How birds and BirdLife can help meet, and monitor, national biodiversity targets

BirdLife Resources to Support National Biodiversity Strategies and Action Plans and Implement Synergies With National Implementation of UNFCCC

DEVELOPING & IMPLEMENTING NATIONAL BIODIVERSITY STRATEGIES & ACTION PLANS
How to set, meet and track the Aichi Biodiversity Targets

Capacity Building for Pilot Countries on the Implementation of Synergies Among the Rio Conventions: Presentation of Existing Tools to Promote Synergies
29 October 2012, Hanoi, Vietnam
Robert Munroe, Climate Change Officer
Achieve CBD Strategic Plan through collective national implementation

→

Achieve synergies with other Rio Conventions decisions/national implementation efforts
CBD Strategic Plan 2011-2020

- Agreed in Oct 2010, COP10, Nagoya
- Comprehensive global framework for achieving vision: ‘Living in Harmony with Nature’
- 20 headline Aichi Targets for 2015 or 2020
The ‘Aichi’ Biodiversity Targets

**Address causes**
- Target 1: Awareness
- Target 2: Mainstreaming
- Target 3: Harmful incentives
- Target 4: Sustainability plans

**Reduce pressures**
- Target 5: Loss of natural habitats
- Target 6: Overfishing
- Target 7: Sustainable management
- Target 8: Pollution
- Target 9: Invasive alien species
- Target 10: Climate change

**Improve status**
- Target 11: Protected areas
- Target 12: Threatened species
- Target 13: Genetic diversity

**Enhance benefits**
- Target 14: Ecosystems Services
- Target 15: Restoration, resilience, carbon
- Target 16: Nagoya Protocol

**Improve implementation**
- Target 17: NBSAPs
- Target 18: Traditional knowledge
- Target 19: Science base
- Target 20: Financial resources

*Icons courtesy of IUCN committee of Japan*
Implementation at the national level

- Translation of Strategic Plan to national level – new or revised NBSAPs
- CBD Parties invited to set own targets
- Bearing in mind national contributions to achievement of global targets
Mainstreaming biodiversity into national policies and plans

Biodiversity concerns need to be incorporated into land-use planning at all levels and integrated into production sectors, sustainable development and poverty reduction plans. Data from birds can be used to ensure this is done effectively, and to monitor the degree to which development is sustainable.

Using birds to track progress

The UK government uses the population trends of common countryside birds to monitor the state of the environment and as a measure of sustainable development. It has adopted these 'Sustainable Development Indicators', alongside others monitoring, for example, levels of poverty and healthy lifespans.

Aichi Target 2

Biodiversity is integrated into national and local planning processes, and incorporated into national reporting systems.

The UK Sustainable Development Indicator for wild bird population trends

Source: Data on 121 species from RSPB/BOU/NCC/DEFRA.
- All birds (121)
- Farmland birds (19)
- Woodland birds (10)
- Water and wetland birds (26)
- Seabirds (19)

Achieving the target: examples of success

BirdLife Partners are working to mainstream soaring bird conservation along the Rift Valley/Red Sea flyway.

Important Bird Areas are being used to integrate biodiversity and development planning in Mongolia.

BirdLife’s Rwandan Partner (ACNR) is helping a community to manage wetland resources sustainably.

For these and other case studies, see State of the world’s birds online at www.birdlife.org/datazone/sowb
Opportunities for synergies (1)

Many Aichi Targets are supportive of UNFCCC decisions and national implementation:

NAPs – ‘coordinated with national SD objectives, plans, policies, programmes’, ‘recognise the need to address adaptation planning in the broader context of SD planning’

Cancun Adaptation Framework (CAF) – integration of adaptation in relevant environmental policies and actions

CAF – enhanced action on adaptation should take into consideration vulnerable groups, communities and ecosystems, and may include building resilience of ecological systems including through sustainable management of natural resources → NAPs or equivalent

Icons from CBD Aichi Targets webpage
### Opportunities for synergies (2)

**NAPA Annotated Guidance:** LEG 2002, table 1, page 16

| Table 1: Possible adaptation strategies and the benefits they bring to each MEA |
|---------------------------------|-----------------|-----------------|-----------------|
| **UNCCD**                      | **CBD**         | **UNFCCC**      |
| Disaster planning framework: early warning systems; emergency measures to respond to floods, droughts, etc. | Help ensure protection of vulnerable communities (e.g., creating food and water reserves, cattle protection schemes). | Identification of fragile ecosystems and species prior to a crisis, to maximize protection during and following a disaster. | Determine priority measures to minimize loss of life and damage to livelihoods as a result of extreme weather events. |
| Integrated watershed management: agroforestry (firewood, fodder, annual crops), run-off harvesting for trees and range. | No over-exploitation of local water hence low salinization risk; run-off harvesting, terraces and trees conserve soil. | Conserves much of the watershed’s biological diversity, utilizes parts of it thus contributing to overall sustainability. | Increases water retention and hence its availability in times of drought. Slows water movement, reducing the risk of flash floods. Maintains vegetation as carbon sink and reservoir. |
| Intensive greenhouse agriculture and aquaculture (cash crops, fish, industrial materials from algae). | High income per unit soil and water used, thus economizing on land and water resources. | Reduced pressure on land leaves habitats for in-situ biodiversity conservation, thus promoting its utilization. | Reduced pressure on land (a) allows conservation of biodiversity resistant to climate change; (b) maintains carbon sink and reservoir. |
| In-situ conservation of biological resources, wildlife conservation. | Potential for economic exploitation as an alternative livelihood; promotion of ecotourism. | Global benefits from dryland biodiversity assets. | Conservation of genetic diversity instrumental in restoring climate change damaged ecosystems. |
Opportunities for synergies (3)

