



*Review of the Implementation of Species Action Plans
for Threatened Birds in the European Union*

FINAL REPORT



The present review was commissioned by the European Commission and prepared by BirdLife International as subcontractor to the “N2K Group” in the frame of Service Contract N#070307/2007/488316/SER/B2 “Technical and scientific support in relation to the implementation of the 92/43 ‘Habitats’ and 79/409 ‘Birds’ Directives”.



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Executive Summary

The EU has been supporting the development of Species Action Plans for priority birds since 1993. So far 54 such plans have been approved for threatened species and subspecies listed in Annex I of the Birds Directive by the European Commission. Since their approval, the implementation of at least 31 species action plans has been monitored and reviewed by BirdLife and the information collected in this process was used to update the plans, revise their contents and inform future conservation actions.

Reviewing the action plans involves evaluating their implementation using a methodology developed by BirdLife under previous contracts for the Commission. It is based on collecting information from national respondents from most (if not all) countries where the plans apply. By comparing a set of scores attributed to each action and on average for the entire plan one can judge the relative effort made to implement each species action plan, to compare across countries and to see which actions are implemented better than others. Finally, by comparing the results of the implementation assessment with the latest available data on population size and trends, conclusions about the overall impact of the plans could be made and the progress towards recovery of each species could be assessed.

This report presents the results of the 2010 assessment of 23 species action plans, collected and analysed by BirdLife International under a contract with the European Commission (17 in 2010, 3 in 2009 and 3 in 2008). Highest levels of implementation have been achieved in species which occur in small number of countries and are well covered by protected areas (e.g. Fea's and Zino's petrels, Dalmatian pelican). On the contrary, implementation has been weaker for species that are dispersed over large areas (e.g. lesser spotted eagle, lesser kestrel) and whose conservation goes beyond implementing classic conservation approaches (e.g. designating and managing protected areas).

The conclusions from this evaluation suggest that species recovery requires tackling large scale land-use pressures, such as agricultural intensification, commercial fisheries or urbanisation, all of which continue to cause habitat loss and degradation (as demonstrated by the little bustard and Balearic shearwater plans). It also suggests that well resourced and coordinated implementation efforts can deliver positive species recovery results (as demonstrated by most of the species subject of LIFE funding). Eight species have clearly improved their population trend (from declining or stable to increasing) and one has continued to recover, most of them as a result of successful conservation work on the ground. The decline of four species has been halted, while five other remained stable or levelled off. There has been marked difference in the levels of implementation within and outside the EU in favour of the Member States. However, the implementation also varied among Member States reaching highest levels in countries which invest significant resources in implementing the plans through national legislation, institutional capacity, strong involvement of NGOs and expert groups, and national co-financing for LIFE projects.

Reviewing the Implementation of Species Action Plans

Bird populations respond rapidly to threats and changing environmental conditions. This dynamism requires that species recovery should be an iterative process with a possibility to adapt and learn from experience. Thus the actual planning and reviewing process is equally important to the final product – the species action plan. Each plan is conceived with an analysis of the current population status and trend of the species, followed by participatory but systematic planning exercise (usually a workshop) whose role is to assess the cause-effect link between external pressures (threats) and the way the population is affected. A well managed workshop involving experts and practitioners with good knowledge of the key threats and stakeholders helps to identify the measures needed to address the threats in the most practical way. Once developed and approved, the species benefits from coordinated implementation of the plan across the range and this should be supported by monitoring and communication among the actors involved. Following implementation, plans should be subject of regular reviews of progress and updating, ideally every five years (or more frequent if the situation with the species require). When monitoring the implementation indicates that the plan is not likely to achieve its objectives or when the duration of the plan has passed, the documents should be revised, new targets should be set, thus closing the management cycle.

From the 54 species action plans for Annex I bird species approved in the EU (Table 8), the implementation of 31 plans has been *reviewed* at least once (Table 1). Three separate assessments of different subsets of plans and of varying geographical scope have been carried out so far, as follows:

- 2001 covering 23 plans in EU15 and 12 Central and Eastern European Countries, by BirdLife International¹
- 2004 covering 23 plans in EU25, by BirdLife International²
- 2007 covering 12 plans in 95 AEWCA Contracting Parties (data limited to 26 countries), by Rubicon Foundation³

This report presents the result of a fourth assessment, carried out in 2008-2010 and covering 23 plans in EU27 and 11 neighbouring countries (Armenia, Azerbaijan, Belarus, Bosnia & Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia, Switzerland, Turkey and Ukraine).

1 Gallo-Orsi, U. ed. (2001) Saving Europe's most threatened birds: progress in implementing European Species Action Plans, BirdLife International, Wageningen, The Netherlands.

2 Nagy and Crockford (2004) Report to the European Commission, Contract No B4-3040/2003/362169/MAR/BZ

3 Gallo Orsi, U. & C. Orhun (2008) Review of the implementation and the effectiveness of 15 action plans for waterbird species. Report to the AEWCA Secretariat. Stichting Rubicon.

Table 1 Implementation reviews of 31 EU SAPs and the achievement of recovery targets⁴ and further reference available.

Species	Previous assessments				Scope of this assessment			
	2001	2004	2007	2008	2009	2010	Information included in:	
Fea's petrel <i>Pterodroma feae</i>	short	short				long	Annex	
Zino's petrel <i>Pterodroma madeira</i>	short	long				long	Annex	
Dalmatian pelican <i>Pelecanus crispus</i>	medium	long	none			short	Annex	
pygmy cormorant <i>Phalacrocorax pygmeus</i>	short	long	long					
lesser white-fronted goose <i>Anser erythropus</i>	none	none	none					
red-breasted goose <i>Branta ruficollis</i>	medium	medium	none		none		Annex, Revised SAP	
marbled teal <i>Marmaronetta angustirostris</i>	none	none	none	none			Annex, Revised SAP	
white-headed duck <i>Oxyura leucocephala</i>	medium	medium	short					
cinereous vulture <i>Aegypius monachus</i>	medium	long				medium	Annex	
Eastern imperial eagle <i>Aquila heliaca</i>	medium	long				long	Annex	
Spanish imperial eagle <i>Aquila adalberti</i>	medium	medium		medium			Annex, Revised SAP	
lesser kestrel <i>Falco naumanni</i>	short	short				short	Annex, Revised SAP	
cornrake <i>Crex crex</i>	medium	medium	medium					
great bustard <i>Otis tarda</i>	none	none			short		CMS report, Revised SAP	
Houbara bustard <i>Chlamydotis undulata</i>	unknown	unknown						
slender-billed curlew <i>Numenius tenuirostris</i>	none	none	none					
Audouin's gull <i>Larus audouinii</i>	long	long	long			long	Annex	
Madeira laurel pigeon <i>Columba trocaz</i>	medium	medium				long	Annex	
white-tailed laurel pigeon <i>Columba junoniae</i>	unknown	unknown				short	Annex	
dark-tailed laurel pigeon <i>Columba bollii</i>	unknown	unknown				short	Annex	
aquatic warbler <i>Acrocephalus paludicola</i>	none	none		short			Annex, Revised SAP	
blue chaffinch <i>Fringilla teydea</i>	short	short				short	Annex	
Azores bullfinch <i>Pyrrhula murina</i>	none	none			long		Annex, Revised SAP	
bearded vulture <i>Gypaetus barbatus</i>						none	Annex	
Bonelli's eagle <i>Aquila fasciata</i>						none	Annex	
Eleonora's falcon <i>Falco eleonorae</i>						long	Annex	
little bustard <i>Tetrax tetrax</i>			none			none	Annex, Revised SAP	
lesser spotted eagle <i>Aquila pomarina</i>						short	Annex	
Balearic shearwater <i>Puffinus mauretanicus</i>						unknown	Annex, Revised SAP	
great snipe <i>Gallinago media</i>			none					
ferruginous duck <i>Aythya nyroca</i>			none					
Total number of plans assessed:	23	23	12	3	3	17	23	

⁴ The achievement of the recovery target was assessed using the latest available population data at the time of the assessment. The achievement of the 'long' term target means that the short and medium term ones have also been achieved. Species in bold were used for comparison between the 2001, 2004 and 2010 assessments.

Methodology

The scope of the present review of implementation of species action plans covers 23 species (Table 1), as follows:

- 17 reviewed in 2010, 3 of which also revised.
- 3 reviewed and revised in 2009
- 3 reviewed and revised in 2008

For 17 of the species (highlighted in bold in Table 1) it was possible to compare their implementation with two previous assessments, bearing in mind the difference in geographic scope in each of them.

The evaluation followed the methodology and scoring system developed by BirdLife (Gallo-Orsi, 2001), which follows three steps.

- Updating of the factual information contained in the descriptive part of the plan (preparing a species account, see Annex)
- Assessing the progress towards implementation of the actions and evaluation against the recovery targets set in the plan.
- Estimating the overall effectiveness of the action plan to meet the planned population recovery objectives, using the latest available population estimate and trend.

The first and the second of these tasks was implemented with the help of a questionnaire with two electronic forms:

Status form: collecting information about the latest population estimate, trend and threats.

Implementation form: based on the contents of the action plan where each action was converted into a target statement to enable measurement of progress in implementation.

First, the questionnaires were distributed among national experts (reviewers) in the relevant range states concerned by each plan (Table 7). When more than one expert per country was contacted, we compared responses and used the matching ones. For the differing responses we contacted back the experts to clarify their response and reach an agreement.

The reviewers were asked to:

- Review and correct, the information used for the action plan, i.e. information on population size, trend and threats;
- Report on measures taken in relation to each action of which they are aware, including coverage of the species population in IBAs and protected areas, existence of management plans, implementation of LIFE and other significant projects;
- Evaluate distance to target by assigning an *Implementation score* against each action (target statement);
- Estimate the size of the population affected by the measure and;
- Estimate the response of that population.

