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FORESTRY SECTOR SUPPORT AND TRAINING

SOMALIA

WILDLIFE RESOURCES MANAGEMENT

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John B. Sale
Wildlife Management Consultant

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1. INTRODUCTION

1.1 Background

This report is the result of a 3-month consultancy on Wildlife Resources Management, carried out from January to March, 1989, under UNDP/FAO Project SOM/86/008, "Forestry Sector Support and Training". The overall objective of this project is to enhance the management of the forest and wildlife resources of Somalia in a manner which achieves maximum productivity and involves participation by local rural communities. It entails both institutional support, and training in extension, forestry and wildlife management procedures.

The terms of reference of the consultancy are attached as Appendix I. They include reviews of the status of wildlife resources (particularly in the Lower and Middle Juba regions), existing management methods including the anti-poaching units and existing policy and legislation concerning wildlife. Recommendations are called for on the latter two items (management methods and policy/legislation), with a particular emphasis on promoting the values of wildlife conservation to the rural population.

Earlier UNDP/FAO assistance to Somalia in the Forestry/Wildlife Sector included SOM/72/012, "Strengthening of Forestry and Wildlife Management", from 1974 to 1976 and SOM/82/005, "Coordinating and Monitoring Assistance to Forestry", from 1982 to 1986. The former project (SOM/72/012) in particular, provided pioneer assistance such as detailed wildlife surveys of the southern area and published a number of useful field documents including Wildlife Policy, Law and Administration (Abel, 1976,b), Conservation and Exploitation of the Wildlife of South-Eastern Somalia (Abel and Kille, 1976) and Management Plan for the proposed National Park, Badade District (Abel, 1976,a). The present project (SOM/86/008) aims to build on this earlier assistance, notably by a) increasing the effectiveness of the Wildlife Department in the Lower Juba Region through the provision of transport and communication equipment, b) providing up-dated wildlife management procedures, c) training selected communities in understanding the necessity of wildlife management practices and co-operating in small-scale conservation projects, d) providing up-dated proposals re Somali forest and wildlife policies,

legislation and regulations and e) the provision of a regional forestry and wildlife management plan for the Lower Juba Region and a development proposal for the Middle Juba Region. In addition, the recently initiated activities of the Tropical Forestry Action Plan in Somalia (SOM/87/014) will include a review of those aspects of wildlife which are closely allied to forestry, such as the need for an up-dated policy statement and legislation.

Whilst public awareness of the need to conserve the country's forest and wildlife resources is generally low, the consultancy has been carried out at a time of greatly increased official concern for better environmental stewardship. A high-level National Committee for Environment has recently been formed and discussions are in progress with the International Union for the Conservation of Nature and Natural Resources (I.U.C.N) on the feasibility of initiating a National Conservation Strategy for Somalia. In connection with the proposal to construct the Baardhere Dam, a comprehensive 2-year study of the ecological and sociological effects of damming the Juba River has just been completed and the draft report (Deshmukh, 1988) contains very useful recommendations on conservation and wildlife in the Juba valley. In conformity with World Bank compensatory wildlands policy in connection with development projects, a consultancy recently identified two wildlife areas, outside of the immediate influence of the proposed dam, in which appropriate management could be funded under the Baardhere Dam Project (Blower, 1988).

On a larger scale, there are recent detailed proposals for a major wildlife conservation component in Phase II of the Central Rangelands Development Project, to be funded by World Bank (Stephenson, 1988,a). This report also recommends two urgently needed conservation projects in northern Somalia. The Bank also commissioned the same consultant to prepare a comprehensive plan for the restructuring of the entire wildlife management organization in Somalia (Stephenson, 1988,b). In addition, under a project of the European Community entitled "Nature and Wildlife Conservation in the Lower Juba Region" (No. 6607.37.47.016), a study was recently commenced on

the feasibility and design of Lower Juba Region National Park (also referred to as Bush-bush National Park). NGO's are also active in the wildlife conservation field, notably the Somali Ecological Society which has set up and runs the Balcad Nature Reserve near Mogadishu. In conjunction with W.W.F. (East Africa) the Society carried out an aerial reconnaisance of wildlife resources in Somalia in 1987 (Parker, 1987). The Ecology and Conservation Unit, University College London carried out very detailed studies of two forest reserves on the Juba and their report (Madgwick, 1988) contains valuable information on the wildlife of the riverine forest, as well as management recommendations.

There is thus a large number of recent recommendations concerning the management and conservation of Somalia's wildlife. Whilst it is as yet unclear exactly which of these proposals will be funded, it is likely that several of them will eventually be implemented with the participation of appropriate aid agencies. However, the long-term aim must be for the Government to develop the capability of formulating and carrying out its own wildlife management policies. In this regard, it is of great importance that approaches to the management of the wildlife resources are developed which are in keeping with the needs of the people. Somalia is classified by the U.N as a least developed country and it cannot afford the luxury of merely "protectionist" type of wildlife management, pressing though some of its conservation problems are. A way must be found to manage the wildlife resource in a manner which convincingly demonstrates its economic usefulness, at the same time as improving the conservation of the more threatened species. Only in this way will the much needed increased public understanding of the importance of wildlife be achieved. Without such a basis, the future for conservation in Somalia is extremely bleak.

1.2 Approach Adopted

In order to obtain an understanding of the status of the wildlife resource in Somalia and present policies and methods of management, the consultant adopted the following approach. All recent major reports on the wildlife situation in Somalia were studied. As far as feasible, discussions were held with knowledgeable persons outside of Somalia. Within the country detailed interviews on the status of various species were held with Government

officials, aid personnel and private persons both in Mogadishu and elsewhere during travels (see Appendix II). Notes were taken and in same cases written submissions were solicited, usually on matters where detailed facts and figures were required.

Field travel to wildlife areas in the Central Rangelands, Middle and Lower Shabelle, Lower and Middle Juba Regions was made in four separate trips, varying in length from 1 day to 3 weeks. Field survey was concentrated in the important wildlife areas of the Lower Shabelle and Juba Regions and overnight camps were made in many of these areas. A number of the Bajun Islands in the northern part of the chain near Kismayo were also assessed for their wildlife and tourism potential. In addition to observing wild animals, areas were examined for their spoor, droppings and other evidences of their presence. In a few places counts were made to give an estimate of density of a particular species but in most cases a more subjective estimate of abundance had to suffice.

To understand the mode of the operation of the Anti-Poaching Unit discussions were held with the Unit's Commander in Mogadishu and the Officer in charge in the Bushbush area. Field groups were accompanied on investigations and in field patrol work in the Lower Juba Region.

The report first reviews the status of wildlife resources and then examines management, policy and legislation in turn, reviewing existing methods and practices and making recommendations for improvement. Possible forms of international assistance in implementing the programmes supported are then presented.

Finally, conclusions and recommendations are summarised. Routine factual material is presented in a series of appendices.

2. THE STATE OF SOMALIA'S WILDLIFE RESOURCES

2.1 Introduction

Somalia has an unusually diverse wild fauna which reflects its position astride two biogeographic zones, viz the tropical savannah and woodland of southern Somalia and the dry, eremic bush and grassland zones of its central and nothern regions - the so-called "Horn of Africa". The wildlife of the former region largely consists of species typical of the East African countries further south, including elephant, black rhino, hippopotamus, buffalo, Burchell's zebra, giraffe, topi, waterbuck, Grant's gazelle, Guenther's and Kirk's dikdiks and serval cat, as well as the Nile crocodile. One major species is endemic to a relatively confined area astride the Kenya - Somalia border near the coast, viz the hirola or Hunter's antelope. In the centre and north of Somalia, on the other hand, are found species typical of arid habitats, a number of which are endemic to Somalia and the adjacent desertic areas of Ethiopia. These include the Somali wild ass,Soemmering's gazelle, Speke's gazelle, Pelzeln's gazelle, Dibatag, Beira antelope, Phillip's and Swayne's dik-diks, a number of small mammals, and a unique reptile, Speke's pectinator. Of widespread distribution throughout Somalia in appropriate habitat, are a number of "generalists" such as the warthog, gerenuk, oryx, lesser kudu, lion, leopard and cheetah.

Formerly, there were thriving populations of all these species in Somalia and at one time there was a prosperous sport-hunting industry based on them. The endemic species of the "horn" consituted a unique attration to trophy collectors which was not available in countries further south. However, due to a variety of factors including loss of habitat to agricultural development, competition from domestic stock and poaching for ivory and meat, many wildlife populations declined seriously during the 1960's and 1970's. Resultant concern for their conservation was reflected in a total ban on the issue of hunting licences in 1971. However, this only suspended a limited form of exploitation and did little to halt widespread and relatively uncontrolled decimation of wildelife by the factors listed above. As a result a number of

species are now seriously endangered and face the threat of extinction within Somalia. This has already occured in the case of Swayne's hartebeest and, according to some observers, Grevy's zebra and the Black rhinoceros.

2.2 Wildlife habitat

There has been degradation and local loss of most wildlife habitats in Somalia as a result of deforestation, overgrazing and expanding cultivation, including organised agricultural development. However, regarding the decline of many wildlife species habitat factors are less to blame than poaching and many of the regions of Somalia visited by the consultant still have a number of areas of relatively intact wildlife habitat but often with remarkably few animals - an unusual situation for the tropical world. This is partly due to the presence of the tse-tse fly which has kept the nomadic pastoralists and their stock out of some areas, except during periods of extreme drought. The absence of water has also precluded the use of some dry habitats by livestock. Moreover, agriculture is alien to the traditional culture of most Somali people, reflecting the low rainfall and soil fertility over much of the country. This is not to suggest that there are grounds for complacency with regard to habitat protection but rather that there is still an adequate basis for developing a network of protected areas, covering most habitat types of importance to the country's diverse wild fauna. Indeed, the availability of suitable land for national parks and wildlife reserves is unlikely to persist much longer and it is of vital importance that the protection measures proposed in the next two Chapters are implemented with due urgency.

Reviews of potential areas for wildlife conservation are to be found in Simonetta and Simonetta, 1983 and more recently in Stephenson, 1988,b. The field travels of the present consultant in southern Somalia confirmed that there are extensive areas of coastal grassland, with good habitat for Speke's gazelle, Oryx or ostrich, between Warshek and Adale and north of Hobbio. Excellent open wooded grassland with Soemmering's gazelle, is to be found in the Derihow (Hargan - Dalandoole) area west of the Jowhar - Bulo Burti road. A slightly denser open woodland type, consisting of

of short grasses and mainly Acacia seyal, with robust populations of oryx and gerenuk and a few Grant's g zelle but very few domestic stock (in the dry season) was seen in the eastern Lag Dhere area, commencing 15 km west of Afmadow. The area towards the Kenya boarder around Liboi, has more water and hence large concentrations of livestock and is thus more or less devoid of wildlife at this time of the year. The wildlife potential of the well-watered savannah woodlands of the Bushbush area is well known. However, the consultant noted with concern the extensive habitat destruction brought about by the recent beginnings (subsequently halted) of a tse-tse control programme in this area, involving the clearance of all woody vegetation from wide, purpose-made cut-lines, as well as the sides of existing roads. This new net-work of cut-lines has also made this important wildlife area much more accessible to motorised poachers and the consultant was alarmed that during 4 days in Bushbush the only significant wildlife seen was a single lesser Kudu. In the western half of the Park, east and south of Baadhadhe, large areas of the woodland have been destroyed by "slash and burn" cultivation, accompanied by temporary settlements. This is still continuing; indeed most of the clearance appears to be of relatively recent origin.

