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Department of Defense Legacy Resource Management Program

PROJECT NUMBER (15-631)

**Status and Distribution Modeling of Golden Eagles
on Southwestern Military Installations and
Overflight Areas: Assessing “Take” for this
Sensitive Species at Risk**

Monitoring Report

**MONITORING REPORT ON THE STATUS OF GOLDEN EAGLES ON SOUTHWESTERN
MILITARY INSTALLATIONS AND OVERFLIGHT AREAS**



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2016 Monitoring Report

SUMMARY

This report is to compliment the Department of Defense Legacy Program 15-631 Final Report (Diamond et al. 2016; 15-631). We provide information on the status of golden eagle [*Aquila chrysaetos*] (GOEA) nest surveys conducted with combined efforts of both the Arizona Game and Fish Department's (AGFD) Nongame and Wildlife Contracts Branches. These combined results were used for robust data analyses across the landscape-scale of the southwestern United States. We are only providing the results of the monitoring component of this project. Please refer to the Final Report (Diamond et al. 2016) for more detail on study area, methodology, and analyses.

We located 914 golden eagle nesting territories and sampled 521 nesting territories multiple times within year across the three year duration of this study (Figures 1 and 2). The purpose of these multiple surveys was to determine if nesting was attempted. If nesting was attempted, did the nest remain occupied long enough to produce fledglings. We created a three stage sampling design in order to categorize each nest. If we detected golden eagle activity at a given nest during only the first survey we categorized the nest as attempted but failed (1). If we detected golden eagle activity at the nest site during only the first and second survey we categorized the nest as successful into the nestling period (2). If golden eagle activity was detected during all three survey periods we classified the nest as successful into the fledgling period (3). We used this design in order to estimate the golden eagle nest success across the MTR status of each territory. Of those 521 eagle nesting territories we detected 237 occupied territories (Figure 2). Of these occupied territories 85 occurred in Military Training Routes (MTR) and the remaining 152 were outside of MTR (Table 1; Figure 2). For the Great Basin sample territories we detected two active territories in period one and none in the other two periods outside MTR. Within MTR in the Great Basin BCR we observed 50% of nest attempts made it to the fledgling period. In the Southern Rockies we detected 40 occupied territories outside of MTR and 17 within MTR in period 1, 23% of these nests made it into the fledgling period in both MTR and non-MTR (Table 1; Figure 2). Similarly, in the Sonoran and Mojave Deserts we detected 43 and 18 active nests in non-MTR and MTR, respectively. Only 9% of nests in the non-MTR were still occupied in the Fledgling period while 27% were occupied in the MTR. In the Sierra Madre Occidental BCR we detected 65 and 44 occupied nests in the non-MTR and MTR, respectively. By the Fledgling period 17% and 18% of the nests in the non-MTR and MTR, respectively, were still occupied in the Sierra Madre Occidental. We detected only two total nests in the Chihuahuan Desert BCR as sampling was very limited in this BCR. Overall, 19% of nest detected (16% in non-MTR and 24% in MTR) in period 1 reached the Fledgling stage (period 3).