The priority of each action in the SAPs was expressed as Priority Score [PS], as follows:

Essential or Critical	4
High	3
Medium	2
Low	1

To evaluate the distance to target achieved each responded provided *Implementation scores* [IS], ranging between 0–4 according to increasing level of progress towards the target:

- 0: Action not needed/not relevant
- 1: Little or no work (0-10%) carried out, (only piecemeal actions not part of a strategic approach);
- 2: Some work started (11-50%), but no significant progress yet;
- 3: Significant progress (51-75%), but target still not reached;
- 4: Action fully implemented, no further work required except continuation of on-going work (e.g. in case of monitoring);

As a third step an *Action Priority Index (API)* was developed for each action across its geographical scope. It was calculated as follows (excluding “0” values):

$$\text{Action Priority Index (API)} = \text{Priority Score (PS)} \times (4 - \text{Implementation Score [IS]}) \div 3$$

The range of the score is between 0 and 4. This index expresses the need for further action for each target. The *API* for a target of a high priority (e.g. PS=4) with a low level of implementation (IS=1) has the highest value (4). A target with a low priority (e.g. PS=1) and a high level of implementation (IS=3) has a low *API* value. (0.33). All the targets with fully implemented actions have an *API* value of 0 (= no further work required).

To facilitate the interpretation of these scores, the results were presented in a graphic format in the species accounts of each of the 17 species assessed in 2010 (fig 1 example)

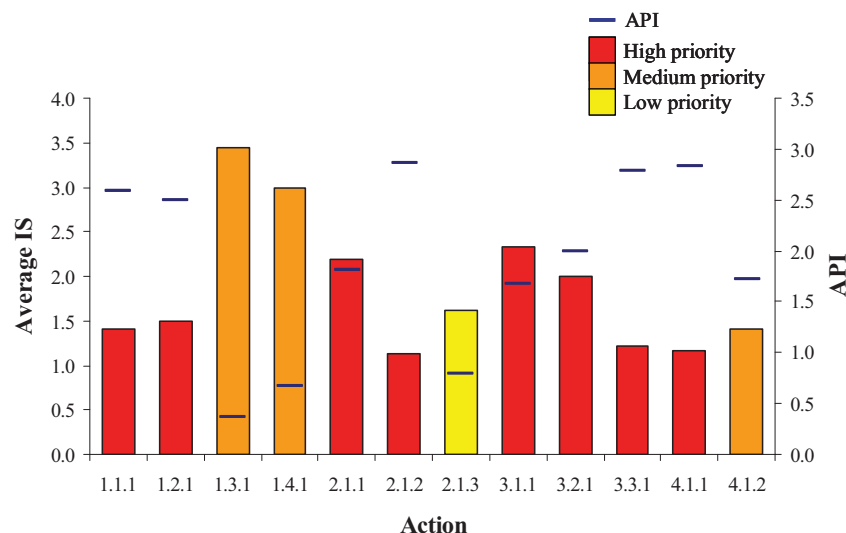


Figure i Average implementation score (IS) and Action Priority Index (API) for each action listed in the little bustard *Tetrax tetrax* species action plan. Colours represent Priority Score.

Additional analysis was carried out to find out the *National Implementation Score (NIS)* for each country which combines the urgency of an action with its implementation level. The *Implementation Score (IS)* of each target was multiplied by its *Priority Score (PS)*, and the sum of all these scores was divided by the sum of the *Priority Scores (PS)*. The formula used was:

$$\text{National Implementation Score NIS} = \frac{\sum (\text{PS} \times \text{IS})}{\sum (\text{PS})}$$

The range of the NIS is, as with the IS, between 1 and 4, with 1 representing little or no implementation and 4 full implementation.

Secondly, beyond scoring the progress in implementation of the actions, the reviewers were also asked to evaluate the contribution of each action towards the conservation of the national population of the species, having in mind its current status and trend. Therefore, an assessment of the impact of the measures on the population in terms of size of the population affected by the measures taken and how the affected populations responded to these measures.

After receiving filled in forms from individual respondents, all answers were checked and some scores were corrected if there were inconsistencies between the answer and the score or if the action was not relevant for the particular country. When in doubt, replies were checked by consulting the respondents individually.

The information collected via the forms was used to prepare a Species Account (the first drafts of which were called Draft Implementation Report) for each species, which was published on the BirdLife forums website⁵ and circulated by e-mail to the respondents and other relevant experts.

Three expert workshops were organised in addition, to help with the implementation review and the following revision of three action plans: Balearic shearwater (17-18 June, Palma de Mallorca), little bustard (24-25 June 2010, Madrid) and lesser kestrel (8-9 July 2010, Madrid). A fourth workshop was organised to review the species conservation status and implementation of the action plans for the Macaronesian endemic birds (26-29 July, Madeira): Zino's and Fea's petrel, white-tailed and dark-tailed and Madeiran laurel pigeons and blue chaffinch.

As a third step, the effectiveness of each action plan was evaluated using a combination of:

(i) Output indicators, represented by the implementation scores:

- Average Implementation Score for each plan
- National Implementation Score representing the average progress with implementation by the country
- Action Priority Index representing the need for further action.

(ii) Outcome indicators:

- Population size, distribution and trends.
- Evaluation against the population recovery targets set in the action plans.
- Overall change in the species conservation status.

Finally, the overall progress with species recovery was represented as a journey with 13 distinct stages of recovery (fig. 2 and table 2). This conceptual model was applied to 29 species with action plans at EU level (23 reviewed in 2008-2010 listed in Table 1, and 6 new plans developed in 2008-2009 which have not been reviewed yet).

⁵ <http://www.birdlifeforums.org>

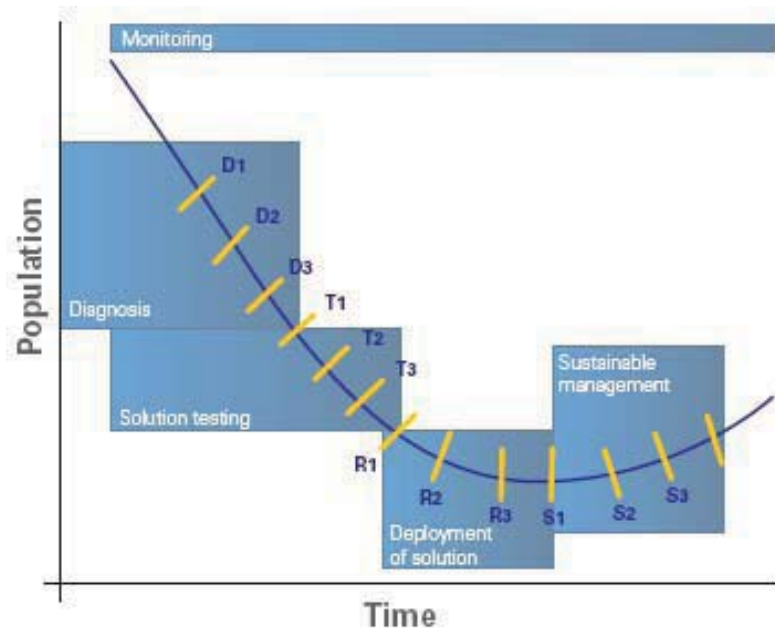


Figure 2 Diagrammatic representation of the species recovery journey
Source: RSPB (2010) Safeguarding species – A strategy for species recovery

Table 2. The 13 stages of species recovery

Stage	Code	Description
Monitoring	M	Purely monitoring, no action taken
Diagnosis (research)	D1	No research undertaken/cause of decline unknown
	D2	Research underway, but limited understanding of causes of decline
	D3	Research is providing strong indication of cause of decline
Solution testing (research delivery)	T1	Diagnosis provides sufficient results to trial solutions, but work only initiated recently
	T2	Trial management underway, but not yet clear evidence that it can deliver objectives
	T3	Trial management is providing strong indication that it will deliver objectives
Deployment of solution	R1	Work initiated to roll out solutions across species' range
	R2	Solutions adopted across the species' range but too early to demonstrate successes against population/range targets
	R3	Solutions enable achievement against population/range targets but only with continued conservation intervention
Sustainable management	S1	Indication that population/range targets being achieved with minimal conservation intervention
	S2	Good evidence available that population/range targets being achieved and can be sustained with little or no conservation intervention (i.e. population maintained within regular land or marine management practices)
	S3	Population/range targets achieved and the species' conservation status secured

Results

Overall Implementation of the Plans

The implementation review of 17 action plans was completed in 2010 and individual species implementation reports were produced (see Annex). For three of the species, a revised action plan was also prepared. The results of this review could be combined with the recent revision of six other existing action plans in 2008-2009⁶ (which also included review of the implementation as part of the process). Thus, 23 plans could be covered by this report (Table 1). In addition, six new action plans were developed for the European Commission during this period, but as the time since their approval has been short, they were not included in most of the analyses (except where indicated).

Despite the difference in scope (species and number of countries), the current assessment followed similar methodology to the previous assessments (BirdLife 2001, BirdLife 2004) and the results are largely consistent. Comparisons between the years were made for 17 action plans for which 3 assessments were available (fig. 3).