Relates to target 10 – connectivity, corridors, restoration, non-climate pressures → maintains ecosystem services important for adaptation and mitigation

*Natural Solutions* and CBD X/31

Maintains provision and resilience of ecosystem services for use in helping people adapt to climate change (ecosystem-based approaches for adaptation) → NAPs

Ecosystem-based approaches for adaptation can support ecosystem services

REDD+ safeguards – activities to ‘incentivise the protection and conservation of natural forests and their ecosystem services’ incorporate in national REDD+ strategies
Opportunities for synergies (4)

Links between biodiversity and carbon

National REDD+ strategies

REDD+ safeguards – activities (including restoration) ‘consistent with the conservation of natural forests and biological diversity’

CBD COP11 invites Parties to build synergies between NBSAPs and national REDD+ strategies and gives advice on application of biodiversity-related REDD+ safeguards

System for providing information on how safeguards are addressed

Restoration EbA activity → NAPs
Why BL – how can we help? (1)
Why BL – how can we help? (2)

- BL works for a world rich in biodiversity, with people and nature living equitably, sustainably and in harmony
- BL acts for nature and people, sharing perspectives and solutions that are founded on local experience but connect across borders and barriers
- BL Strategy (2013-20) fully supportive of CBD Strategic Plan
- Working with national governments supporting efforts to improve management of natural resources, conservation policy and action
Why BL – how can we help? (3)

• BL Partners are ideally placed to involve and engage local communities and the wider public, promoting awareness of the importance of sustainable natural resource management

• BL is CBD International Thematic Focal Point for birds for CHM
  – Hold detailed information on birds and make this widely accessible to help national governments, businesses and others implement and monitor CBD and its programmes of work

• Actively involved in UNFCCC negotiations on adaptation and REDD+ and national implementation
BirdLife can help in

1. Planning NBSAPs/synergies and setting targets
2. Implementation and meeting targets
3. Monitoring and evaluation and reporting again targets
BirdLife International is the CBD’s International Thematic Focal Point for birds for the Clearing House Mechanism (CHM), an information service for promoting technical cooperation and knowledge exchange. We manage a wealth of data that can help Parties to set priorities and track success in meeting biodiversity targets—including developing and revising NBSAPs (see opposite).

### An overview of BirdLife’s online resources

<table>
<thead>
<tr>
<th>Section</th>
<th>URL</th>
<th>QR code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBD support</td>
<td><a href="http://www.birdlife.org/datazone/info/CBDsupport">http://www.birdlife.org/datazone/info/CBDsupport</a></td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>CBD support</td>
<td>A dedicated section of BirdLife’s website, that Parties to the CBD can draw upon when setting priorities, tracking success, developing NBSAPs, preventing extinctions, and designing protected area networks.</td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Country profiles</td>
<td><a href="http://www.birdlife.org/datazone/country">http://www.birdlife.org/datazone/country</a></td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Country profiles</td>
<td>Biodiversity statistics, graphs and maps for every country of the world, including information on numbers of bird species and their IUCN Red List status, numbers of terrestrial and marine Important Bird Areas and their protection status, and environmental treaties.</td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>State of the World’s Birds</td>
<td>An online tool providing access to over 300 Case Studies analysing data from BirdLife and others to help inform decisions, detailed spotlights on BirdLife’s key areas of engagement, and a wide range of publications, including national ‘State of the birds’ reports.</td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Species factsheets</td>
<td><a href="http://www.birdlife.org/datazone/species">http://www.birdlife.org/datazone/species</a></td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Species factsheets</td>
<td>Detailed factsheets for all the world’s birds (&gt;10,000), containing information on IUCN Red List status, distribution, population, ecology, threats, and actions underway and needed.</td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Site factsheets</td>
<td><a href="http://www.birdlife.org/datazone/site">http://www.birdlife.org/datazone/site</a></td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Site factsheets</td>
<td>Detailed factsheets for &gt;11,000 Important Bird Areas (IBAs) in nearly 200 countries, containing information on location and boundaries, key species and habitats, threats, protection status, conservation actions, local communities, and ecosystem services.</td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
<tr>
<td>Marine e-Atlas</td>
<td>A dynamic and interactive map providing information on all the world’s seabirds, breeding colonies, important marine sites, their protection status and relationship to EBSAs.</td>
<td><img src="https://via.placeholder.com/50" alt="QR Code" /></td>
</tr>
</tbody>
</table>
1. Planning and setting targets: Protected areas

- BirdLife Partners identify terrestrial and marine Important Bird Areas (IBAs) nationally
- Involves all stakeholders and uses globally standardised criteria
IBAs are important for identifying gaps...
...including marine (and High Seas)
...important for adaptation

This preliminary analysis projects that the IBA networks in the Lower Mekong region will experience a large turnover of their priority species due to climate change.

