

MODERN WILDLIFE MANAGEMENT: EXAMPLE OF FOUR SPECIES IN THE PROVINCE OF ALESSANDRIA (ITALY)

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Abstract - Man has affected biological equilibria by increasing the number of useful species and by reducing populations that tend to expand markedly and thus threaten agriculture. Management has often been limited to simple operations of repopulation and/or reintroduction without verification of the effects of the interventions. However, the first step of a correct wildlife management is to know the status of the *faunal patrimony* to be managed, therefore regular counts/censuses must be carried out. Here we report operations that have been carried out by the Province of Alessandria for the management of two species of particular *faunal-hunting* interest (the hare and pheasant) and of two *nuisance species* (the crow and the magpie).

Résumé - Gestion moderne de la faune sauvage: exemple de quatre espèces dans la Province d'Alexandrie (Italie). L'homme a altéré les équilibres écologiques en augmentant la concentration des espèces utiles et réduisant celle des espèces nuisibles. Parmi les dernières on peut souligner les espèces qui endommagent les cultures. La gestion s'est souvent limitée à réintroduire ou repeupler le sauvage sans connaître la densité de la population et sans s'occuper des effets de ces opérations. Au contraire la moderne gestion de la faune prévoit, avant tout, l'opération basilaire du recensement des populations. Dans ce travail on rapporte les opérations conduites par la Province de Alessandria au but de contrôler les contingents de deux espèces d'intérêt pour la chasse (la lièvre et le faisán) et deux espèces nuisibles à l'agriculture (la corneille et la pie).

Key-words: Wildlife management, Censuses, Culling, Hare, Pheasant, Corvids

Mots clés: Gestion de la faune sauvage, Recensements, Elimination, Lièvre, Faisán, Corvidés.

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1. Introduction

Throughout time, man has affected biological equilibria and in some cases has caused real devastation. There has been a general tendency to increase the number of useful species (for food sources or for hobby) and contemporaneously to control populations that tend to expand markedly and thus threaten agriculture or the survival of other animals.

Very often, however, management has been limited to simple operations of repopulation and/or reintroduction without any scientific criterion (*e.g.* release of subjects of dubious genetic profile or of allochthonous origin, without phases of familiarization and of

environmental improvement, or simple ready-to-hunt releases) and without verification of the effects of the interventions. In recent decades, it has been seen that correct wildlife management has the purpose of maintaining animal populations at optimal levels that are in equilibrium with the environmental resources and other populations (Caughley & Sinclair, 1994). Past experiences permit the creation of efficient models for the management of different animal species. For this, it is necessary first of all to know the status of the *faunal patrimony* to be managed. In Italy, accurate censuses of the relevant species have only rarely been performed.

A study was initiated in the province of Alessandria to improve the knowledge and for further management purpose. Here we summarize the methods applied, and the main results obtained for the management of two species of particular *faunal-hunting* interest (the hare and pheasant) and of two *nuisance* species (the crow and magpie).

2. Methods

The province of Alessandria covers an area of 3,560 km² in NW-Italy (Fig. 1). The cultivated plains represent the 35% of the territory, while hills and the mountain area represent 53% and 12% respectively. There are about 450,000 inhabitants, in large majority located in the plain districts. Towns, road and other man-made constructions occupy 268 km², thus the surface available for wild game is 3,292 hundred ha. The administration of the Province established managed 51 zones (total of 43,345 ha): here the hunting activity was not allowed, and in December-January the two species of hunting interest (hare and pheasant) were captured and transferred to other areas.

In the 51 managed zones regular counts/censuses were carried out, with methods suitable for the species involved (Sutherland, 1996; Malacarne *et al.*, 1997). In detail: *i.* Hares. Two nocturnal censuses were performed each year, in spring (March) and in autumn (October), along transects 10 km long on average; the area illuminated by the spotlights extended up to 100 m from the vehicle. With this method, we carried out censuses in 51 different zones (Fig. 2). The data are expressed as densities (ind./10 ha). *ii.* Pheasants. The counts were performed at 1.106 listening points, all of them located in the 51 managed zones. Counts were made by two observers during 5 minutes from each point. The census days were located in the middle of April, when the birds were easily detectable for their conspicuous pre-mating behavioural activity and vegetation did not hide the pheasants. *iii.* Crows and Magpies. An analysis of the compensation for damages paid from



Fig. 1 - Province of Alessandria (NW Italy).

1993 to 1996 by the Provincial Administration was conducted, in order to localize the districts where the operations for corvid density reduction would have more effect. From 1996 onward the Administration authorized the use of Larsen traps to capture corvids, and each authorized person delivered report cards for all the captures during the year.

3. Results

i. Hares - An average 1.100 individuals were counted from 1996 to 1998 in the 51 census zones (Fig. 2). This provides an estimate of about 7,000 hares for the entire territory managed as non-hunting areas. In January and February the beats took place in the protected areas and from 3,000 to 4,500 hares were captured, in order to transfer them to the hunting areas of the province. *ii.* Pheasant. In 1997 a total 3,015 individuals were recorded in the 1.106 listening points. The number of detected individuals in each census zone ranged from 0.2 to 9.6 (Fig. 3). *iii.* Corvids. An average of 74.6 million Italian Lire (38,700 Ecu per year) has been paid in the last 4 years as compensation for damage done by these birds to agriculture (Fig. 4).