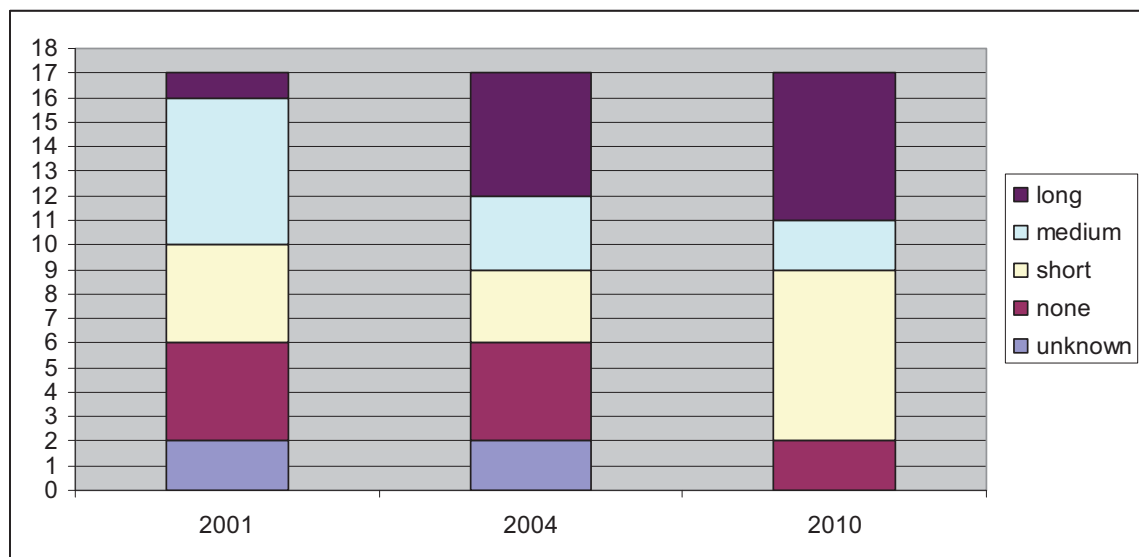


Figure 3 Number of EU SAPs for globally (near-) threatened species achieving the maximum of their recovery target (only the highest level of achievement shown). Comparison for 17 SAPs across three assessments could be made, including the following species: Fea's petrel *Pterodroma feae*, Zino's petrel *Pterodroma madeira*, Dalmatian pelican *Pelecanus crispus*, red-breasted goose *Branta ruficollis*, marbled teal *Marmaronetta angustirostris*, cinereous vulture *Aegypius monachus*, Eastern imperial eagle *Aquila heliaca*, Spanish imperial eagle *Aquila adalberti*, lesser kestrel *Falco naumanni*, great bustard *Otis tarda*, Audouin's gull *Larus audouinii*, Madeira laurel Pigeon *Columba trocaz*, white-tailed laurel pigeon *Columba junonae*, dark-tailed laurel pigeon *Columba bollii*, aquatic warbler *Acrocephalus paludicola*, blue chaffinch *Fringilla teydea*, Azores bullfinch *Pyrrhula murina*

⁶ See BirdLife's reports to the EC in the framework of contract N#070307/2007/488316/SER/B2

Overall the progress that has been made in implementing the action plans over the 10 year period can be summarized in Table 3. Seven action plans have achieved their long term targets and new targets have to be developed through revision of the plans. Two have achieved their medium term targets and their implementation has to continue. In seven plans only the short term targets have been achieved and their implementation has to be improved. For five plans none of the targets has been achieved and they have to be revised and new targets and objectives have to be set (three of them, marbled teal, red-breasted goose and little bustard, were already revised in 2008-2010 and their implementation has to continue). For only one plan evaluation against the target was not possible (Balearic shearwater) due to the lack of population trend data of sufficient quality required to assess the target.

The review method allows comparisons to be made between species and countries. Thus, comparing the Average Implementation Score (AIS) indicates the relative effort made to implement each plan in all range countries combined (fig.4). Generally, the implementation has been moderate (~2) in most plans with highest levels achieved in species which are localized or endemic, or species whose (at least) breeding population is well covered in protected areas with active management (e.g. Fea's and Zino's petrels, Madeira laurel pigeon, Dalmatian pelican). On the contrary, implementation has been weaker in species which are dispersed (e.g. lesser spotted eagle) or whose conservation requires mitigation of large scale land-use pressures such as agriculture, forestry or urbanisation that cause habitat loss and degradation.

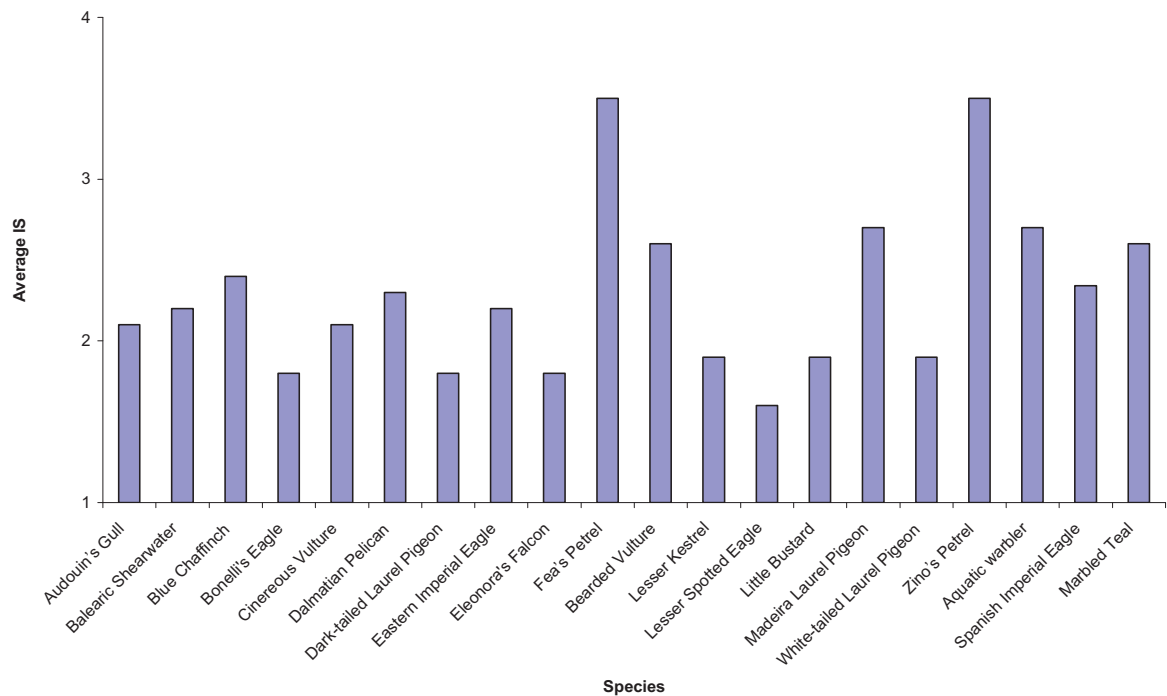


Figure 4 Average implementation score of 20 action plans (17 assessed in 2010 and 3 in 2008) Average implementation scores: 4=full implementation, 3=significant progress, 2=some progress, 1=no implementation.

Table 3. Summary results of the implementation of EU Species Action Plans (17 plans in 2010, 3 in 2008 and 3 in 2009) and recommendation for future actions. Underlined species action plans were already revised in 2008-2010.

Species	Result	Recommended action
Fea's petrel <i>Pterodroma feae</i> Zino's petrel <i>Pterodroma madeira</i> ⁷ Eastern imperial eagle <i>Aquila heliaca</i> Audouin's gull <i>Larus audouinii</i> Madeira laurel pigeon <i>Columba trocaz</i> <u>Azores bullfinch <i>Pyrrhula murina</i></u> Eleonora's falcon <i>Falco eleonora</i>	Long term target achieved	<ul style="list-style-type: none"> • Review threat category and conservation status. • Revise plan and recovery objectives if species still threatened.
Cinereous vulture <i>Aegypius monachus</i> <u>Spanish imperial eagle <i>Aquila adalberti</i></u>	Medium term target achieved	<ul style="list-style-type: none"> • Continue implementation. • Repeat assessment in 5 years or less.
<u>Lesser kestrel <i>Falco naumanni</i></u> Dalmatian pelican <i>Pelecanus crispus</i> ⁸ White-tailed laurel pigeon <i>Columba junonae</i> Dark-tailed laurel pigeon <i>Columba bollii</i> Blue chaffinch <i>Fringila teydea</i> Lesser spotted eagle <i>Aquila pomarina</i> <u>Aquatic warbler <i>Acrocephalus paludicola</i></u>	Only short term target achieved	<ul style="list-style-type: none"> • Revise plan and recovery objective. • Continue implementation. • Repeat assessment in 5 years or less.
<u>Marbled teal <i>Marmaronetta angustirostris</i></u> <u>Red breasted goose <i>Branta ruficollis</i></u> Bearded vulture <i>Gypaetus barbatus</i> Bonelli's eagle <i>Aquila fasciata</i> <u>Little bustard <i>Tetrax tetrax</i></u>	Targets not achieved	<ul style="list-style-type: none"> • Review threat category and conservation status. • Revise priority of species and improve implementation throughout range • Continue implementation with increased resources if species still priority.
<u>Balearic Shearwater <i>Puffinus mauretanicus</i></u>	Unknown	<ul style="list-style-type: none"> • Collect additional information and repeat assessment.

⁷ Forest fire in August 2010 in the breeding colony may have detrimental effect on this species, evaluation pending.

⁸ Despite of significant progress in the EU, implementation not matched in rest of breeding range which is the reason for missed target.

Implementation by Country

Information about the implementation of action plans was collected through questionnaires and publication review from 35 countries and territories, including 18 EU Member States (Table 7). The progress with implementation of the plans in different countries can be generalised by comparing National Implementation Scores (NIS). As the number of species in each country is different average NIS have been calculated for this purpose (fig. 5). However, this information is only indicative as it incorporates ‘average of averages’. Therefore it has to be used with caution.