Maps courtesy of Ian Willis, University of Durham, UK
• Demonstrating the potential for biodiversity and carbon co-benefits

• Forested IBAs – inform areas to be incorporated into REDD+ national strategies for best biodiversity results from REDD investment
Map from UNEP-WCMC, http://www.carbon-biodiversity.net/Interactive/CarbonCalculatorNotes
...making the most of REDD+ (3)

Map from UNEP-WCMC, http://www.carbon-biodiversity.net/OtherScales/Honduras
Information on IBAs available at... (1)
Information on IBAs available at... (2)
Information on IBAs available at...

Bermuda (to UK)

State of the world's birds case studies

Response: What can be done to improve the status of birds

- Bermuda Petrel is being conserved through translocation and provision of artificial nest-sites

Key publications


References


Recommended Citation:
Information on IBAs available at... (4)

Search terms
Country/Territory = Bonaire, Sint Eustatius and Saba (to Netherlands);
Ordered by Country

Number of results 9

<table>
<thead>
<tr>
<th>Country/Territory</th>
<th>Site Name</th>
<th>IBA Criteria</th>
<th>Final Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Boven, Sint Eustatius</td>
<td>A2, A4ii</td>
<td>AN007</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Dos Pos, Bonaire</td>
<td>A1, A2, A3</td>
<td>AN010</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Klein Bonaire, Bonaire</td>
<td>A2, A3, B4i</td>
<td>AN012</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Lac Bay, Bonaire</td>
<td>A1, A2, A3</td>
<td>AN013</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Pelkermeer Saltworks, Bonaire</td>
<td>A4i, B4i</td>
<td>AN014</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Saba</td>
<td>A2, A4ii, B4i</td>
<td>AN006</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>The Quill, Sint Eustatius</td>
<td>A2</td>
<td>AN008</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Washikemba-Fontein-Onima, Bonaire</td>
<td>A1, A2, A3, B4i</td>
<td>AN011</td>
</tr>
<tr>
<td>Bonaire, Sint Eustatius and Saba (to Netherlands)</td>
<td>Washington-Slagbaai National Park, Bonaire</td>
<td>A1, A2, A3, A4i, B4i</td>
<td>AN009</td>
</tr>
</tbody>
</table>
Understanding local needs: the role of Important Bird Areas in peoples livelihoods

Human wellbeing is dependent on biodiversity and ecosystem services. Damage to ecosystems like forests, wetlands, coral reefs, grasslands or others, due to habitat fragmentation or loss, poses a grave danger to biodiversity and human existence. Whilst all of us depend on the environment, this dependence is most direct and immediate for the poor. Very often the place where they live is their source of food, fuel, medicines, shelter and income, and when habitats become degraded they have no alternatives. Poverty has many other dimensions to it other than low income, and experiences of poverty vary from place to place (BirdLife International, 2006). The Organisation for Economic Co-operation and Development (2001) defines five core dimensions of poverty: economic, human, political, social-cultural and protective.

The BirdLife Partnership endeavours to understand and address poverty, where it affects people living at Important Bird Areas (IBAs), through “Participatory Poverty Assessment” with local communities. This provides a forum for people to explain how they experience poverty, and in particular to describe their relationship with their environment (the IBA) and its resources. Through this process, BirdLife Partners in Africa, the Americas and Asia have worked with communities to develop site-specific solutions to the problems that have been identified (BirdLife International 2008). Examples include supporting agricultural development around Kabira National Park, Burundi, to help reduce pressure on the park’s land and resources, developing ecotourism to generate income at San Marcos, Bolivia, and improving management and marketing of non-timber forest products in Pallas Valley, Pakistan. The process has also confirmed the multi-dimensional nature of poverty, which is recorded through experiences as diverse as an inability to send children to school (at Rucoma IBA in Ghana), feelings of isolation and lack of attention from government (communities in the Bay of Panama IBA) and poor housing (Truong Son, Vietnam).

Conversations with communities also revealed the strong links between people’s livelihoods and the environment and, in many cases, the importance of the IBA in helping to reduce vulnerability and assist with coping in times of stress. These ‘voices of the poor’ at IBAs demonstrate that it is important to ensure that the opportunities and risks associated with environmental issues are included in Poverty Reduction Strategies, and indicate that national and global policy measures are needed to support sustainable local livelihoods.
ABOUT THE ASIA CLIMATE CHANGE TOOLKIT

Climate change is predicted to have significant impacts on species, ecosystems and ecosystem services unless mitigation and adaptation measures are taken. The formulation of appropriate measures in Asia has been hampered by a lack of suitable datasets for climate change modelling. The project *Climate Change Impacts on the Conservation of Birds in Asia* has addressed this by compiling databases of geo-referenced point locality records of species of conservation concern in the [Eastern Himalaya](#) and [Lower Mekong](#). These databases have been used to predict changes in species distributions under a variety of climate change scenarios, and examine how effectively networks of [Important Bird Areas](#) (including protected areas) in these two regions will safeguard species of conservation concern and their habitats in the future. This will provide the basis for future work to develop the mitigation measures and adaptive strategies that will be required to counteract the negative effects of climate change.

