



EFFECTIVENESS OF CONSERVATION MEASURES FOR BIRDS IN 100 EUROPEAN UNION SPECIAL PROTECTION AREAS

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ABSTRACT

A two-year survey (2020–22) of 100 EU Birds Directive Special Protection Areas classified by ten Member States (MS) reviewed multiple aspects of their management. Good practices were found but there were major differences in management effectiveness within and between MS with scope for improvement in all aspects of the management process. Lack of adequate funding and stakeholder engagement were identified as significant constraints. Concerted and urgent effort is needed from all MS to enable the EU to achieve Objective 1 of its Biodiversity Strategy for 2030 to “effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately”.

Key words: EU Birds Directive, Natura 2000 network, management effectiveness, conservation objectives, conservation measures, adaptive management, management planning, governance

INTRODUCTION

The European Union’s (EU) core policy for biodiversity conservation has been the establishment of the Natura 2000 (N2K) network of protected areas, a “coherent European ecological network”. The initial driver for establishing these sites were the threats facing many of Europe’s most important areas for conservation in the 1970s and 1980s.

The 1979 ‘Birds’ Directive on the conservation of wild birds (79/409/EEC – BD) was the EU’s first law related to biodiversity. Article 4 requires Member States (MS) to classify Special Protection Areas (SPAs) for taxa listed in Annex I, as well as for regularly occurring migrants.

Together with Special Areas of Conservation (SAC)/Sites of Community Importance (SCI) classified under the 1992 ‘Habitats’ Directive on the conservation of natural habitats and of wild fauna and flora (HD), SPAs are a major element of the N2K network.

Although planned for completion by 1981, the SPA network has taken much longer to create. Over this period, European jurisprudence has progressively

required supporting policies, such as need for multiple aspects of site management (Cashman & Miron, 2023; Tucker et al., 2023). To date, there has been no published assessment of SPA network sufficiency, and over four decades later policies now focus on effective site management. The EU Biodiversity Strategy for 2030 (EC, 2020) now highlights requirements to “*effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately*”.

Adaptive approaches to protected area management (Figure 1) typically involve: an explicit (and for N2K sites, legal) statement of reasons why the site has been established (species, habitats and/or processes); a statement of site conservation objectives (target state); defined conservation actions to be undertaken; implementation of those measures; and a process to monitor and review outcomes, as necessary adjusting future activities.

These adaptive elements all exist within legal requirements for N2K management (Tucker et al., 2023). HD Article 6 and BD Articles 3 and 4 together establish a protection and management regime for N2K sites. The obligations require protection and management beyond

non-deterioration requirements, requiring MS to maintain and re-establish habitats of qualifying species in these sites. Fundamental for delivery is establishment of Conservation Objectives (COs) and Conservation Measures (CMs) for each site. The European Commission (EC) has issued guidance on preparing site-specific COs (EC, 2012a, 2019) and CMs (EC, 2012b, 2019).

Background to assessment

Between 2015–2016, the EC undertook a ‘Fitness Check’ of the two Nature Directives as part of its Regulatory Fitness and Performance Programme. It concluded that both remained fit for purpose, but their implementation needed to be significantly improved (EC, 2016). Among the issues identified as problematic were:

- inconsistent bases for SPA selection, leading to wide variations in size and total national extent, between different MS;
- variable adoption of buffer zones to limit impact of external influences, especially for small sites;
- wide national variation in whether N2K sites have management plans or other processes to direct conservation management; and
- chronic lack of both financial and human resources to protect and manage sites.

A subsequent Action Plan (EC, 2017) highlighted actions to better implement the Directives. This study contributes to the Action Plan by examining a sample of 100 SPAs across ten MS to assess the:

