

3.6 Priorities for action

As resources are scarce, it is unlikely that immediate, comprehensive conservation action can be taken at all of Kenya's 60 IBAs. This means that it is important to set priorities for action among sites. This section presents a priority-setting methodology and the results of applying it to IBAs in Kenya. The methods were refined and applied during a priority-setting workshop held at Naivasha, Kenya, on 7–8 December 1998. Only an outline account is given here: more details will be published elsewhere (Bennun & Matiku, in preparation).

When examining the results of this analysis (Table 8) it is important to remember that **all** IBAs are priority sites for biodiversity conservation. This analysis is attempting to decide, in an objective and defensible way, where efforts and resources should initially be targeted.

3.6.1 *The approach*

Priorities have been set by combining a measure of **threat** with a measure of **biological importance**. As these are priorities for action, the urgency and scale of action are primarily determined by threat. Within threat classes, priority depends on biological importance.

3.6.2 *Assessing threat*

As in the discussion above ('conservation issues'), five main classes of threats are recognised:

- A: Habitat loss caused through government action (e.g. forest de-gazettement, drainage projects)
- B: Habitat loss caused through conversion of private land or encroachment
- C: Habitat degradation and/or fragmentation through unsustainable use
- D: Pollution
- E: Alien species
- F: Hunting or poaching.

Threats were assessed by the workshop participants for each site. Both immediate threats and likely future threats (within the next three years) were considered for each threat class. In each case, the threat was assigned to one of four levels: 1 = slight; 2 = moderate; 3 = severe; 4 = critical, based on the **actual impact** a particular threat would have on the site and its biodiversity. (Thus a threat that was relatively severe at a particular site compared to other sites, but would have little actual impact, could be rated slight.)

An overall threat score for the site was given based on the highest score in any **single** class of threat. These scores were assigned as follows:

- 1 Site faces few immediate threats, threat level will not increase greatly if no action taken within next three years [now 1, future 2]
- 2 Site faces moderate immediate threat, **and/or** likelihood of substantially increased threat level if action not taken within next three years [now 2, future 3]
- 3 Site faces substantial immediate threat, **and/or** likelihood of critical threat levels if action not taken within next three years [now 3, future 4]
- 4 Site is critically threatened and immediate action essential [now 4]

The threats assigned for each site, and the overall scores, are shown in Table 7. It is clear from the table that threat classes A, B and C (habitat loss, fragmentation and degradation) are by far the most important and urgent threats facing IBAs in Kenya.

3.6.3 Biological importance

Here, biological importance has two components: **importance for birds**, and **importance for other biodiversity**. Importance for birds is the more straightforward to assess, as the information is more complete. However, both measures were given equal weight in the final ranking.

Sites were scored on a set of parameters, then these scores mapped onto a simple four-level ranking. Scoring is used as a way of making sense of detailed information that might otherwise be confusing. Because the final result is a simple hierarchy, the scores themselves, and exactly how they are derived, are of less importance than in some schemes.

The size of a site and its global uniqueness are not explicitly considered. These aspects are already bound up into the IBA categories themselves, and into the scoring methods for biological importance described below. The issue of complementarity (e.g. Howard *et al.* 1998) was also ignored; thus a particular site's priority was not affected by the kinds of sites already listed. Again, complementarity is implicit at an earlier stage in the process, in the IBA requirements to cover the full set of restricted-range and biome-restricted species in a country.

Importance for birds

There are four categories in which IBAs may be listed, and some IBAs qualify for more than one category. All else being equal, the more categories that an IBA qualifies for, the more important it can be considered. The categories involve different kinds of criteria and no category has logical or conservation priority over any other. They are in effect different currencies that need to be combined.

The approach taken here was to score sites within all four categories, map the scores on to a simple ranking, and then combine these ranks for all the categories to give a final level of importance. Note that every site was scored for every category, whether or not it was listed under that category in the directory.

A1. Threatened species

Rationale: Sites with more threatened species, and/or more severely threatened species, are more important.

