## SA093 Kouga–Baviaanskloof Complex

**Eastern Cape/Western Cape** **33°25'S–33°50'S; 23°15'E–24°30'E**
**Partially protected** ***c*. 172 000 ha**
**Global IBA (A1, A2, A3)**

### Site description

The Kouga–Baviaanskloof Complex encompasses large areas of mountainous terrain in the western portion of the Eastern Cape. The Kouga and Baviaanskloof ranges are *c*. 120 km long and run parallel to one another from Uniondale in the west to Patensie in the east. The Baviaanskloof Valley, which separates the ranges, lies *c*. 40 km due north of the coastline and to the south, the Langkloof and Tsitsikamma ranges separate these mountains from the coast. The larger and more extensive Kouga range contains many high peaks at its central and western extent, including Smutsberg, the highest peak, at 1 757 m a.s.l. The eastern edge of the range is less rugged, and it consists of plateaus and rolling hills falling below 900 m a.s.l. Relative to Kouga, the linear Baviaanskloof range is far narrower and much more uniform in shape. Scholtzberg (1 625 m a.s.l.) is the highest peak in this range. The north-facing slopes drop steeply into the Great Karoo.

Three main rivers drain the area; the Baviaans and Kouga rivers flow eastwards into the Kouga Dam, and the Groot River flows through a spectacular gorge before joining the Gamtoos River, which runs to the coast. Quartzitic sandstone sediments of the Table Mountain group dominate the area. To the north, the mesic sandstone gives way to arid sandstone slopes, which in turn make contact with the Bokkeveld Shales of the Great Karoo plains. The temperature regime in these mountains is temperate, and rain falls year round. Cut-off lows bring most of the rain to the area. These systems are slow moving pockets of cold air from the mid-latitude South Atlantic Ocean that are trapped in the southern and eastern part of the country by high pressure cells. In the lower-lying areas (<350 m a.s.l.) rainfall averages less than 250 mm p.a. The high-altitude areas (>800 m a.s.l.) generally receive more than 800 mm p.a., the west mostly in winter and the east mostly in summer. The local topography has a dramatic influence on rainfall events. The annual average minimum and maximum temperatures are 5°C and 32°C respectively.

The mainly leached and acid soils, derived from sandstones and quartzites of the Table Mountain Group, support mesic mountain fynbos dominated by a multitude of communities; the Proteaceae, Ericaceae and Restionaceae form particularly dominant elements. Most Kouga–Baviaanskloof fynbos communities have some of the following distinctive species as dominants; *Leucadendron uliginosum, L. salignum, Protea mundii, P. neriifolia, P. nitida, P. repens, Erica newdigateae, E. demissa, E. strigilifolia, E. umbelliflora, Ischyrolepis capensis, Hypodiscus striatus, Restio triticeus, Rhodocoma fruticosa, Brunia nodiflora, Agathosma capensis*, *Thamnus multiflorus, Ehrharta dura, Tristachya leucothrix, Themeda triandra, Merxmuellera stricta, Cannomois virgata, Pentaschistis eriostoma, Cliffortia linearifolia, Agathosma mucronulata* and *Phylica axillaris*. In the seeps *Berzelia* and *Brunia* dominate. Common tree species include *Pappea capensis, Schotia latifolia* and *Euclea undulata*.

Afromontane forest patches found in deep, secluded, mesic gorges are dominated by trees such as *Cunonia capensis, Halleria lucida, Pterocelastrus rostratus, Rapanea melanophloeos* and *Podocarpus latifolius*. Shrubs, ferns, climbers and epiphytes also occur. Arid veld dominated by *Aloe ferox*, *Euphorbia grandidens*, *Passerina obtusifolia, Pentaschistis eriostoma, Cymbopogon marginatus* and *Crassula* spp. occurs on the xeric northern slopes. Spekboomveld is found on the steepest slopes at lowest altitude and is dominated by *Portulacaria afra* and *Putterlickia pyracantha*. On the plains of the Great Karoo, karroid scrub appears, dominated by *Tetragonia, Pteronia incana, Euclea undulata, Euphorbia mauritanica, E. burmannii,* and elements such as *Crassula* spp. and *Cotyledon orbiculata*. On the higher hills and ridges, local patches of renosterbos, dominated by *Elytropappus rhinocerotis*, appears.

