GOLDEN EAGLE ECOLOGY IN THE RHODOPE MTS, BULGARIA AND GREECE

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The golden eagle is the only large raptor that has not gone through a population crash in the Balkans in near historic times and maintains relatively intact geographic range and healthy populations. However, little is known about the ecology of the Balkan golden eagles and particularly that of the Rhodope Mts. The researchers aided by Natural Research Ltd through a Mike Madders Research Award are attempting to bridge this knowledge gap with a two year research project that will establish a baseline for future monitoring and address some basic ecological questions.

Table 1: Territory Occupancy Record for 2012 in the Rhodope Mountains (Bulgaria and Greece)

COUNTRY	N of Territories	N of Monitored Territories	N Occupied (Indeterminate – Unoccupied)
GREECE	33	32	28 (3 – 1)
BULGARIA *(E Rhodopes)*	16	13	12 (0 – 1)
TOTAL	49	45	40 (3 – 2)

To this end 45 field visits were conducted in Greece and 21 in Bulgaria in 2012 (E Rhodopes only, data from Western Rhodopes not compiled yet), whereupon 45 territories were controlled for occupancy (Table 1, Figure 1). In Greece all of the 33 territories apart from 5 were confirmed as occupied, and in Bulgaria 12. Of those, the breeding outcome was known for 21 territories (it was not possible to follow all territories in this season), and the pooled productivity was 0.43 chicks / pair.

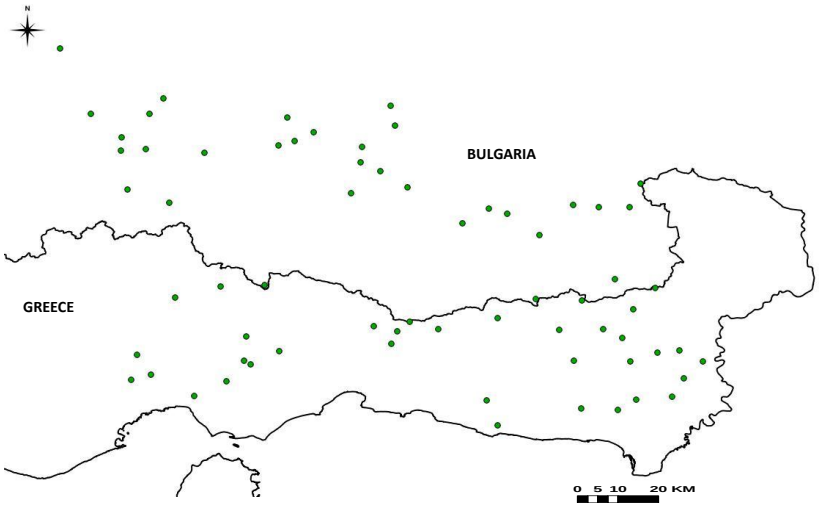

Figure 1: Identified Golden Eagle Territories in the Rhodope Mts

Of the 32 pairs that it was possible to age in 2012, 20 consisted of fully adult birds, 11 were mixed and 1 of exclusively immature or sub adult birds (Table 2).

Table 2: Identified age structure of the Rhodopes GE population (in parentheses total number of individuals per age class)

Pairs	GR	BG	TOTAL
Adult	13 (40)	7 (18)	20 (58)
Mixed	10	1	11
Immature	1 (11)	0 (1)	1 (12)
Unknown	8 (13)	2 (3)	10 (16)

Four golden eagles were recovered poisoned in one incident (Fig 2) in Greece and two more were reported poisoned in the previous year, from an unoccupied but otherwise suitable area on the Bulgarian border.

Figure 2: Two of the four Golden Eagles found poisoned in one of the worst raptor mass poisoning incidents in Greece in decades. Nestos Gorge, February 2012. ©L Sidiropoulos

No link was found between a surrogate of stocking densities in Greece and eagle densities (modeled as Nearest Neighbor Distances – NNDs) but a landscape metric derived from CORINE Land Cover group analyses, revealed higher densities in areas with high landscape diversity (Fig 3). The same analyses will be run on the combined dataset at the end of the project.

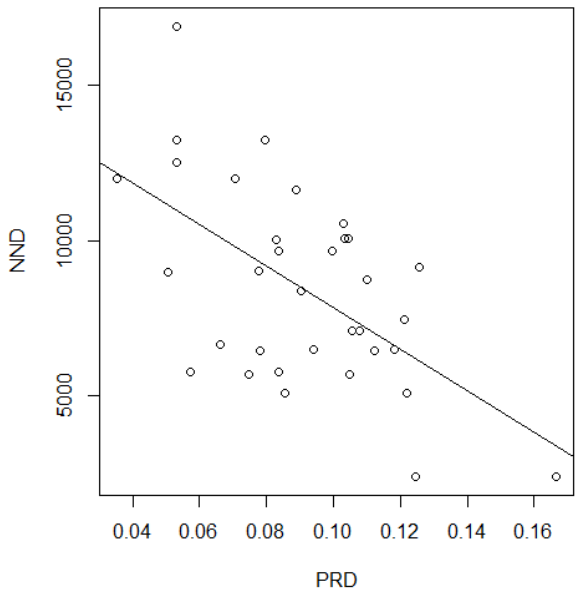

Figure 3: The significant (P<0.0001, R^2 0.31) relationship between GE NNDs in Greece and Patch Richness Density (PRD, number of Patch types / 100 ha) landscape metrics as calculated in FRAGSTATS 4.0 from Corine Land Cover derived thematic maps. The Landscape Metrics were assessed within PAT simulated territories. Equation is (-14540) – 66820 * NND

Prey remains will be collected in 2013 from at least 10 nests in the study area. An additional 20 field visits will be carried out in unmapped areas per country through the year to compile a full population census.