Each threatened species was assigned points as follows:

Critically threatened = 3, Endangered = 2, Vulnerable = 1, Near threatened = 0.5, Regionally threatened = 0.1

A score of 1–4 for the site was assigned according to the total points. Appendix 5 shows the data used to calculate these scores for Kenya’s IBAs.

Total points	Assigned score
0–0.9	0
1.0–1.9	1
2.0–2.9	2
3.0–3.9	3
>3.9	4

The IBA criteria notes distinguish between different levels of threat. This scoring system attempts to weight the different levels. It also introduces a slightly broader view of importance for threatened birds by including a modest weighting for regionally threatened species.

A2. Restricted-range species

Rationale: Sites with more restricted-range species are more important.

The number of restricted-range species was totalled and a score assigned according to the following scale:

Total	Assigned score
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0	0
1	1
2	2
3	3
>3	4

This approach considers the absolute number of restricted-range birds, rather than the proportion of the total complement within the EBA. This recognises that not all EBAs are of equal importance as centres of endemism.

A3. Biome-restricted species

Rationale: Sites that more completely cover a given biome are more important.

The number of species in each biome was listed. The percentage that this constitutes of the **Kenyan** total of species in that biome was then calculated. The highest percentage in any one biome determined the assigned score.

Highest percentage of biome sp.	Assigned score
0–16	0
17–33	1
34–50	2
51–67	3
> 67	4

This approach has the following features:

- the **percentage** of each biome total is considered; i.e. a ‘small’ biome like the Lake Victoria Basin biome is considered as important as a ‘large’ one like the Somali-Masai biome. Biome-restricted assemblages are among the IBA categories in order to ensure that no appropriate bird species are left out. This suggests that completeness of coverage is more significant than absolute numbers (i.e. it is not the fact that a site contains a many species that is important, but that this number constitutes a significant proportion of the overall set).
- For similar reasons, these percentages are not additive across biomes. It would make little sense to have a site that had a few biome species in several biomes scoring higher than one with almost all the species in one biome.

- The percentage calculated is out of the number of biome species **nationally**, not across the biome as a whole. This corresponds with the way that sites in category A3 are selected in the first place, and puts stress on the completeness of coverage across the whole geographical spread of a biome.

A4. Congregations

Rationale: Sites that qualify for more species, or that more substantially exceed the threshold values for any one species, are more important.

Two different approaches were used here, and then combined to create a single score.

(i) For each species for which the site is listed (or for all species combined if listed under category A(iii)), the number of that species recorded was divided by the threshold value. The highest multiple of the threshold was used to assign a score, as follows:

Multiple	Assigned score
0–0.9	0
1.0–2.9	1
3.0–6.9	2
7.0–14.9	3
>14.9	4

(b) The number of individual species for which a site qualifies under category A(i) or A(ii) was tallied, and a score assigned as follows:

Number	Assigned score
0	0
1	1
2	2
3	3
>3	4

The mean score of (a) and (b) gave the overall score for this category.

Overall bird importance

The scores for all four categories were summed and an overall ranking given as follows:

summed score	overall rank
1.0–2.9	1
3.0–4.9	2
5.0–6.9	3
> 6.9	4

Appendix 7 shows the data and scores in each category for Kenya’s IBAs.

Importance for other biodiversity

A rank from 1–4 was assigned to each site as follows, based on overall diversity and/or the numbers of (viable populations of) globally threatened or (near)-endemic plants, butterflies, fish, reptiles, amphibians or mammals present. (Endemic or near-endemic species were considered those confined to this site and at most two other known sites.)

Rank	Numbers of threatened/endemic species
1	Low — 0
2	Moderate — 1–2
3	High — 3–5 or <3 and very diverse
4	Very high — > 5 or 3–5 and very diverse

Enough information exists on all Kenya’s IBAs to attempt this ranking, though the criteria are necessarily more vague than for the bird importance score.

Overall biological importance

This is a score from 2–8 produced by adding the scores for overall bird importance and importance for other biodiversity.