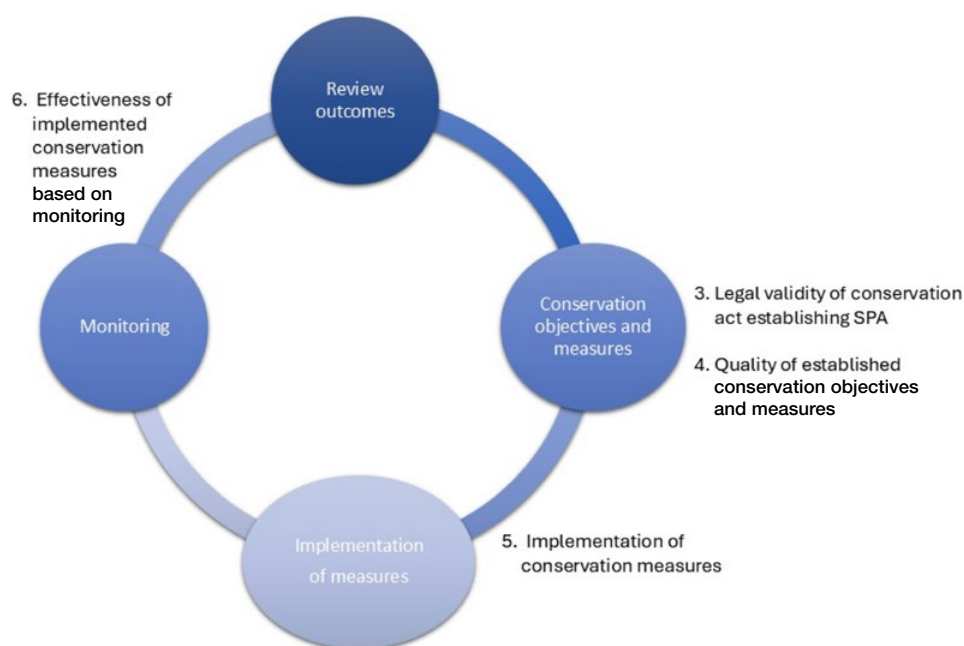


Figure 1. Conceptual outline of main elements of protected area management cycle (based on multiple authors) as related to this survey, and as urged by the EU (e.g. EC, 2013) (Numbers relate to the tasks addressed.)

- quality and sufficiency of SPA classification acts;
- quality of conservation objectives;
- conservation measures established to deliver objectives;
- level of implementation of the conservation measures; and
- their effectiveness.

We assessed implementation and efficacy of measures to maintain sites to benefit those species for which they were designated. We also set out to identify problems and obstacles most encountered in SPA management, as well as good practices. Olmeda et al. (2022) reported full methods and results (link in references). This paper summarises the main findings; unpublished final reports for each MS are held by EC.

The study was organised as six logically sequential tasks presented in Supplementary Online Material 1 for Tasks 1 and 2; and below for Tasks 3–6.

METHODS: OVERALL ASSESSMENT PROCESS AND TEAM

Data collection ran from November 2020 – June 2022. For each of ten MS selected (Croatia, Finland, France, Ireland, Italy, Latvia, Poland, Romania, Slovakia, Spain – Supplementary Online Material 1; Task 1), a nationally knowledgeable assessor (the authors) gathered information using the widest range of public information sources, and especially, although not

exclusively, through confidential questionnaire surveys (Annex 2 of Olmeda et al., 2022). Correspondents, especially site managers and others with direct site knowledge, such as researchers, were selected as most able to inform on site status.

Approaches to elicit information from consultees varied: some were most effectively engaged via direct interviews. Ireland did not permit direct contact with site managers; headquarters staff provided replies for all ten questionnaires. Assessors also undertook their own research on sites using other available information sources.

Questionnaire responses

A total of 180 responses were received from 96 SPAs [of the 100 included sites] with an average of two per site although response rates varied by country (Table 1). Consultee response rate averaged 67 per cent, (100 per cent – Latvia to 41 per cent – Spain). Return quality and detail varied from those who filled in all 50 questions giving comprehensive site overviews, to only partial information provision. Most consultees were site managers, scientists, field practitioners, nature conservation authorities and non-government organisations (NGOs) and, where possible, responses from all these were sought at each site for different perspectives. Private owners and other land-users were poorly represented.



Marais Audomarois SPA, France. One of many sites in this study that was also a Ramsar Site. Whilst conservation Measures are set out in a site management plan, that document poorly relates to the ecological requirements of the qualifying species. These measures are nevertheless better suited to species' habitats (conservation of reedbeds and tall-herb communities, restoration of open areas by clearing brush, reprofiling of the banks of water bodies with gradual slopes), albeit with no specific targets. These measures are particularly effective for populations of Eurasian bittern (*Botaurus stellaris*) and bluethroat (*Luscinia svecica*). © Ecosphère/Prodrone

Table 1. Summary of questionnaire responses from site managers, experts and others both by country and type of respondent, one of the main sources of site-related information.

Country	Total people consulted	Total questionnaires received from					Total sites covered by questionnaires
		NGOs	Administration/ authority	Private experts/ scientists	Others (landowners, stakeholders)	Total	
Croatia	28	8	8	3		19	10
Finland	20	4	6	2	4	16	10
France	32	1	13			14	7
Ireland	54	3	16	3	4	26	10
Italy	31	3	8	5		16	10
Latvia	20	6	8	7	3	24	10
Poland	30	3	12	1		16	10
Romania	20	8	10	1		19	10
Slovakia	26	8	9	1	2	20	10
Spain	24	2	8			10	9
Total	285	46	98	23	13	180	96

Responses to questionnaires for the same SPA frequently differed: typically information provided by state agency employees was more positive than either private experts or staff of NGOs.

Detailed methods for each task are given in Supplementary Online Material 2.