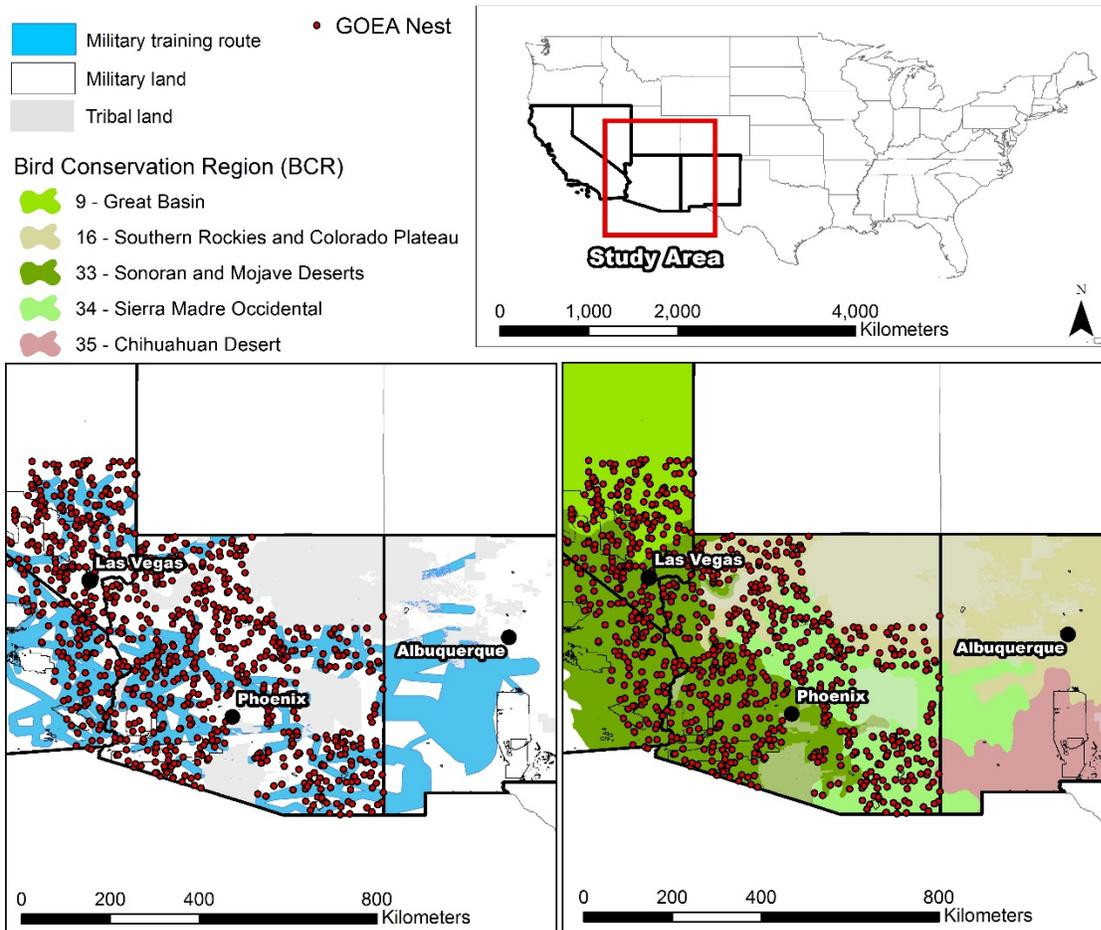


Figure 1. Map of the 914 golden eagle nesting territories included in our analysis

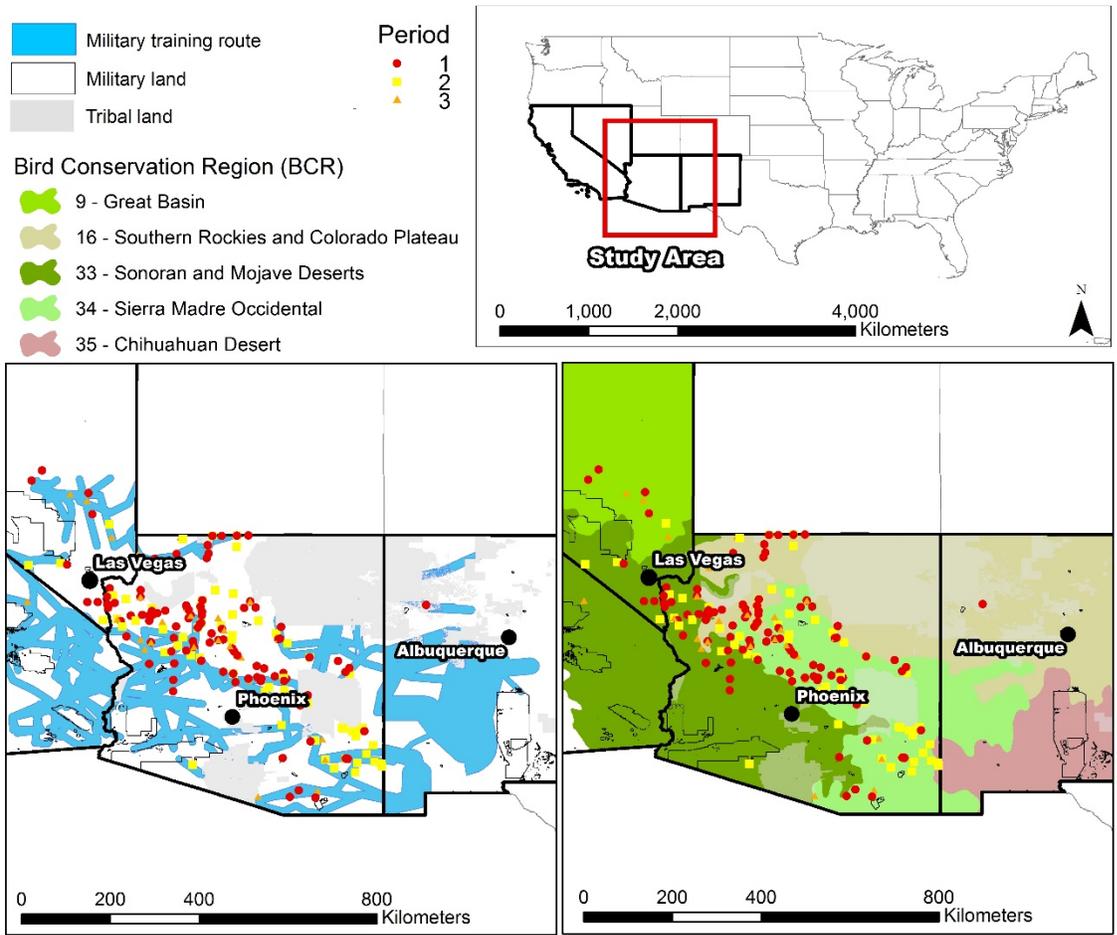


Figure 2. Map of the 521 Golden Eagle nests monitored multiple times. Each point is marked with the breeding period reached.

Table 1. Summary of Golden Eagle breeding status across BCR, MTR and three breeding periods.

BCR	MTR	Period 1	Period 2	Period 3
Great Basin	0	2	0	0
	1	6	4	3
Southern Rockies And Colorado Plateau	0	40	7	9
	1	17	3	4
Sonoran and Mojave Deserts	0	43	11	4
	1	18	5	5
Sierra Madre Occidental	0	65	25	11
	1	44	12	8
Chihuahuan Desert	0	2	2	0
	1	0	0	0
Sum	0	152	45	24
	1	85	24	20

LITERATURE CITED

Diamond, J.M., E. Scobie, M. D. Piorkowski, D.P. Sturla, and M.F. Ingraldi. 2016. Status and distribution modeling of golden eagles on southwestern military installations and overflight areas: assessing “take” for this sensitive species at risk – year 3. Final Report, Legacy 15-631. Arizona Game and Fish Department, Wildlife Contracts Branch, Phoenix, Arizona, USA