

**Project Title:** Incentivized Program for the Delayed Harvest of Winter Wheat for Nesting Waterfowl

**Applicant Contact Information:** California Waterfowl Association  
Caroline Brady  
Waterfowl Programs Supervisor  
(916) 275-1018  
[Cbrady@calwaterfowl.org](mailto:Cbrady@calwaterfowl.org)

**Issue/Problem Statement:**

California's breeding mallard population has been in decline for over the last decade, with significant decreases from the long-term average (CDFW, 2019; Coates et al. 2013 & 2016). This is largely due to land-use changes throughout the state which has resulted in a deficit of upland nesting and brood rearing habitat for locally breeding ducks. Decreases in our locally breeding mallard stock is reflected in the decline of their annual harvest; California breeding mallards support 60-70% of those harvested within the state.

The purpose of this project is to create a program that will incentivize wheat growers to provide safe nesting habitat for ground nesting birds that use winter wheat as nesting cover by delaying harvest until July 1<sup>st</sup> through July 15<sup>th</sup>, when the majority of ducks have fledged their young from these fields. In the Sacramento Valley, natural upland nesting habitat is scarce; a 61% decline in breeding mallards. As a result, breeding birds use agricultural fields as alternative nesting sites. Winter wheat is extremely attractive to nesting ducks, but due to fluctuating markets and demand, growers have shifted to more profitable and less wildlife friendly crops (e.g., orchards and vineyards, Fleskes et al. 2013). Where wheat is still available for nesting birds, reproductive success often depends on multiple variables (weather, plant date, harvest date, market conditions, etc.), and it can act as either a sink or a source for annual duck production. A wildlife-agriculture conflict occurs in June, when harvest of fall-seeded cereal grains takes place simultaneously with peak hatching, resulting in direct or indirect destruction of active nests or mortality of hens struck by farming implements while on the nest. Since 2015, the California Waterfowl Association (CWA) has had a unique view into California's cropland duck production and willingness of landowners to participate through the Egg Salvage Program. This program facilitates the removal and transport of nests from farm fields to Federally permitted hatcheries to avoid destruction by normal farming activities. This program has demonstrated that high densities of nesting waterfowl and other ground nesting bird species utilize fall-seeded cereal grains extensively during the breeding season. This project is an important step in providing a simple, cost-effective solution for safe nesting habitat for local ground nesting birds and will compliment potential State and/or federal cover crop programs. Additionally, the 2006 Central Valley Joint Venture Implementation Plan directly states that executing targeted habitat programs to efficiently increase California duck populations is a goal of the JV (CVJV 2006).

The overall objective of this project is to develop and evaluate an incentivize-based program to delay wheat harvest, and to determine its efficacy to increase locally breeding waterfowl. Additionally, information gathered from this project could help catalyze the development of a habitat program for California State Department of Fish and Wildlife and/or the Natural Resource Conservation Service.

***Project Description (provide acres if habitat project):***

The CWA and its partners have developed an incentive program and ranking criteria for wheat growers in Butte, Colusa, Sutter, and Yolo Counties. In 2014 these counties planted over 62,000 acres of winter wheat and maintain on average 17,000 acres a year. The incentive rate for participants ranges from \$30-\$40/acre of winter wheat; these numbers are based off of the current price of hard red winter wheat (\$5.09/bu; Kansas City Board of Trade – March 2020), the predominant variety grown in California. Incentive payments will be provided to partially offset anticipated loss in profits due to delaying harvest beyond the optimal date (when moisture levels are below 12). This approach was proven to be successful for reducing destruction of tricolored blackbird nests in the San Joaquin Valley (California Audubon, 2015).

Dependent upon funding and interest from farmers, the acreage impacted by the program's pilot year could be extensive. Farmers would be required to delay harvest of their crop until July 1<sup>st</sup> through July 15<sup>th</sup>; those willing to delay later within that timeframe would get higher priority in ranking. The incentive rate will be based on a sliding scale established on harvest date and other variables. Other ranking criteria could include: past participation in CWA's Egg Salvage Program (proven nest densities), proximity to summer water (i.e. cultivated rice fields, wetlands, riparian areas, etc.), and growers with a diversified ranch; especially those that farm other winter grains (e.g. triticale, barley, etc.), or cover crops (e.g. vetch). Other considerations will include specific management options that wheat growers typically employ (on beds or flat, organic vs. conventional, and irrigated/dryland). Proximity to State Wildlife Areas, National Wildlife Refuges, and Presley Program participants, will also be included in ranking weight. Finalizing the incentive rates and criteria will be completed prior to conclusion of the application period. These are open to change in future years once information is collected from partners and growers collected by surveys or workshops; these would be held in winter of 2020 with the support of the California Wheat Commission.

To measure the success of the program and gauge production, CWA will conduct point counts and pair surveys from April to June to determine the extent of nesting activity; CWA will also perform compliance checks. Additionally, there is potential to work with partners to develop protocol for the use of drones equipped with thermal imaging cameras to "nest search" fields. Drones could also be used to conduct brood surveys in the surrounding ag fields in June and July. Lastly, CWA will conduct a program participant survey the following winter (2020) to gather information and feedback such as agricultural and economic benefits/draw backs, ease of participation, ways to improve, and the likelihood of re-enrollment.

***Expected Benefits:***

This program has the potential to provide extensive acreage of critical habitat for nesting birds in the Sacramento Valley, alleviating a serious wildlife-agriculture conflict. Expected benefits include increasing regional mallard and other ground nesting bird (e.g. pheasants, northern harries, etc.) production, program development, analysis of its efficacy, summary of costs, and possible agronomic and wildlife benefits. There is also potential to develop protocols for the use of drones to conduct surveys of fields for nests and broods. This is a simple, economical solution that in practice can be used to benefit locally breeding wildlife and provide farmers with a monetary incentive for a commodity with relatively low market prices without losing significant value of their crop. If successful, this practice could be applied on a broader scale in-state (NECA), and possibly in other wheat growing regions of the country faced with this issue. It also has the potential to expand by including other commodities and practices; i.e. barley, triticale, hay, alfalfa, vetch, and cover crop fields harvested for seed.

### ***Literature Cited***

California Audubon. 2015. Protection, Restoration and Enhancement of Tricolored Blackbird Habitat. US Department of Agriculture, National Resource Conservation Service; Regional Conservation Partnership Program.

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/programs/farmland/rcpp/?cid=nrcseprd987406#Project%20Summary>

Central Valley Joint Venture. 2006. Central Valley Joint Venture Implementation Plan – Conserving Bird Habitat. U.S. Fish and Wildlife Service, Sacramento, CA.

Coates PS, IA Dwight, J Kohl, KM Andrie, and ML Casazza. 2015. Annual data summary 2013-2014: monitoring and research on ring-necked pheasant (*Phasianus colchicus*) in the Sacramento Valley and Sacramento-San Joaquin River Delta of California. USGS Western Ecological Research Center: Final Data Summary.

Coates PS, IA Dwight, B Brussee, and JP Fleskes. 2016. What's driving pheasant declines? California Waterfowl Association Magazine; Fall Issue 52-27.

Fleskes, JP, S Skalos, J Kohl, and D Loughman. 2014. The ring-necked pheasant (*Phasianus colchicus*) in California: current status and factors possibly related to population trends. USGS Western Ecological Research Center: Data Summary.

Skalos, D, and M Weaver. 2019. California waterfowl breeding population survey report. California Department of Fish & Wildlife Branch/Waterfowl Program, Sacramento, CA; Annual Report.