



November 20, 2014

Via Email and for Delivery by Hand
California Fish and Game Commission
1416 Ninth Street, Room 1320
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RE: Emergency Listing of the Tricolored Blackbird

Dear Commissioners:

Audubon California writes on behalf of its members in California to strongly support the petition (“Petition”) to list the Tricolored Blackbird (*Agelaius tricolor* or “tricolor”) as endangered under the California Endangered Species Act (CESA), Cal. Fish & Game Code § 2051 *et seq.* The species has been in a well-documented decline for decades and warrants the legal protections provide by the CESA.

In rejecting the 2004 petition to list the Tricolored Blackbird, the California Fish & Game Commission (“Commission”) found that petition lacked “sufficient information in the categories of population trend, abundance, and degree and immediacy of threat to find that the petitioned action may be warranted.” (California Fish & Game Comm’n Findings, May 4, 2005, at 7 (“2005 Commission Findings”)) The Commission further found that the existing regulatory framework provided adequate protection for the species. (*Id.*)

As discussed further below, the Petition includes results from the best available science, including a population estimate of 145,135 tricolors remaining in California and a population decline off 44% since 2011 and 63% overall since 2008. (*See* Petition, at 11-12, 14; *see also* Meese, R. 2014. *Results of the Tricolored Blackbird Statewide 2014 Survey*. UC Davis, at 6-7) The Petition also describes the degree and immediacy of the threat by including information about the significant challenges to the species’ survival, namely the lack of necessary habitat, threats to large nesting colonies, and other factors that are resulting in tricolor mortality outpacing its reproductive success. Moreover, the Petition demonstrates that the existing statutory framework has failed to conserve the species and that CESA will provide new tools to ensure the species does not go extinct.

Opponents to the petition may argue that the steep decline in the population in recent years may be attributed to a normal population cycle or impacts from the drought. However the population has dwindled from millions to approximately 150,000 within less than a century, which cannot be accounted for by natural population cycles. Moreover, it is reasonable to expect the Commission to find that the causes of the tricolor’s decline—primarily habitat loss and disturbance, which may be exacerbated by other factors such as drought—are going to persist or

worsen with time and that the smaller tricolor population is likely to be less resilient to these adverse impacts.

Current voluntary efforts and the existing regulatory framework have failed to prevent the steep decline of the species. Unless further, rigorous action is taken the species will continue to be pushed toward extinction.

I. THE PETITION PROVIDES CREDIBLE DATA REGARDING THE TRICOLORED BLACKBIRD POPULATION DECLINE TO SUPPORT LISTING.

The Commission determines whether a species should be listed as endangered on a “case-by-case basis after evaluating and weighing all the biological and management information before it.” (2005 Findings, at 1). The Commission weighs available information in the petition and other sources for and against listing and should list the species if a reasonable person would find that there is a “substantial possibility” that the listing should occur. (*See Natural Resources Defense Council vs. Cal. Fish & Game Comm’n* (1994) 28 Cal. App.4th 1104, 1126; *see also* 2005 Findings, at 3) A fundamental question that a successful petition for listing must answer is whether there is “sufficient scientific information” to estimate the species’ population size and, thereby, assess the extinctions risks. (*See* 2005 Findings, at 4)

The Petition includes a thorough review of past and recent studies of the tricolor’s population abundance and trends. (*See* Petition, at 6-14) It improves upon the data available at the time of the 2004 petition because it includes the studies conducted in 2008, 2011, and 2014, which were substantially more rigorous and comparable than previous efforts. Based on the results of those studies and ancillary information, a reasonable person would conclude that “sufficient scientific information” exists to estimate the needed population metrics to establish that there is a “substantial possibility” that the listings should occur.

A. The 2008, 2011, and 2014 Surveys Indicate a Steep and Unsustainable Decline in the Tricolored Blackbird Population.

As the Petition reports, the Tricolored Blackbird population in California has declined by approximately 44% since 2011 and approximately 63% since 2008. (Petition, at 11-12; Meese, R. 2014. *Results of the Tricolored Blackbird Statewide 2014 Survey*. UC Davis)¹ Overall, the species has declined in the Central Valley by 68% from 2008 to 2014. (*Id.*, at 9) In 2014, observers counted 145,135 tricolors at 802 locations throughout California, a decline from 258,000 birds in 2011 and 395,000 in 2008. (*Id.*, at 6-7). By any measure, the species has declined dramatically since the 1930s, when it was estimated to breed in California in the millions. (*Id.*, at 3, citing Neff, J. A. 1937. *Nesting distribution of the tri-colored red-wing*. *Condor* 39:61–81).²

¹ Available at <http://tricolor.ice.ucdavis.edu/content/results-2014-tricolored-blackbird-statewide-survey>.

