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Abstracts

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## PATHOLOGY ENCOUNTERED IN CAPTIVE BLACK GROUSE BRED IN THE EXPERIMENTAL GAME BIRD FARM OF THE NATIONAL CORP OF FORESTERS AT ORECCHIELLA NATURAL PARC (TUSCANY, APENNINE)

*Paolo Mani, Giacomo Rossi & Marco Bagliacca*

The authors describe the pathology encountered in black grouse *Tetrao tetrix* bred in captivity during the period 1988-1998 in the experimental game bird farm of the National Corps of Foresters in the nature Park of Orecchiella in the upper Tuscanian Apennines. The research consisted of clinical and epidemiological examinations and anatomy/histopathological tests on birds found dead. For laboratory diagnostic procedures, virological, bacteriological and parasitological tests were performed on pathological material taken during necropsy and on fecal samples or other material taken from the game farm. A total of 51 black grouse of various age were necropsied. The various laboratory diagnostic procedures revealed the following pathologies:

- bacterial: Coligranulomatosis, aerosacculitis and *E. coli*-associated enteritis, spirochete-associated typhlitis;
- protozoan: *Trichomonas* spp. and coccidia-associated enteritis, and/or typhlitis;
- parasitological: capillariasis of the oesophagus and crop;
- stressors: heat stroke, injuries and fractures, cannibalism, perforation of the gizzard, etc.

Clinical control in the game bird farm and samples taken from live animals often revealed epidemiological risks and permitted suitable treatments and preventive measures to be taken.

## EFFECT OF LANDSCAPE STRUCTURE ON HABITAT SELECTION AND SURVIVAL OF BLACK GROUSE BROODS

*Arto Marjakangas, Ari Nikula & Anu Koski*

We studied the effect of landscape structure on habitat selection and survival of black grouse *Tetrao tetrix* broods during 1990-93 in eastern central Finland at various spatial scales, using data on radio-marked hens with brood. As landscape data we used classified satellite images. Landscape characteristics around mean brood locations and random points were analysed in Geographic Information System (GIS), using four different radii (200 m-2.5 km). Broods avoided landscapes with mature forest (dominant habitat type) and agricultural land, and they preferred landscapes with open bog, other open habitat including clearcut, and pine bog, especially at larger spatial scales. Furthermore, the amount of habitat patches and edges were higher in brood landscapes than in random landscapes. These results suggest that broods preferred fragmented landscapes, and that edge effect may play an important role in their habitat selection. Considering all years, 68 hens fledged one or more chicks, while 32 hens lost their broods totally by early August. However, we found no important differences in landscape structure between successful and unsuccessful broods.