### Birds

The Kouga–Baviaanskloof Complex and the surrounding plains hold a remarkable number of avian habitats, making it home to approximately 300 bird species. The mountain ranges hold all the Cape Fynbos restricted-range and biome-restricted assemblage birds. The forest patches hold several South African Forest restricted-range species and the Great Karoo plains in the northern foothills hold several Namib-Karoo biome-restricted assemblage species. Within the low fynbos scrub Striped Flufftail *Sarothrura affinis* are found and the western race of the Blackrumped Buttonquail *Turnix hottentotta* (*nana*) is suspected. Orangebreasted Sunbird *Nectarinia violacea* is widespread in ericas, while Cape Sugarbird *Promerops cafer* and Protea Canary *Serinus leucopterus* occur in the proteoid elements and tall scrub. Cape Francolin *Francolinus capensis*, Cape Bulbul *Pycnonotus capensis* and Cape Siskin *Pseudochloroptila totta* are widespread within the fynbos, while Victorin's Warbler *Bradypterus victorini* is found in moist seeps in the hilly areas. The Ground Woodpecker *Geocolaptes olivaceus* is common on most rocky slopes above 1 000 m a.s.l., while the Cape Rockjumper *Chaetops frenatus* is inexplicably rare, with a few records from the western Baviaanskloof area. The mountain peaks and associated cliffs also hold Black Stork *Ciconia nigra*, Booted Eagle *Hieraaetus pennatus*, Black Eagle *Aquila verreauxii*, Cape Eagle Owl *Bubo capensis* and Peregrine Falcon *Falco peregrinus*. The Martial Eagle *Polemaetus bellicosus* is a rare, widespread resident within the Kouga–Baviaanskloof Complex. The isolated forest patches, particularly in the south, hold several forest endemics, including Knysna Woodpecker *Campethera notata* and Forest Canary *Serinus scotops*. Other forest species, including Olive Bush Shrike *Telophorus olivaceus* and Bluemantled Flycatcher *Trochocercus cyanomelas*, also occur.

The Great Karoo plains and northern foothills of the complex hold Karoo Korhaan *Eupodotis vigorsii*, Sicklewinged Chat *Cercomela sinuata* and Rufouseared Warbler *Malcorus pectoralis*. Blackheaded Canary *Serinus alario* occurs occasionally, whenever there is seeding grass and water. The belts of riverine *Acacia karroo* woodland hold Namaqua Warbler *Phragmacia substriata* and provide food, shelter and breeding habitat for many species, while the thicket and scrub on the slopes also supports Layard's Titbabbler *Parisoma layardi* and Southern Grey Tit *Parus afer*. The Palewinged Starling

*Onychognathus nabouroup* occurs in rocky gorges and kloofs. Other arid-zone species occurring just to the north of the Kouga–Baviaanskloof Complex include Pale Chanting Goshawk *Melierax canorus*, Pririt Batis *Batis pririt*, Fairy Flycatcher *Stenostira scita* and Whitethroated Canary *Serinus albogularis*. Several small Lesser Kestrel *Falco naumanni* roosts occur; the birds disperse during the day to forage on the plains. Furthermore, the coastal grassland belt to the south holds Blue Crane *Anthropoides paradiseus*, Stanley's Bustard *Neotis denhami*, Black Harrier *Circus maurus* and White Stork *Ciconia ciconia*, which regularly forage within the agricultural matrix in the southern portion of the Kouga–Baviaanskloof Complex.

## Other threatened/endemic wildlife

This area is thought to hold in excess of 2 000 plant species. There are many endemic ericas and restios in the southern Kouga–Baviaanskloof Complex. Many more endemics probably await discovery after comprehensive botanical surveys.

Hewitt's Dwarf Leaftoed Gecko *Goggia hewitti* has most of its global range restricted to the Baviaanskloof Mountains. The rare Yellowbellied House Snake *Lamprophis fuscus* has been recorded here, as has the highly localised Southern Ghost Frog *Heleophryne regis* and an as yet undescribed species of Dwarf Chameleon *Bradypodion* sp.

Many southern African endemic reptiles have been recorded in the complex, including the more spectacular Black Thread Snake *Leptotyphlops nigricans*, Sundevall's Shovel Snout *Prosymna sundevallii*, Crossmarked Grass Snake *Psammophis crucifer*, Cape Cobra *Naja nivea*, Manyspotted Snake *Amplorhinus multimaculatus*, Berg Adder *Bitis atropos*, Cape Legless Skink *Acontias meleagris*, Redsided Skink *Mabuya homalocephala*, Spotted Sand Lizard *Pedioplanis lineoocelata*, Cape Mountain Lizard *Tropidosaura gularis*, Common Mountain Lizard *T. montana*, Cape Girdled Lizard *Cordylus cordylus*, Southern Rock Agama *Agama atra*, Ocellated Thicktoed Gecko *Pachydactylus geitje* and Spotted Thicktoed Gecko *P. maculatus*. Cape Grysbok *Raphicerus melanotis* also occurs within the IBA. Threatened mammals include Leopard *Panthera pardus*, Cape Spiny Mouse *Acomys subspinosus* and Striped Weasel *Poecilogale albinucha*.

## Conservation issues

Most of this terrain forms the Kouga/Baviaanskloof Wilderness Area (172 208 ha; 155 323 ha demarcated State Forest, 16 885 ha undemarcated State Forest and an additional 157 829 ha proposed Wilderness Area) in accordance with the policy of the Department of Water Affairs and Forestry (DWAF) (formerly the Directorate of Forestry and Environmental Conservation) to extend reserves for more effective water management. The Directorate of Nature Conservation of the Eastern Cape Province controls the area. Private nature reserves, agricultural farmlands and other privately owned land buffers the protected area along its borders.

