Key biodiversity areas: Identifying the world's priority sites for conservation – lessons learned from Turkey

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Background

Over the last decade, international conservation organisations have devoted much effort to locate broad scale global priorities for conservation. These include the Endemic Bird Areas (EBAs) of BirdLife International[1], the Global 200 Ecoregions of WWF International[2] and the Biodiversity Hotspots of Conservation International[3]. Important as they are for informing the investment of globally flexible conservation resources, these large-scale analyses do not address a practical problem. They do not exactly define which sites should be protected at a fine scale. Furthermore, by virtue of their broad scale, some sites that are globally important for biodiversity would not be captured.

Parallel to this, many global obligations were set concerning protected areas under the Convention for Biological Diversity (CBD). Among these, parties to the CBD are enjoined to establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity (Article 8(a)). More recently, these site conservation obligations have been reinforced by the targets and indicators set in the Millennium Development Goals and by decisions at the World Summit for Sustainable Development (WSSD). The Convention on Wetlands (Ramsar Convention) and the World Heritage Convention are other key legal instruments established to conserve ecological site networks globally.

Since the 1980s, BirdLife International has been working with a wide range of collaborators to identify Important Bird Areas (IBAs). This work has resulted in internationally accepted standards for selecting networks of key areas that form the site level targets for bird conservation. Regional and national IBA inventories have been produced in Europe[4], the Middle East[5], Africa[6], Andes[7] and new ones are underway in other regions.

Key Biodiversity Areas build on 25 years of experience through the BirdLife International partnership in identifying, safeguarding and monitoring of IBAs. Several projects have recently been developed to extend the IBA approach to other taxa. These include Important Plant Areas (IPAs)[8], Prime Butterfly Areas[9], Important Mammal Areas[10], Prime Dragonfly Areas[11] and Important Sites for Freshwater Biodiversity, with prototype criteria developed for freshwater fish, molluscs, odonates, and crabs[12]. The KBAs framework builds on these initiatives and considers all taxonomic groups for which data exist in site identification. KBAs have already been identified in many countries around the world. These can therefore be used as a starting point for national- and regional-level gap analyses and conservation action.

Rationale of the Key Biodiversity Area method

Key Biodiversity Areas are (KBAs) places of international importance for biodiversity conservation at the global level. The overall goal of the KBA methodology is to provide universal standards for selecting sites of global significance for conservation through the application of quantitative criteria[13]. Such criteria should be easily and consistently applied

across all biogeographic regions and taxonomic groups. They should also be applicable through a national- or regional-level, bottom-up, iterative process, involving local stakeholders, to maximize the usefulness of the resulting site priorities[14].

KBAs are selected to form, when taken together, a systematic network of sites throughout each target species' range. The network of KBAs may be considered as a minimum set, essential to ensure the survival of these species by mean of site conservation. Four criteria are used to select KBAs: (1) Threatened species; (2) Restricted-range species, with small global ranges; (3) Congregatory species, which concentrate in large numbers at a particular site during some stage in their life cycle; and (4) Biome-restricted assemblages (sets of species confined to a particular habitat type, or biome).

These non-exclusive criteria correspond to two main considerations used when planning networks of sites; vulnerability and irreplaceability[15]. The first criteria – threatened species – addresses vulnerability, while the others cover different facets of irreplaceability. To ensure global consistency, thresholds are being applied for each KBA criterion. Broadly speaking, KBA thresholds define the minimum size of the species population for which a KBA must be selected. Furthermore, definitions of two KBA criteria are directly associated with numeric thresholds: restricted-range species and biome-restricted assemblages. Thresholds may be relaxed within each criterion to identify sites of regional or sub-regional significance.

The identification process of KBAs often brings additional sites onto the conservation agenda for the first time[16]. Such sites may not necessarily require protection according to traditional definitions — they might, for example, be sustainably used and managed by local communities. The types of conservation measures needed for KBAs vary with socio-economic context. However, sites must be managed to conserve the important biodiversity that they shelter, and to allow for the continuing provision of biodiversity goods and services to people.

Key biodiversity areas – sites – are one of the main pillars of biodiversity conservation. Yet they are not the whole or the only answer, and sites will not be sufficient to conserve biodiversity in the long term[17]. Some species are not well protected by a site conservation approach (such as dispersed species occurring at low densities across wide areas). For others, site conservation may only be appropriate across some of their range or for parts of their life cycle – for example, colonially nesting species that disperse extensively during the non-breeding season[18]. Hence, KBAs should form part of a wider, integrated approach that embraces conservation not only of sites but also species and landscapes[19].

Nonetheless, KBAs, judging from the IBA example, have the potential to become a practical and effective focus for site scale conservation. They are defined using objective criteria, which helps give the results of the process weight and credibility. The criteria are simple and robust enough that they can be applied uniformly and cost-efficiently. Their application does not require complete datasets, since the method is based on individual biological values and not on relative significance. Such information has to be generated by national and local organisations, working on the ground. Therefore, the implementation process can be a powerful tool for building institutional capacity and setting an effective conservation agenda.