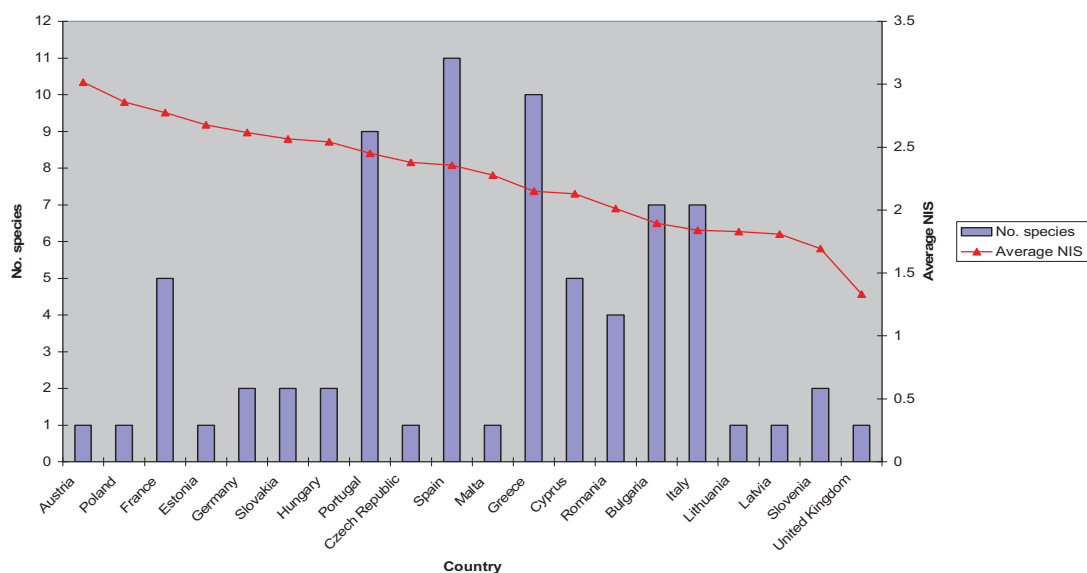


Figure 5. Average national implementation scores (NIS) per EU Member State for 17 species action plans assessed in 2010.

The implementation of action plans varies considerably between countries. It was generally highest in countries with small number of applicable plans (e.g. Austria) and in countries with strong traditions and systems of species recovery work (e.g. France, Hungary, Slovakia, Poland, Estonia) where implementation was driven by legislation or voluntary working groups. The geographical scope of this review has meant that some countries have been underrepresented in this assessment (e.g. UK, Latvia, Lithuania presented with only 1 species), while others (e.g. Portugal, Spain, Greece, Bulgaria and Italy) have been presented with 7 to 11 species. From this last group of countries, highest average implementation has been achieved by Portugal and Spain. The latter country has done extensive species recovery work which is carried out at autonomous community level, which lowers the average national score (as in some regions implementation has been stronger than in others).

Implementation of the Conservation Actions by Type

Analysis of the type of actions included in each plan and their implementation was carried out on 20 action plans (17 in 2010 and 3 in 2008, fig.8). We used the standard IUCN classification of conservation actions⁹ and applied it to the actions included in the action plans. We added category No. 8 *Monitoring and research*, as this is an important action type in all plans, while it is not included in the typology (fig. 6).

⁹ See http://iucn.org/about/work/programmes/species/red_list/resources/technical_documents/new_classification_schemes/

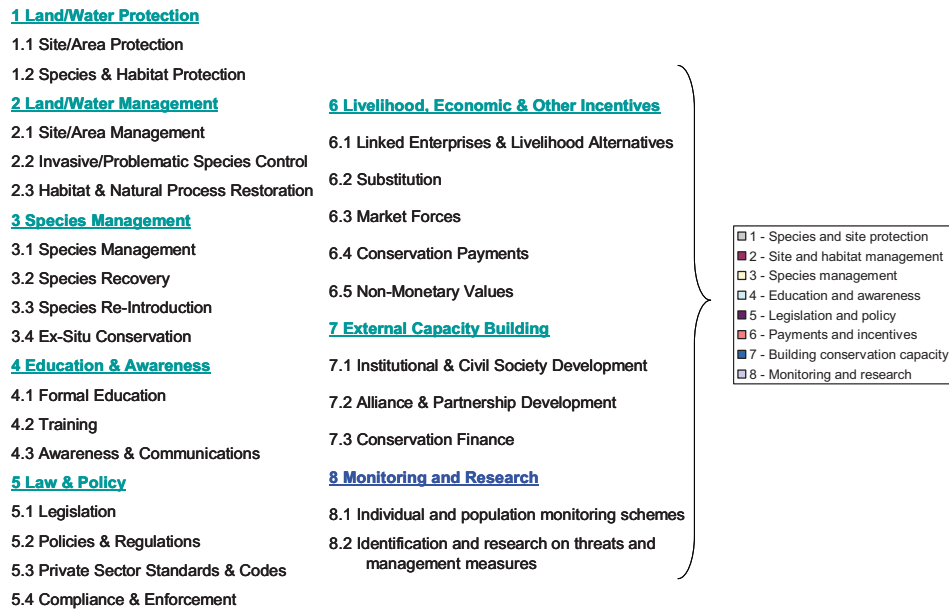


Figure 6 Typology of the conservation actions used

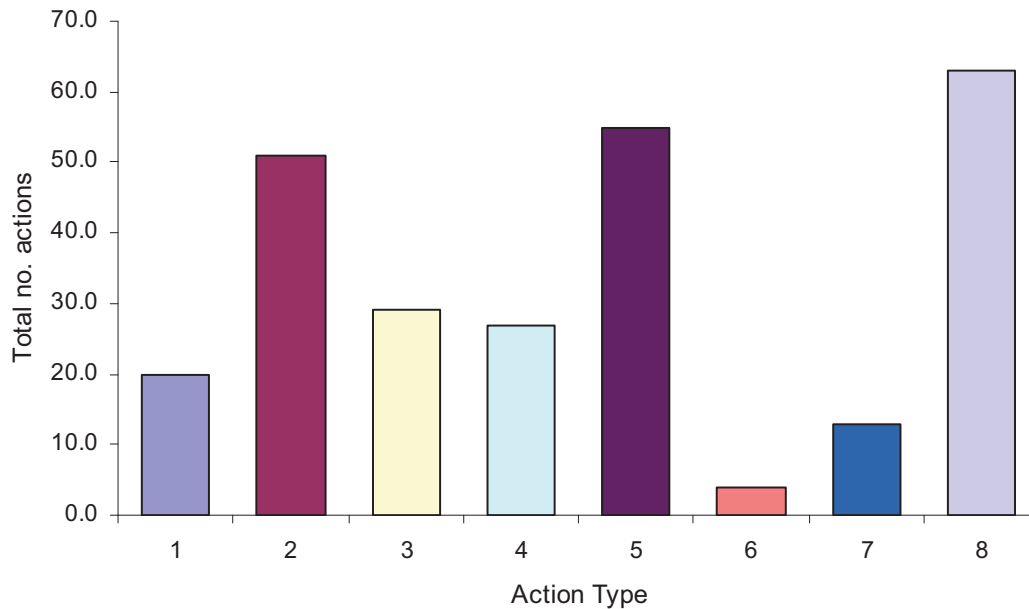


Figure 7 Number of conservation actions by type in 20 action plans analysed.

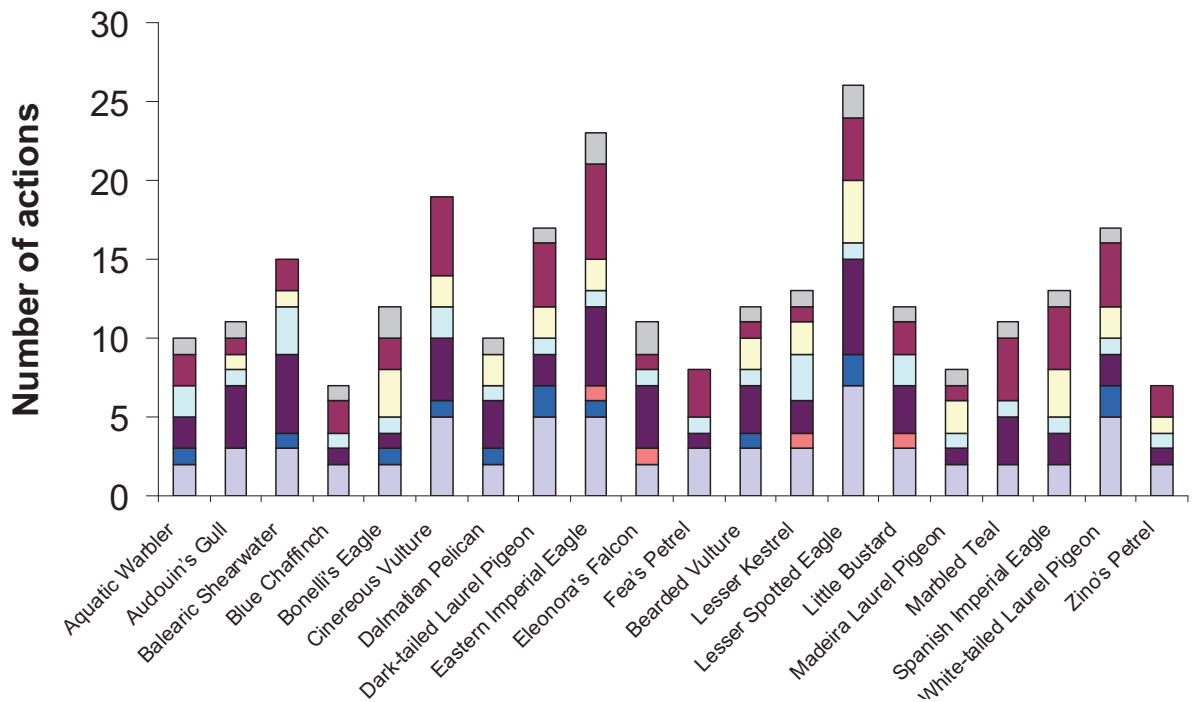


Figure 8 Number of actions in each type and their distribution in 20 species action plans analysed.

