

March 19, 2015

**California Department of Fish and Wildlife (Department) Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015**

The Tricolored Blackbird has been listed as an endangered species by the California Fish and Game Commission pursuant to the California Endangered Species Act (CESA). As an endangered species, unauthorized take of Tricolored Blackbird is prohibited. Take is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”.

This guidance is designed to provide a set of measures that, in many cases, will avoid take of breeding Tricolored Blackbirds and their nests where they occur on agricultural fields and where harvest of those fields could result in take. In recent decades, large Tricolored Blackbird breeding colonies have become established on a variety of agricultural crops. The majority of these colonies have occurred in the San Joaquin Valley on triticale fields associated with dairies. Loss or alteration of breeding habitat or nest site disturbance which results in: 1) nest abandonment; 2) loss of young; or 3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Tricolored Blackbirds incidental to otherwise lawful activities.

The take avoidance measures described here should be considered a starting point when assessing risk of take in any particular situation. Differences between breeding colonies and local conditions that can occur at specific sites may require modified or additional measures to ensure that take is avoided. When in doubt, the Department should be consulted in order to ensure that unauthorized take is avoided. This guidance assumes that agricultural activities that may occur at or near breeding colonies would not result in significant impact to foraging habitat, but rather may directly affect breeding birds or their nests through activities at or adjacent to breeding colonies. Accordingly, this guidance deals only with potential take of birds and nests where they occur on agricultural crops.

This guidance is based on "model" avoidance measures which have been used successfully in the past to avoid or reduce disturbance of Tricolored Blackbird breeding colonies.

The Department works closely with the Tricolored Blackbird Working Group in planning for the conservation of the species. It is anticipated that future discussions on take avoidance and minimization, and mitigation for take, will lead to additional guidance. The guidance provided here addresses only take avoidance.

Topics for which Staff has developed recommended Avoidance Measures are:

1. Buffer Zone – Harvesting of fields up to the edge of established breeding colonies is known to have caused colony abandonment. In order to prevent take, it is advisable to avoid intensive disturbances (e.g., heavy equipment operation associated with harvesting) or other activities which may cause nest abandonment or forced fledging within about 60 feet (buffer zone) of an active breeding colony. Implementation of this buffer zone distance when attempting to avoid disturbance of breeding colonies due to harvesting activities has successfully resulted in little to

no disturbance. In some situations, in order to avoid take, the buffer zone insulating the colony from disturbance-causing activities will need to be larger, depending on configuration of the field and the colony location and extent within the field. When young fledglings are present, a larger buffer zone between the colony site and harvesting activities would be more likely to avoid take, because young fledglings are weak fliers and may be susceptible to disorientation once leaving the nest. The buffer zone guidance beginning at 60 feet assumes that harvesting activities near a Tricolored Blackbird colony are brief and occur on a single occasion. The buffer zone may need to be increased to avoid take if additional or recurring harvesting or other agricultural activities will occur. For example, construction activities have often been restricted within 300 feet of an active breeding colony.

Many Tricolored Blackbird breeding colonies expand over time as additional birds are recruited at the edges of established colonies. For this reason, it is important to reassess the extent of a breeding colony before conducting harvesting activities.

2. Harvest Date – The date at which a field hosting a Tricolored Blackbird breeding colony can be harvested to avoid take has often been determined through estimation of the nesting stage of the breeding colony. Visual estimates from outside the colony or walking survey transects through a portion of the colony have been used to estimate nesting stage of breeding colonies. Walking transects are more likely to provide accurate estimates of nest stage across the entire extent of the colony, but this method may have adverse effects and colony entry requires authorization from the Department. Based on observed nests or behavior of adult birds, the earliest possible stage of individual nests in a colony is estimated (nest building, egg laying, incubation, or nestlings). For purposes of estimating possible fledge date (and to ensure take is avoided), nests are assumed to be at day one of whichever nest stage is observed; this assumption can be relaxed if qualified observers have additional information that allows more precise estimation of stage. Based on the estimate of the earliest nest stage for a colony and known breeding phenology for Tricolored Blackbirds, an estimated date at which young will fledge is obtained. The following example of this estimation method assumes that adult Tricolored Blackbirds are observed carrying nesting material into a colony: because nest building typically takes four days, egg laying typically occurs over 3-4 days, incubation occurs over 12 days, and nestlings fledge 12-14 days after hatching, fledging will typically occur about 31-34 days after nest building begins (Meese et al. 2014). In setting a potential harvest date, additional days should be added to ensure all young have fledged and young fledglings that are dependent on parents for food have the ability to disperse from the breeding site; this may add as much as an additional week before harvest can occur.

