The Corncrake *(Crex crex)* in France

Bernard Deceuninck

1. Introduction

During the last ten years, studies were carried out in France on the distribution and biology of the corncrake. These studies were in the form of national inventories, agro-environmental schemes and LIFE programmes.

Together with general publications on the status and distribution of avifauna (e. g. atlases), they give some interesting information about the evolution of corncrake distribution in the country since the 1930s.

2. Development of knowledge about the corncrake in France

The first national census of corncrakes was coordinated in 1983-1984. This project gave the first precise estimate of national population and distribution pattern. Nevertheless other studies and some "old" publications also give good figures on corncrake distribution and allow assessment of the breeding range reduction in France.

Since 1930, corncrake distribution has been analysed in seven main stages:

2.1. "Old" data: situation between 1930-1940 and 1950-1960

A bibliographical analysis, based on regional and local publications (Dubois 1989) showed that, up to the 1930s, corncrakes were present as breeders in 74 out of 95 French départements. The species was only absent in the Mediterranean regions.

The same analysis for the years 1950-1960 showed that the corncrake disappeared in 20 départements, or a 27% distribution reduction in 30 years (Fig. 1).

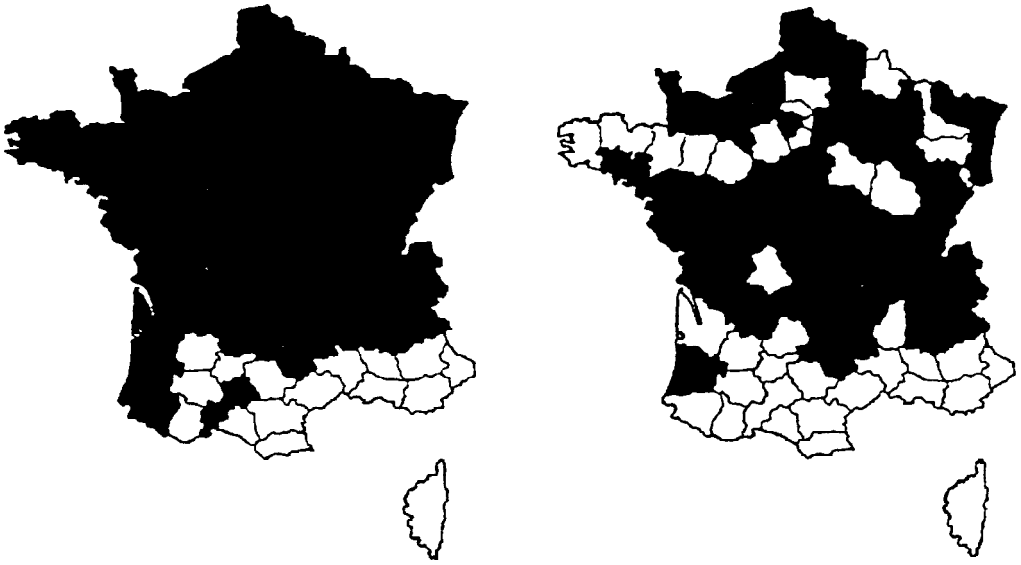

Figure 1: Corncrake distribution in France départements (black) during the two decades 1930-1940 (left map) and 1950-1960 (right map), following Dubois (1989). The maps show that the species was widespread in most regions in France by the beginning of the 20th century, and that a range contraction occurred 50 years ago.

2.2. During the 1970s: First National Atlas 1970-1975

In the first national atlas of breeding birds in France (YEATMAN 1976), the distribution map showed that the corncrake underwent a reduction and fragmentation of range. The main regions were: Centre-West, East and North. The latter was divided into four sub-areas. The corncrake did not breed anymore in the Pyrenees, or in many areas in the centre, or in the Alps (Fig. 2).

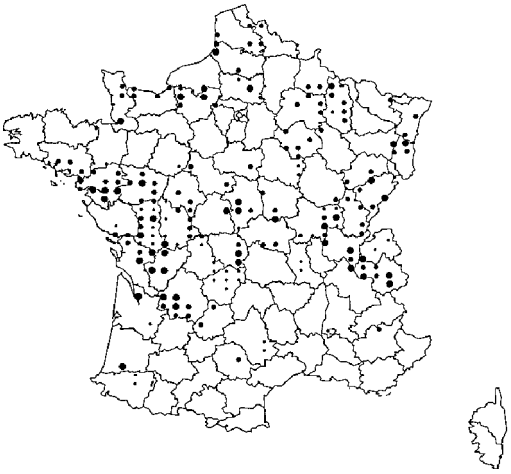

Figure 2: Corncrake distribution during the first national atlas (1970-1975) following YEATMAN (1976), published in YEATMAN-BERTHELOT & JARRY (1994).