² Early population estimates in the 1930s were conducted by Johnson A. Neff, a biologist with the U.S. Bureau of Biological Survey, with state and county wildlife and agricultural biologists. From 1930 to 1936, Neff studied the distribution, population, economic status and control of Tricolored Blackbirds throughout the Central Valley (The

Opponents to the petition are likely to argue that survey methods are inadequate to fully capture all occurrences of the tricolor throughout the state. While all scientific study must acknowledge some inherent uncertainty, the 2008, 2011, and 2014 surveys represent an impressive and comprehensive effort that included, most recently, over 180 trained observers visiting 802 sites in 41 counties.

1. Observations at the largest colonies indicate a significant population decline.

The degree of the decline is perhaps most simply illustrated with a review of the declines at the largest colonies in California. These colonies comprise the vast majority of the tricolor population and are the least likely to be missed by observers. (*See Meese (2014)*, at 12-13) Moreover, given the tricolor's colonial nesting biology, the largest colonies are likely key to the species' continued survival.

According to Dr. Meese's 2014 report, the number of tricolors at California's ten largest colonies have declined steeply. In 2008, 306,000 birds, or 77% of the total count, were observed at the ten largest colonies. In 2011, that number fell to 208,800 birds, or 81% of the total count, where observed at the ten largest colonies. In 2014, those numbers fell to 93,000 birds, or 64% of the total count. (2014 Report, at 11)

The reduced number of birds at the ten largest colonies can be attributed to the overall population decline and to a wider dispersion of breeding adults, perhaps in response to the drought. While the exact reason cannot be pinpointed without further study, we do know that smaller colonies may be more susceptible to reproductive failure and that continuing fragmentation of large colonies may be an indicator of overall decline of the species. (*See Gustafson, J. R., and D. T. Steele. 2004 (Sep 15.). Evaluation of petition from Center for Biological Diversity to list Tricolored Blackbird (*Agelaius tricolor*) as endangered. Calif. Dep. of Fish and Game, Habitat Conservation Planning Branch, Sacramento, 42 pp. + append, at 21 (noting similarities in the tricolor's decline to those of species such as the Passenger Pigeon and the Carolina Parakeet)*)

The Tricolored Blackbird, like the Passenger Pigeon and most colonial-nesting birds, evolved to rely on large colonies in order to subsist. It is likely that the tricolor, again like the Passenger Pigeon, could continue to decline as large colonies fragment and can no longer be formed. As Paul Ehrlich explains:

The Passenger Pigeon once nested in colonies of billions of birds covering many square miles. **When its numbers were reduced to the point at which large colonies could no longer be formed, it declined to extinction in spite of the presence of abundant habitat and food and the absence of further human**

The Tricolored Blackbird Working Group (2009) *Conservation Plan for the Tricolored Blackbird*, available at <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/FocalSpecies/Plans/TCBL.pdf>. Neff (1937) estimated a population of 2-3 million Tricolored Blackbirds, residing in wetlands in coastal and Central Valley locations. Large breeding colonies were observed in the 1930s that contained Tricolor adults numbering greater than the current global population.

molestation. In large colonies, the birds presumably saturated local predators; nests of scattered survivors simply may have been too vulnerable to predation.

(Erhlich, et al. 1988. *Coloniality. Birds of Stanford*, Stanford University. Available at <http://web.stanford.edu/group/stanfordbirds/text/essays/Coloniality.html>, emphasis added)

At this point, we know that the tricolor lacks “abundant habitat and food” and will continue to undergo “further human molestation”, which indicates that the decline of large colonies is perhaps even more worrisome than it might have been for the Passenger Pigeon. The sensitivity of the tricolor as a colonial breeder, coupled with the decline in the large colonies and ongoing stresses, underlines the immediacy of the threat to the species.

