

S07-3 Monitoring important bird areas in Africa: prospects and challenges

Steven W. EVANS¹, Leon BENNUN², Aldo BERRUTI¹

1. BirdLife South Africa, PO Box 515, Randburg 2125, South Africa; iba@birdlife.org.za

2. BirdLife International, Wellbrook Court, Girton Road, Cambridge CB3 0NA, UK; leon.bennun@birdlife.org.uk

Abstract We address the monitoring of sites important to the conservation of birds globally within the context of our African experience. The Important Bird Areas process has been used to designate such sites. We describe a model site-monitoring process developed in eastern and southern Africa, drawn from a rationale for monitoring, the variables to be measured, monitoring techniques, coordination and long-term sustainability. The need for monitoring is reviewed. In Africa, there are insufficient resources to monitor a wide array of variables in all the IBAs, or even the highest-priority IBAs, in every country. It is necessary to select priority variables that indicate habitat and species status, as well as potential human influences and conservation responses. Within this “pressure-state-response” framework, variables can be selected by ranking their feasibility (ease of use and cost-effectiveness), and their utility (value of information collected). A two-level approach of “basic” monitoring at all sites and “detailed” monitoring at a subset of sites allows effort to be scaled according to capacity. This process should provide the means for comparing a range of sites within countries and between countries regionally. It should delineate large-scale trends, while helping to build the capacity of individual organizations through sharing experience. Effective linkages to conservation action are essential if monitoring is to be useful, requiring appropriate institutional structures. There are also needs, largely unmet at present, for national and regional coordination, data analysis and long-term data storage.

Key words Site monitoring, Field techniques, IBA, Africa

1 Introduction

The Important Bird Area (IBA) conservation program of BirdLife International is unique in using agreed, objective criteria for site selection that are applied nationally using information collected locally. It employs birds as the primary indicators and is global in scope. Identification and documentation of the sites leads on to conservation planning, advocacy, intervention and monitoring. This paper outlines the development of an IBA monitoring program in Africa applicable at site, national, continental and global levels by the BirdLife International Africa Partnership. The approach was developed initially by Nature Kenya and later adopted and refined by the BirdLife Africa Partnership (Bennun, 2000a,b; Mutekanga, 2000; Ngeh, 2001).

Monitoring involves repeated collection of information over time, in order to detect changes in one or more variables of concern. There are different levels at which data can be systematically collected at a site. Survey is one, comprising a set of standardized observations. Surveillance is another, comprising a series of standardized surveys over time. Narrowly defined, “monitoring” means surveillance that is carried out with specific objectives, usually to detect departures from a standard set. Here we use monitoring more broadly, and include “surveillance” in it. Monitoring has another specialized meaning in the context of project design; but this paper deals only with monitoring of sites, not project outputs.

2 The need for monitoring and coordination

The approach in IBA monitoring is to “think global and act local”. It means that information collected is collatable and comparable at the levels of the site, nation, continent, and globe (Figs. 1, 3). Its purpose is to determine current biodiversity trends and status, and to assess the impact of conservation activities at each of these levels and so serve as an early warning of impending changes. This implies that a monitoring system must contain effective feedback loops into policy, legislation and management actions at each level. Such a system, in sum, should be designed to provide an efficient framework for conserving biodiversity and the life sustaining properties of the Earth (Fig. 1). It should be noted, however, that in such monitoring schemes, not all indicators will be able to be monitored by any single organization, e.g., the BirdLife Partner NGO; usually a consortium of institutions will have to be involved (Fig. 3; Bennun, 2002).

Successful regional coordination of national IBA monitoring allows an unprecedented synthesis and overview of the threats to biodiversity, biodiversity status and conservation responses across Africa. It provides, moreover, a very powerful tool for international conservation advocacy and fund-raising. Such a level of cooperation in Africa serves to continue the process of building the capacity of individual organizations, through sharing experience and