RESULTS

Legal validity of classification acts (Task 3) was typically good but frequently poor in detail. Only one of 100 SPAs had an act fully compliant with requirements (EC, 2012c): name, location and site boundaries; a list of species motivating classification; purpose of classification; need for non-deterioration measures and prevention of impacts; and obligation to apply CMs where necessary to maintain or re-establish species habitats. All other sites lacked one or more of these elements (e.g. objective purpose of site classification was clearly stated only for 35 sites).

In some MS, all SPAs analysed were designated by a single act (e.g. Croatia and Poland), although for others, mostly name, location and site boundaries were included, together with a map. A full list of qualifying species was only included at 48 sites. Where such species were listed, these sometimes varied significantly between classification act, national legal statement of importance (sometimes called a citation), site management plan and/or N2K Standard Data Form (SDF).

Classification acts could not be located for single Irish and Italian sites, and were lacking for three Spanish SPAs.

Definition of Conservation Objectives

Our assessment (under Task 4) found that 87 of the 100 SPAs had site-specific COs corresponding to the ecological requirements of birds for which the SPA had been classified ('qualifying species' as identified in the relevant SDF). However, only 51 SPAs had COs for all qualifying species. Only 43 SPAs had COs that clearly identified condition of species and their habitats to be achieved, and only 20 SPAs had COs that included quantitative and measurable targets. Finally, only 25 SPAs had COs reflecting their overall importance for species and network coherence. COs for many sites simply repeated the BD's high-level objectives and gave little direction for establishing site related CMs (Figure 2; Supplementary Online Material 3, Annex 2).

Establishment of Conservation Measures

Of 100 SPAs, 90 had CMs established in some kind of management plan or through statutory, administrative or contractual measures, noting that site selection (Supplementary Online Material 1; Task 2) favoured inclusion of SPAs with management plans.

Seventy-two SPAs had at least some CMs and fewer than half the sites (49) had complete CMs (i.e. covered all qualifying bird species for the SPA). Further, in only 29 SPAs were measures clear and precise, sufficiently specific, detailed and quantified (Figure 2). In most cases COs and CMs did not comply with Commission guidelines (EC, 2012a,b). Paradoxically, at some SPAs, reasonably good CMs were intuitively established without precise COs. However, these could not be effectively evaluated. Supplementary Online Material 3,

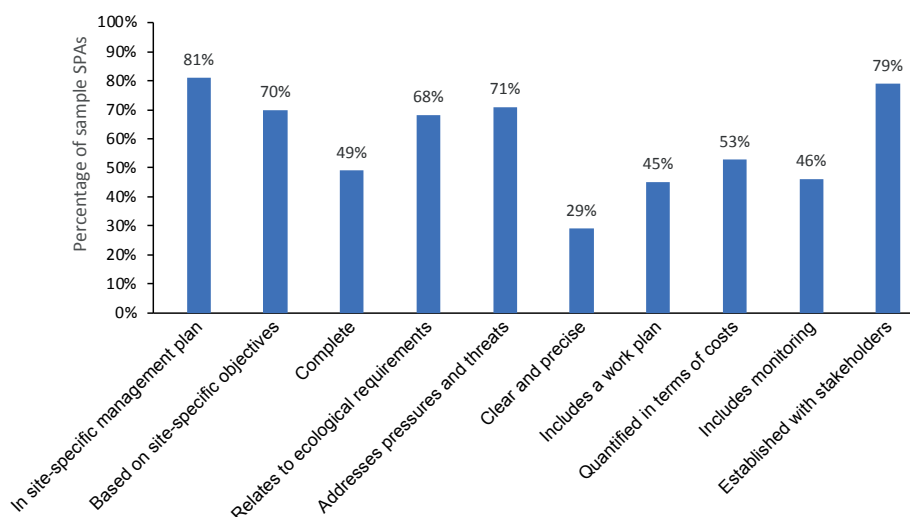


Figure 2. Assessment of Conservation Measures quality in a sample of 100 SPAs.

Annex 3 gives examples of different national procedures for establishing COs and CMs.

Implementation of management plan and conservation measures

Implementation of CMs (assessed in Task 5) was generally poor and varied substantially between MS. One seemed to rely solely on high level law or policy to deliver requirements – for example through constraints on development because of an area’s status within spatial planning policy, thus relying on passive ‘non deterioration’ approaches without active requirements on landowners.

Management of publicly owned sites (also nationally protected) was generally better than on privately owned land (where typically limited habitat management was required other than to restrict overtly damaging activities). In some MS, such as France, voluntary

financial incentives were used to encourage appropriate management.

Respondents considered that management plan implementation was good overall at only 21 sites with some form of management plan (medium at 51, poor at 27 sites).

Implementation of CMs for qualifying species was sufficient at only two SPAs, compared to 12 where it was wholly insufficient. For the remaining 86 SPAs it was only partly sufficient.

At all sites assessed, at least some bird species had no, insufficient or inappropriate implementation of CMs. In almost half (48), respondents considered implemented measures insufficient for a significant proportion of qualifying species (over half the species – Figure 3).