Dense Commiphora-Acacia woodland, or "bush", is still widely available and particularly intact examples were noted in the areas south of Haradheere (good dibatag habitat), to the north of Far Waamo and north of Buulo Xarji. An extensive area of intact "Yihib" bushland is to be found south-east of Belet Huen, although it does not appear to contain much wildlife.

Swamps and associated flooded grasslands, which constitute habitat for a variety of wildlife species, are under considerable pressure in southern Somalia from both livestock and cultivation. Unless special attention is given to swamp protection this habitat type is likely to be totally denied to wildlife in the near future. In the Lower Shabelle Region the Alifootu Swamp Project core area is under serious pressure at this time of the year from goats and camels which are being watered there and cattle grazing in large numbers on the swamp grasses. It is a fine wildlife area of great scientific importance and tourist potential and is being spoiled and seriously degraded as a result of the apparent inability of the Wildlife Department staff posted in the area to

prevent the above mentioned intrusion by livestock. Cultivation is also present but constitutes a less serious problem. The Haranaqa Swamp further south on the Shabelle is also an important area, particularly for buffalo and elephant. However, in spite of attempts, it proved impossible for the consultant to reach the swamp area at this time of the year, so no evaluation was possible. The entire southern portion of the large Far Waamo Swamp is under intensive cultivation at this time of the year and any value as a wildlife dry season grazing area has clearly already been forfeited. However, an area to the north of Qumbi, on the north-west corner of the swamp, was visited which still has water in March and contained recent evidence of elephant, buffalo, giraffe and lion, as well as having a good wild fowl population. This swamp habitat should be accorded high priority for protection. It is already recommendedfor compensatory funding under the Baardhere Dam scheme in the Blower Report.

The other Somali habitat type in serious danger is riverine forest. Most of this unique forest type has already disappeared from the Shabelle and Juba river valleys or is very seriously degraded. Two small forest reserves in the Middle Juba, Shoonto and Barako Madow, offer some protection to the forest and adjacent flood plain and dusheeq vegetation and attendant wildlife. It is vital this protection be increased as per the proposals in Chapter 3 of this report. No other habitat type in the country has been reduced to such a small area, which was the subject of a special study by a London University Conservation Unit in 1986 (Madgwick, 1988).

The mangrove forests fringing the large tidal areas of the lags in the Bushbush area appear in excellent condition but should be offered protection as an important habitat type of the southern coast. The Bajun Islands are mainly of wildlife importance as habitat and breeding grounds for marine turtles and sea birds such as terns. On some, such as Gandyu, the natural vegetation has already been modified by settlement, cultivation and the presence of domestic stock. It is hence important that at least a propotion of the uninhabited islands, such as Ilese, be protected together with the xerophytic shrubs and herbs growing on the infertile coral rock and and stunted baobab trees curiously "hedged" by the prevailing on-shore winds.

2.3 Present status and distribution of wildlife species

2.3.1 General

Possibly the only Somali mammal whose numbers and distribution have remained unchanged with the increasing domination of the environment by man in recent decades is Heterocephalus glaber, the Naked mole-rat. It lives constantly in underground tunnels, constructed in hard red soil seldom disturbed by cultivation and the volcano-like mounds produced by its excavations are abundantly distributed in appropriate habitat. Very few surface-dwelling mammals still reflect their original status, however, as both their densities and distribution have been altered, either negatively or positively, as a result of human activities which have greatly increased in intensity.

Based on recent reports, interviews with knowledgeable persons and his own observations in central and southern Somalia, the consultant has attempted below an assessment of the status of 43 of the major wildlife species occuring in the country, using some of the categories of the I.U.C.N. Red Data Book. It should be emphasised that in the absence of reliable quantitative data, based on formal censuses, some of this categorisation is bound to be arbitary. However, the aim isto summarise the overall situation with regard to each species and indicate the degree of conservation effort required with respect to it if a viable population is to survive within Somalia. Of course, in practice, most of the required conservation effort would be provided jointly for a number of species in a community by management action such as the establishment and effective maintenance of protected areas. Only in a few acute cases is specific species-oriented rehabilitation required.

2.3.2 Extinct Species - animals which formerly occured in the wild in Somalia but are no longer thought to do so.

2.3.2.1 Swayne's hartebeest (Alcelaphus buselaphus swaynei)

Formerly in northern Somalia. Disappeared prior to 1930 (Simonetta, 1988).

2.3.2.2 Black rhinoceros (Diceros bicornis)

The rhino formerly had a scattered distirubution in southern Somalia, with the main population in the Bush bush area. After heavy poaching of the species for its horn in the seventies and early eighties Simonetta and Simonetta (1983) estimated there were 10 - 15 rhinos in Bushbush in 1983. They considered the species "on the verge of extinction ". There is considerable opinion in the country that it has now finally disappeared. There are reports circulating of one or two individuals in the area north of Far Waamo and a similar number in the Bushbush area. However, both these reports appear dated and attempts to obtain up-to-date confirmation failed. Unless positive current evidence of the existince of rhino in the country can be produced the species must regretably be considered extinct. Fagatto (1985), quoted in Madgwick (1988), already considered it extinct in 1984.

2.3.2.3 Grevy's zebra (Equus grevyi)

There used to be a few scattered groups in the area between the Shabelle and Juba rivers but since there have been no positive sightings for a number of years, this zebra appears to be extinct in Somalia.

2.3.3 Endangered Species - animals in danger of extinction and unlikely to survive if the causal factors continue operating

2.3.3.1 Greater Kudu (Tragelaphus strepsiceros)

This large antelope may even be extinct in Somalia but, if not, is certainly highly endangered. It formerly occured widely in the northern mountains and may still exist on the northern slopes of the Gaan Libah, while animals beyond the disputed border near Belet Weyn may occasionally move into Somalia (Simonetta, 1988).

2.3.3.2 Hunter's hartebeest or Hirola (Damaliscus hunteri)

Numbers of Hirola in Somalia are greatly reduced due to poaching and it is no longer seen in much of its former range. Extensive enquiries by the consultant failed to

to establish positive evidence of its current presence but this could be due to seasonal migration across the Kenya border. Some consider it may be extinct in Somalia but due to its habit of migrating from Kenya, good protection could reverse this process if it has indeed occured. It seems probable that Hirola reported on an aerial reconnaisance over the Alifootu Swamp area of the Lower Shabelle in 1987 (Parker, 1987) were in fact Topi which still occur there in reasonable numbers. The Hirola's range has never extended to this area.

2.3.3.3 Harvey's Red duiker (Cephalophus harveyi)

This small antelope has suffered as a result of the destruction of its riverine forest habitat along almost the entire length of the Juba river. Even now the greatly reduced population is subject to considerable poaching by local people for meat (Madgwick, 1988) and will undoubtedly be eliminated completely unless these destructive processes can be bought under control.

2.3.3.4 Somali wild ass (Equus asinus somalicus)

This important equid, endemic to northern Somalia and adjacent areas of Ethiopia, has suffered from habitat loss and hunting, resulting in a great reduction of its former range and numbers. However, at least two populations are still said to exist, although there is no accurate estimate of current numbers and the consultant was given figures varying from 50 to 2,000. The impact of recent hostilities in northern Somalia on the ass population is unknown. An extremely serious matter which requires immediate investigation is the possibility that the wild ass is subject to "genetic pollution" as a result of interbreeding with domestic donkeys. A carefully designed study and rehabilitation programme, including proper protection of a portion of the ass's range, appears an urgent priority and at least one international NGO has expressed interest in assisting with this.

2.3.3.5 Burchell's zebra (Equus burchelli)

There were formerly good numbers of Burchell's zebra in the Bushbush - Lag Dhere area and also north of Far Waamo. However, no evidence of the species was seen by the consultant and there were no reliable reports of its current presence. Clearly numbers are greatly reduced and the current situation needs clarification.

2.3.3.6 African elephant (Loxodonta africana)

The elephant was formerly present in good numbers (estimated total 35,000) in the Bushbush area, Far Waamo and along the Juba and Middle and Lower Shabelle rivers and migrated seasonally throughland between these areas. Apart from very considerable loss of habitat, particularly in the Middle and Lower Juba due to local farming and organised rice and banana cultivation, the elephant has been the victim of very heavy poaching for its ivory. This poaching, carried out by mobile, heavily armed gangs of commercial poachers, was particularly severe in the late seventies and early eighties, partly as a result of automatic weapons becoming readily available after the Ethiopian war. Simonetta and Simonetta (1983) estimate that between 2/3 and 3/4 of the country's elephant were slaughtered between 1979 and 1983. Others cite 1981 to 1985 as the worst years. The decline in elephant poaching in the last few years probably mainly reflects the fact that all the animals with commercially valuable ivory have already been killed and hunting the very small number which remain would be only marginally profitable. Evidence points to some of the same poachers that slaughtered Somalia's elephants now operating in Kenya, with Somalia being used as a route for disposal of some of their ivory. Evidence of an earlier period of severe poaching abounds. Watson (quoted in Deshmukh, 1988) estimated a total of 4,300 elephants skeletons along the Juba river during an aerial census in March-April, 1987 (he saw no live elephants). During his presentinvestigations the consultant found dung, tracks and feeding signs of elephants in four areas, viz Alifootu Swamp, Qumbi (northern Far Waamo), Ibrahim Dinahoo (thick bush area15 km north-west of Buulo Xarji) and Melka Jira north of Lag Anoli in Bushbush National Park - all areas with good elephant habitat. Significantly, all four elephant groups showed the following characteristics:

i) The groups are widely separated from each other.

ii) The group size is small - largest was estimated at five individuals, most were around three.

iii) The animals are all immature (from size of dung boli and footprints); no sign of an adult elephant was seen.

iv) The animals are extremely shy of vehicles and humans-none were seen in spite of following up fresh sign in two places.

Normally elephants show maximum aggregation in the late dry season around available water. No evidence of such aggregation was found but only small, widely scattered groups. The absence of adult animals means that, even with first-rate protection, the population could only recover extremely slowly. Elephants reach puberty around 10 to 12 years old, males possibly older, and in good habitat conditions (which are still available in southern Somalia) a female produces a calf once every 4 years. All calves and adolescent and mature females remain in their maternal group (the "cow-calf unit") and are normally protected from predators and other dangers by the old females, or "matriarchs", in the group. In the absence of such old experienced matriachs infant mortality is likely to be higher than normal, thus further impairing population recovery.

It is thus clear that the earlier poaching bout has not only greatly reduced total elephant numbers but has left a very atypical population, in which the normal social organisation of the species is seriously disrupted and its reproductive potential impaired. The evidence seen by the consultant throws doubt on the present estimate of a total of 2,000 elephants in Somalia and, since further poaching cannot be ruled out, the species should be regarded as being on the verge of extinction in the country. Very special rehabilitation measures will be needed if extinction of the elephant is to be avoided.

2.3.3.7 Reticulated giraffe (Giraffa reticulata)

The giraffe is subjected to heavy poaching for meat in almost all areas where it occurs, particularly by military personnel according to many reports. It has totally disappeared from parts of its former range such as the area around Belet Weyne and there is no doubt that its numbers in the country generally are greatly reduced. The consultant found evidence (tracks and dung) in the following areas: Hajalaly (north of Far Waamo), Qumbi, Melka Jira (Bushbush) and Yamani area, east of Lag Badana. No giraffe were seen, however, and it is in clearly very shy of man and vehicles due to poaching which is still

continuing according to many reliable reports. Protection of giraffe, which must be considered highly endangered, must be increased if the species in to survive in Somalia. Present protection appears relatively ineffective. With good protection the species could recover within a few years.

