

Breeding waders in France: populations, trends and distributions: 1984–1996

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A census of the breeding waders of France was carried out during 1995–96. Oystercatcher (969–1,020 pairs), Black-winged Stilt (1,532–1,767), Avocet (2,219–2,368), Little Ringed Plover (4,320–5,947), Kentish Plover (1,266–1,457) and Black-tailed Godwit (127–159) all showed increased populations since the previous survey in 1983–84. The following species appear to have stable populations: Ringed Plover (110–123 pairs), Snipe (95–166), Woodcock (100,000–300,000), Curlew (1,698–1,966), Redshank (1,137–1,347), Common Sandpiper (582–857), Dotterel (1–2), Pratincole (28) and Ruff (0–18 females). The latter three species are marginal breeders in France and Pratincole shows strong annual fluctuations. The increase recorded in the number of breeding pairs of Redshank and Common Sandpiper is probably due to better survey-coverage than to a change in the population. Lapwing (12,716–16,073 pairs) and Stone Curlew (5,000–9,000) are decreasing.

Priority national conservation action should be targeted towards Snipe, Lapwing, Stone Curlew and Pratincole. It is emphasised that the population of some species is extremely restricted. Therefore they are vulnerable when they breed outside protected areas.

INTRODUCTION

Wetlands in France are of major importance for migrating and wintering waterfowl, but only marginally important for breeding waders. Seventeen species breed regularly. Most are present in small numbers, with some hundreds of pairs.

The first national survey of breeding waders in France was co-ordinated in 1983–84 by Dubois & Mahéo (1986). Since then, only species-specific surveys (e.g. Stone Curlew: Malvaud 1996) and local surveys have been carried out. (For scientific names of the species mentioned in this paper, please refer to Table 1).

As many sites have been designated as nature reserves during the last ten years, and as major habitat destruction (drainage, land claim, etc.) has occurred over the same period, it was necessary to evaluate the impact of land management on breeding populations of wader species at a national scale. This is why LPO–BirdLife co-ordinated a national survey in 1995–96, with financial support from the French Ministry of Environment (Deceuninck & Mahéo 1998a, 1998b). The main results are summarised here.

METHODS

Field method

First, regional co-ordinators for each département (French administrative region) identified areas to be surveyed. These included all sites considered to afford potential habitat for any of the 15 target species as well as all sites covered during the first national survey in 1983–1984. The target species were all those listed in Table 1 with the exception of

Woodcock and Stone Curlew (which have been censused in other studies, e.g. Rocamora & Berthelot (1999) and Malvaud (1996)).

Names of the sites and geographical co-ordinates were noted on field forms provided to participants who were asked to visit each site in the morning twice between the end of March and early June. All sightings of birds showing breeding behaviour and other evidence of nesting, such as display, nest, chicks, etc., collected during the two visits were considered as breeding records.

Regional co-ordinators summarised all field data and sent survey summaries to the national co-ordinator. Survey summaries consisted of one survey form per species per département with information on population sizes in all sites, département population estimate, trend since 1984 and data quality codes.

Estimation of data quality

Survey coverage was not comparable between every region of France, due to differences in the number of voluntary ornithologists, the areas surveyed, species, habitats, etc. Therefore, the results need evaluation to assess how closely they reflect actual breeding populations. This has been achieved by using standardised codes of data quality provided by the regional and local co-ordinators.

The regional co-ordinators were asked to evaluate the data quality in their region (i.e. département), for every species, following three codes:

- Code 1:** species not well known, no quantitative data, low data quality;



- **Code 2:** species well known, incomplete quantitative data at regional scale and based on extrapolations;
- **Code 3:** very good quantitative data, complete counts in all suitable habitat.