Management capacity and financing

Almost 40 per cent of respondents (Table 2) indicated insufficient or low capacity and/or financial resources of the organisation responsible for CM implementation.

Regular funding for CMs and monitoring was often lacking, with site conservation frequently only achievable through time-limited external funds (LIFE, other EU funds such as Common Agricultural Policy, national or regional funds) meaning long-term financial continuity was insecure.

Governance

The ten MS showed a wide variety of models for SPA governance. Management was often the responsibility of a conservation authority which, in most cases, was a national or a regional statutory body.



South island, Inishkea Islands SPA, Ireland, looking down to the now abandoned former village. The wind-swept natural grasslands provide crucial grazing for Ireland’s largest population of Greenland Barnacle Geese (*Branta leucopsis*). Limited generic Conservation Objectives are published for the site that do little more than state the broad legislative requirements. There is no management plan for the site, nor Conservation Measures to deliver objectives. © David Cabot

Table 2. Assessment from 180 respondent questionnaires of capacity (defined as availability of adequately trained staff), and financial (and other technical) resources for CM implementation at 96 SPAs.

Assessment of capacity and resources	1 Completely insufficient	2	3	4	5 Completely sufficient
Overall capacity for SPA management and for CM implementation	14%	26%	33%	20%	7%
Financial resources for site management and CM implementation	23%	37%	23%	15%	2%

In some MS such as Italy, management approaches were determined by the site manager for example encouraging agreements with farmers to carry out specific conservation measures defined collaboratively and paid under the Rural Development Programme. The participatory and collective approach there, and increased sensitivity of farmers involved, resulted in no conflicts with agricultural uses and activities generating beneficial grassland management.

At ten SPAs in Latvia, Slovakia and Romania, management was undertaken by a local organisation (either non-government or a public institution) with a further six managed by NGOs or through partnerships.

Stakeholders were usually involved in preparing and adopting management plans at 88 sites where plans exist. Stakeholders typically were involved in initial development of objectives and measures, yet their continuing active engagement in implementation measures was uncommon. Only 39 sites reported adequate stakeholder engagement, and only 27 had processes to address management conflicts.

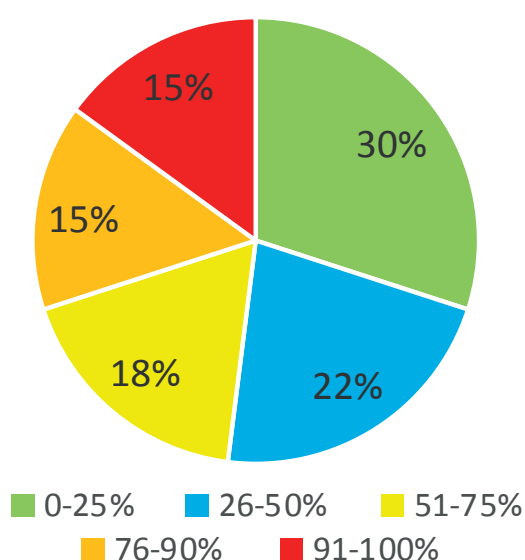


Figure 3. Proportion of species for which the SPA was classified for which conservation measures implemented were insufficient. Thus, in 15 SPAs conservation measures were insufficient for 91-100 per cent of qualifying species.



Monitoring

Monitoring provision was widely variable (Table 3). At some SPAs, management plans included a monitoring programme to assess implementation and CM outcomes. Other plans however did not include monitoring, or it occurred at basic levels with few implementation indicators. Almost all management plans analysed recognised the need to monitor CM implementation – even if this did not occur.

Monitoring populations of *all* qualifying species was carried out regularly at only 40 SPAs. For nearly 50 sites, there was only partial or incomplete monitoring. Where undertaken, monitoring results were publicly available for half the sites. At only 21 sites was the quality of monitoring good (41 medium and 38 poor). In some MS where monitoring occurred, it was not used by authorities to direct or review management adaptively. Most respondents highlighted the need to reinforce monitoring at all SPAs, with insufficient funding reported as the main limitation.

In many MS, principal data sources were through personal communications (e.g. 72 per cent of Latvian sources). Other sources there were technical publications

Table 3. Assessment from 180 respondent questionnaires of monitoring effectiveness at 96 SPAs.

Monitoring in assessed SPAs	Yes	Partly	No	N/A
Are protected bird populations regularly monitored?	38%	48%	9%	5%
Are monitoring results publicly available?	43%	26%	26%	5%
Is there a regular evaluation of CM efficacy?	16%	39%	40%	5%

(16 per cent), scientific publications (8 per cent) and citizen science databases (4 per cent).

Task 6 assessed CM effectiveness. Nearly a quarter of questionnaire respondents, mainly site managers, considered the potential benefit of CMs for qualifying species to be limited – measures benefited all or most species in only 34 of the 100 SPAs. At 42 sites, measures benefited a significant proportion (over 75 per cent) of qualifying species present but at 24 others, less than 25 per cent of species.