Additional information:
Hole et al. 2011 *Conservation Biology*

Hole et al. 2009 *Ecology Letters*
Information on IBAs available at... (7)

Maps
A suite of maps, showing how the ranges of the majority of bird species breeding in sub-Saharan Africa could be impacted by climate change, is made available here online.

- Search by Common Name
- Search by Scientific Name
- Search by Family

These maps, depict modeled present-day and modeled projections of future species ranges approximating to four discrete time periods: present-day (based on the mean climate between 1970–2000), 2035 (a mean of climate projections for the period 2010–2039), 2055 (mean for 2045–2069) and 2085 (mean for 2075–2099).

The maps have been developed collaboratively by BirdLife International and Durham University with data provided by the Zoological Museum of the University of Copenhagen (see here) for “observed” distributional data for all terrestrial bird species breeding in sub-Saharan Africa. These were supplemented by additional point count data for species of the Albertine Rift generously provided by the Wildlife Conservation Society.

These ranges have been prepared for 1608 species, the entire breeding avifauna of sub-Saharan Africa, minus 71 species recorded from fewer than five grid cells, for which modeling was impractical.

The “climate envelope” of a species represents the association between its present-day distribution and current climatic variables. Future distributions are then estimated by projecting this relationship onto scenarios of climate change, making the assumption that current relationships between climate and distribution are retained (see e.g. Pearson & Dawson, 2000). As such, these maps represent the distribution of areas of potential climatic suitability for a species, rather than an explicit...
1. Planning and setting targets: EbA (1)
1. Planning and setting targets: EbA (2)

UK Government Funded Darwin Initiative Project: Ecosystem conservation for climate change adaptation in East Africa (Burundi, Kenya, Rwanda, Uganda)

1. Awareness of EbA raised and implementation capacity built within government and civil society
2. National partnerships built for effective implementation of EbA
3. Improved information and quantitative evidence of the benefits to be derived from ecosystem-based approaches for adaptation
4. Experience and best practice examples and guidance on the successful application of EbA widely disseminated and contributed to regional and international climate change processes
1. Planning and setting targets: EbA (3)

What to look for – good practice EbA

The following points should be considered when reviewing good practice ecosystem-based approaches for adaptation to climate change (EbA) in each country (project activity 1.4) in order to: note case studies for presentation at national training workshops; inform location of national training workshop; note possible members of national stakeholder group; note issues for discussion at national stakeholder group meetings; learn lessons on implementation of EbA in each country.

- Use of ecosystem service(s) for human adaptation – is it truly EbA? – see Q&A document. An ecosystem is defined as the living community of animals and plants sharing an environment with non-living elements such as climate and soil. Ecosystem services are defined as: the benefits that people receive from nature.

- Detailed, participatory vulnerability assessment (analysis of factors that determine exposure, sensitivity and adaptive capacity of vulnerable groups, communities and ecosystems) that examines social, economic and environmental factors and understands that vulnerability is socially differentiated (i.e., poor, women, indigenous groups, elderly and children are potentially marginalised and therefore particularly vulnerable).

- Adaptation intervention chosen is defined by using vulnerability assessment information.

- Understanding social resilience in relation to what makes a resilient ecosystem:
  - What makes social resilience (more information from the Africa Climate Change Resilience Alliance, http://community.eldis.org/55f689a8/research.html):
    - access to assets: natural capital (forest resources, access to water resources), physical capital (flood defence schemes, boreholes), financial capital (household income)

Frequently asked questions on ecosystem-based approaches for adaptation to climate change

1. What is climate change adaptation? Questions in **BOLD**, answers in *italics*.

   The Intergovernmental Panel on Climate Change, the leading international body for the assessment of climate change, defines adaptation as: ‘The adjustment in natural or human systems in response to actual or expected climatic stimuli [changes in average annual conditions, climatic variability and associated extremes] or their effects, which moderates harm or exploits beneficial opportunities.’

2. What is vulnerability?

   Vulnerability is defined by the United Nations Office for Disaster Risk Reduction as ‘The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards’.

3. Why would a BirdLife Partner want to work on human adaptation?

   (i) To help the local communities that BirdLife Partners work with realise (in some cases in terms of understanding, in others in terms of capacity and resources) the solutions that nature provides for us.

   (ii) As environmental degradation is a fundamental driver of risk (as recognised by the World Conference on Disaster Reduction in the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters) and BirdLife Partners are well-suited to tackling degradation.

