size. The average number of breeding adults reported per year declined by 61% between the 1930s and 1970s, and fell by more than 72% between the 1970s and 1980s. In the 1930s, the tricolor's total population averaged about 480,000 adults per year. By the 1980s, the average population was estimated at about 51,600 per year, representing an overall decline of 89%. Losses of colonies in the Sacramento and San Joaquin Valleys, the heart of the tricolor's historical range, account for much of their overall population decline.

A principal factor implicated in the tricolor's population decline and the reduction or loss of colonies is elimination of wetland habitat. The vast marshes that once characterized the Central Valley have been largely eliminated. Tricolors consequently have

less nesting and foraging habitat available and nest in relatively small colonies in smaller remnant patches of wetland habitat.

Small, fragmented colonies have lower reproductive success, possibly because they are more vulnerable to predators and disturbances and are less able to compete with other species for limited wetland nesting habitat. Increased use of pesticides has also resulted in the loss of concentrated insect food sources, such as grasshopper outbreaks, thereby eliminating a critical element required for the breeding success of tricolored colonies. Increased disturbance by humans, to which tricolors are unusually sensitive, and poisonings, either deliberate or incidental, have also reduced tricolor populations.

According to criteria outlined in Section 4(a) of the federal Endangered Species Act (ESA), ample evidence exists for the USFWS to list the tricolor as a threatened or endangered species. The elimination of large tricolor colonies as recently as 1987 (Kesterson) and 1990 (Folsom-partial extirpation) indicates that factors responsible for declines in this species are still operating. Existing regulatory mechanisms are clearly inadequate to protect tricolor colonies, much less promote their recovery. Legal protection under the ESA could protect and enhance tricolored populations and would also benefit a host of waterfowl and other wetland-dependent species that have suffered population declines.

Introduction

BACKGROUND

Historical Distribution

Tricolored blackbirds (*Agelaius tricolor*) are largely endemic to the lowlands of California, but also occur sparsely in Oregon and northwestern Baja California (Neff 1937). Tricolors reached peak densities in the Sacramento and San Joaquin Valleys, but their historical range in California also included the low foothills of the Sierra Nevada and Coast Ranges from Shasta County south to Kern County, the coast from Sonoma County south to the Mexican border, and the Modoc Plateau (Baird 1870; Cooper 1875; Dawson 1923; Neff 1937, 1942; Grinnell and Miller 1944).

Natural History

Tricolors are considered the most intensely colonial of all North American passerine birds (Bent 1958; Orians 1961a, 1980; Orians and Collier 1963). Up to 20,000 nests have been recorded in a cattail marsh of 10 acres or less (DeHaven et al. 1975a). Individual nests are often built within a foot or less of each other (Neff 1937, Lack and Emlen 1939, Orians 1961a, Payne 1969, Hosea 1986).

Breeding is highly synchronized; most pairs in a colony initiate nesting within a few days of each other (Neff 1937, Orians 1961b, Payne 1969). The tricolor's highly synchronized and colonial breeding system evolved to exploit a rapidly changing environment where the locations of secure nesting habitat and rich food supplies were ephemeral and likely to change each year (Orians 1961a, Orians and Collier 1963, Payne 1969). Although tricolors are relatively adaptable in their choice of nesting substrates, they prefer to breed in freshwater marshes with dense growths of emergent vegetation (Neff 1937, DeHaven et al. 1975a).

Tricolors are highly nomadic (Neff 1937, 1942; DeHaven and Neff 1973), and flocks may suddenly appear in areas where they have been absent for months and immediately breed (Orians 1961b). Banding studies suggest that individual birds are unlikely to nest at the sites where they hatched or where they had nested the year before (DeHaven and Neff 1973, DeHaven et al. 1975b). However, breeding colonies exhibit some site fidelity and traditionally use many areas that provide critical resources, including secure nesting substrates, water, and suitable foraging habitats. Superabundant insect populations in local

areas probably stimulate the tricolor's nesting behavior, and a lack of food may explain why many seemingly suitable habitats are unoccupied by nesting tricolors (DeHaven et al. 1975a).

Tricolors typically initiate nest building in early or mid-April, and breeding activity has been observed until mid-July (Neff 1937, Orians 1961a, DeHaven et al. 1975a). Tricolors have also been recorded nesting infrequently in October and November in the Sacramento Valley, but colonies nesting in this period had low reproductive success (Orians 1960, Payne 1969).

Long-Term Population Trends

During the last years of the 19th century and first decade of this century, extensive areas of marshland in the Central Valley were drained and reclaimed for agriculture. Tricolored populations probably declined in this period (Neff 1937). However, Neff (1937) reported that in the 1930s rice cultivation and irrigation of other crops in the Central Valley had caused some regrowth of marsh vegetation in agricultural areas and improved the overall tricolored breeding habitat compared to that of earlier decades.

Surveys conducted throughout California from 1931 to 1936 indicated that tricolors nested in 26 counties, and the total breeding population was estimated at about 1,500,000 nests (Neff 1937). Each year their centers of population abundance varied; colonies were scattered over a large part of California in one year and concentrated in localized areas of the state in another. In this period, rice-growing areas in the northern Sacramento Valley were the heart of the tricolor's range, especially in Glenn County, where a colony of over 200,000 nests was reported.

Neff (1937) predicted that tricolors would continue to thrive as acreages of rice and other irrigated crops increased in the Central Valley. In the early years of California's rice industry, tricolors and other blackbird species were so abundant that they caused severe crop losses by eating seeds and ripening rice in the late summer and fall, and active poisoning and shooting programs were enacted to control their populations (McCabe 1932, Neff 1937).

For more than 30 years following Neff's (1937) surveys, no comprehensive studies were conducted on the distribution and abundance of tricolors. However, the species' reproductive and social behavior was intensively investigated during this period (Payne 1969; Orians 1960, 1961a, and 1961b; Orians and Collier 1963; Collier 1968). The largest colonies reported in the 1950s and 1960s were in Colusa County and were estimated at 80,000 and 100,000 nests, respectively (Orians 1961a).

During 1969-1972, DeHaven et al. (1975a) conducted intensive surveys of tricolored colonies in California and southern Oregon and concluded that the species' general range and major breeding areas had not changed since Neff's (1937a) study. However, DeHaven et al. (1975a) estimated that the tricolor's overall population size had declined by more than 50% since the 1930s. The continued conversion of marsh nesting habitat to agriculture and

the loss of insect food supplies resulting from increased pesticide applications were the major causes suggested for this decline (DeHaven et al. 1975a). Colony sizes had also declined, as the largest colony found by these observers included only 30,000 breeding adults, with fewer than 20,000 individuals remaining to complete their nesting cycle.

A trend of continued decline of the tricolored population was reported during the 1980s, as field ornithologists documented losses of breeding colonies throughout their range, especially in the Sacramento and San Joaquin Valleys (*American Birds* file data, Beedy and Hayworth in press, DeHaven pers. comm., Hosea 1986).

RECENT PROTECTION MEASURES

Remsen (1978) reviewed the literature and the unpublished field notes of active field ornithologists and concluded that tricolors should be considered candidates for the California Department of Fish and Game's (DFG's) list of species of special concern. His analysis also concluded that tricolors were vulnerable to disturbance and habitat destruction because of their colonial nesting behavior and their preference for wetland breeding habitats. DFG's list of species of special concern offers no legal protection, but its intent is to encourage consideration of these declining species in impact analyses, mitigation planning, and other environmental documentation. Because of their continued declines during the 1980s, DFG added tricolors to this list in May 1990 (Larsen pers. comm.).

During the late 1970s, USFWS also recognized the dramatic declines of this formerly abundant species and included the tricolor as a candidate (Category 2) for listing as a federal endangered or threatened species (54 FR 554-579, January 6, 1989). As a further measure to protect declining tricolored populations, USFWS proposed to modify two historical depredation orders (50 CFR 21.43 and 21.44) in 1988. Under these modified orders, tricolors and seven other native species may not be killed for depredation control purposes without first obtaining a federal permit (53 FR 32634-32636, August 26, 1988).

USFWS noted that no comprehensive reviews of tricolor populations had been conducted since the 1970s (Harlow and Sorenson pers. comms.). Although the species had appeared to be declining significantly during this period, USFWS had no quantitative estimates of their current populations or the extent of their overall decline. As part of an overall status review for tricolors, USFWS contracted with Jones & Stokes Associates to summarize their historical and current distribution and abundance.

OBJECTIVES

The objectives of our study were to: 1) describe historical and current trends in the tricolor's breeding distribution and abundance throughout its range; 2) evaluate the major factors contributing to observed changes in the tricolor's distribution or abundance; 3) describe the historical and current habitat associations of breeding tricolors; and 4)

recommend whether the existing biological data justify petitioning USFWS to list the tricolor as either threatened or endangered under the provisions of Section 4(a) of the Endangered Species Act of 1973 (Public Law 93-205).

Methods

DATA SOURCES

We evaluated the tricolor's historical and current status by reviewing all published literature on the species' distribution and abundance, compiling and analyzing unpublished breeding records in existing databases, contacting field ornithologists to obtain unpublished observations of breeding colonies, and conducting field surveys in the Sacramento and San Joaquin Valleys. We discuss these four methods in more detail below.

Published Literature

Neff (1937) cited 26 publications that contained specific records of tricolored breeding colonies. We reviewed all these references except for a few historical volumes, such as Audubon (1831) and Heermann (1853), that were unavailable to us. (These unreviewed historical articles were included in our database but are cited as "reviewed by Neff (1937)" in Appendices I-1 to I-44.) We also reviewed all articles describing the breeding distribution and abundance of tricolors that have been published since 1930.

Unpublished Information

We summarized all tricolored breeding records in the DFG's Natural Diversity Data Base (Warenycia pers. comm.), The Nature Conservancy's Oregon Natural Heritage Data Base (Stern pers. comm.), and Cornell University's Laboratory of Ornithology (Lynch pers. comm.). We also reviewed all available field data sheets, correspondence, and other notes compiled during the studies of DeHaven et al. (1975a, 1975b).

We acquired copies of the regional files of *American Birds* from the northern California editors (Campbell and Yee pers. comms.) and a letter summary of tricolored breeding records from southern California counties (McCaskie pers. comm.). Regional editors of this journal compile records of rare species and information on the local status of declining species, such as tricolors. Requests for unpublished information about tricolored breeding colonies were also published in the *Ornithological Newsletter, Oregon Birds* (Schmidt and Zeilemaker pers. comms.), and newsletters of local Audubon societies throughout California and Oregon.

Contacts with Field Ornithologists

We sent letters to 150 active field ornithologists throughout California, parts of Oregon, and other western states requesting unpublished observations of breeding tricolors. We sent reminders to those who did not respond to the first letter in 3 months. Tricolored breeding records received by December 31, 1990, were included in our database and population analyses. Although we attempted to contact all possible sources, undoubtedly some tricolored breeding records were not submitted for our review.

Field Observations

During 1987 and 1988, intensive observations were made of seven tricolored colonies in Colusa, Merced, Sacramento, and Sutter Counties (Beedy and Hayworth in press). Followup visits were made to each of these colonies at least once annually (1989 and 1990) during the breeding season (i.e., April to June) to characterize habitat conditions and the status of nesting tricolors. Between 1986 and 1990, we also made irregular visits to Glenn, Kern, Placer, San Joaquin, Solano, Sutter, and Yolo Counties to search for tricolored breeding colonies.

DATA ANALYSES

Regional Mapping

Each of California's 58 counties was assigned to one of the following regions: north coast, central coast, south coast, northeast interior, Sacramento Valley, San Joaquin Valley, and southeastern deserts (Figure 1). The boundaries of these regions were based on their geographical locations and general similarity in terms of tricolored breeding habitat. Tricolored breeding records from Oregon and Baja California were analyzed separately.

Comparability of Data between Decades

Data included in our analyses were collected by many observers over a period of about 140 years. Such data are inherently variable because of differences among observers, habitats, census techniques, and study objectives. The breeding range of the tricolor is also highly unpredictable from year to year (Neff 1937; Orians 1961a, 1961b; Orians and Collier 1963; DeHaven et al. 1975a, 1975b). Because of the variability of observers and the characteristically nomadic behavior of the species, our analyses did not focus on specific breeding localities. Instead, we summarized county, regional, and rangewide trends in tricolored distribution and abundance for each decade from 1900 until 1989.

References published before the 1930s were general and provided only brief summaries of tricolor distribution (e.g., Baird 1870; Cooper 1875, 1880; Belding 1890; Dawson 1923) these sources were not sufficient to accurately characterize the species' historical range or abundance (Neff 1937). Neff's study (1937) was the first to systematically document the status and distribution of tricolors in a significant portion of their range. No attempts were made to describe the tricolor's overall distribution during the 1940s, 1950s, or 1960s. DeHaven et al. (1975a) thoroughly analyzed the species' status and distribution in the 1970s. Thus, we included tricolored colonies from all time periods in our database but focused our comparative analyses on three decades in which systematic observations were made throughout the tricolor's range: the 1930s (Neff 1937), 1970s (DeHaven et al. 1975a), and 1980s (present study).

Definitions, Assumptions, and Calculations

Historical and current records of tricolored breeding for each decade between 1900 and 1989 were summarized by region and county to describe distributional trends, the location and status of individual colonies, and overall population abundance.

Breeding Colonies

Breeding colonies were defined as groups of tricolors nesting together at a particular location. Tricolored colonies were considered to be separate if the areas they occupied were at least 0.5 mile apart. In this analysis, breeding groups less than 0.5 mile from each other were considered subcolonies of larger, composite colonies.

We only included colonies in our database if definite observations were made of tricolored breeding activity (e.g., carrying nesting material, fresh nests with eggs, incubation, feeding young, or fledgling behavior). Where possible, we included the following data for each colony: observation date, number of breeding adults (total breeding adults, pairs, or nests), specific location, nesting habitat and substrate, stage of nesting activity, fate of the colony, and current status.

All successful colonies and colonies that failed during the egg-laying stage or later were included in our database. If groups of tricolors made nesting attempts (successful or failed) at the same location in multiple years within a decade, these groups were recorded as single colonies in our database. For example, if 5,000 and 10,000 breeding adults were recorded at the same location in 1988 and 1989, then they were counted as a single colony. (See population abundance calculations below.)

We defined the current (1991) status of each tricolored breeding colony as either extant, extirpated, or unknown. Extant colonies occupied areas where successful nesting occurred during the 1980s and where suitable breeding and foraging habitat are currently known to exist. The extirpated category included all colonies recorded since 1960 where the permanent removal of nesting habitat (or other critical resources such as water or food) was documented and for which there was no evidence of the colony renesting nearby. Because of the conspicuous nature of breeding tricolors and the extensive coverage of California and

Oregon by experienced field ornithologists, we also assumed historical colonies (i.e., those recorded before 1960) were extirpated if they were not observed during this 30-year period. Colonies found in the past three decades that lacked specific locality data or recent status information were assigned to the unknown category.

Population Abundance

Published and unpublished estimates of tricolored population abundance were included in our database in the units reported by the original observers (i.e., total breeding adults, pairs, or nests). Tricolors have a polygynous mating system where males mate with two (and occasionally more) females for an approximate sex ratio of 1:2 when averaged across an entire breeding colony (Lack and Emlen 1939, Orians and Collier 1963, Payne 1969). For comparative purposes we used the approach of DeHaven et al. (1975a) and Hosea (1986), and multiplied colony sizes reported in units of pairs or nests by a 1.5 conversion factor to approximate the total number of breeding adults in each colony.

When a range of population abundance estimates were reported for each colony (e.g., Hosea 1986), the midpoint value was used as a population abundance estimate in all calculations. Population estimates reported as "hundreds" or "thousands" were estimated at 200 and 2,000, respectively. Fewer than 10% of all colonies were reported in this fashion. Breeding reports that lacked estimates of abundance were included in the analyses of breeding colonies but omitted from the population abundance calculations.

Colonies where repeated nesting occurred in the same location during different years were counted separately in the population abundance calculations. For example, if 5,000 and 10,000 breeding adults were recorded at the same location in 1988 and 1989, a total of 15,000 adults would be counted at that colony for the decade. All abundance totals (reported and converted values) were summed to estimate the total number of breeding adults for each county and region in each decade. For comparative purposes, however, these totals were divided by the number of years of record in each decade and county to provide an estimate of the average annual abundance per decade. Thus, the colony containing 5,000 and 10,000 adults would have an average annual abundance of 7,500 adults for the decade.

Habitat Associations

Descriptions of breeding habitat and nesting substrates of colonies were included in our database (Appendices I-1 to I-44) as they were reported by individual observers. For analytical purposes, however, each colony was assigned to one of five categories based on the dominant vegetation present at the site: 1) emergent freshwater marsh dominated by tules (*Scirpus* sp.) or cattails (*Typha* sp.); 2) thickets dominated by blackberries (*Rubus* sp.), thistles (*Centaurea* sp.), or nettles (*Urtica* sp.); 3) willows (*Salix* sp.); 4) other substrates including giant cane (*Arundo donax*), mustard (*Brassica campestris*), wild rose (*Rosa* sp.), safflower (*Carthamus tinctorius*), alfalfa (*Medicago sativa*), barley (*Hordeum* sp.), rice and other irrigated crops, and orchards; and 5) data not available.

Results

NUMBER AND DISTRIBUTION OF COLONIES

A total of 696 tricolored breeding colonies were identified from California, Oregon, and Baja California (Appendices I-1 to I-44). Fewer than 20 colonies were reported in most decades; the 1930s, 1970s, and 1980s were the only periods when more than 150 colonies were observed (Table 1). The total number of reported breeding colonies declined by 37% between the 1930s and 1970s but increased by 114% between the 1970s and 1980s.

Tricolored breeding colonies have been reported in 43 counties in California since 1850 (Figure 2). Throughout this period, breeding has been observed almost every decade in each of 23 counties, concentrated primarily in the Sacramento and San Joaquin Valleys and the central and south coastal regions.

The overall tricolored breeding distribution in California has remained relatively constant, but 10 counties within their historical range did not support nesting colonies during the 1980s (Figure 2). Of these, only Yolo County historically supported large concentrations of breeding tricolors (Appendix I-41). The remaining nine historical nesting counties with unconfirmed tricolored breeding during the past included marginal areas such as the Sierra foothills (Placer and Madera), northeast interior (Siskiyou), coastal regions (Lake, Sonoma, and Ventura), northern Sacramento Valley (Tehama), and southeastern deserts (San Bernardino) (Figure 2).

After an absence of reports during the 1970s, small tricolored colonies (e.g., 2,000 breeding adults or fewer) were again reported in five historical nesting counties (Calaveras, Marin, Orange, Santa Clara, and Solano) during the 1980s (Figure 2). Similarly, small tricolored colonies were observed in four counties (Amador, Contra Costa, Lassen, and San Benito) for the first time during the 1980s.

Only two counties in southern Oregon (Jackson and Klamath) supported both historical and current tricolored breeding colonies (Figure 3). However, very small colonies (e.g., 30 breeding adults or fewer) were first observed in three northern Oregon counties (Multnomah, Umatilla, and Wheeler) during the 1980s (Appendix I-44).

Although recorded historically as a breeding species in Baja California, confirmed evidence of tricolored nesting has not been reported from this region since the 1880s (Appendix I-43). Wintering flocks of tricolors have been observed in northwestern Baja California during the past few years (Erickson and Wilbur pers. comms.).

In summary, the outline of the tricolor's California breeding distribution during the 1980s is similar to that found historically. A loss of breeding range may have occurred in Baja California, and small numbers of tricolors have expanded their range into northern Oregon.

SIZE OF COLONIES

Average colony size has declined dramatically since the 1930s (Figure 4). Of 252 breeding colonies reported during the 1930s, about 25% had fewer than 1,000 adults, almost 62% had 1,000-10,000 adults, and as much as 12% had more than 10,000 adults. In contrast, almost 67% of 183 breeding colonies reported in the 1980s had fewer than 1,000 adults, only 23% had 1,000-10,000 adults, and fewer than 3% had more than 10,000 adults.

The size of the largest breeding colonies has also declined dramatically since the 1930s (Table 2). Neff (1937) reported an immense colony of more than 200,000 nests (about 300,000 breeding adults) in Glenn County and four other colonies that exceeded 50,000 adults elsewhere in the Sacramento and San Joaquin Valleys (Figure 4).

During the 1950s and 1960s, two colonies supporting more than 100,000 breeding adults were reported in Colusa County (Table 2 and Appendix I-5). The three largest recent breeding colonies reported included 25,000 adults near Corcoran, Kings County; 30,000 adults near Knight's Landing, Yolo County, during the 1970s; and 47,000 adults at Kesterson Reservoir, Merced County, in the 1980s. All three of these large colonies were destroyed and one of the largest remaining colonies, about 10,000 adults near Folsom, Sacramento County, was eliminated during the 1990 breeding season (Appendices I-11, I-17, I-22, and I-41). Thus, it is unlikely that any colonies exceeding 10,000 breeding adults currently exist anywhere in the tricolor's range.

Although Payne (1969) reported an autumnal "colony" near Firebaugh (Fresno County) with only one nest, few very small colonies (i.e., those with less than 10 adults) were reported before the 1980s. During the 1980s, however, a few very small breeding groups were reported, including one to two pairs among nesting red-winged blackbirds at Cholame Valley pond and about seven adults feeding young along Carmel Valley Road, Monterey County, and about five individuals at San Felipe Lake, San Benito County (Appendices I-8, I-18, and I-23).

POPULATION ABUNDANCE

Average Populations per Decade

Throughout the tricolor's range, the average number of breeding adults reported per year declined by 61% between the 1930s and 1970s and by 72% between the 1970s and 1980s, for an overall decline of 89% during the 1930s-1980s (Table 3). The most

pronounced declines in average annual abundance occurred in the Sacramento and San Joaquin Valleys. Probable long-term declines occurred in the south coast and northeast interior regions, and short-term losses are also apparent in the north and central coast regions (Table 3).

Tricolors have expanded their range in Oregon since the 1930s, and the number of breeding adults may have increased in the southeastern deserts (principally western Riverside County) during the 1980s (Table 3). However, the southeastern deserts and Oregon were not surveyed intensively by Neff (1937) and these areas represent a combined total of slightly more than 5% of the average rangewide abundance of tricolors during the 1980s.

Declines in the average annual abundance of tricolors in Baja California are also likely, resulting from habitat destruction (Erickson and Wilbur pers. comms.); however, without specific tricolored breeding information, no overall abundance trends can be determined for this region.

In summary, the total tricolored population averaged about 480,000 breeding adults per year during the 1930s. The 1980s average population of known colonies was estimated at 51,600 per year, representing an overall decline of 89% since the 1930s (Table 3).

Regional Trends

North Coast

The historical data available on nesting tricolors in the north coast region are incomplete. Neff (1937) spent little time surveying this area and reported only a single colony of about 50 nests near Lakeport (Lake County) in the entire region (Figure 5 and Appendix I-12). In contrast, north coast counties received extensive coverage during the 1970s and 1980s (*American Birds* file data), when tricolor colonies were also reported from Marin and Sonoma Counties (Figures 6 and 7).

There are no historical or recent tricolor breeding records in Humboldt and Del Norte Counties, but nonbreeding individuals have been observed in large, mixed blackbird flocks in spring and fall (Barron, Erickson, and Lester pers. comms.). Similarly, breeding tricolors have not been observed in Napa County (Parmeter and Tillay pers. comms.) and have not been reported from Mendocino or Trinity Counties in the north coast region (Erickson, Harris, and Yutzky pers. comms.).

The north coast constituted a marginal part of the tricolor's historical breeding range (Grinnell and Miller 1944), and small breeding colonies (usually less than 100 adults) currently make opportunistic use of freshwater marshes near coastal pasturelands (*American Birds* file data). For example, tricolors may be present at some sites, such as Olema Marsh or Drakes Bay (Marin County), in one year, be absent for several years, and possibly not return at all (DeSante, Shuford, and Stallcup pers. comms.).

Because of the sparse populations and unpredictable occurrence of tricolored colonies in north coast counties, long-term population trends are difficult to document for this region. However, a recent loss in breeding range may be occurred in Sonoma County, where up to nine breeding colonies were observed during the 1970s but none was found in the 1980s (Appendix I-35). The current status of these colonies is unknown, but breeding tricolors have not been reported at most of them for more than a decade, which suggests that a countywide, and possibly regional, decline may have occurred.

Central Coast

As with the north coast, Neff (1937) observed few tricolored colonies in central coast counties during his studies. He reported only one colony from Santa Cruz County and four colonies in Monterey County; the largest of these had 3,000 nests (Appendices I-18 and I-31).

In the 1970s and 1980s, ornithologists found new breeding colonies in Alameda, Contra Costa, San Benito, San Luis Obispo, Santa Clara, and Santa Cruz Counties (Appendices I-1, I-6, I-23, I-27, I-30, and I-31). Tricolored colonies have not been observed historically or currently in San Francisco County (Hopkins and Murphy pers. comms.). Similarly, few recent breeding colonies have been reported from other developed portions of the Bay Area, such as San Mateo County (Metropoulos pers. comm.).

Average annual abundance comparisons for the central coast region suggested that tricolored populations may have increased in the 1970s and 1980s compared to the 1930s (Table 3). However, this apparent increase in the number of breeding colonies (Table 1) and total population abundance may be a result of improved road access and the greater number of field ornithologists who actively surveyed central coast counties during the 1970s and 1980s.

In the 1980s, Alameda, Monterey, and San Benito Counties all reported average annual totals in excess of 1,000 breeding adults (Figure 7), but regional populations have declined by almost 25% since the 1970s (Table 3). Five of 38 colonies reported from the central coast during the 1980s were extirpated (Table 4), including three colonies from Monterey County and one each from Santa Clara and Santa Cruz Counties. The combined loss represented more than 21% of the regional population total for this decade (Table 5).

South Coast

According to the notes and manuscripts of the pioneer California field ornithologist, J.G. Cooper, the tricolor was "the most abundant species near San Diego and Los Angeles, and not rare at Santa Barbara" (Baird 1870). Cooper also observed nesting tricolors in Ventura County during the 1870s, but breeding colonies apparently have not been seen there since then (Appendix I-40).

Sharp (1907) noted that tricolors were somewhat less common than red-winged blackbirds (*Agelaius phoeniceus neutralis*) but mentioned no overall decline in southern California tricolored populations. However, Willet (1933) reported that tricolors were formerly common in the lowland marshes of southern California but were rare throughout the region except in San Diego County. Neff (1937) observed tricolored colonies in Los Angeles, Orange, San Diego, and Santa Barbara Counties (Figure 5) but he did not survey this region intensively. South coast tricolored populations were historically small relative to those in the Central Valley and averaged less than 2% of the total population reported in the 1930s (Table 3).

During the 1970s, numerous tricolored breeding colonies were reported in Los Angeles, Orange, San Diego, and Santa Barbara Counties (Appendices I-14, I-18, I-25, and I-29). Only one colony of unknown size at the Union wastewater treatment plant west of Santa Maria, Santa Barbara County, was definitely extirpated in the 1980s (Table 5 and Appendix I-29). However, the reported observations in south coast counties have declined by almost 75% since the 1970s (Table 3).

Tricolors remain locally common and have adapted to urban surroundings in a few areas of San Diego County (Unitt pers. comm.). Throughout most of southern California, however, tricolors are definitely declining (Dunn, Lehman, and Willick pers. comms.).

Northeast Interior

During the early 1930s, six tricolored colonies were recorded in Shasta County (Appendix I-32), but no other historical breeding observations were reported from the northeast interior counties (Figure 5). Tricolors continued to breed in Shasta County during the 1970s, and two additional colonies were observed in Siskiyou County (Appendix I-33 and Figure 6). Small numbers of breeding tricolors were reported from Shasta County during the 1980s, and five small colonies (60 breeding adults or less) were also observed in Lassen County (Appendix I-13 and Figure 7). Breeding tricolors have not been observed in Modoc County (Summers pers. comm.).

Despite the expansion of the tricolor's breeding range into Siskiyou and Lassen Counties during the 1980s, northeast interior populations declined by more than 90% since the 1930s (Table 3). For example, the average annual abundance in this region declined from 14,325 in the 1930s to 445 in the 1980s. The largest colonies in the northeast interior region were in Shasta County and included 10,000 nests (15,000 adults) in the 1930s, 5,000 adults in the 1970s, and 1,000 pairs (1,500 adults) in the 1980s (Appendix I-32).

Thus, the regional decline in population abundance reflected reduction in both the number and total size of tricolored colonies. None of the nine colonies reported during the 1980s was known to be extirpated, but the recent status of eight of these colonies is unknown.

Sacramento Valley

The Sacramento Valley was the heart of the tricolor's breeding range in the 1930s (Figure 5), and 160 of 252 colonies (about 63%) reported statewide in that decade were from this region (Neff 1937). Four rice-growing counties, Butte, Glenn, Sacramento, and Yuba, supported more than 50,000 breeding tricolors annually during this decade (Figure 5).

During the 1930s, Sacramento Valley counties also supported some of the largest tricolored colonies ever recorded, including 150,000 nests (225,000 adults) northeast of Butte City, Butte County; 20,000 nests (30,000 adults) northeast of Williams, Colusa County; 200,000 nests (300,000 adults) east of Norman, Glenn County; 120,000 nests (180,000 adults) east of Sacramento, Sacramento County; 28,000 nests (42,000 adults) near Davis, Yolo County; and, 50,000 nests (75,000 adults) northeast of Marysville, Yuba County (Appendices I-3, I-5, I-9, I-22, I-41, and I-42).

Although no rangewide estimates of overall population abundance were made during the 1950s and 1960s, enormous tricolored colonies continued to be reported in rice-growing areas of the Sacramento Valley (Tables 2 and 3). The largest colonies observed during this period included 35,000 nests (52,500 adults) near Gridley, Butte County; 80,000 nests (120,000 adults) and 100,000 nests (150,000 adults) near the Butte Sink, Colusa County; 75,000 nests (112,500 adults) in northern Sacramento County; 70,000 nests (105,000 adults) near Madison, Yolo County; and 40,000 nests (60,000 adults) near Marysville, Yuba County (Appendices I-3, I-5, I-22, I-41, and I-42).

Long-term studies of the tricolor's nesting distribution suggested that population centers shifted unpredictably during the 1970s, but areas with consistent breeding populations included the rice-growing areas of Colusa, Sutter, and Yolo Counties and the pasturelands of Sacramento County (DeHaven et al. 1975). These four counties supported an average annual abundance of greater than 10,000 breeding adults, and four other counties (Butte, Glenn, Placer, and Tehama) averaged more than 1,000 breeding adults during the 1970s (Figure 6). In the Sacramento Valley region, only Nevada, Plumas, and Sierra Counties have no records of breeding tricolors (*American Birds* file data and Laudenslayer pers. comm.).

Throughout the Sacramento Valley, tricolored populations declined by almost 74% between the 1930s and the 1970s (Table 3). The most pronounced losses occurred in Butte, Glenn, Sacramento, and Yuba Counties (Figure 6). Despite a regional population decline during this period, several large colonies were recorded, including 20,000 nests (30,000 adults) northeast of Williams, Colusa County; 20,000 adults near Afton, Glenn County; 25,000 adults north of Clay, Sacramento County; 30,000 adults at Gilsizer Slough, Sutter County; and 25,000 adults north of Knights Landing, Yolo County (Appendices I-5, I-9, I-22, and I-41).

In the 1980s, tricolored populations in the Sacramento Valley had declined by almost 94% compared to the 1930s and by almost 77% compared to the 1970s (Table 3). The greatest losses occurred in Colusa, Glenn, Placer, Sacramento, Sutter, Tehama, Yolo, and Yuba Counties (Figure 7) (Appendices I-3, I-5, I-7, I-9, I-20, I-37, I-41, and I-42). Sporadic

nesting continues in Butte, Colusa, El Dorado, Glenn, Sutter, and Yuba Counties, but no breeding tricolors have been observed in Placer or Yolo Counties since the early 1970s (*American Birds* file data, Gaines and Beedy 1987). Small colonies (200 nests or fewer) were reported from Amador and Solano Counties during the 1980s (Appendices I-2 and I-34). The pasturelands of southeastern Sacramento County continued to be a stronghold of the tricolor's range in the Sacramento Valley region during the 1980s (Johnson, Manolis, and Mohr pers. comms.).

The largest Sacramento Valley colonies reported in the 1980s included 5,000 pairs (7,500 adults) along the Chico-Butte City Highway, Butte County; 10,000 adults at Gilsizer Slough, Sutter County; and 10,000 adults near Folsom, Sacramento County (Appendices I-3, I-22, and I-37). Of 64 tricolored colonies observed in Sacramento Valley counties in this decade, 17 are definitely extant, three were definitely extirpated, and 44 have an unknown status (Table 4). The extirpated colonies included 250 adults near Mather Field, Sacramento County, and a colony of 40-50 individuals in Vallejo, Solano County (Appendices I-22 and I-34). The large colony of 10,000 adults at Folsom was partially extirpated by dewatering of the Natomas Ditch, and the remaining 2,000 breeding tricolors are threatened by the Folsom Lake Community College, which is scheduled for construction in 1991. These extirpated colonies represented more than 10% of the average annual population reported in the Sacramento Valley region during the 1980s (Table 5).