At most SPAs, there was limited evidence that implemented measures had improved species status since classification. At only half the SPAs was it possible to verify that populations of at least some qualifying species had increased (or at least not declined) since classification. Conversely, there were decreases from classification baselines at 53 SPAs. Where improvement in status of qualifying species could reasonably be attributed to CM implementation, this was attributed to the regulation of activities demonstrated by adequate surveillance. However, there was no monitoring of outcomes at 43 sites.

Land-use changes

Changes in land uses or human activities since classification benefited qualifying species at 40 SPAs, but no beneficial changes were reported at over 50 sites. Most beneficial changes were linked to adaptation of agriculture and forestry practices, and to regulation of activities such as hunting, extractive activities, tourism and recreational activity. In contrast, more than half of respondents reported changes in land uses and human activities which had harmed qualifying species during the last decade. These were mainly changed/intensified agricultural practices, tourism and/or recreation.

Conflicts of interest between CM implementation and other human activities (including farming, forestry, fishing and hunting, tourism and use of sensitive areas) were reported by 76 per cent of respondents. At some sites with both SAC and SPA classifications, conflicts of interests occurred between habitat COs (under HD) and bird needs (under BD), including conflicting grazing/

grass management regimes and needs for scrub management (for birds).

Table 4 presents a summary of results in relation to the main stages in SPA management across the ten MS using several key questions as performance indicators. It shows highly variable results both between MS for a single issue and overall between the different issues. No single SPA demonstrated all elements of good/required good practice concerning legal certainty; establishment of COs; establishment and implementation of CMs; comprehensive monitoring and review processes; and stakeholder engagement. However, many sites showed some, or indeed many, of these elements.

DISCUSSION

Methodological issues

This study is the first wide-scale survey of practical implementation of EU SPA requirements. Resources and logistics did not allow for use of protected areas protocols such as WWF's Management Effectiveness Tracking Tool (Stolton et al., 2021). Consequently, there was no model capable of achieving wide-scale assessment with the depth needed to capture both positive and negative outcomes. Supplementary Online Material 3, Annex 4 provides a critical assessment of our methodology aimed at improving any future surveys of the N2K network.

We note the non-random nature of site sampling designed by the EC to enable exploration of extant management processes. In terms of outcomes, however, this may skew statistical results to be more positive than a truly random sample, but whether this occurred is unknown (Supplementary Online Material 1, Task 2).

Legal certainty

Correct statutory establishment of SPAs is critical to establish the legal framework for delivery of SPA management and provide 'legal certainty' in the event of third-party challenge. This need was established by European Court of Justice case-law (in C-293/07 and C-415/01) which, *inter alia*, establishes that "the identification of species of importance which have warranted classification of that SPA must satisfy the same requirement" of clarity. Such wide disparity of practice is concerning as it renders a site's legal

Table 4. Overall progress results (as %) using a simple indicator system. Information drawn from 180 questionnaire respondents and other data sources. Darker colour indicates higher implementation score. Source: Olmeda et al. (2022) giving detailed national breakdown.

Member State	Croatia	Finland	France	Italy	Ireland	Latvia	Poland	Romania	Slovakia	Spain	Average
Planning	73	65	69	53	16	48	61	53	88	71	59
CM implementation	52	40	58	37	5	65	40	20	58	52	41
Site management	55	23	56	49	1	53	46	64	64	51	44
Monitoring	52	70	58	33	27	53	47	17	55	46	44
Conservation outcomes	44	71	52	39	28	54	35	25	49	47	43

protection and management regime less effective. In particular, confusion about which species are legal ‘qualifiers’ has significant consequences for SPA protection and management through the scope of Environmental Impact Assessments and Appropriate Assessments.

Management plan establishment

There were significant shortcomings in the establishment of good quality site-specific COs and CMs. This negatively impacts implementation and effectiveness of CMs and ultimately protected species status – likely being one of the main reasons why the status of qualifying species at many sites has not improved over time. Establishment of COs and CMs mainly occurred in management plans. Whilst some plans have legal status, others were essentially non-statutory ‘wish-lists’. In Ireland, there were no management plans. There was variable involvement of stakeholders in the development of COs and CMs. Whilst some MS, such as France, Poland and Finland, are inclusive in the involvement of stakeholders in CO/CM development, others (such as Ireland) are not.

Management plan implementation

Lack of CM delivery is driven by inadequate management plan implementation despite the need for such conservation actions being well understood. Sometimes, CMs known to be effective, such as prohibiting hunting or raising water levels, were not implemented due to landowner/hunter resistance or perceived negative impacts on surrounding land use. Several respondents indicated that apparently, site managers/authorities avoid these measures for fear of stimulating negative responses towards nature conservation.