   When species die out or are depleted or genetic diversity declines, ecosystems become less stable and are less able to withstand shocks and pressures, and their delivery of key ecosystem services [the
# 1. Planning and setting targets: EbA (4)

**Ecosystem-Based Adaptation Guidance**

*Moving from Principles to Practice*

WORKING DOCUMENT: APRIL 2012

<table>
<thead>
<tr>
<th>Component</th>
<th>A: Setting the Adaptive Context</th>
<th>B: Selecting Appropriate Adaptation Options</th>
<th>C: Design for Change</th>
<th>D: Adaptive implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Supports selection of the most appropriate options for adaptation in a given context. Component A explores this context with a view to establishing where information gaps exist.</td>
<td>Identification of appropriate intervention measures and associated, context specific, adaptive actions.</td>
<td>Supports the transition from a list of selected intervention measures, to develop a program that will guide implementation and define a plan to evaluate and reflect on performance.</td>
<td>Provides users with guidance to be confident in implementing change if and when required.</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Clear adaptation decision making context defined with a particular understanding of the role of ecosystem services.</td>
<td>Appropriate adaptation options prioritised in project context.</td>
<td>Plan for implementation and evaluation.</td>
<td>An adaptive approach to EbA implementation.</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td>A range of resources to assist in completing Component A is presented in Annex A1-A5. This includes tools, toolkits, reports and papers on ecosystem service valuation and climate risk screening.</td>
<td>A selection of resources for considering adaptation options is presented in Annex B1-B3. Key tools and methods for adaptation option analysis as well as a thorough overview of adaptation technologies is provided.</td>
<td>A range of resources to assist in initiative design and monitoring and evaluation are provided in Annex C1-C3. Example indicators are aligned to ecosystem services and guide for selecting indicators are presented.</td>
<td>In text boxes outlining an adaptive approach to initiative implementation and links to adaptive management resources are presented in Annex D1.</td>
</tr>
<tr>
<td><strong>EBA Focus</strong></td>
<td>Users are asked to consider their ecosystems and the associated services they provide to inform a problem statement and goal definition. By defining the problem that an adaptation intervention may wish to address with an ecosystem lens, EBA options are placed on a 'level playing field' with respect to traditional adaptation technologies.</td>
<td>Example adaptation technologies are grouped by ecosystem service with their associated benefits and limitations provided to guide the selection of intervention measures with a view to maintain and/or enhance ecosystems resilience.</td>
<td>Users are guided in project design and evaluation to facilitate long-term adaptive management and deliver 'evidence for persuasion'. This sets the foundation for continued support for EBA initiatives whilst ensuring transparency and accountability in implementation.</td>
<td>EBA requires a long-term view. An adaptive, flexible and sustainable approach is advocated to meet this challenge.</td>
</tr>
</tbody>
</table>

*Travers et al. 2012*
1. Planning and setting targets: EbA (5)

2. Meeting the targets

- Achieving the Aichi Targets is a huge challenge

- Requires concerted efforts by all – government, business and civil society – and joint work with the development sectors

- 117 national BirdLife Partners around the work can assist through their conservation programmes and action on the ground
3. Tracking targets

- Monitoring targets is essential to check that progress is being made
- The BirdLife Partnership monitors birds and Important Bird Area locally following a standardised framework
- The data generated can be used to track the Aichi targets nationally, regionally and globally
2. Meeting the targets: Eradicating invasive alien species

Invasive alien species have been the most important driver of documented bird extinctions—implicated in the disappearance of more than 70 species since 1500. The problem is especially acute on islands, where endemic landbirds and breeding seabirds often lack adequate defences against introduced predators such as rats and cats. Over the last two decades, however, there have been considerable advances in eradication techniques, and a number of recent and current island restoration projects attest to the dramatic success that can be achieved given sufficient resources and political will.

One of the first large-scale, island-wide eradication projects took place on Campbell Island, 700 km south of the New Zealand mainland. Here, introduced brown rats *Rattus norvegicus* had devastated native wildlife and pushed the endemic Campbell Islands Teal *Anas nesiotis* to the brink of extinction. The size (c.113 km²), topography and remoteness of the island presented a considerable challenge to effective eradication. However, in 2001, a team from the New Zealand Department of Conservation, equipped with four helicopters, successfully transported and spread 120 tonnes of rodenticide-laced bait across the island. With rats eliminated, native bird species have recolonised and the Campbell Islands Teal has been reintroduced. The success of the project established a model for rodent eradication that has since been replicated around the world.
2. Meeting the targets: Conserving Forests of Hope

**Paraguayan project gets gold**

*Tue, Jan 25, 2011*  
*Americas, News, Top Stories*

A pioneering project in Paraguay aims to show that REDD (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) can deliver significant and lasting benefits to forest communities and biodiversity, while meeting corporate social responsibility commitments, and contributing to climate change mitigation by sequestering carbon.

The work has been independently validated and verified under procedures laid down by the Climate, Community and Biodiversity Alliance (CCBA), being awarded the Gold level.
Restoring degraded forest

Large areas of tropical forest have been degraded by logging and resource extraction, but remain important for biodiversity conservation. Restoring such forests can increase their value for birds and other biodiversity, enhance resilience, and increase their contribution to climate change adaptation and local livelihoods. Bird populations can be used as sensitive indicators to monitor the degree of habitat degradation and to track progress in restoration.