2.3.3.8 African buffalo (Synceros caffer)

The buffalo is also subjected to poaching for meat but possibly at less intensity than elephant or giraffe. Small populations still exist in the Lower Shabelle swamps, the Lower Juba and Far Waamo areas and in Bushbush National Park. Sign of buffalo were seen at Qumbi, Melka Jira and Shoonto but group size appears to be very small for the species, presumably as a result of population deci ation by poachers. No animals were actually seen, indicating shyness as a result of poaching. The species tends to undergo seasonal migrations and, like the elephant, requires large tracts of protected habitat for long-term survival.

2.3.3.9 Leopard (Panthera pardus)

This large cat, which formerly had a scattered distribution throughout Somalia, was subjected to heavy poaching for its coat particularly in the 1970's. It's numbers are now very low but according to reports a few do still exist. The consultant collected no first-hand information on the leopard.

2.3.3.10 Cheetah (Acinonyx jubatus)

This cat also occured in more open habitats in both southern and northern Somalia. No direct information on its current status was collected but reports suggest it is still present in low numbers, at least in northern Somalia and northern parts of the Central rangelands. It is possible cheetah should be described as "rare" rather than endangered, as like all large cats, it naturally occurs in low densities within its range.

2.3.3.11 Dugong (Dugong dugong)

This marine mammal which grazes underwater grasses close to the shore, formerly used to be abundant along much of the Somali coast but is now regarded as nearly extinct as a result of severe overexploitation by fishermen. It requires careful protection.

2.3.4 Vulnerable species - animals whose populations are declining and likely to move into the endangered category in the near future if the causal factors continue operating.

2.3.4.1 Topi (Damaliscus lunatus)

This flood-plain grazer still occurs locally in fair numbers, although subjected to some poaching for meat. A good population, with many young calves, was observed at the Alifootu Swamp area by the consultant and it is said to still occur in Bushbush. The small number of its existing population makes topi valneable, particularly to habitat loss or epidemic diseases.

2.3.4.2 Waterbuck (Kobus ellipsiprymnus)

Although numbers and population units are greatly reduced mainly due to habitat loss along the two main rivers but also some poaching, a few healthy populations still exist locally such as the one at Alifootu Swamp seen by the consultant to be in excellent condition with an unusually high density. A small population is said to still exists in the Bushbush area.

2.3.4.3 Oryx (Oryx gazella beisa)

This antelope of arid grasslands still occupies a fairly wide range throughout the country, although numbers are greatly reduced in certain areas due to poaching. A robust population, with animals of all ages, was seen by the consultant in the Lag Dhere area. Simonetta's (1988) estimate of a total population of 1,000-1,200 and

"imminent danger of extinction" is not supported by evidence given to consultant. However, the species requires constant protection wherever at occurs and especially in the north of Somalia.

2.3.4.4 Grant's gazelle (Gazella granti)

This gazelle has a very restrictd distribution in Somalia in the Lag Dhere area and numbers have been considerably reduced by poaching. However, its continuity with a large population in Kenya (and Tanzania) will probably save it from extinction in Somalia, otherwise it should be in the "endangered" category. One small group was seen by the consultant in the Lag Dhere area.

2.3.4.5 Soemmering's gazelle (Gazella soemmeringii)

This Horn of Africa endemic has also suffered a reduction in numbers but still maintains a large, if scattered range throughout the central and northern parts of Somalia. One small group of 4 animals was seen by the consultant in the Derihow area west of the Jowhar - Buulo-Burti road.

2.3.4.6 Bushbuck (Tragelaphus scriptus)

As a result of destruction of its riverine habitat and some hunting bushbuck numbers are greatly reduced. However, it still occurs in small populations in a number of areas which precludes it from being endangered at the present time.

2.3.4.7 Blue monkey (Cercopithecus mitis)

This arboreal monkey is confirmed to the deep shade of the evergreen riverine forests much of which has already been totally destroyed. Its future hence depends on the successful protection of remaining patches of riverine forest.

2.3.4.8 Greater Bushbaby (Galago crassicaudatus)

Like the blue monkey, this small primate is becoming increasingly rare due to disappearance of the riverine forest.

2.3.4.9 Somali Ostrich (Struthio camelus)

The ostrich still has a considerable range throughout the country but its numbers are greatly reduced compared to former times. Birds were sighted in the coastal plains north of Hobbyo and between there and Haradheere, and spoor were seenat several places in the south.

2.3.5 Satisfactory species - animals whose survival is not at present threatened; including species whese total population in the country may be somewhat reduced but still maintains a wide distribution approximating to its original range and still has a number of viable or even increasing population units.

2.3.5.1 Lesser Kudu (Tragelaphus imberbis)

One of the most abudant antelopes in Somalia which, in spite of considerable hunting for meat, still maintains a large range, especially in the southern half of the country where it has an almost continuous distribution in a variety of bush and woodland habitats. Densities are undoubtedly depressed in many areas and it can be extremely shy - both results of it being hunted for meat. However, it gains a good deal of protection from its habitat and is in no danger of extinction in most parts of its range.

2.3.5.2 Gerenuk (Litocranius walleri)

Also has an extremely wide range throughout the country, and is especially numerous in Acacia thorn bush areas. Some very healthy populations, with a good ratio of young animals, seen by the consultant particularly in the Lag Dhere and other waterless areas. Occassionally hunted in some areas but in most places does not show an unusual degree of shyness for the species.

2.3.5.3 Speke's gazelle (Gazella spekei)

On endemic of the northern open grasslands and coastal plains, Speke's gazelle is still present throughout its original range, although numbers are reduced in many areas due to competition from livestock and some hunting. Consultant saw good populations between Warshek and Adale, where the density was estimated at 7.8/sq.km, and north of Hobbyo.

2.3.5.4 Beira (Dorcatragus megalotis)

This small entelope is endemic to the rocky hill sides of northern Somalia and is still to be found throughout its former range, mostly in normal densities according to reliable observers.

2.3.5.5 Dik-diks (Madoqua kirkii, M. guentheri, M. phillipsi and M. swaynei)

All four species of dik-dik (and their various sub-species such as Piacentini's dik-dik along the central coastal Plain) are widely distributed, often in impressively high densities and do not appear to have been adversely affected by habitat changes or a degree of local hunting in some areas.

2.3.5.6 Hippopotamus (Hippopotamus amphibius)

This large aquatic mammal occurs in good densities in the Middle and Lower portions of both the Shabelle and Juba rivers and associated dasheeqs (seasonal swamps). Deshmukh (1988) estimates a total population for the Juba of 3,000 to 6,000. Hippo are frequently a menace to riparian crops which they destroy by trampling and feeding during their nightly forays out of the water. Occasionally animals are shot and a few communities eat hippo meat but poaching is not a serious constraint on the species at the present time. Indeed, the population in the most dense areas could withstand some controlled off-take, as they constitute a pest. The consultant participated in the investigation of a hippo poaching case, in which the large teeth had been sold for Sh. 400/-, indicating a market for poor quality "ivory".

2.3.5.7 Warthog (Phacochoerus aethiopicus)

This pig occurs in large numbers almost throughout the entire country and benefits from the Islamic cultural prohibitions against eating members of the pig family. The animal appears to flourisheven in waterless zones, persumably obtaining its water requirements as moisture the roots and tubers of plants which it digs up. It is a serious crop pest in many areas and numbers require to be controlled.

2.3.5.8 Lion (Panthera leo)

Although it is occasionally prisoned or trapped as a cattle killer, the lion continues to occupy a very wide range in Somalia and was reportedly present in all almost areas visited by the consultant, although rare in some, such as Belet Weyne. Spoor and/or nocturnalroaring were noted in Hajalaly, Qumbi (two animals came within 30m of the camp) and ushbush. Human injury or fatality occasionally occur and a nomad was hospitalised at Afmadow, while the consultant was in the area, with injuries arising from a single-handed encounter with a lion which was allegedly killed using only a knife.

2.3.5.9 Spotted hyaena (Crocuta crocuta)

Droppings, spoor and calls of this carnivore are encountered almost everywhere and it appears to be maintainingboth range and normal densities, presumably feeding extensively on the young and carcasses of domestic animals.

2.3.5.10 Olive baboon (Papio anubis)

The baboon is widespread and particularly in the riverine and woodland areas of southern Somalia is present in high densities, possibly having profited from the reduction in number of leopard, one if its chief predators. In areas where crops such as bananas are being cultivated the baboon is a serious pest and control measures are needed to reduce its numbers.

2.3.5.11 Vervet monkey (Cercopithecus aethiops)

Although seldom present in such high densities as baboons, the vervet is still widespread and adapts well to a "semi-symbiotic" relationship to man in the areas of of human settlements.

2.3.5.12 Nile crocodile (Crocodilus niloticus)

This carnivorous aquatic reptile occurs throughout the Middle and Lower regions of both the Shabelle and Juba rivers, being particularly numerous along certain stretches of the Juba and in associated dasheeqs. Deshmukh (1988) draws attention to the "exceptionally high" crocodile density on the Juba quoting an estimate based on a recent aerial survey of 40,000 - 150,000 individuals - a number likely to increase after the flooding of the Baardhere reservoir on the upper Juba. Crocodile attacks on livestock and people are frequent and the species is regarded as a menace in most rural areas where it occurs. Much more vigorous control by the Wildlife Department is needed and numbers should be reduced by an appropriate utilization scheme.

2.3.5.13 Vulturine guinea-fowl (Acryllium vulturium)

This game bird is abundant throughout almost all areas visited by the consultant and could form the basis of controlled off-take for the benefit of local people.

2.3.6 Insufficiently known species - animals where lack of information precludes an assessment of status.

2.3.6.1 Dibatag (Ammodorcas clarkei)

This antelope, which is endemic to Somalia, lives in very thick bush and this together with its cryptic habits makes it a difficult animal to observe. It was formerly present in the central rangelands and northern Somalia and although there has almost certainly been a considerable reduction in its numbers, there is insufficient information

available to meaningfully allocate it a status category. A careful study of the species to assess its current status and distribution should be a high priority.

2.3.6.2 Pelzeln's gazelle (Gazella dorcas pelzelni)

Confined to the northern coastlands along the Gulf of Aden, this antelope apparently still occupies most of its former range but an investigation of numbers is needed to decide whether its status is "satisfactory" or it has became "vulnerable".

2.3.6.3 Oribi (Ourebia ourebia)

Confined to southern Somalia this small elusive antelope may still flourish in woodland area. One was seen by the consultant to the north of the Bushbush areas. Since the species does not normally occur in high densities, it is difficult to assess its current status in the absence of a specific investigation of its typical habitat.

2.3.6.4 Klipspringer (Oreotragus oreotragus)

This small antelope of the steep rocky slopes of the mountain ranges in the north may still be in a satisfactory state but specific reports from the area were not available to the consultant and recent literature is also not very informative on the species.

2.3.6.5 Bush-pig (Potamochoerus porcus)

Formerly common along the Shabelle and Juba rivers, the current overall status of this pig is uncertain, although there are reports of it being a crop pest in certain areas in the Juba valley (Madgwick, 1988; Deshmukh, 1988).

2.3.6.6 Striped hyaena (Hyaena hyaena)

More information should be gathered on the status of this small hynaenid, which seems to be much less well known that the larger Spotted hyaena. However, its nocturnal (and silent) habits may obscure its real status unless a specific enquiry is made on a systematic basis.