Overall, tricolored colonies have been lost at an alarming rate in the Sacramento Valley. This decline was first observed by DeHaven et al. (1975a), and a downward trend has continued through the 1980s. A major continuing concern is the loss of all the large colonies (i.e., greater than 10,000 adults) in this historically central part of their breeding range.

San Joaquin Valley

In 1915, the San Joaquin Valley was considered the center of the tricolor's range; however, much less fieldwork had been done at that time, and tricolored populations in the Sacramento Valley were largely undescribed (Neff 1937). The San Joaquin Valley is currently extremely arid, but it is likely that greater acreages of freshwater marsh and potential tricolored breeding habitat have always existed in the Sacramento Valley (DeHaven et al. 1975).

Since the early 1900s, however, breeding tricolors have been observed in all San Joaquin Valley counties except Tuolumne County (Winter pers. comm.) and Mariposa County (Yee pers. comm.). Unfortunately, tricolored colonies that probably nested in the extensive wetlands of Tulare Lake, Kings County, were apparently never recorded. Neff (1937), however, observed large breeding colonies in the San Joaquin Valley that represented about 14% of the average annual abundance of the total population reported during the 1930s (Figure 5 and Table 3). The largest San Joaquin Valley colonies observed in this decade included 50,000 nests (75,000 adults) northwest of Merced, Merced County, and 10,000 nests (15,000 adults) near Patterson, Stanislaus County (Appendices I-17 and I-34).

Tricolored populations of the 1970s had declined in the San Joaquin Valley by only about 15% since the 1930s (Table 3), and the population there represented more than 30% of the rangewide total observed during the 1970s. DeHaven et al. (1975a) reported that tricolors predictably nested in the pasturelands of Merced County and marshes along the San Joaquin River in Stanislaus County in the San Joaquin Valley. The largest colonies reported in the 1970s included 25,000 adults south of Corcoran, Kings County; 5,000 adults along Cottonwood Creek, Madera County; near the San Joaquin River, San Joaquin County; and up to 15,000 adults near Gustine, Merced County (Appendices I-11, I-15, I-17, I-26, and I-36).

San Joaquin Valley tricolored populations declined by more than 75% between the 1930s and 1980s and by 71% between the 1970s and 1980s (Table 3). In the 1970s, Kings and Stanislaus Counties supported an average annual abundance of more than 10,000 adults, and Fresno, Kern, Madera, Merced, San Joaquin, and Tulare Counties provided habitat for more than 1,000 breeding adults annually (Figure 6). In the 1980s, however, only Calaveras, Kings, Kern, Merced, and Stanislaus Counties supported an average annual abundance of more than 1,000 adults, and no counties supported more than 10,000 adults (Figure 7). The largest San Joaquin Valley colonies reported during the 1980s included 47,000 adults at Kesterson Reservoir, Merced County, and about 11,300 adults southwest of Modesto, Stanislaus County (Appendices I-17 and I-36).

Of 39 tricolored colonies reported in the San Joaquin Valley during the 1980s, 15 are extant, six are extirpated, and 18 have an unknown status (Table 4). Five of the six extirpated colonies were at Kesterson Reservoir (Table 5), including the colony of 47,000 adults, which was the largest colony reported since the early 1960s (Appendix I-17). The other extirpated colony included 100 pairs (150 adults) at the California City Central Park, Kern County, which was destroyed by cattail removal during 1983-1985 (Chichester pers. comm.). These six extirpated colonies represented more than 80% of the breeding tricolors in Merced County and more than 56% of the total San Joaquin population reported during the 1980s.

Southeastern Deserts

The southeastern deserts have probably always represented a marginal part of the tricolor's breeding range (Grinnell and Miller 1944). Breeding colonies have never been reported from Alpine County (Harper pers. comm.), Mono County (Strauss pers. comm.), or Imperial or Inyo Counties (Mackay and McCaskie pers. comms.). However, a small nesting colony of 75 adults was observed at Jacumba within 5 miles of the San Diego/Imperial County line in 1978 and probably through the 1980s (Appendix I-25, Unitt pers. comm.). Although breeding tricolors were historically observed in San Bernardino County, no colonies have been reported since the early 1950s (Appendix I-24, Carlson pers. comm.).

Tricolored colonies were first discovered in Riverside County in 1950 and intermittent breeding was reported there through the 1980s (Appendix I-21). The largest colony, at the San Jacinto Wildlife Area, contained 3,000 pairs (4,500 adults) and was extant

in 1989. Establishment of this colony contributed an almost 300% increase in the regional tricolored breeding population since the 1970s (Table 3). However, the southeastern deserts only comprised about 4% of the total tricolored breeding population reported during the 1980s.

Oregon

Although nonbreeding tricolors have been reported in Oregon since the 1850s (Gabrielson and Jewett 1940), the first breeding colony was found north of Klamath Falls, Klamath County in 1932, by Neff (1933). Klamath County continues to be a stronghold of the tricolor's range in Oregon; small breeding colonies (500 or fewer adults) continued to be reported there during the 1970s and 1980s (Figure 8 and Appendix I-44).

In Jackson County, colonies of 1,500 adults and 1,800 adults were reported in the Bear Creek and Rogue River Valleys in 1958 and 1960, respectively (Appendix I-44). Although a colony of 500-600 adults was seen in the 1970s, no colonies larger than 30 adults were reported in Jackson County during the 1980s.

In the 1980s, very small colonies (30 or fewer adults) were first reported in northern Oregon, including colonies in the Columbia River bottomlands north of Portland, Multnomah County; near Hermiston, Umatilla County; and at the Hancock Field Station, Wheeler County (Appendix I-44 and Figure 8).

Despite a recent range extension into northern Oregon, statewide tricolor populations declined by 22% during the past decade and represented less than 1% of the total tricolor population reported during the 1980s (Table 3). Elimination of habitat at two Multnomah County colonies (Table 5), a trend of decreasing colony size, and unpredictable shifts in local population abundance may account for the tricolor's apparent decline in Oregon during the 1980s. The small statewide population combined with their unpredictable nesting behavior make future protection of tricolored breeding habitats in Oregon difficult (Marshall pers. comm.).

Baja California

Tricolored colonies were reported as "rather common" in freshwater marshes of Baja California during the late 1800s (Bendire 1875). Loss of breeding habitat may have occurred in the early 1900s; Huey (1926) only observed tricolors once during his travels through Baja California when about a dozen males of this species were seen in a large, nonbreeding flock of red-winged blackbirds at a well in Upper San Antonio del Mar in March 1925.

Few observations of tricolors in Baja California have been published since the 1920s (Appendix I-43). Some potentially suitable tricolored breeding habitat exists in Baja California, but most recent tricolored observations have been of wintering flocks (Erickson and Wilbur pers. comms.).

Nevada

Hosea (1986) reported a tricolored colony in a marsh next to the Toiyabe National Forest offices in Carson City, Nevada, during the first week of June 1980. This marsh was destroyed for the construction of a railroad museum (Hosea pers. comm., data from Debra Small). This record was not submitted for review until April 1991 and, therefore, was not included in our database or analyses.

HABITAT ASSOCIATIONS

Nesting Substrates

Almost 93% of the 252 breeding colonies reported by Neff (1937) were in freshwater marshes dominated by tules and cattails (Figure 9). Of the remaining eighteen colonies, nine were in willows, four were in blackberries, thistles, or nettles; and no data were available for five. In contrast, only about 53% of the colonies reported during the 1970s and 1980s were in tules and cattails. Similarly, an increasing percentage of tricolored colonies in recent decades were found in blackberry brambles, thistles, nettles, and other vegetation.

Neff (1937) reported tricolored colonies nesting in a variety of nonmarsh, unusual substrates, including sedge grasses, marsh weeds, nettles, briars, thistles, willows, mustard, wild rose, and grapevines. More recently tricolors have been observed breeding in other atypical substrates, including giant cane and safflower (DeHaven et al. 1975a), alfalfa and alfalfa/oat fields (Orians 1961a), tamarisk trees, elderberry/poison-oak riparian, grassland and riparian edges, saltbush, and lemon orchards (*American Birds* file data, Miller pers. comm.). However, these substrates were only used by about 4% of colonies reported in the 1970s and by about 3% of those in the 1980s (Figure 9).

Discussion

Tricolored blackbird populations have declined dramatically in this century, with reported observations dropping by almost 90% from the 1930s to the 1980s. Data from the last decade indicate these declines are continuing. The enormous breeding colonies that once typified tricolor populations in the Central Valley have been replaced by smaller, fragmented colonies. The sizes of the largest colonies reported in the 1970s and 1980s averaged about 10% of the adults contained in the largest colonies observed in the 1930s. No tricolored colonies with more than 10,000 adults are currently known.

Almost all of the 1930s data were collected by a single individual who devoted about 31 person-days annually to search for tricolor nesting colonies (Neff 1937). He also had limited access to many vast Central Valley wetland areas, such as the Butte Sink and the Yolo Basin. For this reason his overall coverage was incomplete, and the number of colonies he reported was probably an underestimate of the total breeding population present at that time.

In contrast, many professional and amateur ornithologists actively surveyed the avifaunas of California and Oregon during the 1970s and 1980s. In the 1970s, DeHaven et al. (1975a) spent 4 years (averaging 45 person-days annually) with improved access and transportation searching for tricolor colonies. In general, observers throughout the state were able to survey local areas well, providing relatively complete coverage of potential tricolor breeding areas during these decades. Thus, the specific losses of tricolored populations reported here are almost certainly underestimates of the species' overall decline from the 1930s to the 1970s and 1980s.

A principal factor implicated in the tricolor's population decline and the loss of individual colonies is elimination of wetland habitat, which drastically reduced available nesting and foraging habitat. The smaller colonies that have resulted from reduced nesting and foraging habitat may be more vulnerable to disturbance by natural predators and also less able to compete with other species for limited wetland nesting habitat. Higher rates of nesting failures and lower reproductive success have been observed in small colonies compared to large colonies (Orians 1961a, Payne 1969). Poisoning, either deliberate or indirect, and increased disturbance by humans, have also been cited as contributing to the continued population decreases. The importance of these factors to breeding tricolors is discussed below.

LOSS OF WETLAND HABITAT

Under aboriginal conditions, the Central Valley's major river systems overflowed to create extensive marshes that provided abundant breeding and foraging habitat for tricolors. Of more than four million acres of wetlands that existed in the Central Valley in the 1850s, only 561,500 (about 14%) remained in 1939 (Frayner et al. 1989). An estimated 482,800 acres of freshwater emergent marshes (about 86% of the total freshwater wetlands in 1939) were reduced by nearly 50% to only 243,100 acres by the mid-1980s. This represents an average annual loss of about 5,200 acres of freshwater emergent wetlands during this 46-year period (Frayner et al. 1989).

In the absence of the vast marshlands that once characterized the Central Valley, tricolors are often obliged to nest in marginal habitats. In the 1930s, over 90% of the tricolors nested in tule or cattail marshes, presumably the optimal nesting habitat for this species. In the 1970s and 1980s, only about 53% nested in tules or cattail marshes and an increasing percentage of tricolors were reported from nonmarsh habitats, especially blackberry thickets in Sacramento County. Rangewide, tricolored populations declined by more than 74% between these decades, which suggests that they are not successfully adapting to nesting in fragmented and disturbed marshes or in nonmarsh habitats.

Neff (1937) suggested that the adverse effects of wetland habitat losses on tricolors would be offset by the increased acreage devoted to rice cultivation and other agriculture. He predicted that tricolors could increase their populations as irrigated agriculture expanded into formerly arid areas, such as the southern San Joaquin Valley. Rice acreage in the Central Valley increased from about 435,000 acres in 1939 to almost 660,000 acres during the mid-1980s, representing an average annual net gain of about 4,800 acres (Frayner et al. 1989). Instead of expanding their populations as acreages of rice and other irrigated crops increased, the tricolor's numbers declined by almost 90% between the 1930s and the 1980s. Clearly, irrigated agriculture and rice cultivation has failed to compensate for the loss of natural marshland breeding habitat preferred by tricolors.

LOSS OF FORAGING HABITAT, FOOD SUPPLIES, AND WATER

Proximity to concentrated insect food supplies is probably the major factor in the selection of tricolor nesting sites (Neff 1937; Orians 1961a, 1961b; Payne 1969). The tricolor's nomadic and colonial behavior probably evolved as a strategy for maximizing their exploitation of concentrated and temporarily abundant insect food sources, such as grasshopper outbreaks (Orians 1961b, Payne 1969). Their colonial nesting behavior demands that they exploit locally abundant food sources while minimizing the distance of their foraging flights (Crane and DeHaven 1977).

Tricolored foraging flocks have been observed following the nomadic movements of grasshoppers (*Oedaleonotus enigma* and *Melanoplus devastator*) for many miles (Payne 1969). These grasshopper outbreaks, which were commonly observed decades ago (Neff and Wilson

1940), were most abundant in moist pastures and other grasslands. Breeding tricolors would travel up to 4 miles from their colonies to consume them (Orians 1961a).

An abundant, concentrated supply of insects is clearly important to the success of tricolor breeding colonies. Studies of their foraging behavior in Merced County found that animal matter made up 91% of the food volume of nestlings and fledglings, 56% of the food volume of adult females, and 28% of the adult male food volume (Skorupa et al. 1980). These differences reflect nutritive requirements of developing birds for a protein-rich diet to support their rapid growth. The animal taxa most often consumed (percentage incidence) in this study included ground beetles and weevils (Order Coleoptera), cutworms and loopers (Order Lepidoptera), and various flies (Order Diptera). Oats were the primary vegetable food in Merced County (Skorupa et al. 1980), whereas rice predominated in the tricolor's diet in the Sacramento Valley (Crane and DeHaven 1978).

Many formerly abundant insects in the Central Valley have now been controlled by pesticides and reduced by the conversion of wetlands, grasslands, and other native habitats to agricultural and urban uses (Stern pers. comm.). Preferred foods, such as ground beetles and grasshoppers, typically do not occur in rice fields. Thus, an increase in acreages devoted to rice cultivation and other agriculture and a decrease of grassland foraging habitat have probably resulted in use of other habitats that would demand longer searching times and yield less insect food per foraging trip (Hosea 1986). The lack of concentrated insect sources near suitable nesting sites could account for many observed tricolored nesting failures.

Although the dietary water requirements of tricolors are apparently unknown, observations indicate that most breeding colonies are situated over or near water (Neff 1937, Orians 1961a, DeHaven et al. 1975). Adult tricolors frequently drink and bathe at water sources, and Brewer's blackbirds (*Euphagus cyanocephalus*) sometimes dunk grasshoppers in water before feeding them to their young (Koenig 1985). These observations suggest that tricolors and other blackbirds require some free water. When deprived of traditional water sources, entire colonies may be abandoned (Beedy and Hayworth in press). For example, a colony of 10,000 breeding tricolors was lost when the Natomas Ditch near Folsom, Sacramento County, was diverted into an underground pipe (Holl pers. comm.).

Many adult tricolors that initially attempt to settle in a nesting colony may not remain to breed (Orians 1961a, Payne 1969), and 10-50% of colonies are at least partially or completely abandoned each year (DeHaven et al. 1975a). Unexplained abandonment of entire tricolored colonies at advanced stages of nesting has also been documented by several observers, including Belding (1890), Neff (1937), Orians (1961a), and Beedy and Hayworth (in press). Mass desertions occur most frequently in the early and late periods of the breeding season, suggesting that insect food supplies may be insufficient to support the breeding adults and their young (Orians 1961a). Loss of water supplies and increased predation could also be responsible for some unexplained tricolored nesting failures.

DISTURBANCE BY PREDATORS AND HUMANS

Tricolors usually select marshes and other nesting substrates that deter predators, such as areas near open water moats (cattails, tules, sedge grasses, and marsh weeds), natural armor (nettles, thistles, and bramble thickets), or dense vegetation (willows, poison-oak, and giant cane). Colonies that select unprotected nesting substrates, such as alfalfa, oats, and safflower, would be highly vulnerable to predation, which may explain why such sites are used infrequently by tricolors.

Although tricolors typically select secure nesting habitats, historical observers documented numerous examples of their colonies being lost to predators, including wolves (*Canis lupis*) and gray foxes (*Urocyon cinereoargenteus*) (Heerman 1853), skunks (*Mephitis mephitis*) and opossums (*Didelphis virginiana*) (Evermann 1919), Swainson's hawks (*Buteo swainsoni*) (Mailliard 1914), Cooper's hawks (*Accipiter cooperii*), burrowing owls (*Athene cunicularia*), American crows (*Corvus brachyrhynchos*), raccoons (*Procyon lotor*), and mink (*Mustela vison*) (Neff 1937). More recently, Payne (1969) observed predation of tricolored nests by feral cats (*Felis domesticus*), northern harriers (*Circus cyaneus*), barn owls (*Tyto alba*), short-eared owls (*Asio flammeus*), and yellow-billed magpies (*Pica nuttalli*). Mauser (pers. comm.) observed 3,000 breeding adults at an abandoned nest colony (Colusa National Wildlife Refuge) after persistent disturbance and predation by northern harriers and black-crowned night-herons (*Nycticorax nycticorax*). Snakes (*Thamnophis* and *Pituophis*) are also potential tricolored nest predators because they are common in marshes, can climb cattails, and have been seen robbing red-winged blackbird nests (Orians 1961a). As suitable nesting areas become fewer and smaller, repeated use and higher ratios of predators to breeding tricolors will probably result in increased loss and abandonment of colonies.

In addition to human destruction of nesting habitat, Neff (1937) reported that tricolors and other blackbirds were shot for the market. This historical practice continued until at least the 1930s, when more than 300,000 tricolored and red-winged blackbirds were marketed from the Sacramento Valley during a 5-year period. Neff (1937) believed that the combined effects of heavy hunting pressure and predation had caused only minor impacts on tricolors because the species was so abundant that even the loss of large colonies would not have a significant effect on their overall breeding populations. Until the 1960s, many tricolors and other blackbirds were deliberately exterminated to control damage to rice and other crops in the Central Valley. However, improved harvesting methods and declining populations have resulted in few recent reports of blackbird crop depredation, and no control programs are currently in effect (Clark pers. comm.).

Human disturbance can also be a factor in the loss of tricolored colonies. For example, Hosea (1986) observed that conducting a nest census caused abandonment of an entire colony within 2 days. Beedy and Hayworth (in press) also reported that human entry typically causes tricolors to abandon all or portions of their colonies, especially in those areas where nesting microhabitats are disturbed. With increased access and human populations occupying formerly remote areas, few tricolor breeding sites are completely free of the stress of occasional or frequent human visitors.

In general, colonies in large marshes have a high proportion of their nests in relatively secure, central areas, compared with colonies in small marshes and nonmarsh habitats, where many nests are situated near edges that offer relatively easy access to ground predators and humans. Current conditions dictate that most tricolors must attempt nesting in small, fragmented marshes or alternate habitats where disturbance by a single predator or human has the potential to destroy the yearly nesting efforts of thousands of breeding adults.

COMPETITION WITH RED-WINGED BLACKBIRDS

The smaller size of tricolored colonies (e.g., typically less than 2,000 adults), which has resulted from loss of wetland habitat, may adversely affect the tricolor's ability to reproduce successfully. Red-winged blackbirds, which are behaviorally more aggressive than tricolors, are normally unable to exclude tricolors from preferred nesting sites because of the overwhelming numbers of the tricolors (Orians and Collier 1963). Reduced colony size (total adults), however, may put tricolors at a competitive disadvantage, resulting in their exclusion from remaining nesting sites. The inability of small groups of tricolors to exclude redwings and other marsh-nesting birds may explain why tricolors seldom breed in small marshes or patches of nonmarsh habitat.

POISONING

Direct poisoning of tricolored colonies has been documented infrequently, but the few published examples illustrate that toxic substances have the potential to destroy entire colonies. McCabe (1932) vividly described the deliberate strychnine poisoning of 30,000 breeding tricolored blackbirds as part of an agricultural experiment. Hosea (1986) observed nestling mortalities at two colonies in Sacramento and Colusa Counties after they were subjected to aerial application of rice herbicides.

During 1986, Beedy and Hayworth (in press) observed the total nesting failure of the largest colony reported in the last two decades: 47,000 breeding adults at Kesterson Reservoir, Merced County. Between 1981 and 1986, Kesterson Reservoir's inflow consisted almost entirely of subsurface agricultural drainage water, which contained elevated concentrations of salts and numerous trace elements, including selenium. Selenium is believed to be responsible for numerous embryo deformities, and deaths of bird embryos, chicks, and adults at Kesterson Reservoir and elsewhere in the San Joaquin Valley (Ohlendorf et al. 1986, Skorupa et al. 1990).

Hundreds of dead tricolored nestlings (1-5 days old) were found on levee roads surrounding Kesterson Reservoir in 1986. Laboratory results indicated that livers salvaged from these birds had significantly higher concentrations of selenium than livers collected from red-winged blackbird nestlings in an uncontaminated area at Merced National Wildlife Refuge (Beedy and Hayworth in press, Paveglio pers. comm.).

Laboratory studies of several tricolored nestlings revealed that they died after several days on a diet containing 100 parts per million (ppm) selenium (dry weight), but a selenium dose-response relationship has not been developed for tricolors or other passerine birds (Grau et al. 1987). Collections of aquatic insects at Kesterson Reservoir indicated that many potential prey species contained selenium concentrations higher than 90 ppm (dry weight) (U.S. Bureau of Reclamation 1987). All potential tricolored nesting areas and other wetland habitats at Kesterson Reservoir were drained and filled by the U.S. Bureau of Reclamation during the late 1980s to reduce wildlife exposure to the contaminated area (Paveglio pers. comm.).

Few observers have reported direct poisoning of tricolored colonies by selenium, other trace elements, pesticides, or herbicides. However, the examples cited here reveal that a single poisoning incident can have a regional impact on tricolored populations. For example, the large colony poisoned at Kesterson Reservoir represented about 46% of the breeding adults reported in the San Joaquin Valley during the 1980s.

Recommended Action

One of the objectives of this study was to determine whether evidence exists to petition the USFWS to list the tricolor as either threatened or endangered under the ESA (Public Law 93-205). Under criteria outlined in Section 4(a) of the ESA (16 USC 1533), the Secretary of the Interior may designate a species as threatened or endangered as a result of any of the following five factors: the present or threatened destruction, modification, or curtailment of its habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or, other natural or manmade factors affecting its continued existence. Tricolors meet all of these criteria except the second, overutilization for commercial, recreational, scientific, or educational purposes.

Recent examples vividly illustrate the threats facing tricolors and emphasize the inadequacy of existing regulatory mechanisms. In 1989, a colony of 10,000 tricolors near Folsom, Sacramento County, was reduced to 2,000 adults when a ditch supporting dense blackberry nesting habitat was dewatered to facilitate urban development. Impacts on one of the largest remaining colonies were reviewed in an environmental impact report (EIR) in accordance with the California Environmental Quality Act. Impacts on the tricolored colony were deemed significant, but this finding did not alter the City of Folsom's dewatering action.

The remaining 2,000 breeding tricolors at the Folsom site are currently threatened by construction of Folsom Lake Community College by the Los Rios Community College District. An EIR prepared for this project failed to disclose the presence of breeding tricolors and recommended elimination of their blackberry breeding habitat (Eco-Analysts 1990). Mitigation proposals for this area would not provide suitable replacement habitat for breeding tricolors.

Despite the tricolor's declining status, in 1988 the USFWS issued a permit to shoot 2,000 tricolors with shotguns at Mather Air Force Base, Sacramento County (Sorenson, pers. comm.). This action was taken to prevent breeding tricolors from interfering with air traffic during their foraging flights.

The loss of the largest remaining colony of tricolors at Kesterson Reservoir in 1986 indicates that factors other than habitat loss, shooting, and predation are inhibiting the survival and recovery of tricolors. Investigations into the effects of selenium and other types of poisoning on tricolors have just begun in the last decade, but the results are alarming. Even the best efforts at protecting and restoring tricolor wetland habitat may be fruitless if marshes and foraging sites are contaminated with toxic levels of trace elements.

Current management practices on USFWS wildlife refuges, DFG wildlife areas, private duck clubs, and irrigated pastures pose less dramatic but potentially significant threats to tricolors. To create open water for waterfowl, dense stands of tules and cattails are routinely burned or water levels are managed to prevent their growth. For example, Gray Lodge Wildlife Area in Butte County does not support breeding tricolors, in spite of the extensive wetlands and potential foraging habitat available. If dense stands of tules and cattails were allowed to grow in some portions of that refuge, tricolors might breed there as they sometimes do at Colusa and Sacramento National Wildlife Refuges. Refraining from routine clearing or burning of blackberry thickets along irrigation canals might also increase available nesting habitat for tricolors.

Creation of new marshlands and alteration of management practices to maintain more dense habitat at federal and state refuges would benefit several other waterfowl and declining wetland species, including mallards (*Anas platyrhynchos*), gadwalls (*A. strepera*), cinnamon teal (*A. cyanoptera*), redheads (*Aythya americana*), American bitterns (*Botaurus lentiginosus*), least bitterns (*Ixobrychus exilis*), snowy egrets (*Egretta thula*), black-crowned night-herons, white-faced ibis (*Plegadis chihi*), and giant garter snakes (*Thamnophis couchi gigas*). These species have suffered declines from the loss of freshwater marsh habitat and prefer dense stands of emergent vegetation.

Most of the world's population of breeding tricolors occurs in the lowlands of California. Such a restricted distribution makes the entire species more vulnerable to local perturbations in the environment. For example, the recent drought and associated reductions in water supplies to wildlife refuges and private wetlands in the state almost certainly eliminated some of the tricolor's remaining breeding and foraging habitat.

Tricolors are clearly threatened with possible extinction, and an aggressive recovery program will be required to reverse this continuing decline. The recovery program should emphasize protection and restoration of their preferred wetland nesting and foraging habitats, vigorous protection of less preferred habitats where tricolors now extensively nest, protection and management of foraging habitats, and research and monitoring. These efforts will also benefit waterfowl and many other wetland-dependent wildlife species.

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Tables

Table 1. Number of Tricolored Blackbirds Recorded in Each Region and County

Region and County	<1900		1900-09		1910-19		1920-29		1930-39		1940-49		1950-59		1960-69		1970-79		1980-89	
	Total Colo- nies	Total Abun- dance (Yrs)*	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)
Region 1. North Coast																				
County:																				
Lake									1	75** (1)							1	2,500 (1)		
Marin							1	NA (1)	1	NA									4	1,010 (4)
Sonoma															1	150 (1)	9	8,050 (5)		
Subtotal							1	NA	2	75					1	150	10	10,550	4	1,010
Region 2. Central Coast																				
County:																				
Alameda							1	250 (1)							1	15,000 (1)	7	12,425 (5)	6	3,780 (2)
Contra Costa																			5	1,288 (2)
Monterey									4	9,225 (2)					2	2,300 (2)	2	6,000 (1)	10	3,060 (3)
San Benito																			2	2,005 (1)
Santa Clara	1	NA (1)*																	6	2,155 (3)
San Luis Obispo															1	NA	4	1,400 (3)	3	293 (3)
Santa Cruz	1	NA (1)							1	750 (1)							2	490 (3)	6	1,445 (3)
San Mateo																	2	NA (1)		
Subtotal	2	NA					1	250	5	9,975					4	17,300	17	20,315	38	14,026

Table 1. Continued

Region and County	<1900		1900-09		1910-19		1920-29		1930-39		1940-49		1950-59		1960-69		1970-79		1980-89	
	Total Colonies	Total Abundance (Yrs)*	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)
Region 3. South Coast																				
County:																				
Los Angeles	2	NA (1)							1	750 (1)	1	200 (1)					1	2,500 (1)	3	178 (2)
Orange									1	375 (1)									9	3,828 (4)
Santa Barbara									1	4,500 (1)							5	2,775 (4)	2	300 (1)
San Diego	1	NA (1)																	2 (NA)	NA
Ventura	3	500 (3)							8	7,425 (4)							4	4,325 (2)		
Subtotal	6	500							11	13,050	1	200					10	9,600	16	4,306
Region 4. Northeast Interior																				
County:																				
Lassen																			6	160 (5)
Shasta	1	NA							6	28,650 (2)							1	5,000 (1)	3	1,650 (4)
Siskiyou																	2	1,015 (1)		
Subtotal	1	NA							6	28,650							3	6,015	9	1,810

Table 1. Continued

Region and County	<1900		1900-09		1910-19		1920-29		1930-39		1940-49		1950-59		1960-69		1970-79		1980-89	
	Total Colonies	Total Abundance (Yrs)*	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)	Total Colonies	Total Abundance (Yrs)
Region 5. Sacramento Valley																				
County:																				
Amador																			1	350
																				(1)
Butte									32	336,263					3	52,875	3	10,350	3	7,925
										(5)						(3)		(3)		(2)
Colusa									20	127,763			3	101,000	9	178,225	9	63,000	7	9,769
										(4)				(1)		(6)		(4)		(4)
El Dorado	1	NA															1	600	1	500
																		(1)		(1)
Glenn									51	555,825					7	3,530	4	26,500	2	200
										(5)						(3)				(2)
Placer									2	3,750							1	3,000		
										(2)								(1)		
Sacramento									10	477,750			3	208,500	3	51,750	29	170,513	40	41,929
										(5)				(1)		(1)		(5)		(7)
Solano									1	10									5	433
										(1)										(4)
Sutter									10	49,875					1	9,000	3	32,000	3	14,000
										(5)						(1)		(2)		(3)
Tehama									1	1,125							1	2,000		
										(1)								(1)		
Yolo									13	99,500					1	105,000	7	53,150		
										(7)						(1)		(3)		
Yuba									20	353,900	1	33,000	3	85,725	18	109,400			2	4,963
										(7)		(1)		(1)						(1)
Subtotal	1	NA							160	2,005,761	1	33,000	9	395,225	42	509,780	58	361,113	64	80,069

Table 1. Continued

Region and County	<1900		1900-09		1910-19		1920-29		1930-39		1940-49		1950-59		1960-69		1970-79		1980-89	
	Total Colo- nies	Total Abun- dance (Yrs)*	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)
Region 6. San Joaquin Valley																				
County:																				
Calaveras															1	4,000 (1)			5	3,400 (3)
Fresno			2	400 (1)					1	150 (1)					4	11,152 (3)	4	5,621 (3)	4	3,150 (9)
Kern			1	NA (1)	1	NA (1)	1	35 (1)	3	3,075 (2)							2	3,000 (2)	6	6,965 (5)
Kings									1	3,000 (1)							1	25,000 (1)	2	2,300 (2)
Madera			1	200 (1)													1	5,000 (1)		
Merced					2	30,000 (1)			44	234,075 (5)							20	48,400 (5)	14	70,405 (8)
San Joaquin	1	NA (1)			1	38 (1)			5	6,000 (2)					3	700 (3)	4	5,540 (3)	1	300 (1)
Stanislaus					1	2,000 (1)			12	33,700 (3)							22	48,825 (4)	6	14,455 (4)
Tulare									1	3,000 (1)							1	1,500 (1)	1	150 (1)
Subtotal	1	NA	4	600	5	32,038	1	35	67	283,000					8	15,852	55	142,886	39	101,125

Table 1. Continued

Region and County	<1900		1900-09		1910-19		1920-29		1930-39		1940-49		1950-59		1960-69		1970-79		1980-89	
	Total Colo- nies	Total Abun- dance (Yrs)*	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)	Total Colo- nies	Total Abun- dance (Yrs)
Region 7. Southeastern Desert																				
County:																				
Riverside	1	NA (1)											3	750 (2)			1	750 (1)	2	4,530 (2)
San Bernadino											3	3,100 (3)	4	1,000 (3)						
Subtotal	1	NA									3	3,100	7	1,750			1	750	2	4,530
Region 8. Oregon																				
County:																				
Jackson													1	1,500 (1)	2	2,000 (2)	2	550 (2)	2	45 (1)
Klamath									1	50 (1)							2	270 (1)	3	950 (3)
Multnomah																			3	25 (2)
Umatilla																			2	50 (1)
Wheeler																			1	NA (1)
Subtotal									1	50			1	1,500	2	2,000	4	820	11	1,070
Region 9. Baja California	1	NA																		
Subtotal	1	NA																		
Total:	13	500	4	600	6	32,038	2	35	252	2,340,561	5	36,300	17	398,475	57	545,082	158	552,049	183	207,946

*Number in parentheses represents the number of years of record for each decade.

**Numbers reported as nests or pairs in Appendices I-1 to I-44 were converted to numbers of breeding adults by multiplying by 1.5 (see text).

Table 2. Largest Colony Reported Per Decade in Each Region During the Period 1900–1989

Region	<1900	1900–09	1910–19	1920–29	1930–39	1940–49	1950–59	1960–69	1970–79	1980–89
1. North Coast					75*			150	3,000	750
2. Central Coast	NA**			250	4,500			15,000	5,000	3,000
3. South Coast	300				4,500	200			2,500	1,510
4. Northeast Interior	NA				15,000				5,000	1,500
5. Sacramento Valley	NA				300,000	33,000	112,500	150,000	30,000	10,000
6. San Joaquin Valley	"Immense"	200	2,000	30	75,000			10,000	25,000	47,000
7. Southeastern Deserts	NA					2,000	500		750	4,500
8. Oregon					50		1,500	1,800	500	500
9. Baja California	NA									
Number of Colonies Reported	13	4	6	2	252	5	17	57	158	183
Largest reported per decade	"Immense"	200	2,000	250	300,000	33,000	112,500	150,000	30,000	47,000

*Numbers reported as nests or in pairs in Appendices I-1 to I-44 were converted to numbers of breeding adults by multiplying by 1.5 (see text).

