



2012

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### Recommended Citation

Gee, Jennifer (2012) "Causes and Consequences of Mixed-Species Coveys of California and Gambel's Quail and Their Hybrids,"  
*National Quail Symposium Proceedings*: Vol. 7 , Article 121.  
Available at: <http://trace.tennessee.edu/nqsp/vol7/iss1/121>

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# CAUSES AND CONSEQUENCES OF MIXED-SPECIES COVEYS OF CALIFORNIA AND GAMBEL'S QUAIL AND THEIR HYBRIDS

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## ABSTRACT

California (*Callipepla californica*) and Gambel's quail (*C. gambelii*) hybridize where their distributions overlap. Outside of the area of overlap, pairs are known to form within the covey. I observed two mixed-species coveys within the hybrid zone and examined if pairing occurred within the coveys. I compared hatching success and survival of chicks between resident within-covey pairs to immigrant pairs. Isolated coveys could become inbred, given that choice of conspecific mate may be constrained by small population size. I measured relatedness between quail for each individual that paired within the covey, and tested whether it was more or less related to its mate than to other individuals in the covey of the same and opposite sex. The hybrid zone between *C. californica* and *C. gambelii* appears to be bounded by ecological forces rather than genetic incompatibility. Clinal allelic and plumage trait differences between *C. californica* and *C. gambelii* map closely into the ecotonal area of hybridization. Quail species have fluid geographical distributions but extraordinarily plastic mating systems. This dynamic may help explain why quail have a higher incidence of hybridization than most other bird species.

**Citation:** Gee, J. 2012. Causes and consequences of mixed-species coveys of California and Gambel's quail and their hybrids. Proceedings of the National Quail Symposium 7:332.

**Key words:** California quail, *Callipepla californica*, *C. gambelii*, Gambel's quail, hybridization

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