2.3.6.7 Marine turtles (various species)

There is considerable evidence along the coast and on the Bajun Islands of widespread utilization of various large turtle species and some may be being overexploited. An appropriate study should be instituted to ascertain the precise facts with regard to this important marine resource.

2.4 Conclusion

Although various degrees of habitat degradation are widespread in the country, the consultant found that in southern Somalia there are still adequate areas of most habitat types relatively unmodified and available to wildlife. Exceptions are the riverine forests and associated swamps of the Shabelle and Juba river systems, of which only very limited areas remain intact. Of the 23 wildlife species assessed as "extinct", "endangered" or "vulnerable",habitat degradation or loss appears to have been mainly responsible in only two cases (both primates), whilst it has been a contributory factor in a further six cases. Significantly, of the total of eight species thus affected, all except one inhabit riverine forest or swamp habitats. It is thus of great importance that due attention is given to the protection of these two habitat types in the country's network of protected areas.

Of the 23 threatened species referred to above, hunting appears to be the main threat in 15 of them and a contributory factor (together with habitat loss) in a further six. Of the total of 21 (15+6) species affected by hunting, the motive is meat in 12 of them and trophies or skins in the other nine. Thus approximately half of the 43 species whose status was considered by the consultant are under serious pressure from hunting, most of it illegal (and therefore consituting poaching). This is an extraordinary statistic by any standards. It is salutary to note, by contrast, that only 13 species were adjudged to be in a "satisfactory" state, although some of the seven presently described as "insufficiently known" may turn out to be satisfactory once a proper investigation into their status has been completed. Of the antelope group, which is well respresented in Somalia, 10 out of 19 species examined are assessed as threatened and only five are defined as "satisfactory". four of the seven "insufficiently known" are antelopes.

The above summary of the status of habitats and wildlife species serves to indicate what the main conservation priorities in the country should be and where protection effort needs to be targetted. The main significance of hunting as the major factor in the decline of Somalia's fauna is that a massive and rationally planned public awareness campaign is required to educate leaders and the people as to the importance and value of wildlife and convince them that its disappearance, by uncontrolled exploitation, is not in the country's interests. At the same time the effectiveness of the Anti-Poaching Unit needs to be greatly increased by stronger legal provisions, as well as by the provision of more personnel, much needed equipment and more specific training. If such measures as these can be implemented quickly there is little doubt that the majority of presently endangered or vulnerable species could be saved from extinction. However, enormous political will is perhaps the chief ingredient for success in reversing the present widespread trends in the decline in Somalia's invaluable wildlife resource.

3. WILDLIFE MANAGEMENT AND CONSERVATION

3.1 Introduction

Having reviewed the status of the wildlife resource in Chapter 2, the present Chapter reviews the state of wildlife management in Somalia, its present approach, and techniques, including the working of the Anti-Poaching Unit. A number of areas which currently require management attention are then examined, including wildlife damage control, utlization, protected areas and public awareness. The Chapter incorporates recommendations for improving and widening present management and increasing the effectiveness of conservation in the country, bearing in mind the need for greater public awareness of wildlife issues and the importance of managing the resource for the ultimate benefit of the people. Wildlife management and conservation in the country is the responsibility of the Wildlife Department which is within the Ministry of Livestock, Forestry and Range. Although directly under the Ministry, for all administrative purposes the Department operates within the National Range Agency (NRA) and has its headquarters in the N.R.A. building. The Department is small, with a limited budget, and its activities are confined to four main areas, viz administrative functions at headquarters, joint responsibility with the Police for the Anti-Poaching Unit, a city wildlife park at Mogadishu and running of the Shabelle Swamp Project.

3.2 The Wildlife Department

Fauna conservation was originally (1969) under the Ministry Rural Development and Self Help Schemes, which was responsible for administering wildlife reserves and issuing hunting licences. In 1971 a National Parks Agency was constituted under the President of the Supreme Revolutionary Council, with the main objective of establishing and maintaning national parks and reserved areas. The title was later changed to the National Agency for Parks and the Protection of Wildlife and in 1977 it was transferred to the Ministry of Livestock, Forestry and Range, as the "Wildlife Department".

The headquarters staff of the Wildlife Department consists of a Director and two graduate wildlife officers, together with a small supporting staff(clerk/typists, messengers, drivers). None have specific training in wildlife management. The total annual budget of the Department(1988) is Somali Shillings 5,500,000, equivalent to approximetely U.S Dollars 18,333. The Director's monthly salary is Somali Shilling 10,000 or U.S Dollars 33. A driver's salary is a meagre Somali Shillings 3,000 or US$ 10. Other budget allocations are on a comparable scale. Until recently, the headquarters staff was supplemented by a Wildlife Adviser provided by the Government of the Federal Republic of Germany. Apart from very basic office equipment and old transport in need of repair, the Department has no tools with which to carry out wildlife management in the field. Understandably, practically the only field activity financed from the headquarters budget is the operation of the Anti-Poaching Unit.

3.3 The Anti-Poaching Unit

An Anti-Poaching Unit (APU) was first formed within the Wildlife Department in 1976. In 1980 the Unit's rangers were transferred to the control of the Somali Police Force, although this provision did not take full effect until much later. In 1985 members of the newly constituted Unit, which now included some personnel with a Police background, were issued for the first time with automatic weapons. Presently the Unit is the joint responsibility of the Wildlife Department and the Police Force and a major portion of the Department's budget goes towards the salaries of its own rangers in the Unit, as well as all transport and equipment, except weapons and ammunition.

The A.P.U. is presently commanded by a Police Colonel, attached to the Director of Wildlife in Mogadishu, and consists of 120 rangers, 55 of whom are from a police background, together with 65 men originating from the Wildlife Department. All are under a military code of discipline, an important provision for a force armed with automatic weapons. Whilst the A.P.U. members have general police training and a number of them have considerable experience in anti-poaching work, none have received specific training in anti-poaching operations. The Unit's personnel

are presently deployed in six main centres, viz Mogadishu (H.Q.), Jowhar, Alifootu (Swamp Project), Jilib, Bu'aale and Kismayo (Field H.Q. for Lower Juba Region). From the Lower Juba H.Q. at Luglow near Kismayo seven units, each comprising approximately 8 rangers and 1 inspector, are posted out in the field as follows: Buulo Xarji, Wadajir, Kolbio, Lehili, Beebi, Liboya and Deef. As well as several interviews with the Colonel in charge in Mogadishu, the consultant spent considerable time at the Field H.Q. at Kismayo and in the field with rangers from five different units. He also participated in an investigation of a hippo poaching case in Jamama with the local field commander in charge of the Bushbush area.

One fact immediately apparent is that, apart from having powerful automatic rifles (mainly German G3 type), the entire A.P.U. is acutely short of equipment. In particular, they have only one 4 x 4 vehicle (a Land Rover pick-up) and out of three trucks, only one is operational at present due to lack of replacement tyres. Considering that the furthest units are 209 and 245 km from Kismayo, this represents totally inadequate transport for the supplying and mobility of the field units. The entire organization is without radio communications, both between the two H.Q.'s in Mogadishu and Kismayo or between either H.Q. and field units deployed therefrom. Hence there is no possibility of rapid deployment or redeployment of field forces, so essential in work of this kind. Similarly, the lack of tentage and even basic camping equipment and personal gear (uniforms, boots, haversacks, water bottles, sleeping bags, mosquito nets, binoculars) is a serious constraint to their mode of operation. How can men whose only footwear is "Hawai" chappels do serious patrolling in heavy thornbush country (the consultant's new vehicle sustained a total of 93 punctures due to thorns, during a 3½ week spell in the bush with these men)?

Bearing in mind the above acute constraints, the following observations were made re mode of deployment and operation in the field:

1) Field units are based in small towns, often at the local Police Station, along the main transport routes, not as one might expect, in the very heart of the wildlife areas where poaching actually takes place. Without their own communications or tentage and being forced by their extremely low pay to partially depend on others for the necessities of life, there is little alternative. However, from the point of view

of preventing poaching this arrangement is not ideal, additionally becauseit results in APU members forming close, dependent relationships with the local populace, thus compromising the independance of local influence which they need for full effectiveness as a law enforcement agency.

2) The membership and duty station of the units are rarely changed, so that most rangers have been at their present stations for a long time. Again, this leads to over-familiarity with the local people and makes for compromise in discharge of duties.

3) Whilst some field patrolling is undertaken in the area surrounding the duty station, the consultant failed to perceive any systematic pattern in this (or frequent switch of pattern), so essential when trying to out-wit poachers in the field. Also the area covered by patrolling appeared to be very limited in many cases, leaving many key wildlife areas uncovered on any regular basis - presumably partly a result of lack of transport, as all patrolling is done entirely on foot from the base.

4) More serious, was the observed tendency for field units to stay around their town - based duty station, waiting for reports of irregularities or suspicious activities to come in (by word of mouth, on the "grapevine"). An investigation in the appropriate area would then be mounted. This is a mode of operation typical of a police force but is inappropriate for an anti-poaching force, whose primary task is to <u>prevent</u> poaching taking place in the areas where the target wildlife species are known to be living. With key species such as elephant, for example, which undertake seasonal movements from one area to another, APU members should be re-locating themselves (their camps and areas of patrol) according to where the main concentrations of the target animals are at any particular time. Investigation of crimes already committed must be a very secondary function of an anti-poaching force, although of course not an unimportant one.

5) In the consultant's view, the APU's investigation of poaching cases is well executed, once information indicating that an illegal act has been committed is received. The framing of prosecutions seems adequate and a good

proportion of them result in successful convictions in the courts. However, one wonders whether the figure of two or three cases of poaching apprehended per month, claimed for the Lower Juba APU network, represents an adequate return, considering there are seven units out in the field and by all accounts poaching, especially for meat, is currently rife in the region. Perhaps this apparently rather low record of success is partly a result of the methods of deployment of the force noted above. Some officials in the region hint at efficiency being impeded by more serious factors, such as collusion between poachers and law enforcement personnel but there was no way for the consultant to check on this possibility.

A high degree of success is claimed for the APU, particularly in combating elephant poaching during the post - 1985 period. Some claim the poaching gangs shifted their operations to Kenya as a result of heavy pressure against them by the Somali APU. In the period from 1980-1986, 17,000 elephant tusks were confiscated and a further 8,000 during 1987 and 1988. Most of these were discovered in large batches (2,900; 450; 1,400 etc), sometimes in caches in the wildlife areas and at others as consignments about to be transported out of the country, one favoured route being via dhow from small southern Somalia ports to Abu Dhabi or Dubai. In 1983 a Police colonel was convicted of involvement in ivory traffic and sentenced to 11 years in jail. APU personnel have from time to time suffered casualties in fights with poachers and between 1986 and '88 three rangers were killed and four injured.

The need for specialised training in combating poaching is acknowledged and appropriate international assistance in this regard would be welcomed. The best course of action would be to first furnish equipment for the APU and then provide a crash course, of say 1 month, which included training in use of the new equipment. An increase in the size of the anti-poaching force is also a necessity if its effectiveness is to be widened to encompass other forms of poaching than that of large trophy species such as elephant. From the overall conservation point of view a broadened coverage of this kind is most desirable.