Data quality at national level, or “National Weighted Accuracy” (A_{nw}) was calculated for every species, with the sum of regional accuracies, weighted by the proportion of the national population estimated to be present in each region:

$$A_{nw} = \left[\sum_i^n (A_{wi}) \right]$$

where:

A_{nw} = National Weighted Accuracy;

n = number of départements where species is present;

A_{wi} = Weighted Accuracy of département $i = A_i * E_i/E_{tot}$

where: A_i = data quality of département i ;

E_i = estimated population of département i ;

E_{tot} = total national population

Values of data quality ranged between 1 and 3 (see Table 1). They are classified as follows:

$A_{nw} > 2.5$ and ≤ 3 : Good data quality at national level;

$A_{nw} > 1.5$ and ≤ 2.5 : Medium;

$A_{nw} \oplus 1$ and ≤ 1.5 : Poor.

ESTIMATION OF NATIONAL TRENDS

Simple comparisons of total population estimates from the two national surveys (1983–84 and 1995–96) are not possible, since coverage was not comparable for most species. Therefore, it was necessary to use other information provided by the co-ordinators, concerning regional trends. (Regional trends are often well known, and are of great value for interpreting the results of the national surveys).

For each species, data concerning regional trends (since the previous national survey) were classified using eight codes: +1, 20–50% increase; +2, more than 50% increase; 0, stable, (increase or decrease < 20%); -1, 20–50% decrease; -2, more than 50% decrease; F, yearly fluctuations, with variations >20% (scored as 0); N, new breeding species (scored as +2); X, species disappeared since first survey (scored as -2). Hence, for each species, each region is given a score between -2 and +2.

National trends are obtained from the sum of weighted regional trends:

$$T_{wi} = T_i \cdot \frac{E_i}{E_{tot}}$$

where:

T_{wi} = weighted trend of département i ;

T_i = trend of département i (i.e. +2 to -2);

E_i = population in département i ;

E_{tot} = total national population.

The sum of T_{wi} , for départements with stable populations ($T_i = 0$) is, of course, 0. A means of both by-passing this arithmetical limit and taking into account the stable populations in the national trend, is to multiply the average weighted trend of départements with positive or negative trend ($T_i \neq 0$) by the proportion of national population showing trend (P). This gives the National Weighted Trend (T_{Np}):

$$T_{Np} = \left[\sum_i^n (T_{wi}) \right] P$$

where:

$$P = \sum \frac{E_i (T_i \neq 0)}{E_{tot}}$$

n = number of départements where population is not reported stable ($T_i \neq 0$);

P = proportion of total estimated population in départements where the population is not stable ($T_i \neq 0$).

This National Weighted Trend enables biases arising from differences in coverage at national and regional level between both surveys to be avoided. It also allows valuable data relating to local and regional trends to be incorporated. Resulting national trends are expressed in values ranging from -2 to +2:

- $T_{Np} \oplus -2$ and < -1.5 : strong decline;
- $T_{Np} \oplus -1.5$ and ≤ -0.5 : moderate decline;
- $T_{Np} \oplus > -0.5$ and $< +0.5$: stable (no clear trend);
- $T_{Np} \oplus +0.5$ and $< +1.5$: moderate increase;
- $T_{Np} \oplus +1.5$ and $\leq +2$: strong increase.

RESULTS AND DISCUSSION

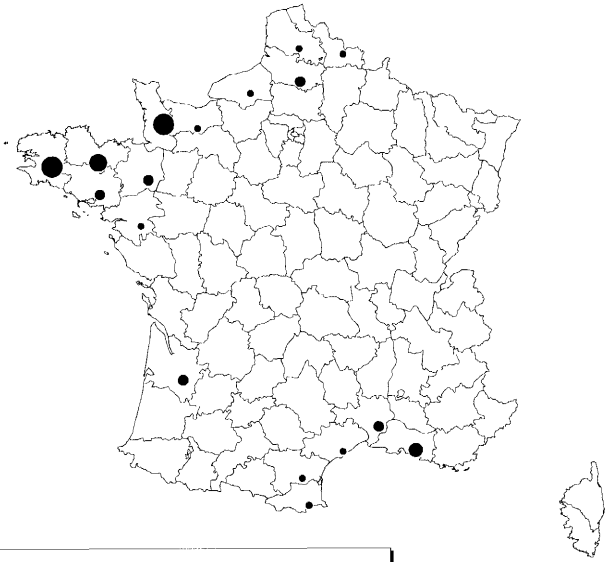
National population estimates as well as information on trends and data quality are set out in Table 1. Only three species have a substantial proportion of their European populations in France: Avocet (6%), Black-winged Stilt (9%), Stone Curlew (11–27%) and Kentish Plover (5–8.5%) (Hagemeijer & Blair 1997).