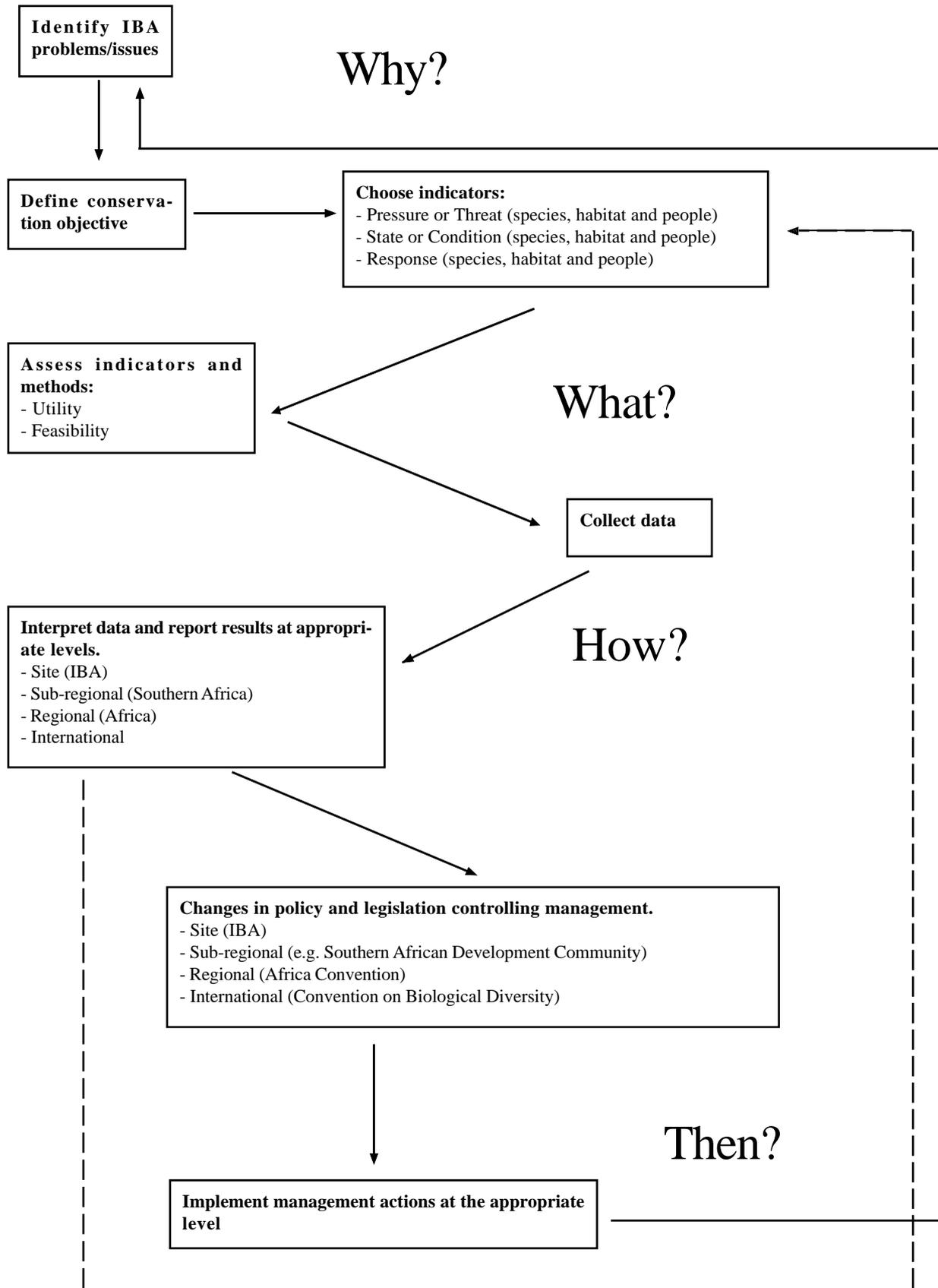


Fig. 1 Simplified steps in designing a monitoring scheme (adapted from Bennun, 2002)

technical expertise (Fig. 3).

3 Classification of indicators

The IBA conservation program aims to identify and protect a global network of sites critical for the long-term viability of naturally occurring bird populations, across the range of those bird species for which a site-based approach is appropriate (Fishpool and Evans, 2001). IBAs are selected on the basis of the birdlife occurring in them, the objective being to manage the sites to conserve their bird populations. The indicators selected for monitoring should be appropriate to this objective (Fig. 1).

Many indicators are open to selection. The BirdLife International Partnership in Africa and Europe, as well as the Convention on Biological Diversity, order them within a “pressure-state-response” indicator framework (Callaghan, 2000, 2001; Bennun, 2002) (Fig. 2). Conservation is usually approached at either the habitat (landscape), site (IBA) or species level. These three levels inter-link closely (Fig. 2). Sites are selected using species, and from landscape features containing particular habitats that are connected (or isolated) by the surrounding matrix. Thus, a site (IBA) monitoring program is likely to incorporate habitat and species indicators (Fig. 3). Another category of indicators concerns people (Fig. 3). Each of the indicators within the “pressure-state-response” framework can thus be categorized further to involve species, habitat or people. A summary of the following indicators is found in Bennun (2002).