**NA-data not available.

**Table 3. Average Annual Abundance of Tricolored Blackbirds Recorded Per
Decade in Each Region From 1900-1989**

Region	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79	1980-89	Percent Change		
										1930s- 1970s	1930s- 1980s	1970s- 1980s
1. North Coast				75			150	4,110	253	548.0	337.3	-93.8
2. Central Coast	NA*		250	5,362			16,150	9,115	6,857	169.9	127.8	-24.8
3. South Coast	NA			7,481	200			5,357	1,346	-28.4	-82.0	-74.8
4. Northeast Interior	NA			14,325				6,015	445	-58.0	-96.9	-92.6
5. Sacramento Valley	NA			383,664	33,000	294,326	23,135	101,453	23,083	-73.6	-93.9	-77.3
6. San Joaquin Valley	600	32,038	35	68,736			7,950	58,607	16,891	-14.7	-75.4	-71.2
7. Southeastern Deserts	NA				1,033	708		750	2,265	-	-	302
8. Oregon				50		1,500	1,000	545	425	1,090.0	850.0	-22
9. Baja California	NA											
Total	600	32,038	285	479,693	34,233	296,534	48,385	185,952	51,565	-61.2	-89.3	-72.3

*NA-data not available.

**Table 4. Status of Tricolored Blackbird Colonies Recorded
During the 1980s During the 1989 and 1990 Breeding Seasons**

Region	Total	Status of colony		
		Extant	Extirpated	Unknown
1. North Coast	4			4
2. Central Coast	38	8	5	25
3. South Coast	16	11	1	4
4. Northeast Interior	9	1		8
5. Sacramento Valley	64	17	3	44
6. San Joaquin Valley	39	15	6	18
7. Southeastern Deserts	2	1		1
8. Oregon	11	2	2	7
Total	183	55	17	111
Percent of total		30.0	9.3	60.7

**Table 5. Number of Tricolored Blackbird Colonies Known to
Have Been Extirpated During the 1980s**

Region/County	Number of Extirpated Colonies	Total Individuals in Extirpated Colonies	Total Individuals in the 1980s			Percent of Individuals Extirpated in the 1980s		
			County	Region	Total Range	County	Region	Total Range
Central Coast								
Monterey	3	1,653	3,060			54.0		
Santa Clara	1	600	2,155			27.8		
Santa Cruz	1	750	1,445			51.9		
Subtotal	5	3,003		14,026			21.4	
South Coast								
Santa Barbara	1	NA*	-	-	-	-	-	-
Sacramento Valley								
Sacramento*	2	8,270	41,929			19.7		
Solano	1	50	433			11.6		
Subtotal	3	8,320		79,636			10.4	
San Joaquin Valley								
Kern	1	150	6,965			2.2		
Merced	5	56,700	70,405			80.5		
Subtotal	6	56,850		101,125			56.2	
Oregon								
Multnomah	2	25 + NA	25	1,070		NA**	2.3	
Total	17	68,198			207,513			32.9

*Colony at Folsom, Sacramento County, was partially extirpated during 1989-1991.

**NA - Estimate of population abundance not available.

Figures

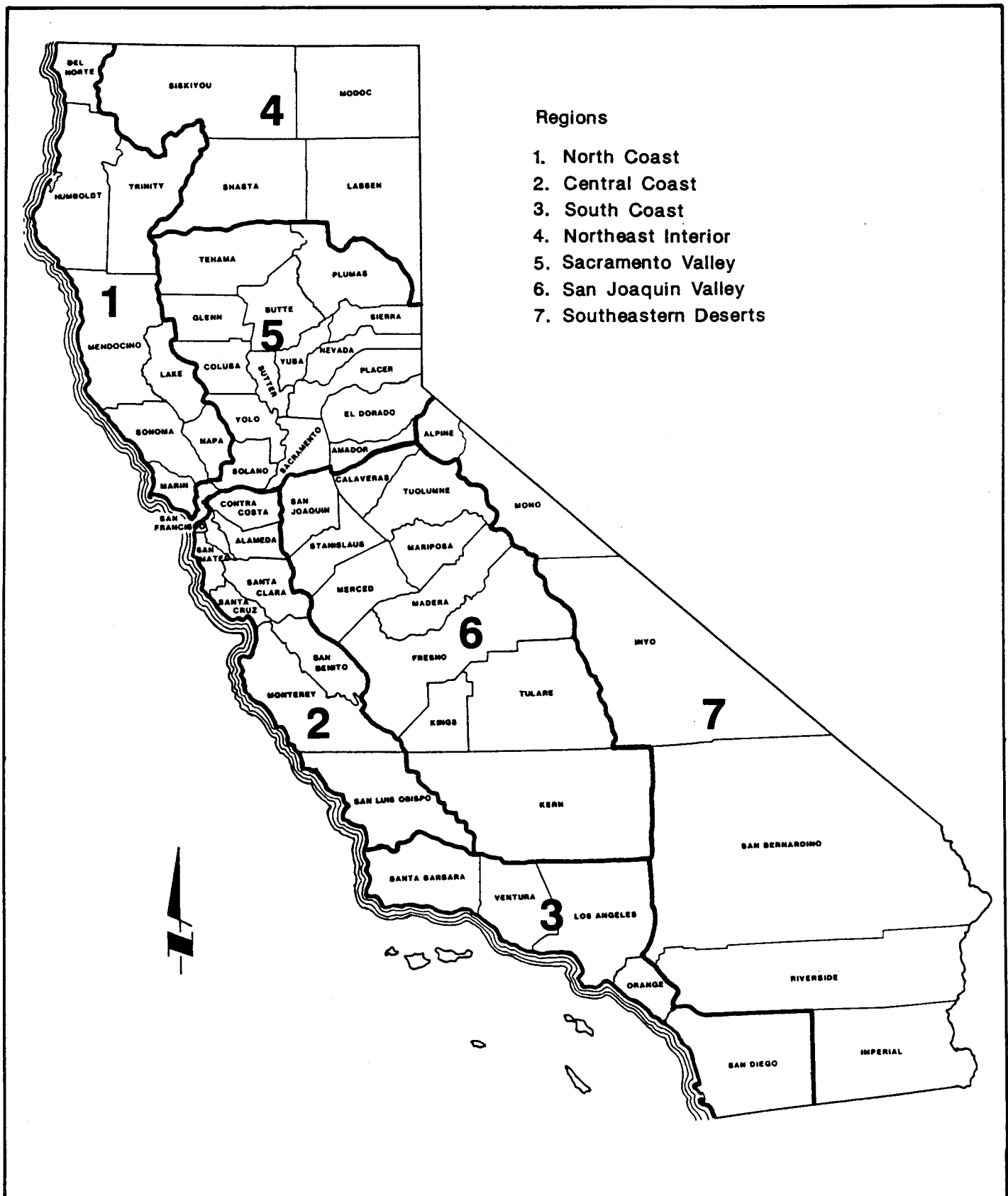


Figure 1. Regional Groupings of California Counties

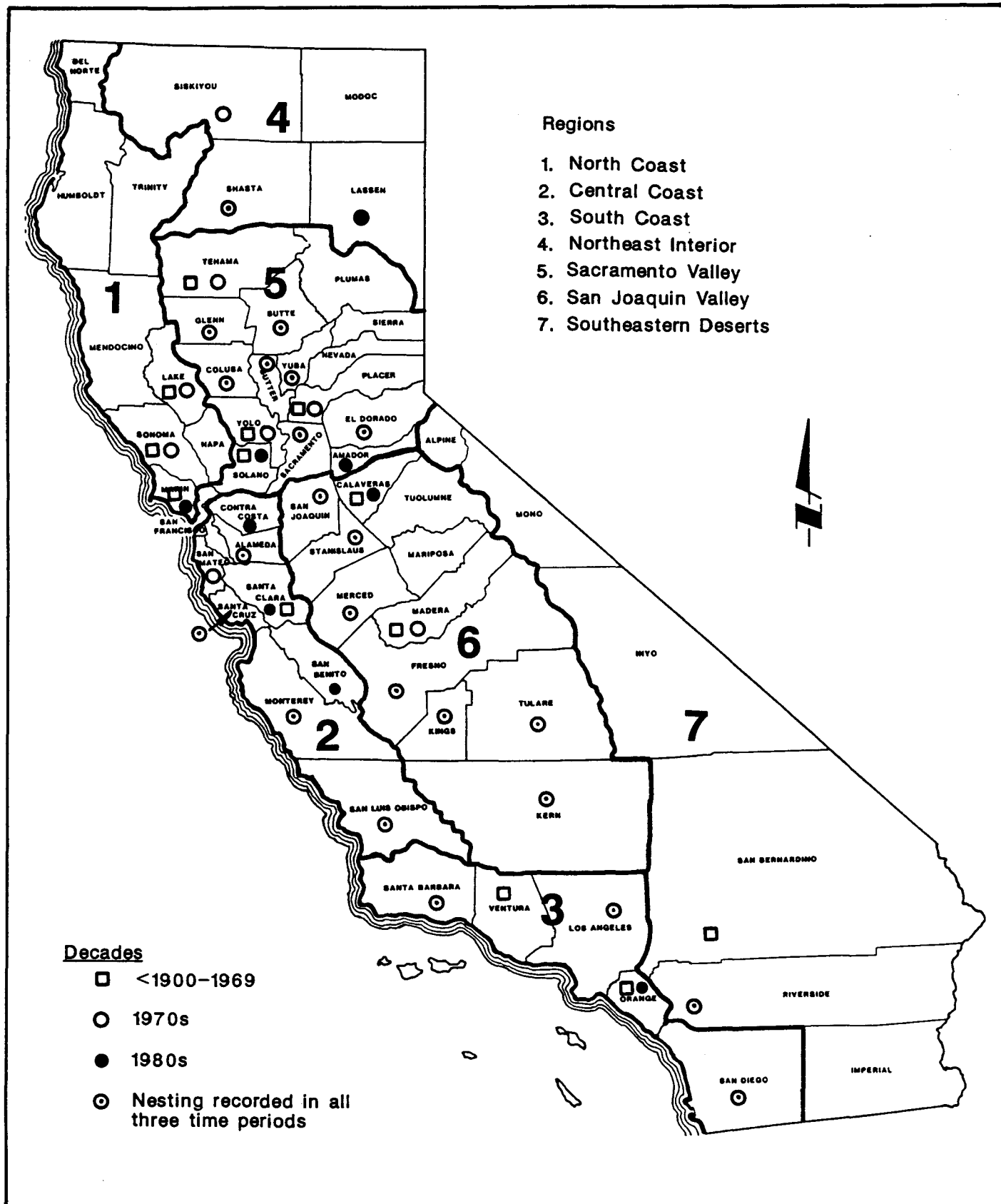


Figure 2. California Counties Where Tricolored Blackbird Breeding Colonies Were Recorded from 1900 to 1989

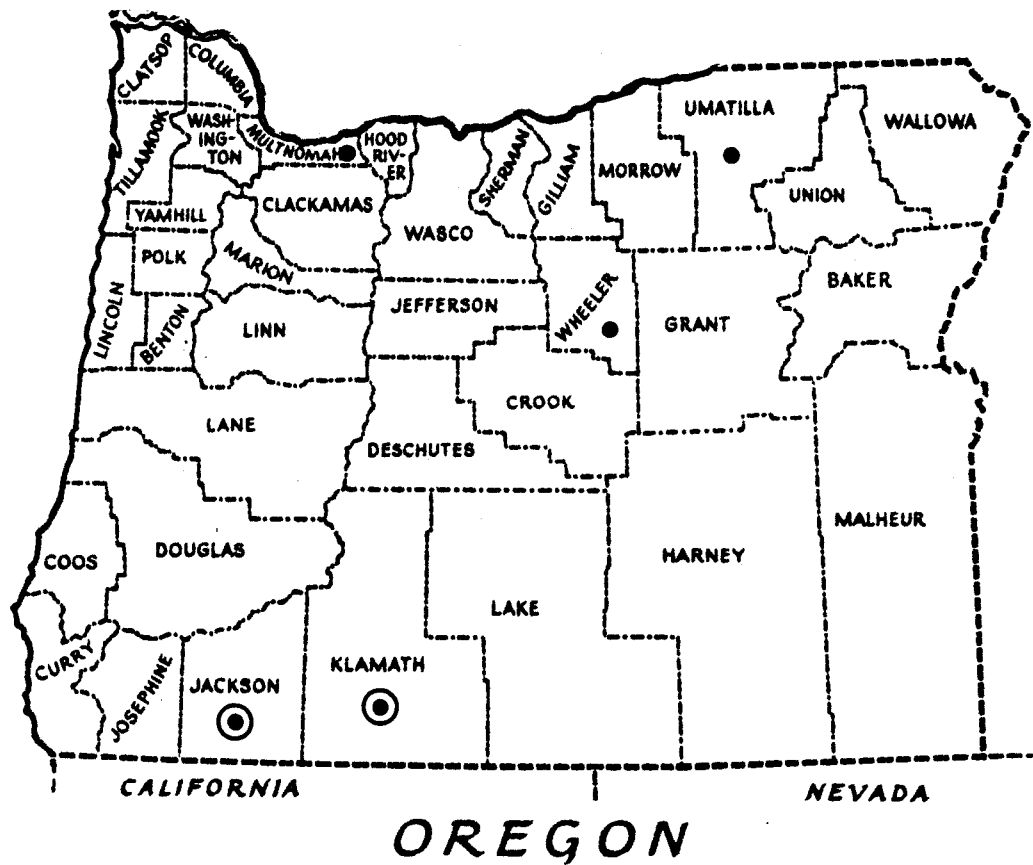
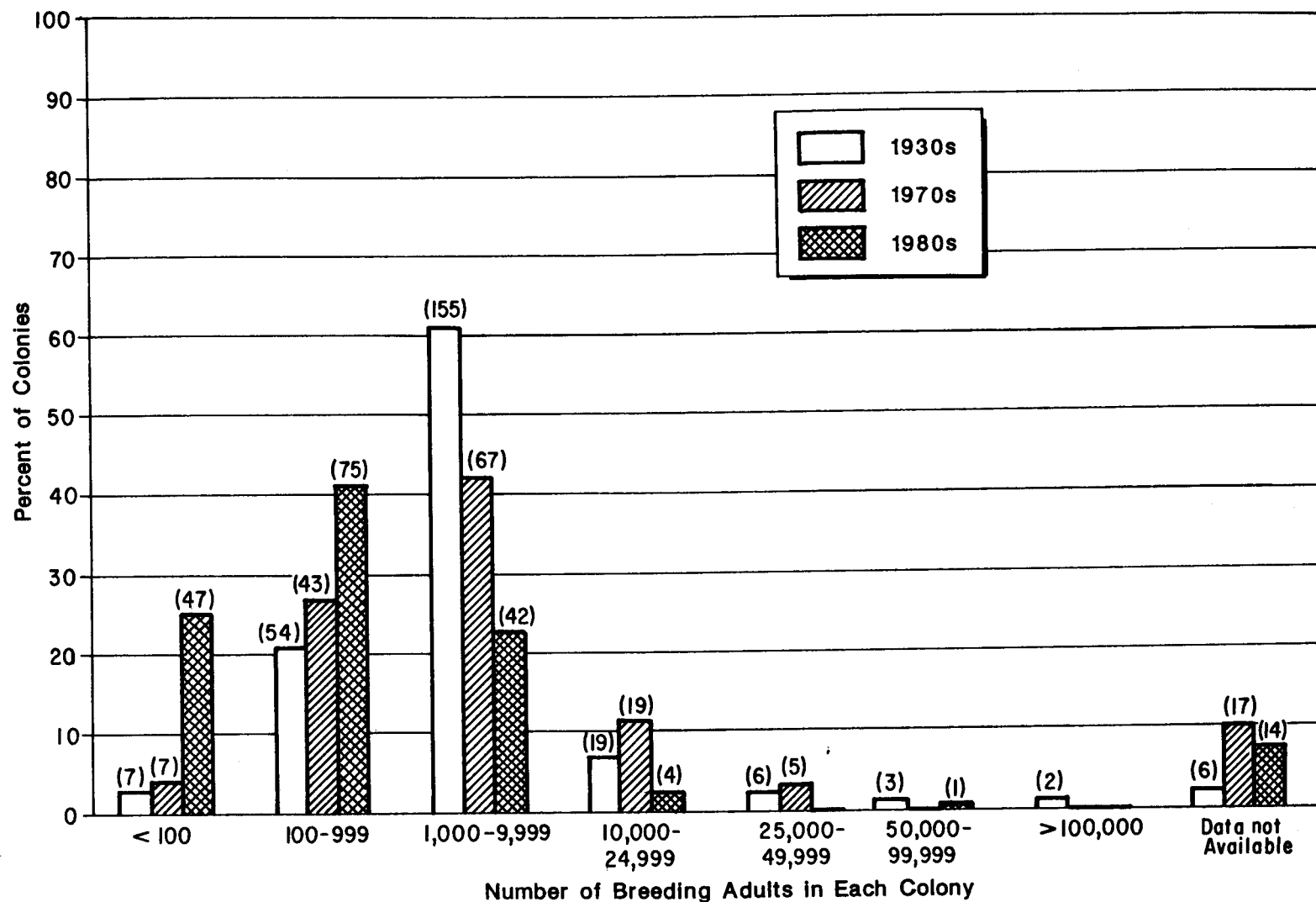


Figure 3. Oregon Counties Where Tricolored Blackbird Breeding Colonies Were Recorded from 1900 to 1989



Note: Numbers in parentheses indicate the total number of colonies reported in each decade.

Figure 4. Percentage of Tricolored Blackbird Colonies in Each Size Class During the 1930s, 1970s, and 1980s







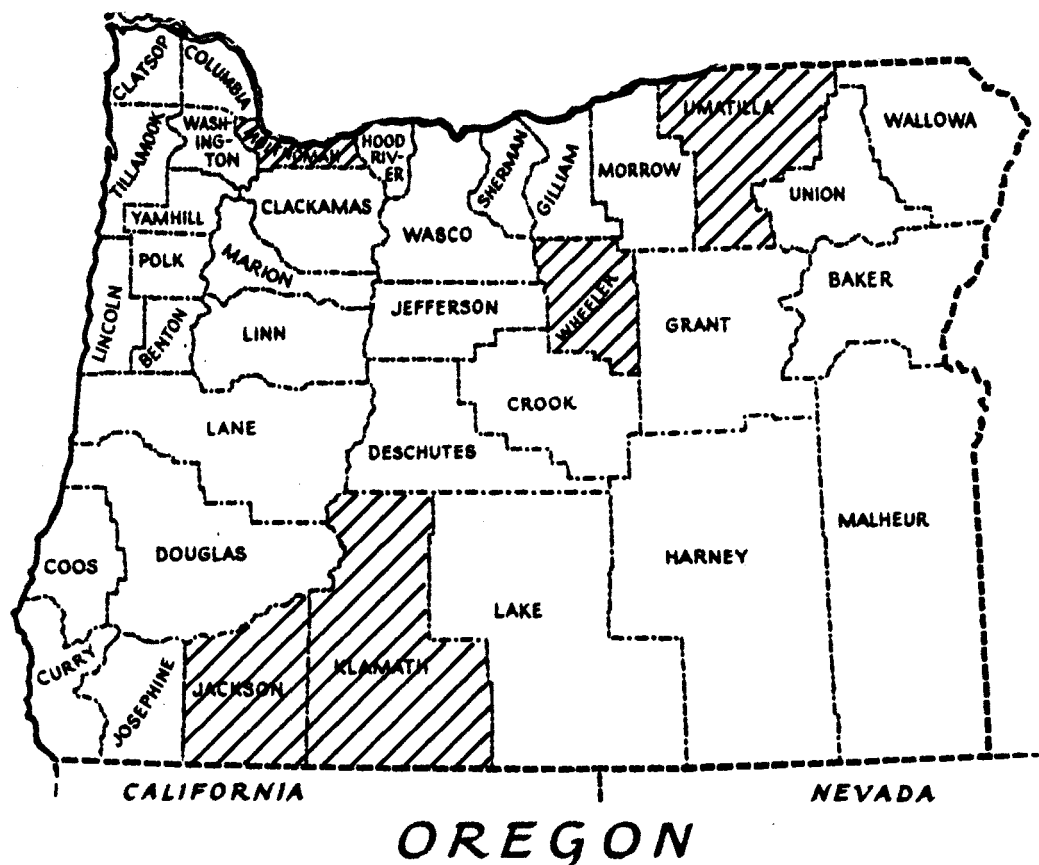
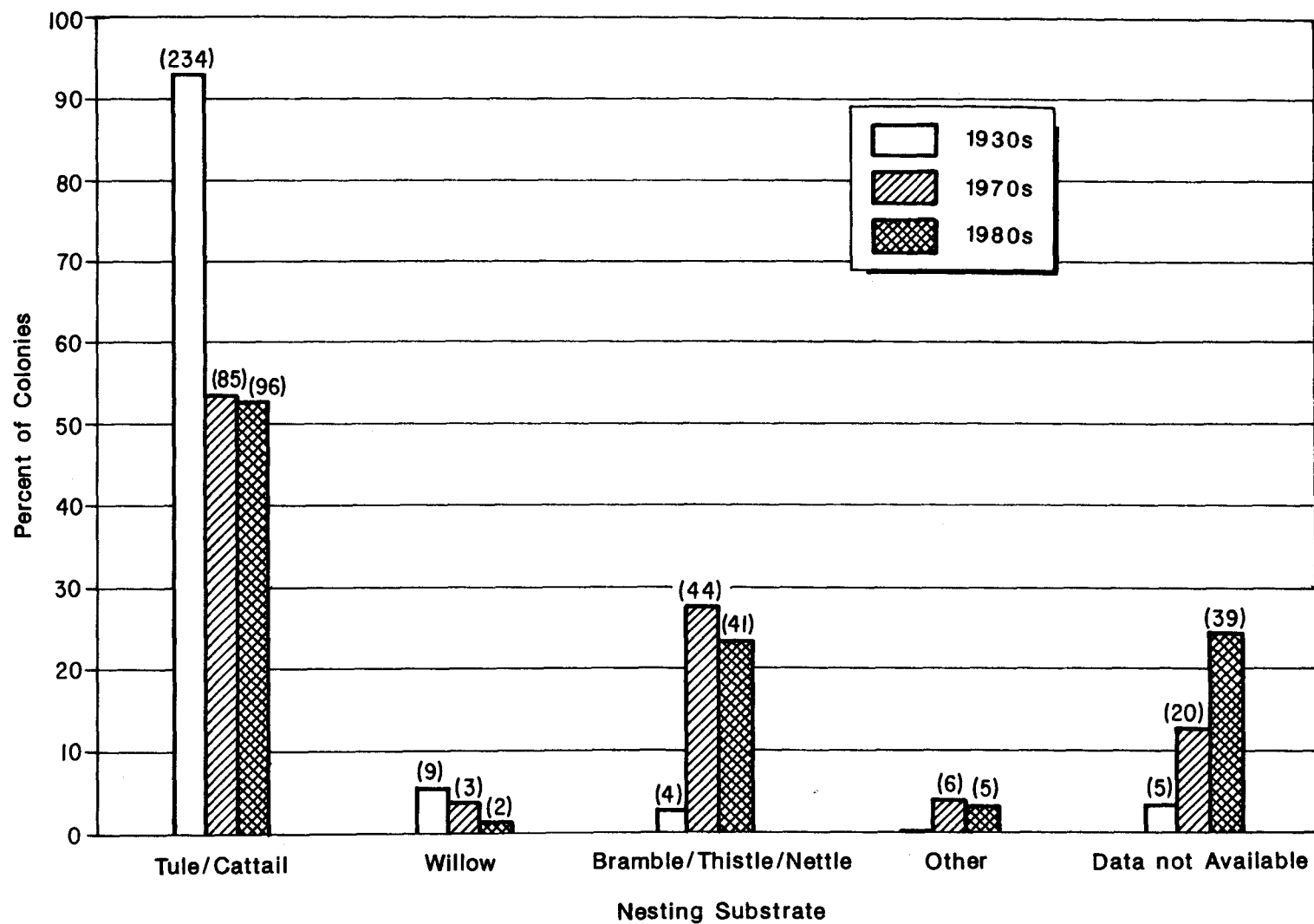
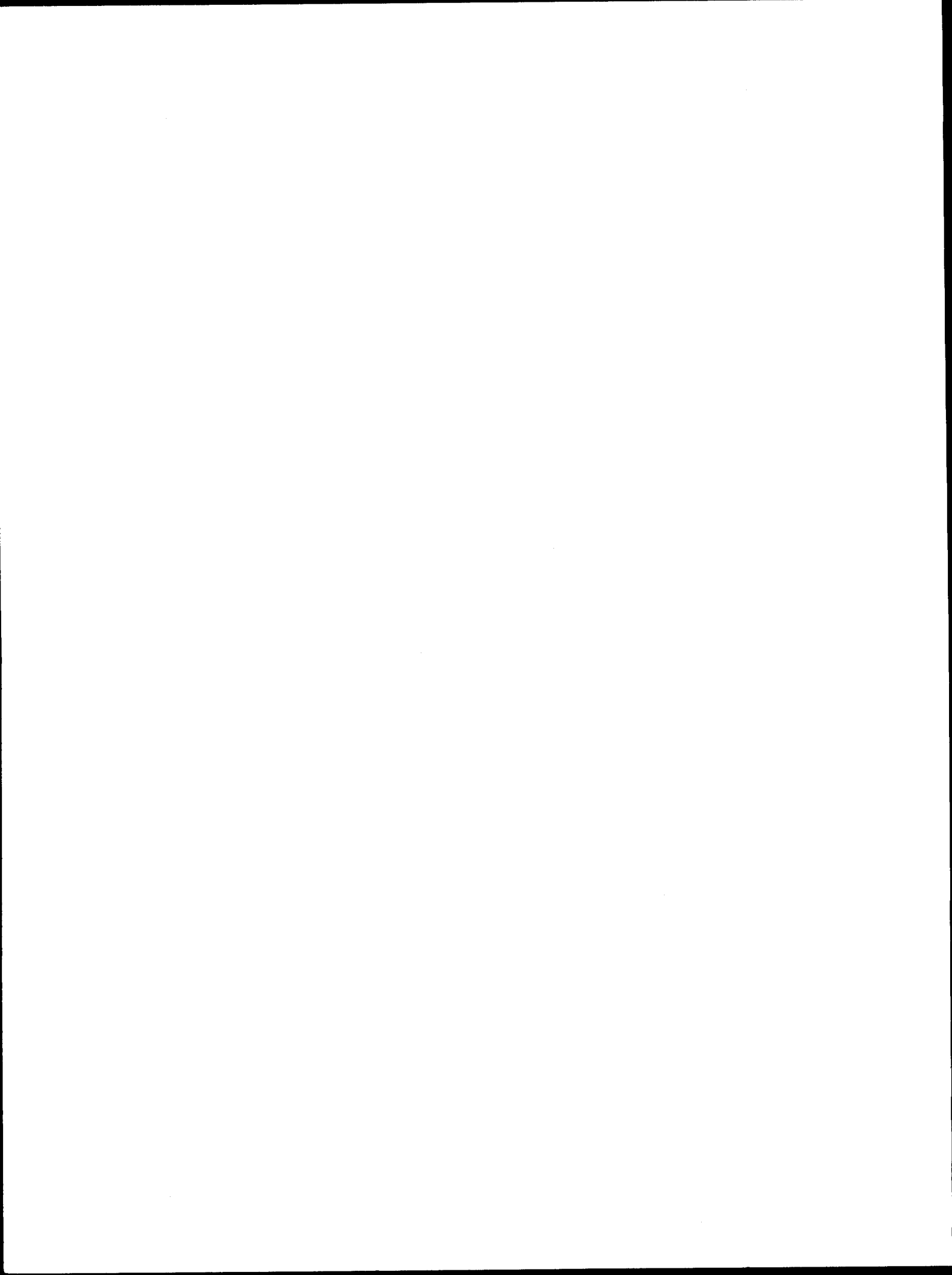


Figure 8. Average Annual Abundance of Breeding Tricolored Blackbirds in Oregon Counties during the 1980s



Note: Numbers in parentheses indicate the total number of colonies reported in each decade.

Figure 9. Percentage of Tricolored Blackbird Colonies in Different Nesting Substrates During the 1930s, 1970s, and 1980s



Appendices

Appendix I-1. Tricolored Blackbird Nesting Observations in Alameda County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1900-1919</u>						
5/20/17	200-300 ind.	Newark (near San Francisco).	Large, dense patch of common nettle.	<p>Large colony with two or more subcolonies found. Many nests had young in them; some still had eggs. Nests lower to the ground had been tilted to one side, possibly by skunks.</p> <p>This same site visited again on May 4, 1918. The patch of nettles where the birds nested last year was deserted; part had been burned. A large colony was found close to last year's site. Nearly all nests contained four eggs; some young were observed, but the nesting season was at its height.</p> <p>Visited site again on May 4, 1919 and observed 200-300 birds. Females were building nests and males were singing. On May 11, colony was nearly deserted; virtually all the nests less than 2 feet above the ground had been tilted over to one side. Skunks and/or opossums were suspected of destroying the nests causing the birds to abandon the colony.</p>	Presumed extirpated	Evermann 1919
<u>1960-1969</u>						
5/9-10/66	10,000 prs.	Stivers Lagoon, central Fremont.	Tule marsh.	<p>Observed several nests with eggs. Most of this marsh was excavated to make Lake Elizabeth, now a "recreational and scenic" asset of Fremont's Central Park. A small marsh still exists; however, no tricolored blackbirds have probably nested there since the lake was built.</p>	Extirpated; some habitat extant	Cogswell pers. comm. Green pers. comm. (Data from Cogswell)

Appendix I-1. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1970-1979</u>				<p>Observed 70 to 100 adults flying to and from this colony on 6/10/66, apparently carrying food. The colony was not entered or scanned closely on this date.</p> <p>On 7/15/67, no tricolors seen. Colony could have already nested and gone.</p>		
5/11/71	1,200 ind. 700 nests	Sunol Valley at intersection of Alameda Creek and Highway 680.	Thistle interspersed with tall mustard; no water present.	Size of colony approximately 1.25 acres. Noted nests with 1-day old eggs. Incubation just beginning.	Unknown	DeHaven unpublished field data
5/11/71	5,000 ind. 3,000 nests	Intersection of Highways 680 and 17, approximately 4 miles north of Milpitas.	Thistle interspersed with mustard; no water present.	Size of colony approximately 20 acres; (two colonies 10 acres each on both sides of Highway 17). Observed nine fledglings, two nests with three 4-day old nestlings, one nest with two 1-day old nestlings and two eggs, one nest with three 2-day old nestlings and one egg, and two nests with two 3-day old nestlings.	Unknown	DeHaven unpublished field data
5/11/71	5,000 ind. 3,000 nests	Coyote Hills Regional Park, 1 mile north of Dumbarton Toll Bridge.	Tules; water 1-2 feet deep.	Size of colony approximately 2 acres. Two stages of nesting: nests containing one to four eggs and nests containing one to four nestlings (some with unhatched eggs still present). Also noted several old nests.	Unknown	DeHaven unpublished field data and American Birds file data
1971, 1972, 1974	Up to 600 ind.	Coyote Hills Regional Park, central to south central part.	Tall marsh.	Various observations made from 4/11/71 to 8/13/71. Saw mostly males each time. Nesting not verified.	Unknown	Cogswell pers. comm. & American Birds file data

Appendix I-1. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/4/74-5/11/74	60 prs.	Intersection of Isabel Avenue and Vineard Avenue where Arroyo del Valk crosses Isabel Avenue on northeast corner.	Cattail marsh (freshwater or stream); surrounding area mostly mulefat, small willows, grass, and low shrubs.	<p>During 4/72, observed mostly males (100 ind.). Marsh dry around the edges; no nesting observed.</p> <p>Nesting was confirmed by East Bay Regional Park District personnel during 1971-72.</p> <p>On 4/4/74; 15+ individuals seen, including several singing males. No colony developed in the marsh this year.</p> <p>Size of colony approximately 0.25 acre. Unknown if colony fledged young; many empty nests observed on 5/11.</p>	Unknown	Edwards pers. comm.
4/27/74	~500	Near Livermore.	Data not available.	Colony observed.	Unknown	Erickson pers. comm.
4/24/76-6/7/76; & 3/28/78-4/30/78; <u>1980-1989</u>	16+ prs. Hundreds of prs.	Gravel pit area belonging to Kaiser Gravel Company on north side of Stanley Boulevard, 3 miles west of Livermore, and 3 miles east of Pleasanton.	Freshwater cattail marsh; large shallow pond with deep mud bottom.	Size of colony approximately 10 acres. Colony probably fledged young but not known for sure. Colony is located on private property so limited access is available.	Unknown	Edwards pers. comm.
6/80	125 prs.	Gravel pit area belonging to Kaiser Gravel Company on north side of Stanley Boulevard, 3 miles west of Livermore, and 3 miles east of Pleasanton.	Freshwater cattail marsh; large shallow pond with deep mud bottom.	Size of colony approximately 10 acres. Colony probably fledged young but not known for sure. Colony is located on private property so limited access is available.	Unknown	Edwards pers. comm.