The breeding distribution, during 1995–96 by French département, for 12 of the 15 species covered by the survey are shown in the Maps (1–12). There are no distribution maps for three species with very limited distributions: Dotterel, Pratincole and Ruff. Two of these have only one known breeding site: Dotterel in the eastern Pyrenees and Pratincole in the Camargue. Ruffs were present in only five sites during the survey period: one in Normandy, one in Vendée and three in Loire-Atlantique. However, no female was seen with chicks. Therefore, Ruff is not considered to be a confirmed breeder during 1995–96. Since then, leks with displaying males have been seen, but only one proved breeding case (female with chicks, Vendée, 1997) (Rétiveau 1997).

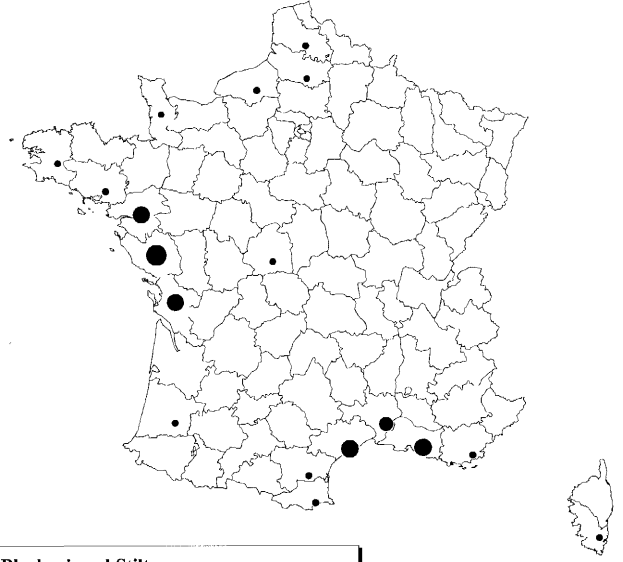
Superficially, the results of this national survey present an optimistic picture: most species show stable or increasing populations in France. Nevertheless, the situation remains worrying for some species. Moreover the results indicate that 12 out of the 17 species have an unfavourable conservation status.

Lapwing and Stone Curlew declined between 1984 and 1996. Snipe, Pratincole and Ringed Plover, while generally