Governance

In sites where land is mainly privately owned/farmed there appear to be greater challenges to implement CMs compared to state-owned SPAs, and established nature

conservation/wilderness areas where default non-intervention management is the main CM.

A frequent problem in achieving COs relates to land uses and other influences *outside* the SPA. For example, in Finland, mire restoration within the SPA/SAC can typically be impossible or at least be very difficult to initiate if it has unwanted impacts on surrounding areas (most often privately-owned land). Other negative influences, such as atmospheric pollution, are beyond site managers’ control.

Lack of stakeholder engagement is a cross-cutting issue. It seemed that even if stakeholders had been involved in management plan development, they seemed rarely involved in CM implementation – a major shortcoming given the internationally acknowledged importance of such engagement. Concerningly, we further found that many otherwise knowledgeable individuals consulted had limited understanding of the processes that should be occurring on ‘their’ SPA.

Resources

Lack of adequate, consistent long-term resources is the main constraint on SPA effectiveness. Many sites are dependent on ad hoc funding: at some, CM implementation commenced through LIFE projects but after these concluded so did site management – sometimes even for the original objectives of the LIFE project. This led to the loss of benefits, at least partly, of the original funded actions. For agricultural measures, this is despite strong recognition of agri-environment scheme importance, published evidence of its efficacy, and ready availability of best practice models (e.g. through the EC’s Birds@Farmland initiative).

Our findings reinforce earlier conclusions of the Fitness Check that widespread poor management of N2K sites results from lack of financing leading to inadequate staffing, coupled with low stakeholder engagement in site management (EC, 2016).



Delta Neretve SPA, Croatia, is an estuarine and coastal site of importance for waterbirds. There is no management plan and as at many other sites, COs do not contain quantified attributes for the area and structure of habitats; do not address threats recorded in the SPA's Standard Data Form and are not clearly linked to the ecological requirements of individual species. The timeframe and resources needed for achievement of COs have not been defined. © Jasminka Radovic

Monitoring

Regular, complete and systematic bird monitoring was lacking at most sites – being only present at 15 SPAs. Where conducted, monitoring often lacked standardised protocols, varying both between SPAs within individual MS and between MS. Thus, it was not feasible to quantitatively analyse trends for qualifying species at sites. The consequence of such deficiencies was that important changes were not detected, and management measures were accordingly poorly adapted to conservation needs. Lack of funding seemed the primary constraint on adequate monitoring.

Lack of management plan 'adaptive' review resulting from monitoring failure is a shortcoming in nearly all MS (other than on the Finnish mainland where there is systematic monitoring implementation and periodic review of SPA management plan effectiveness).

Effectiveness of Conservation Measures

We found limited evidence that CMs had widely improved population status of qualifying species (only at a third of sites). This finding contrasts with previous studies that demonstrated positive influences on populations linked to Annex I status (e.g. Sanderson et al., 2015) based on wide-scale, correlative methods. Probable reasons for the lack of strong positive effects (and indeed, significant declines at over half the sites)

relate to lack of positive directed management. At others, CMs are either inadequately framed, or even if drafted correctly, inadequately implemented (if at all).

Ultimate reasons for most implementation problems relate to lack of financing limiting human capacity to implement CMs/monitoring. Frequently SPAs lacked sufficient staff for management, personnel for monitoring and guarding, and expert advice.

Population changes within SPAs were directly influenced by land uses that were adverse to COs. Where such conflicts existed, there was typically limited evidence of systematic measures taken to address those. Sometimes (given above) needed measures were not implemented for fear of negative public reactions. Such management deficits are critical and constrain ability to deliver legal requirements to ensure non-deterioration at SPAs.

Where populations increased on sites this often mirrored national scale increases unrelated to SPA condition. In contrast, some qualifying species showed declines or stability contrasting with wider scale increases – implying SPA habitat degradation. We conclude that many implemented CMs have prevented population declines to some extent, but at most of the assessed sites further implementation measures with adequate monitoring are clearly, and urgently, needed.

Overall, results show SPA management frequently has been unable to prevent or limit changes in land uses or human activities detrimental to birds. We found CMs were insufficient to reduce negative land-use impacts which is likely why some species are still declining in SPAs. Widespread structural support for other crucial land uses, such as sustainable traditional agriculture was generally lacking.

Whilst there were some excellent examples of good practice, there was overall poor implementation of legal requirements and compliance with policy guidance on SPA management.

Major constraints to delivering favourable site conditions

We identified two major issues as significant constraints on effective SPA management. Of greatest, and fundamental, importance is the lack of adequate funding for all aspects of the SPA adaptive management cycle. Whilst the EC has provided much guidance on what *needs* to happen (EC, 2012a,b,c), there has never been adequate regional, national or EU resources for delivery. Reliance on short-term funding initiatives, such as LIFE or time-limited agri-environment schemes, is inadequate for long-term management needs. Such financing is limited either to few sites and/or to those agriculturally managed.