National identification of Key Biodiversity Areas – the pilot project in Turkey

The KBA identification process must be led at a local or national level to ensure use of the best available data and ownership of the resulting priorities. The selection process of KBAs in Turkey aims not only to identify the sites but also to:

- ✓ Develop technical and conservation capacity within the country
- ✓ Develop partnerships between key organisations – both governmental and non-governmental – concerned with site conservation
- ✓ Build broad understanding of the process, and broad ownership of the final site list
- ✓ Focus any new survey work on the most important gaps in knowledge.

By working with local partners, international organisations can use the KBA approach to set fine scale targets for their conservation investment within their priority areas. For governments, KBAs provide a tool to identify national networks of globally important sites. These areas should be priorities both for national investment and for channeling resources from international instruments such as Global Environment Facility (GEF). Furthermore, KBAs can be used to objectively assess the environmental impacts of large-scale development projects funded by international finance institutions.

Turkey is a key country for global biodiversity mainly because of its exceptionally rich flora. With nearly 9,000 species of vascular plants and ferns, Turkey has the richest flora of any country in the temperate zone, with a level of endemism of almost 34% (3,022 species). Three biodiversity hotspots extend in Turkey (Irano-Anatolian, Caucasus and the Mediterranean), as a result of its floristic richness[20].

Identification of Turkey's KBAs dates back to 1989. Since then, several inventories were produced covering KBAs selected for birds, plants, marine turtles and for the globally threatened Mediterranean monk seal. Moreover, Doğa Derneği (Nature Society in Turkish) has produced a draft KBA inventory in 2003 (*www.sifiryokolus.org*), in collaboration with the General Directorate of Nature Conservation and National Parks of Turkey, BirdLife International, Wageningen University and several Turkish universities and other NGOs. Currently, this national inventory is being finalised by applying the four KBA criteria and their thresholds. The taxon groups covered by the Turkish KBA programme include plants, birds, mammals, herpetofauna, freshwater fish, butterflies and dragonflies.

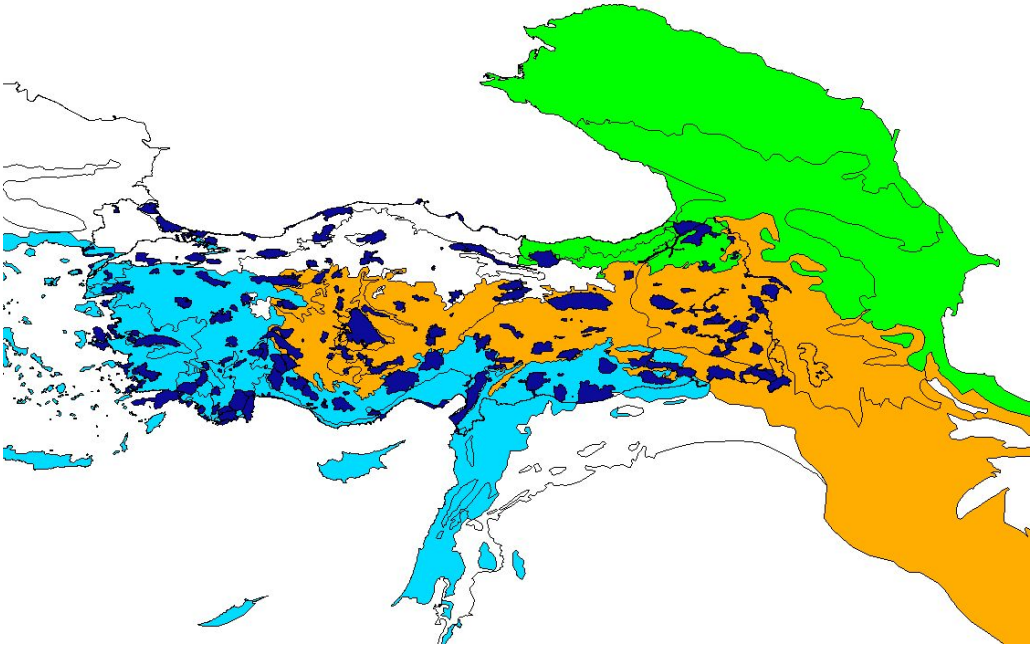
Preliminary results of the KBA project in Turkey

Doğa Derneği, with the help of many experts, identified 267 Key Biodiversity Areas in Turkey covering seven different taxonomic groups. Among these areas 96 qualify as AZE sites (Zero Extinction Areas, *www.zeroextinction.org*), overwhelmingly for plants. 115 of Turkey's KBAs qualify just for one taxonomic group, while 152 trigger the KBA criteria for two or more taxonomic groups.

Taxonomic group	Preliminary KBAs with respect to taxon groups they trigger
Plants	147
Birds	188

Mammals	87
Herpetofauna	42
Freshwater fish	42
Butterflies	17
Dragonflies	13

The boundaries of KBAs and data gathered by Doğa Derneği to select the sites are entirely shared with Turkish Ministry of Environment and Forestry, universities, national and international NGOs. Doğa Derneği and Turkish Ministry of Environment developed a national database called "Nuh'un Gemisi" (*www.nuhungemisi.web.tr*) as the first step of biodiversity monitoring in Turkey. The full list and justifications of the KBAs in Turkey will be published as " Key Biodiversity Areas in Turkey" book in early 2006. This book is expected to form the official Natura 2000 shadow list of Turkey during the European Union accession period.



Source: Doğa Derneği Archive

Figure 1: Preliminary key biodiversity areas for Turkey

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