

To: Pheasants Forever and the California Department of Fish and Wildlife

From: U.S. Geological Survey, WERC Research Team

Subject: May – June 2016 Pheasant Project Update

May – June 2016 Summary Bullets

- Conducted 39 experimental rooster crowing counts
- Monitored 60 pheasants (57 VHF, 3 GPS)
- Obtained 699 VHF telemetry locations
- Obtained 237 GPS telemetry locations
- Recovered 13 mortalities
- Monitored 41 nests (7 active, 14 successful, 20 failed)
- Monitored 14 broods (11 active, 3 failed)
- Conducted 67 predator surveys (raven/raptor)
- Conducted 57 microhabitat surveys

This document is an update specifically related to monitoring and research objectives for the Central Valley ring-necked pheasant research project during the 2016 season as of 30 June. This document does not represent a completed data analysis and findings. Instead, the purpose of this update is to provide you with a summary of our efforts, as well as observations regarding movements, reproduction, habitat, and predators from the field perspective. This information is preliminary and is subject to revision. It is being provided to meet the need for timely best science. The information is provided on the condition that neither the U.S. Geological Survey nor the U.S. Government may be held liable for any damages resulting from the authorized or unauthorized use of the information.

Rooster Crowing Count Study

During April and May 2016, we conducted 39 experimental crowing count surveys at five study sites. Our primary objective was to estimate the frequency of individual male pheasant crows relative to the time of day. We also sought to estimate the likeliness of double counting male pheasant crows during a standard four-minute crowing count interval. The surveys were conducted at randomly selected pre-established crowing count stations from 45 minutes before sunrise to one hour after sunrise. One observer identified one to three individual male pheasants that could be reliably heard during the survey, and recorded the exact times at which each individual pheasant crowed. Another observer listened and recorded the exact times at which all male pheasants crowed at that station. The observers remained at a single station for the duration of the survey. These experimental crow counts were conducted in supplement to the standard two- and four-minute crow counts done at each study site. Standard crowing counts were conducted at least three times at each site between the first week of April and the first week of May. Results of these assessments will be included in the annual data summary following the end of the field season.

Telemetry Monitoring

We carried out telemetry on a sample of pheasant across multiple populations ranging from the Sacramento-San Joaquin River Delta to the Klamath Basin to accomplish the following study objectives: 1) estimating demographic rates, 2) estimating space use patterns, 3) developing an integrated population model, and 4) identifying factors that limit and regulate population growth. During May and June 2016, we obtained 699 ground telemetry locations on 57 active VHF units (Gray Lodge WA, $n = 12$; Mandeville Island, $n = 5$; Yolo Bypass WA, $n = 8$; Lower Klamath NWR, $n = 9$; Roosevelt Ranch, $n = 14$; Little Dry Creek, $n = 9$). An additional four VHF collars deployed at Lower Klamath NWR and one VHF collar deployed at Little Dry Creek were not relocated in May or June, because the birds either moved out of the study area or the VHF units ceased functioning. We also collected 237 GPS telemetry locations from three pheasants outfitted with GPS transmitters at Lower Klamath NWR. We stopped receiving GPS telemetry locations from these pheasants after 24 May.



Female pheasant hiding in the brush at Gray Lodge WA

Reproduction. —We have monitored 41 nests (7 active, 14 successful, 20 failed) across the six sites as of 30 June. Fourteen nests were monitored at Gray Lodge WA (2 active, 5 successful, 7 failed), four nests were monitored at Mandeville Island (2 successful, 2 failed), eight nests were monitored at Yolo Bypass WA (1 active, 4 successful, 3 failed), three nests were monitored at Lower Klamath NWR (1 active, 2 failed), seven nests were monitored at Roosevelt Ranch (1 active, 1 successful, 5 failed), and five nests were monitored at Little Dry Creek (2 active, 2 successful, 1 failed). Six nests were depredated, two were abandoned, three nest sites were

flooded during incubation, and three nests failed because the nesting females were killed at or near their nest. We monitored 14 broods (11 active, 3 failed) across the six study sites as of 30 June. Broods are considered successful if at least one chick is present after 50 days.

Mortalities. —We recovered 13 mortalities across all field sites during May and June. Three were recovered at Gray Lodge WA, two were recovered at Mandeville Island, three were recovered at Yolo Bypass WA, three were recovered at Lower Klamath NWR, one was recovered at Roosevelt Ranch, and one was recovered at Little Dry Creek. One female at Gray Lodge WA, Yolo Bypass WA, and Little Dry Creek died at or near their nest site. The female recovered at Little Dry Creek was found decapitated at her nest site with her wings and internal organs still intact, which suggests that she was killed by an avian predator. The female recovered at Gray Lodge WA had only her breast, back, and leg meat eaten, which also suggests that she was killed by an avian predator. The female recovered near her nest at Yolo Bypass WA was also believed to be killed by a predator. However, only bone fragments and feathers were found, which suggests that a mammal killed her or scavenged her carcass. Since January 2016, we have recovered five mortalities at Gray Lodge WA, four at Mandeville Island, 11 at Yolo Bypass WA, six at Lower Klamath NWR, 11 at Roosevelt Ranch, and 12 at Little Dry Creek.



Mortality found cached by a mammal but completely intact at Yolo WA (seen here unburied by observer so collar could be recovered)

Microhabitat and Avian Predator Surveys

We conduct microhabitat surveys at all nest locations and at the first three brood locations. In addition, we conduct 10 minute point count surveys for ravens and raptors at each nest location and at the first three brood locations. During these surveys we also document the presence of livestock and anthropogenic subsidies such as roads, buildings, fences and farms. As of 30 June, we have conducted 67 raven/raptor and 57 microhabitat surveys.

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