Using birds to track progress

Birds can be useful indicators of forest quality, with some groups of species being particularly sensitive to forest structure and more practical to census than many other animal or plant groups. The population trends of these forest-dependent bird species can be used to monitor the extent of habitat degradation and the degree of recovery of forests being restored.

Achieving the target: examples of success

BirdLife Partners in Indonesia and Sierra Leone are developing innovative approaches to save forests

BirdLife Partners are restoring forests that will help buffer communities against climate change

Community management of forest on Mount Oku, Cameroon, has led to significant habitat regeneration

Aichi Target 15

Ecosystem resilience and the contribution of biodiversity to carbon stocks is enhanced, including through restoration of 15% of degraded ecosystems

Change in abundance of different bird species groups ten years after selective logging compared with similar undisturbed primary forest in northern French Guiana


Images:
- Birds such as Ferruginous-backed Antbird are sensitive to forest condition, so monitoring their trends can help to track the success of efforts to restore degraded forest.
- Restoring forest sites identified for their bird conservation value often enhances the provision of ecosystem services as well as benefiting other biodiversity, such as Sumatran Tiger.

For these and other case studies, see State of the world’s birds online at www.birdlife.org/datazone/swob
2. Meeting the targets: Biodiversity conservation adaptation (1)

| Table 1. Climate-change adaptation strategy (CCAS) categories and example category contingent management actions aimed at increasing a site’s adaptive capacity. |
|---|---|---|---|---|---|---|
| **CCAS category** | **Propensity of priority species** | **Proportion of invasive species** | **Stochastic management** | **Disturbance regime management** | **Translocation** | **Increase site area** |
| High persistence | low | low | high | Resilience: maintain viable populations of persistent species | Desirable: focus on restoration efforts centred on ex situ reserves and/or historical perspective to maximize habitats for persistent species; consider using genotypes better adapted to projected future climate | Desirable: manage disturbance regimes within current range of variability, allow passive traits where unviable | Low priority (because change in climate suitability is neither driving touch extinction nor encouraging touch colonization) | Desirable: identify and incorporate refuge sites (e.g., highland areas, areas of physiological diversity and/or abiotic gradients to maintain resilience of persistent species) |
| Increasing specialization | high | low | low | Resilience: maximize populations of projected emigrants to maximize likelihood of successful establishment in newly suitable sites | Desirable: focus on restoration to maximize proportion of key habitats for emigrants | High priority: optimize disturbance conditions for emigrants (e.g., initial habitat succession driven by climate change) | High priority: consider translocations from the site and preparation of ex situ conservation plans (contingent on network-wide representation targets for emigrants) | Low priority (unless able to include additional suitable area directly to support persistence or productivity of populations of emigrants) |
| High turnover | high | high | low | Resilience and facilitation: maximize populations of projected emigrants; facilitate transformation of habitats to support projected colonists | High priority: balance focus on restoration of key habitats for emigrants with habitat creation to suit colonists | High priority: balance optimizing conditions for emigrants with facilitating disturbance regime shifts in direction of change to suit colonists | High priority: consider translocations to and from the site and preparation of ex situ conservation plans (contingent on network-wide representation targets for emigrants and colonists) | High priority: accommodate potentially conflicting habitat management needs of maximizing source populations of emigrants and providing suitable habitat for colonists |
| Increasing value | low | high | high | Resilience and facilitation: maintain viable populations of persistent species; facilitate transformation of habitats to support projected colonists | High priority: balance focus on restoration from current and/or historical perspective for persistent species with habitat creation to suit colonists | High priority: balance management within natural range of variability (allowing passive traits where unviable) with facilitating disturbance regime shifts in direction of change to suit colonists | High priority: consider translocations to the site (contingent on network-wide representation targets for colonists) | High priority: accommodate potentially conflicting habitat management needs of maintaining viable populations of persistent species and providing habitat for colonists |

Hole et al. 2011
2. Meeting the targets: Biodiversity conservation adaptation (2)

England Biodiversity Strategy
Climate Change Adaptation Principles
Conserving biodiversity in a changing climate

Smithers et al. 2008
Minimising climate change impacts

Helping biodiversity to cope with climate change will require robust measures to reduce greenhouse gas emissions coupled with efforts to maximise the resilience and adaptation of ecosystems. The latter will require effective management of protected area networks. Information from projected and documented effects on birds can help to frame adaptive management of sites and monitor impacts on species. Helping ecosystems adapt will also benefit human adaptation efforts.

Using birds to track progress

Combining systematic bird population monitoring with independent projections of climate change effects on bird distributions allows calculation of indicators to illustrate the impact of climate change on biodiversity. In Europe since about 1990, species expected to gain range in response to climate change have shown positive population trends, and those expected to lose range have shown negative trends. The Climatic Impact Indicator combines these results and demonstrates an increasing impact of climate change on European birds in the last two decades.

Trends in climatic impacts on population trends: the Climatic Impact Index for European birds, showing the degree to which population trends of 122 species have responded in the direction expected from climate change.