2.3. The first Corncrake National Survey: 1982-1984

The first corncrake national survey (BROYER 1985) showed that the species was disappearing in some areas which were important during the 1970s, such as the Dordogne valley (SW), Vendée (centre-W), Sologne and Brenne (centre), Nord-Pas-de-Calais and Somme estuary (N). Thanks to good coverage, some populations, unknown during the first Atlas period, were discovered in the North-East (Fig. 3).

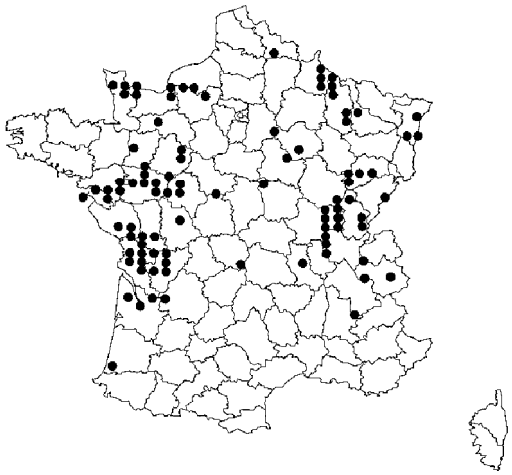

Figure 3: Corncrake distribution during the first corncrake survey (1982-1984) following BROYER (1985).

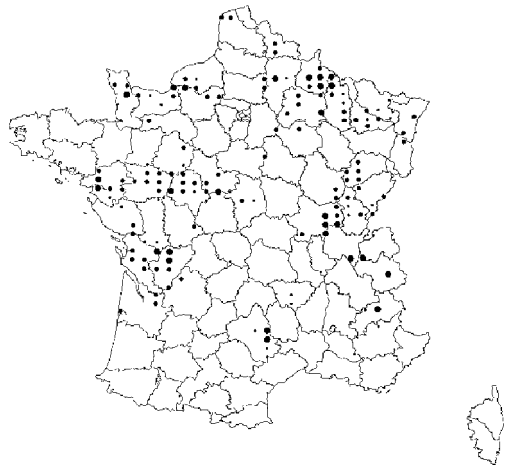

Figure 4: Corncrake distribution during the second national atlas (1985-1989) published in YEATMAN-BERTHELOT & JARRY (1994).

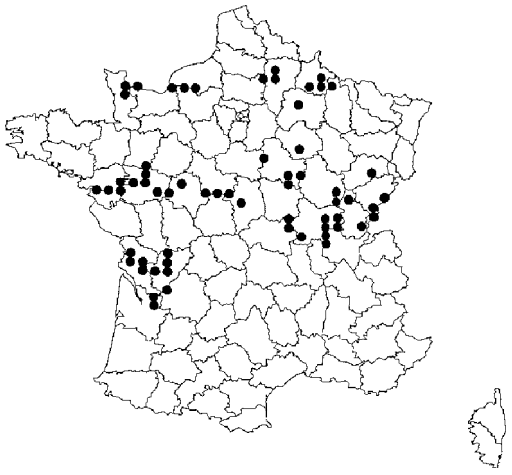

Figure 5: Corncrake distribution during the second corncrake survey (1991-1992) following BROYER & ROCAMORA (1994).

2.4. During the 1980s: the second National Atlas 1985-1989

The second national atlas of breeding birds in France (YEATMAN-BERTHELOT & JARRY 1994) covered the 1985-1989 period. The distribution of the corncrake was very similar to the 1982-1984 survey. The main difference was an individualisation of main breeding areas, with disappearance of breeding sites, mostly in the centre of the country (Fig. 4).

2.5. The Second Corncrake National Survey: 1991-1992

The second corncrake survey (Broyer & Rocamora 1994) showed continuous reduction of the range in France and the disappearance of corncrake in Alsace and Lorraine (NE) and in the Alps (SE). A reduction of main areas was also observed (Fig. 5).