In establishing a harvest date that will avoid take, this method of estimation requires that nesting of birds within the colony is synchronous and that additional birds do not initiate nesting once the nest stage is estimated. Because of the size of breeding colonies and the density and concealed nature of nests within a colony, it is difficult to determine whether either of these assumptions are valid, and in fact it is known that many large colonies on agricultural fields are

not completely synchronous. Only trained observers<sup>1</sup> should make a finding that all nests have fledged young and the breeding colony is no longer active. In the absence of thorough colony monitoring, the only way to ensure that all nests in a colony have fledged young is to delay harvesting until the end of the breeding season; usually the end of June in the San Joaquin Valley (Meese et al. 2014). Colony site abandonment can occur for other reasons, such as intense nest predation or other natural impacts to nesting substrate, but as with determinations of fledging, only trained observers<sup>1</sup> should make a finding that a colony site has been abandoned.

3. Hazing<sup>2</sup> – Hazing could be considered take depending on the method used and when it is employed. Types of methods typically used to haze birds include:
  - a. Audio devices – sonic and ultrasonic; e.g. distress/predator calls, electronic noise, air/propane canon.
  - b. Visual devices – light reflecting objects, predator decoys, lasers.
  - c. Mechanical devices – rotating rods, or other continual motion device.
  - d. Predator pursuit – use of live predators (e.g. falcons) or remote control predator drones.

Where employed prior to establishment of nests (completed nests with 1 or more eggs), use of the first three types of methods (a-c, above) would not likely rise to the level of take. If employed after nests have been established, use of these types of deterrents could result in nest abandonment, and therefore could result in take. The fourth method, use of live falcons or drones, would be considered take regardless of when employed, because the method involves pursuit or hunting with the potential to kill, or attempting to do so. Therefore, use of the first three types of hazing devices could be used if employed prior to the establishment of nests, but the fourth method is not a viable option to avoid take.

Although this report includes recommended Avoidance Measures, activities which could cause take of Tricolored Blackbird at breeding colonies may vary. When in doubt, landowners or project proponents are encouraged to consult with the Department on a case-by-case basis to ensure no unauthorized take of Tricolored Blackbird occurs, and to develop alternative avoidance measures where necessary.

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<sup>1</sup> The Department can provide names of individuals who are trained in colony monitoring and nest stage estimation. Any management activities that require entry into a breeding colony must be authorized by the Department through a CESA permit or MOU (Fish and Game Code section 2081(a)). Interested landowners who enroll in Natural Resources Conservation Service programs can receive compensation for delaying harvest of occupied fields and will receive consultation on colony nest stage free of charge.

<sup>2</sup> Past attempts to haze Tricolored Blackbirds in order to prevent establishment of colonies have resulted in little success. In order to be successful, hazing efforts would likely need to be intensive and consistently applied; this can result in an expensive and difficult undertaking. However, without such an effort hazing will not likely deter birds from occupying a field. Also, if hazing is successful, the birds will likely move onto a neighboring field. Because of difficulties in determining when colonies contain active nests, caution should be exercised in using hazing activities.

Literature Cited:

Meese, R.J., E.C. Beedy and W.J. Hamilton, III. 2014. Tricolored Blackbird (*Agelaius tricolor*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:

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