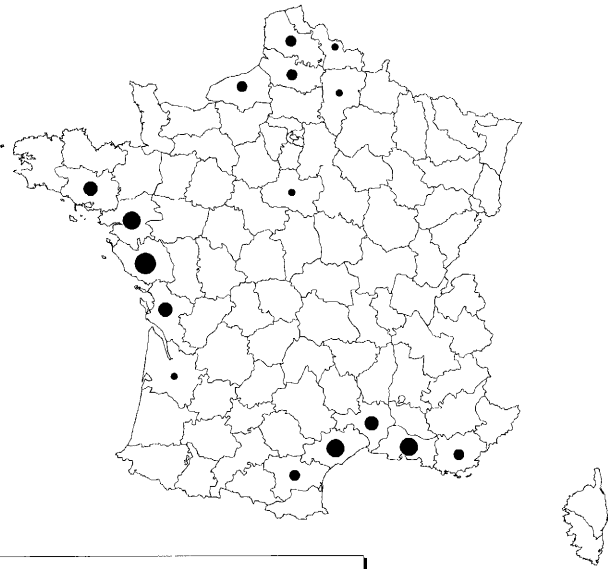




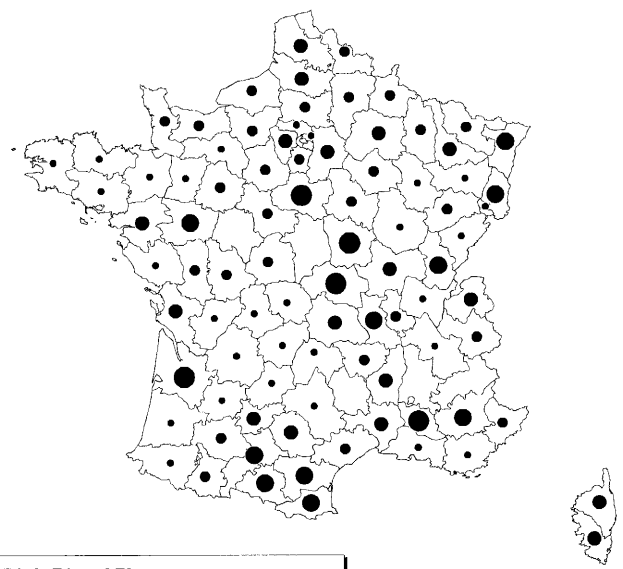
Map 1. Oystercatcher
 Total 969 - 1,020 pairs, 17 départements
 ● > 200 pairs
 ● 101 - 200
 ● 51 - 100
 ● 21 - 50
 ● < 21



Map 2. Black-winged Stilt
 Total : 1,532-1,767 pairs, 18 départements
 ● > 300 pairs
 ● 201 - 300
 ● 101 - 200
 ● 51 - 100
 ● < 51

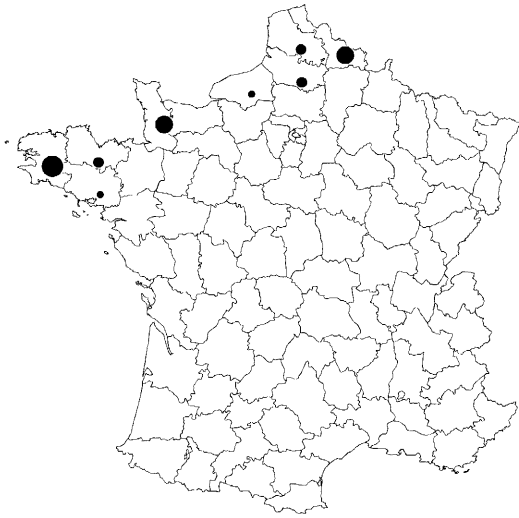


Map 3. Avocet
 Total 2,219-2,368 pairs, 16 départements
 ● > 500 pairs
 ● 201 - 500
 ● 101 - 200
 ● 21 - 100
 ● < 21



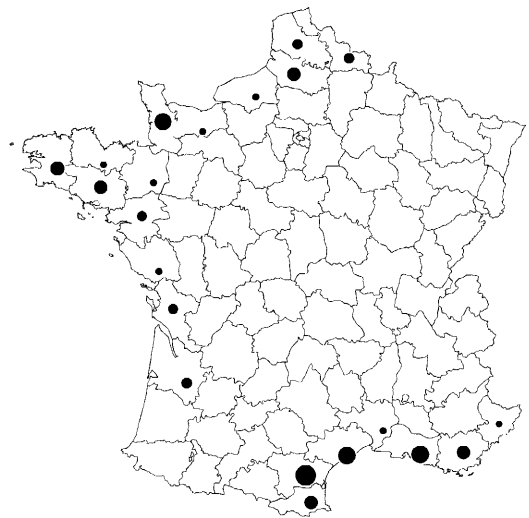
Map 4. Little Ringed Plover
 Total : 4,320 - 5,947 pairs, 88 départements
 ● > 200 pairs
 ● 101 - 200
 ● 51 - 100
 ● 21 - 50
 ● < 21