3.1 Pressure (threats)

Pressure indicators identify and track the major threats to IBAs. Examples include the rate of grassland conversion to crop-agriculture (habitat), applications to prospect and mine (people), number of birds hunted (species), and human population growth (people).

3.2 State (condition)

Indicators of state concern changes in site condition and biodiversity value. Examples of site condition indica-

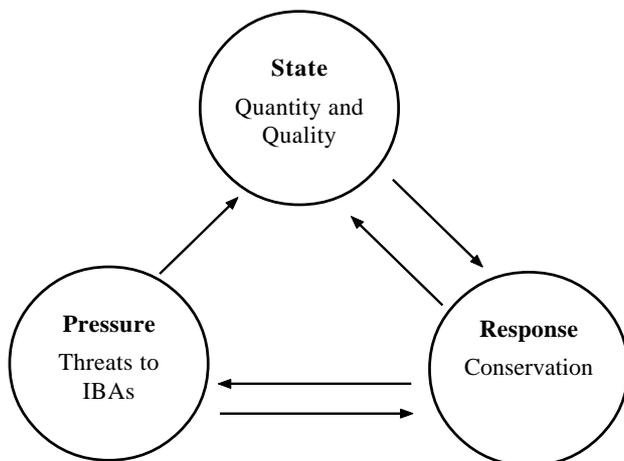


Fig. 2 The relationship between indicators of pressure, state and response (from Bennun, 2002)

tors (habitat) include forest canopy height, grass cover or dead wood density. Examples of biodiversity value indicators (species) include threatened species populations or species richness.

3.3 Response

Response indicators identify and track conservation actions. Examples include a change in legal conservation status (people), reduction in the rate of decline in the population or re-introduction of a threatened species (species), and reduced conversion of grasslands to crop-agriculture or establishment of Site Support Groups (people).

To illustrate the integration of these indicators by means of an example: Owiunji (2001) assessed changes in the avian communities of Budongo Forest Reserve after 70 years of selective logging. Assessing the avian communities involves screening both state (condition) and response indicators. Establishing the effects of selective logging on the forest structure, and consequently impacts on the avian community, in turn analyses a pressure (threat) indicator. Together, the appropriate indicators of pressure, state and response meet the overall monitoring objectives of detecting threats (pressure), determining which interventions to implement (response), assessing their effectiveness (state), making appropriate changes to interventions (response), and tracking overall biodiversity status (state). As this is a site-monitoring (IBA) framework, it is not necessary to always have a habitat, species and people indicator for each of the categories: the most appropriate indicators will depend on the circumstances (Fig. 2).

4 Selecting the most appropriate indicators

In Africa, there are insufficient resources to monitor a wide array of indicators in all the IBAs, or even the highest-priority IBAs in every country. There is therefore a need to select priority variables and indicators within the “pressure-state-response” framework (Fig. 2). Many monitoring schemes are over-ambitious, designing indicators that may be informative but require very expensive and time-consuming data collection. Such schemes cannot be sustained. It is far better to collect basic data reliably over many years than to adopt a more ambitious scheme that soon falls apart (Bennun, 2002).

Indicators should be scientifically credible, simple and easily understood, and quantify information so that its significance is clear (SBSTTA, 1999). Finding indicators that fulfil all these requirements is not easy. The approach currently in use within the BirdLife Africa Partnership ranks indicators against their utility or value for monitoring, regardless of expense and other factors, and their feasibility or practicability in terms of expense and logistics for collecting data (Bennun, 2000a,b; Mutekanga, 2000; Ngeh, 2001).

At a national level, this system can be used to ensure selection of the most effective indicators (Bennun, 2000). At subcontinental and continental level, it has been used to determine which indicators are used by all, some or a few NGOs

(Mutekanga, 2000). Indicators do not need to be completely standardized across sites and countries; for basic monitoring, they can vary so long as they are appropriate for making an overall rating of change. Indicators for detailed IBA monitoring can vary too, depending on the nature of the site and the conservation issues, as long as the links between monitoring and site conservation objectives are made.