2.6. During the 1990s: distribution in IBAs and main sites (1992-1997)

Counts were made between 1992-1997 in main sites within the frame of conservation programmes, including LIFE contracts, IBAs inventory and ESA schemes (Jourde et al. 1998, Deceuninck & Blanchon 1996a, 1996b). These recent data show that the species is still present in sites where it was not mentioned in 1991-1992. Furthermore, calling males were censused in sites where the corncrake has never been mentioned earlier.

A maximum of 1191 calling corncrakes are present in IBAs in France, or 90% of the national population (Fig. 6).

2.7. The third Corncrake national survey: 1998

The effective of Corncrakes counted during the 1998 survey reached more or less 1200 calling males (some data are not yet available), or roughly the same population as in 1991-1992.

Thanks to a significant increase in Basses Vallées Angevines and a better coverage in general, the population size seems to be stable. Nevertheless, decreases did occur in some important areas: Val de Charente, Normandy, Burgundy,… The map of Fig. 7 shows current distribution.

3. Distribution and important areas of corncrake population

The 12 main sites have 82% of the estimated national population (table 1). Of these, 11 are included in IBAs, totalling 78% of the national popu-

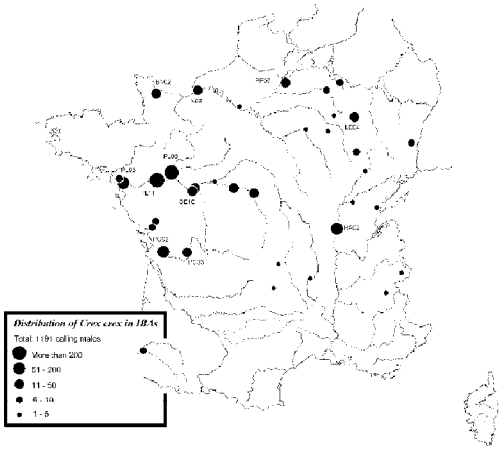

Figure 6: Corncrake distribution in French IBAs (data: 1992-1997).

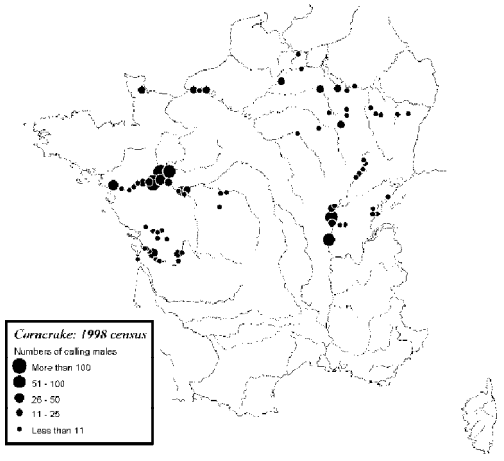

Figure 7: Corncrake distribution during the third national survey (1998).

lation. A total of 30 French IBAs have corncrake breeding populations, with a maximum of 1191 calling males (87% of the national population).

4. Size and development of the national corncrake population

4.1. Size of the national corncrake population

a. Population trend: the four national estimates
Four national estimates of the breeding population in France are available for the last two decades (table 2): 1983-84 (BROYER 1985); 1991-92 (BROYER & ROCAMORA 1994), combined data 1992-1997 (JOURDE et al. 1998, DECEUNINCK & BLANCHON 1996) and 1998 (DECEUNINCK & BROYER in prep.).

The 1992-97 estimate is somewhat higher than the 1991-92 survey total. This is partially due to population increases, thanks to conservation actions (e.g. Basses Vallées Angevines-PL06: 280-300 calling males in 1992, 380-411 in 1997, or nearly a 40% increase).

The increase is also due to better counts in some sites (Estuaire de la Seine-HN03 and Val de Saône Bourguignon), where populations were reported as stable in 1994-96.

Nevertheless, 1998 counts confirm the increase of the main population in Basses Vallées Angevines, but also show that the situation is actually worrying in other sites where the species is still decreasing (e.g. Vallée de la Charente-PC02: at least 31% decrease since 1984, GUÉRET & DECEUNINCK 1998).

4.2. Development of population

a. National population trend
A confirmed decrease of this species occurred between the years 1930 and 1990, or 60 years of constant decline and disappearance in many regions (see 2.). Since the early 1990s, the total population seems to be stable.

b. Data accuracy
Data before 1983 are only distribution data, based on regional publications (DUBOIS 1989) and the first national atlas (YEATMAN 1976).