The relation of the APU to the Wildlife Department is a subject of much debate, many understandably feeling that its effectiveness would be increased if control, at least for operational and administrative purposes, was wholly with the Director of Wildlife, leaving them under

the Police Force solely in relation to discipline and the use of arms. This arrangement would, however, not wholly remove the ambiguity which is the cause of concern. Undoubtedly, a force specialised in and entirely devoted to, the protection of the wildlife resource from illegal and destructive activities would be ideal and would facilitate the revision of some of the present practices which are more appropriate to a police force. The logical base for such a specialised wildlife protection unit would clearly be the Wildlife Department. However, in recommending such a development, the consultant wishes to emphasise that in order to remain effective the APU should continue to operate under strict code of military discipline, within the Wildlife Department. Arrangements for this recommended shift of responsibility need to be incorporated into the proposed revised wildlife legislation. A draft ad hoc change in the law along these lines has already received a positive response from the legal department of Government and appropriate political authorities. However, it would probably be more expenditious to await the redrafting of wildlife legislation in its entirety, so as to ensure a fully integrated approach to the proposed adjustment.

3.4 The Mogadishu Wildlife Park

The wildlife park was set up on a 24 hectare site on the outskirts of the capital in 1987. It is financed by a special recurrent grant of Somali Shilling 10,000,000 and in 1989 a further Sh.20,000,000 was allocated for capital works. The staff consists of a director and a graduate technical manager, plus 45 subordinate staff. The area is fenced and is divided into a number of large paddocks covered fairlyuniformly by the scattered bush/tree vegetation which is natural to the sandy soil of the Mogadishu area. Water is provided to some of the paddocks for drinking purposes andis in short supply and cannot, for example, be spared to water the soil in an attempt to increase the grass cover, which is virtually non-existent in the dry season. At present the numbers of animals is low and in some species only one sex is represented, so that no breeding can take place. The general condition of animals is poor and the staff appear to have little or no training in captive husbandry.

There does not appear to be a very clear set of objectives for the wildlife park and unfortunately it is manifesting some of the worst features of zoos in other parts of the world.

It appears neither to be oriented towards the breeding and conservation of some of Somalia's rare species nor towards becoming an educational tool in imparting conservation ideals to the Mogadishu public. Labels on the enclosures are of a very low standard and impart no ecological information about the animals whose names they bear.

To the consultant, it seems entirely inappropriate that the wildlife park consumes so much more money than the Wildlife Department and yet gives such a poor return. The funds could be put to much better use in developing the Department's field conservation programme. Alternatively the zoo should be deliberately developed into a strong medium for increasing public awareness about wildlife conservation. This would require appropriate targetted planning and the training of personnel in the techniques of wildlife education and interpretation.

3.5 The Shabelle Swamp Project

This is a special field project operated by the Wildlife Department with finance allocated under the World Bank's compensatory wildland management scheme, in conjunction with the adjacent Semi-Mechanised Rainfed Agriculture Project (SMRAP). The project area is located some 230 km south-west of Mogadishu, in the Lower Shabelle Region between the towns of Kurtunwaarey and Soblaale. It covers approximately 650 sq.km of swamps, grassland and woodland astride the Shabelle River and has resident populations of wildlife, including giraffe, topi, waterbuck, lesser kudu, buffalo, hippo and crocodile. Elephants visit the area in the dry season, no doubt attracted by the permanent open water of the swamps, which also support an impressive variety of waterfowl. The consultant visited the area from 16 to 18 February and was well impressed with the habitat and diverse wildlife seen, which demonstrate good potential for development as a major focus of conservation and wildlife management activities.

Financial provision for compensatory wildland management under the SMRAP budget amounts to US$ 482,000 to be used over a 7 year period. Although project activities have commenced, none of the above funds have yet been released by World Bank and the project is operating on a loan from NRA - an unsatisfactory situation which it is to be hoped will be resolved in the near future.

Project staff are divided into two components, one for field management and are for inventory work in the project area. The management component presently consists of a field manager, liaison officer, one staff member, a driver, 11 rangers from the Anti-Poaching Unit and casual labour. It is equipped with a rather old field vehicle but two new vehicles (one for each component) and other equipment are anticipated when funds are released. The inventory component, presently based at Wildlife Department H.Q. in Mogadishu. comprises a leader, assistant leader, a staff member, two rangers and one casual labourer.

Project activities are based on a "Final Project Document" but in the copy shown to the consultant (marked in red as "Important" and "Confidential") it was not clear whether this was the agreed plan of activities by all parties, as it has no signatures to this effect. The document contains a description of the area's resources, including a list of wildlife species allegedly inhabiting it. Clearly this needs modification as the project is not within the known range of a number of the species listed and several of them are already extinct in Somalia. The objectives of the project also require clarification as, although the main objective appears to be to set up a "wildlife"reserve (no provision for which exists in present legislation), the objectives given are really a list of proposed activities. A further point concerns the proposal to divide the project area into "seven mainly concentric zones". Whilst zonation is an accepted principle in the planning of protected areas and the net functions proposed for the zones are reasonable, such a large number of zones seems totally impracticable and likely to cause confusion to those entrusted with their delineation and maintenance. Considerable simplification is required. Also such zone descriptors as "untouchable", "like national park" or "like protected wildlife reserve" are inadequate unless clearly defined. However, the project document will no doubt be refined in time, when the above points should receive attention.

Although in initial discussion the management team assured the consultant that they were successfully keeping domestic stock out of the core of the area, which has high wildlife conservation values, he was alarmed to discover evidence of heavy use by livestock in some areas in the form of trampling and droppings. This was confirmed by encountering a herd of goats approaching the water and, at night and

in the presence of a project ranger patrol, camels being watered and a large herd of cattle grazing within the swamp itself. Clearly, very firm intructions need to be issued to project staff on such vital aspects of protection and frequent supervisory visits made from H.Q. to see that they are being carried out. An incident with a tourist party indicated that the position with regard to tourist permission to use the area also requires regularising so that field staff can instantly recognise the standard form of required permit and cannot be confused by letters and "permits" issued by authorities other than the Wildlife Department.

The inventory phase of work should be initiated as soon as equipment is to hand but the leader of this component will need careful briefing as to methodology, as he has no formal training in this field. However, he has good aptitude for field work under difficult conditions.

The enthusiasm for their pioneer task was evident in all members of the Swamp Project team, including the ranger force and augers well for the success of the venture. As elsewhere, equipment needs are acute but these will be covered in a later specific section on the subject.

The Swamp Project is the only attempt at protected area establishment presently being undertaken by the Wildlife Department. The area is well selected and adequate funds for the initial phase are available. Strongest possible technical and logistic support should be given to the Project which could become a model of its kind for the entire country. Only with constant support and encouragement will the high expectations of this Project be realised.

3.6 Hunting of wildlife

Hunting is a widespread activity in Somalia which impinges directly on the conservation of its wildlife. Law No. 15 of 1969 basically defines three types of legal hunting, two of which are still current. Apart from two lists of animals which are "prohibited" (which includes females and young of non-prohibited species) or "protected", an "indigenous hunter" (defined as any Somali citizen) may kill any animal for the purpose of providing food for himself and his family. Hunting with a licence was

allowed for a specified list of species, excluding prohibited game, until the issue of such licences was revoked by Law No. 65 of 13 October, 1971. A Ministers licence, normally issued to dignitaries, can permit the hunting of any specified species in any area, excluding game reserves. Indigenous hunting and Minister's licences remained in force when the issue of normal hunting licences was suspended in 1971.

As indicated in Chapter 2, hunting has been primarily responsible for the decline in range and numbers of many of Somalia's wildlife species. There is no doubt that the great majority of this destruction was due to unlicenced hunting, as evidenced by the fact that it has continued unabated since general licences were withdrawn in 1971. Unlicenced hunting outside of Game Reserves for meat of the males of species which are neither prohibited nor protected such as lesser kudu, bushbuck, gerenuk, gazelles, dik-diks, topi, buffallo, waterbuck and zebra is perfectly legal, except that since 1978 all hunting of buffalo, zebra and Soemmmering's gazelle has been banned. The hunting of females and young and hunting in Game Reserves is very widespread and there is at best only partial enforcement of this part of the law. The destructive effect of this has been particularly marked in the cases of bushbuck and Grant's gazelle and to lesser extent in all other species, except dik-dik. The banning of all hunting of the three additional species in 1978 was probably too late, particularly in the case of zebra and Soemmering's gazelle. In any case, some (illegal) hunting of buffalo and Soemmering's gazelle still continues.

Poaching of many prohibited and protected species has also been widespread for many years and its effects have been particularly devastating in the cases of leopard, Hunter's hartebeest, oryx, Red duiker, rhinoceros, elephant, and giraffe. The latter three species have suffered most as a result of failure to enforce the law, rhino probably being extinct, giraffe endangered and elephant highly endangered. Law No. 43 of 1 November, 1978 introduced severe penalties for the killing of various declining species, including emprisonment for between 5 and 10 years and a fine in the case of rhino, elephant and girafe. In spite of this the worst period for elephant slaughte was 1979 to 1985 when it is estimated by various authorities that Somalia lost approximately 75 percent of its elephants. A recent (October 1988) estimate put out by the African Elephant Conservation Coordinating Group of CITES shows Somalia as having 24,323 elephants

in 1981 and only 6,000 in 1987. The free availability of automatic weapons following the war with Ethiopia no doubt contributed to this carnage and elephant hunting in particular was carried out by organised mobile gangs. Giraffe poaching is said to be a popular activity with military personnel and the sale of giraffe meat is evidently still quite widepread. Employees of the GTZ tse-tse control team in Bushbush National Park in 1988 are reported to have fed on giraffe meat bought from poachers in the area. In Bushbush the consultant saw large patches of grassland which has been recently burned, apparently to facilitate hunting of smaller species, a practice expressly banned by Law No. 15 (Article 34).

Without precise figures it is difficult to comment on the current volume of hunting on Minister's licences but the consultant gained the impression that a considerable number of these are being issued to foreigners, including aid personnel. Whilst the volume of off-take involved is probably not significant, one cannot help but query the psychological effect of seeing foreigners being allowed to hunt on species forbidden by law to the Somali perople. Does not the question arise of priveleged persons needing to set a good example?

Hunting of wildlife for both meat and trophies is a long established tradition in Somalia and there are no easy solutions to its control, unless a widespread change in public attitudes can be brought about. The legal export of skins and trophies in the colonial period set a trend which it will be difficult to eliminate. According to Simonetta and Simonetta (1983), an annual average of over 500 leopard skins, 450 of cheetah, some 100,000 hides of the larger antelopes and some 350,000 of dik diks was offically exported during the period 1951 to 1963. Hence it is not surprising that the small Wildlife Department finds it difficult to effectively control hunting today. Considerable international assistance will be needed if significant progress in this regard is to be achieved.

The first requirement is for Government policy, particularly with regard to hunting of common species for meat by local people, to be clarified and then incorporated into revised legislation. It is clearly undesirable to totally stop the consumption of wildlife meat which is an important protein supplement for poorer sectors of the population. However, it is vital that this off-take be confined to species which are common and available in good numbers and prevented in the case of animals, such as giraffe, whose

survival is being threatened by semi-commercialised hunting and sale of their meat. Rational forms of wildlife off-take, which do not conflict with conservation aims, are not easy to implement but there are examples in some African countries such as Botswana and Zambia, and Somalia would be advised to examine these as possible models for its legislation.