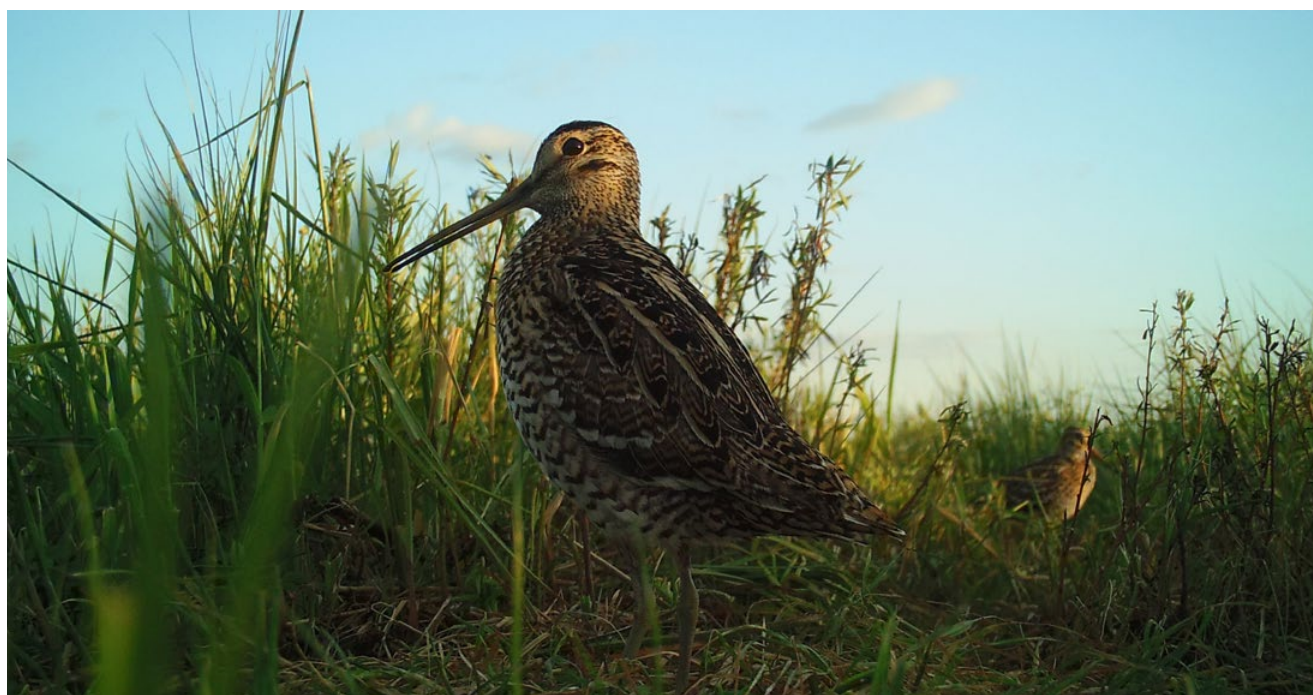
We found frequent lack of active stakeholder engagement in CM development and implementation and consider

this a major constraint on delivering long-term, effective site management.

Low-cost solutions?

Whilst system-wide financial deficits with multiple implications is a major constraint, we suggest the following low-cost actions as means to improve the situation:

- As first priority, establish COs for each SPA since other needs (monitoring, conservation measures) depend on these.
- EU funding bodies (e.g. Horizon and the LIFE Programme), as well as national research bodies, should require publication of site-related data on SPAs by funded projects. Too much relevant data quickly becomes unavailable once project funding ceases.
- Promote more systematic engagement with active researchers and ‘citizen scientists’ at sites as they are likely to be already ‘invested’ in its conservation. Such individuals typically are productive sources of monitoring data past and present and should be proactively encouraged by state authorities.
- Create site-level committees including researchers, landowners and other users to provide a discussion forum. Such fora can provide information on SPA pressures and facilitate cost-effective solutions/conservation measures.



Great Snipe (*Gallinago media*) at Kuja SPA, Latvia. In recent decades this species has been focus of significant conservation measures, including restoration of floodplain grasslands, leading to population stabilisation, if not increase. Novel technologies such as trail cams offer new monitoring possibilities. © Otars Opermannis



Heronry at South Alessandro Lake within Risaie della Lomellina SPA, Italy. SPAs embedded in intensively used landscapes often face competing demands from farming, hunting and water management, highlighting the need for governance frameworks capable of reconciling conservation priorities with broader socio economic interests. Improving conservation in such complex agricultural landscapes requires timely ecological information. Emerging tools such as drone based surveys offer practical opportunities to address monitoring gaps and support more adaptive management. © Mauro Fasola.