The results of this analysis shows the great number of monitoring and research actions included in the action plans, followed by actions for legislation and policy changes and actions for site and habitat management (Fig. 7). The big number of research and monitoring actions is linked to the greater detail by which these actions are incorporated in the plans. In contrast, actions relating to policy changes and implementation of land-use policies on the ground and to economic incentives (e.g. agri-environmental schemes) or habitat management are often lumped in rather general descriptions, whose interpretation and evaluation is more difficult.

The highest numbers of conservation actions are linked to *monitoring and research*. This can be explained, on one hand, by the bias in the designing of the action plans due to the intensive participation of conservation researchers. On the other hand, it reflects the genuine needs for further investigation of threats and the effect of conservation actions. Further, large number of knowledge gaps still exists, especially in relation to migratory birds and their non-breeding quarters and migratory routes (e.g. lesser kestrel, lesser spotted eagle). For such plans, international cooperation in the framework of international agreements and bilateral programmes is essential. As far as implementation is concerned (Fig. 4), it has been good (average 2.3), highest for some endemic species (e.g. Fea's and Zino's petrels) and for species whose ecology has been studied in a given country (e.g. marbled teal in Andalusia, cinereous vulture in Spain, France and Greece).

The second most common action type relates to broadly defined *legislation* and land-use *policy objectives*. This group of actions is particularly important (high priority given) and it relates to the needs of integration of the conservation needs of the species into the broader policy context of land management. Highest implementation has been achieved for localized species (Fig. 4), which are affected by few targeted issues (e.g. petrels, blue chaffinch) or species that are well covered by strict protected areas and are relatively protected from negative impacts in the wider environment at least in part of their life cycle (e.g. Dalmatian pelican, cinereous vulture). On

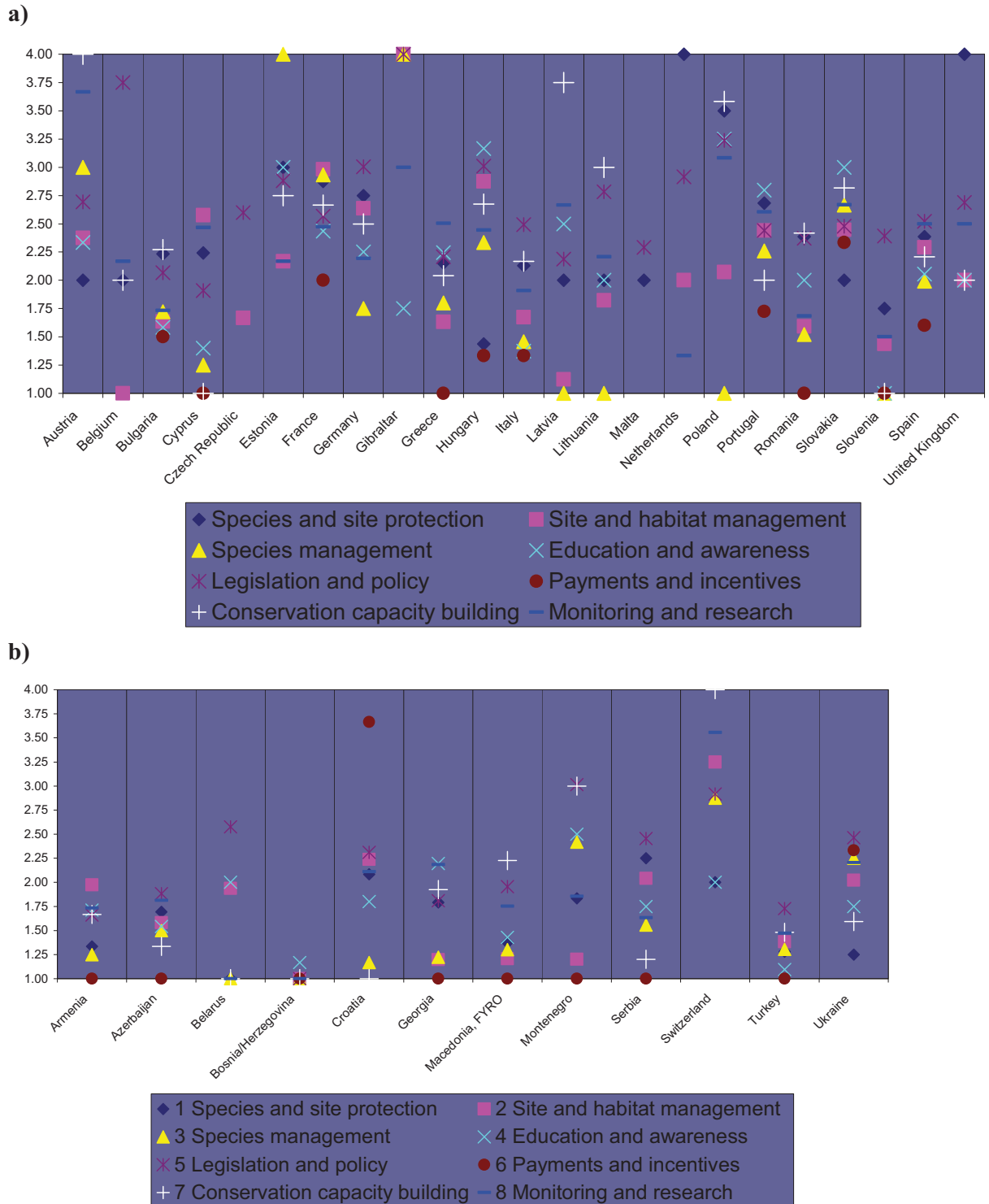
the contrary, plans of species that are dispersed and/or largely dependent on land management practices beyond protected areas have been less successfully implemented e.g. lesser kestrel (agricultural intensification), Bonelli's eagle (powerlines), and marbled teal (agricultural wetland drainage and pollution). The species where integration with agriculture is of critical importance such as the little bustard, implementation through agri-environmental schemes has been done but the scale was insufficient to ensure positive effect at biogeographical level. Regarding forest management, the ensuring of non-disturbance zones around nests and the protection of breeding habitats has been achieved to greater extent than in farmland (e.g. Eastern imperial and lesser spotted eagles).

The third most important action type is *site and habitat management* which refers to management plans in protected areas (and Natura 2000 sites). Here again, implementation has been highest in species confined to one or few protected areas (usually with stricter regime at a national level and responsible administration, e.g. national parks) e.g. Zino's petrel, laurel pigeons. In the other extreme are species that are dispersed among many protected areas (e.g. SPAs) where establishment of effective conservation management with specific objectives to the species remains a challenge. In most of the cases where such management is delivered through e.g. agri-environmental measures, the levels of uptake and targeted implementation of the measures remains low (e.g. Fig 1, example of little bustard actions 1.1.1 and 3.1.1, relating to agri-environment measures, for details see the species account in the Annex). As an exception one can point out intensive local or regional schemes, kicked off in the framework of LIFE projects (e.g. little bustard in S and W France, Spanish imperial eagle, lesser kestrel in Portugal, Eastern imperial eagle in HU, SK and BG).

This information was further analysed at national level and compared between EU member states and non-EU states (Fig.9). Although this data is not easy for interpretation with simple methods (a more advanced multi-factor statistical analysis could be developed in the future), there are some emerging trends.

First, the levels of implementation are consistently higher in EU member states than in non-EU states, Switzerland being a notable exception (Fig. 9a). Secondly, the implementation between plans varies within countries. Member states that show consistently implementation levels above average in all plans are e.g. Austria, Estonia, France and Slovakia (few species, implementation levels highest on average) although as pointed earlier this may be influenced by the varying number of plans per country, followed by Portugal, Spain and Bulgaria (many species, implementation slightly lower on average). Other countries show less consistent results, with one or two plans showing high scores (explained by the existence of a national working groups or project) and lower scores in other.

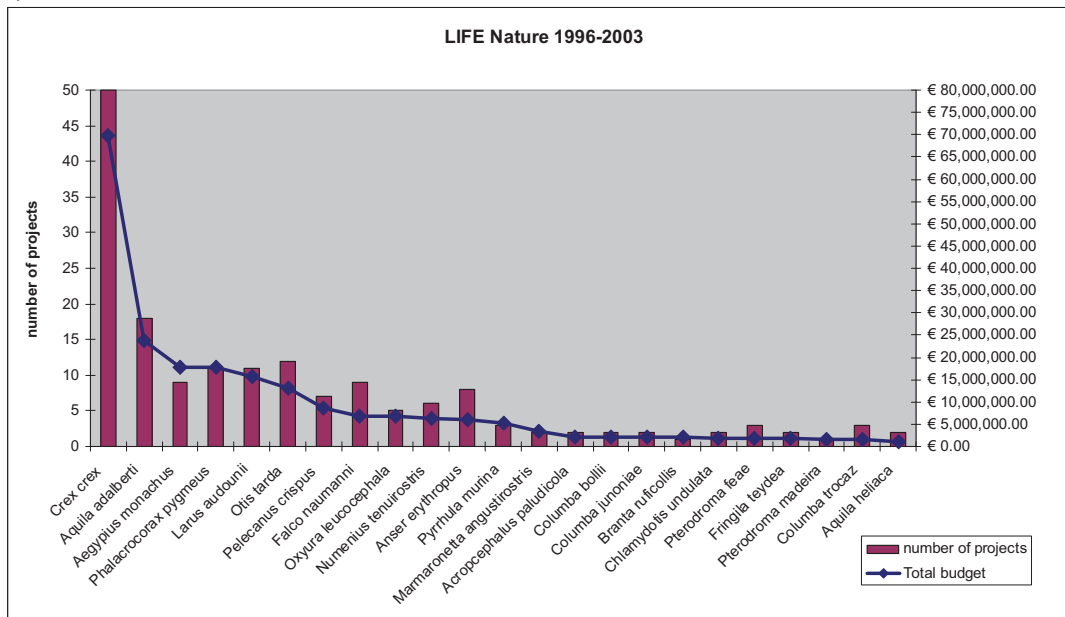
Further information regarding individual species action plans can be found in the species accounts (see Annex).