3.7 Damage by wildlife

According to Deshmukh (1988), "wildlife as a nuisance to most rural people is perhaps a more common experience than as a potential meat". He adds that "At present, activities of the Wildlife Department are largely directed at protecting wildlife from poaching and hunting. Such a role induces conflict rather than co-operation with rural people. Control of wildlife that is a genuine threat to people or their economic activities is a necessary activity of any wildlife department". Although Deshmukh's first comment was based on his survey of the Juba valley, it is undoubtedly of wider applicability in the country, with fairly frequent reports of wildlife damage to cultivated crops, livestock and even humans themselves. The negative effects of uncontrolled nuisance wildlife on people's perception of the resources have to be taken seriously, particularly in the light of the urgent need to increase public awareness of the necessity for conservation (section 3.9).

The most ubiquitous crop pest is the Warthog which is present in high densities almost everywhere, receiving de facto protection by virtue of the cultural attitudes of Moslim people to members of the pig family. In riverine areas, the related Bushpig is also a persistent pest, particularly along the Juba and the same applies to the baboon which is present in particularly high densities all along the river. The same communities also suffer extensive damage to their riparian crops from hippo which they both feed on and trample during their nightly forays on dry land. Elephant was formerly a major crop pest, as for example a reported case of 250 elephants which destroyed 100 hectares of cane at Juba Sugar in the early 1980's. However, the massive decline in elephant numbers since that time has brought respite from their depredations. Waterbuck, porcupine, vervet monkeys and rodents are occasionally reported to be a nuisance but do not appear to be major pests.

Regarding damage to livestock, the lion and spotted hyaena are the main culprits, away from the two rivers, these days, as leopard numbers are seriously reduced and cheetah is less generally prone to livestock predation Along the rivers, particularly the Juba and associated swamps, the crocodile is widely reported as a nuisance to domestic stock and is occasionally killed by local people for this reason. It is mainly the larger crocodiles that take livestock, the smaller individuals being confined to fish-eating. However, with the present large population of crocodiles, the number of large, potentially nuisance animals is considerable.

Threat to human life also comes largely from crocodiles in the riverine areas, with for example, a report from Banta on the Juba (quoted in Madgwick, 1988) of five adults and six children being killed within a 5-year period. At Radiile dasheeq, near Bu'aale, the consultant was informed that a man had been taken by a crocodile two days prior to his visit. The lion is also occasionally implicated in human injury and fatality. The consultant learned of a man recovering in Afmadow hospital, after a single-handed encounter with a lion, in which the animal was killed with a knife after inflicting serious wounds. Although such episodes are rare, they atteact a great deal of negative publicity for wildlife generally, which needs to to countered by the Wildlife Department being more active in the control, and where necessary destruction, of nuisance animals(See Deshmukh's second comment above).

Of the above nuisance species, the present law (No. 15 of 1969) defines baboon, spotted hyaena and porcupine as "vermin" which may be shot (without a licence) in any area other than a game reserve. However, the Minister may declare a species to be vermin, either generally or in a specific areaat any time. In addition, it provides for the driving out or destruction of wild animals, other than prohibited species, which are endangering livestock, crops or other property by the owner or his agent (in the case of protected species, after obtaining permission from an authorized officer). The legal position for dealing with animals causing damage thus seems satisfactory. At present, the Anti-Poaching Unit handles whatever control of nuisance animals is carried out by the Wildlife Department by, for example, attempting to drive animals from an area of cultivation by the use of fire crackers or gun fire. It does not have specialised training in this work which should

really come within the ambit of a general field force of the Wildlife Department. Moreover, today there are more efficient ways of preventing wildlife encroachment, such as the use of high-energy electric fencing. The effective deployment of such techniques would do much to enhance the effectiveness of wildlife damage control in Somalia and at the same time increase public sympathy for the conservation side of the Wildlife Department's work.

3.8 Research and monitoring

With such meagre resources at their disposal, it is not surprising that the Wildlife Department does not presently have any activities in either research or monitoring, although the planned inventory of the Swamp Project will constitute a basic form of "research" of a type which is widely needed in proposed protected areas. Indeed, systematic surveys of the distribution and abundance of vegetation types and wildlife species are urgently needed in all areas of the country of major wildlife importance. As pointed in Section 2.3.6, a number of species are at present insufficiently known to be able to assess their conservation status. Aspects of the ecology of critically threatened species, such as the elephant, require early elucidation in order to provide a more precise basis for their protection. For example, knowledge of the seasonal movement patterns of key populations of elephant are essential to planning their year-round protection and could be established quite quickly using radio-tracking technology. Similar information is needed in order to plan effective protected areas for the Somali wild ass and possibly the dibatag. An accurate survey of the distribution and local abundance of the crocodile population will be needed if plans for a utilization scheme are to go ahead and a case made to CITES for a crocodile quota. In the longer term, all wildlife populations should be subjected to monitoring at regular intervals to determine trends in numbers and population composition. The need for an investigation or research and monitoring unit within the Wildlife Department is evident and should be included in any future plans for expansion, possibly with the initial assistance of an appropriate international agency.

3.9 Public awareness

As already intimated, there is a very low level of public appreciation of the importance and values of wildlife and its conservation at the present time and this undoubtedly partly stems from the total absence of any

public awareness or wildlife education programme on the part of the Wildlife Department. The excellent Somali Ecological Society has made some headway in getting conservation issues debated by a limited sector of society, through its monthly meetings, literature and the Balcad Nature Reserve which it assists in administering. There is, however, an urgent need for programmes aimed at alerting target sectors of the population such as politicians, leaders of nomadic society and students to environment and wildlife conservation matters. Without at least a degree of popular understanding, if not positive support, wildlife conservation on the part of Government will prove a losing battle. A small corps of dedicated and suitably trained people, with minimum of equipment, could do a great deal in this field, including perhaps designing appropriate radio and television programmes and taking mobile presentations into the rural centres of population of which Somalia, after all, has only a limited number. The involvement of NGO's in this type of conservation activity has proved extremely useful in some African countries and should be borne in mind, particularly if Government funds are too limited to start such work at the present time.

3.10 Protected areas

In many countries a network of protected areas, such as national parks and wildlife reserves, constitutes the main form of conservation managment. In Somalia, although there has been legal provision for some categories of protected area for some years, there is currently no effective protected area management by the Wildlife Department, except for the recent initiative in establishing a wildlife reserve at the Alifootu Swamp in the Lower Shabelle (details in section 3.5). In addition, a small 190 hectare area on the bank of the Shabelle river 35 km north of Mogadishu, comprising remnant riverine forest and adjacent scrub savannah, is being managed as Balcad Nature Reserve by the Somali Ecological Society on behalf of the National Range Agency. This remarkable example of NGO enterprise already has a basic protection staff, field centre, and 132-page illustrated guide-book to the birds of the area, which constitute its main faunal interest. It deserves full support by the Wildlife Department.

As mentioned elsewhere, the E.C., via an Italian contractor, is presently preparing proposals for the development of Bushbush National Park. Once an appropriate plan and assistance are agreed, the way will be clear for setting up effective management in what will be Somalia's first national park - a significant step forward for wildlife conservation in the country.

Although the protection of wildlife is not their primary objective, mention should be made of three small forest reserves set up to conserve remnants of the once extensive Juba riverine forests. Two of the reserves, Shoonto and Barako Madow, representing approximately 400 hectares south of Bu'aale, have been studied in detail by a London University team who also produced a management plan for the area (Madgwick and Wood, 1988). Although somewhat rudimentary, this management plan provides a sound basis on which to initiate management of these forest reserves, which include considerable wildlife values. It is strongly recommended that the NRA Regional Director at Bu'aale begins to implement the plan immediately, with assistance from the FAO Regional Forestry Advisor at Kismayo (Project SOM/86/008). Some effort at boundary demarcation has already been made. Additional work urgently needed includes 1) prevention of cultivation,tree cutting, hunting and land registration in the reserves by engaging additional guards 2) erection of sign boards indicating the reserve status 3) establishing nurseries of local tree species to provide stock for planting in degraded patches of forest in the reserve, as well as making plantations of useful species outside of the reserve core area to supply the needs of local people and compensate them for loss of access to the natural forest and 4) providing assistance to improve desheeq cultivation outside of the core area, thus compensating for loss of seasonal cultivation of dasheeqs inside (which in any case is only possible in years when the dasheeqs dry up). Later, when proper zonation of the proposed enlarged reserve area has been implemented, a scheme for local hunting of small game (e.g. dik-dik, kudu, guinea fowl) on an annual quota could be initiated. The tourism proposals in the management plan are rather ambitious for the present but could be borne in mind for the future. Help should be given by the Wildlife Department in controlling wildlife damage to crops in the area, thus assisting public attitudes to the local conservation enterprise. The reserves could became a model of their kind for the rest of the country in joint management of habitat and associated wildlife species in collaboration with the local people. The other Juba forest reserve is a 400 hectare area called Kailoi north of Bu'aale, which was only declard in 1988 and awaits detailed management proposals

The present legislation (Law No. 15 of 1969) defines three kinds of wildlife management area, viz Game Reserves, Controlled Areas and Partial Game Reserves. Schedules to

the same law declare four areas (two in the north and two in the south) as game reserves, three (two in the south, and one in the north) as controlled areas and a further four (all in south-central Somalia) as partial game reserves. The legal status of a game reserve is similar to that of a national park in many contries in that it confers absolute protection to all wildlife and habitat and in fact the Bushbush game reserve has been deemed to be national park, since the establishment of the National Parks Agency in 1971. Residence, mining and recreational activities are permitted, however. Controlled areas and partial game reserves are hunting areas requiring an area - specific permit, in addition to a game licence, "Protected" species may not be hunted in partial game reserves.

The utility of controlled areas and partial game reserves ceased with the abolition of licenced hunting in 1971, as the law freely permits other forms of hunting in these areas, i.e. indigenous hunting and hunting on a Minister's licence. The integrity of the four game reserves has regrettably not been maintained and the wild animal populations in all of them have suffered considerable destruction by hunting, as well as habitat loss. The very recent serious destruction of habitat in Bushbush National Park by a tse-tse control programme suggests a wholly inadequate appreciation of national park status. However, the point should not escape attention that had conservation management been even partially established in the Bushbush area, such a blatent contravention of national park principles is unlikely to have occured.

Assuming Somalia intends to conserve its wildlife resource and prevent its further destruction, leading to extinction of species, some hard decisionswill have to be taken about the type of conservation management the country wishes to have and can realistically afford. Giving due regard to the widespread pressures on wildlife, the very limited funds available for its protection and the absence for the foreseeable future of any significant wildlife - based tourism, it would not be advisable to plan to set aside large tracts of land as national parks. As hitherto, the likelihood is that their legal status would be unenforcable and they would therefore never realise their intended role as bastions of wildlife and wilderness conservation. For the present therefore, it is recommended that plans and accompanying legislation be drawn up for a network of "strict nature reserves". These would be of modest size (100 to 300 sq.km) and have the sharply focussed objective of providing high quality

protection to a selection of ecosystems representative of Somalia's main biomes. Reasons for selection would mostly involve a mixture of vegetation types and associated wildlife species. However, in a few cases the preservation of a rare vegetation type might be the predominant criterion, whilst in others the presence of a highly threatened animal species may be the primary reason for an area to be selected for strict nature reserve (S.N.R.) status. The predominant management would be one of fierce protection against all forms of encroachment and interference by pastoralists, cultivators and hunters. Residence and such activities as quarrying or mining would be banned. The concept of keeping people and livestock out of specially designated wildlife areas is supported in the current 5-year development plan (1987-1991), section 5.22.

