TRICOLORED BLACKBIRD

Agelaius tricolor
USFWS: Species of Concern
CDFG: Special Concern

Species Account

H. Clark

Status and Description. The tricolored blackbird was listed as a California Species of Special Concern on December 20, 1983 and in April 2004, the Center for Biological Diversity submitted a petition to the U.S. Fish and Wildlife Service requesting emergency protection for the tricolored blackbird. On December 5, 2006, the USFWS found that the petition did not provide new or substantial information indicating that listing was warranted. Adult blackbirds are 7.5 inches in length. Adult males have black plumage and a bright red patch on wings bordered by white. Immature males are similar to females but have red shoulders. Adult females have a pale supercilium, heavily streaked breast, dark belly, black and white upperparts, and sometimes a yellow tinge to their face and throat. Immature females are similar in size and color to adult females (Robbins *et al.* 1966).

Range, Populations and Activity. Tricolored blackbirds are found exclusively in California although there are small populations in Oregon, Washington, Nevada and coastal Baja California. Over 99 percent of the population occurs within the state, and the Central Valley alone contains over 90 percent of the population. Tricolor blackbirds have been documented to nest in 46 California counties extending from northeastern California (including Tule Lake and sometimes Honey Lake) to the southern deserts in Antelope Valley in Los Angeles County. Tricolored blackbirds are locally common throughout the Central Valley and along the coast south of Sonoma County (Grinnell and Miller 1944, McCaskie *et al.* 1979, Garrett and Dunn 1981). Colonies formerly numbered up to 200,000 or more nests, but now only have up to 20,000 nests (DeHaven *et al.* 1975), still the highest nest density of any marsh-nesting blackbird (Ehrlich *et al.* 1988).

Neff (1937), in 1937, located as many as 736,000 breeding adults in 1934 from surveys of just eight California counties. While recent efforts have shown the species' geographic range mostly unchanged compared to the 1930s (Neff 1937) and 1970s (DeHaven *et al*. 1975a), they do provide strong evidence of a continuing overall population decline. The recent population declines have been most apparent in historical strongholds of the species' range in the Central Valley, including Fresno, Kern, Merced, and Sacramento counties, although range-wide losses are also evident (Beedy *et al*. 1991). Surveys in late April of 1997, reported by Beedy and Hamilton, found roughly 230,000 breeding tricolored blackbirds in California (USFWS 1999). A follow up survey conducted in 1999 found fewer than 95,000 breeding individuals. The preliminary estimate for a different survey conducted during the spring of 2000 is 162,000 birds (W. J. Hamilton III, *pers. comm*.).

Tricolored blackbirds usually breed from mid-April to late July, although breeding has been reported in October and November in Sacramento Valley (Orians 1960). Male blackbirds are polygynous and will breed with several females within their nesting territories. Breeding tricolored blackbirds

generally nest in colonies of at least 50 or more pairs (Grinnel and Miller 1944), with 20,000 or more nests occurring in areas of 10 acres or less (DeHaven *et al.* 1975).

Tricolored blackbirds construct nests of mud and plant material and usually build them in a few feet above or near fresh water (Granholm 1990). Breeding territory encompasses about 85 square feet or less, in dense vegetation, but may be larger when cover is less suitable (Orians 1961). Nests may be located up to 4 miles from foraging areas (Orians 1961). Nest heights range from a few centimeters to 1.5 meters above water or ground at colony sites in fresh water marshes, and up to 3 meters in the canopies of riparian trees; rarely, they are built on the ground (Shuford and Gardali 2008).

The species lays between two to six clutches a year with three to four eggs per clutch, and may raise two broods in a single year (Terres 1980). Incubation lasts about 11 days. The altricial young are fed by the female and sometimes the male. Young fledge at approximately 13 days and reach sexual maturity at one year of age (Harrison 1978).

Tricolored blackbirds often forage on the ground in croplands, grassy fields, flooded land, and edges of ponds (Granholm 1990). The diet of tricolored blackbirds includes clams, grass and forb seeds, and grain. The proportion of seeds and grain consumption is much higher during the non-breeding season (Granholm 1990). Young feed approximately 90% on clams, snails, spiders, and insects (Skorupa *et al.* 1980).

Habitat Use. Tricolored blackbirds usually nest in large flocks in dense vegetation near open water or in emergent wetland vegetation, especially cattails and tules, but sometimes in thickets of willow, blackberry, wild rose, tall herbs willow thickets (Granholm 1990, Terres 1980). This species' basic requirements for selecting breeding sites are open, accessible water; a protected nest substrate, including either flooded or thorny or spiny vegetation; and a suitable foraging space providing adequate insect prey within a few kilometers of the nesting colony (Beedy and Hamilton 1999). Historically, most colonies were in freshwater marshes dominated by cattails or tules (*Scirpus* spp.), but some were in nettles (*Urtica* spp.), thistles (*Cirsium* spp.) and willows (*Salix* spp.). However, since the 1970s an increasing percentage of colonies have been reported in Himalayan blackberry (*Rubus discolor*) and thistles and some of the largest recent colonies were in silage and grain fields near diaries in the San Joaquin Valley (Hamilton *et al.* 1995, Meese 2006). Other less commonly used nesting substrates include Safflower (*Carthamus tinctorius*), tamarisk (*Tamarix* spp.), elderberry (*Sambucus* spp.), poison oak (*Toxicodendron diversilobum*), giant reed (*Arundo donax*), and riparian scrublands and forests (Beedy and Hamilton 1999).

