

CALIFORNIA WATERFOWL DELAYED WHEAT HARVEST PROGRAM

2020 Pilot Program Report Summary

California has demonstrated that post-harvest flooded rice fields act as surrogate wetlands for wintering migratory birds. Now California Waterfowl has shown it's not only possible, but cost-effective, to use small-grain fields as surrogate uplands to benefit waterfowl that nest in California.

In February 2020, California Waterfowl supporters stepped up to help fund an innovative pilot program that seeks to mitigate a key wildlife-agriculture conflict constraining the state's mallard population: the destruction of duck nests during harvest. This summary recaps key findings of our full program report. ✍

WHAT THE PROGRAM DOES

In the Sacramento Valley, small-grain fields provide ideal nesting habitat for mallards, providing dense cover that protects nests from predators. But farmers typically begin harvest in early- to mid-June, when most nests should be hatching. Harvest either destroys nests or exposes them to predators, and it can kill hens.

This program provides incentives for farmers who agree to delay grain harvest until July 1-15 so nests can hatch. The incentive payments offset risks including crop degradation, fire and weed growth.

FARMER RESPONSE

Farmers responded enthusiastically to the program, applying to enroll nearly 11% of the Sacramento Valley's wheat fields. Funding constraints were the only factor limiting enrollment; we ultimately enrolled one-fourth of applicants: 17 fields in Colusa, Sacramento, Sutter and Yolo counties, totaling 1,751 acres.

The majority of growers opted for the latest harvest period (July 11-15) for the highest pay rate (\$40/acre). This suggests that the reward of the incentive payments outweighed the risk of crop loss.

PROGRAM RESULTS

Success means hens incubate their eggs and guide their ducklings out of the field when they're ready – a phenomenon that would be expensive to gauge. However, CWA biologists measured what they could, surveying enrolled fields twice a month, counting the number of breeding pairs flushing from or landing in the fields over a five-minute period between sunrise and 7 a.m.

From this and other research, we concluded:

- Fields located close to rice or wetlands were the most attractive to ducks, holding 3.5 and 5.3 observed breeding pairs per field, respectively. Few breeding pairs

were confirmed in fields whose only nearby water sources were irrigation ditches (0.4 per field).

- A survey of a control field found one nest per acre with a nest success rate of 33%, more than double what's required to sustain a breeding population.
- Pairing our observations with existing research, we can conclude this program likely added one duck per acre to the state's mallard population with minimal staffing investment and no interference with natural nesting behavior. At a cost of \$34 per duck, this is more cost-effective than other methods currently used to mitigate this wildlife-agriculture conflict.
- Data from ag-nesting hens fitted with GPS transmitters suggests they will nest in croplands repeatedly in the same year and in consecutive years.
- Of the farmers surveyed, all but one said they'd participate again (the one just wasn't sure), and 80% said their crops were not significantly compromised.

THE FUTURE

Most breeding-waterfowl conservation efforts focus primarily on natural upland habitats, but we know ag fields are heavily used by waterfowl throughout the spring and summer. Given that, it doesn't make sense to invest solely in natural-habitat solutions.

Investing in programs that improve the odds for wildlife in ag fields at minimal cost, without labor-intensive and potentially destructive interventions, is low-hanging fruit for conservationists.

CWA sought, but didn't receive, grant funding to continue this program in 2021. However, the Natural Resources Conservation Service is looking to incorporate delayed harvest into its programs. That interest, coupled with strong farmer response and promising data from the field, signals pivotal momentum.

To capitalize on that momentum, we are seeking private donations to continue the program in 2021, with two goals: enroll more fields, focusing on the most productive; and expand data collection. Additional data will demonstrate the program's efficacy and help secure sustainable funding to scale up the program and achieve measurable improvements for California's mallard population.