5 Monitoring and prioritization of conservation action

Large changes in the condition of an IBA — the drainage of a wetland for example — are reasonably easy to appraise, and form the foundation of basic IBA monitoring. A decline in the population of a threatened species or other subtle changes in the biodiversity value of an IBA are much more difficult to assess and, practically, can only be measured at a very small number of IBAs. Such variables form the foundation of detailed IBA monitoring (Bennun, 2002).

5.1 Basic IBA monitoring

This procedure should be undertaken for all IBAs

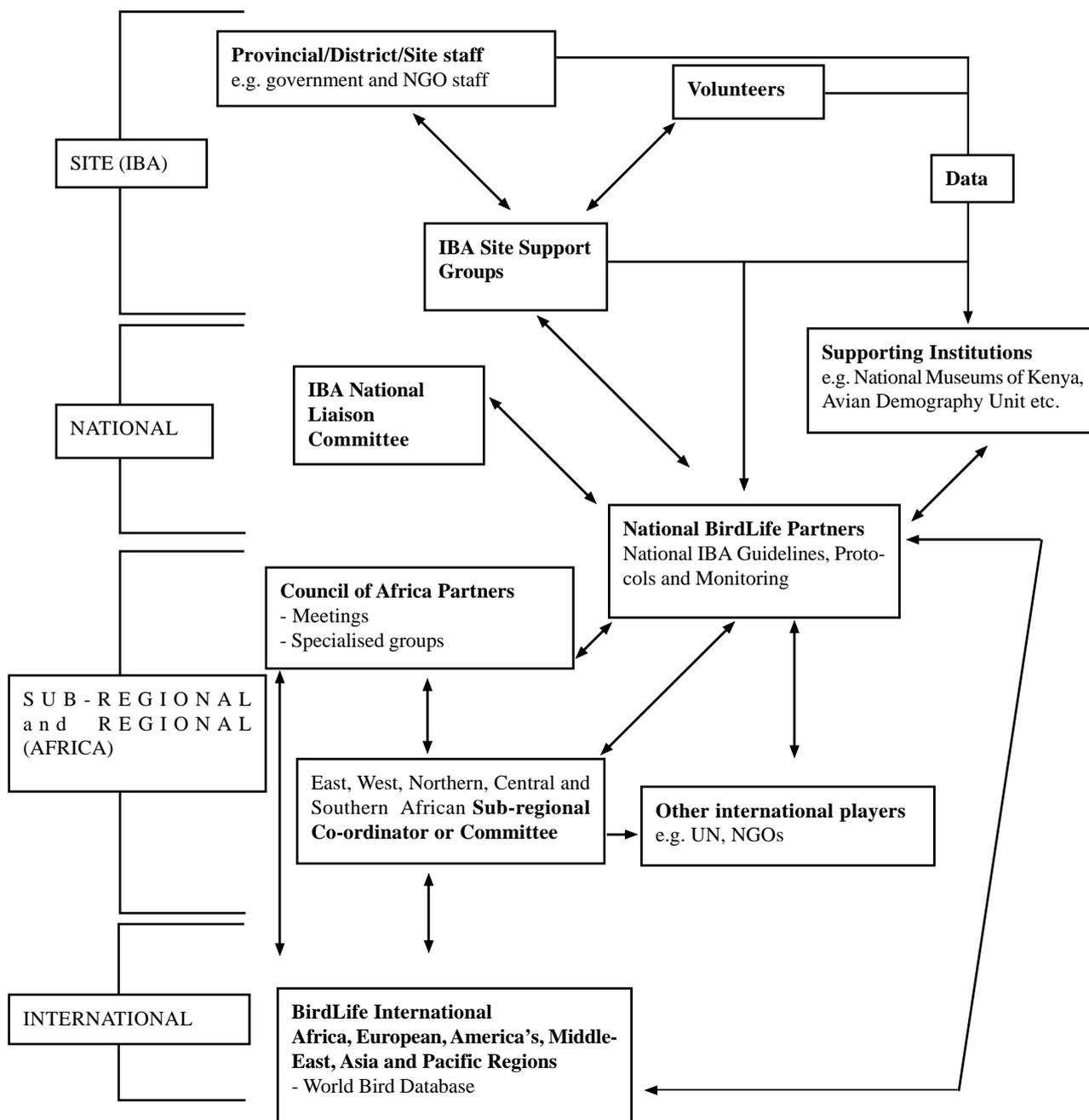


Fig. 3 Co-ordination and information flow between various components and levels of BirdLife International focused on Africa