- Raise general awareness by state authorities at multiple scales, as well as with stakeholders, regarding the legal and other implications of SPA status. Bizarrely, this basic knowledge is poor in many MS – decades after BD adoption.
- Publish (by MS) summary information on the issues addressed in this study, perhaps as a national ‘dashboard’. Such transparency will generate public/political pressure for resource allocation to improve site condition.
- Make full use of LIFE funded projects to kick-start more coherent national approaches to SPA conservation management where needed.
- Consider how to integrate the current study’s outcomes into reporting under BD Article 12 to monitor progress.
- Revise publicly-funded national monitoring schemes which purport to provide monitoring data, but in practise, fail to do so, to ensure their effectiveness.

Global contexts

The Kunming-Montreal Global Biodiversity Framework (Convention on Biological Diversity, 2022) Target 3 includes both an area sub-target and, crucially, also a sub-target for management: that such areas should be “... effectively conserved and managed ...”.

For the EU, this requirement is delivered through the Biodiversity Strategy (EC, 2020) key commitments which relate not just to the extent of protected areas, but also to the need to “effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately”. This survey indicates significant good practice but also a wide range of problematic issues that MS need to address urgently to ensure the SPA network is fit for purpose and effectively managed. Highly relevant is the 2024 Nature Restoration Regulation establishing restoration targets, especially for N2K sites as priority, as well as targets for bird species’ habitats.

We urge that attention be given by MS to the survey’s conclusions which identified multiple issues where (significant) improvements are necessary, including:

- Enhancing completeness/quality of SPA classification acts to give legal certainty;
- Establishing explicit COs for all SPAs;
- Drafting and implementing SPA management plans (or equivalent mechanisms) at all sites (containing clear statements of CMs to deliver necessary management), and at all stages involving NGO stakeholders;
- Regular, complete and systematic bird monitoring of qualifying species at all SPAs supported by sustained long-term funding, with results

transparently and systematically reported; and

- Relevant national-funding streams to routinely require publication of data collected at SPAs.

Since this study was undertaken, and in part in response to its findings, the Commission have launched a LIFE-funded PAME (Protected Area Management Effectiveness) project to develop a European framework complementing existing PAME systems. In early 2026, the involvement of 47 pilot sites from 26 MS, and ten more from five non-EU countries has been confirmed. The project provides staff training on identified deficiencies such as stakeholder engagement and governance. A pilot programme report is expected in early 2027.

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SUPPLEMENTARY ONLINE MATERIAL

1. Methods/results for Task 1 (selection of ten MS), and Task 2 (selection of ten SPAs within MS)
2. Methods for Tasks 3, 4, 5 and 6
3. Supplementary data Annexes:
 - Annex 1. Details of the 100 SPAs selected
 - Annex 2. Main strengths and weaknesses in setting COs in each MS
 - Annex 3. Examples of procedures for establishment of COs and CMs
 - Annex 4. Summary of methodological issues and recommendations

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Les Alpilles SPA, France. An extensive Mediterranean site holding a diversity of habitats, including pseudo-steppes, grassland, scrub, forests, wetlands, rocky outcrops and dunes and is important for steppe-loving birds such as European Roller (*Coracias garrulus*) and Stone Curlew (*Burhinus oedicnemus*). Good quality and prioritised Conservation Measures, based on well-drafted Conservation Objectives are published for the SPA in a publicly accessible site management plan. © Ludovic Lejour.

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RESUMEN

Este estudio de dos años de duración (2020-22) sobre 100 Zonas de Especial Protección para las Aves (ZEPA) de la UE, designadas por diez Estados miembros, ha revisado diferentes aspectos de su gestión. Si bien se encontraron buenas prácticas, hubo diferencias importantes en la eficacia de la gestión tanto dentro como entre los Estados miembros, con un amplio margen de mejora en todos los aspectos analizados. La falta de una financiación adecuada y de la participación de las partes interesadas se identificaron como limitaciones significativas. Se necesita un esfuerzo organizado y urgente de todos los Estados miembros para que la UE pueda lograr el Objetivo 1 de la Estrategia de Biodiversidad para 2030, que consiste en «gestionar eficazmente todas las áreas protegidas, definiendo objetivos y medidas de conservación claros y supervisándolos adecuadamente».

RÉSUMÉ

Une étude menée pendant deux ans (2020-22) sur 100 aires protégées relevant de la Directive Oiseaux de l'UE, désignées par dix États membres, a permis d'analyser de multiples aspects de leur gestion adaptative. Si des bonnes pratiques ont été constatées, d'importantes disparités subsistent quant à l'efficacité de la gestion, tant au sein des États membres qu'entre eux, laissant une marge d'amélioration considérable à tous les niveaux du processus. Le manque de financement adéquat et d'implication des parties prenantes constitue un frein majeur. Un effort concerté et urgent de la part de tous les États membres est indispensable pour permettre à l'UE d'atteindre l'objectif 1 de sa stratégie en matière de biodiversité à l'horizon 2030, à savoir « gérer efficacement toutes les aires protégées, en définissant des objectifs et des mesures de conservation clairs et en y assurant un suivi approprié ».