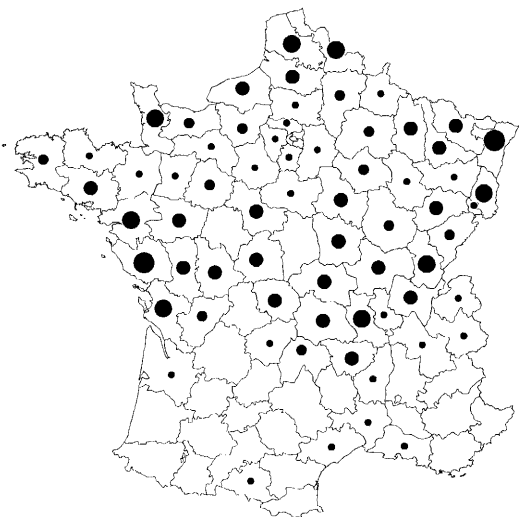
Map 5. Ringed Plover
Total : 110 - 123 pairs, 8 départements

- > 50 pairs
- 16 - 50
- 11 - 15
- 6 - 10
- < 6



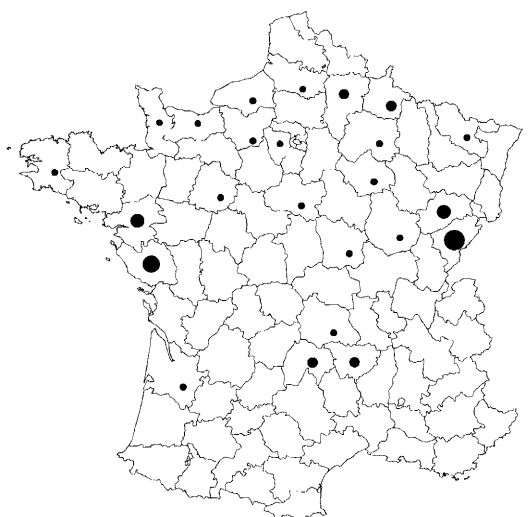
Map 6. Kentish Plover
Total : 1,266 - 1,457 pairs, 23 départements

- > 300 couples
- 101 - 300
- 51 - 100
- 26 - 50
- < 26



Map 7. Lapwing
Total : 12,716 - 16,073 pairs, 67 départements

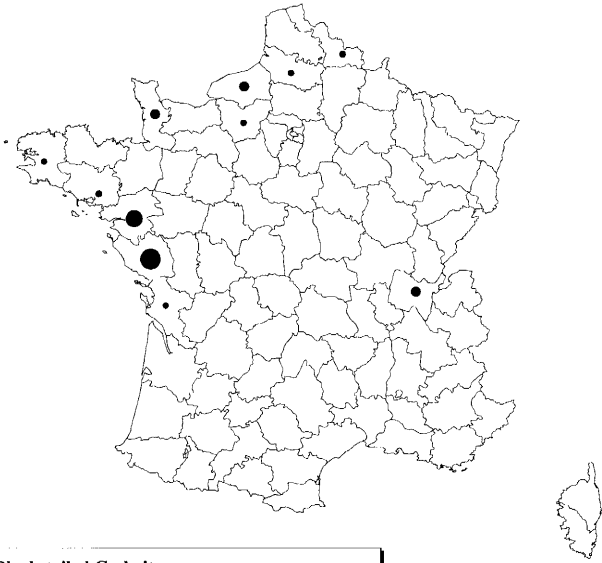
- > 1500 pairs
- 501 - 1500
- 101 - 500
- 51 - 100
- < 51