Wintering tricolored blackbirds often congregate in huge, mixed species blackbird flocks that forage in grasslands and agricultural fields with low growing vegetation and at dairies and feed lots (Shuford and Gardali 2008). With the loss of a natural flooding cycle and most native wetland and upland habitats in the Central Valley, tricolored blackbirds now forage primarily in artificial habitats. Ideal foraging conditions for this species are created when shallow flood irrigation, mowing, or grazing keeps the vegetation at an optimal height (<15 cm). Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, as well as annual grasslands, cattle feed lots, and dairies (Beedy and Hamilton 1999).

Population Levels and Occurrence in Plan Area. Tricolor blackbirds are most typically associated with Freshwater Marsh vegetation located within the Plan Area Freshwater Marsh and Riparian

Natural Community. However, the species occasionally nests in overgrown upland ruderal weed patches within the Valley Grassland and Vernal Pool Natural Community as well. There are 31 current records of tricolored blackbirds nesting in Solano County. Two of these of these records are considered extirpated. In addition to records in the CNDDB, nesting colonies of the tricolored blackbird have been observed (or are suspected based on presence of birds during the breeding season) on the Gridley Mitigation Bank and Jepson Prairie, Hay Road landfill, Potrero Hills (location not confirmed), and McCoy Basin and southeast of the intersection Walters Road and Air Base Parkway in Fairfield (Steve Foreman, LSA, pers. obs.).

Dispersal. The tricolored blackbird is not migratory over most of its range, but migrates from northeastern California in fall and winter (Granholm 1990). Flocks become nomadic in fall while foraging for food. In winter, flocks become more widespread from Marin to Santa Cruz Counties and in the Sacramento River Delta (Granholm 1990). Nesting birds in Colusa and Yuba Counties traveled as far as 4 miles from their nesting territories to feed; in each of two colonies, members foraged over more than 80 square miles (Orians 1961).

Threats to the Species. Surveys indicate that populations have been rapidly declining for decades (Bent 1958, DeHaven *et al.* 1975, PRBO 2001). DeHaven (2000) found that a large population decline was evident from the 1970s to the present and that much of the present-day breeding habitat is associated with land conversions associated with large dairy operations in the San Joaquin Valley. DeHaven also found that silage harvest, associated with dairy feed, has had an adverse impact on breeding tricolored blackbirds. The report concludes that future increases in the tricolored blackbird will likely be obtained through: (1) potentially large increments of reproductive output provided the silage harvest effects are minimized, and (b) possible long-term stabilization and management of existing, high-value tricolored blackbird habitat associated with large dairies.

The main causes for decline of the tricolored blackbird are loss of native wetland habitat for nest building, loss of associated foraging habitat, disturbance and mortality by predators and humans, destruction of colonies by agricultural practices, direct poisoning, and poisoning by selenium (Beedy *et al*. 1991). Existing colonies in active agricultural fields are susceptible to destruction when crops are harvested (Beedy and Hamilton 1997). Tricolors are particularly susceptible to mowing and heavy grazing during the breeding season (Hamilton *et al*. 1994). Of particular concern is the harvesting of silage fields that have tricolor colonies in them. Large colonies of tricolors have been completely destroyed when the silage is harvested (Beedy and Hamilton 1997). The loss of native vegetation causes tricolors to concentrate in large colonies. Large concentrated colonies are more vulnerable to catastrophic events that may destroy the entire colony (Hamilton *et al.* 1994). Recently, especially in permanent freshwater marshes of the Central Valley, entire colonies have been lost to black-crowned night-herons (*Nycticorax nycticorax*) and common ravens (*Corvus corax*). Some large colonies may lose >50 percent of nests to coyotes (*Canis latrans*). Thus, water management by humans often has the effect of increasing predator access to colonies (Shuford and Gardali 2008). Up until the 1960s, thousands of blackbirds were exterminated to control damage to rice crops in the Central Valley. Selenium, mosquito abatement oil, and herbicide have also caused the loss of colonies (Shuford and Gardali 2008).

Current Conservation Efforts. An effort to monitor and survey the annual distribution and abundance of the tricolored blackbird population was initiated in 1994. The National Audubon Society Western Regional Office, California Department of Fish and Game, University of California,

Davis, U.S. Fish and Wildlife Service, and the Point Reyes Bird Observatory participated in the coordination of this survey. Census objectives included locating all tricolored blackbird colonies throughout their current distribution in California, estimating their numbers, and determining the outcome of their nesting activity (PRBO 2001).

The Tricolored Blackbird Conservation Plan (TBWG 2007) includes management and research recommendations to conserve the species. These include restoration of habitat, management of agricultural fields for optimal tricolored blackbird foraging habitat, discourage nesting in areas likely to be disturbed, investigate predator-prey relationships, perform demographic research, analyze depletion of food resources, evaluate habitat selection mechanisms, use banding and radio telemetry to measure dispersal and evaluate distribution and survival of wintering birds.

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