Appendix I-1. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/5/85	120 prs.	City of Fremont, Warm Springs District. Large field north and east of Kato Road near Mission Boulevard and south of Agua Caliente Creek channel. The following three colonies were in close proximity to this colony but had different nesting stages.	Upland field dominated by weeds. Vegetation includes yellow star thistle (8-12 inches), bull thistle (18-34 inches), and wild radish.	Size of colony approximately 1 acre. Many fledglings observed and a few nests still contained young. Most nests in vicinity located in walnut tree. Disturbances included annual mowing for fire prevention, and potential urban development and mammalian predation if trails were created in dense star thistle. Successful nesting indicated by observation of fledged young.	Unknown	Lowe pers. comm.
5/5/85	150 prs.	City of Fremont, Warm Springs District. Northwest corner of Kato Road and Mission Boulevard.	Upland small lot comprised of annual grasses, wild radish (6 ft. tall), mustard (8 ft. tall), and milk thistle (8 ft. tall).	Size of colony less than 1 acre. All nests contained young approximately 1-2 days old and a few contained small young with one egg. Unknown if colony fledged young. Disturbances included annual mowing for fire prevention, frequent human presence, and potential urban development.	Unknown	Lowe pers. comm.
5/5/85	220 prs.	City of Fremont, Warm Springs District. Small lot between Kato Road, Warren Avenue, and Mission Boulevard.	Upland with even mix of mustard, wild radish, and milk thistle with some annual grasses.	Size of colony less than 1 acre. Breeding complete. Approximately 400 fledglings flying around site. Successful nesting indicated by observation of fledged young. Disturbances included annual mowing for fire prevention, frequent human presence, and potential urban development.	Unknown	Lowe pers. comm.
5/5/85	30 prs.	City of Fremont, Warm Springs District, between two sets of railroad tracks bounded by Warren Avenue and Mission Boulevard.	Dense stand of milk thistle and bull thistle.	Very small colony. Fledglings flying around site. Successful nesting indicated by observation of fledged young. Disturbances included possible use of herbicide for weed abatement as vegetation appeared stunted.	Unknown	Lowe pers. comm.

Appendix I-1. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/4-26/85	Several thousand prs.	Gravel pit area located 0.5 mile east of Isabel Avenue and 0.5 mile north of Vineard Avenue. Property of Kwik-Set Company.	Cattail marsh; shallow pond with deep mud bottom.	Four sites listed above (dated 5/5/85) were visited during summer 1986; no tricolored blackbirds were observed. Size of colony approximately 10 acres. Unknown if colony fledged young (colony is located on private property).	Unknown Unknown	Takakawa per. comm. Edwards pers. comm.

Appendix I-2. Tricolored Blackbird Nesting Observations in Amador County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
1980-1989						
4/21/86	Colony of 200 nests	Near Drytown.	Data not available.		Unknown	American Birds file data

Appendix I-3. Tricolored Blackbird Nesting Observations in Butte County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
1928-1930	Data not available	Vicinity of Oroville, at the eastern edge of the Sacramento Valley near the mouth of the Feather River Canyon (also includes a small area known as Dry Creek).	Cottonwood-sycamore habitat lining the banks of the Feather River, and willow-cottonwood habitat at Dry Creek.	Ten nests with fresh or incubated eggs were found during a 2-year period. No specific information given as to location or number of birds.	Presumed extirpated	Davis 1933
5/10/32	75 nests 500 nests 200 nests 2,500 nests	Ten miles west of Biggs. Ten miles west of Biggs. Eight miles west of Biggs. Four miles north of Biggs.	Cattails along canal. Cattails along slough. Cattail marsh. Cattail marsh.		Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937 Neff 1937
5/15/32	5,000 nests	Northeast of Butte City.	Cattail marsh along slough.	Three localities.	Presumed extirpated	Neff 1937
6/17/32	300 nests 2,000 nests 3,000 nests 1,000 nests 9,000 nests 4,500 nests	Ten miles west of Gridley. Nine miles west of Gridley. Four miles west of Biggs. Three miles north of Biggs. East of Butte City. East of Butte City.	Cattail marsh. Cattail marsh. Cattail marsh. Cattail marsh. Cattail marsh along slough. Cattail marsh along slough.	Four localities. Three localities.	Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937 Neff 1937 Neff 1937 Neff 1937
6/24/32	100 nests 500 nests	Northeast of Butte City. Northeast of Butte City.	Cattail marsh along slough. Cattail marsh along slough.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
5/10/33	2,500 nests	West of Gridley.	Cattail marsh.		Presumed extirpated	Neff 1937

Appendix I-3. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/18/33	50 nests 1,200 nests 2,500 nests	Near Shippee Station. Six miles west of Biggs. Five miles north of Biggs.	Cattails around reservoir. Cattails along ditch. Cattails along canal.	Listed as being in both Butte and Glenn Counties.	Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937
5/20/33	150,000 nest	Northeast of Butte City.	Cattails/tules along slough.		Presumed extirpated	Neff 1937
5/24/33	200 nests	Eight miles north of Oroville.	Cattail marsh.		Presumed extirpated	Neff 1937
5/23/34	4,000 nests 6,000 nests 20,000 nests 300 nests 1,000 nests 1,000 nests	Butte Creek. Southwest of Richvale. Southwest of Richvale. Four miles north of Biggs. Two miles north of Biggs. One mile north of Biggs.	Cattails along slough. Cattails along canal. Cattails along slough. Cattail marsh. Cattail marsh. Cattail marsh.		Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937 Neff 1937 Neff 1937 Neff 1937
5/21/35	500 nests 1,000 nests 250 nests 1,000 nests	East of Butte City. Southeast of Richvale. East of Riceton Station. Southwest of Richvale.	Cattails along slough. Cattails along slough. Cattail marsh. Cattail marsh.		Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937 Neff 1937
5/27/36	1,000 nests 3,000 nests	Near Biggs. Near Butte City.	Cattails along canal. Cattails along slough.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
<u>1960-1969</u>						
Spring 1960	35,000 nests	Gridley.	Data not available.	Began nest building on 5/11, egg laying on 5/15, incubating on 5/18, and feeding young on 5/30.	Presumed extirpated	Orians 1961

Appendix I-3. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
10/61	150 nests	Gridley.	Data not available.	Autumnal breeding colony: nest building began on 10/1.	Presumed extirpated	Payne 1969
10/64	100 nests	Gridley.	Data not available.	Autumnal breeding colony: nest building began on 10/1.	Presumed extirpated	Payne 1969
<u>1970-1979</u>						
5/12/71	2,500 ind.	Four miles southwest of Oroville.	Willow trees in nonirrigated, dry, rolling hills.	Size of colony approximately 1 acre. At first visit unsure of nesting activity but on 5/24/71, noted all nests contained full clutches of 6-7 day old incubated eggs.	Unknown	DeHaven unpublished field data
4/2/72, 5/15/72, & 6/10/72	200-500 ind.	Two miles north of Oroville.	Cattail marsh.	Size of colony approximately 0.3 acre. Many nests (about 260) found on 6/10. Successful nesting indicated by observation of about 30 fledglings.	Unknown	Cornell University, Laboratory of Ornithology (data from Nielsen)
6/4/74	7,000-8000 ind.	Two miles south of Afton.	Tules.	Size of colony approximately 0.25 acre. Incubation stage of nesting; some eggs may have already hatched by observation of adults flying to and from nests.	Unknown	DeHaven unpublished field data

Appendix I-3. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
5/28/83	150 prs.	Dump on Humboldt Road located on the outskirts of Chico.	Dense bed of large purple thistle at dump site, adjacent to rolling, rocky foothill grasslands.	Thistle bed not more than 1.25 acres. Tricolored blackbirds were seen foraging in flocks in the surrounding dry, grassy hill-sides (thistle bed was still green). Possible breeding suggested by observation of adults carrying food to thistle bed (nests with young inferred but not seen by observer). Unknown if colony fledged young. No apparent disturbances to colony observed.	Possibly extirpated; habitat extant	Manolis pers. comm.
5/25/85	5,000 prs.	Along Seven-Mile Lane (Chico-Butte City Highway) north of Nelson West Road.	Cattails and tules (mixed, diverse marshland).	Size of colony estimated to be several acres. Possible nesting indicated by observation of birds carrying nest material to site. Unknown if colony fledged young.	Unknown	Manolis pers. comm.
4/29/86	200+ ind.	Rancho Llano Seco, left bank Sacramento River, at Rivermile 180.5. (Llano Seco T20N R12 S17 SW/SE)	New growth riparian habitat dominated by elderberry and poison oak.	Site was logged in early 1970s and burned in 1984. Two hundred adults nesting. Threat of conversion to agricultural use.	Unknown	Snowden pers. comm.

Appendix I-4. Tricolored Blackbird Nesting Observations in Calaveras County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1960-1969</u>						
1963	4,000 ind.	Rock Creek downstream of Rock Creek Road bridge, 2 miles southeast of Milton.	Cattails.	See comments for 5/10/88 observation.	See comments for 5/10/88 observation	Natural Diversity Data Base (data from Gifford)
<u>1980-1989</u>						
4/23/87	400+ ind.	Near Milton Road.	Lush grasslands.	Two flocks observed north of Milton and two flocks seen south of Milton, apparently nesting.	Unknown	Campbell pers. comm. (data from American Birds file)
4/23/87	500+ ind.	Highway 26, just east of San Joaquin County line.	Grassy valley, no substrate given.	Breeding site. Females observed with nest material.	Unknown	American Birds file data
5/9/87	2,000 ind.	Rock Creek Road, 2 miles south-east of Milton.	Dense patches of roses with some blackberry bushes in a little valley in low foothills; a pasture area with small creek.	Heard calls of many young from within the shrub thickets. Originally estimated the total number of birds to be 12,000 ind. in late April (by Elsie Richey).	Presumed extant	Cogswell pers. comm.
5/10/88	300-400 ind.	North bank of Rock Creek downstream of rock Creek Road bridge, 2 miles southeast of Milton. (Jenny Lind T2N R10E S24)	Rose and blackberry thicket.	Approximately 4,000 observed nesting in 1963. Only 300-400 found nesting in rose and blackberry thicket in 1988. Significant habitat destruction between 1987 and 1988 due to grazing. Nests found in 0.25 section along north bank.	Presumed extant	Natural Diversity Data Base (data from Gifford field survey 1988)

Appendix I-4. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/27/89 & 6/20/89	150-200 ind.	Two miles north-northwest of Altaville; 1 mile west of Dogtown Road.	Irrigated, grazed pasture with blackberry patches and several small ponds.	Total field size approximately 10 acres. Birds seen flying, perching, and occasionally singing from blackberries and oak trees surrounding pasture. One bird seen carrying food to blackberries at edge of pond. Unknown if nests present or if colony fledged young, but continuous presence in this period suggests possible nesting. Landowner wants to control blackberries; bushes most likely to support nesting activity can be saved.	Extant	Airola pers. comm.

Appendix I-5. Tricolored Blackbird Nesting Observations in Colusa County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/12/32	5,000 nests	Southwest of Princeton.	Cattails along slough.		Presumed extirpated.	Neff 1937
5/12/32	75 nests	Five miles northeast of Maxwell.	Cattails along slough.		Presumed extirpated.	Neff 1937
	1,000 nests	Five miles northeast of Maxwell.	Cattails along slough.		Presumed extirpated.	Neff 1937
	20,000 nests	Four miles northeast of Williams.	Cattail marsh.		Presumed extirpated.	Neff 1937
6/13/32	250 nests	Five miles southwest of Grimes.	Cattails along slough.		Presumed extirpated.	Neff 1937
	750 nests	Nine miles southwest of Colusa.	Cattail marsh.		Presumed extirpated.	Neff 1937
6/20/32	1,000 nests	Three miles southwest of Maxwell.	Cattail marsh.		Presumed extirpated.	Neff 1937
	200 nests	Two miles southwest of Maxwell.	Cattails along canal.		Presumed extirpated.	Neff 1937
	500 nests	One mile west of Maxwell.	Cattail marsh.		Presumed extirpated.	Neff 1937
6/23/32	2,500 nests	Four miles east of Delevan.	Cattails along canal.		Presumed extirpated.	Neff 1937
6/24/32	400 nests	Fifteen miles west of Biggs.	Cattail marsh.		Presumed extirpated.	Neff 1937
4/28/33	10,000 nests	Colusa Outing Club.	Cattail marsh.		Presumed extirpated.	Neff 1937
5/4/33	4,000 nests	Four miles south of Maxwell.	Cattails along canal.		Presumed extirpated.	Neff 1937
5/9/33	2,000 nests	One mile southwest of Cortena.	Cattails along canal.		Presumed extirpated.	Neff 1937
6/6/34	15,000 nests	Five miles west of Colusa.	Cattail marsh.		Presumed extirpated.	Neff 1937
	7,500 nests	Five miles west of Colusa.	Cattail marsh.		Presumed extirpated.	Neff 1937
	7,500 nests	Three miles southeast of Maxwell.	Cattail marsh.		Presumed extirpated.	Neff 1937
	7,500 nests	Seven miles northeast of Maxwell.	Cattails along slough.		Presumed extirpated.	Neff 1937

Appendix I-5. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/28/36	3,000 nests 2,000 nests	Near Williams. Near Williams.	Cattail marsh. Cattail marsh.		Presumed extirpated. Presumed extirpated.	Neff 1937 Neff 1937
<u>1950-1959</u>						
Spring 1959	1,500 nests	East Park Reservoir.	Cattail marsh.	Began nest building on 4/21, egg laying on 4/25, incubating on 4/28, and feeding young on 5/10. Mass desertion of the colony began on 5/2, and by 5/15 only eight females were feeding young. Abandonment of the colony may be attributed to the inadequacy of food; the spring of 1959 was unusually dry.	Presumed extirpated	Orians 1961
Spring 1959	80,000 nests	Capitol Outing Club.	Cattails.	Colony stretches over 1 mile with various stages of nesting occurring. In the northeastern portion, nest building began on 5/8, egg laying on 5/11, incubating on 5/14, and feeding young on 5/26. On 6/11, young observed flying. On 5/26 in the southwestern portion, nest building is just beginning. By 6/20 most young are being fed.	Presumed extirpated	Orians 1961
10/16/59	19,500 prs.	Five miles west of Colusa, on a large duck-hunting club.	Cattails.	Autumnal breeding colony; nest building began 10/3, egg laying began on 10/7, and nestlings hatching on 10/23. Many of the nests were abandoned after eggs were laid and nestling survival was poor, probably due to lack of food availability. Only about 200-300 young fledged.	Unknown	Orians 1960

Appendix I-5. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1960-1969</u>						
Spring 1960	50 nests	East Park Reservoir (site A).	Cattail marsh.	Began nest building on 4/21, egg-laying on 4/25, incubating on 4/28, and feeding young on 5/7.	Unknown	Orians 1961
Spring 1960	600 nests	East Park Reservoir (site B).	Cattail marsh.	Began nest building on 5/17, egg-laying on 5/21, and incubating on 5/24. This colony was destroyed.	Unknown	Orians 1961
Spring 1960	100,000 nests	Capitol Outing Club.	Data not available.	Began nest building on 5/17, egg-laying on 5/21, incubating on 5/24, and feeding young on 6/5.	Unknown	Orians 1961
10/61	4,000 nests	Colusa.	Data not available.	Autumnal breeding colony; nest building began 10/19.	Unknown	Payne 1969
4/25/62-5/3/62	250 ind.	East Park.	Data not available.	Number of nests: 150 Number of nests fledged: --	Unknown	Payne 1969
6/8-12/63	400 ind.	East Park.	Data not available.	Number of nests: 200 Number of nests fledged: --	Unknown	Payne 1969
4/15/64-5/10/64	20,000 ind.	East Park.	Data not available.	Number of nests: 7,500 Number of nests fledged: 5,000	Unknown	Payne 1969
4/15-20/65	200 ind.	Stonyford.	Data not available.	Number of nests: 40 Number of nests fledged: --	Unknown	Payne 1969

Appendix I-5. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/20/65- 6/20/65	400 ind.	East Park.	Data not available.	Number of nests: 100 Number of nests fledged: 80	Unknown	Payne 1969
<u>1970-1979</u>						
1971	Data not available	Two and one-half miles west of Browning Road intersection with county line.	Cattails.	Colony nesting in cattails.	Unknown	Natural Diversity Data Base (data from DeHaven)
1971	Data not available	South and west sides of East Park Reservoir, southeast of Stonyford.	Cattail/willow.	Colony nesting in cattail/willow habitat.	Unknown	Natural Diversity Data Base (data from DeHaven)
5/24/71	25,000 ind.	Four and one-half miles west of Colusa.	Cattail marsh.	Size of colony approximately 10 acres. Appears that nesting activity has just begun but possibility of incubating.	Unknown	DeHaven unpublished field data
5/26/71	Less than 1,000 ind.	East Park Reservoir, 2 miles north of Ladoga on northwest corner of reservoir.	Willow trees; water 6-8 feet deep.	Size of colony approximately 1 acre. Noted nest building 50-75 percent complete.	Unknown	DeHaven unpublished field data
4/21/72	1,000 ind.	Sutter Buttes, 5 miles east of Colusa.	Cattail marsh.	Size of colony approximately 1-2 acres. No apparent nesting activity yet.	Unknown	DeHaven unpublished field data
6/8/72	15,000-18,000 ind.	County Line	Cattail marsh.	Size of colony 8-9 acres. Young have fledged but are still in marsh.	Unknown	DeHaven unpublished field data
6/4/74	2,000 ind.	Three miles northwest of Sutter.	Blackberries.	Size of colony approximately 0.1 acre. Possible nesting colony but did not check.	Unknown	DeHaven unpublished field data

Appendix I-5. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/12/74	2,500 ind.	End of Putnam Road.	Blackberries, willows, and thistles.	Size of colony approximately 1 acre. Incubation stage of nesting.	Unknown	DeHaven unpublished field data
6/6/75	15,000 ind.	East side of Highway 99, 1 mile north of Maxwell.	Tules and willows; water 1 foot deep.	Size of colony approximately 1.5 acres. Probable nesting area; tricoloreds have nested in this location before.	Unknown	DeHaven unpublished field data
<u>1980-1989</u>						
5/19/81	239 ind.	Richmond Gun Club, Highway 20 and Hausted Road.	Cattails along canals and culverts.	Nests abandoned when cattails started dying, possibly from herbicide spraying.	Unknown	Hosea 1986
5/19/81	1,330 ind.	Highway 20 and Lone Star Road, approximately 3 miles southwest of Colusa.	Cattails in ponds and canals/ culverts.	Nests abandoned when cattails started dying, possibly from herbicide spraying.	Unknown	Hosea 1986
6/17/82	1,800 ind.	Fourmile Road, approximately 5 miles east southeast of Princeton and 3 miles north of Delevan National Wildlife Refuge. (Princeton T18N R2W S29)	Rice field.	Colony of approximately 1,800 nesting in a rice field.	Unknown	Hosea 1986
6/17/82	900 ind.	Putnam Road, 2.5 miles northwest of Butte-Colusa-Sutter Counties junction. (Sanborn Slough T17N R1W S15)	Rice field.	Colony of approximately 900 nesting in a rice field.	Unknown	Hosea 1986

Appendix I-5. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/12/87-6/25/87	2,000 ind.	Tract 21 of Colusa National Wildlife Refuge. (Colusa T15N R2W S26 NW)	Cattail marsh.	Size of colony approximately 25 acres. Site found abandoned. Colony failed while feeding young in nests, possibly due to predation by northern harriers and black-crowned night herons which nested in large numbers nearby. No disturbances or threats to colony other than predators. This is a different site than used in 1988-1989 (see Berendzen notes).	Extant	Beedy and Hayworth (in press) and Mauser pers. comm.
7/88 & 8/88	2,000 ind.	Colusa National Wildlife Refuge, Tracts 21 and 22. Also observed several flocks in adjacent private rice fields.	Cattail marsh.	No breeding observed--just nightly roosting. Birds arrived too late for typical nesting. Unknown if colony fledged young.	Habitat extant	Berendzen pers. comm.
5/26/89-6/30/89	1,000 prs.	Colusa National Wildlife Refuge, Tracts 21 & 22, west of Ohm Road. (Colusa T15N R2W S26 NE)	Bulrush/cattail deepwater marsh.	Size of colony approximately 80 acres (four separate subcolonies reported with 200-300 pairs of birds per site). Nest building observed on 5/26 in subcolonies 1 and 2. Successful nesting indicated by observation of fledged young in subcolonies 1 and 2 approximately 6/23, and colony 3 around 7/6. Unknown if subcolony 4 fledged young.	Extant	Berendzen pers. comm.

Appendix I-6. Tricolored Blackbird Nesting Observations in Contra Costa County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
4/19/80	25 prs.	East Martinez, Mt. View Sanitation District sewage ponds.	Tules.	Colony abandoned because of minor tule removal.	Unknown	American Birds file data
5/9/80	250 ind.	Southwest of Byron.	Dense bull thistle near small pond in grassland.	Nesting observed.	Unknown	American Birds file data
Most Years	Data not available	Marsh Creek Reservoir. (Nearest road is Marsh Creek Road and nearest town is Brentwood).	Tules and cattails.	Possible nesting and fledging in some years. No apparent disturbances observed or known.	Extant	Richmond pers. comm.
3/30/89 to 5/11/89	1,000 ind.	Marsh Creek Reservoir.	Cattails around reservoir. Annual grasslands surround area.	Site visited from 3/30 to 5/11 on various occasions. Nesting presumed but not verified.	Extant	Myers pers. comm.
?	Data not available	Farm pond between Brentwood and Vasco Road (Los Vaqueros area).	Pond.	Tricolored blackbirds observed by others around 1980. Birds observed during 1988 field studies for Los Vaqueros Project. Unknown if colony has ever fledged young.	Probably extant; habitat definitely extant	Richmond pers. comm.
<u>1990</u>						
4/2/90	100-200 prs.	Unimin Quarry, approximately 2.5 miles west of Byron, off Camino Diablo Road.	Cattail marsh along northwest edge of 1-acre pond within quarry property. Pond has been on property for at least 10 years.	Size of colony approximately 0.25 acre. Colony is on private property with no further access allowed, so unknown if colony fledged young.	Extant	Schmoldt pers. comm.
5/7/90	125 prs.	Approximately 1 mile east of Alamo Creek and Dougherty Road, adjacent to Parks Military Reserve.	Freshwater stock ponds (2); both with dense cattails in portions of pond. Westernmost pond has approximately 0.25 mile of willow riparian upstream.	Size of colony approximately 0.5 acre. Approximately 100 pairs at westernmost pond and 25 pairs in upper pond. Observed young being fed. Area is planned for development.	Extant	Schmoldt pers. comm.

Appendix I-7. Tricolored Blackbird Nesting Observations in El Dorado County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
6/12/96	Data not available	The shores of Lake Tahoe.	Data not available.	Nesting colony.	Unknown	Barlow 1900 (data from R. H. Beck)
<u>1970-1979</u>						
5/31/71	400 prs.	Salmon Falls Road, 3.9 miles south of Pilot Hill. (T11N R9E NE 1/4 NW 1/4 S19)	Blackberries.	Nesting colony.	Unknown	Wilburn pers. comm.
<u>1980-1989</u>						
5/31/87	500 ind.	Crazy Horse Campground, 150 yards south of Highway 50, between Bass Lake exit and Cameron Park exit. (Clarksville T9N R9E S8 NE/NE)	Cattails on small pond.	Colony of approximately 500 adults; adults carrying insects to young in nest.	Presumed extant	Natural Diversity Data Base (data from Hosea)

Appendix I-8. Tricolored Blackbird Nesting Observations in Fresno County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1900-1919</u>						
4/30/07	Hundreds of ind.	Thirty miles southwest of Fresno.	Patch of nettles growing in a low, damp sink at the end of a large abandoned slough. A dense fringe of willows was located on two sides of the nettle patch.	Two colonies (about 200 yards apart) observed on this date. Both seemed to be less than 0.5 acre in size with about the same number of birds. Many nests were found which contained three to five eggs. Nests containing young birds were found in the center of the nettle patch.	Presumed extirpated	Tyler 1907
6/30/07	Hundreds of ind.	Near Letcher.	Large clump of tules growing in about 4 feet of water in a pond.	Out of 200 nests found, there were some young birds, but most nests contained three to four highly incubated eggs.	Presumed extirpated	Tyler 1907
<u>1920-1949</u>						
6/6/36	100 nests	Near Firebaugh.	Cattails along canal.	Apparently this colony was a remnant of a much larger colony. The major part of which had already left the nests.	Presumed extirpated	Neff 1937
<u>1960-1969</u>						
4/10-25/62	1,000 ind.	Firebaugh.	Data not available.	Number of nests: 400 Number of nests fledged: 20	Unknown	Payne 1969
10/63	100 nests	Firebaugh.	Data not available.	Autumnal breeding colony; nest building began 10/2.	Unknown	Payne 1969
10/63	1 nest	Firebaugh.	Data not available.	Autumnal breeding colony; nest building began 10/25.	Unknown	Payne 1969
5/16-21/64	10,000 ind.	Firebaugh.	Data not available.	Number of nests: 600 Number of nests fledged: --	Unknown	Payne 1969

Appendix I-8. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1970-1979</u>						
5/28/74	2,300 ind.	Three miles northwest of Clovis.	Blackberry thickets.	Many nests found during visit, both active and inactive. Successful nesting indicated by observation of 200-300 fledged young.	Unknown	Cornell University, Laboratory of Ornithology (data from Hansen)
4/9/75	121 ind.	California State University, Fresno campus.	Data not available.	Flock took over redwing colony for first time; many successful nests noted.	Unknown	American Birds file data
Numerous; Intensive 6/75 & 7/75	3,000 ind.	Northwest corner of Bullard and Cedar Avenues in Fresno (flood control basin). (Fresno North T13S R20E S2 SE)	Cattail marsh.	Size of colony approximately 3-4 acres. Several observations indicated successful nesting. Colony foraged, and was probably maintained (dependent), on California State University, Fresno agricultural (grain) fields to the east. Colony abandoned because habitat eliminated for basin maintenance.	Definitely extirpated; habitat eliminated	Valentine pers. comm.
1978	Several hundred	Little Panoche Detention Reservoir.	Cattail along shoreline.	Unknown if colony successfully nested here.	Unknown	Beam pers. comm.

Appendix I-8. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
1981-1988	1,000 ind.	Northeast of Friant-Kern Canal and Tollhouse Road (Highway 168). (Round Mountain T12S R22E S20 SE)	Cattail/tule marsh, possibly created/enhanced by barrier effect of Friant-Kern Canal on upslope drainage.	Size of colony less than 1 acre. Unknown if colony fledged young. Disturbance to colony may become apparent with grazing and pasture management which may alter amount of water applied or may cause owner to eliminate cattails for more productive livestock use. In 1988, no tricolored blackbirds observed.	Presumed extant; habitat extant	Valentine pers. comm.
5/86	Data not available	Little Panoche Reservoir. (Laguna Seca Ranch T13S R11E S19 SE/SE)	Saltbush (Atriplex sp.).	Nesting colony.	Unknown	Natural Diversity Data Base (data from California Department of Fish and Game R-4 Monthly Report)
5/3/89	2,000 ind.	Lemon grove on north side of Friant Kern canal. Approximately 1 mile north of Tollhouse Road (Highway 168) and approximately 1.5 miles northeast of Tollhouse/Shepard/Thompson intersection. (Academy T12S 22E S?)	Active lemon orchard.	Tricoloreds have been nesting in this orchard and nearby orchards for 8-10 years according to ranch supervisor. Disturbances include tree trimming operations and possible spraying during breeding season.	Extant	Natural Diversity Data Base (data from Miller)
5/8/87 & 5/18/87	150 ind.	Little Panoche Reservoir and adjacent grasslands. (Laguna Seca Ranch T13S R11E)	Cattails.	Successful nesting indicated by observation of fledged young.	Presumed extant; habitat extant	Myers pers. comm.; American Birds file data (data from Erickson)

Appendix I-8. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1990</u> 5/14/90	1,000-1,500 ind.	North side of Shaw Avenue, 0.6 mile west of Academy Avenue. (Round Mountain T13S 22E S 1/2 of SW 1/4 S10)	Cattail/tule marsh.	Colony found nesting in marsh. Observed foraging in an irrigated pasture to the west. Possible threats/disturbances include urban uses to the south (removal of annual grassland foraging area) and change in farm economics and water availability that could in turn cause a change away from irrigated pasture which appears to support nesting habitat.	Extant	Valentine pers. comm.

Appendix I-9. Tricolored Blackbird Nesting Observations in Glenn County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/10/32	15,000 nests	Eight miles southeast of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
	5,000 nests	Five miles east of Butte City.	Cattails/tules along slough.		Presumed extirpated	Neff 1937
5/11/32	3,000 nests	Six miles southeast of Willows.	Willows.		Presumed extirpated	Neff 1937
	5,000 nests	Two miles west of Sidds Landing.	Cattails/tules along ditch.		Presumed extirpated	Neff 1937
	3,000 nests	Three miles S. of Fairview School.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
	1,000 nests	Two miles E. of Fairview School.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
5/12/32	15,000 nests	Four miles east of Norman.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
5/21/32	8,000 nests	One mile S. of Fairview School.	Cattails/tules/sedges along slough.		Presumed extirpated	Neff 1937
6/21/32	1,000 nests	Three miles SE of Fairview School.	Cattail marsh.		Presumed extirpated	Neff 1937
	2,500 nests	Three miles E. of Fairview School.	Cattail marsh.		Presumed extirpated	Neff 1937
6/24/32	5,000 nests	Seven miles NE of Butte City.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
	5,000 nests	Nine miles NE of Butte City.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
4/21/33	2,500 nests	East of Willows.	Cattails along slough.		Presumed extirpated	Neff 1937
5/3/33	500 nests	East of Willows.	Cattails and willows along slough.		Presumed extirpated	Neff 1937
5/4/33	5,000 nests	Six miles southeast of Willows.	Willows.		Presumed extirpated	Neff 1937
5/10/33	1,500 nests	Two miles west of Glenn.	Cattail marsh.		Presumed extirpated	Neff 1937
	2,000 nests	Five miles southwest of Glenn.	Cattail marsh.		Presumed extirpated	Neff 1937

Appendix I-9. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/25/34	250 nests	Two miles south of Willows.	Cattails along ditch.		Presumed extirpated	Neff 1937
	2,000 nests	Three miles southeast of Willows.	Cattails along canal.		Presumed extirpated	Neff 1937
5/9/34	6,000 nests	Eight miles NE of Butte City.	Cattails along slough.		Presumed extirpated	Neff 1937
	2,500 nests	Eight miles NE of Butte City.	Cattail marsh.		Presumed extirpated	Neff 1937
5/10/34	1,000 nests	Three miles south of Willows.	Cattails along ditch.		Presumed extirpated	Neff 1937
	1,000 nests	One mile west of Norman.	Cattail marsh.		Presumed extirpated	Neff 1937
	1,000 nests	One mile east of Norman.	Cattails along canal.		Presumed extirpated	Neff 1937
	200,000 nests	Four miles east of Norman.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
	750 nests	Six miles southeast of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
	500 nests	Six miles southeast of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
	1,000 nests	Six miles southeast of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
5/15/34	2,500 nests	Three miles west of Glenn.	Cattail marsh.		Presumed extirpated	Neff 1937
5/16/34	500 nests	Two miles east of Norman.	Cattails along canal.		Presumed extirpated	Neff 1937
	30,000 nests	Four miles southeast of Willows.	Cattails along slough.		Presumed extirpated	Neff 1937
	750 nests	Eight miles northeast of Norman.	Cattails along canal.		Presumed extirpated	Neff 1937
5/21/34	200 nests	Four miles east of Willows.	Cattails and willows along slough.		Presumed extirpated	Neff 1937
	1,500 nests	Seven miles southeast of Willows.	Cattails along slough.		Presumed extirpated	Neff 1937
5/22/34	3,000 nests	Four miles northwest of Princeton.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
	400 nests	Two miles northwest of Princeton.	Cattails/tules along slough.		Presumed extirpated	Neff 1937
	7,500 nests	Two miles northwest of Princeton.	Cattails/tules along slough.		Presumed extirpated	Neff 1937
5/30/34	750 nests	Three miles northeast of Norman.	Cattails along creek.		Presumed extirpated	Neff 1937

Appendix I-9. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/1/34	600 nests	Three miles northwest of Princeton.	Cattails along canal.		Presumed extirpated	Neff 1937
	1,250 nests	Eight miles northeast of Norman.	Cattails along canal.		Presumed extirpated	Neff 1937
6/2/34	1,000 nests	Three miles south of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
6/4/34	10,000 nests	Three miles southwest of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
6/5/34	5,000 nests	Four miles southwest of Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
	1,000 nests	Two miles east of Norman.	Cattails along creek.		Presumed extirpated	Neff 1937
5/22/35	1,000 nests	East of Willows.	Cattails along slough.		Presumed extirpated	Neff 1937
	2,500 nests	Southwest of Glenn.	Cattail marsh.		Presumed extirpated	Neff 1937
	400 nests	West of Glenn.	Cattail marsh.		Presumed extirpated	Neff 1937
	200 nests	West of Glenn.	Cattail marsh.		Presumed extirpated	Neff 1937
5/27/36	1,000 nests	Near Butte City.	Cattail marsh.		Presumed extirpated	Neff 1937
	1,000 nests	Near Artois.	Willows along creek.		Presumed extirpated	Neff 1937
5/28/36	2,500 nests	Near Willows.	Cattail marsh.		Presumed extirpated	Neff 1937
<u>1960-1969</u>						
4/7/63- 5/25/63	1,200+ ind.	Elk Creek.	Data not available.	Number of nests: 560 Number of nests fledged: 300	Unknown	Payne 1969
10/63	20 nests	Elk Creek.	Data not available.	Autumnal breeding colony; nest building began on 10/3.	Unknown	Payne 1969
4/18/64- 6/9/64	800 ind.	Elk Creek.	Data not available.	Number of nests: 590 Number of nests fledged: 100	Unknown	Payne 1969

Appendix I-9. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/20-25/65	200 ind.	Four-pen.	Data not available.	Number of nests: 20 Number of nests fledged: 0	Unknown	Payne 1969
5/7-11/65	600 ind.	Four-pen.	Data not available.	Number of nests: 100 Number of nests fledged: 0	Unknown	Payne 1969
5-24-29/65	600 ind.	Four-pen.	Data not available.	Number of nests: 70 Number of nests fledged: 0	Unknown	Payne 1969
4/20-25/65	100 ind.	Corral Marsh.	Data not available.	Number of nests: 20 Number of nests fledged: 0	Unknown	Payne 1969
<u>1970-1979</u>						
5/12/71	2,500 ind.	Two miles south of Afton.	Long, narrow cattail marsh in the middle of an oat field; water 2-3 feet deep.	Size of colony approximately 1 acre. Noted that half of the colony has finished nest building.	Unknown	DeHaven unpublished field data
5/24/71	3,000 ind.	Three miles southwest of Orland.	Cattail marsh.	Size of colony approximately 2 acres. Birds just arrived so no nesting activity evident.	Unknown	DeHaven unpublished field data
5/30/72	1,000 ind. 750 nests	East of 5/12/71 colony, about 0.75 mile.	Cattails; water 1-4 feet deep in ditch.	Size of colony approximately 0.2 acre. Incubation stage of nesting.	Unknown	DeHaven unpublished field data
5/15/75	20,000 ind.	Afton.	Tule/bulrush; water 2 feet deep.	Size of colony approximately 1.25 acre. Some nest building activity beginning. On 6/6, 6/9, and 6/12, nestling taken for data.	Unknown	DeHaven unpublished field data

Appendix I-9. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
5/30/85	Data not available	Sacramento National Wildlife Refuge.	Flooded cattail/hardstem bulrush.	Nests (73,000) found. No data as to number of fledgling, if any.	Unknown	American Birds file data
6/1-28/89	Several hundred prs.	Sacramento National Wildlife Refuge (P7A.3), approximately 1 mile south of Norman Road.	Flooded cattail/hardstem bulrush.	Size of colony approximately 50 acres. Unknown if colony fledged young. No visible threats or disturbances to colony.	Extant.	Mensik pers. comm.