Management scenarios for African IBAs, based on the turnover of species projected under climate change


Aichi Target 10

Pressures on vulnerable ecosystems impacted by climate change are minimised

Achieving the target: examples of success

BirdLife Partners are safeguarding IBAs in order to mitigate climate change impacts on birds

BirdLife Partners are working with local communities to protect and restore mangrove ecosystems

Managed realignment for coastal wetlands in the UK is helping people and nature adapt

Image: Protecting and restoring mangroves not only benefits wildlife, but also helps defend coastal communities against the impacts of climate change. (Jim Konrad)

For these and other case studies, see State of the world’s birds online at www.birdlife.org/datazone/sowb
## Different types of ecosystem services

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supporting</strong></td>
<td></td>
</tr>
<tr>
<td>Maintenance of genetic diversity</td>
<td>Ecosystems are the source of genetic diversity from which a variety of commercial species can be developed. In Nepal, genetic diversity of crops increases production and decreases susceptibility to pests and climate variation.</td>
</tr>
<tr>
<td>Cultivated food</td>
<td>In Nepal, the basic cereal crop on which almost all of the population relies is rice, a cultivated food. There are also over 440 species harvested as wild foods, including mushrooms and edible fungi.</td>
</tr>
<tr>
<td>Raw materials</td>
<td>Timber (a fibre) and fuelwood (an energy source) are hugely important for the Nepali rural population. The Himalayan Giant Nettle is widely used throughout the mountainous regions of Nepal as a source of fibre (powa) for weaving ropes, thread, porter's tumplins, mats, sacks, and bhangra (traditional clothing).</td>
</tr>
<tr>
<td>Natural medicines</td>
<td>Many communities use natural medicines to treat ailments. Tibetan natural medicine practitioners called ‘amchis’ and their medical system is commonly practiced in the mountainous regions of Nepal.</td>
</tr>
<tr>
<td>Water flows</td>
<td>Water is vital to sustain life, and is needed for domestic use, drinking and irrigation. Due to its position in the Himalayas, the mountains of Nepal produce important water flows for the country and beyond.</td>
</tr>
<tr>
<td><strong>Providing</strong></td>
<td></td>
</tr>
<tr>
<td>Local climate and air quality regulation</td>
<td>Ecosystems can contribute to regulating local climatic conditions. Nepal’s forests provide shade and influence rainfall patterns. The wetlands at Koshi Tappu Wildlife Reserve moderate the local climate by absorbing heat by day and releasing heat at night, as well as by removing pollutants.</td>
</tr>
<tr>
<td>Global climate regulation</td>
<td>Forests contribute to regulating the global climate through sequestration of greenhouse gases (CO₂, NO₂, CH₄) and storage of carbon. In Nepal, over 40% of the area is forested and so the country makes a major contribution to this important service.</td>
</tr>
<tr>
<td>Water purification and waste treatment</td>
<td>Good water quality as a result of natural water purification processes provides safe drinking water and waste treatment. This is important in maintaining healthy ecosystems, protecting species and human health.</td>
</tr>
<tr>
<td>Erosion control</td>
<td>Forests can help to prevent or control movement of materials from a surface to another location as a result of wind or water. Although erosion is often a natural process and can also have benefits, there is evidence across many hill slopes in Nepal that erosion is leading to water pollution and soil loss.</td>
</tr>
<tr>
<td>Reducing the impact of weather events</td>
<td>Ecosystems can help to buffer against negative impacts from weather events and can help people adapt to the impacts of climatic variability and change, e.g. by providing protection from storms and flooding. The forested Churia hills help to protect the lowland areas from flooding.</td>
</tr>
<tr>
<td>Biological control</td>
<td>Regulation of pests and vector-borne diseases is an important benefit that we take for granted. In Nepal, waste disposal by vultures helps to reduce populations of pests and reduces the risk of diseases spreading.</td>
</tr>
<tr>
<td><strong>Cultural</strong></td>
<td></td>
</tr>
<tr>
<td>Nature-based recreation/tourism</td>
<td>Nepal is a popular tourism destination for birdwatching, wildlife safaris, rafting and trekking, and this tourism is an important source of national and local income. Koshi Tappu Wildlife Reserve is a popular destination for birdwatchers while Chitwan and Bardia National Parks are more famous for large mammals like the Indian rhinoceros and Tiger.</td>
</tr>
<tr>
<td>Aesthetic benefits / inspiration / mental health</td>
<td>Ecosystems can provide aesthetic beauty and mental/intellectual stimulation that lift the human spirit. The beauty of Phoksundo Lake in Shey Phoksundo National Park and Rara Lake in Rara National Park appeal to Nepali people regardless of whether they are able to visit these remote sites.</td>
</tr>
<tr>
<td>Spiritual / religious experience</td>
<td>Ecosystems play an important role in cultural and spiritual traditions and in providing religious and spiritual solace for people. The Gosainkunda Lake in Langtang National Park is visited by many pilgrims from various parts of the country in the Janai Purnima festival.</td>
</tr>
</tbody>
</table>
2. Meeting the targets: measuring ecosystem services to improve decision-making (2)

Stages in assessing ecosystem services at sites, as outlined in the ‘toolkit’