Adapted from Bennun, 2000b; Mutekanga, 2000.

everywhere. Ideally, it involves an annual assessment of each IBA against indicators of pressure (threat), state (condition) and response. If annual monitoring is not possible, then a longer but regular time-scale (e.g., every two or three years) should be set. The actual indicators that are used can vary from IBA to IBA, and country to country, so long as they are appropriate for making an overall rating. Information on particular IBAs is submitted on simple forms by those with recent personal knowledge of the site, such as its management authority or conservation project staff, site support groups, researchers or birdwatchers. The data required are simple and mainly qualitative, and can be scored to give an overall rating for each site.

Data collection forms may vary in their structure and level of detail. The form should be designed to fit local needs in particular countries. As well as being used in annual assessments, such forms can capture valuable information from ad-hoc visits to the IBA at any time. This information is compiled and added to whatever is already available centrally. From the compiled information, the national IBA monitoring coordinator assesses overall improvement or deterioration at the IBA once a year, and rates each to cover pressure, state and response (Bennun, 2002).

An annual IBA status report, produced regularly and on time, is a potentially powerful conservation tool. It is important to have an accepted, predictable recording system that can be sustained into the future, without constant delays and lapses. The national IBA status report is forwarded to the BirdLife secretariat for regional compilation (Fig. 3).

5.2 Detailed IBA monitoring

Ideally, detailed monitoring should take place at all IBAs annually. Realistically, however, it only takes place in a subset of priority sites, and then not in all countries in Africa. This is because detailed monitoring is substantially more expensive and time-consuming than basic monitoring. The number of IBAs that can be covered will depend on available resources, and some countries find that only basic monitoring is possible (Bennun, 2002). IBAs for detailed monitoring should be carefully selected to include those where this approach will be both most useful and most feasible. Although all IBAs are, by definition, of high priority for biodiversity conservation, some are more immediately threatened and some are richer than others. One method for setting priorities among IBAs to target effort where it is most urgently needed combines the two axes of threat and importance: see Bennun and Njoroge (1999) for its application in Kenya. Other filters to use are the presence/absence of ongoing conservation projects, particular threats that need to be tracked, and the presence of people who can monitor. Such procedures for prioritizing action amongst IBAs has also been adopted in several other African countries (Ethiopia, Uganda and South Africa) (Evans, 2000).

Detailed monitoring is likely to focus mainly on indicators of state, e.g., the condition of the site and its

biodiversity value. However, detailed assessment of pressure and response is sometimes appropriate as well. Indicators need to be carefully selected so that the monitoring can inform site management. When monitoring numbers of a threatened bird, for example, it is probably useful to monitor its habitat as well. Such indicators might also be assessed during basic monitoring. In these instances, the difference between basic and detailed monitoring is likely to be in levels of precision and accuracy.

Detailed monitoring can benefit from shared information about techniques, and it is desirable for the same methods and indicators to be used wherever possible. Even so, and providing that they give useful information about trends, there is no rigid requirement for indicators to be standardized across the IBA network, as they must respond to local needs (Bennun, 2002). For project sustainability, detailed monitoring should be kept as simple, robust and inexpensive as possible, and integrated into the site action plans of site management authorities and Site Support Groups.

6 Coordination and communication

Project sustainability is a key problem for IBA monitoring in Africa. This makes it necessary to institutionalize monitoring (basic and detailed) as far as possible, keep techniques simple and inexpensive, and take on only those that can be kept going. Basic monitoring is difficult enough to implement, and detailed monitoring must be carefully and cautiously planned (Bennun, 2002). An effective institutional structure is essential. These vary from country to country according to national circumstances, especially the local history of bird monitoring. Figure 3 illustrates the information exchange between various structures and levels of the BirdLife International African Partnership that results from institutionalization.

A common key gap at national level is coordination (Bennun, 2002). Experience has shown that there must be a designated National IBA Monitoring Coordinator, irrespective of physical location or employment status. Fig. 3 illustrates the components involved in coordinating the collection, analysis and distribution of IBA monitoring results at site, national, continental and global levels for Africa. A key gap at the continental and global levels is the current absence of Continental and Global IBA Monitoring Coordinators within the BirdLife Africa Division and BirdLife International Policy and Advocacy Division respectively. At the global level, all IBA and species monitoring results are entered, stored and analyzed in BirdLife International's World Bird Database.