The Special Role of LIFE+

The LIFE fund has been the main tool used by the Commission to stimulate the implementation of priority conservation measures for the threatened species and habitats in the EU. For example during 1992-2003 LIFE-Nature has invested some €367 million in projects targeting threatened bird species. This figure is not yet final for the current LIFE+ period, but estimates were made for a subset of threatened birds for this assessment (fig. 10).

a)



b)

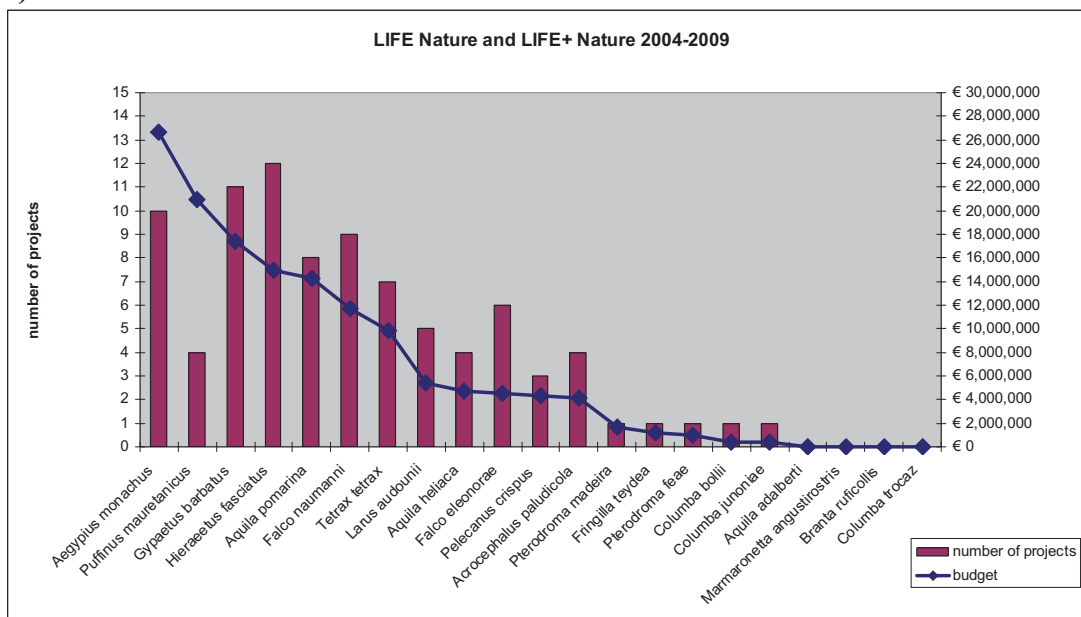


Figure 10 Funding for the implementation of species action plans from LIFE (a) and LIFE+ (b).

Site Protection Measures (Coverage with Natura 2000 and protected areas)

The designation of SPAs is the key requirement under the Birds Directive as regards the conservation of threatened species. The relatively good knowledge on the species distribution and the existence of IBAs makes it possible to analyse progress against the site conservation targets with GIS methods. For the purposes of this review the following information about the designation of key sites (such as IBAs) for the target species was collected.

- Status of protection of key sites per species per country (tables 4 and 5)
- The availability of site management plans taking into account the conservation needs of the species (information included in the species accounts).
- GIS based analysis of the overlap between IBAs and SPAs per species (fig. 12).

The results of this analysis show that good progress has been achieved with the designation of key sites as protected areas and Natura 2000 sites in the EU, although the same pattern applies – dispersed species are less well covered than concentrated species. Particular progress has been made recently with the identification and designation of marine SPAs (still incomplete) covering important feeding grounds of the marine birds assessed. The map presented as fig. 13 clearly illustrates the picture: most of the designated IBAs have been legally protected in the EU contrasted by the situation in the non-EU range states (esp. Russia and Turkey).

Table 4. Protection status of key sites for 17 species from 2010 SAP assessment

Species	No. of IBAs	No. of protected areas (incl. SPA)	No. of IBAs not protected	Total Area of IBAs (ha)	Total Area of protected areas (incl. SPA) (ha)	Total area of IBAs not protected (ha)
Audouin's Gull	65	101	13	1,159,451	1,187,173	452,068
Balearic Shearwater	12	21		38,562	77,278	
Blue Chaffinch	7	5		16,650	98,490	
Bonelli's Eagle	105	179	12	7,758,165	6,042,080	694,137
Cinereous Vulture	64	78	31	7,759,162	2,608,710	4,693,507
Dalmatian Pelican	105	63	53	4,354,502	467,997	2,908,389
Dark-tailed Laurel Pigeon	11	10		28,325	135,365	
Eastern Imperial Eagle	171	47	132	9,691,222	1,894,150	7,587,036
Eleonora's Falcon	69	72	20	1,467,038	399,026	1,035,978
Fea's Petrel	1	1		1,384	11,302	
Bearded Vulture	53	54	22	7,042,806	993,255	5,769,486
Lesser Kestrel	124	145	54	7,032,277	3,650,628	2,548,317
Lesser Spotted Eagle	147	126	45	8,634,224	5,396,829	2,766,253
Little Bustard	130	142	60	6,791,079	3,609,600	2,928,544
Madeira Laurel Pigeon	2	2		18,653	16,745	
White-tailed Laurel Pigeon	11	8		30,715	122,363	
Zino's Petrel	1	2		3,411	16,745	

Table 5 Number of SPAs designated per assessed species by EU Member States¹⁰

Country	Audouin's Gull	Balearic Shearwater	Bonelli's Eagle	Blue Chaffinch	Cinereous Vulture	Dalmatian Pelican	Dark-tailed Laurel Pigeon	Eastern Imperial Eagle	Eleonora's falcon	Fea's Petrel	Bearded vulture	Lesser Kestrel	Lesser Spotted Eagle	Little Bustard	Madeira Laurel Pigeon	White-tailed Laurel Pigeon	Zino's Petrel	Number of SPAs	No. of species
Austria																		0	0
Bulgaria				3	20			12				2	11					48	5
Cyprus			2					2	1									5	3
Czech Republic																		0	0
Estonia													7					7	1
Finland																		0	0
France	6		11		2							3		30				52	5
Germany													20					20	1
Gibraltar (to UK)																		0	0
Greece	19				4	16		3	36		16	24	8					126	8
Hungary								12					4					16	2
Ireland																		0	0
Italy	38		7						12			20		7				84	5
Latvia													12					12	1
Lithuania													9					9	1
Poland													27					27	1
Portugal			9		4					1		6		13	2	8	2	45	8
Romania						27		10					14					51	3
Slovakia								8					13					21	2
Slovenia												1	1					2	2
Spain	38	21	138	5	65		10		23		38	83		92				513	10
United Kingdom																		0	0
Grand Total	101	21	179	5	78	63	10	47	72	1	54	145	126	142	2	8	2	1056	

However, as illustrated by the implementation scores for site and habitat management (see above) the challenge has clearly shifted from designation and protection to actual targeted management of SPAs, which was identified as a the most important conservation priority for several species (e.g. little bustard, lesser kestrel, Eastern imperial eagle, Dalmatian pelican and lesser spotted eagle).

¹⁰ Only SPAs especially designated for the 17 species part of the 2010 assessment are included. Data as of January 2010.

Overall Progress with Recovery of Threatened Species

Finally, the 13 stage model of the species recovery process presented in Fig. 1 was applied to the 29 species, subject of species action plan development and review at EU level since 2008. The allocation of a given species to a particular stage is arbitrary and for illustration only, but the decision was taken based on the species status, contents of the action plan and the conclusions in each species account.

Table 6 Overview of the progress with recovery of the 29 species subject of action plan work at EU level since 2008. The underlined species action plans are still recent and no information on their implementation is available yet, only information included in their action plan was used.

Stage	Code	Species	Number of species
Monitoring	M		0
Diagnosis (research)	D1	<u>semi-collared flycatcher</u>	1
	D2	<u>European roller</u>	1
	D3	<u>Dupont's lark</u>	1
Solution testing (research delivery)	T1	Balearic shearwater	1
	T2	<u>Egyptian vulture</u> , marbled teal, red breasted goose	3
	T3	Bonelli's eagle, little bustard	2
Deployment of solution	R1	bearded vulture, aquatic warbler, <u>red footed falcon</u> , eastern imperial eagle	4
	R2	blue chaffinch, <u>red kite</u>	2
	R3	cinereous vulture, Dalmatian pelican, lesser kestrel, lesser spotted eagle, Zino's petrel, Spanish imperial eagle, Azores bullfinch, great bustard	8
Sustainable management	S1	dark tailed laurel pigeon, white tailed laurel pigeon	2
	S2	Audouin's gull, Eleonora's falcon, Fea's petrel, Madeira laurel pigeon	4
	S3		0

The collection of quantitative information about the current population size and trend of the species during the drafting, revision and review of action plans from the compilers and from current literature made it possible to compare the population trends of the species before and after the implementation of the plans (fig. 10). It shows the positive impact of species action plans for the selected species. Eight species have clearly improved their population trend (from declining or stable to increasing) and one has continued to recover. The decline of four species has been halted, while five other remained stable or levelled off. Two species have clearly not benefitted from their SAPs (little bustard and Balearic shearwater) as their populations continue to decline or at least do not show recovery. The reasons behind these results are discussed in the individual species accounts, but can be summarized as insufficient integration into the wider land and marine-management policies. For nine other species, this assessment shows no clear results, as their action plans were only recently approved or they show unclear trends.