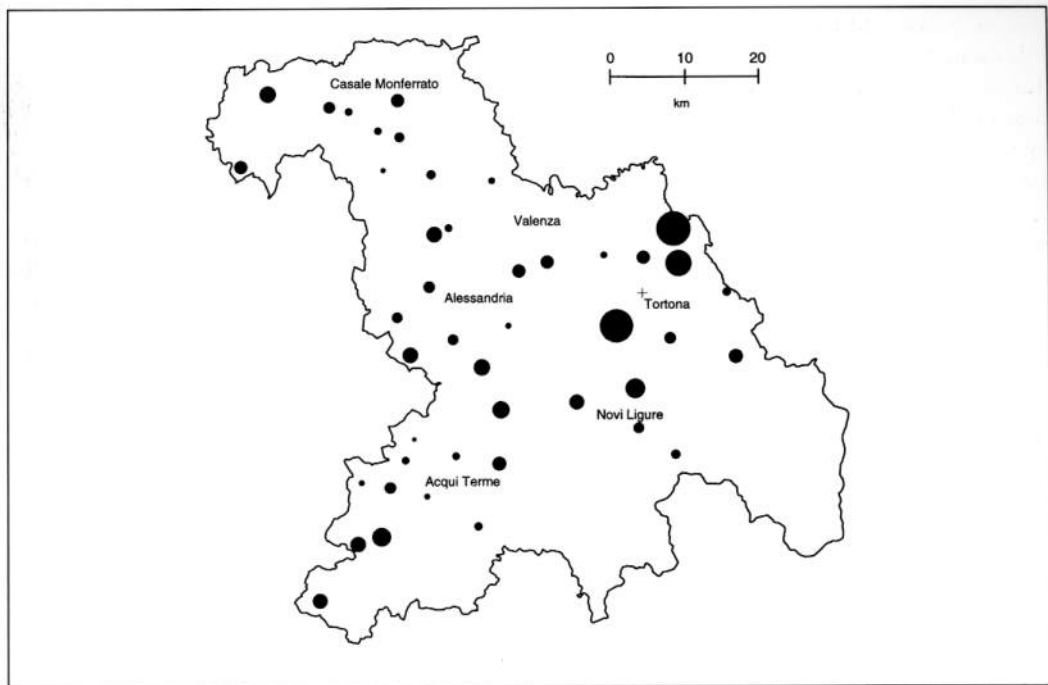


Fig. 2 - Census of the hares in the Alessandria province (October 1996). The size of the dots is proportional to the number of individuals per 10 ha, from minimal value (absence) to maximal value (8.5 ind./10 ha).

The compensation requests came mainly from the plain sectors, in the northern part of the province (Fig. 5). In these same sectors most corvid captures later occurred. The Larsen traps were very effective: a total of 4,800 and 5,900 crows and 400 and 600 magpies were captured in 1996 and 1997, respectively.

4. Discussion

Conservation and management of the organisms within natural areas depends on an adequate assessment of the areas faunal abundance. Often natural areas (preserves, refuges, and parks) have been set aside by local or state governments prior to detailed biological inventories, and effective management and protection of those areas are hampered by not knowing which are the densities of the species that are present. Wildlife management has become more sophisticated with evaluation and monitoring schemes, but the develop-

ment and implementation of effective procedures are ultimately the key to successful sustainable use (Taylor & Dunstone, 1996). In this paper we illustrated the schemes utilized to census hares and pheasant in the province of Alessandria. They probably represent a good compromise between the scientific need of obtaining reliable data, and the pragmatic request of simple methods from the non-professional volunteers that carry on the censuses. Future research are needed to evaluate the effects of the harvesting on the populations of hares and pheasant of the province, and to develop a sustainable exploitation of these species. Concerning the corvid removal, an accurate monitoring of their density throughout the territory of the province is requested in order to evaluate whether the culling effectively lead (as a preliminary analysis of transect data from university personnel suggest) to reduced population sizes of the species captured.

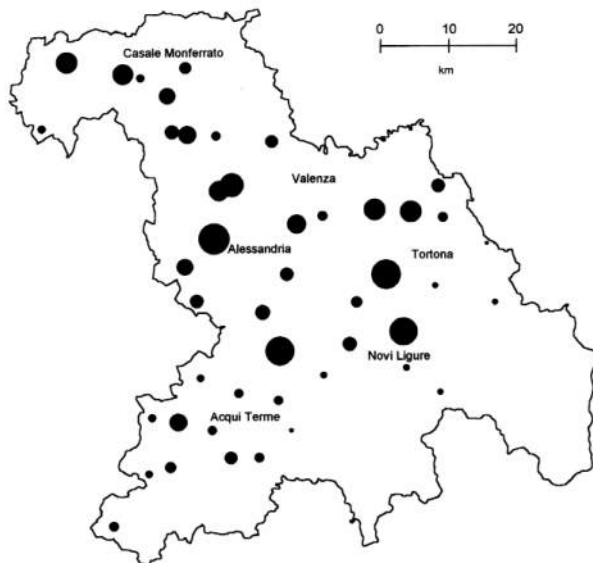


Fig. 3 - Census of the pheasants in the Alessandria province (April 1997). The size of the dots is proportional to the average number of individuals in all census point of each zone, from minimal value (absence) to maximal value (9.6 ind./census plot).

