

Large Mammal Advisory Committee

Approved Project

QUARTERLY PROGRESS REPORT

Project Name: Estimation of Abundance of the Pacific Deer Herd Using Fecal DNA

Quarter: 3rd: January through March 2015/ FY 14/15 (months/FY)

**Summary of cumulative 2014 Field Work**

Start Date: field work started on June 23, 2014.

Total # of Samples Collected: 629 (includes 415 samples for this study and 214 post-fire samples archived for future analysis)

**Summary of cumulative 2013—2014 Lab Work**

Total # 2013 DNA Samples collected: 480

Total # 2014 DNA Samples collected: 415\*

Total project samples collected: 895

No. of samples fully processed\*\* to date: 484 samples

No. of samples pending processing until funding becomes available in FY 2015/2016: 411

\*Full processing of a fecal sample involves DNA extraction, followed by duplicate attempts at polymerase chain reaction (PCR), electrophoresis, and fragment analysis, and, lastly, comparison of duplicate allele calls and formation of a consensus genotype.

**Progress and preliminary results**

The average number of pellet groups sampled per transect run is 3.7. The average range across runs per transect by season was 0.5 to 12.3. The maximum number of pellet groups collected on a single transect was twenty (Fig 1.). Population estimates for each transect in 2013 is illustrated in Figure 2.

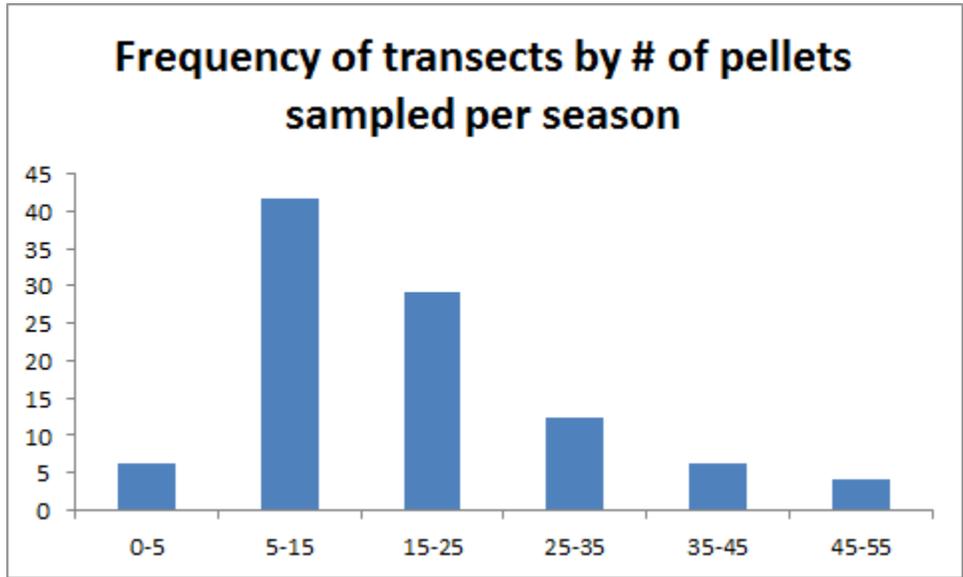


Fig.1. Frequency distribution of pellets sampled per season.