Current trends (2010)	Increasing	Azores bullfinch, EN Zino's petrel, EN Eastern imperial eagle, VU Spanish imperial eagle, VU Lesser kestrel, VU	Blue chaffinch, NT Dalmatian pelican, VU Bearded vulture, LC	Cinereous vulture, NT	<p>Trends uncertain (stable or increasing) Dark tailed Laurel Pigeon, NT White tailed Laurel Pigeon, EN</p> <p>Trends uncertain (stable or decreasing) Semi-collared Flycatcher, NT Red breasted goose, EN</p>
	Stable	Aquatic warbler, VU Marbled teal, VU Bonelli's eagle, LC Great bustard, VU Red footed Falcon, NT	Eleonora's falcon, LC Fea's petrel, NT Lesser spotted eagle, LC Madeira laurel pigeon, NT Red kite, NT	Audouin's gull, NT	
	Decreasing	Balearic shearwater, CR European roller, NT Dupont's lark, NT Egyptian vulture, EN	Little bustard, VU		
		Decreasing	Stable	Increasing	

Trends at the time of SAP development

* Species in grey font have very recent SAP and implementation has just begun

Figure 11 Comparison of the population trends change, as an indicator of the action plan impact

Conclusions

The results of the review of the action plans present an overall positive picture, especially when the progress of their implementation is compared to the actual changes in population trends of the analysed species (Fig. 10). However, the following conclusions could be derived from this process:

Action plans worked well when:

- Species is rare and localised, which makes it easier to manage with classic conservation tools (e.g. protected areas designation and management, nest guarding, restocking).
- Direct threats to the species were eliminated through better enforcement.
- Targeted funds were available and sustained (e.g. LIFE)
- There was direct interest of key stakeholders to contribute to the implementation of measures.
- Problems and threats were well diagnosed and their mechanisms understood.
- Good data exists or is gathered through the implementation to support management actions.
- Coordination and technical support for implementation and monitoring was taken by a dedicated organisation or a working group.
- Acute threat that was in the basis of the decline could be eliminated relatively easy (e.g. electrocution)
- Species could benefit from positive environmental trends (e.g. wetland restoration and improvement of water quality and fish stocks).

They failed when:

- Species was dispersed within a large heterogeneous habitat (e.g. agricultural mosaics).
- Classic conservation tools are ineffective or of limited extent (e.g. insufficient habitat included in protected areas)
- Key stakeholders had no interest to contribute (e.g. low uptake of agri-environmental measures).
- Financial incentives caused additional pressures for the species habitat (e.g. subsidies for irrigation, crop conversion, etc.)
- Threats are diffuse, difficult to manage, too complex (e.g. illegal poison use, agricultural intensification)
- Poor data to guide management and provide feedback (e.g. no monitoring schemes in place)
- No clear responsibility or push for implementation (e.g. no one is responsible for the plan at national or international level)
- Plans are of poor quality, not supported by the stakeholders and organisations.
- No clear link to funds for implementation (eg not a priority for LIFE funding).
- They were most needed – to prevent structural pressures to biodiversity from other policies with impact on land-use (e.g agriculture, fisheries, energy).

To deliver better results in the future species action plans should:

- Aggregate key actions by sector and by country to extract policy relevant priorities for action that could be integrated into sectoral plans.
- Be used as guidance for improving the implementation of the Birds Directive.
- Prioritize and guide the targeting of EU funds (in all relevant funds)

- Provide “biodiversity proofing” of EU spending and policies
- Guide further policy development (e.g. new legislation on IAS, sector guidelines)
- Be used to define conservation objectives and actions in national biodiversity plans and budgets.

Species action plans should work better if there were commitment for their implementation from the side of all relevant stakeholders. First, there should be an organisation responsible for coordinating their implementation and ensuring that these stakeholders are taken on board during the implementation.

The EC will need to look further how to stimulate the implementation of action plans. For example, by using them as a standard of good practice for species and habitat conservation measures and as tools supporting the diagnosis of conservation problems. As recent experience suggests, implementation could be encouraged by positive incentives (e.g. funding through LIFE) and stricter enforcement (e.g. enforcement cases similar to C-418/04 against Ireland).

Member States could use the action plans in a similar way when developing their national plans for biodiversity and for key policies and sectors such as agriculture and rural development, forestry, energy, infrastructure development and fisheries. Those Member States that have adopted the development of national or lower level action plans for species recovery (e.g. France, Spain, Italy and others) should ensure that these plans are compatible with and contribute to the implementation of the international species action plans.

Table 7 Distribution of responses to the questionnaire received for this review

Country	Lesser spotted eagle	Eleonora's falcon	Bearded vulture	Bonelli's eagle	Balearic shearwater	Little bustard	Zino's petrel	Fea's petrel	Dalmatian pelican	Cinereous vulture	Eastern imperial eagle	Lesser kestrel	Audouin's gull	Madeira laurel pigeon	Dark-tailed laurel pigeon	White-tailed laurel pigeon	Blue chaffinch
1. ALBANIA	P	P		P					P	P		P					
2. ARMENIA	C									C	C	C					
3. AZERBAIJAN	C					C				C	C	C					
4. BELARUS	C																
5. BOSNIA/HERZEGOVINA	C											C					
6. BULGARIA	C	C		C					C	C	C	C					
7. CROATIA	C	C		C						C	C	C					
8. CYPRUS		C		C							C	C	C				
9. CZECH REPUBLIC	C											C					
10. ESTONIA	C																
11. FRANCE		CP		C	C	pa				CP		CP	CP				
12. GEORGIA	C									C	C	pa					
13. GERMANY	C		C														
14. GIBRALTAR												C					
15. GREECE	C	C	C	C		C			C	C	C	C	C				
16. HUNGARY	C										C	C					
17. ITALY		C	C	C		C				C		C	C				
18. LATVIA	C																
19. LITHUANIA	C																
20. MACEDONIA, FYRO	C								C	C	C	C					
21. MALTA		C															
22. MOLDOVA																	
23. MONTENEGRO	C								C		C	C					
24. POLAND	C											C					
25. PORTUGAL		C		C	C	C	C	C		C		C		C			
26. ROMANIA	C								C		C	C					
27. RUSSIA	X					X			X	X	X						
28. SERBIA	C								C		C	C					
29. SLOVAKIA	C										C	C					
30. SLOVENIA	C											C					
31. SPAIN		C	C	C	C	C				C		C	C		C	C	C
32. SWITZERLAND			C														
33. TURKEY	C	C	C	C		C			C	C	C	C	C				
34. UKRAINE	C					C			C	C	C	C					
35. UNITED KINGDOM					pa												

Contacted, no response

Confirmation received, no response

Partial response received

Complete response received

P

Request declined

X

CP

No contact available

pa

C

Figure 12 Analysis of the overlap of IBAs with protected areas (SPAs in the EU) for 17 species, analysed in 2010 (see Table 1).

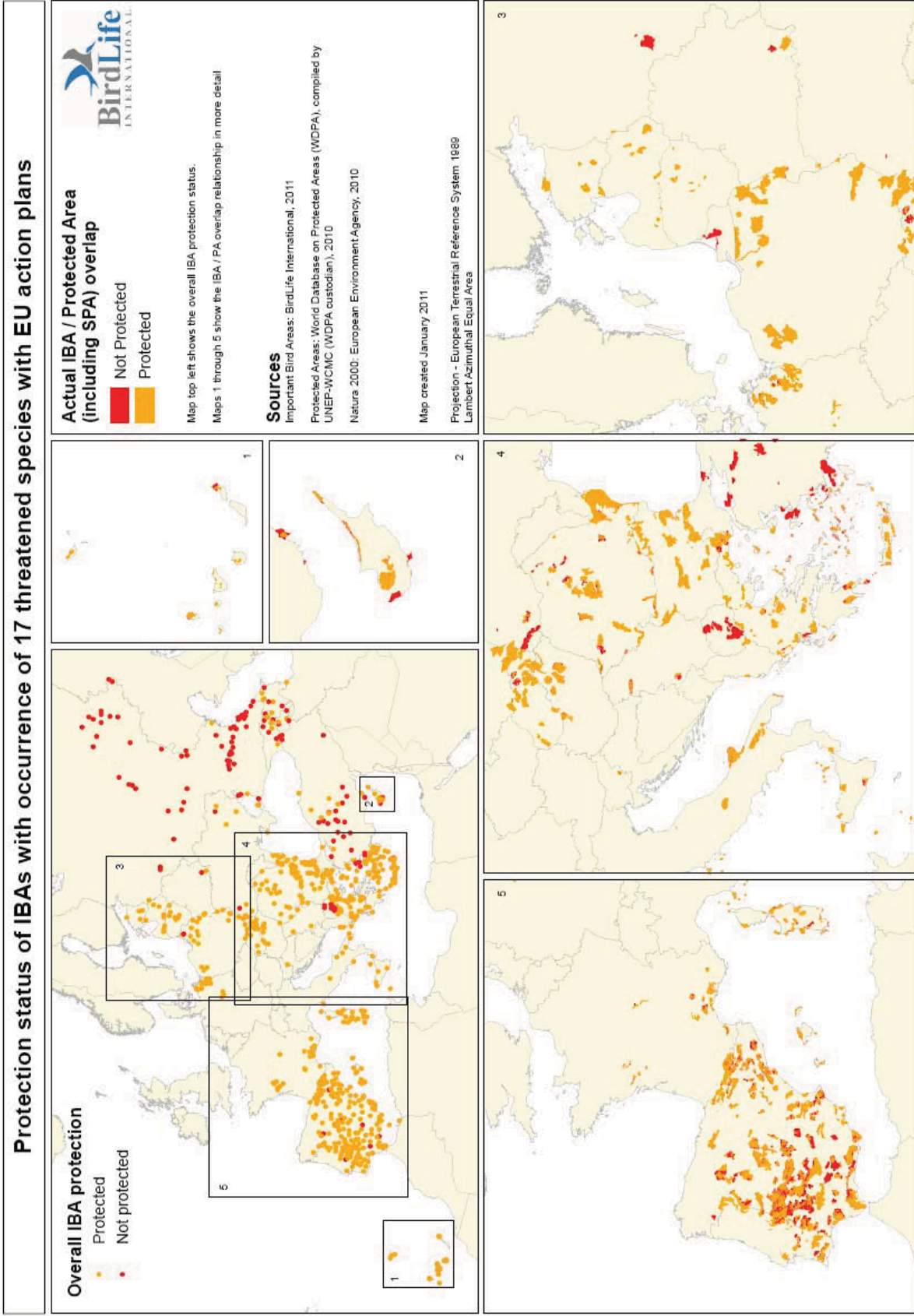


Table 8 Current list of species action plans for birds from Annex I of the Birds Directive commissioned by the European Commission and their endorsement, implementation reviews and latest revision