Since 1983, data are complete counts for important and "secondary" sites (sites where the

Table 1: Current distribution of the corncrake in the 12 main sites.

Area		Calling males
Basses Vallées angevines	(IBA PL06)	380-411
Vallée de la Loire	(PL11)	224-235
Val de Saône	(RA02)	100
Val de Saône Bourguignon	(Not IBA)	58-62
Val de Charente	(PC02, Charente-Maritime)	59
Confluence Loire-Vienne	(CE10)	57
Estuaire de la Loire	(PL03)	52-52
Vallée de la Charente	(PC03, Charente)	27-35
Marais du Cotentin	(BN02)	26-31
Estuaire de la Seine	(HN03)	26-31
Vallée de l'Aisne	(PE07)	15-29
Vallée de la Meuse	(LE04)	25

Table 2. National estimates since 1983-84.

Years	1983-84	1991-92	1992-97	1998
Calling males, total national	1600-2200	1100-1200	1249-1370	+/- 1200
Data quality (1-3)	2	2	2	2

species is known as a regular breeder). Some data come also from "marginal" sites (sites where the species is not known as a regular breeder). This means that every marginal site is not surveyed, and the figures for the national populations are slightly underestimated, particularly regarding the size of populations which breed regularly.

c. Examples of population trends in restricted areas

Some sites are surveyed regularly (some every year). These data give good indications of trends not only on a local scale, but also at national level, since they concern most important sites, covering more than 50% of the national population (e.g. Val de Saône, Val de Charente, Basses Vallées Angevines: MOURGAUD & LOIR 1997).

d. Estimate of future national population trend

It is difficult to estimate the future trend of national populations due to a change in agro-environmental measures in France. We fear that corncrake will continue to decrease, except in some areas where specific protection measures are applied (nature reserves, purchased lands,...).

e. Reasons for population trend

The future of ESA schemes is not very optimistic in France. Agro-environmental measures may evolve towards a system which does not sufficiently take into account biodiversity. The ESA Scheme will be replaced by "contrats territoriaux d'exploitation" (contracts of territory exploitation - CTE). CTE will be applied to farms as "exploitation units" and not to specific parcels. We fear a dilution of credits, which will not be directed toward the protection of really sensitive areas. Up to now, no precise application directions have been established at national level. Therefore, it is of major importance for French NGOs of nature conservancy to negotiate the environmental aspects of CTE. NGO representatives should sit on regional committees. CTE should take into account biodiversity conservation and specify concrete management for sensitive species, as is the case in current ESA Scheme contracts.

Even in main sites, where nature reserves are managed for the species, the populations depend mostly on the protection of surrounding habitats. Therefore, agro-environmental measures are vital to preserve habitats and to promote conservation measures in the concerned sites, and should be maintained. Their abolition in important corncrake areas could lead to the species decline.

5. Threats to the corncrake population

The greatest threats in France are earlier and faster mowing and habitat loss.

More chicks, juveniles and flightless moulting adults are killed by new mowing material (tractors > 100 CV and mowers reaching 3 m. wide) which allow faster hay harvest.

Habitat loss is due to: (1) planting of maize, sunflower and poplar, (2) conversion from mowing to grazing and (3) drainage and abandonment of flood plains transform meadows into unsuitable habitats for corncrakes.

Intensification: fertilisation and drainage allow earlier mowing in many areas in France (Alsace, Vendée...) and led to disappearance of the species.

Predators: Fox, Red Kite, cats and crows are reported as corncrake predators in France. No quantitative data are available on the impact of predators on population dynamics of the species.

Though protected, corncrakes are shot every year in France in Autumn. The impact of shooting on this species is not known, but may be high and is due to confusion with other game species and its slow flight making it easy prey.

6. Conservation status

The corncrake has been fully protected in France since 1981. This means that shooting, rearing in captivity, and destroying clutches are forbidden at any time, anywhere in the country.

The species is considered as *Endangered* in France in the new red data BOOK (YEATMAN-BERTHELOT et al., in press.). So, its status did chan-

ge since the publication of the first red list (DUQUET 1994). It was then considered as *vulnerable*.