B. The 2008, 2011 and 2014 Survey Methods Are Robust and Produce Credible, Replicable Results.

At its root, the Commission’s determination to reject listing the Tricolored Blackbird in 2005 appears to have rested, in large part, on its determination that the 1994, 1997, and 2000 surveys were inadequate to estimate population abundance and trend and, therefore, to assess the degree and immediacy of the threats to the species. (2005 Findings, at 5-7). Specifically, the Commission points to an observation of approximately 136,000 Tricolored Blackbirds nesting on the Delevan National Wildlife Refuge in 2004, with an estimated number of 97,000 produced young, as undermining previous estimates that put the total population of tricolors at approximately 162,000 birds in 2000 (*See id.*)

In assessing the adequacy of the 2004 survey, the Commission seemed persuaded by Green and Edson’s summary of that year’s survey, which acknowledged that it was inadequate to estimate the tricolor population as a whole and opined:

A more accurate estimate would require more surveyors covering more potential tricolored blackbird nesting habitat over more of the breeding season, or using new methods combining intensive area sampling and double-observer methods[.]

(2005 Findings, at 5, quoting Green and Edson. (2004) *The 2004 Tricolored Blackbird April Survey*, Central Valley Bird Club Bulletin, Spring/Summer 2004, Vol. 7, Nos. 2 & 3)

The survey method employed in 2008, 2011, and 2014 was purposefully improved over the methods that caused confusion in the Commission’s 2005 Findings. The Tricolored Blackbird Working Group—which includes the top biologists studying and conserving the species—acknowledged that better survey methods were necessary to meaningfully contribute to monitoring and conserving the species. (*See Tricolored Working Group. 2009. Conservation Plan for the Tricolored Blackbird*, at 14-16). The survey method employed since 2008 set out to meet those goals by providing greater survey coverage over a longer period to better assess the species’ population status. (Meese (2014), at 12)

Not only are the most recent surveys an improvement over prior efforts, but they have become increasingly comprehensive since 2008. Since 2008, the number of observed nesting sites

included in the survey has increased from 361 to 802. (Meese (2014), at 12). So, in the current survey period, more observers were out documenting the species in more locations than ever before. Despite the expanded effort, a worrisome decline in the population has been observed.

In other words, the surveys since 2008 improved upon the prior surveys significantly. If, at this point, opponents of the petition were to argue that the surveys since 2008 are inadequate, one must ask what, if any, protocol would meet the standard to provide adequately, credible scientific information on the tricolor population and trend. Healthy skepticism about any scientific study is necessary, but it should not give rise to an over-abundance of caution and timidity in the face of such a significant decline in a species' population size.

II. THE PETITION DESCRIBES THE DEGREE AND IMMEDIACY OF THE THREAT TO A SUSTAINABLE TRICOLORED BLACKBIRD POPULATION.

As a colonial nesting bird, the Tricolored Blackbird may be more vulnerable to extinction as its population declines than other species. (Gustafson, J. R., and D. T. Steele. 2004 (Sep 15.). Evaluation of petition from Center for Biological Diversity to list Tricolored Blackbird (*Agelaius tricolor*) as endangered. Calif. Dep. of Fish and Game, Habitat Conservation Planning Branch, Sacramento, 42 pp. + append, at 16) The declines at the largest colonies may indicate an overall degradation of the species' strongholds.

While increased reproductive success at some smaller colonies, such as those found in foothill regions, may be a source of optimism, there is no evidence those colonies are successful enough to sustain the significant population decline that is occurring in the Central Valley. (See Meese (2014, at 12-13; see also Meese (2013), at 103 (attributing high nesting success at a study site to the "extraordinary abundance" of forage insects on an adjacent rangeland) If anything, smaller colonies may be more vulnerable to predation and environmental impacts over time, more easily leading to local extirpation. (Gustafson and Steele (2004), at 21)

A. The Population Decline Presents an Immediate and Serious Threat to the Continued Viability of the Tricolored Blackbird.

In its 2005 Findings, the Commission determined that the 2004 petition did not adequately describe the degree and immediacy of the threat. (2005 Findings, at 7) Much of this determination depended on the Commission's dismissal of the 1994, 1997, and 2000 surveys as inadequate to estimate population abundance and trend, which prevented an assessment of the degree and immediacy of the extinction threat. (*Id.*, at 5-7)

As discussed above, the survey method has significantly improved since the earlier surveys. Not only is it much more comprehensive and reproducible, but it can provide a better estimate of overall population abundance. Moreover, the observed decline is so significant, it cannot be reasonably written off as an artifact of annual variation or data collection quality control.

1. The Tricolored Blackbird has already been extirpated from much of its historic range and is in danger of becoming extinct throughout a significant portion of its remaining range in California.