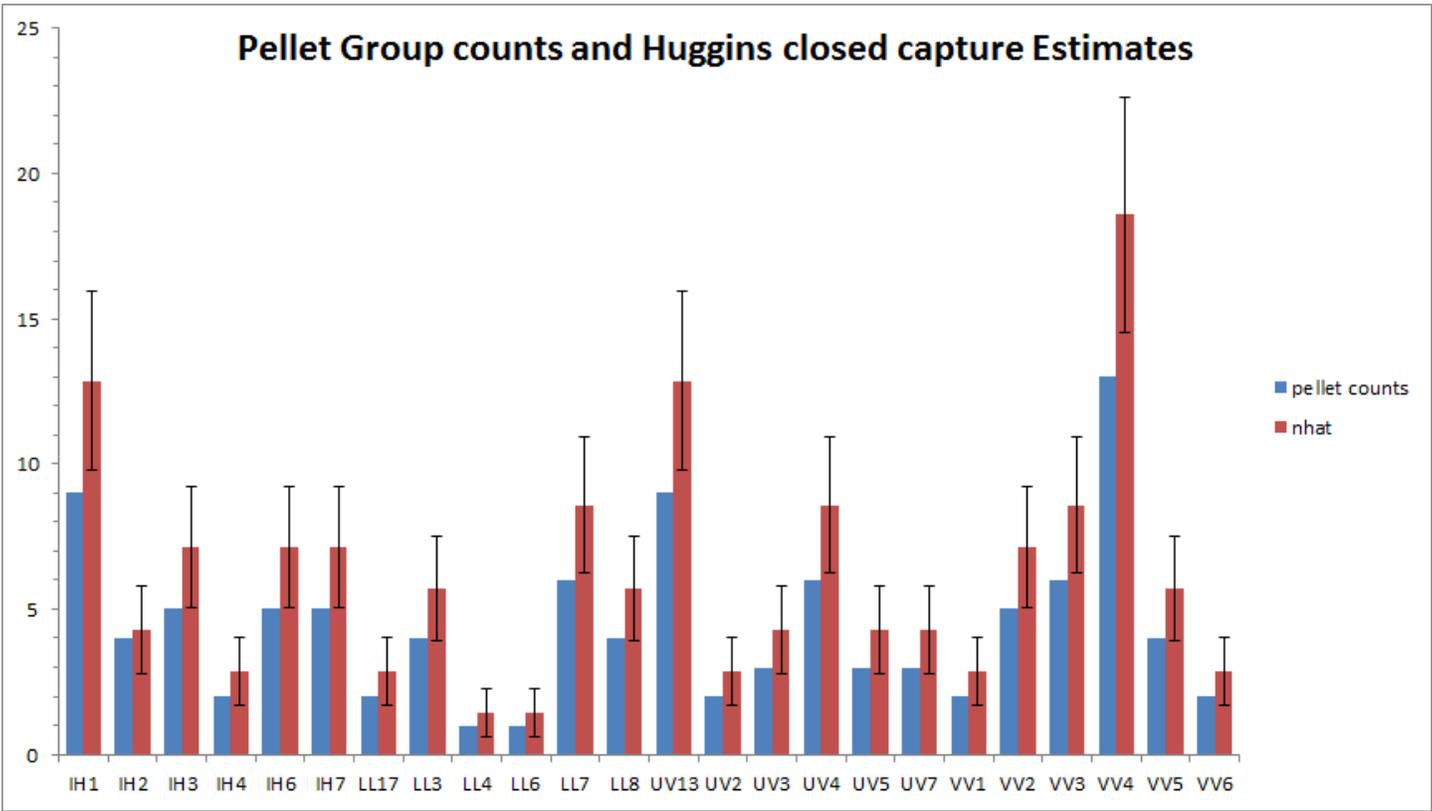


Fig. 2. Pellet counts with population estimates for each transect in 2013.

## **Proposed Post-Fire Study**

On September 13, the King fire erupted near the project area. The fire reached the western boundary of the study area and burned over 97,000 acres. The area burned is designated a Pacific Deer Herd holding area and winter range. All pre-fire samples (n=895) have been collected, processing is in progress, and data analysis is pending. From October to November 2014, we collected samples (n = 214) from three post-fire runs on 13 transects in the Ice House, Van Vleck and Loon Lake sampling areas.

In order to further study the population dynamics of this herd, Dr. Sacks of U.C. Davis, submitted a grant proposal for consideration to the Big Game Management Program to process samples collected immediately after the fire and to continue collecting fecal pellets for one more season to increase the robustness of the population estimate and to determine if the King Fire had any effect on the population.

### **Work Anticipated for Next Quarter:**

Continue analysis of 2014 data once the fiscal year spending constraints are met (funding was allocated by fiscal year). Funds for FY 2014/15 have been exhausted. Further work cannot be done until the next fiscal year begins. An amendment to the contract to remove this constraint was submitted, but has not yet been approved.

Writing the final report will begin in July 2015, unless funding is granted to continue the study for one more year. If additional funding is granted, an interim population report that incorporates data from 2013 and 2014 will be submitted in the fall of 2015.

### **Funds Expended:**

	<u>This quarter</u>	<u>Total to date</u>
Personnel:	0	\$ 50,722.00
UC Davis Contract	\$50,333.29	\$ 78,508.35
<u>Operating Expense:</u>	0	\$
Total:	0	\$