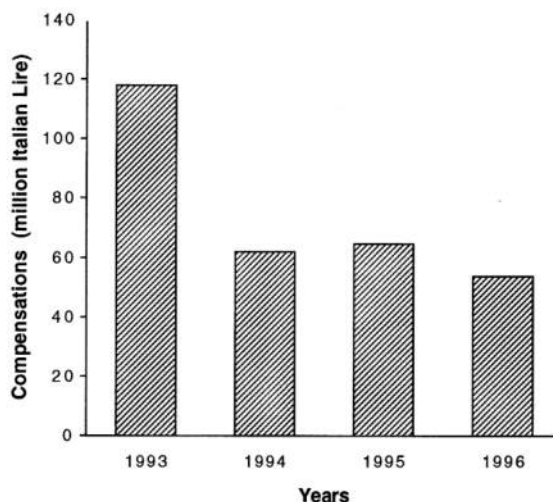


Fig. 4 - Compensation for crows and magpies damages in the Alessandria province (million Lire in the 1993-1996 period).

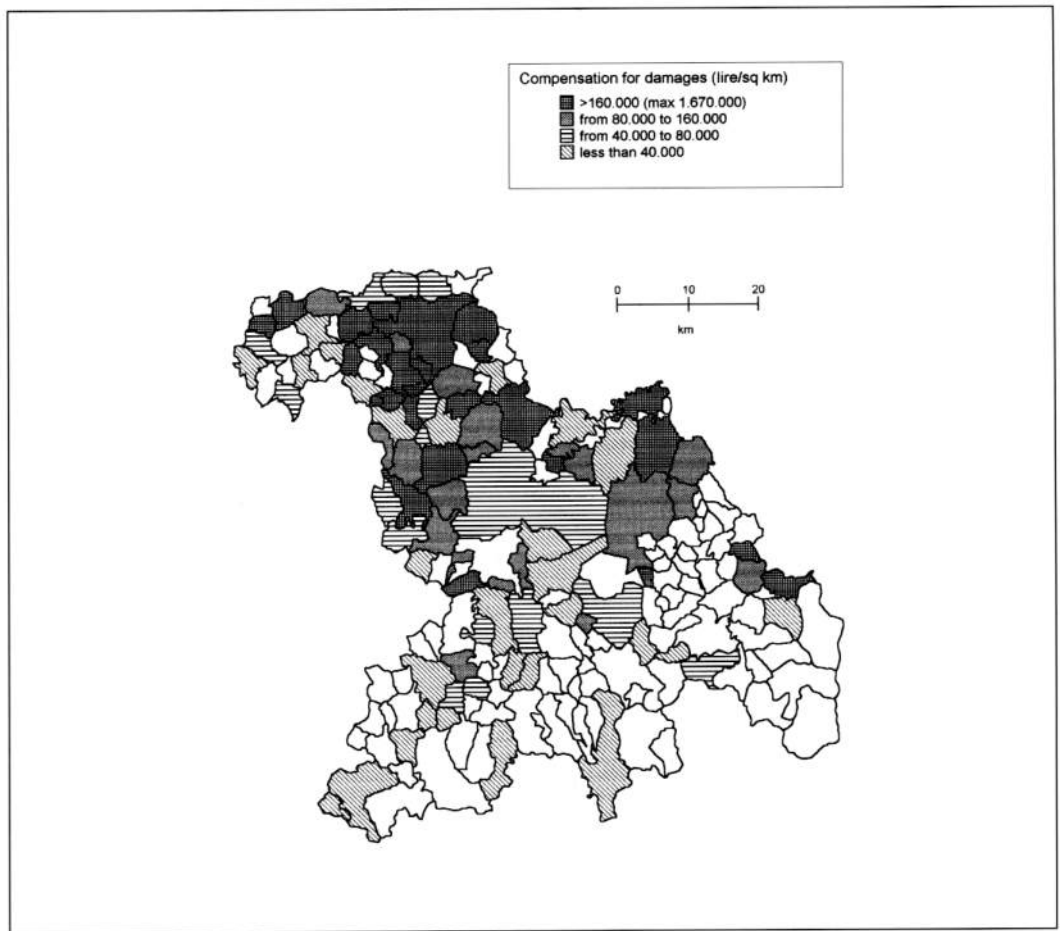


Fig. 5 - Compensation for crows and magpies damages (localization of compensation).

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