

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

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

Subject: June 2017 Pheasant Project Update

June 2017 Summary Bullets

- **Deployed 36 VHF collars on females during Spring 2017**
 - 1 VHF collars at Gray Lodge WA
 - 8 VHF collars at Mandeville Island
 - 21 VHF collars at Lower Klamath NWR
 - 4 VHF collars at Roosevelt Ranch.
 - 2 VHF collars at Little Dry Creek Unit, UBBWA
- **Captured, banded, and extracted blood from 2 males**
- **Collected 12 total blood samples from wild pheasants**
- **Obtained 346 VHF telemetry locations**
- **Recovered 27 mortalities**
- **Monitored 58 pheasants (VHF)**
- **Located 32 nests (4 active, 12 successful, 16 failed)**
- **Monitored 12 broods (9 active, 1 successful, 2 failed)**
- **Conducted 56 predator surveys (raven/raptor)**
- **Conducted 49 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 2017 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

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Rooster Crowing Count Study

During spring (March – May) of 2016 and 2017, we conducted a total of 47 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 or two 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.

Trapping Efforts

We use night-spotlighting techniques to capture adult pheasants at night using an ATV. However, pervasive rainfall and sodden field conditions throughout winter and early spring precluded trapping efforts until April when field conditions improved. A total of 36 VHF collars were deployed on female pheasants during April and May 2017 across five field sites. We deployed one VHF collar at Gray Lodge WA, eight at Mandeville Island, 21 at Lower Klamath NWR, 4 at Roosevelt Ranch, and 2 at the Little Dry Creek unit of Upper Butte Basin WA. We were unable to deploy transmitters at Yolo Bypass WA due to flood conditions during the trapping season. Including the surviving hens marked during the 2015 and 2016 field seasons, we monitored a total of 58 active VHF collars deployed across five field sites as of 30 June 2017.



Captured female being positioned for blood extraction at Lower Klamath NWR

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 February – June 2017, we obtained 476 ground telemetry locations on 58 active VHF units (Gray Lodge WA, $n = 4$; Mandeville Island, $n = 11$; Lower Klamath NWR, $n = 23$; Roosevelt Ranch, $n = 10$; Little Dry Creek, $n = 10$). Most marked females across all active sites have stayed within the same field they were captured. However, several of the females at Roosevelt Ranch have moved back and forth from a fallowed field on the southwest corner of the property to an active wheat field off property.



Successful re-nest at Little Dry Creek; Hatched 6 June

Reproduction. — Females began incubating nests during the first week of April, and the first nest was located on 5 April. We have located 32 nests (4 active, 12 successful, 16 failed) across five sites as of 30 June. Seven nests were monitored at Mandeville Island (2 successful, 5 failed), five nests were monitored at Lower Klamath NWR (2 active, 3 failed), nine nests were monitored at Roosevelt Ranch (1 active, 4 successful, 4 failed), and 11 nests were monitored at Little Dry

Creek (2 active, 5 successful, 4 failed). Two nests at Mandeville Island and one at Lower Klamath NWR failed because the incubating females were killed on or near their nest. Additionally, two nests at Lower Klamath NWR and two at Roosevelt Ranch were abandoned. Broods are considered successful if at least one chick is present after 50 days post-hatch. Of the 12 broods monitored across the five sites, one was successful, two failed, and nine are still active.

Mortalities. — We recovered 31 mortalities across five field sites during February – June. Three mortalities were recovered at Gray Lodge WA, five at Mandeville Island, 14 at Lower Klamath NWR, six at Roosevelt Ranch, and three at Little Dry Creek. Two females were killed by farming equipment, five females were killed by mammalian predators, and three were killed by avian predators. Many of the carcasses were recovered after field conditions improved in the spring and there was not enough evidence to indicate a cause of mortality. Many of the carcasses were highly decomposed and only bone fragments remained.

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, horses, and anthropogenic subsidies such as roads, buildings, fences and farms. As of 30 June, we have conducted 56 raven/raptor and 49 microhabitat surveys across five field sites.



Technician searching for nest in large upland at Lower Klamath NWR

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