7. Conservation projects

a. - Nearly 80 % of the national population is concentrated in 11 IBAs. Only eight of these IBAs benefit by some legal and partial legal protection (ZPS-SPA, Ramsar, APB-Prefectoral Biotop Protection, SC-Listed Site, RC-Hunting Reserve, RN-Nature reserve, SGC-Management of purchased lands (LPO, Conservatoires), see table 2. Some designation status of IBAs overlap. Therefore, total protected areas included within IBAs cannot be accurately added together. For instance, in Marais du Coterntin-BN02, the Ramsar site includes 86.5 % of the IBA, and covers the SPA and other protected sites (table 3). The designation level of IBAs is too low, since total protected surface is only 29.6% of the 11 "Corncrake" IBAs. This low level of designation is general in France, since only 16% of total IBA surface is designated as SPAs, and only 15% has some other conservation status (RUFRAY et al. in prep.).

b. - 12 ESA Schemes : benefit 67 % of the national population in the 11 main IBAs and in one site which is not in IBA:

10 out of the 12 ESA Schemes are adapted to corncrake, and include delayed and friendly mowing;

1 ESA Scheme is an important site for corncrake, but is not well adapted, since it does not specify delayed and friendly mowing (HN03);

1 ESA Scheme is a project in PC02.

c. - ACNAT/LIFE: land purchase for corncrake conservation under ACNAT/LIFE programmes occurred in five areas: PL06, PC02, PC03, RA02 and PE07. Nearly 1000 ha of land has now been acquired : 330 ha LPO ; 20 ha Conservatoire de Poitou-Charentes ; 200 ha Conservatoire de Picardie... and managed as nature reserves.

d. - The experimental Corncrake Life-programme 1994-96, concerned six important breeding areas (IBAs PC02, PC03, PL03, PL06, HN03 and Val de Saône bourguignon) with 300 calling males. 137-154 breeding "pairs" were present in

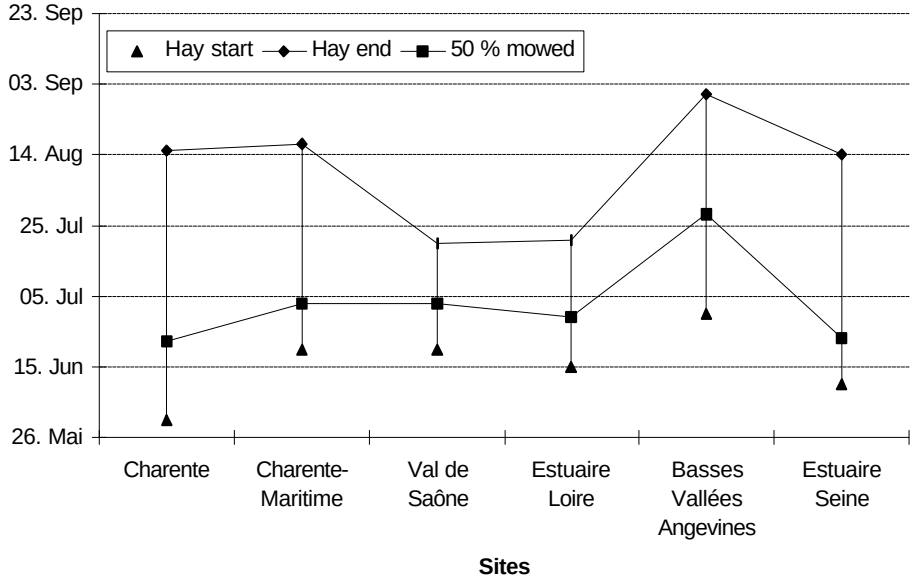

Figure 8: Timing of hay periods in six study areas in 1995, showing that period: dates of start and end vary greatly from one region to another.

Table 3: Conservation Measures in IBAS where Corncrake is present in France.
Numbers of IBAs refer to site names listed in table 1. Designation codes: RAM: site protected under the Ramsar Convention; ZPS: SPA; APB: Prefectoral Biotop Protection; SC: Listed Site; RC: Hunting Reserve; RN: Nature Reserve; SGC:Management of purchased lands (LPO, Conservatoires,...)

granted areas of the experimental scheme (as a maximum, or 45-51 % of the population present in these sites). This programme is aimed at elaborating specifications for grants in future ESA Schemes. Main results detailed in SALAMOLARD et al. (1995), DECEUNINCK & BLANCHON (1996a, 1996b) and DECEUNINCK et al. (1997) are summarised here:

1. The analysis of land-use allowed to quantify habitat loss, changes in meadow affectation and hay timing. It was pointed out that habitat conditions (flooding, grass density, rainfalls, hay timing,...) vary very much from one region to another within the same year (see figure 8) and that conditions are fairly variable from one year to another on the same site. These varying habitat conditions have a direct impact on the timing of breeding and on the reproductive success.