Appendix I-10. Tricolored Blackbird Nesting Observations in Kern County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1900-1919</u>						
5/20/07-6/16/07	Data not available	Buena Vista Lake.	Data not available.	Breeding colony found.	Extirpated	C. B. Linton (cited in Neff 1937)
6/7/12	"Hordes"	Immediate vicinity of Buena Vista Lake.	Data not available.	Large colony found.	Extirpated	Lamb and Howell 1913
<u>1920-1949</u>						
4/2/21	20 prs.	Walker Basin.	Old dead tule patch.	Nests found containing one to four incubated eggs. One female seen carrying food, probably to small young.	Presumed extirpated	Dickey and Van Rossem 1921
4/30/35	1,500 nests	Near Wasco.	Cattails around reservoir.		Presumed extirpated	Neff 1937
5/6/36	500 nests 50 nests	Near Tupman. Connors Station.	Cattails/tules along slough. Cattails along slough.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
<u>1970-1979</u>						
5/4/71	2,000 ind. 1,200 nests	Intersection of Highway 43 and Stockdale Highway, approximately 12 miles east of Bakersfield.	Tules. Water dried up.	Size of colony approximately 1.25 acres. Observed young 1-2 days old and also nests with eggs still in them. Noted that a man shot three adults.	Unknown	DeHaven unpublished field data
4/73	1,000 ind.	Approximately 2.5-3 miles due west of Kern National Wildlife Refuge.	Data not available.		Unknown	Hawes pers. comm. (letter to Crase)

Appendix I-10. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
6/2/81	1,200 ind.	Kern Valley Wildlife Area.	Data not available.	Young present.	Unknown	Hosea 1982
3/26/83	100 prs.	Southwest corner of main park pond (California City Central Park).	Cattails over water.	Size of colony less than 1 acre. Unknown if colony fledged young. Colony was taken over by yellow-headed blackbirds when cattails were removed during 1983-1985. During 1984 site visit, only 10 males observed during cattail removal project.	Possibly extirpated; partial habitat extant	Chichester pers. comm.
1983-1986	1,000s of prs.	Kern National Wildlife Refuge, Unit 1, 20 miles west of Delano, CA.	Cattail marsh.	Size of colony approximately 10 acres. Colony presumed successful in fledging young. Disturbances included cattail burning by refuge staff and unreliable water supply.	Presumed extant; habitat extant	Chichester pers. comm.
8/86	2,000 ind.	South Fork Kern River. Vicinity of Prince Pond at east end of Lake Isabella. (Weldon T26S R34E S16 /NE)	Cattail marsh.	Breeding colony.	Unknown	Natural Diversity Data Base (data from Laymon & Halterman 1986)
Spring 1988-1989	60 prs.	South of Laval Road (200 yards), approximately 1 mile east of Tejon Agriculture Partners' headquarters and almond huller.	Ephemeral drainage consisting of mulefat, cottonwood, and a black-berry thicket.	Size of colony less than 1 acre. Successful nesting indicated by observation of fledged young. Possible disturbance may be due to agricultural spraying.	Definitely extant; habitat extant	Chichester pers. comm.

Appendix I-10. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/89	350 prs.	Northwest corner of Interstate 5 and Twisselman Road intersection.	Holding pond surrounded by Tamarisk and willow trees.	Size of colony approximately 15-20 acres. Saw many nests and newly fledged young.	Extant	Gerstenberg pers. comm.
<u>1990</u>						
6/2/90	700-1,000 prs.	Hidden Lake Condominium complex adjacent to Highway 178 between mouth of Kern Canyon and Alfred Harrell Highway. (Rio Bravo Ranch T29S R29E S15)	Fringe of cattail/tule marsh surrounding an artificial lake.	Current management practices continue to make the pond attractive to this species.	Extant	Chickester pers. comm.

Appendix I-11. Tricolored Blackbird Nesting Observations in Kings County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/16/32	2,000 nests	Four miles southwest of Corcoran.	Tules along canal.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
5/4/71	25,000 ind. 17,000 nests	Eight to 10 miles south of Corcoran.	Mustard and safflower plants.	Size of colony approximately 80 acres. Nest building activity with about 3/4 completed. On 5/23/71, checked colony; only 1,500 birds left. Status uncertain, but probably abandoned.	Unknown Unknown	DeHaven unpublished field data DeHaven unpublished field data
<u>1980-1989</u>						
6/83	200 prs.	North side of "West Hacienda" water storage basins.	Tamarisk trees.	Possible nesting site but unconfirmed.	Unknown	Gerstenberg pers. comm.
June-July 1984	2,000 ind.	West Hacienda.	Saltbush.	About 100 nests were seen on north edge of the pond. Site visited again on 6/6/85; 500+ birds. Observed nests and nesting activity.	Unknown	American Birds file data

Appendix I-12. Tricolored Blackbird Nesting Observations in Lake County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/29/36	50 nests	Near Lakeport.	Cattail marsh.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
6/10/72	2,500 ind.	Three miles northwest of Nice.	Blackberries.	Observed adults feeding young.	Unknown	DeHaven unpublished field data

Appendix I-13. Tricolored Blackbird Nesting Observations in Lassen County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
5/14/80	Data not available	Four miles southeast of Standish at the intersection of county roads 302 & 305. (Standish T28N R14E S34 SW)	Intermittent pond bordered with cattails, reeds, bulrushes, etc.	Size of colony approximately 4-6 acres. Observed territorial behavior. Unknown if colony fledged young. Possible disturbances included fluctuating water levels, and cattle grazing.	Unknown	Stovall pers. comm.
7/5/82	7 males; Unknown number of females	Honey Lake Wildlife Area - Fleming Unit, 0.25 mile west of first parking area.	Intermittent water course with cattails and bulrushes.	Size of colony approximately 2.5 to 5 acres. Unknown if colony fledged young.	Unknown	Stovall pers. comm.
5/28/83	15-20 pr.	Center Road at southeast corner of Leavitt Correctional Center.	Cattail marsh (sedges, tules, grasses in surrounding grassy marsh edge, outer border of sage brush.	Observed birds feeding young on nests but not known if birds fledged. No visible disturbances to colony noted.	Unknown	Manolis pers. comm.
5/26-27/84	40-50 ind.	Same as above	Cattail marsh.	Unknown if colony fledged young; no sign of nesting.	Unknown	Manolis pers. comm.
5/25/85	20-30 ind.	Same as above	Cattail marsh.	No evidence of nesting observed, but birds nested at this location the last 2 years.	Unknown	Manolis pers. comm.
5/26/85	30-40 pr.	Mapes Lane near Dakin Unit (opposite side of road) of Honey Lake State Wildlife area.	Cattail marsh.	Size of colony approximately 0.25 acre. Observed birds feeding young on nests but not known if birds fledged. No visible disturbances to colony noted.	Unknown	Manolis pers. comm.

Appendix I-14. Tricolored Blackbird Nesting Observations in Los Angeles County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
Before 1895	Data not available	Within Los Angeles County.	Data not available.	Located several breeding colonies.	Unknown	Bendire 1895 (data from Stephens)
5/8/97	Data not available	Near Compton.	Data not available.	Nesting colony found; took 35 sets of slightly incubated eggs.	Presumed extirpated	Grinnell 1898 (data from G. F. Morcom)
<u>1920-1949</u>						
5/17/36	500 nests	1-1/2 miles E. of Kemp Station.	"River jungle" habitat. Nests in cattails and willows along river.		Presumed extirpated	Neff 1937
4/13/40 & 5/10/40	4-200 ind.	Dominguez Lagoon, northeast of Gardena (Nigger Slough on old maps).	Tall tule marsh and grain field.	Observed birds flying between the marsh and grain fields.	Presumed extirpated	Cogswell pers. comm.
<u>1970-1979</u>						
4/23/71	2,500 ind. 500-1,000 nests	1-1/2 miles northeast of Del Sur.	Giant cane at edge of 2-foot pond.	Size of colony less than 1 acre. Apparently two major nesting groups; one with eggs and the other building or finishing fresh nests. Examined 63 nests; 35 of the nests contained 1-5 eggs, 26 were fresh nests, and 2 were in the process of being built. Old nests present, probably from previous year. Three birds found dead around pond for unknown reasons.	Unknown	DeHaven unpublished field data

Appendix I-14. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
1981 or 1982	75-100 ind.	Madrona Marsh located in the City of Torrence.	Vernal pool area with tules.	Not sure if colony is still active.	Unknown	Collins, pers. comm.
May 1989	50-70 prs.	Northernmost part of El Dorado Regional Park in East Long Beach near the 605 freeway just above Wardlaw Road.	Man-made lake with several large clumps of tules.	Unknown if colony nested at this site.	Extant	Collins pers. comm.
	Data not available	Harbor Lake near City of San Pedro.	Reeds.	Possibly a new colony. Successful nesting indicated by observation of fledged young just out of the nest. A former breeding colony; still observe tricoloreds here during the summer. Also, tricoloreds probably nested in the Antelope Valley but are now observed only during winter and appear to be in reduced numbers from a decade ago. Perhaps the species nests locally around a few ranch ponds. Overall, "...the species is declining and is doing so alarmingly."	Presumed extant; habitat extant	Dunn pers. comm.

Appendix I-15. Tricolored Blackbird Nesting Observations in Madera County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1900-1919</u>						
4/28/ 1900	Hundreds of ind.	Near northern Madera County line.	Small patch of tules (6-10 feet high) surrounded by a shallow pond near an artesian well.	Many nests found which contained young approximately 24-48 hours old. Some nests contained eggs in the last stages of incubation. Found nests that contained decayed or partially dried, broken eggs. Exposed nests seemed to have been robbed, possibly by Swainson's hawks, which were numerous.	Unknown	Mailliard 1900
<u>1970-1979</u>						
4/22/75	5,000 ind.	Avenue 7, 1 mile east of the intersection of Avenue 7 and Road 16.	Tules along Cottonwood Creek.	Size of colony approximately 0.5 acre. Nest building activity in 2nd or 3rd day.	Unknown	DeHaven unpublished field data

Appendix I-16. Tricolored Blackbird Nesting Observations in Marin County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
4/17-20/26	Data not available	Short distance north of Point Reyes.	Dense growth of raspberry bushes.	Nesting colony found. Birds were just beginning to build nests.	Unknown	Booth 1926
5/14/33	Data not available	North of White Gulch, east of Tomales Point, Tomales Bay.	Data not available.	Colony observed by John Cushing, who noted that "The parents were quite tame and the females sat in anxious groups at one end of the thicket while I searched the other."	Unknown	Natural Diversity Data Base (data from Neff 1937)
<u>1980-1989</u>						
6/8/80-7/15/80	110 ind.	West side of Drake's Beach pond, Pt. Reyes National Seashore.	Bulrush and tule.	Colony observed on five separate dates during the breeding season including observations of carrying nesting material (6/8) to feeding fledglings (7/15) suggesting successful breeding at this site during 1980. Colony abandoned by 7/31. Like most areas in Marin County, this site does not support breeding tricoloreds each year.	Unknown	Shuford pers. comm.
4/28/82	50-100 ind.	Brazil Ranch, southeast of Dillon Beach.	Blackberry, salmonberry thicket.	Birds displaying/nest building on 4/28. A second visit (6/3) indicated the site was abandoned for unknown reasons.	Unknown	Shuford pers. comm.

Appendix I-16. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/20/86	50 prs.	Near Lake McSwain.	Information not available.	Colony of 50 nests.	Unknown	American Birds file data
5/19-31/88 & 6/7-21/88	500 prs.	Livermore Marsh and Cypress Grov Preserve; 1 mile northwest of Marshall on the east shore of Tomales Bay. (Tomales 38 deg. 10'N, 122 deg. 53'W)	Freshwater marsh; bulrushes and open water.	<p>Size of colony approximately 1.2 hectares with 0.3 hectares of bulrush/nest area.</p> <p>Nest success estimated at 45 percent; eggs fledged from successful nests estimated at 59 percent; overall nesting success was 26.6 percent. Observation of nests revealed broken egg shells in a few nests and a few torn nests; many nests suffered partial nest losses. Nest destruction possibly due to breeding marsh wrens. No apparent disturbances to colony observed.</p> <p>Opportunistic use of marshes in Marin County; colonies may be present at some sites (e.g., Olema Marsh or Drakes Beach) and absent for several years, or not return at all.</p>	Unknown	<p>Kelly pers. comm.</p> <p>Stallcup pers. comm.</p>

Appendix I-17. Tricolored Blackbird Nesting Observations in Merced County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1900-1919</u>						
5/27/16-6/13/16	20,000 nests	Near Dos Palos.	Swamps, tules and cattails.	Very large nesting area. Examined 3,500 nests.	Presumed extirpated	Dawson 1919
1916	Data not available	Near Los Banos.	Tules and cattails.	Large nesting area found.	Presumed extirpated	Dawson 1921
<u>1920-1949</u>						
5/14/32	50,000 nests	Fifteen miles northwest of Merced.	Thistles.		Presumed extirpated	Neff 1937
4/23/33	15,000 nests	Eight miles north of Atwater.	Cattail marsh.		Presumed extirpated	Neff 1937
4/26/33	100 nests	Three miles southwest of Merced.	Cattail marsh.		Presumed extirpated	Neff 1937
4/27/33	250 nests 1,000 nests	North of Merced. Near Hoff Station.	Cattail marsh. Cattail marsh.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
4/28/33	1,000 nests	Four miles SW of Livingston.	Cattail marsh.		Presumed extirpated	Neff 1937
5/2/33	2,500 nests 1,500 nests 500 nests	Three miles northeast of Snelling. Two miles south of Snelling. One mile east of Snelling.	Cattail marsh. Cattail marsh. Cattail marsh.		Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937
5/4/33	4,000 nests 6,000 nests	Two miles south of Livingston. Eight miles SW of Livingston.	Cattails along slough. Cattail marsh and willows.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
5/9/33	2,500 nests	Near Merced.	Cattails along canal.		Presumed extirpated	Neff 1937

Appendix I-17. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/10/33	3,000 nests	Near Merced.	Cattails along creek.		Presumed extirpated	Neff 1937
	5,000 nests	Four miles northeast of Merced.	Cattails and willows along creek.		Presumed extirpated	Neff 1937
5/12/33	7,500 nests	Fifteen miles south of Merced.	Cattail marsh.		Presumed extirpated	Neff 1937
	300 nests	Near El Nido.	Cattails around reservoir.		Presumed extirpated	Neff 1937
5/19/33	1,500 nests	Southwest of Merced.	Cattails along canal.		Presumed extirpated	Neff 1937
5/26/33	1,500 nests	Five miles northeast of Snelling.	Willows along creek.		Presumed extirpated	Neff 1937
6/5/33	2,000 nests	Near Delhi.	Cattail marsh.		Presumed extirpated	Neff 1937
	3,000 nests	Four miles south of Turlock.	Cattail marsh.		Presumed extirpated	Neff 1937
6/11/34	1,000 nests	Merced.	Cattails along canal.		Presumed extirpated	Neff 1937
6/12/34	500 nests	Near El Nido.	Cattails around reservoir.		Presumed extirpated	Neff 1937
4/25/35	150 nests	South of Livingston.	Cattails along canal.		Presumed extirpated	Neff 1937
5/27/35	1,250 nests	Four miles north of Merced.	Cattails along canal.		Presumed extirpated	Neff 1937
5/28/35	5,000 nests	Two miles south of Snelling.	Cattail marsh.		Presumed extirpated	Neff 1937
	600 nests	One mile south of Snelling.	Cattails along slough.		Presumed extirpated	Neff 1937
	1,000 nests	Eight miles north of Atwater.	Cattail marsh.		Presumed extirpated	Neff 1937
	400 nests	Near Hoff Station.	Cattail marsh.		Presumed extirpated	Neff 1937
	1,500 nests	Near Merced.	Cattails along canal.		Presumed extirpated	Neff 1937
	1,000 nests	Near El Nido.	Cattails around reservoir.		Presumed extirpated	Neff 1937
	1,000 nests	Near Livingston.	Cattails along canal.		Presumed extirpated	Neff 1937
	1,500 nests	Near Livingston.	Cattails and willows along slough.		Presumed extirpated	Neff 1937
	4,000 nests	South of Livingston.	Cattails along canal.		Presumed extirpated	Neff 1937

Appendix I-17. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
	3,000 nests	South of Livingston.	Cattail marsh.	Three localities.	Presumed extirpated	Neff 1937
	1,500 nests	South of Livingston.	Cattail marsh.		Presumed extirpated	Neff 1937
	5,000 nests	South of Livingston.	Cattail marsh.		Presumed extirpated	Neff 1937
	2,500 nests	Northeast of Los Banos.	Cattail marsh.		Presumed extirpated	Neff 1937
	7,500 nests	San Joaquin River bridge.	Cattails and willows along canal.		Presumed extirpated	Neff 1937
6/5/36	2,000 nests	Near Merced.	Cattails along canal.		Presumed extirpated	Neff 1937
6/6/36	1,000 nests	Near Dos Palos Junction.	Cattails/willows in riverbank jungles.		Presumed extirpated	Neff 1937
	2,000 nests	Lucerne Ranch.	Cattail marsh.		Presumed extirpated	Neff 1937
6/7/36	2,000 nests	Near Snelling.	Cattails along slough.		Presumed extirpated	Neff 1937
	1,500 nests	Arundel Station.	Cattail marsh.		Presumed extirpated	Neff 1937
	1,000 nests	Near Merced.	Cattails along canal.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
4/25/70	300 nests	Marsh behind shop building, San Luis National Wildlife Refuge.	Cattail/tule marsh.		Unknown	Sipe pers. comm. (letter to DeHaven)
4/28/71	500 ind.	Along eastside of Interstate 5, near Gustine overpass (#1)	Drainage ditch with cattails/tules in flat, grassy, irrigated and nonirrigated pastures.	Possibly incubating but not verified.	Unknown	DeHaven unpublished field data

Appendix I-17. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/5/71	3,500 ind. 1,800 nests	Five miles due east of Los Banos.	Tule-filled ditches; water 2-4 feet deep.	Size of colony approximately 2 acres. Observed seven day-old nestlings, 17 fledglings, and 17 dead nestlings (killed by rain). Noted that many nests are being built; possible renesting attempt. 5/13/71 - observed more fledglings. 5/26/72 - Tried to recheck site but "no trespassing" signs every few feet along fence. Presumed adults feeding young.	Unknown	DeHaven unpublished field data
5/6/71	1,200 ind. 800 nests	Intersection of Interstate 5 and Highway 140, approximately 5 miles west of Gustine.	Tules; water 1-2 feet deep.	Size of colony approximately 1 acre. Observed five day-old nestlings and seven fledglings. Noted that many new nests are being built; possible renesting attempt.	Unknown	DeHaven unpublished field data
5/6/71	2,500 ind.	Santa Fe Grade #1, 2.5 miles south of Gun Club Road and approximately 5 miles southwest of Gustine.	Bulrush; water 0-1 foot depth.	Checked 31 nests with eggs: three with four eggs, 19 with three eggs, six with two eggs, and three with one egg. 5/13/71 - most nests with eggs are ready to hatch or are hatching. Noted many missing or broken eggs in nests; some with eggshells still present. Only about two to three eggs left per clutch.	Unknown	DeHaven unpublished field data

Appendix I-17. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/6/71	3,000 ind. 1,800 nests	Gun Club Road, 2 miles east of Hunt Road turnoff and 2 miles south of Gustine.	Tule ditch; water 1-2 feet deep.	Checked 18 nests: 15 with one egg and three with two eggs.	Unknown	DeHaven unpublished field data
5/6/71	1,100 ind. 750 nests	Sante Fe Grade #2, 1.6 miles south of Santa Fe Grade #1 above. Approximately 8 miles southwest of Gustine.	Tules; water 2 feet deep.	Size of colony approximately 0.5 acre. Observed 16 nests: three with four eggs, six with three eggs, five with two eggs, and two with one egg. 5/13/71 - observed young about 3-4 days old.	Unknown	DeHaven unpublished field data
5/9/71	1,500 ind.	South side of Highway 140; 4-1/2 miles west of Merced.	Blackberries in irrigated pastures.	Size of colony approximately 1/25 of an acre. Presumed nesting but unknown; area too inaccessible to reach.	Unknown	DeHaven unpublished field data
5/13/71	1,500 ind. 750 nests	One mile east of Gun Club Road colony (abandoned) and 3/4 mile southeast of the Gustine Airport.	Cattail in 2 to 3 feet of water.	Size of colony approximately 1.5 acres. Observed incubation of eggs (about 2 days). Noted egg stains in many nests; strong predation from something.	Unknown	DeHaven unpublished field data
5/13/71	Data not available	One-half mile east of Gun Club Road colony (above).	Cattail and bulrush.	Did not check but probably same stage (incubation) as Gustine Airport (above).	Unknown	DeHaven unpublished field data
5/14/71	250 nests	Kesterson National Wildlife Refuge.	Data not available.	Noted 90 percent of eggs hatched on 5/24/71.	Unknown	DeHaven unpublished field data
5/25/71	3,000 ind.	Along eastside of Interstate 5, near Gustine overpass (#2). (See 4/28/71 report.)	Drainage ditch with cattails/tules in flat, grassy, irrigated and nonirrigated pastures.	Observed new nests and noted several with one, three, and four eggs.	Unknown	DeHaven unpublished field data

Appendix I-17. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/25/71	6,000 ind.	Santa Fe Grade #3, 1/4 mile north of Santa Fe Grade #1.	Tules, some bulrush; water 1-2 feet deep.	Size of colony approximately 3 acres. No observation of actual nesting but noted many birds singing and flying to nearby fields.	Unknown	DeHaven unpublished field data
6/3/71	7,500 ind. 5,000 nests	Merced National Wildlife Refuge.	Tules and bulrush; water 1-2 feet deep.	Size of colony approximately 2 acres. Noted nest building activity.	Unknown	DeHaven unpublished field data
5/14/72, 5/20/72, & 5/30/72	Data not available	Six miles north of Los Banos.	Freshwater cattail and bulrush marsh.	Nest building observed on 5/14. On 5/20 approximately 75 nests estimated. Some nests contained eggs. On 5/30 visit, colony was apparently abandoned for unknown reasons.	Unknown	Cornell University, Laboratory of Ornithology (data from Sipe)
5/25/72	500 ind.	One mile northeast of last year's colony (Junction of Interstate 5 and Highway 140 - 5/6/71).	Cattail pond.	Size of colony approximately 0.3 acre. Colony has already fledged young.	Unknown	DeHaven unpublished field data
5/25/72	12,000-15,000 ind.	Near Gustine Airport (same general as 5/13/71 colony).	Cattail slough next to sewage ponds.	Size of colony approximately 3 acres. Observed young 5-8 days old.	Unknown	DeHaven unpublished field data
5/26/72	2,000 ind.	Five miles east of Los Banos.	Cattail/bulrush marsh.	Probably feeding young, did not check nests.	Unknown	DeHaven unpublished field data
4/25/73 & 5/30/73	200 ind.	State Route 140, southeast of Stevinson.	Tall thistles.	Tricoloreds singing and flying to and from patch of tall thistles across narrow ditch by roadside on 4/25. On 5/30, several hundred still in and near thistles, apparently nesting.	Unknown	Cogswell pers. comm.

Appendix I-17. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/26/75	200 ind.	Kesterson National Wildlife Refuge, southeast part.	Marshy ponds.	Observed birds perching and flying in an area of fields and ponds; no nesting verified.	Unknown	Cogswell pers. comm.
<u>1980-1989</u>						
1982 & 1983	500-1,000 ind.	Merced National Wildlife Refuge at the "Glory Hole."	Emergent vegetation.	Small nesting colony found. Reported flocks of up to 10,000 individuals in 3/83.	Unknown	San Luis National Wildlife Refuge file data
1983	Data not available	San Luis National Wildlife Refuge at Loaf Lake unit.	Milk thistle.	Nesting colony found. Flocks of tricoloreds observed utilizing riparian habitat along the San Joaquin River and E-Canal.	Unknown	San Luis National Wildlife Refuge file data
1983	Data not available	Kesterson National Wildlife Refuge at evaporation cell #5.	Data not available.	Nesting colony found. During 1985, 75-150 individuals nesting at cell #5. Cell #2, 5,000 roosting.	Colony extirpated, habitat eliminated	San Luis National Wildlife Refuge file data
4/84	1,000 ind.	Lake Yosemite near Merced.	Data not available.	Breeding colony. Visited site again in 1985; 400 birds. Nesting activity observed.	Unknown	American Birds file data
4/85, 3/1/87, & 5/31/87	100 ind.	Merced National Wildlife Refuge.	Data not available.	Breeding colony. Site visited again during mid-May 1987; 1,500 birds observed. Nesting activity began, and eggs found by June 1. Also four colonies nesting at San Luis and Kesterson National Wildlife Refuges during May.	Unknown	American Birds file data

Appendix I-17. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/1/86- 5/10/86	47,000 ind.	Pond 5, Kesterson Reservoir, Kesterson National Wildlife Refuge. (Ingomar T8S R10E S21 NW)	Large cattail marsh, open pasture, and feedlot nearby.	Size of colony approximately 40 acres. First territorial behavior observed in early April. About 100 young fledged out of entire colony; 266 dead tricolored nestlings found on road near colony in mid-April (selenium contamination is a possible cause of mortality). Habitat eliminated by U. S. Bureau of Reclamation to reduce wildlife exposure to selenium. By early May, the colony had been abandoned. Aside from the 100 fledglings, the colony failed.	Colony extirpated; habitat eliminated	Beedy and Hayworth (in press) Coakley pers. comm.
4/7/86- 5/30/86 & 4/17/87- 5/26/87	1,500 ind.	Small cattail marsh behind the maintenance shop on San Luis National Wildlife Refuge. (San Luis Ranch T9S R11E S6 NE)	Cattail and tule marsh; cattails were the primary nesting substrate.	Size of colony approximately 1.5 acres. Successful nesting completed by 5/30/86. Similar for 1987. Colony was partially abandoned due to egg collecting for selenium analyses in 1987. No disturbances or threats to colony; U. S. Fish and Wildlife Service will not permit future disturbance to this colony. Adjacent maintenance building do not appear to disturb this colony.	Extant	Beedy and Hayworth (in press)
4/13/87- 5/7/87	2,000 ind.	Pond 7, Kesterson Reservoir, Kesterson National Wildlife Refuge. (Ingomar T8S R10E S17 SW)	Cattail marsh, open pasture, and feedlot nearby.	Size of colony approximately 1 acre. Many observations during the nesting season. Habitat eliminated by U. S. Bureau of Reclamation to reduce wildlife exposure to selenium. Site found abandoned; colony failed. Possible disturbances by mammalian predators.	Colony extirpated; habitat eliminated	Beedy and Hayworth (in press)

Appendix I-17. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/13/87-5/29/87	200 ind.	Pond 1, Kesterson Reservoir, Kesterson National Wildlife Refuge. (Ingomar T8S R10E S21 SW)	Large cattail marsh, open grassland, and feedlot nearby.	Size of colony approximately 1 acre. Many observations during the breeding season. About one-half of the pairs fledged young. Habitat eliminated by U. S. Bureau of Reclamation to reduce wildlife exposure to selenium. Possible disturbance to colony by predators.	Colony extirpated; habitat eliminated	Beedy and Hayworth (in press)
5/12/87-7/2/87	7,500 ind.	Pond 5, Kesterson Reservoir, Kesterson National Wildlife Refuge. (Ingomar T8S R10E S21 NW)	Large cattail marsh, open pasture, and feedlot nearby.	Size of colony approximately 4 acres. Many observations during the nesting season. About 50 young fledged. Habitat eliminated by U. S. Bureau of Reclamation to reduce wildlife exposure to selenium. Active hazing by U. S. Fish and Wildlife Service to scare birds from the contaminated reservoir may have caused colony to partially fail.	Colony extirpated; habitat eliminated	Beedy and Hayworth (in press)
5/5/87 and 6/17/87	2,000 ind.	Mud Slough, approximately 0.25 mile north of Pond 12 of Kesterson Reservoir.	Cattail and tule marsh.	Size of colony approximately 1-2 acres. Territorial behavior noted on 5/15/87 and feeding young on 6/17/87. Presumed colony was successful in fledging young. Appears that this site was only used 1 year. This colony appeared after tricoloreds were actively hazed from Kesterson Reservoir by the U. S. Fish and Wildlife Service.	Presumed extant, habitat extant	Beedy (file data)
June 1988	1,500-2,500 prs.	Gallo Ponds, Kesterson National Wildlife Refuge; 2 miles east of Santa Fe Grade and Highway 140 intersection.	Semi-permanent freshwater marsh interspersed with grass uplands; dense cattail stands in 1.5 feet of water.	Size of colony approximately 15 acres. Observed an unknown number of fledglings.	Presumed extant; habitat extant	Klett pers. comm.

Appendix I-17. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
Year long	25-100 prs.	Cattail/tule. Grasslands Resource Conservation District.	Permanent marsh maintained through the waterbank program.	Unknown if colony fledged young.	Presumed extant; habitat extant	Beam pers. comm.
5/16/89, 6/13/89, & 6/20/89	3,000-4,000 prs.	South Gadwall Pond, Kesterson National Wildlife Refuge, east of Cell 7, Kesterson Reservoir.	Permanent freshwater marsh inter- spersed with grass uplands; dense cattail stands in 2 feet of water.	Size of colony approximately 10 acres. Not all of the 3,000-4,000 birds were were breeding. Noticed egg-laying on 5/16, and on 6/13 visit, observed 2,000-3,000 fledglings.	Presumed extant; habitat extant	Klett pers. comm.