No.	Species	Subspecies or population	Global threat status (2010)	SPEC Category (BirdLife 2004)	EU Threat Status (BirdLife 2005)	Endorsed by				Year 1st publication	Year of reviews	Latest revision
						EC	Bern	Bonn	AEWA			
1.	<i>Pterodroma feae</i> Fea's Petrel		NT	SPEC 1	VU	*	*			1996	2001, 2004, 2010	
2.	<i>Pterodroma madeira</i> Zino's Petrel		EN	SPEC 1	(CR)	*	*			1996	2001, 2004, 2010	
3.	<i>Puffinus mauretanicus</i> Balearic Shearwater		CR	SPEC 1	CR	*	*			2000	2010	2010
4.	<i>Phalacrocorax aristotelis</i> European Shag	<i>P. a. desmarestii</i>		Non-SPEC ^E	(S)	*	*			2000		
5.	<i>Phalacrocorax pygmeus</i> Pygmy Cormorant			SPEC 1	S	*	*	*		1996	2001, 2004, 2007	
6.	<i>Pelecanus crispus</i> Dalmatian Pelican		VU	SPEC 1	R	*	*	*		1996	2001, 2004, 2007, 2010	
7.	<i>Botaurus stellaris</i> Great Bittern	<i>B. s. stellaris</i> only		SPEC 3	H	*				1996		
8.	<i>Anser erythropus</i> Lesser White-fronted Goose		VU	SPEC 1	EN	*	*	*		1996	2001, 2004, 2007	2008 ¹¹
9.	<i>Branta ruficollis</i> Red-breasted Goose		EN	SPEC 1	VU	*	*	*		1996	2004, 2007, 2009	2010 ¹²
10.	<i>Marmaronetta angustirostris</i> Marbled Teal	W Med population	VU	SPEC 1	(VU)	*	*	*		1996	2004, 2007, 2008	2008
11.	<i>Aythya nyroca</i> Ferruginous Duck		NT	SPEC 1	(VU)	*	*	*		1996	2007	2006 ¹¹
12.	<i>Polysticta stelleri</i> Steller's Eider		VU	SPEC 3W	L	*	*	*		1999		
13.	<i>Oxyura leucocephala</i> White-headed Duck		EN	SPEC 1	VU	*	*	*		1996	2004, 2007	2006 ¹¹

¹¹ Latest revision of the plan was commissioned by AEWA and approved by the European Commission

¹² The latest revision of the plan was jointly commissioned by the European Commission and AEWA

No.	Species	Subspecies or population	Global threat status (2010)	SPEC Category (BirdLife 2004)	EU Threat Status (BirdLife 2005)	Endorsed by				Year 1st publication	Year of reviews	Latest revision
						EC	Bern	Bonn	AEWA			
14.	<i>Milvus milvus</i> Red Kite		NT	SPEC 2	D	*			2010			
15.	<i>Gypaetus barbatus</i> Bearded Vulture			SPEC 3	(VU)	*	*		1999	2010		
16.	<i>Neophron percnopterus</i> Egyptian Vulture		EN	SPEC 3	EN	*			2008			
17.	<i>Aegypius monachus</i> Cinereous Vulture		NT	SPEC 1	R	*	*	*	1996	2001, 2004, 2010		
18.	<i>Accipiter gentilis</i> Northern Goshawk	<i>A. g. arrigonii</i>		Non-SPEC	S	*	*		1996			
19.	<i>Accipiter nisus</i> Eurasian Sparrowhawk	<i>A. n. granti</i> only		Non-SPEC	S	*	*		1996			
20.	<i>Aquila pomarina</i> Lesser Spotted Eagle			SPEC 2	(D)	*	*		1999	2010		
21.	<i>Aquila clanga</i> Greater Spotted Eagle		VU	SPEC 1	EN	*	*	*	1999			
22.	<i>Aquila heliaca</i> Eastern Imperial Eagle		VU	SPEC 1	R	*	*	*	1996	2004, 2010		
23.	<i>Aquila adalberti</i> Spanish Imperial Eagle		VU	SPEC 1	(EN)	*	*	*	1996	2001, 2004, 2008	2008	
24.	<i>Aquila fasciata</i> Bonelli's Eagle			SPEC 3	EN	*	*		1999	2010		
25.	<i>Falco naumanni</i> Lesser Kestrel		VU	SPEC 1	H	*	*	*	1996	2001, 2004, 2010	2010	
26.	<i>Falco vesperinus</i> Red-footed Falcon		NT	SPEC 3	(VU)	*			2009			
27.	<i>Falco eleonorae</i> Eleonora's Falcon			SPEC 2	D	*	*		2000	2010		
28.	<i>Falco biarmicus</i> Lanner Falcon			SPEC 3	VU	*	*		2000			
29.	<i>Falco cherrug</i> Saker Falcon		EN	SPEC 1	EN	*	*		2006 ¹³			

¹³ The SAP was commissioned by the Bern Convention and adopted by the EC Ornith Committee

No.	Species	Subspecies or population	Global threat status (2010)	SPEC Category (BirdLife 2004)	EU Threat Status (BirdLife 2005)	Endorsed by				Year 1st publication	Year of reviews	Latest revision
						EC	Betn	Bonn	AEWA			
30.	<i>Falco rusticolus</i> Gyrfalcon			SPEC 3	(R)	*	*			2000		
31.	<i>Alectoris graeca</i> Rock Partridge	<i>A. g. saxatilis</i> + <i>A. g. whitakeri</i>		SPEC 2	(D)	*	*			2000		
32.	<i>Perdix perdix</i> Grey Partridge	<i>P. p. italica</i> + <i>P. p. hispaniensis</i>		SPEC 3	VU	*	*			2000		
33.	<i>Crex crex</i> Corncrake		NT	SPEC 1	H	*	*	*	*	1996	2001, 2004, 2007	2006
34.	<i>Porphyrio porphyrio</i> Purple Swamphen			SPEC 3	L	*	*			2000		
35.	<i>Fulica cristata</i> Red-knobbed Coot			SPEC 3	CR	*	*			2000		
36.	<i>Tetrax tetrax</i> Little Bustard		NT	SPEC 1	VU	*	*			1999	2006, 2010	2010
37.	<i>Chlamydotis undulata</i> Houbara Bustard	north-west African population	VU	SPEC 1	(VU)	*	*			1996	2004, 2006, 2008	2010
38.	<i>Otis tarda</i> Great Bustard		VU	SPEC 1	VU	*	*	*	*	1996	2004, 2006, 2009	2010
39.	<i>Cursorius cursor</i> Cream-coloured Courser			SPEC 3	(EN)	*	*			2000		
40.	<i>Gallinago media</i> Great Snipe		NT	SPEC 1	D	*	*		*	2004	2007	
41.	<i>Numenius tenuirostris</i> Slender-billed Curlew		CR	SPEC 1	NE	*	*	*	*	1996	2004, 2007	
42.	<i>Sterna dougalli</i> Roseate tern	East Atlantic population	LC	SPEC 3	R	*				1999		
43.	<i>Larus audouinii</i> Audouin's Gull		NT	SPEC 1	L	*	*	*	*	1996	2004, 2007, 2010	
44.	<i>Columba trocaz</i> Madeira Laurel Pigeon		NT	SPEC 1	(R)	*	*			1996	2001, 2004, 2010	
45.	<i>Columba bollii</i>		NT	SPEC 1	(R)	*	*			1996	2001, 2004,	

No.	Species	Subspecies or population	Global threat status (2010)	SPEC Category (BirdLife 2004)	EU Threat Status (BirdLife 2005)	Endorsed by				Year 1st publication	Year of reviews	Latest revision
						EC	Bern	Bonn	AEWA			
	Dark-tailed Laurel Pigeon										2010	
46.	<i>Columba junoniae</i> White-tailed Laurel Pigeon		EN	SPEC 1	EN	*	*		1996	2001, 2004, 2010		
47.	<i>Coracias garrulus</i> European Roller		NT	SPEC 2	VU	*			2008			
48.	<i>Dendrocopos major</i> Great Spotted Woodpecker	<i>D. m. canariensis</i> + <i>D. m. thanneri</i>		Non-SPEC	S	*	*		2000			
49.	<i>Chersophilus duponti</i> Dupont's Lark		NT	SPEC 3	(H)	*			2008			
50.	<i>Acrocephalus paludicola</i> Aquatic Warbler		VU	SPEC 1	(VU)	*	*		1996	2004, 2008		2008
51.	<i>Ficedula semitorquata</i> Semi-collared Flycatcher		NT	SPEC 2	D	*			2010			
52.	<i>Fringilla teydea</i> Blue Chaffinch		NT	SPEC 1	R	*	*		1996	2001, 2004, 2010		
53.	<i>Loxia scotica</i> Scottish Crossbill		DD	SPEC 1	DD	*	*		2000			
54.	<i>Pyrrhula murina</i> Azores Bullfinch		CR	SPEC 1	(EN)	*	*		1996	2001, 2004, 2009		2010