Map 8. Snipe
Total : 95-166 pairs, 24 départements

- > 40 pairs
- 21 - 40
- 11 - 20
- 6 - 10
- < 6

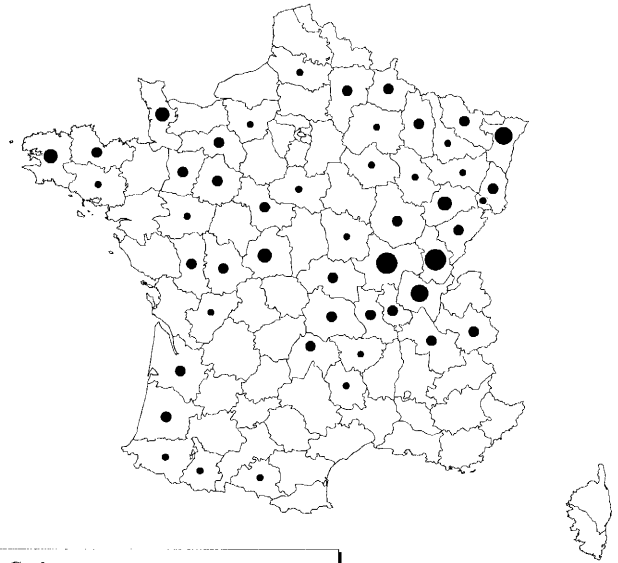




Map 9. Black-tailed Godwit

Total : 127-159 pairs, 11 départements

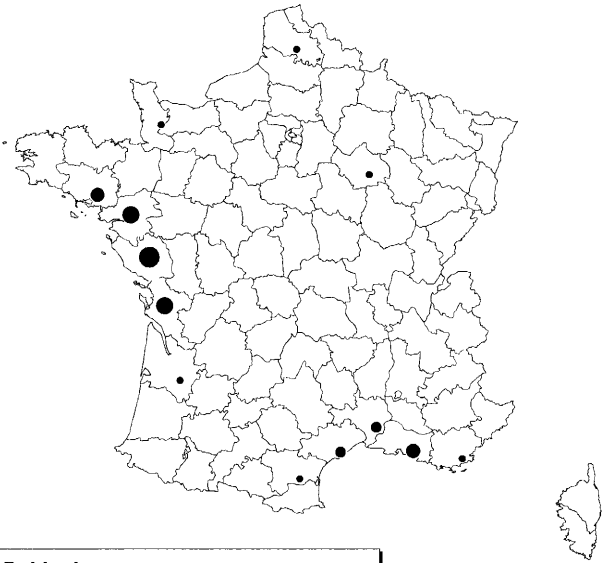
- > 50 pairs
- 21 - 50
- 11 - 20
- 6 - 10
- < 6



Map 10. Curlew

Total : 1,698-1,966 pairs, 49 départements

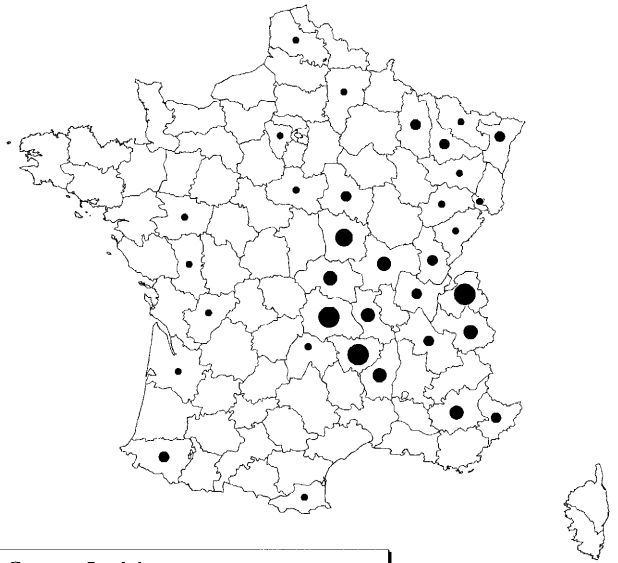
- > 250 pairs
- 101 - 250
- 51 - 100
- 11 - 50
- < 11



Map 11. Redshank

Total : 1,137-1,347 pairs, 13 départements

- > 900 pairs
- 91 - 900
- 51 - 90
- 6 - 50
- < 6



Map 12. Common Sandpiper

Total : 582 - 857 pairs, 34 départements

- > 100 pairs
- 52 - 100
- 22 - 51
- 7 - 21
- < 7



Table 1. National population estimates of breeding waders in France, trends and data quality (see Methods for calculation of values). Population estimates are in pairs (except for Ruff where it is the number of breeding females).