As an initial matter, Audubon notes that there can be no reasonable argument that the species has already suffered a very significant reduction in available habitat in California. Fish and Game Code Section 2062 states that a species is a candidate for listing if it “is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, over exploitation, predation, competition, or disease.” With over 90% of the state’s native wetlands lost, and the unpredictability of cultivated fields as nesting sites, the tricolor’s preferred nesting sites have largely disappeared, been fragmented, or pose risks due to harvest practices. Therefore, the Commission should consider the state of the species’ current range in the context of its historic span.

2. Given the Tricolored Blackbird’s steep population decline, it is threatened with extinction in the foreseeable future absent special management efforts.

Fish and Game Code § 2067 states that a species is a candidate for listing if “not presently threatened with extinction [but] is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by [CESA].…” Clearly, the Tricolored Blackbird meets this criteria, given the precipitous decline recorded since 2008 and the ongoing challenges it faces, including loss of habitat, disruption of nesting sites, and climate change.

In 2005, the Commission criticized the 2004 petition for failing to demonstrate the “degree and immediacy” of the threat to the continued existence of the Tricolored Blackbird. (2005 Commission Findings, at 6-7) Specifically, the Commission found:

Instead of demonstrating actual threats to the survival of tricolors, the petitioners provide general and vague statements that they say may have impacts to tricolor survival. There are no numbers, no facts and no actual demonstration of harm, much less a threat to the overall survival of the species.

(*Id.* at 6) The Petition offers several examples of large-scale mortality for the species, including from harvest practices, environmental contamination, and predation. Clearly, these kinds of threats—and additional challenges such as drought and storms—will persist, creating an ongoing and collective threat to the survival of the species.

B. The Tricolored Blackbird Is Vulnerable to Reproductive Failure and Lack of Recruitment to Maintain its Population.

Loss of habitat and disturbance of nesting colonies is likely the primary cause of the tricolor’s overall decline. In its 2005 findings, the Commission noted that loss of nesting sites due to harvest practices could potentially be a significant problem for the species, but it largely dismissed the concern because of a lack of survivorship information which, if available, would

provide context about the threat of nesting destruction. (2005 Findings, at 7) In other words, if the species has a high rate of adult survivorship, low reproductive success may be less of a concern.

In 2013, at least one study indicated that tricolor reproductive success in the Central Valley is “chronically low”. (Meese, R. 2013. *Chronic low reproductive success of the colonial tricolored blackbird from 2006 to 2011*. Western Birds 44:98–113, at 103) The 2013 study reported that several factors can contribute to large-scale reproductive failure in tricolors, including scarcity of foraging habitat, predation, and silage harvest. (*Id.*, at 108) The “chronically low” reproductive success was identified as a probable contributor to the significant decline observed in tricolors between 2008 and 2011. (*Id.*, at 109)

1. The Tricolored Blackbird is extremely vulnerable to significant reproductive disruption as grain fields are harvested.

It is well known that Tricolored Blackbirds often nest on grain fields associated with dairies, which may often be harvested before the tricolors’ nesting efforts are complete. (Meese (2014), at 12-13) It has also been well-documented that major tricolor colonies have been destroyed by harvests. The Petition provides a sobering list of the estimated number of nests destroyed in silage fields, totally more than 1 million nests since 1993. (Petition, at 40, Table 4) These numbers warrant further investigation in order to best understand nest loss as well as the efficacy of buyout programs.

The MBTA does not provide a regulatory framework for protecting birds from habitat destruction. While CESA has an agricultural exemption for “accidental” take during regular agricultural activities, it can provide more tools for managing grain fields to avoid unnecessary impacts to nesting tricolors.

2. Other sources of mortality are poorly understood, but are likely significant and can be avoided.

The Petition recounts and provides scientific sources regarding other sources of mortality for the tricolor are known but poorly quantified. (Petition, at 42-48; Meese (2014), at 12) They are significant, however, to the Commission’s consideration of the issue because (1) anthropogenic sources can be identified, better studied, and managed and (2) natural sources need to be understood so that a reasonable population target and management practices are in place to help the species survive extended, natural sources of mortality and reproductive failure.

a. Anthropogenic mortality can have significant negative impacts on tricolor populations, but management practices can reduce or eliminate many of these causes.