The largest conservation areas in the Cape Floral Kingdom have been proclaimed by DWAF in order to protect water catchment areas. Land was acquired rapidly during the 1960s after it was shown that mature forest plantations used much more water than neighbouring natural fynbos vegetation. Strict control on afforestation under the Mountain Catchment Areas Act of 1970 was implemented to protect South Africa's limited water supply. The fact that these water catchment areas coincided with areas of greatest plant biodiversity and endemism was entirely fortuitous. Management objectives in the Kouga and Baviaanskloof mountain catchments are the production of potable water and nature conservation, with fire-hazard reduction, wildflower harvesting, recreation and grazing being secondary objectives.

The importance of these mountains for both water management and biodiversity conservation cannot be overemphasised. The Kouga and Baviaanskloof form the source and lifeblood of many of the freshwater systems in the Eastern Cape, including a large proportion of the catchments of the Gamtoos, Krom and Seekoei rivers. Invasive alien *Acacia, Hakea* and *Pinus* trees pose a serious threat to the conservation of water and natural vegetation in these mountains. In places, these exotic taxa dominate thousands of hectares of natural vegetation, significantly modifying communities and threatening many

| | Breeding (pairs) | Total numbers |
|---|---|---|
| **Globally threatened** | | |
| Blue Crane * | Br? | 100–200 |
| ¥Lesser Kestrel * | | OV |
| **Nationally threatened** | | |
| African Marsh Harrier | | 5–10 |
| Striped Flufftail | | 20–80 |
| Stanley's Bustard | Br | 5–30 |
| **Globally near-threatened** | | |
| Black Harrier * | | 10–40 |
| Ground Woodpecker | Br | 100–250 |
| Cape Rockjumper | Br? | 20–30 |
| Cape Siskin | 1000s | 1000s |
| Protea Canary | 100–300 | 250–800 |
| **Nationally near-threatened** | | |
| Black Stork | Br | 4–10 |
| ¥Peregrine Falcon | Br | 2–4 |
| Lanner Falcon | 8–12 | 20–30 |

| RR & BRA | Status |
|---|---|
| Cape Francolin | Common |
| Striped Flufftail | Rare |
| Karoo Korhaan | Uncommon |
| Knysna Woodpecker | Uncommon |
| Grey Cuckooshrike | Uncommon |
| Cape Bulbul | Common |
| Sicklewinged Chat | Fairly Common |
| Cape Rockjumper | Rare |
| Layard's Titbabbler | Fairly Common |
| Victorin's Warbler | Common |
| Yellowthroated Warbler | Fairly Common |
| Namaqua Warbler | Uncommon |
| Olive Bush Shrike | Uncommon |
| Cape Sugarbird | Common |
| Orangebreasted Sunbird | Common |
| Swee Waxbill | Common |
| Forest Canary | Fairly Common |
| Cape Siskin | Fairly Common |
| Protea Canary | Uncommon |
| Blackheaded Canary | Uncommon |

* – Species both globally and nationally threatened
¥ – Species does not meet IBA threshold
F – Number of females (for polygamous species)
group – Number of groups (for co-operative breeders)
RR & BRA – Restricted-range and biome-restricted assemblage
av – Yearly average (max count) max – Absolute maximum
Br – Confirmed breeding Br? – Suspected breeding
V – Vagrant OV – Occasional visitor

indigenous taxa with extinction. Alien trees are also known to accelerate riverbank erosion and reduce in-stream flow. They are also responsible for changes in fire regime and alteration of plant community composition. It is estimated that in the fynbos biome some 750 plant species are threatened with global extinction by the invasion of alien taxa. The control of these elements is now the largest task facing managers in this biome. Bio-control agents, including fungus and insects, have been introduced to prevent the spread of alien species. Some of these agents have been extremely successful and have spread throughout the biome. Physical removal, bio-control and the use of fire as control agents are now appropriately incorporated into most management plans.

Fynbos is a fire-maintained ecosystem and it has been recognised that fire can be used as a conservation and management tool. Burning operations are prescribed in terms of three fire regime components (fire frequency, fire season and fire intensity) and are based on knowledge of the effects of these three components on the vegetation in a general and local context. By providing greater public access to wilderness areas, the risk of aseasonal or inappropriate burns by irresponsible or accidental public activities increases immensely. Care should be taken to minimise accidental fires.

Within the IBA, limited and controlled agricultural and urban development is allowed in which grazing, game farming and flower and plant harvesting are permitted on a scale that is compatible with ecosystem preservation.

The greater human usage of this mountain area increases the chance of dispersal of the exotic Argentine Ant *Iridomyrmex humilis* into these ecosystems. The Argentine Ant ousts the indigenous ants that are responsible for seed dispersal of numerous myrmecochorous fynbos species. The loss of the indigenous ants could have a major negative impact on the local biota.

## Further reading

Cowling (1992); Euston-Brown (1995); McGill (1992); Richardson *et al*. (1992); van Wilgen *et al*. (1992).