2. Following sites and local conditions, two or three types of contracts have been proposed to farmers on 590 ha of meadows to favour late and friendly mowings.

3. During the three years of the programme, mowing searches have been performed on 970 ha (including areas out of the schemes, for comparisons). They showed 375-385 adult sized corncrakes (adults and full grown chicks), 420-421 chicks and 11 nests. Age estimation of observed birds showed that the breeding period is long in France: young chicks are present in meadows from the end of May till the end of July, and that the production of a second brood is highly probable in at least three sites.

4. Data of mowing impact on corncrake survival showed that friendly mowings significantly reduced the mortality of young birds. The survival rate during classical mowing (inwards) has been estimated at 41 %. The survival rate rises significantly (+ 50%), and reaches at least 61% during friendly mowing (DECEUNINCK et al. 1997).

5. A comparison of mowing timing have been made between granted and ungranted areas. It showed that delayed dates of mowing proposed in contracts actually did delay mowing in granted areas. The average delay was from 12 days to 5 weeks in 1996, following the study areas (figure 9). Nevertheless, the hay period is shorter on granted areas and cover disappears faster. This points out the need for application of further conservation measures, such as corncrake

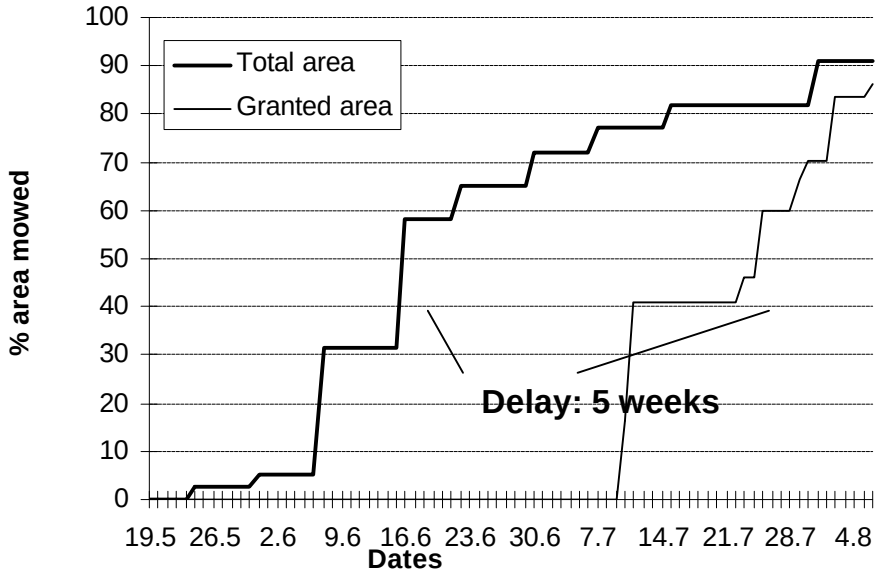

Figure 9: Comparison of hay timing in Charente on granted and ungranted meadows, showing that on granted areas hay timing is actually delayed (5 weeks when 50% area is exploited), but exploitation is accelerated on granted meadows (cover disappeared quicker).

corners, nature reserves, very late mowing... to keep late cover.

6. Field studies and contracts with farmers led to the proposal of concrete measures aimed at preserving corncrake and its habitat in four new ESA schemes.

8. Ongoing or planned conservation and study projects

The only ongoing project co-ordinated at national level is a regular survey. Depending on funding opportunities, a national census of breeding corncrakes should be co-ordinated every 5-7 years. The next update of national population will be produced in 1999, based on a national survey which was co-ordinated in 1998.

Current and future conservation projects include: (1) land purchase of NGOs and Conservatoires (regional bodies of nature conservation) in main sites; (2) negotiation of friendly management for the corncrake and meadow avifauna in ESA schemes and (3) study of the impact of ESA schemes on chick survival and population dynamics. These three projects are regional/local initiatives and are not co-ordinated at national level. The main challenge is to define a way to make compatible the current management of meadows with the survival of the corncrake and associated species.

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