**Preliminary work**
- Define site, based on biological importance and perceived threats
- Explore policy context
- Identify and engage stakeholders

**Rapid appraisal**
- Identify habitats and drivers of change
- Identify services and beneficiaries

**Identify alternative state**
- Given drivers of change and policy context

**Methods selection**
- Select relevant services to assess
- Identify how to assess alternative state
- Select appropriate methods for each service

**Data acquisition**
- Collect/collate data for site in current state

**Data acquisition**
- Collect/collate data for site in alternative state

**Analysis and communication**
- Analyse data to compare current and alternative states of site
- Identify potential changes in distribution of benefits
- Communicate messages
2. Meeting the targets: measuring ecosystem services to improve decision-making (3)

Climate regulation services
Above-ground and below-ground carbon stocks are estimated using one of three methods: (1) reference to IPCC standard tables; (2) ‘transfer’ of values from similar sites; (3) simple field surveys to quantify the volume of living vegetation in different habitats. Loss of carbon through disturbances is estimated using standardised methods. Carbon dioxide, methane and nitrous oxide emissions are estimated using IPCC methods for appropriate habitat types. Data are extrapolated based on values per hectare.

Water services
Water provision can be calculated using data from water companies in many places and can be estimated from questionnaire surveys in others. However, in many situations water services for the alternative state are difficult to measure and so two online tools (‘Costing Nature’, ‘WaterWorld’) are recommended. These provide information on changes in water provision, seasonality, peak flows and sedimentation.

Harvested wild goods
The most important harvested wild goods are identified through a stakeholder workshop. For each of these, surveys of random selected households are undertaken to quantify the annual amount harvested, the unit value and related costs (including opportunity costs). The selected goods are then matched to land cover types and extrapolated according to average per hectare values.

Cultivated goods
The key cultivated goods are identified through a stakeholder meeting with informed individuals. For each of these goods, random household surveys are undertaken to quantify the annual amount cultivated, the unit value and related costs (including opportunity costs). Average values per hectare are applied to the area under cultivation.

Nature-based tourism and recreation
Data on the number of visitors to a site can be gathered through: (1) published reports on visits to sites e.g. protected areas; (2) a census of visitors over a random selection of days, extrapolated to an annual estimate. Economic contribution from tourism at the site is deduced from interviews with visitors—to estimate average expenditure (travel, food, other goods, entrance fees) per visit. The proportion of that value coming from nature-based tourism is estimated through simple questions about the alternative state.
2. Meeting the targets: measuring ecosystem services to improve decision-making (4)

CONSERVING BIODIVERSITY & DELIVERING ECOSYSTEM SERVICES at Important Bird Areas in Nepal
Safeguarding ecosystem services

Important Bird Areas (IBAs) are critical sites for biodiversity conservation but also deliver ecosystem services such as carbon sequestration and storage, water supply, food, timber, medicines, crop pollination and pest control. Furthermore, many communities are dependent on IBAs for their livelihoods. Effectively conserving the global IBA network would undoubtedly safeguard substantial provision of ecosystem services and local livelihoods.

Using birds to track progress

Birds themselves are important providers of ecosystem services, through their role as pollinators (for which at least 50 crop and medicinal plant species rely on birds), pest control (e.g. rodent-hunting birds of prey), seed dispersal (e.g. frugivores such as hornbills) and scavengers (e.g. vultures). Tracking trends in the status of such species can help to monitor the provision of ecosystem services. In addition, monitoring ecosystem service delivery at IBAs can help to demonstrate the benefits of IBA conservation beyond species, and to monitor progress in safeguarding ecosystem services.

(a) Trends in the extinction risk for species that provide ecosystem services: the Red List Index for pollinating birds.
(b) Trends in the delivery of multiple ecosystem services: proportion of Important Bird Areas in Nepal delivering ecosystem services with increasing, decreasing or stable trends

Source: (a) Analysis of data held in BirdLife’s World Bird Database (2012). (b) Data from 27 sites from Bird Conservation Nepal and BirdLife International (2012).

Aichi Target 14
Ecosystems that provide essential services and livelihoods are safeguarded and/or restored, with equitable access

Achieving the target: examples of success

Bird Conservation Nepal is assessing ecosystem services at Important Bird Areas.

The Nigerian Conservation Foundation is assisting wetland restoration to safeguard vital ecosystem services.

Nature Uganda is empowering local communities to manage natural resources better and to restore ecosystem services.

Image: Healthy, bio-diverse wetlands provide numerous ecosystem services upon which local communities depend. (Lisa Macavan)

For these and other case studies, see State of the world’s birds online at www.birdlife.org/datazone/sowb
3. Tracking targets: EbA

Ecosystem conservation for climate change adaptation in East Africa project:

Developing indicators for Target 11, e.g.
*Trend in proportion of protected areas in which EbA activities are being implemented*

Target 14, e.g.
*Trends (through repeated application of BirdLife’s ecosystem service rapid assessment tool at a suite of sites) in proportion of sites in which delivery of flood control services is increasing/decreasing*

Target 15, e.g.
*Trends in welfare and economic losses associated with climatic variability and change*