Appendix I-18. Tricolored Blackbird Nesting Observations in Monterey County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/4/32	750 nests	4.5 miles northwest of Salinas.	Cattails/tules along slough.		Presumed extirpated	Neff 1937
5/4/32	400 nests	San Juan Grade.	Cattail marsh.		Presumed extirpated	Neff 1937
5/21/32	3,000 nests	3.5 miles northeast of Castroville.	Tules along slough.		Presumed extirpated	Neff 1937
5/20/36	2,000 nests	Near Salinas.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
<u>1960-1969</u>						
4/30/60	Thousands of ind.	Warner Lake (1.6 miles south by east of Pajaro in the extreme northern portion of Monterey County).	Wide belt of tall tule marsh bordering pond of several acres.	Size of pond several acres. Tricoloreds observed flying to and from colony. Males more evident than females in flocks commuting to low grassy hills to south. Many males in marsh were singing.	Presumed extirpated	Cogswell pers. comm.
6/22/63	300 ind.	Hall and vicinity, northeast of Elkhorn Slough.	Data not available.	Visited site again on 6/22/63; no tricoloreds present. Observed males and females flying to and from presumed nesting colony on Las Lomas Ranch.	Presumed extirpated	Cogswell pers. comm.
<u>1970-1979</u>						
4/71	1,000 ind.	Junction of Old San Juan Grade and Crazy Horse Road.	Marsh.		Unknown	Yadon pers. comm. (letter to DeHaven)

Appendix I-18. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE	
4/28/71	5,000 ind. 2,500 nests	Approximately 7 miles north- northeast of Salinas.	Pond with bulrush surrounded by nonirrigated grassland hill and orchards. Water 2-5 feet deep.	Size of colony approximately 1.75 acres. Examined 132 nests; most contained one to five eggs and some were freshly built nests.	Presumed extirpated	DeHaven unpublished field data	
<u>1980-1989</u>				Revisited site on 5/13/71. Noted about 2,000 individuals present. Young observed jumping from nests. Birds have renested and most nests contain three 8-10 day-old eggs. Estimated that approximately half of the birds have abandoned the colony.	Unknown	DeHaven unpublished field data	
	4/8/85	300 pr.	Laguna Seca.	Data not available.	None.	Unknown	American Birds file data
	4/28/85	1-2 prs.	Cholame Valley pond.	Data not available.	Observed female carrying food among 50 pairs of red-winged blackbirds. This is a new nest location far from the previously known sites in the county.	Extirpated; pond dry in 1989.	Roberson pers. comm.
	6/6/85	7+ ind.	Carmel Valley Road.	Marsh.	Adults observed feeding nearly full-grown young. "Dry by August."	Unknown	American Birds file data
	3/26/88- 5/15/88	1,000 prs.	El Piojo Reservoir; 25 km west of Cape San Martin; 9.3 km north of the San Luis Obispo County line; 7 km southwest of Lockwood; 10.2 km south of Jolon.	Most of the colony was in a dense cattail marsh in the seep below the dam. The small part of the colony (approximately 2 percent) was in the cattails at the opposite side of the pond.	Two colonies observed; approximate size: main was 1-2 acres, and small colony was 0.5 acre. Main colony was not successful in fledging young; small colony was partially successful. No significant disturbances observed at main colony; small colony possibly disturbed by presence of fisherman and soldiers. Pond dried out and all birds gone by May 30. No birds found during 1989.	Extirpated; pond dry in 1989.	Roberson pers. comm. (Data from Ryno)

Appendix I-18. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/7/88	200 ind.	Above Robinson Canyon (San Clemente Rancho).	Pond.	Nesting building in early April. By late May, numerous fledglings present. Pond had lots of water in June.	Unknown	Campbell pers. comm. (data from American Birds file)
4/21/88	10-100 prs.	Bald Mountain block pond, on Fort Hunter-Liggett, southwest sector.	Pond.	Observed nests with eggs. Unknown if colony fledged young. On 5/24, no tricoloreds present; dry weather eliminated the pond.	Extirpated; pond dry in 1989.	Roberson pers. comm. (Data from Ryno)
5/12/88	10-100 prs.	Near Salinas sewer ponds.	Data not available.	Tricolored blackbirds observed on apparent nest site during breeding season. Unknown if colony nested at this site.	Unknown	Roberson pers. comm. (Data from Gerow)
6/3/88	100 prs.	Gatehouse pond off Carmel Valley Road; entrance to San Clemente Rancho property.	Pond.	Observed adults feeding young; unknown if colony fledged young.	Unknown	Roberson pers. comm.
2/26/89	100 prs.	Laguna Seca (Grande?) ponds.	Data not available.	This site is the only one regularly colonized and reported over the years.	Extant	Roberson pers. comm.
4/21/89, 5/16/89, & 5/18/89	300 prs.	Two miles northeast of the "intersection" of Nacimiento Road and the Fort Hunter Liggett/Los Padres National Forest boundary and 3.4 miles northeast of Lower Stoney Reservoir.	Cattails at spillway where birds nest.	Colony size approximately 0.5 acre. Successful nesting indicated by observation of fledged young. Potential threat to colony may be amount of air traffic.	Extant	Ryno pers. comm.

Appendix I-19. Tricolored Blackbird Nesting Observations in Orange County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/10/36	250 nests	Near Laguna Beach.	Cattails around swamp.		Presumed extirpated	Neff 1937
<u>1980-1989</u>						
Around 1986 and 1987	Less than 100 ind.	Huntington Beach near Huntington Central Park.	Pond with cattail and bulrush.	<ul style="list-style-type: none"> o Huntington Central Park - small year-round colony of 50-100 birds. Observed nesting a few years ago. Current breeding status unknown. o Laguna Hills; Vech Reservoir - small year-round colony of 100+ birds have been present for 2-3 years. Breeding status unknown. 	Unknown	Willick pers. comm.
5/4-26/88 & 6/7-9/88	10 prs.	Near El Toro, California.	Stock pond surrounded by dryland barley. Nesting substrate consists of bulrush.	Size of colony approximately 2 acres. Observed adults feeding young on 5/24-26/88. Unknown if colony fledged young. Visible threat to colony includes probable development of the area.	Unknown	Whisler pers. comm.
3/12/89	40-50 prs.	Huntington Beach: Carr Park at Heil and Springdale.	Small cattail and bulrush pond with island in the middle.	Nest building observed on 3/12. Fledglings seen by other observers (dates unknown).	Extant	Willick pers. comm.
4/1/89	500-600 prs.	Peter's Canyon Reservoir (east of City of Orange) near the intersections of Santiago Canyon Road, Chapman Avenue, and Newport Avenue.	Large reservoir, densely lined with cattail and bulrush.	Size of colony less than 1 acre. Not sure if this is a breeding colony. A large foraging area near the reservoir is currently being developed.	Extant	Willick pers. comm.

Appendix I-19. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/1/89	80-120 prs.	Mouth of Bommer Canyon near Bonita Canyon Road in Irvine.	Small cattail and bulrush pond.	Observed flock of about 50 tricoloreds feeding at a nearby park. Approximately half appeared to be juveniles. In March, tricoloreds took over the red-winged blackbirds' winter colony for the third year in a row. Tricoloreds are an uncommon (and declining) local summer resident in the county and a slightly more common visitor during the winter.	Extant	Willick pers. comm.
1989 nesting season	1,510 ind.	Upper end of Canada Chiquita. (Canada Gobernadora T7S R7W S9 SW)	Cattails/bulrush.	Counts were not made in 1990 but numbers appeared comparable to numbers observed in 1989.	Extant	Bontrager 1990
1989 nesting season	260 ind.	Chiquita Canyon Narrows, Canada Chiquita. (Canada Gobernadora T7S R7W S16)	Cattails/bulrush.	Counts were not made in 1990 but numbers appeared comparable to numbers observed in 1989.	Extant	Bontrager 1990 Bloom pers. comm.
1989 nesting season	420 ind.	Calmat Settling Basin. (Canada Gobernadora T7S R6W S36 SW)	Cattails/bulrush.	Numbers possibly higher in 1990.	Extant	Bontrager 1990
1989 nesting season	380 ind.	Riverside Cement leasehold wet-lands. (San Clemente T8S R6W)	Manmade ponds with emergent vegetation, such as cattails.	This site was not used in 1990.	Unknown	Bontrager 1990
<u>1990</u> 1990 nesting season	200-300 ind.	Dipcrossing, north of San Juan Creek (Canada Gobernadora T7S R7W S28 NW)	Cattails.	Not occupied in 1989 nesting season.	Extant	Bontrager 1990

Appendix I-20. Tricolored Blackbird Nesting Observations in Placer County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/26/33	1,000 nests	Lincoln.	Cattails along canal.		Presumed extirpated	Neff 1937
5/26/36	1,500 nests	Near Lincoln.	Cattails along canal.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
1971	2,000 prs.	Chamberlain Ranch, approximately 4 miles north-northwest of Lincoln. (T13N R6E NW 1/4 SW 1/4 S28)	Cattails around a marsh created by watering pasture lands.		Presumed extirpated No recent tricolored blackbird records for Placer County	Natural Diversity Data Base (data from DeHaven) Laudenslayer pers. comm.

Appendix I-21. Tricolored Blackbird Nesting Observations in Riverside County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1950-1959</u>						
3/5/50	500 ind.	Lake Norconian, 1 mile south-southwest of Norco (elevation: 650 feet).	Tules.	Tricoloreds observed flying from tules and adjacent U. S. Naval Hospital trees to adjacent fields. At least two females seen with nest material. This may have been part of the 1946 colony from Mill Creek Marsh, about 3 miles to the northwest (see San Bernardino County).	Unknown	Cogswell pers. comm.
4/27/50	200 ind.	Chino Creek Valley (elevation: 490 feet).	Small patch of tules along creek.	Observed males and females flying to and from alfalfa fields; nesting presumed but not verified.	Unknown	Cogswell pers. comm.
4/6/51	50 ind.	Fairmount Park (elevation: 800 feet).	Tall tules.	Observed about 35 singing males and a number of females, one which held nesting material in her bill for more than 5 minutes. Doubt that tricoloreds would actually nest in this heavily used city park. Visited site again on 4/28; none present.	Unknown	Cogswell pers. comm.
<u>1970-1979</u>						
4/24/71	750 ind. 750 nests	1 mile northwest Alberhill.	Cattail, bullrush, and willow. Riparian stream bottom surrounded by dry chaparral hills. Water 3-4 inches deep, but mostly dry now.	Size of colony 1.5-2 acres. Successful nesting indicated by observation of fledged young. Examined 60 nests; 42 fresh empty nests, five nests contained one dead young, three nests knocked down, four nests contained one live young, six nests contained one old egg, and one nest contained three old eggs. Mortality due to both predation and natural causes.	Unknown	DeHaven unpublished field data

Appendix I-21. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
1983-1986	20 prs.	Fisherman's retreat membership trailer park: 32300 San Timoteo Canyon Road, Redlands, CA.	Freshwater marsh with bulrush and cattail.	Size of colony approximately 0.5 acre. Colony has been successful in fledging young in past years but specific dates not known. Potential disturbances to colony may have included activity of trailer park and fisherman, etc.	Unknown	Ramirez-Kelley pers. comm.
3/25/89- 6/7/89	3,000 prs.	San Jacinto Wildlife Area, 3 miles north of Lakeview in marsh immediately south of Pond 1. (El Casco T3S R2W S29)	Alkaline "freshwater" cattail and tule marsh.	Size of colony approximately 3-4 acres. Successful nesting indicated by observation of hundreds of fledglings. No disturbances known. Likely predators include common raven, long-tailed weasel, northern harrier, and black-crowned night heron. This same location used as a nesting site in 1988 (the first year the marsh was developed). Also in previous wet years, tricoloreds nested in the nearby old San Jacinto River channel.	Extant	Craig pers. comm.

Appendix I-22. Tricolored Blackbird Nesting Observations in Sacramento County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
4/25/32	120,000 nests	Eighteen miles east of Sacramento.	Cattails/tules along reservoir.		Presumed extirpated	Neff 1937
5/5/32	1,000 nests	Near Folsom.	Cattails along reservoir.		Unknown	Neff 1937
5/28/33	1,000 nests	Near Folsom.	Cattail marsh.		Unknown	Neff 1937
6/3/33	100,000 nests	Eighteen miles east of Sacramento.	Cattails/tules around reservoir.		Presumed extirpated	Neff 1937
5/10/34	75,000 nests	Seventeen miles east of Sacramento.	Cattails around reservoir.		Presumed extirpated	Neff 1937
5/15/34	5,000 nests	Eighteen miles north of Sacramento.	Cattail marsh.		Presumed extirpated	Neff 1937
5/26/35	1,000 nests	Nimbus Ranch.	Cattails around reservoir.		Presumed extirpated	Neff 1937
5/31/36	3,000 nests	Near Folsom.	Cattails around reservoir.		Unknown	Neff 1937
	5,000 nests	Near White Rock Station.	Cattails around reservoir.		Presumed extirpated	Neff 1937
	7,500 nests	Near Ney School.	Cattails around reservoir.		Presumed extirpated	Neff 1937
<u>1950-1959</u>						
Spring 1959	14,000 nests	Mustard patch, 10 miles north of Sacramento on Highway 24.	Mustard.	Size of colony approximately 3 acres. Began nest building on 5/1, egg laying on 5-5, incubating on 5/7, and feeding young on 5/19.	Unknown	Orians 1961
Spring 1959	50,000 nests	Alfalfa field, 10 miles north of Sacramento on Highway 24.	Alfalfa.	Began nest building on 5/9, egg laying on 5-13 (most nests checked contained three eggs), incubating on 5/16, and feeding young on 5/28. On 6/11, young just out of nests.	Unknown	Orians 1961

Appendix I-22. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
Spring 1959	75,000 nests	County Line, just east of Highway 24 just south of border between Sacramento and Sutter Counties.	Oat-alfalfa field.	Began nest building on 5/15, egg-laying on 5/18, incubating on 5/20, and feeding young on 6/3.	Unknown	Orians 1961
<u>1960-1969</u>						
Spring 1960	500 nests	Riego Road (site A).	Data not available.	Began nest building on 5/17, egg-laying on 5/21, incubating on 5/25, and feeding young on 6/4.	Unknown	Orians 1961
Spring 1960	30,000 nests	Riego Road (site B).	Data not available.	Began nest building on 5/28, egg-laying on 6/1, incubating on 6/4, and feeding young on 6/15.	Unknown	Orians 1961
Spring 1960	4,000 nests	County Line, just east of Highway 24 just south of border between Sacramento and Sutter Counties.	Oat-alfalfa field.	Began nest building on 5/17, egg-laying on 5/20, incubating on 5/23, and feeding young on 6/2.	Unknown	Orians 1961
<u>1970-1979</u>						
4/13/71	150+ ind.	Highway 99, just off west side, 3 miles north of Galt (Twin Cities overpass).	Blackberry surrounded by irrigated grassland pasture.	Total size of habitat 0.05 acre. Several females seen carrying nest material. Observed two completed nests. Neither males or females territorial yet. Revisited site on 4/23/71. Incubation stage of nesting; observed two nests with four eggs each.	Unknown	DeHaven unpublished field data

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/3/71	12-15 ind. 6-7 nests	Two miles south of Folsom on Scott Road.	Blackberries bordering irrigation ditch.	<p>5/4/71 - found four nests with young 1 to 2 days old in each. Estimate fledging about 5/17 or 5/18.</p> <p>On 5/7/75, noted about 500 tricoloreds in 2nd or 3rd day of nest building.</p> <p>Size of colony approximately 0.02 acre. Could not get across ditch but presumed birds are incubating eggs.</p>	Unknown	DeHaven unpublished field data
5/4/71	25,000 ind. 1,000 nests	North of Clay, 1.25 miles.	Pond with cattail (90 percent) and bulrush (10 percent). Water depth 1-3 feet deep. Nonirrigated pasture nearby.	<p>Size of colony approximately 3 acres. Much nest building activity, especially in the middle of the colony; nests have not yet been started in the outer portion of the colony, probably due to a later arrival by the birds. Colony is much larger than the previous year.</p>	Unknown	DeHaven unpublished field data
5/4/71	300 ind. 200 nests	Herald, 3/4 mile east.	Blackberries with irrigated and nonirrigated pastures and grain crops nearby.	<p>Size of colony approximately 0.05 acre. Young just beginning to hatch. Colony is much smaller than the previous year.</p>	Unknown	DeHaven unpublished field data
5/4/71	700 ind.	Three miles north of Galt (0.75 mile east of the junction of McKenzie and Twin Cities Roads).	Blackberries surrounded by irrigated and nonirrigated pastures and alfalfa.	<p>Size of colony approximately 0.05 acre. Nest building activity observed.</p>	Unknown	DeHaven unpublished field data

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/5/71	22,000 ind. 8,500 nests	Three-fourths mile northeast of 4/13/71 colony, above; 1-4 miles north of Galt.	Cattail, little bulrush. Mostly dead with little new growth surrounded by irrigated and non- irrigated pasture (water 1-5 feet deep).	Size of colony approximately 9 acres. Most nests freshly completed and contained four eggs (90 percent); some found with three. Empty nests with young fledged (6 percent); young in nests (2 percent); and freshly built nests (2 percent). Found four day-old dead young, probably due to heavy rains of 5/3 and 5/4. Revisited site 5/17/71 - about one-half of the birds have abandoned the colony; the remainder of nests contained 2-3 day old young.	Unknown	DeHaven unpublished field data
4/20/72	100 ind. 65 nests	One-half mile north of Twin Cities Road and Interstate 80.	Blackberries.	Size of colony approximately 0.1 acre. acre. Noted freshly laid eggs.	Unknown	DeHaven unpublished field data
5/9/72	5,000 ind. 3,500 nests	Two miles east-northeast of Herald.	Tules; water 3 feet deep.	Size of colony less than 1 acre. Two stages of nesting: nests containing one to five eggs and nests containing one to four young. Some old nests were noted.	Unknown	DeHaven unpublished field data
5/9/72	5,000 ind. 500-600 nests	One mile east of Herald.	Blackberries and willows.	Size of colony approximately 1 acre. Observed nest building activity.	Unknown	DeHaven unpublished field data

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/9/72	750 ind.	Alta Mesa Road, approximately 5 miles east of Burrows Road.	Tules and bulrush.	Size of colony less than 1 acre. Observed nests containing one to four eggs and nests containing one to four young. Some old nests were noted.	Unknown	DeHaven unpublished field data
5/9/72	700 ind.	Bessaw Road, 0.5 mile south of Cherokee Road.	Bulrush/tule ditch.	Size of colony approximately 1 acre. Incubation stage of nesting.	Unknown	DeHaven unpublished field data
5/72	2,000 ind.	Sandage Road (off Bradshaw).	Blackberries.	Observed nests containing one to four eggs. Old nests present.	Unknown	DeHaven unpublished field data
5/72	2,000 ind.	Eagles Nest and Florin Roads.	Tules.	Observed nests containing one to four eggs. Old nests present.	Unknown	DeHaven unpublished field data
5/72	Data not available	Highway 16 just east of Eagles Nest Road.	Tules.	Observed nests containing one to four eggs. Old nests present.	Unknown	DeHaven unpublished field data
6/7/72	10,000 ind.	Just west of Highway 99 near Grant Line exit; 12 miles south of Sacramento.	Cattail or bulrush marsh.	Probable nesting area but did not confirm.	Unknown	DeHaven unpublished field data
4/18/74	1,000 ind.	One-half mile north of Twin Cities Road and Interstate 80.	Blackberries.	Size of colony approximately 0.2 acre. Nest building activity completed; 1/4 of the nests contained one egg. On 4/22/74, 75 percent of colony abandoned, and on 5/14/74, 100 percent abandoned.	Unknown	DeHaven unpublished field data

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/22/74	10,000 ind.	One-half mile east of Herald.	Blackberries.	Size of colony approximately 0.5 acre. Noted nest building in second or third day. On 4/29/74, 50 percent of colony abandoned, and on 5/14/74, 100 percent abandoned.	Unknown	DeHaven unpublished field data
4/29/74	15,000 ind.	One mile south of Morengo and Twin Cities Road.	Blackberries.	Size of colony approximately 1.5 acres. Noted nest building in second or third day. On 5/14/74, 100 percent of colony abandoned.	Unknown	DeHaven unpublished field data
4/29/74	3,000 ind.	One mile west of Folsom.	Blackberries.	Size of colony approximately 0.1 acre. Appears to be three stages of nesting: singing, nest building, and incubation.	Unknown	DeHaven unpublished field data
5/14/74	1,000 ind.	Mingo Road, 0.5 mile east of Highway 99.	Blackberries.	Size of colony approximately 0.1 acre. Nest building activity. On 5/30/74, 75 percent of colony abandoned and some young 2-3 days old.	Unknown	DeHaven unpublished field data
4/30/75	15,000 ind.	Morengo Road, 1/4 mile south of Twin Cities Road (near 4/29/74 colony).	Blackberries.	Size of colony approximately 0.5 acre. Incubation stage of nesting with 2-3 day-old eggs. On 5/5/75, some abandonment of colony noted.	Unknown	DeHaven unpublished field data

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/30/75	3,000 ind.	Placerville Road, 1.5 miles south of Folsom.	Blackberries.	On 5/12/75, 80 percent of colony abandoned. Size of colony approximately 0.1 acre. Predict that nest building will occur within 2-3 days. On 5/16, 5/19, and 5/22, nestlings taken for food data.	Unknown	DeHaven unpublished field data
5/5/75	8,000-10,000 ind.	Along west side of Highway 99, about 0.75 mile north of Elk Grove exit.	Blackberries.	Size of colony approximately 0.25 acre. Found many completed nests and nests containing eggs on 5/6/75. Colony is evidently growing.	Unknown	DeHaven unpublished field data
5/12/75	15,000 ind.	Laguna Creek.	Blackberries.	Size of colony approximately 0.5 acre. Egg-laying stage of nesting in 2nd or 3rd day.	Unknown	DeHaven unpublished field data
5/12/75	10,000 ind.	Grant Line Road, 0.5 mile north east of Sheldon Road.	Blackberries.	Size of colony approximately 0.5 acre. Nesting activity just beginning.	Unknown	DeHaven unpublished field data
5/15/75	8,000-10,000 ind.	One-half mile east-northeast of Herald.	Blackberries.	Size of colony approximately 0.25 mile. Adults singing. On 6/5, 6/8, and 6/11, nestlings taken for data.	Unknown	DeHaven unpublished field data
6/1/75	5,000 ind.	North side of Twin Cities Road, 1 mile east of the junction of Highway 99.	Blackberries on edge of tule/bulrush marsh; no water.	Size of colony approximately 0.25 acre. Latter stage of nest building activity.	Unknown	DeHaven unpublished field data

Table I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/14/77	800 ind.	Galt (2.5 - 2.75 miles north by east to north-northeast). East side of Morengo Road, about 2 miles west of Herald.	Dense blackberry with bits of marsh and individual willow shrubs in a swale.	Observed flock foraging in irrigated pasture. Nesting verified.	Unknown	Cogswell pers. comm.
<u>1980-1989</u>						
1980	Small colony	Hauschildt Road, approximately 0.75 mile northeast junction Twin Cities-McKenzie Roads, northeast of Galt. (Galt T5N R6E S11)	Data not available.	Small colony observed in 1980 but abandoned same year. Farmer may have baited with poisoned rice. Cowbird parasitism noticed here.	Unknown	Hosea 1986
5/2/80	20 ind.	Near the intersection of Highway 104 and Hauschildt Road.	Blackberries.	Size of colony approximately 0.20 acre. Incubation observed.	Unknown	Hosea 1986
5/26/80	160 ind.	Near U.S. 50 at White Rock Road and Zinfandel.	Thistles.	Size of colony approximately 0.75 acre. Observed fledglings.	Unknown	Hosea 1986
1981	3,000 ind.	Just north of Florin Road, 0.5 mile west of Eagle's Nest Road, approximately 2.5 miles north-east of Elk Grove.	Data not available.		Unknown	Hosea 1986 (data from Matus)
4/15/81	1,330 ind.	Old Placerville Road (now called East Bidwell Road).	Blackberries.	Size of colony approximately 0.75 acre. Observed incubation.	Unknown	Hosea 1986
4/16/81	Several hundred ind.	Tavernor Road and Folsom South Canal.	Blackberries.	Observed young.	Unknown	Hosea 1986 (data from DeHaven)

Appendix I-22. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/29/81	120 ind.	Near Morengo Road, approximately 2 miles north-northeast of Galt. (Galt T5N R6E S14)	Blackberries and cattails.	Size of colony approximately 0.20 acre. Probable breeding colony.	Unknown	Hosea 1986
5/2/81	2,635 ind.	Highway 104, Rancho Seco.	Wild rose.	Observed egg laying.	Unknown	Hosea 1986
5/11/81	320 ind.	Calvine Road and railroad tracks, southeast of Sacramento. (Florin T7N R5E S27 SW/SE)	Blackberries.	Size of colony approximately 0.20 acre. Probable breeding colony.	Unknown	Hosea 1986
5/11/81	50 ind.	Calvine Road and Highway 99. (Florin T7N R5E S14 SW/SW)	Blackberries and cattails.	Size of colony approximately 0.20 acre. Fledglings observed.	Unknown	Hosea 1986
5/15/81	1,000 ind.	North of Mingo Road, 1 mile northwest of McKenzie Road-Twin Cities Road. (Galt T5N R6E S3)	Blackberries and bulrush.	Size of colony approximately 0.50 acre. Young observed.	Unknown	Hosea 1986
5/15/81	100 ind.	Near intersection of Kameron Road and Bruceville Road, 4 miles north of Franklin Field. (Bruceville T6N R5E S15)	Blackberries.	Size of colony approximately 0.25 acre. Probable breeding colony.	Unknown	Hosea 1986
6/21/81	300 ind.	North side of Highway 104 and Highway 99, approximately 2 miles north of Galt. (Galt T5N R6E S10)	Cattails.	Size of colony approximately 0.30 acre. Fledglings observed.	Unknown	Hosea 1986

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/21/81	60 ind.	McKenzie Road (0.3 mile south of Mingo Road, approximately 2.5 miles north of Galt). (Galt T5N R6E S11)	Blackberries.	Size of colony less than 0.20 acre. Probable breeding colony.	Unknown	Hosea 1986
5/4/82	75 to 180 ind.	West Scott Road.	Blackberries.	Incubation observed.	Unknown	Hosea 1986
5/5/82	825 to 880 ind.	South West Scott Road.	Blackberries.	Nestlings observed.	Unknown	Hosea 1986
5/5/82	90 to 160 ind.	Scott Road.	Blackberries.	Incubation observed.	Unknown	Hosea 1986
6/5/82	235 to 270 ind.	White Rock Road and Folsom South Canal, 1.5 miles northeast of Mather Field. (Carmichael T9N R6E S36)	Thistles.	Fledglings observed. Colony had been at this site many years, but area was leveled and disced for development into a business park.	Extirpated	Hosea 1986
6/7/82	130 ind.	Along Sheldon Road, 0.5 mile east of Highway 99. (Florin T7N R5E S26 N/NE)	Cattails along culvert.	Nesting observed. Nesting stage unknown.	Unknown	Hosea 1986
6/7/82	2,300 to 2,800 ind.	Herald. (Clay T5N R7E S7 NE/SE)	Cattails.	Nestlings observed.	Unknown	Hosea 1986
6/7/82	2,500 to 3,000 ind.	Highway 104 near Rancho Seco. (Clay T6N R8E S30)	Ponds in pasture and wildrose.	Tricoloreds nested in two of three sites each year. Two sites are ponds in pasture, third is along row of wildrose under powerlines.	Unknown	Hosea 1986

Table I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/9/82	1,700 to 1,780 ind.	Laguna Creek, approximately 1.5 miles north-northwest of Junction 104 and Clay Station Road. (Clay T6N R7E S23)	Willows.	Incubation observed.	Unknown	Hosea 1986
6/9/82	6,280 to 6,630 ind.	Clay Station Road, near Twin Cities. Pond west of road approximately 1.25 miles north of junction with Highway 104. (Clay T6N R7E S23 SE)	Cattail pond.	Egg laying observed. On 7/21 visit, almost every nest was full of dead young; unknown cause, possibly due to herbicide/pesticide spraying.	Unknown	Hosea 1986
7/18/82	200-300 ind.	Scott Road, Sacramento.	Brambles.	Nesting observed.	Unknown	American Bird file data
4/26/86	Hundreds of prs.	Florin Road just east of intersection of Eagles Nest Road.	Cattail marsh.	Size of colony approximately 9 acres. Unknown if colony fledged young.	Unknown	Manolis pers. comm.
4/6/87	500+ ind.	Near Florin ponds.	Data not available.	Nesting colony.	Unknown	American Bird file data
4/13/87- 5/30/87 & 4/16/88- 5/17/88 & 4/11/89, 5/5/89, 5/21/89, & 5/23/91	10,000 ind.	Natomas Ditch, approximately 2 miles south of Folsom on East Bidwell Road. (Folsom T9N R8E S5 SE)	Blackberry brambles along ditch and in west pastures.	Size of colony approximately 2 to 3 acres (linear patches). This is the largest and possibly the most productive colony in Sacramento County. Large numbers of young fledged every year. Similar nesting dates all three years. The area is threatened by construction of the Folsom Lake Community College. The Natomas Ditch, water source for this colony, was drained during 1990 and the colony was reduced to about 2,000 adults during the 1991 nesting season (Holl pers. comm.).	Partially extirpated; some nesting in near remaining wetlands	Beedy and Hayworth (in press)

Appendix I-22. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/2/87	1-200 prs.	Stonehouse Road near Rancho Murieta sewage plant.	Grassy hillsides.	Size of colony not known (colony located over hill on unseen location). Adults observed foraging and carrying food to unseen site. Unknown if colony fledged young.	Unknown	Manolis pers. comm.
5/2/87	1-200 prs.	Scott Road, approximately 1-2 miles north of Deer Creek Crossing (marsh on east side of road).	Cattail marsh.	Size of colony approximately 1-2 acres. Adults observed carrying food to colony. Unknown if colony fledged young.	Unknown	Manolis pers. comm.
5/26/87, 6/16/87, & 6/26/87	200 prs.	East side of Highway 5, 0.35 mile north of Hood Franklin exit. Bridge sign reads: "Middle Reach Stone Lake" (BR24-345).	Cattail/willow marsh with adjacent grasslands. Cattails: 50' x 75'; Willows: 15-20' high	On 6/16/87, observed adults carrying food to another possible breeding site. Successful nesting indicated by observation of fledged young on 6/26/87. No tricolored blackbirds seen during 1988. Various sightings between 3/30/89-4/28/89; no nesting observed. Disturbance to colony is proximity of Highway 5; cars frequently stop at this spot.	Extant	Myers pers. comm.
April-June 1988	750-1,000 prs.	Surrounding pasture/marsh lands near Clay.	Blackberry brambles around ponds and bordering grassy/marshy pastures.	Size of colony difficult to judge; nesting birds scattered over approximately 1 square mile. Nesting "clumped" in little colonies in patches of blackberry thickets; largest concentration of 250 pairs, but probably 750-1,000 pairs in entire area. Adults observed feeding young out of nests. Successful nesting indicated by observation of fledged young. No visible threats or disturbances observed.	Unknown	Manolis pers. comm.

Appendix I-22. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/16/89	50-75 ind.	North Stone Lake at western edge where borrow channel "meets" the lake (i.e., opposite triangle on lake side). (Clarksburg T6N R4E S11 Ne)	Blackberry thicket at interface of borrow channel, uplands, bulrush marsh, and lake.	Successful nesting indicated by observation of fledged young. Visible threat to colony may be cattle grazing.	Extant	Scammell-Tinling pers. comm.
4/22/89 & 5/20/89	250 ind.	Southwest of access road to reservoir in Rancho Seco Park. (Goose Creek T6N R8E S33 NE)	Open grass with areas of shrubs, vines, and a few eucalyptus trees. Creek meandering through area.	Size of colony approximately 1 acre. Observed adults carrying food on 5/20. Successful nesting indicated by observation of fledged young. No visible threats or disturbances observed. Also observed tricolored blackbirds at a potential nesting area during 1988 breeding season near Teichert settling ponds located between Jackson Road and Kiefer Boulevard, just west of Watt Avenue.	Extant	Munson pers. comm.
5/20/89	Several hundred	Southeast of Grant Line Road, approximately 0.5 mile south of intersection of Bond Road.	Pasture land, cultivated fields with blackberry hedges.	Size of colony approximately 0.5 acre. Observed adults carrying food to colony. Unknown if colony fledged young.	Extant	Manolis pers. comm.
5/20/89	100-200 ind.	North of Highway 104 (and the railroad tracks), approximately 0.4 mile northeast of Clay.	Blackberry hedge along marshy creek.	Size of colony approximately 0.25 acre. Observed adults carrying food to young. Unknown if colony fledged young. Potential disturbance to colony may be proximity of road to the site.	Extant	Manolis pers. comm.

Appendix I-22. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/20/89	500 ind.	Skunk Creek southeast of Highway 104, 0.5 mile east of Herald.	Pastureland, hay crops, and blackberry hedges.	Observed adults carrying food to young. Unknown if colony fledged young. No visible disturbances observed.	Extant	Manolis pers. comm.
5/21/89	150 prs.	Along creek drainage just east of railroad tracks across Florin Road approximately 1.5 miles east of intersection of Elk Grove-Florin Road.	Blackberry hedge on edge of marshy creek.	Size of colony approximately 0.25 acre. Observed adults carrying food to colony; successful nesting indicated by observation of fledged young. Potential disturbance to colony may be proximity of road to site.	Extant	Manolis pers. comm.
5/21/89	1,000-3,000 ind.	Laguna Creek drainage approximately 0.5 mile west of Eagles Nest Road (visible, but distant from road).	Pastureland, alfalfa fields, and blackberry hedges.	Size of colony approximately 2-3 acres. Observed adults carrying food to colony. Unknown if colony fledged young.	Extant	Manolis pers. comm.
5/24-25/89	1,000 ind.	One quarter mile west of Eagle's Nest Road.	Blackberry thicket.	Size of colony approximately 0.25 acre. Observed adults carrying food to nests. Colony successfully fledged young. No present disturbance to colony, but landowners may alter use of land in the future.	Extant	Johnson pers. comm.
5/20/89 and 5/27/89	150 prs.	On Latrobe Road about 1 mile west of Scott Road and 2.25 miles north of Highway 16. Crevis Creek runs along the road just east of a farmhouse. Colony is located about 50 yards from the road on the north bank of the creek.	Blackberry patch along the creek. Area is generally grassland pasture.	Size of colony approximately 180 feet long by 20 feet wide. Observed adults carrying food to young on 5/20 and 5/27. By 6/10, no tricoloreds seen.	Extant	Mohr pers. comm.