At least in the initial stages, popular tourism would not be permitted in S.N.R.'s. Tourism could be developed in adjacent areas where appropriate, perhaps later leading to the nature reserve being constituted as the core area of a national park which included the tourist zone and other buffer areas under a less strict form of protection. However, it is strongly recommended that the slender resources of the Wildlife Department are not dissipated at present on developing tourism but concentrated on installing effective protection for the country's rapidly dwindling wildlife populations. The adminstration of tourism in national parks requires a great deal of manpower and infrastructure and frequently diverts funds and effort from the primary task of conserving the fauna and flora. With wildlife in such a parlous state in Somalia, the risk of diluting protection work by engaging in tourism management is too great to take.

In designing the network of S.N.R.'s the initial aim should be to include at least one example of each major habitat - wildlife type. A preliminary list, mainly given to illustrate the concept, follows with tentative suggestions as to the area which might be suitable for a particular reserve. However, before instituting these recommendations, further consultation and survey would be essential.

1) Dry woodland habitat typical of central Somalia, with dabatag, kudu, Soemmering's gazelle, gerenuk, etc - area immediately south of Haradhere, astride the road to El Dere (proposed for assistance under CRDP Phase II).

2) Coastal grassland, with Speke's gazelle, ostrich, oryx - either area north of Hobbio known as Bud Bud (proposed under CRDP Phase II) or the Adale - Warshek area north of Mogadishu.

3) Dry southern woodland, with oryx, gerenuk, Grant's gazelle, hirola, giraffe, etc. - Lag Dhere area, west of Afmadow.

4) Moist woodland/savannah, with elephant, giraffe, topi, buffalo, lion, kudu, etc. - Bushbush area, with E.C. assistance already being developed as a major national park, core of which could be constituted a S.N.R.

5) Swamp associated with Shabelle and Juba river systems, with waterbuck, topi, buffalo, elephant etc - Alifootu Swamp Project - core could constitute a S.N.R.

6) Riverine forest and associated swampy grassland, with bushbuck, waterbuck, Red duiker, Blue monkey, leopard etc. - Shoonto and Barako Forest Reserves in Middle Juba (see above for more details). Core of these forest reserves could be constituted S.N.R.

7) Wildlife Ass habitat in Nugal region - core of wildlife reserve proposed under CRDP Phase II could be constituted S.N.R.

8) Northern coastal plans and hills, with Pelzeln's gazelle and Beira antelope - approprioate area (or may be two areas) to be determined.

It would be of great importance, after selecting a site for management as a SNR, that clear objectives for it be established and incorporated in a 5 - year management plan for that particular S.N.R. This plan should include 1) a description of the main characteristics of the region in which the S.N.R. is situated, 2) a description of the vegetation, wildlife and other natural resources of the S.N.R. area itself, drawing attention to any of particular conservation importance, 3) a clear set of objectives for the reserve in priority order - these should emphasise the preservation of wilderness; protection of named endangered species so as to allow them to increase to the level of a viable population, removing the risk of extinction; exclusion of all forms of interference etc., 4) a planned programme of work and activities such as monitoring, designed to fulfil the above objectives and appropriately distributed

over the 5 years of the plan period, 5) a phased programme of recruitment of staff required to carry out the work programme, 6) a list of equipment required to implement the work programme and 7) a budget for the 5-year period which reflects the costs of capital works proposed, equipment and staff emoluments in sections 4 to 6 of the plan above.

Management plans should be revised every 5 years or sooner if circumstances in a reserve change unexpectedly.

3.11 Wildlife utilization

3.11.1 General

As indicated above (3.10), the wildlife situation in Somalia at the present time and the resources available to develop it do not indicate tourism as a high priority target, although it certainly should not be ruled out in the long term. Nevertheless it is of importance that ways be found of convincingly demonstrating to decision-makers and the general public that wildlife has a contribution to make to the economy. It is unrealistic to expect an economy such as Somalia's to support a programme of wildlife conservation without any expectation of economic returns, however vital that programme may be in the judgement of the international conservation community.

3.11.2 Crocodile utilization

An immediate opportunity for sustained yield harvesting and the earning of foreign exchange is presented by Somalia's large crocodile population, which as already noted has reached pest proportions in some sectors of the Juba. One estimate (Blower, 1988) puts the gross value of skins croppable on the Juba at between US$ 1.5 and 3.4 million per annum. It should also be noted that the large reservoir to be created by the Baardhere dam will greatly increase the crocodile habitat available and the species population is likely to rise even further.

Careful consideration needs to be given to the type of utilization proposed for the crocodile. Blower (1988) favours putting a concession for direct cropping of the adult population out to tender, after an initial survey and management plan have been completed. Such a scheme, whereby the contractor does all the work and pays royalties based on current market prices to the Government has some advantages, not the least of which is its simplicity, relieving the Government as it does of much technical involvement. However, this approach would only work well if the Wildlife Department has the capability to monitor the operations of the contractor in the field during the harvesting season. Failure to do this could lead to gross irregularities, damage to the wild population and loss of revenue to the Government. A serious shortcoming of this approach in the view of the present consultant is that it does not entail any participation by the rural populations, who suffer the depredations of the crocodile on their livestock, in the profits derived from its exploitation. As such a valuable opportunity to contribute to rural upliftment is lost, as well as the possibility of positively influencing public opinion in favour of wildlife management.

An alternative mode of crocodile utilization which should be examined is crocodile "farming", which would involve raising the animals in captivity in a closed-circuit operation that only requires periodic replenishment from wild stocks. It lends itself readily to management by village cooperatives or participation by a large number of local "farmers" after receipt of a minimum of training in the husbandry involved. This approach also greatly increases the number of harvestable crocodile, and thus income, as it makes use of many eggs and young animals that are normally destroyed by predators before reaching maturity in the wild populations.

The pattern of operation visualized is that after an initial survey by a crocodile biologist, the number of eggs and/or hatchlings that could be removed without damaging the wild population would be estimated. Training in husbandry and construction of a hatchery and ponds for hatchlings and older animals would also be given by the biologist to registered prospective farmers. Once these facilities were constructed and had passed inspection by officials of the Wildlife Department, a recorded number of eggs or hatchlings obtained from the wild would be issued to each farmer. Ongoing technical advice would be available to farmers during the approximately 3-year rearing period.

A private contractor, selected on a tender basis, would then be given a concession to buy crocodiles of appropriate size for slaughter from the farmers, slaughter them and market the skins under Government licence. A simple cross-check on the numbers of skins purchased by from farmers by the contractor against eggs issued to respective farmers (3 years earlier) would ensure that skins obtained illegally from the wild were not infiltrated into the pipeline. Three parties would benefit from such a utilization scheme, viz the village-based farmers along the Juba, the contractor handling the skins and the Government, via fees paid to it by the contractor. Profit from the operation would then be distributed at different levels in the economy; conservation of the wild population would be safe guarded and a considerable amount of public awareness of the value of wildlife would be generated.

Since the Nile crocodile is in Appendix I of the C.I.T.E.S. convention, to which Somalia is a signatory, it would be necessary to obtain a quota for export of a given number of skins each year from the CITES authorities. However, once an approved scheme was worked out, this should present no probelm, as a number of African countries already receive an annual quota for crocodile skin export.

One crucial aspect of the type of crocodile farming outlined above is the consistent availability of cheap food for the captive animals. Farms must be sited within a reasonable distance of a supply of food, such as an abbatoir producing waste from animal carcasses. As a preliminary investigation of the feasibility of setting up crocodile farms in the Juba valley, the consultant ascertained the volume of carcass waste freely available from several slaughter houses, with the following results. Normal waste available for the taking consists of skulls (with some skin and flesh attached) tails, lungs, intestines and other internal organs not consumed by man.

Location of slaughter-house	Daily rate of slaughter		
	Camels	Cattle	Goats/sheep
Kismayo	15	3 or 4	6 or 7
Jilib	4 or 5	2 or 3	8 or 10
Bu'aale	Dry season: 1 camel or cow every alternate day		
	Rainy season: 1 camel or cow every day		

In addition, some hotels in these towns slaughter their own animals and waste would also be available from these sources. A possible scheme would be for several farms situated in a particular area to use common transport to collect carcass waste from the town and deliver it to the farms An alternative source of food for farmed crocodiles would be fish caught in the river or dasheeqs by net. In any case it would be advisable to include some fish in the crocodiles' diet in addition to whatever animal waste was being fed to them.

3.11.3 Safari hunting

There used to be a substantial safari hunting business in Somalia, based on healthy wildlife populations of former times. It is possible to visualize reintroduction of this lucrative form of wildlife utilization at some time in the future, provided that it could be guaranteed that the limited off-take involved did not damage the wild populations of the species involved. The ability of the Wildlife Department staff to control hunting parties in the field and ensure that licence conditions were adhered to, is a further crucial point. At present the Department does not have this capability. One difference between safari hunting and tourism based on wildlife viewing, is that whilst the latter requires considerable infrastructure in the form of reasonable airport facilities and roads, a certain standard of accommodation and service in lodges based in wildlife areas, the safari hunter accepts rough tracks in the bush and tented accommodation (albeit of good quality) as part of the normal experience of an African hunting trip. The profit margin from safari hunting is, however, considerably higher than that from wildlife viewing and these days extremely high licence fees are being demanded by African wildlife departments. Since this type of hunting is normally limited to males, it has little or no effect on a population's ability to reproduce, as most wildlife species are polygamous.

Species which could be capable of withstanding a limited amount of licenced hunting in Somalia at present include warthog, hippopotamus, crocodile, gerenuk, Speke's gazelle, dik-diks, waterbuck and lesser kudu. However, with the exception of Speke's gazelle and some species of dik-dik, these animals are commonly available elsewhere and may not therefore constitute an attractive bag for a foreign sportsman unless one or two unusual species can be added. Horn of Africa endemics such as dibatag, beira antelope, Soemmering's or Pelzeln's gazelle would attract but the status of these species is either unclear or known to be threatened at present. Detailed surveys might, however, reveal the feasibility of limited hunting off-take in the case of beira or Pelzeln's gazelle.

Should Somalia wish to reintroduce licenced hunting in the future, appropriate provision for this should be made in the proposed revision of legislation. Provision in the law for a species to be hunted does not mean that licences have to be issued for it at any particular time. In any case, such matters can be controlled by regulations which can be changed more easily than legislation (see Chapter 4).

3.12 Rehabilitation

In the case of a small number of Somalia's highly endangered species very special management measures may be needed to assist the animal's rehabilitation and recovery from the brink of extinction. Indeed, if stock can be obtained from elsewhere, it may be possible to reintroduce a species such as the Black rhinoceros. The prerequisite in all cases is a detailed survey of the numbers and distribution of existing stocks of the species. Reasons for decline also need to be precisely identified as any rehabilitation programme must protect the animal from these factors in a very specific manner.

Several different strategies are available, depending on the biology of the species in question and the precise nature of its present difficulties. In some, cases such as that of the oryx, merely ensuring that one or two populations are within proposed strict nature reserves may be sufficient to guarantee their viability. The proposed S.N.R. at Lag Dhere would be particularly important in the case of oryx. If numbers in the relevant S.N.R.'s are well below normal densities the recovery may be assisted by the capture and translocation into the protection of the S.N.R.'s of small pockets of the species which form isolated remnants of former populations in areas that are presently difficult to protect. A similar approach may be appropriate in the case of the wild ass. It makes protection of the remaining members of a greatly reduced species easier if they are all collected together in one or two key populations in this manner. Later dispersal can be assisted by translocation, once numbers in the key S.N.R. populations have risen suitably and presently threatened habitats of the species have been brought under robust protection management.