Species	1995–96 minimum	1995–96 maximum	Estimated national population	National weighted trend (T_{Np} -2 to +2)	Data quality (A_{nw} 1 to 3)
Oystercatcher <i>Haematopus ostralegus</i>	969	1,020	1,050	+ 0.58 Mod. increase	2.77 Good
Black-winged Stilt <i>Himantopus himantopus</i>	1,532	1,767	1,850	+ 0.72 Mod. increase	2.76 Good
Avocet <i>Recurvirostra avosetta</i>	2,219	2,368	2,500	+ 1.31 Mod. increase	2.92 Good
Little Ringed Plover <i>Charadrius dubius</i>	4,320	5,947	7,000	+ 1.01 Mod. increase	1.91 Medium
Ringed Plover <i>C. hiaticula</i>	110	123	130	-0.17 Stable	3 Good
Kentish Plover <i>C. alexandrinus</i>	1,266	1,457	1,500	+ 0.58 Mod. increase	2.55 Good
Lapwing <i>Vanellus vanellus</i>	12,716	16,073	18,000	-0.5 Mod. decline	2.28 Medium
Ruff <i>Philomachus pugnax</i>	0	18	18	0 Stable	2.11 Medium
Snipe <i>Gallinago gallinago</i>	95	166	200	+ 0.28 Stable	2.30 Medium
Black-tailed Godwit <i>Limosa limosa</i>	127	159	165	+ 1.1 Mod. increase	2.89 Good
Curlew <i>Numenius arquata</i>	1,698	1,966	2,000	+ 0.11 Stable	2.12 Medium
Redshank <i>Tringa totanus</i>	1,137	1,347	1,400	+0.21 Stable	2.95 Good
Common Sandpiper <i>Actitis hypoleucos</i>	582	857	900	+ 0.39 Stable	2.12 Medium
Pratincole <i>Glareola pratincola</i> ***	20	28	28	0 Stable	3 Good
Dotterel <i>Eudromias morinellus</i> ***	1	2	2+	0 Stable	2 Medium
Woodcock <i>Scolopax rusticola</i> *	100,000	300,000	100,000– 300,000	0 Stable	1 Low
Stone Curlew <i>Burhinus oedicnemus</i> **	5,000	9,000	5,000– 9,000	-1 Mod. decline	2 Medium

*, **: Woodcock and Stone Curlew were not included in this survey. Both species have been censused in other studies (e.g.: * Rocamora & Berthelot 1999; ** Malvaud 1996). Trends are those reported by these authors. ***The figures given for Pratincole and Dotterel are from new surveys carried out since the national survey of 1995–96 (Sériot *et al.* 2000).

stable, are still vulnerable. They suffered habitat losses and decreased during the years 1970–80 in most regions (Dubois & Mahéo 1986) and did not recover later. Small populations are now confined to a few small suitable sites.

The status of breeding waders in France can be summarised as follows:

- ❑ **Endangered species:** Snipe.
- ❑ **Declining species:** Lapwing and Stone Curlew.
- ❑ **Species that are vulnerable because their populations are small and/or depend on a limited number of sites:** Oystercatcher, Black-tailed Godwit, Avocet, Ringed Plover, Ruff, Redshank, Pratincole, Dotterel and Curlew.
- ❑ **Species with a favourable conservation status:** Black-winged Stilt, Little Ringed Plover, Kentish Plover, Common Sandpiper and Woodcock.

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