7 From monitoring results to action

Data from monitoring must be used to improve the management of an IBA; that is the purpose of collecting them (Bennun, 2002). Through its structure of national organizations operating at grassroot levels, and regionally linked, the BirdLife International Partnership is ideally situated to achieve this unprecedented task in Africa. If the

framework is used consistently, it will be possible to sum data across levels to produce credible, high-quality analyses that can inform advocacy and management at the national, continental and international levels.

Audiences need to be considered carefully, and reports targeted accordingly. It may be appropriate to provide a detailed technical report for IBA managers, yet only a readable summary for higher-level decision-makers such as Government Ministers and executives of the Southern African Development Community (SADC). The summary for a Government Minister may focus on the status of IBAs in one country only, while a summary for a meeting of the SADC would include information on all the IBAs in its region of interest. Separate, clearly targeted reports are necessary for multilateral environmental agreements such as the Convention on Biological Diversity, Convention on Wetlands of International Importance (Ramsar) and Convention on the Conservation of Migratory Species of Wild Animals (Bennun 2002).

If monitoring identifies a conservation problem, a process needs to be in place that allows action to be taken. It is important to develop clear routes for taking action. This is an area where the IBA National Liaison Committee or specific Site Support Group has potential to play a very valuable role (Figs 1 and 3).

At both regional and global levels, implementing this framework should allow the BirdLife Partnership to learn lessons about the approaches that work best for conserving IBAs across Africa (Figs 1 and 3). These lessons need to be documented, analyzed, interpreted and published — and imported into strategies for site conservation. This is the task of the BirdLife International secretariat, particularly its Africa Division (Fig. 3). Initiating and maintaining monitoring requires substantial investment in a national African network (Fig. 3). Much of the work will have to be done through the personal interest, commitment and good will of volunteers, who need support and motivation. Ignoring this reality may prove fatal for the long-term prospects of the monitoring scheme.

8 Conclusion

Developing an effective IBA monitoring program is

not a simple task. To work, it must be sustainable, practical to implement, flexible, repeatable over time, and respond to local conditions and needs. The data that it gathers, moreover, must have the capacity to improve the management of an IBA. The BirdLife International Partnership is in the process of developing and implementing national IBA monitoring throughout Africa. Its organizations there are currently directing most of their resources towards coordinating national IBA monitoring programs and solving the problems associated with long-term data storage and processing for the future. We envisage that the Partnership will be able to report positively on the establishment of national IBA monitoring and conservation frameworks across Africa within the next four years.

References

- Bennun LA, 2000a. Monitoring bird populations in Africa: an overview. *Ostrich* 71: 214–215.
- Bennun LA, 2000b. Guidelines for Monitoring Kenya's Important Bird Areas. Unpublished report. Nairobi: National Museums of Kenya.
- Bennun LA, 2002. Monitoring Important Bird Areas in Africa: a Regional Framework. Unpublished report. Cambridge, UK: BirdLife International.
- Bennun L, Njoroge P, 1999. Important Bird Areas in Kenya. Nairobi: Nature Kenya.
- Callaghan D, 2000. Identifying and Monitoring Important Bird Areas (IBAs) in Europe: Current Activities and Future Development. Unpublished report. Wageningen: BirdLife International.
- Callaghan D, 2001. Monitoring. In: Nagy S ed. IBA Best Practice Guide. Wageningen: BirdLife International, 97–109.
- Evans SW, 2000. Prioritising of South Africa's Important Bird Areas for Conservation Action. Unpublished report. Johannesburg: BirdLife South Africa.
- Fishpool LDC, Evans MI, 2001. Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation. Newbury and Cambridge: Pices Publications and BirdLife International.
- Mutekanga DR, 2000. The Eastern Africa Sub-regional IBA Monitoring Guidelines. Unpublished report. Cambridge: BirdLife International.
- Ngeh PC, 2001. IBA West African Sub-region, Monitoring Process, Workshop report. Unpublished report. Cambridge: BirdLife International.
- Owiunji I, 2001. Changes in avian communities of Budongo Forest Reserve after 70 years of selective logging. *Ostrich* 71: 216–219.
- SBSSTA (Subsidiary Body on Scientific, Technical and Technological Advice), 1999. Development of Indicators of Biodiversity. UNEP/CBD/SBSTTA/5/12. Montreal: Secretariat of the Convention on Biological Diversity.