Herbicides and pesticides are known sources of significant direct mortality and reproductive failure for passerines, but measuring the extent of the mortality is difficult. (See Mineau, Pierre (2005) *Direct Losses of Birds to Pesticides – Beginnings of a Quantification*, USDA Forest

Service Gen. Tech. Rep. PSW-GTR-191. 2005, at 1065, 1069)³ Tricolors may be particularly sensitive to pesticides and herbicides, since it could reduce forage insects and nesting substrates, respectively.

Listing pursuant to CESA would deter activities that result in take of the species. With the greater emphasis on conservation provided by CESA, stakeholders would be better motivated to identify sources of anthropogenic mortality, quantify their impacts, and avoid them whenever possible.

b. Natural sources of mortality can be significant and demonstrate the need to maintain a large, resilient population if the species is to survive.

Successful species develop reproductive strategies that permit survival during times of intense, natural stress. For the tricolor, its dependence on large, colonial nesting can provide immense benefits, but the strategy can falter if overall population size decreases to a level where it cannot absorb naturally-caused mortality or reproductive failure over an extended period of time.

For example, Storms can be the source of significant reproductive failure, with the potential to negatively affect large colonies. (Petition, at 44, citing Meese (2010), at 11)) The potential for large-scale failure due to storms underlies the need for a large, resilient population that can absorb such naturally-caused mortality or reproductive failure events.

Likewise, droughts, such as the one we are currently weathering, can depress available insect populations for forage and reduce water necessary for nesting sites. The species evolved to endure drought conditions in California, but, again, we do not know the minimum population threshold for the species to survive an extended drought. This question is even more pressing given the likelihood that drought is the “new normal” in California given climate change and the fact that the 20th century was wetter than prior periods.

Because human activities have caused such a severe depression in the tricolor’s overall population, it is reasonable to conclude that we have made the species less able to persist through extended naturally-caused mortality and reproductive failure events.

III. LISTING OF THE TRICOLORED BLACKBIRD WOULD SIGNIFICANTLY CONTRIBUTE TO STABILIZING AND RECOVERY THE POPULATION.

A. The Existing Regulatory Framework Is Inadequate to Conserve the Tricolored Blackbird.

In 2005, the Commission rejected the petition, in part, because it determined that the then-current regulatory framework – primarily the Migratory Bird Treaty Act and the Fish & Game Code – provided adequate protection for the species. Given the continued destruction of major nesting

³ Available at http://www.fs.fed.us/psw/publications/documents/psw_gtr191/psw_gtr191_1065-1070_mineau.pdf

colonies and the decline of the species' population, it can reasonably be concluded that the current legal protections are not adequate for maintaining a stable populations of tricolors.

The Ninth Circuit Court of Appeals had held that the MBTA is intended to apply to activities that directly take migratory birds, such as the “physical conduct of the sort engaged in by hunters and poachers, conduct which was undoubtedly a concern at the time of the statute’s enactment in 1918.” (952 F.2d 297, 302 (9th Cir. 1991)). The Ninth Circuit has declined to apply the MBTA to incidences of habitat destruction. (*Id.*)

Likewise, there is no record of the California Department of Fish & Wildlife enforcing the existing Fish & Game Code provisions to protect nesting tricolors. Given the Department’s great reluctance to use existing laws to protect migratory birds that are not listed, it is unreasonable to expect that the Department will use the existing statutory framework to protect tricolors.

The tricolor has demonstrated flexibility in choosing nesting sites and can successfully reproduce in non-native areas that provide adequate nesting substrates and adjacent foraging opportunities. The species’ flexibility creates conservation opportunities and a source of optimism that conservation efforts—combined with the protections provided by CESA—can successfully stabilize the species, contribute to its recovery, and ultimately meet the goal of delisting it.

CONCLUSION

For the foregoing reasons, Audubon California strongly supports the Center for Biological Diversity’s petition to list the Tricolored Blackbird as endangered pursuant to CESA. The Petition reports the best available data that ably describes the population abundance, distribution, and trend of the tricolor in California. The Petition also explains the immediacy and degree of the threat, given the species’ steep decline and extreme vulnerability to anthropogenic and natural sources of mortality and reproductive failure.

Audubon understands the Commission’s caution in proceeding with listings under CESA. The additional statutory and regulatory framework can create burdens on private land owners, business, and state agencies. We also will continue to work with all interested stakeholders in implementing voluntary conservation measures to stabilize and recover the species.

However, given the population’s vulnerability and the additional tools provided by CESA, the Commission should proceed with the listing now in order to protect birds during the 2015 nesting season.

Respectfully submitted,



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