Table I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/4/89	150 prs.	Gravel company site located on the west side of Folsom-South Canal, south of the intersection of Kilgore and International Roads, Rancho Cordova.	Riparian area (cottonwood trees present).	Tricoloreds seen carrying food. Unknown if colony fledged young. Colony is threatened by its location to gravel site.	Extant	Johnson pers. comm.
<u>1990</u>						
4/8/90	300+ prs.	Scott Road, about 0.25 mile south of Coyote Creek crossing.	Cattail/tule marsh.	Size of colony approximately 0.5 acre. Tricoloreds observed building nests. Revisited site in June and sighted about 1,000 birds. Evidence of possible second nesting attempt.	Extant	Mohr pers. comm.
4/17/90	80-100 prs.	Along Southern Pacific Railroad tracks south of Calvine Road.	Blackberry hedgerow adjacent to grassy pastureland.	Size of colony approximately 0.5 acre. Observed both males and females carrying food to small (?) young on nests (not visible). Encroaching housing development north of Calvine Road may cause future disturbance to colony. Unknown if colony fledged young.	Extant	Manolis and Magney pers. comms.
4/21/90	3,000-4,000 ind.	California Traction railroad tracks along Colony Road between Woods and Walmort Roads.	Blackberries and cattails along fence roads, creek, and ditch margins. Pastureland and low-density residential areas adjacent to site.	Size of colony approximately 2-3 acres. Possible nesting area, but not confirmed. Revisited area near site on 5/28; a few tricoloreds seen.	Extant	Manolis pers. comm.

Appendix I-22. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/30/90	200-250 prs.	Northeastern portion of Russell Ranch, east of Folsom. (Clarksville T10N R8E S28 SW)	Blackberry thicket surrounded by nonnative grassland (heavily grazed) adjacent to remnant valley freshwater marsh and great valley cottonwood riparian forest (along Natomas Ditch).	Size of colony approximately 2 acres. Colony successfully nested; fledging occurred between 5/18/90 and 5/24/90. Threats to colony include urban development and loss of hydrology which currently maintains the wetland vegetation.	Extant	Bumgardner pers. comm.
5/9-20/90	1,000 prs.	Knox Road north of Florin Road.	Blackberry brambles on east and west side of road.	Size of colony approximately 0.25 acre. On May 9, observed nest with three eggs and two newly hatched young. Revisited site on May 20; colony successfully fledged young although several hundred naked, dead young were found on the road.	Extant	Johnson pers. comm.
5/12/90	80-100 prs.	Calvine Road just north of intersection of Badger Road.	Blackberry thickets adjacent to pastureland.	Size of colony approximately 1-2 acres. Adults seen carrying food to either nestlings or fledglings (did not confirm) in hedge.	Extant	Manolis pers. comm.
5/12/90	150-200 prs.	South of Kiefer Boulevard, north of Deer Creek.	Blackberry brambles (two locations 100 yards apart).	Size of colony approximately 0.25 acre. Unknown if colony fledged young. Colony is located on private property and is undisturbed at this time.	Extant	Johnson pers. comm.
5/28/90	25-50 prs.	North fork of Badger Creek where it crosses Davis Road, just north of Walmort Road.	Blackberries and cattails along fence roads, creek, and ditch margins. Pastureland and low-density residential areas adjacent to site.	Size of colony approximately 1-2 acres. Adults seen feeding recently fledged young and carrying food into blackberry thickets.	Extant	Manolis pers. comm.

Appendix I-23. Tricolored Blackbird Nesting Observations in San Benito County

DATE OF OBSER- ATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
3/5/87	5+ ind.	San Felipe Lake.	Data not available.	Singing males on territory at small pond.	Unknown	American Birds file data
4/14/87	2,000 ind.	San Felipe Lake.	Data not available.	Unknown if this was a breeding colony. No confirmed breeding records for the county.	Unknown	Van Vuren pers. comm.

Appendix I-24. Tricolored Blackbird Nesting Observations in San Bernardino County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
5/16/83	Data not available	Bernardino River.	Data not available.	Breeding colony found on 5/16. By 5/25, all eggs hatched with four birds in each nest. Young seemed to be approximately the same age.	Presumed extirpated	Belding 1890 (data from Blaisdell)
No date given	Data not available	San Bernardino.	Data not available.	Generally found breeding in the county.	Presumed extirpated	Belding 1890 (data from Blaisdell)
<u>1920-1959</u>						
5/22-23/43	2,000+ ind.	Los Serranos Country Club, 3 miles south by west of Chino.	Pond with tules.	Majority of birds had young (possibly all) recently out of nests. Some young flew with adults while others remained in the marsh and begged for food.	Presumed extirpated	Cogswell pers. comm.
		Rancho Don Lugo (formerly Los Serranos Country Club--see above).		On 7/4/46, hundreds of tricoloreds observed. Birds apparently persisted even though most of the tules were burned in March 1946. Calls of some young were heard in the remaining marsh remnant.		
		Rancho Cielito (formerly Rancho Don Lugo--see above).		On 4/25/51, observed large colony. Large flocks of adults carrying food toward pond on 4/28/51.		
				Site visited on 3/28/52; no tricoloreds present.		

Appendix I-24. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/2/46	500-700 prs.	Mill Creek Marsh, northeast part of Prado Basin (southeast of Chino).	Marsh.	Adults observed feeding fledglings. The main marsh (former Chino Gun Club) was doomed by lack of maintenance of the small dam after the flood control basin dam on the Santa Ana River was built (post World War II), but was still a marsh at this date. The dam broke and much of the marsh dried up.	Presumed extirpated	Cogswell pers. comm.
4/23/50	300 ind.	Loma Linda (0.8 miles west).	Tule pond (8 acre pond with 100 foot marsh border).	Observed nesting; small flocks carrying insects into tules and coming out empty- billed (young inferred but not seen).	Presumed extirpated	Cogswell pers. comm.
4/29/50	200 ind.	Loma Linda (1 mile west).	Tule pond.		Presumed extirpated	Cogswell pers. comm.
5/4/52	500+ ind.	Mill Creek Valley, northeast part of Prado Basin.	Nettles	Colony observed building nests in nettles over shallow water (former marsh area). Water probably dried up by June. Flocks flew more than 0.5 mile to green grain field to the northwest.	Presumed extirpated	Cogswell pers. comm.

Appendix I-25. Tricolored Blackbird Nesting Observations in San Diego County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
5/4/90	Data not available	Near Lakeside.	Data not available	Collected sets of eggs at this location.	Presumed extirpated	Bendire 1895
<u>1900-1919</u>						
Prior to 1906	Data not available	Escondido and San Pasqual Valleys and Bernardo Rancho.	Data not available	Observations of tricolored nesting colonies are from a district list compiled from 16 years of field notes. Apparently several colonies recorded. Earliest and latest nesting dates noted are from 4/30 to 5/26.	Presumed extirpated	Sharp 1907
<u>1920-1949</u>						
5/18/32	200 nests	Lakeside Lake.	Tules around lake.		Presumed extirpated	Neff 1937
5/19/32	1,000 nests	One mile west of San Luis Rey.	Tules around lake.		Presumed extirpated	Neff 1937
5/27/32	200 nests 1,200 nests	San Dieguito Reservoir. Two miles NE of San Luis Rey.	Tules/cattails around reservoir. Tules/cattails around estuary.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
1933	Large number	Lakeside.	Data not available.	Nesting colony found.	Presumed extirpated	Willet 1933 (data from Huey and Dixon)
5/12/35	100 nests	Near San Clemente.	Cattails around swamp.		Presumed extirpated	Neff 1937
5/15/36	1,000 nests	Near San Pasqual.	Cattail marsh.		Presumed extirpated	Neff 1937

Appendix I-25. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/16/36	750 nests	East edge of Chula Vista.	Cattails around reservoir.		Presumed extirpated	Neff 1937
5/17/36	500 nests	Near San Luis Rey.	Cattails around reservoir.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
4/26/71	2,500 ind. 10-20 nests	1-1/2 miles south of Fallbrook.	Pond with cattail and bulrush surrounded by nonirrigated grassland in orange and avocado orchards.	Size of colony approximately 2/5 of an acre. Just beginning to build nests; found two completed nests and several incompleated nests.	Unknown	DeHaven unpublished field data
5/26/71	1,500 ind. 700 nests	Approximately 5 miles west of Lakeside, east side of Santee.	Gravel pit with cattail, bulrush, and willow surrounded by nonirrigated grassland in small valley.	Size of colony approximately 0.75 acre. Part of the colony has already fledged and the rest is either in egg or nestling stage. Highly unsynchronous nesting. Birds have been nesting in this area since 1967 according to gravel pit owner.	Unknown	DeHaven unpublished field data
3/18/78	75 ind.	Jacumba.	Data not available.	Observed birds carrying nest material. Site visited again on 4/26/87. Adults seen feeding young in colony.	Extant	McCaskie pers. comm. and Unitt pers. comm.
5/19/78	250 ind.	Tijuana River Valley (Dairy Mart Road ponds).	Data not available.	Observed birds carrying food in nesting colony. The species nests irregularly at this location, including a colony of 40 adults feeding young on 4/26/87.	Probably extant	Unitt pers. comm.

Appendix I-25. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>				In the 1980s, irregular nesting has occurred in the Tijuana River Valley at the Dairy Mart ponds, and also probably somewhere along the lower Otay River, the San Diego River near Old Mission Dam, Santee Lakes, and possibly along the San Luis Rey River (including Whalen and Guajome Lakes). Jacumba, the easternmost colony, is probably used every year. Overall, tricolors remain locally common and depend on a few colony sites, the locations of which are obscure.		Unitt pers. comm.

Appendix I-26. Tricolored Blackbird Nesting Observations in San Joaquin County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
5/10/79	"Immense colony"	Central California (near Stockton).	Tules.	Many nests found and each nest averaged about one to each square yard. Approximately 100 nests were examined and the greatest number of eggs or young birds in any one nest was three. Several nests held only one egg or young bird and several young were dead. The colony was not thriving.	Presumed extirpated	Belding 1890
<u>1900-1919</u>						
5/7/19	25 prs.	Two miles southwest of La Grange.	Cattails in dredger pits.	Breeding colony found.	Presumed extirpated	Grinnell and Storer 1924
<u>1920-1949</u>						
5/17/35	150 nests	Near Escalon.	Cattail marsh.		Presumed extirpated	Neff 1937
6/3/36	100 nests	Near Lodi.	Cattails along canal.		Presumed extirpated	Neff 1937
	750 nests	Near Tracy.	Cattails along slough.		Presumed extirpated	Neff 1937
	2,500 nests	East of Tracy.	Cattails and willows along railway slough.		Presumed extirpated	Neff 1937
	500 nests	South of Manteca.	Cattails along canal		Presumed extirpated	Neff 1937
<u>1960-1969</u>						
5/19/65 & 5/17/66	Several hundred ind.	Durham Ferry Road, about 1 mile west of San Joaquin River.	Small marsh in an agricultural drainwater pond south of the road.	Observed tricoloreds flying to and from marsh, apparently feeding young. Some adult males still singing.	Unknown	Cogswell pers. comm.

Appendix I-26. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/18/68	300 ind.	Just west of San Joaquin City, west of the river.	Cattail marsh.	On 5/17/66 visit, several hundred adults flying to and from nesting colony in cat-tails. On 4/30/67 visit, no tricoloreds seen. Observed adults flying to and from nesting colony in marsh. Located in same agricultural drain as Durham Ferry site, but farther northeast, closest to Kasson Road.	Unknown	Cogswell pers. comm.
<u>1970-1979</u>						
5/5/71	Data not available	Between Tracy and Manteca, 1 mile west of Airport Way. (0.25 mile west of the junction of Highway 120 and Swanson Road.)	Giant cane taller than the colony. No water present.	Size of colony approximately 0.25 acre. Noted young fledging on 5/9/71. Revisited site on 5/25/72. Saw 25-50 tricoloreds; probably already fledged and left the colony. Noted one adult feeding young. Revisited site on 6/5/74. Noted about 500 tricoloreds. Young have already fledged but some fresh clutches found.	Unknown	DeHaven unpublished field data
5/26/72	5,000 ind.	San Joaquin River; 0.75 mile southeast of junction of San Joaquin River and Road J-9.	Cattail and bulrush marsh; dry but water was present earlier.	Size of colony approximately 0.75 acre. Observed young fledglings in tules.	Unknown	DeHaven unpublished field data

Appendix I-26. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/72	25-50 ind.	Along Highway 120, 5 miles west of Manteca.	Giant cane.	Colony of 25-50 in giant cane; post fledging.	Unknown	Natural Diversity Data Base (data from Neff)
6/5/74	500+ ind.	Along Highway 120, 5 miles west of Manteca.	Giant cane.	Colony of 500+ nesting in giant cane in June 1974; post fledging and new clutches.	Unknown	DeHaven unpublished field data
<u>1980-1989</u>						
4/25/89	200-400 ind.	At intersection of Messick Road and Clements Road on unnamed tributary where the Calaveras River crosses Clements Road. (Linden T2N R8E S2 SW)	Blackberry thickets located on both sides of Clements Road.	Presumed breeding site. Observed adult birds foraging in pasture and returning to blackberry thickets.	Extant	Gifford pers. comm.

Appendix I-27. Tricolored Blackbird Nesting Observations in San Luis Obispo County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1960-1969</u>						
5/6/67	Data not available	Near Los Osos.	Freshwater marsh.	Nest found with eggs. Unknown if colony fledged young.	Unknown	Cornell University, Laboratory of Ornithology (data from Penhale)
<u>1970-1979</u>						
1973, 1974, & 1975	Less than 50 nests; several hundred ind.	Goleta Slough, adjacent to U. C. Santa Barbara.	Freshwater marsh.	Information not available.	Unknown	Rothstein per. comm. (letter to DeHaven) Rothstein per. comm. (letter to DeHaven)
1974 & 1975	100-1,000 prs.	Estrella Creek at Whitney Gardens.	Data not available.	Observed nesting activity.	Unknown	Rothstein per. comm. (letter to DeHaven)
1975	Data not available	One mile south of Shandon.	Data not available.	Small number of tricoloreds observed nesting among redwings.	Unknown	Rothstein per. comm. (letter to DeHaven)
June 1975	Data not available	Several miles south of Atascadero.	Data not available.	Observed tricoloreds bringing food to a large colony.	Unknown	Rothstein per. comm. (letter to DeHaven)
<u>1980-1989</u>						
Summer 1987	50 prs.	Seasonal water pond at Villa Creek, 3 miles north of Cayucos on Highway 1.	Tules.	Size of colony approximately 1 acre. Colony successfully fledged young.	Unknown	Edell pers. comm.

Appendix I-27. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/16/88- 7/8/88	100-125 prs.	California Men's Colony sewage evaporation pond located 0.25 mile north of Cuesta College, on the west side of Highway 1, 5 miles north of San Luis Obispo.	Sewage evaporation pond with cattle grazed and agricultural crop field around. Tules growing at two locations on pond.	Size of colony approximately 0.1 acre. Unknown if colony fledged young.	Unknown	Edell pers. comm.
5/20/89	30 prs.	Highway 46, 5 miles east of Highway 1.	Permanent pond with small patches of tules, grazed grasslands, and steep hillside with mustard.	Size of colony approximately 1 acre. Colony was probably successful in fledging young; female observed carrying food. Stock pond located near colony may disturb the site.	Extant	Edell pers. comm.

Appendix I-28. Tricolored Blackbird Nesting Observations in San Mateo County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1970-1979</u>						
Early 1970's	Data not available	Along Highway 1 at the junction of Miramontes Road at the south city limit of Half Moon Bay.	Data not available.	Colony also existed in late 1960's.	Presumed extirpated	Metropulos pers. comm. (Data from Sauppe)
6/2/79	Data not available	Along Verde Road just south of Half Moon Bay.	Cattails.	Observed female carrying nest material to cattails.	Presumed extirpated	American Birds file data (Data from Sauppe)
				As of 1989, no active breeding colonies in the county.		Metropulos pers. comm.

Appendix I-29. Tricolored Blackbird Nesting Observations in Santa Barbara County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/18/36	3,000 nests	Near Los Alamos.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
4/27/71	1,000+ ind.	Along north side of Highway 101, 6-7 miles west of Santa Barbara.	Ponds with cattail and bulrush surrounded by nonirrigated grasslands. Water 2-5 feet deep.	Three locations within 1.5 mile radius. Size of colonies: 3/4, 1/10, and ? of an acre. Successful nesting indicated by observation of fledged young.	Unknown	DeHaven unpublished field data
1973-1975	50 prs.	Goleta Slough, adjacent to the University of California, Santa Barbara.	Data not available.	Information not available.	Unknown	Rothstein pers. comm. (Letter to DeHaven)
1975?	Several hundred prs.	Lake Los Caneros, Goleta.	Data not available.	Probably a nesting site.	Unknown	Rothstein pers. comm. (Letter to DeHaven)
July 1979	1,200+ ind.	Cuyama Valley; arid valley with irrigated agriculture.	Nesting observed at ranch ponds.	Unknown if colony fledged young.	Unknown	Lehman pers. comm.
Late 1970's	200 ind.	Marsh located across the street from the Santa Barbara Airport.	Small marsh.	No longer breeding at this location, but still observe 25-50 adults with fledged young over Goleta golf course in late summer.	Extirpated.	Lehman pers. comm.

Appendix I-29. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
	Hundreds of ind.	Union sugar wastewater settling ponds located just west of Santa Maria.	Data not available.	Sporadic breeding during the last 10+ years at this location.	Unknown	Lehman pers. comm.
1983	Less than 100 ind.	Near the City of Goleta.	Vernal pools adjacent to sewage treatment plant.	Former nest site. Sewer ponds were filled with sludge 6 years ago. A large colony was found along the Santa Ynez River during the 1980s, but the exact location is not available. Tricolors may also breed at several lakes on Vandenberg Air Force Base. Overall, the species is declining in Santa Barbara County.	Extirpated, habitat eliminated	Dunn pers. comm. Lehman pers. comm.

Appendix I-30. Tricolored Blackbird Nesting Observations in Santa Clara County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
1800-1899						
5/26/95	Data not available	Near Sargent.	Tule patch.	A small breeding colony found. Nests were just completed and were approximately 5 feet above the water.	Presumed extirpated	Barlow 1900
1980-1989						
3/30/83	5 ind.	Halls Valley.	Data not available.	Breeding colony in 1982; approximately 20 birds present. Site visited again on 4/25/87; 100-200 birds observed. Site is apparently used for nesting each year.	Unknown	American Birds file data
5/26/83	30+ ind.	Coyote percolation ponds.	Data not available.	Breeding colony; birds observed carrying nest material. Site visited again on 4/23/85; 40 individuals observed.	Unknown	American Birds file data
6/3/84	20+ ind.	Arroyo Bayo, east side of Mt. Hamilton.	Data not available.	Probable breeding colony. Number of birds estimated by sound and occasional flying birds.	Unknown	American Birds file data
4/15/89	1,150 ind.	Sargent Creek, 1.45 miles north of the confluence of the Pajaro River and the San Benito River. (Chittenden T12S R4E)	Tule marsh with approximately 30 percent open water; stock pond surrounded by grasslands.	Size of colony approximately 50 m x 20 m. Observed females carrying nest material into tules and males displaying. Unknown if colony fledged young. No visible threats or disturbances to colony observed.	Extant	Suddjian pers. comm.
4/15/89	350 ind.	Sargent Creek, 1.25 miles north of the confluence of the Pajaro River and the San Benito River. (Chittenden T12S R4E)	Cattail marsh with a few willows surrounded by grasslands; no open water.	Size of colony approximately 40 m x 20 m. Observed females carrying nest material into tules and males displaying. Unknown if colony fledged young. No visible threats or disturbances to colony observed.	Extant	Suddjian pers. comm.

Appendix I-30. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
4/21-30/89	600 ind.	Base of Calero Reservoir Dam, northwest corner of reservoir; south of San Jose (elevation 400 feet). (Santa Teresa Hills T9S R2E)	Tule/cattail marsh adjacent to sycamore riparian, grasslands, and disturbed ruderal habitat.	Observed females carrying nest material into marsh and males displaying on 4/21/89. On 4/28/89, approximately 20 females evident with no males present. No tri-colored blackbirds present on 4/30/89; colony presumed abandoned. Observed a few red-winged blackbirds moved into area previously occupied by tricoloreds. Potential disturbances from maintenance work at adjacent dam. Potential future disturbances may be caused by construction of a pipeline at the north end of the marsh.	Colony extirpated; habitat extant	Suddjian pers. comm.

Appendix I-31. Tricolored Blackbird Nesting Observations in Santa Cruz County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
1884	Data not available	Within Santa Cruz County.	Data not available.	Nests with eggs found. Species is common throughout the county.	Unknown	Skirm 1884
<u>1900-1949</u>						
4/30/32	500 nests	Five miles west of Watsonville.	Blackberries/nettles/cattails along dry marsh.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
4/25/73-5/2/73	60+ prs.	Neary's Lagoon located near Bay Street and California Street in the City of Santa Cruz.	Extensive cattail marsh with nearby willows, cottonwoods, grassland, lawn, and development in surrounding area.	Found 37 nests on 4/25/73. Colony found destroyed and abandoned on 5/2 visit. Tricoloreds reportedly "vigorously hassled by red-winged blackbirds when attempting to enter marsh."	Unknown	Suddjian pers. comm. (Data from Greenberg and Shilt)
				Possible nesting at this site in 1975 and 1977, but no details available.	Unknown	Suddjian pers. comm. (Data from Morgan)
6/15/75, 7/2/75, 5/14/76, & 6/12/76	Hundreds of ind.	Scott Creek Marsh at the creek mouth.	Tule and cattail marsh surrounded by agricultural fields, riparian and sandy beach; former peat ponds.	Colony was not successful in fledging young during 1976 breeding season; marsh was drained in late May. Successful nesting indicated by observation of fledged young on 7/2/75 visit.	Unknown	Suddjian pers. comm. (Data from Morgan)

Appendix I-31. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
7/7/80	100 ind.	West Struve Slough.	Tule marsh in seasonal wetland surrounded by weedy fields.	Nesting activity reported but unknown if colony fledged young.	Unknown	Suddjian pers. comm. (Data from Busch)
6/10/87	30 ind. (all males)	North end of Antonelli Pond, Santa Cruz; 0.3 mile southwest of junction of Highway 1 and Western Drive.	Permanent pond with cattail marsh and willows adjacent to agricultural and ruderal fields, and development.	Only one female seen on 5/25/88. One nest observed on 6/10/88, but no nesting activity apparent this season.	Unknown	Suddjian pers. comm. (Data from Morgan)
5/8/87 & 6/15/87	300 ind.	Last Chance Pond. South end of Last Chance Road near north end of Swanton Road; 0.55 mile east-northeast of northern junction of Highway 1 and Swanton Road.	Permanent pond in grasslands surrounded by native monterey pine forest. Pond filled with tules and smartweed.	Observed nesting activity on 5/8 and adults carrying food to nestlings on 6/15. Colony presumed to have fledged young based on numerous nestlings seen. The only threat to colony is possibility of pond drying up in severe drought years.	Unknown	Suddjian pers. comm.
6/15/87	40+ ind.	Harkins Slough.	Data not available.	Observed foraging; known to nest at nearby Struve Slough in past years (see 7/7/80 entry).	Unknown	Campbell pers. comm. (American Birds file, data from Suddjian)
4/21/88 & 6/5/88	150 prs.	Last Chance Pond; 0.55 mile east-northeast of northern junction of Highway 1 and Swanton Road.	Tule marsh at perennial pond surrounded by grasslands and native monterey pine forest (elevation: 580 feet).	Observed nesting activity on 4/21/88 and adults carrying food to nests on 6/5/88. Unknown if colony fledged young. No visible threats or disturbances to colony noted.	Unknown	Suddjian pers. comm. (Data from Kempf)

Appendix I-31. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
2/12/88 & 4/15/88- 6/20/88	750 ind.	East side of Hanson Slough; 1.1 miles northwest of junction of Highway 1 and Highway 129, west of Watsonville.	Seasonal wetlands with the lower portion of the slough consisting of cattail, smartweed, willow, cocklebur, and poison hemlock. Upland slopes of the slough are a mix of California black- berry, poison hemlock, and annual grasses. The surrounding area consists of agricultural fields, an orchard, cattle grazing, and additional seasonal wetlands.	Observed males singing on 2/12, 4/15, and 4/22; females carrying nest material on 5/2; adults feeding fledged young on 6/5 and 6/20. All nests were in two large adjacent blackberry brambles located at the base of the slope with a few in surrounding hemlock. No disturbances observed. Potential disturbances may include wandering dogs and future westward expansion of development in Watsonville. As of 4/30/89, this colony has been abandoned. No visible changes to the area were observed.	Colony extirpated Habitat extant	Suddjian pers. comm.

Appendix I-32. Tricolored Blackbird Nesting Observations in Shasta County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
Prior to 1853	Data not available	Cottonwood Creek (near Shasta City).	Thickets of alder and willow bushes located next to the creek.	Size of colony was several acres. Eggs had already hatched and young were present in nests. Wolves and foxes arrived nightly to devour young that had fallen from their nests during the day.	Presumed extirpated	A. L. Heerman (cited in Neff 1937)
<u>1920-1949</u>						
5/16/32	10,000 nests	One half mile south of Anderson.	Cattail/tule/sedge marsh.	Four nesting colonies located.	Presumed extirpated	Taylor and Neff (cited in Neff 1934)
5/18/32	5,000 nests 2,000 nests	Five miles southeast of Anderson. Five miles northeast of Cottonwood.	Cattails/tules along creek. Cattail/tule marsh.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
6/14/32	1,000 nests	Six miles south of Redding.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
5/22/33	100 nests	One mile south of Glenburn.	Tangle of blackberry, rose, and plum, overhanging the high bank of Fall River.	Estimated about 60-70 nests in colony which contained two to three eggs.	Presumed extirpated	Olsen and Neff (cited in Neff 1934)
6/30/33	1,000 nests	Southeast of Anderson.	Cattails along creek.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
6/6/72	5,000 ind.	Four miles southwest of Anderson.	Data not available.	Did not find colony but presumed young in nests; adults observed carrying food into hills.	Unknown	DeHaven unpublished field data

Appendix I-32. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>						
6/8/80	1,000 pr.	Between MacArthur Swamp and Big Lake.	Data not available.	None	Unknown	American Birds file data
5/19/84 & 7/18/86	50+ ind.	Big Lake.	Data not available.	Possible breeding colony.	Unknown	American Birds file data
6/30/89	10-30 prs.	MacArthur Swamp - Rat Ranch Road Big Lake.	Cattails and tall grasses. Lake seepage to reeds.	Potential breeding colony; unknown if colony fledged young. Other potential breeding sites: Honey Lake, Tule, and Klamath Lakes. Glenburn - 4/1/89; 100 ind.	Extant	Yutzy pers. comm.

Appendix I-33. Tricolored Blackbird Nesting Observations in Siskiyou County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1970-1979</u>						
6/10/71	1,000 ind. 750 nests	Two miles south of Tule Lake National Wildlife Refuge headquarters.	Nettles along bank.	Two stages of nesting: nests containing eggs and newly completed nests.	Unknown	DeHaven unpublished field data
6/10/71	15 ind.	Southeast corner of Tule Lake National Wildlife Refuge, adjacent to Lava Beds National Monument.	Nettles.	Flock of 15 nesting in nettles.	Unknown	Natural Diversity Data Base (data from DeHaven)

Appendix I-34. Tricolored Blackbird Nesting Observations in Solano County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/6/32	6 nests	Two miles west of Birds Landing.	Cattail marsh.		Presumed extirpated	Neff 1937
<u>1980-1989</u>						
4/18-26/81	200 ind.	One-half mile south of Stevenson's Bridge (over Putah Creek) to the east of Road 95A.	Small cattail marsh.	Birds gone after 2 weeks.	Habitat extant, but no nesting in recent years	American Birds file data
4/20/81	Data not available	Highway 113 at Calhoun Cut. (Dozier T5N R1E S25)	Cattails.	Size of colony approximately 0.25 acre. Nest building observed, but the site was abandoned.	Unknown	Hosea 1986 (Data from DeHaven)
4/8/83	170 ind.	Jepson Prairie.	Data not available.	Possible breeding, not continued. Possible nesting suggested by observations on two separate dates. Unknown if colony fledged young.	Unknown	Souza pers. comm (Data from Lovio)
5/87	6 males	Near parking lot of Lake Herman. (Benicia T3N R3W S24 NW)	Fresh water reservoir with many tules (cleaned up in 1988).	Size of reservoir approximately 160 acres. Probable nesting but unknown if colony fledged young. Possible disturbances included unleashed dogs and kids on motor bikes.	Presumed extant	Souza pers. comm.
4/23-24/88	40-50 inds.	Immediately east of Admiral Callahan Road, 0.6 mile north of Redwood Street in Vallejo. (Cordelia T3N R3W S5 SW)	Tall tules (2.5-3 m) and cattail (2-3 m). Small fresh water marsh on small creek.	Size of colony approximately 1 acre. Hatching occurred approximately 4/22/88; Successful nesting indicated by observation of fledged young on 5/31/88. (This site was first visited on 4/27/87; nest building observed but no fledged young).	Definitely extirpated; habitat extant	Lovio and Leong pers. comms. (additional data provided by Gross)

Appendix I-34. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
				Return visit to same location on 3/11/89; no birds found. Disturbances include a shopping center, additional construc- tion, the highway, a collection of garbage along the landward (north) side of the colony, and tule removal by Vallejo Public Works.		

Appendix I-35. Tricolored Blackbird Nesting Observations in Sonoma County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1960-1969</u>						
5/11/66	100 prs.	Copeland Creek, located on edge of Sonoma State University campus, Rohnert Park.	Blackberry and willow.	Observed about 100 nests but no eggs found. Successful nesting indicated by observation of fledged young. Colony members flew about 0.75 mile to feed at a chicken farm.	Extirpated	Arnold pers. comm.
<u>1970-1979</u>						
4/27/71	300 ind.	Stony Point Road, 5 miles west of Cotati.	Blackberries.		Unknown	Norwitt pers. comm. (letter to Crase)
4/27/71	200 ind.	Roblar Road, 5 miles west of Cotati.	Blackberries.		Unknown	Norwitt pers. comm. (letter to Crase)
4/71	3,000 ind.	One mile east of Rohnert Park on Copeland Creek.	Blackberries, willows, thistles.		Unknown	Norwitt pers. comm. (letter to Crase)
4/71	Data not available	Willow Creek, a tributary of the Petaluma River.	Blackberries.		Unknown	Norwitt pers. comm. (letter to Crase)
Summer 1972	300 ind.	Southwest Sonoma County.	Data not available.	Small colony observed. Unknown if colony fledged young.	Unknown	American Birds data file
4/27/76	Data not available	Sonoma County airport.	Data not available.	Nesting observed. New location in county. Unknown if colony fledged young.	Unknown	American Birds data file
4/29/76 & 5/3/76	100 prs.	Copeland Creek, located on edge of Sonoma State University campus, Rohnert Park, CA.	Blackberry "jungle" on bank of Copeland Creek.	Several nests were completed. Unknown if colony fledged young.	Extirpated	Arnold pers. comm. and Winter pers. comm.

