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## Abstracts

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## ARTIFICIAL BLACK GROUSE BREEDING IN TUSCANY (APENNINE REGION OF ITALY)

*Marco Bagliacca, Giorgio Calzolari, Maurizio Folliero & Paolo Mani*

Captive breeding of black grouse *Tetrao tetrix* is justified because this species is declining in most of the alpine areas, at the edge of its distribution area. Only reared black grouse originating from the alpine population, can be used for re-introducing the species in the alpine areas where it has disappeared or is endangered. For this reason in 1988 the Orecchiella natural park (44.1°N, 1200m a.s.l.) started the artificial breeding. The experimental breeding has been always based on fixed pairs; it started with 6 pairs originating from East Alps. In 1993-94, eight young birds, obtained from eggs coming from Central Alps, were taken for crossbreeding. There are altogether 18 males and 13 females. The pens built in 1988 were provided with complete net floors and some additional pens were built in 1993 and in 1996. Nutrition was based on a three-phase feed (laying, growth, and rest). Since it was not possible to use merely artificial feed, some natural long-fiber supplementary feed (*Pinus mugo* for adults, and *Vaccinium myrtillus* for growing birds) with siliceous grit was always given. The laying period in the experimental breeding farm starts in May and ends in July (mean 5 eggs/female). Eggs are artificially incubated (99.7°F, 47%R.H). The incubation period is 24.5 days. The mean hatchability is 40%. Chicks are reared in commercial heated cages for the first 4 weeks before transferred to the pens. Pairs are formed in the winter.

## CAPERCAILLIE BREEDING SUCCESS IN SCOTLAND IN RELATION TO PREDATOR ABUNDANCE AND HABITAT

*David Baines, Robert Moss & Ron W. Summers*

Capercaillie *Tetrao urogallus* breeding success was estimated from fourteen forests in Scotland during 1991-97. Forest structure, ground vegetation, and predator abundance, were assessed. Breeding performance differed ten-fold between forests and also between years. Capercaillie bred more successfully where predators were fewer. Breeding success (chicks per female) and the proportion of female capercaillie with broods was negatively correlated with carrion crow *Corvus corone* abundance and with PCA predator scores. Mean brood size was negatively correlated with fox abundance. Years when breeding success was low were associated with high temperatures in May and higher rainfall in mid-June. Weather did not appear to affect brood size, only the proportion of females with broods.