3.6.4 Priority sites

Table 8 shows the results of the priority-setting exercise, with sites ranked within threat classes according to overall biological importance.

The number of IBAs with particular biological importance scores within each threat class is shown by crosses in the following matrix.

Biological importance							
Threat	8	7	6	5	4	3	2
4	XXXXXX X	XX	XX	XX	X	XX	
3	XXXX	XXXXXX XXXX	XX	XX	X		
2	X	XX	X	XXXXXX	X	XX	XX
1	X	XX	XXX	XXX		XX	XX

X represents one site

Categorisation

Sites were given a three-level categorisation for conservation action priority as follows:

CRITICAL: sites for intensive and immediate action

URGENT: sites for ongoing action at a less intensive level

HIGH: sites for a set of lower level actions

These categories are shown in Table 8 and also in the matrix above, where the dark shading shows sites in the ‘critical’ category, the lighter shading ‘urgent’ sites and the unshaded area ‘high’ priority sites.

Sites prioritised as ‘critical’

(listed in alphabetical order)

Site no.	Site name
1	Aberdare Mountains
7	Arabuko-Sokoke Forest
57	Busia Grasslands
9	Diani Forest
58	Kakamega Forest
13	Kaya Waa
2	Kianyaga Valleys
4	Kinangop Grasslands
48	Lake Naivasha
50	Masai Mara
52	Mau Narok/Molo Grasslands
59	Mt Elgon
5	Mt Kenya
6	Mukurweini Valleys

36	Nairobi National Park
55	South Nandi Forest
21	Taita Hills Forests
22	Tana River Delta
23	Tana River Forests

Sites prioritised as 'urgent'

(listed in alphabetical order)

Site no.	Site name
43	Cherangani Hills
8	Dakatcha Woodland
37	Dunga Swamp
10	Dzombo Hill Forest
3	Kikuyu Escarpment Forest
38	Koguta Swamp
39	Kusa Swamp
46	Lake Elmenteita
49	Lake Nakuru National Park
28	Lake Turkana
17	Marenji Forest
51	Mau Forest Complex
18	Mrima Hill Forest
53	North Nandi Forest
54	Ol Donyo Sabache
20	Shimba Hills Forest
60	Sio Port Swamp
41	Yala Swamp

Sites prioritised as 'high'

(listed in alphabetical order)

Site no.	Site name
42	Amboseli National Park
26	Chyulu Hills Forests
35	Dandora Ponds
27	Dida Galgalu Desert
11	Gede Ruins National Monument
12	Kaya Gandini
14	Kisite Island

15	Kiunga Marine National Reserve
44	Lake Baringo
45	Lake Bogoria National Reserve
47	Lake Magadi
29	Machakos Valleys
30	Masinga Reservoir
31	Meru National Park
16	Mida Creek, Whale Island and the Malindi/Watamu Coast
32	Mwea National Reserve
40	Ruma National Park
19	Sabaki River Mouth
33	Samburu/Buffalo Springs National Reserves
34	Shaba National Reserve
56	South Nguruman
24	Tsavo East National Park
25	Tsavo West National Park

Conservation actions

Suggested classes of conservation actions for each of the priority categories, resulting from discussion at the priority-setting workshop, are given below.

Critical sites only	Urgent and critical sites	All sites
<ul style="list-style-type: none"> • Identify actual and potential stakeholders and collaborators for IBA conservation • Benefit sharing • Provision of alternative resources for the local people • Conservation and development projects • Integrated resource or ecosystem management • Develop and implement management or action plans • Fund raise to buy small unprotected sites • Habitat restoration and rehabilitation 	<ul style="list-style-type: none"> • Develop and maintain site-support groups • Socio-economic surveys • Education and awareness-raising • Local and national advocacy for IBA conservation 	<ul style="list-style-type: none"> • Monitoring • Awareness raising for decision makers • Enforce conservation policies • Promoting eco-tourism • Advocacy for protection status • Detailed surveys • Lobbying for appropriate legislation on site conservation • Gazettement and designation of unprotected IBAs