Appendix I-35. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
Late April 1976	500-700 ind.	Sebastopol.	Data not available.	Breeding colony. Unknown if colony fledged young.	Unknown	American Birds data file
6/13/77	Data not available	Americena Creek near Valley Ford.	Data not available.	Breeding colony located on Sonoma/Marin County line. Unknown if colony fledged young.	Unknown	American Birds data file

Appendix I-36. Tricolored Blackbird Nesting Observations in Stanislaus County

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1900-1919</u>						
4/14/14	Several thousand ind.	Rancho Dos Rios.	Tules.	Size of colony was several acres. On 4/14, nest building observed. On 4/23, nests were found containing two to four eggs. Visited site again on 4/29 and observed some newly hatched young; most nests still contained eggs. By 6/15, colony was greatly scattered and fledglings observed foraging with adults. Colony was beginning to disintegrate by 7/1.	Unknown	Malliard 1914
<u>1920-1949</u>						
5/14/32	2,500 nests 10,000 nests	Three miles east of Patterson. Near Patterson colony (above).	Tules along ditch. Cattails/tules along ditch.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
5/15/35	2,500 nests 5,000 nests	West of Mt. View School. Near Jennings School.	Cattail marsh. Cattails along canal.		Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937
5/17/35	250 nests	East of Oakdale.	Cattails along slough.		Presumed extirpated	Neff 1937
5/20/35	750 nests	West of Crows Landing.	Cattails along canal.		Presumed extirpated	Neff 1937
6/4/36	7,500 nests 500 nests 500 nests 200 nests 1,000 nests 3,000 nests	Near Oakdale. Near Oakdale. Near Oakdale. South of Oakdale. Near Roberts Ferry. Near La Grange.	Cattails along canal. Cattails along canal. Cattails around lake. Cattails along canal. Cattail marsh and willows. Cattails around dredger pits.		Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated Presumed extirpated	Neff 1937 Neff 1937 Neff 1937 Neff 1937 Neff 1937 Neff 1937

Appendix I-36. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1970-1979</u>						
4/28/71	1,250 ind. 500-700 nests	Along Interstate 5 about 2 miles south of Patterson exit.	Tule-lined drainage ditch along freeway in nonirrigated grassland. Water 1-2 feet deep.	Size of colony approximately 1 acre. Most nests contained four eggs. Checked colony again on 5/9/71; birds are almost ready to fledge. Banded 500 nestlings on 5/11/71 (about 1/3 of total colony production). Revisited colony again on 5/25/72; colony is not active this year; cattails have been plowed under and drainage ditches dug.	Unknown	DeHaven unpublished field data
5/5/71	1,500 ind. 900 nests	Along south side of Maize Boulevard, 7 miles west of Modesto.	Salt marsh pond with cattail and bulrush by nonirrigated pastures.	Size of colony approximately 0.75 acre. Birds observed feeding young that are 6 days old; 60 percent of the nests are either empty or with young and 40 percent contain two to three eggs. Found dead young on ground, possibly due to rain.	Unknown	DeHaven unpublished field data
5/5/71	8,500 ind. 5,500 nests	Junction of Fulkerth and Vivian Roads, 9 miles southwest of Modesto.	Cattail marsh surrounded by nonirrigated pastures and alfalfa fields. Water depth - 1 foot all over.	Size of colony approximately 2.5 acres. Three stages of nesting: young fledglings (75 percent), 4-day old young (20 percent), and freshly built nests (5 percent). "Excellent production; saw thousands of young in marsh."	Unknown	DeHaven unpublished field data

Appendix I-36. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/5/71	1,000 ind.	Junction of West Main and Crows Landing Roads, 8 miles west of Turlock.	Tules.	<p>Revised colony on 5/26/72; not active this year.</p> <p>Size of colony 1/10 of an acre. Noted some young have already fledged, but most nests have eggs.</p> <p>On 5/9/71, observed fresh clutches.</p> <p>On 5/17/71, observed young fledging.</p> <p>On 5/26/72, no colony this year; tules have been plowed under.</p> <p>On 6/5/74, noted about 500 tricoloreds apparently feeding young (did not confirm).</p>	Unknown	DeHaven unpublished field data
5/5/71	450 ind. 300 nests	Near junction of Crows Landing and Bradbury Roads, 8 miles west-southwest of Turlock.	Cattails in 3-4 feet of water; all new growth.	<p>Size of colony 1/20 of an acre. Just starting to lay one to three eggs, but some nests still empty.</p> <p>On 5/26/72, revisiting site. No colony this year; tules have been removed.</p>	Unknown	DeHaven unpublished field data
5/5/71	225 ind. 100 nests	Four miles east of Crows Landing.	Cattail marsh; water 1 foot deep. Mostly old cattail but some new growth noted.	Size of colony approximately 0.25 acre. Most nests contain four eggs, some with three eggs. Eggs have been incubated about 3 days. One nest found with two 4-day old young.	Unknown	DeHaven unpublished field data

Appendix I-36. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/9/71	1,000 ind.	Five miles southwest of La Grange (#1) near Turlock Reservoir.	Narrow strip of cattail in riparian stream bottom/gravel gravel pit area surrounded by nonirrigated rolling hills pasture.	On 4/22/75, revisited colony. Noted 2,500 individuals in 3rd or 4th day of nest building. Size of colony approximately 0.75 acre. No apparent nesting yet; just milling around.	Unknown	DeHaven unpublished field data
5/9/71	2,500 ind.	Three and one-half miles south-west of La Grange.	Cattail marsh surrounded by irrigated and nonirrigated pastures in rolling hills.	Size of colony approximately 0.5 acre. Noted a few birds starting to build nests but most are just sitting and singing; may not nest here because of very sparse cattails (large marshes noted to the south).	Unknown	DeHaven unpublished field data
5/9/71	1,500 ind.	Four and one-half miles west of Merced; southside of Highway 140.	Blackberries in irrigated pastures.	Size of colony 1/25 of an acre. Unknown if this is a nesting site; area is too inaccessible to reach.	Unknown	DeHaven unpublished field data
6/71	8,500 ind.	Crows Landing.	Tule/bulrush mixture.	Banded 1,100 fledglings.	Unknown	DeHaven unpublished field data
6/17/71	5,000 ind. 3,000 nests	One and one-half miles north-west of the intersection of Carpenter and West Main Avenue and about 10 miles west of Modesto.	Tules.	Size of colony approximately 2 acres. Observed adults foraging food for young.	Unknown	DeHaven unpublished field data

Appendix I-36. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/20/72	Several hundred ind.	Sonora Road, east of Woodward Reservoir.	Tules and cattails in a small pond with a small area of irrigated land in the vicinity, but the area was generally dry, short grassland on low rolling terrain.	Observed tricoloreds flying to and from a nesting colony.	Unknown	Cogswell pers. comm.
5/25/72	1,200-1,500 ind. 800-1,000 nests	One mile northeast of 4/28/71 colony, approximately 2 miles west of Patterson.	Cattail marsh; water 1-1.5 feet deep.	Size of colony approximately 0.1 acre. Young are just beginning to fledge.	Unknown	DeHaven unpublished field data
5/26/72	500 ind.	One-half mile west of 5/5/71 colony (junction of West Main and Crows Landing Roads, 8 miles west of Turlock). Turlock.	Tules.	Size of colony approximately 0.2 acre. Noted that young have fledged and are just hanging around the marsh.	Unknown	DeHaven unpublished field data
5/26/72	1,000 ind. 600-700 nests	One-half mile west of 5/5/71 site (junction of Fulkerth and Vivian Roads, 9 miles southwest of Modesto).	Cattails and bulrush pond.	Size of colony approximately 0.3 acre. Some young have already fledged and are in marsh. Many new clutches con- taining two to four eggs.	Unknown	DeHaven unpublished field data
5/26/72	1,000-1,200 ind. 750-1,000 nests	Junction of Laird and Keyes Road, about 5 miles northwest of 5/5/71 colony (see above).	Bulrush; water 0-14 inches deep.	Size of colony approximately 0.5 acre. Noted most nests contained three to four fresh eggs.	Unknown	DeHaven unpublished field data

Appendix I-36. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/5/74	Data not available	Junction of Maize Boulevard and River Road.	Data not available.	Observed adults and fledglings in the area but actual colony not located.	Unknown	DeHaven unpublished field data
6/5/74	500-1,000 ind.	Two miles east of junction of Maize Boulevard and River Road.	Cattail marsh.	Possible nesting site but not confirmed.	Unknown	DeHaven unpublished field data
6/4/74	2,000 ind.	One mile south of Crows Landing colony (6/71 above).	Cattails.	Noted adults feeding young.	Unknown	DeHaven unpublished field data
6/5/74	Less than 500 ind.	Two miles east of Newman.	Cattails.	Noted adults feeding young.	Unknown	DeHaven unpublished field data
4/22/75	2,500 ind.	Four miles east of Crows Landing.	Cattails.	Colony of 2,500 observed by Crase during early nest-building stage.	Unknown	Natural Diversity Data Base (data from DeHaven)
4/22/75	7500 ind.	Hills Ferry Road, 2.6 miles east of Newman.	Bulrush/tules; water 3-4 feet deep.	Size of colony approximately 0.75 acre. Nests containing one to three eggs noted.	Unknown	DeHaven unpublished field data
<u>1980-1989</u>						
7/9/80	Data not available	North of Warnerville Road (0.3 mile) on Stearns Road, approxi- mately 8 miles north-northwest of Waterford. (Waterford T2S R10E S24 N/SE)	Tules		Unknown	Natural Diversity Data Base (data from Small)
5/25/81	1,355 ind.	Junction of Keyes Road and Muncy Road, approximately 5 miles southwest of Modesto. (Brush Lake T4S R8E S27 SE/SW)	Cattails and bulrush.	Size of colony approximately 0.25 acre. Incubation observed.	Unknown	Hosea 1986

Appendix I-36. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/25/81	11,263 ind.	Junction of Vivian Road and Fulkerth Road, approximately 9 miles south-southwest of Modesto.	Bulrush.	Size of colony approximately 2.75 acres. Probable breeding colony.	Unknown	Hosea 1982
6/21/86	1,000-1,500 ind.	Jennings Road.	Data not available.	Estimated 300 pairs at height of nesting. All birds gone by 7/13.	Unknown	American Birds file data
4/23/87	400+ ind.	Milton Road, south of Calaveras County line.	Grasslands.	Tricolored nesting among blackbirds at riparian edge.	Unknown	American Birds file data
6/9/87	175-200 ind.	Littlejohns Creek near the town of Oakdale on Sonora Road. (Oakdale T1S R11E)	Small pond with cattails. Black- berries and willows along road and creek. Valley foothill riparian, remnant surrounded by grazed annual grassland.	Size of colony approximately 1 acre. Adults observed foraging and carrying food to blackberry bushes; no nests seen. Successful nesting indicated by observation of fledged young. Future 1989/90 bridge replacement and widening plus road widening may disturb the colony. Visited site on 6/24/87; no tricolored blackbirds seen at colony but flocks observed within 0.25 mile.	Unknown	Walters pers. comm.

Appendix I-37. Tricolored Blackbird Nesting Observations in Sutter County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/5/32	5,000 nests	Twenty miles north of Sacramento.	Cattail/tule/thistle marsh.		Presumed extirpated	Neff 1937
5/21/32	5,000 nests	Five miles north of Robbins.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
5/19/33	500 nests	Near Meridian.	Cattails around lake.		Presumed extirpated	Neff 1937
	5,000 nests	North of Robbins.	Cattail marsh.		Presumed extirpated	Neff 1937
5/26/33	7,500 nests	Twenty miles north of Sacramento.	Cattail marsh.		Presumed extirpated	Neff 1937
5/24/34	2,500 nests	Near Meridian.	Cattails and tules around lake.		Presumed extirpated	Neff 1937
	3,500 nests	North of Sutter Causeway.	Cattail marsh.		Presumed extirpated	Neff 1937
5/20/35	500 nests	Sutter Basin.	Cattails along canal.		Presumed extirpated	Neff 1937
	750 nests	Near Meridian.	Cattails along canal.		Presumed extirpated	Neff 1937
5/25/36	3,000 nests	Near Verona.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
<u>1960-1969</u>						
Spring 1960	6,000 nests	Buttes.	Data not available.	Began nest building on 5/10, egg-laying on 5-14, and incubating on 5/17. This colony was destroyed.	Unknown	Orians 1961
<u>1970-1979</u>						
1971	Data not available	West Butte Road, 5 miles east of Colusa.	Cattails.	Colony nesting in cattails.	Unknown	Natural Diversity Data Base (data from DeHaven)

Appendix I-37. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/4/74	2,000 ind.	Three miles northwest of Sutter.	Blackberries.	Size of colony approximately 0.1 acre. Possible nesting colony but did not check.	Unknown	DeHaven unpublished field data
6/12/74	30,000 ind.	Gilsizer Slough.	Tules.	Size of colony approximately 3 acres. Nest building activity beginning.	Unknown	DeHaven unpublished field data
<u>1980-1989</u>						
5/27/85	2,000 ind.	Small marsh just west of West Butte Road, near the turn to the Honolulu Duck Club in the Butte Sink. (Sanborn Slough T16N R1E S7 SE)	Cattail and tule marsh.	Size of colony approximately 2 acres. Colony observed in small marsh. Visited colony again on 4/26/86; estimated 1,000 nests. Visited site on 5/10/87-6/10/87 and 5/15/88; site found abandoned; colony failed--cause unknown. Habitat extant but the site was not used in 1988 or 1989.	Unknown, extant habitat	American Birds file data Beedy and Hayworth (in press); Deuel pers. comm.
4/4/87	Hundreds (nearly all females)	East Levee Road (Natomas) just south of intersection with Riego Road.	Cattails.	Unknown if colony nested at this site.	Unknown	Manolis pers. comm.
6/20/87	10,000 ind.	Milepost 14 on levee road where Gitsizer Slough meets the east Sutter Bypass levee.	Tule-cattail marsh.	Size of colony approximately 60 acres. Nesting colony previously not known. Unknown if colony fledged young in 1987. Visited site on 7/4/88; adults observed feeding young. Fewer birds (4,000 ind.) seen than 1986 visit. Marsh was burned in February 1988 and again in February 1989; not known if burning is an annual event.	Presumed extant	Deuel pers. comm.

Appendix I-38. Tricolored Blackbird Nesting Observations in Tehama County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/27/36	750 prs.	Near Orland.	Cattails along creek.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
6/6/72	2,000 ind. 1,500 nests	Gay Creek, just past Glenn County.	Tules, blackberries, willows, and cottonwood in vicinity; nests in tules.	Size of colony approximately 2 acres. Birds have already fledged; appears that 95 percent of nests were successful.	Unknown	DeHaven unpublished field data

Appendix I-39. Tricolored Blackbird Nesting Observations in Tulare County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/13/35	1,500 nests	Near Pixley.	Cattail marsh.		Presumed extirpated	Neff 1937
<u>1970-1979</u>						
5/5/71	1,500 ind.	Success Dam, 8 miles east of Porterville.	Data not available.	Birds observed carrying insects to nestlings in an inaccessible area.	Unknown	DeHaven unpublished field data
<u>1980-1989</u>						
3/28/82	100-200 ind.	Creighton Ranch Preserve.	Data not available.	<p>One bird observed on 3/28; up to 200 by 4/7.</p> <p>Known areas of tricolored blackbirds (several thousands TCBB's observed at each location for the last several years):</p> <ul style="list-style-type: none"> o South Fork Kern River on the Kern River Preserve; o U. S. Army Corps of Engineers' South Fork Wildlife area east of Isabella Reservoir; o Frazier Valley north of Porterville, Tulare County; and o Yokohl Valley east of Exeter, Tulare County. 	Unknown	<p>American Birds file data</p> <p>Barnes pers. comm.</p>

Appendix I-40. Tricolored Blackbird Nesting Observations in Ventura County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
1872	200 prs.	Santa Clara Valley.	Nettles and briars in a pasture.	Definite nesting colony.	Presumed extirpated	H. W. Henshaw (cited in Neff 1937)
1872-1873	Data not available	Near Saticoy (latitude: 34 degrees, 27 minutes; altitute: 50 feet).	Data not available.	Nesting observed on May 22. Nesting near Saticoy to June 21, 1875.	Presumed extirpated	Cooper 1880
1875	Hundreds of ind.	Saticoy.	Nettles.	Hundreds of nests found in the nettle thicket; no nests located in nearby cattails or rushes.	Presumed extirpated	Cooper 1875

Appendix I-41. Tricolored Blackbird Nesting Observations in Yolo County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
5/31/31	4,000 nests	Five miles east of Woodland.	Cattails around reservoir.		Extirpated	Neff 1937
	3,000 nests	Five miles east of Woodland.	Cattails along canal.		Extirpated	Neff 1937
	3,000 nests	Five miles east of Woodland.	Cattail marsh.		Extirpated	Neff 1937
4/9/32	5,000 nests	Northern county line.	Cattails along canal.		Extirpated	Neff 1937
5/21/32	5,000 nests	Six miles west of Sacramento.	Thistles/mustard along levee.		Extirpated	Neff 1937
5/24/32	28,000 nests	Near Davis.	Thistle field.		Extirpated	Neff 1937
6/1/33	3,000 nests	Six miles southwest of Sacramento.	Cattail marsh.		Extirpated	Neff 1937
6/4/34	2,000 nests	Six miles west of Sacramento.	Cattail marsh.		Extirpated	Neff 1937
5/24/35	5,000 nests	South of Elkhorn.	Thistles along levee.		Extirpated	Neff 1937
6/18/35	5,000 nests	Southwest of Verona.	Cattails around pothole.		Extirpated	Neff 1937
6/1/36	1,000 nests	Near Woodland.	Cattails and tules along canal.		Extirpated	Neff 1937
	1,000 nests	Near Woodland.	Cattail marsh.		Extirpated	Neff 1937
5/13/39	2,000 ind.	Willow Slough.	Cattails.	Observed nest building on 5/13, egg-laying and/or incubation on 5/16, and hatching between 5/22 and 5/27. By 5/30, only 40 birds remained; many nests had been disturbed and the eggs broken.	Presumed extirpated	Lack and Emlen 1939

Appendix I-41. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1960-1969</u>						
Spring 1960	70,000 nests	Madison.	Data not available.	Began nest building on 5/4, egg-laying on 5/8, incubating on 5/11, and feeding young on 5/22.	Extirpated	Orians 1961
<u>1970-1979</u>						
4/5/71	1,750 ind.	Port of West Sacramento, West Sacramento.	Mustard and star thistle (no water).	Size of colony approximately 2 acres. Nests located in 5-foot thistles--hard to observe.	Extirpated	DeHaven unpublished field data
5/12/71	150 ind. 100 nests	Woodland sugar ponds; 3 miles northeast of Woodland.	Thistles.	Size of colony approximately 1/20 of an acre. Observed egg-laying; most nests contained one or two eggs. A few nests still empty.	Extirpated	DeHaven unpublished field data
				Site visited on 5/10/72; 1,000 individuals observed. Size of colony approximately 0.25 acre. Egg-laying just beginning.	Extirpated	DeHaven unpublished field data
				Site visited on 4/25/74; 250 individuals observed. The wetlands supporting this colony were drained to create a sugar beet field in the mid-1970's.	Extirpated, habitat eliminated	American Birds file data
5/12/71	15,000 ind.	Knights Landing, 1.75 miles north.	Wild raspberry with a few willow trees mixed in rice-growing area.	Size of colony approximately 2 acres. Nest building activity just beginning.	Extirpated	DeHaven unpublished field data

Appendix I-41. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/15/71	10,000 ind.	River Farms colony (from 1969).	Cattail marsh.	Size of colony approximately 1.5 acres. Observed adults feeding young.	Extirpated	DeHaven unpublished field data
5/10/72	25,000 ind.	Three miles north of Knights Landing.	Tule ditch/willows/thistle.	Size of colony approximately 1.5 acres. Observed nests containing one to four eggs. Also nest building activity continuing.	Extirpated	DeHaven unpublished field data

Appendix I-42. Tricolored Blackbird Nesting Observations in Yuba County

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1920-1949</u>						
4/12/31	3,000 nests	Twelve miles NE of Marysville.	Cattails and tules along slough.		Presumed extirpated	Neff 1937
4/15/31	10,000 nests	Two miles west of Hammonton.	Cattails around dredger pits.		Presumed extirpated	Neff 1937
4/23/31	30,000 nests	Twelve miles NE of Marysville.	Cattails and tules along slough.		Presumed extirpated	Neff 1937
4/24/31	10,000 nests	Ten miles NE of Marysville.	Cattails and tules along slough.		Presumed extirpated	Neff 1937
5/4/31	50,000 nests	Twelve miles NE of Marysville.	Willows, cattails, and tules along slough.		Presumed extirpated	Neff 1937
5/20/31	Data not available, but in the tens of thousands	Nigger Jack area, 12 miles north of Marysville.	Cattail rushes bordered by a miniature forest of willows, growing in clusters of 20 feet or more in height.	Very large nesting colony which was used by the Biological Survey, USDA, as the site for an experiment to develop effective methods of large-scale destruction of blackbirds by poisoning with strychnine. Most of the young birds were either dead, starving, or grilling and parching by sunburn. Estimate the total number of tricolored blackbirds destroyed at 30,000.	Presumed extirpated	McCabe 1932
5/26/31	2,000 nests	Nine miles NE of Marysville.	Cattails along canal.		Presumed extirpated	Neff 1937
6/1/31	3,000 nests	One mile northwest of Hallwood.	Cattails and tules along slough.		Presumed extirpated	Neff 1937
6/17/31	3,000 nests	Eight miles NE of Marysville.	Cattails along slough.		Presumed extirpated	Neff 1937
6/20/31	2,000 nests	Fourteen miles NE of Marysville.	Cattails/willows along Dry Creek.		Presumed extirpated	Neff 1937

Appendix I-42. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
5/20/32	100 nests	Twelve miles NE of Marysville.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
6/20/32	2,000 nests	Fifteen miles south of Marysville.	Cattail/tule marsh.		Presumed extirpated	Neff 1937
4/28/33	2,500 nests	Twelve miles NE of Marysville.	Cattails and tules along slough.		Presumed extirpated	Neff 1937
5/4/33	5,000 nests	Twelve miles NE of Marysville.	Cattail marsh.		Presumed extirpated	Neff 1937
5/1/34	35,000 nests	Ten miles south of Marysville.	Cattail marsh.		Presumed extirpated	Neff 1937
5/15/34	15,000 nests	Two miles west of Hammonton.	Cattails around pits.		Presumed extirpated	Neff 1937
5/20/35	2,000 nests	Northeast of Marysville.	Cattails and tules along slough.		Presumed extirpated	Neff 1937
5/21/35	3,000 nests	South of Marysville.	Cattails along slough.		Presumed extirpated	Neff 1937
May 1936	5,000 nests	Composite of all areas.	Data not available.		Presumed extirpated	Neff 1937
5/16/39	60,000 ind.	Near Marysville.	Cattails.	Colony was reported to contain about 60,000 tricoloreds up to 5/12. On 5/16 visit, only a few hundred were left. Of 100 nests examined, three-fourths contained freshly broken eggs. On 6/2, no adult birds were seen in the vicinity. Destruction appeared to be caused by a small species of bird.	Unknown	Lack and Emlen 1939
Spring 1940	22,000 nests	Hammonton and Arboga.	Data not available.	Two colonies: one near Hammonton with about 7,000 nests, and the other near Arboga with about 15,000 nests.	Unknown	Emlen 1941

Appendix I-42. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1950-1959</u>						
Spring 1959	15,000 nests	Haskell Ranch.	Cattail marsh.	Began nest building on 4/28, egg-laying on 4/30, incubating on 5/2, and feeding young on 5/14. On 5/12, poisoning noted. Also, a magpie is seen in colony and observed flying with an egg in its bill on 5/13. Many eggs are smashed and punctured in nests.	Unknown	Orians 1961
Spring 1959	40,000 nests	Marysville - 40 mile road near junction of Highway 99.	Data not available.	Began nest building on 5/3, egg-laying on 5/6, incubating on 5/8, and feeding young on 5/20. Noted that many new nests are being constructed on 5/30; also, many dead young beneath nests. On 6/11, observed free-flying young everywhere.	Unknown	Orians 1961
10/16/59	2,150 nests	Haskell Ranch, 8 miles southeast of Marysville.	Cattails.	Autumnal breeding colony; nest building began 10/3, egg laying began on 10/7, and nestlings hatching on 10/23. Many of the nests were abandoned after eggs were laid and nestling survival was poor. Only about 50 young fledged.	Unknown	Orians 1960
<u>1960-1969</u>						
Spring 1960	1,500 nests	Haskell Ranch (site A).	Data not available.	Began nest building on 4/28, egg-laying on 4/22, and incubating on 4/25. This colony was destroyed, possibly by snakes.	Unknown	Orians 1961

Appendix I-42. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
Spring 1960	15,000 nests	Haskell Ranch (site B).	Data not available.	Began nest building on 5/23, egg-laying on 5/27, incubating on 5/30, and feeding young on 6/10.	Unknown	Orians 1961
Spring 1960	800 nests	Marysville.	Data not available.	Began nest building on 4/29, egg-laying on 5/2, and incubating on 5/5. This colony was destroyed, possibly by snakes.	Unknown	Orians 1961
10/60	400 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 10/7.	Unknown	Payne 1969
6/10-14/61	2,000 ind.	Haskell Ranch.	Data not available.	Number of nests: 400 Number of nests fledged: --	Unknown	Payne 1969
9/61	300 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 9/24.	Unknown	Payne 1969
9/61	100 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 10/16.	Unknown	Payne 1969
4/17-22/62	200 ind.	Haskell Ranch.	Data not available.	Number of nests: 4 Number of nests fledged: 0	Unknown	Payne 1969
5/3-16/62	10,000 ind.	Haskell Ranch.	Data not available.	Number of nests: 2,000 Number of nests fledged: 800	Unknown	Payne 1969
5/20/62- 6/20/62	40,000 ind.	Haskell Ranch.	Data not available.	Number of nests: 24,000 Number of nests fledged: 14,000	Unknown	Payne 1969

Appendix I-42. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
10/62	200 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 10/6.	Unknown	Payne 1969
4/2-6/63	800 ind.	Haskell Ranch.	Data not available.	Number of nests: 800 Number of nest fledged: 200	Unknown	Payne 1969
5/26/63- 6/4/63	10,000 ind.	Watts Ranch.	Data not available.	Number of nests: 4,000 Number of nest fledged: --	Unknown	Payne 1969
9/63	300 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 9/28.	Unknown	Payne 1969
10/63	100 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 10/13.	Unknown	Payne 1969
5/2-6/64	200 ind.	Haskell Ranch.	Data not available.	Number of nests: 200 Number of nest fledged: 100	Unknown	Payne 1969
5/20/64- 6/12/64	18,000 ind.	Red Barn Ranch.	Data not available.	Number of nests: 10,000 Number of nest fledged: --	Unknown	Payne 1969
10/64	100 nests	Marysville.	Data not available.	Autumnal breeding colony; nest building began 10/6.	Unknown	Payne 1969
<u>1980-1989</u>						
6/17/82	700 to 750 ind.	Schuster Ranch, approximately 2.5 miles southeast of Olivehurst. (Olivehurst T14N R4E S22)	Rice and cattails.	Fledglings observed.	Unknown	Hosea 1986

Appendix I-42. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/17/82	4,050 to 4,425 ind.	Plumas - Arboga Road, approxi- mately 3 miles south of Olivehurst. (Olivehurst T14N R4E S28)	Cattails in pond.	Fledglings observed.	Unknown	Hosea 1986

Table I-43. Tricolored Blackbird Nesting Observations in Baja California

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1800-1899</u>						
6/85	Data not available	Data not available.	Data not available.	Large colony found nesting in tules. Reported as rather common and breeding in all freshwater marshes along the northwest coast of Baja.	Unknown	Bendire 1895
<u>1900-1929</u>						
3/2/25	--	Upper San Antonio del Mar.	Data not available.	Twelve males were observed in a nonbreeding flock of red-winged blackbirds.	--	Huey 1926
<u>1980-1989</u>						
				Very few reports in recent years (mostly in winter). Several likely breeding spots in the northwestern corner of Baja, particularly in the Guadalupe and San Rafael Valleys north and east of Ensenada.		Wilbur pers. comm.

Appendix I-44. Tricolored Blackbird Nesting Observations in Oregon

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>JACKSON COUNTY</u>						
<u>1950-1959</u>						
6/2/58	1,500 ind.	Bear Creek, just east of Central Point.	Blackberry vines.	Observed young birds in nests on 6/21. In 1959, unable to find nesting colony.	Unknown	Richardson 1961
<u>1960-1969</u>						
5/30/60	1,800 ind.	White Camp area near the Rogue river, north of Medford. (Medford T36S R1W S18)	Cattail marsh.	Nesting confirmed. Collected three males, three females, and three nests with three eggs. The marsh was drained in 1961. The birds were later found nesting 1 mile east of Eagle Point in a wild blackberry patch.	Habitat eliminated	Richardson 1961 (data from Oregon Natural Heritage Data Base)
6/65	Several hundred	Wagner Creek, 6 miles west of Talent.	Data not available.	Observed nesting at this location.	Unknown	Audubon Field Notes 19(8):573
<u>1970-1979</u>						
5/13/70	500-600 ind.	Talent's Bear Creek Park, (now named Lynn Newbry Park), Talent, Oregon.	Blackberry and willow.	Observed many nests; some with eggs. Ten tricoloreds banded: 1 male, 9 females near nesting colony. On 5/17, 5 more females banded.	Unknown	Swisher pers. comm. & Cornell University, Laboratory of Ornithology (data from Swisher)

Appendix I-44. Continued

DATE OF OBSERVATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
6/77	Data not available	1.6 km east of Eagle Point. (Medford T36S R1W S2)	Data not available.	Breeding colony first reported in 1964. A small nesting colony found near Eagle Point in 1977. This location is across the Cascade crest (about 75 km west of the northernmost regular breeding site at Klamath Lake.	Unknown	Richardson & Sturges 1964; Roberts & Contreras 1977 (data from Oregon Natural Heritage Data Base)
<u>1980-1989</u>						
5/83	10 prs.	Located between Biddle and Bullock Roads by a creek, near City of Medford. (Medford T37S R2W S12)	Blackberry bushes.	Observed adults feeding young; nests were as close as 3 feet apart. McCamant & Richardson first observed a nesting colony of about 1,500 individuals on Bear Creek on 6/2/58. Revisited site on 6/21 and found all nests with young birds. No birds found on 1959 visit.	Unknown	Swisher pers. comm. McCamant & Richardson 1958 (data also from Oregon Natural Heritage Data Base)
5/17/83	30 ind.	Bullock Island, Jackson County airport. <u>KLAMATH COUNTY</u>	Data not available.	Nesting colony.	Unknown	Eltzroth pers. comm. (data from Swisher)
<u>1920-1949</u>						
6/14/33	50 ind.	26 miles north of Klamath Falls on the Copco Ranch near Agency Lake. (Chiloquin T34W R7E S19)	Nesting in nettles (Urtica) on the levee separating Agency Lake from adjacent ranch land.	Nesting colony. About 20 nests were under construction, three containing one egg each. Nine males were collected as specimens.	Presumed extirpated	Neff 1933

Appendix I-44. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1970-1979</u>						
3/78	"Colony"	Miller Island.	Data not available.		Unknown	Eltzroth pers. comm. (Oregon Birds data)
8/78	180 prs.	Upper Klamath National Wildlife Refuge. (Pelican Butte T35S R73 S19)	Data not available.	Two colonies first observed in 1971.	Unknown	DeHaven and Crase 1975. (From the Oregon Natural Heritage Data Base)
<u>1980-1989</u>						
4/5/80	500 ind.	Miller Island Game Management Area near Malin.	Data not available.	Nesting site.	Unknown	Eltzroth pers. comm.
6/2/85	Data not available	Along old Highway 62 north of Modoc Point.	Data not available.	Two nesting colonies observed at the two locations noted. No other information available.	Unknown	Swisher pers. comm.
4/16/86	150 males	Southeast of Alkali Lake on Bergdorff Road at the east end of small marsh. (Malin T39S R11E S18)	Small cattail marsh.	150 male birds observed singing. Unknown if this was a breeding colony.	Unknown	Data by Stern & Rosenberg (From the Oregon Natural Heritage Data Base)
		<u>MULTNOMAH COUNTY</u>				
<u>1980-1989</u>						
Summer 1984	"Colony"	Portland.	Data not available.		Unknown	Eltzroth pers. comm. (data from American Birds file)

Appendix I-44. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
1985	20-30 ind.	St. Johns Landfill in Portland. (Portland T1N R1E S3)	Dense Himalayan blackberries adjacent to a blind slough with sparse tree cover along the slough margins.	Houck et al. first observed 36 birds apparently nesting on 6/25/83.	Habitat eliminated	Houck et al. (From Oregon Natural Heritage Data Base)
1985	Data not available	South of Tomahawk Island on Northeast Brighton Road, off of Marine Drive. (Portland T1N R1E S3)	Dense Himalayan blackberries along a blind slough.	Small population observed during the nesting season; nesting not confirmed.	Extirpated; habitat eliminated	Houck et al. (From Oregon Natural Heritage Data Base)
<u>UMITILLA COUNTY</u>						
<u>1980-1989</u>						
4/21/89	20 prs.	Junction of Highway 207 and Interstate 84, 0.5 mile east.	Cattail marsh and small adjacent shallow pond (swamp) with flooded out dead willows.	Size of colony approximately 1-2 acres. Unknown if colony successfully nested. Disturbance to colony may be a larger colony of yellow-headed and red-winged blackbirds.	Extant	Sullivan pers. comm.
4/26/89	20 ind.	One-half mile east of the junc- tion of Interstate 80 north and Highway 207.	Cattails in a small freshwater marsh.	Territorial behavior observed but nest searches not conducted. Colony failed to successfully nest, possibly due to competitive exclusion by yellow-headed blackbirds.	Extant	Corder pers. comm.

Appendix I-44. Continued

DATE OF OBSER- VATION	NUMBER OF BIRDS	LOCATION	SUBSTRATE/ HABITAT	COMMENTS	CURRENT STATUS OF COLONY	SOURCE
<u>1980-1989</u>		<u>WHEELER COUNTY</u>				
5/84	Data not available	Hancock Field Station.	Data not available.	Nesting colony.	Unknown	Eltzroth pers. comm.