In the case of the elephant, which requires a larger area of appropriate habitat than most species, the proposed S.N.R's at Alifootu Swamp and Bushbush National Park may constitute suitable foci for rehabilitating the species. It is now technically feasible to translocate elephant over considerable distances under drug sedation and this possibility should be considered, with appropriate expert advice, in the case of small isolated groups of elephants that are vulnerable to poaching. A critical factor in elephant rehabilitation is their slow reproductive rate, making artificial measures of the type proposed more necessary than in species that reproduce more rapidly.

The rhino is a relatively easy animal to manipulate by procedures such as reintrodution because of its habit of staying within a relatively limited home range in appropriate habitat. If the rhino is indeed extinct in Somalia reintrodution into a well protected area of suitable habitat, such as the Alifootu Swamp area, would first require a suitable source of stock. This could either be a foreign zoo or another African country which was willing to supply Somalia with a small breeding group from its wild stock. If, by good fortune, there are still one or two rhinos of both sexes left in Somalia it would be prudent to capture them immediately and transfer to a safe refuge such as Alifootu. Here they would be confined to an area of suitable habitat by an electric fence and kept under heavy guard, over and above the normal protective measures in force in the area. Capture and translocation is not entirely devoid of risks to the animal's life but in the case of rhino in the Lower Juba Region at the present time, these risks would be considerably less than those from poaching which is a high possibility should any lone rhino still be roaming there.

4. WILDLIFE POLICY AND LEGISLATION

4.1 General

There is widespread opinion that the time has come for a major examination of policy and legislation in relation to wildlife in Somalia. It is some years since a comprehensive public statement was issued setting out the Government's views on the country's wildlife resources and its place in the national strategy. There is currently a growing concern about the management of the environment generally, evidenced in the recent setting up of the National Committee for the Environment. Hence, this would seem to be an appropriate time for the Government to formulate an up-to-date manifesto on this important natural resource.

Such a statement of current wildlife policy should form the broad basis for new legislation, which in a sense is a formal reflection of policy and indicates its implications in concrete terms. At present the legislation regarding wildlife, although based on one major law (No. 15, promulgated in 1969), is scattered in a collection of laws and amendments, which are not only somewhat confusing but also do not fully address the present wildlife situation in the country. Furthermore, several organisational proposals with statuatory implications regarding the Wildlife Department are under consideration at present and, if implemented, would require yet more amendments to existing legislation. Hence the time seems to be ripe, from several different considerations, for a major revision which incorporates all relevant amendments, discards superseded sections of the law and adds whatever new provisions are perceived as necessary in the current situation and in order to reflect the stated national policy.

In addition to a policy statement and updated legislation, there is a need for a set of regulations. These would provide a framework of practical day-to-day guidance in the implementation of the law and contain minor details with which it is undesirable to clutter the main statute book. Morever, regulations should be easier to amend as necessary from time to time, without resorting to the cumbersome procedure of promulgating a new law. For example, they might be subject to amendment by a ministerial committee. At present a change such as that suspending the issue of a general hunting licence for the time being

can only be effected by issue of a new law. Similarly, a further new law needs to be passed in order to lift that temporary suspension. A procedure of this kind should be controlled at the level of regulations, rather than being a burden on the main legislative process.

4.2 Policy

4.2.1 Existing statement of policy

The nearest thing to a declaration of Government policy available at the present time is the brief section on wildlife in the 1987-91 Five-year Development Plan. Section 5.22, headed "Wildlife", may be summarised in English as follows:

- Wildlife is important in Somalia but the country must improve wildlife habitat, as wildlife is important for tourism.
- the country must establish the numbers and distribution of wildlife species in the country.
- the destruction of wildlife must be stopped in the country.
- the country must improve the environment of wildlife and make some national parks and provide water for wildlife.
- people and livestock must be kept out of national parks.
- the numbers of the Anti-Poaching Unit must be increased.
- the Government must improve the Wildlife Department.

All these are important matters for the conservation and development of the country's wildlife but the list is more of an action plan than a broad overview of policy. However, the policy reflected by these proposed actions appears to be very much along the right lines and one would like to see it spelled out. It is clear from the statement that the Government is fully aware of the deleterious trends in the wildlife situation and is determined to reverse these. Its proposed methodologies are broadly correct and, in particular, the stated intention of enlarging the Anti-Poaching Unit and improving the Wildlife Department is laudable. One hopes that finance will soon be made available for both these urgently needed actions.

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4.2.2 Framework for a Policy Statement

Any overview of Government thinking on wildlife must take into account the political and economic realities of Somalia. It must address the apparent conflict between a poor country, with few resources and pressing human priorities and the urgent need, highlighted by international concern, to prevent a number of wildlife species (some of which are found only in Somalia) from becoming extinct. "Pure" preservation would appear to be a luxury which the country cannot afford and hence a way must be sought to present wildlife as a resource which can contribute to Somalia's socio-economic enrichment. To do this convincingly is essential to political and popular acceptance of wildlife conservation in the long-term.

Bearing the above in mind, it is suggested that a policy declaration on wildlife should include, but not be confined to, the following ingredients. Obviously the precise wording used and the order in which the points are presented in the statement is a matter for those charged with drafting it.

1) Nature has endowed Somalia with a rich and diverse fauna, a number of species of which occur nowhere else in the world.

2) This fauna is the priceless heritage of the Somali people and is intricately woven into their traditions and culture.

3) In a wider context, it also belongs to the entire family of mankind for whom the Somali people hold it in trust.

4) Furthermore, if conserved and managed along modern, scientific lines it can constitute an important economic resource, capable of making a significant contribution to the upliftment of rural people. It is already making such a contribution in a number of other African countries who are struggling with similar economic problems to Somalia.

5) In recent years there has been widespread destruction of wildlife, resulting in a serious decline in the numbers of many species. Several have been totally exterminated in the country and a number of others are on the verge of extermination. Illegal hunting is the major cause of this shameful destruction, which has given Somalia a very bad image in the international community.

6) The Government is absolutely determined to lead the people to more responsible stewardship of this invaluable resource, so that its potential for their social and economic enrichment may be fully realised.

7) Once an improvement in the state of the wildlife has been achieved, it will also be proudly displayed to the rest of the world and thus bring credit to the Somali nation.

8) Towards this goal, the first and most urgent priority is to initiate measures aimed at the restoration of the more seriously endangered species, such as the elephant, rhinoceros, Somali wild ass and the leopard. At the same time, the Government proposes to demonstrate the economic value of the wildlife resource by instituting a utilization scheme based on species such as the crocodile which have abundant populations that can yield tangible benefits to the local people.

9) As far as possible, care will be taken to ensure that both the above aspects of wildlife management will be fully integrated with other forms of land use such as pastoralism and agriculture. For example, land which has traditionally been used for settled cultivation will not be taken over for wildlife reserves. Damage to livestock and people by predators, such as the crocodile, will be lessened as their numbers are reduced by the proposed off-take scheme. However, a few small areas of wild land, in various parts of the country, will need to be set aside for the exclusive use of wildlife. The Government will provide compensation to people whose traditional and legitimate livelihood is distrupted by the establishment of these reserves but is confident that all concerned will accept any sacrifice involved in the interests of national progress and development.

10) The Government is confident that the entire Somali nation will join hands with it in defeating that small group of unpatriotic persons who are involved in the destruction of wildlife for their own greedy ends. All illegal hunting must be completely stopped and those practicing it severely punished. Such activities must be seen to be totally against the national interest and damaging to the country's future prosperity and standing in the international community.

11) Education programmes, at all levels, will shortly be commenced on a national basis to teach people about the importance and value of wildlife and show how the ordinary citizen may participate in its conservation.

12) Surveys and studies to indicate the numbers and present distribution of the endangered species will be carried out, to provide a basis for thier rehabilitation and management along modern scientific lines.

13) Improved measures for the control of nuisance animals will be introduced and modern techniques employed to reduce damage to crops and livestock.

14) In accordance with this new policy, all existing legislation concerning wildlife is shortly to be reviewed andacomprehensive new law drafted, which reflects the revised policies and accommodates the up-to-date wildlife situation in our country.

15) In order to usher in this entirely new era in the life of Somalia's wildlife, the Government is also making available significantly increased finance and manpower. The Wildlife Department and its Anti-Poaching Unit will be progressively strengthened by the provision of additional personel and much needed equipment, such as transport and radio communications.

16) International assistance will be sought where appropriate in initiating programmes arising from this revitalised policy in relation to wildlife. Many of our friends are ready to help us.

17) It must be emphasised that this new phase in the history of Somalia's wildlife will only become a reality if it receives the wholehearted and enthusiastic support of all the Somali people. The Government is leading the way forward in the confident anticipation that such support will indeed be forthcoming and that everyone will shortly enjoy the fruits of this exciting initiative in the life our of our Nation.

4.3 Legislation

4.3.1 Existing legislation

The basic legal provisions regarding wildlife are found in Law No. 15 of 25 January, 1969 which is entitled, "Law on Fauna (Hunting) and Forest Conservation". This extensive piece of legislation contains 77 articles, divided between three books on Fauna (Hunting) Conservation (50 articles), Forest Conservation (11 articles) and General Provisions (16 articles) respectively. In addition, it contains 22 schedules. In relation to wildlife, this law defines protected areas (see Section 3.10), forms of hunting (Section 3.6), prohibited and protected species and gives instruction re issue of licences and handling of trophies, as well as prescribing penalties for various offences. In relation to forest conservation the law deals with the creation of forest reserves and the protection of forests and forest produce. In general it is a good piece of legislation and many parts of it are still relevant. However, it reflects an outmoded approach to wildlife management in that the emphasis is on hunting ("game") and not primarily on conservation, although the definition of a game reserve is adequate. Clearly there have been serious problems in the enforcement of many parts of this law but that cannot be blamed on the law itself.

The first major amendment of Law No. 15 was Law No. 65 of 13 October, 1971 which "suspended" Article 16 that deals with the issue of Game Licences, leaving indigenous hunting and the Minister's Licence as the only valid forms of hunting. This amendment had a negligable effect on the conservation of threatened species, as it did not prevent the widespread illegal hunting that was taking place, although it may have prevented this being done under the guise of licenced hunting.

Law No. 43 of 1 November, 1978 attempted to halt the slaughter by imposing heavy penalties (5 to 10 years jail and fines from Sh. 10,000 to 20,000) for killing trophy species, and lesser penalties for others which were under pressure including several that were not formerly "prohibited" or "protected" such as buffalo and Soemmering's gazelle. In 1979 this measure was further strengthened (Law No. 32) by applying the same stiff penalties to persons convicted of shielding and abetting poachers of those species or dealing in their trophies.

A highly significant provision in 1980 (Law No. 4) prescribed rewards for persons providing information leading to the confiscation of trophies such as ivory, as well as for those involved in the act of arrest and confiscation. Rewards were defined as percentages of the value of the material successfully confiscated (20% in the case of an informer). Some claim that this rather unusual piece of legislation backfired and resulted in the protection forces and their accomplices becoming part of the poaching network. Certainly it did little to halt the widespread carnage and the main period of elephant poaching (up to 1985) followed the introduction of the reward system. It also appears that the generous rewards may have encouraged the smuggling into Somalia of ivory from neighbouring countries - an activity that has been widely alleged in the international media. Certainly, the practice of giving rewards needs careful review in the light of experience.

Another group of laws has regulated the various changes that have taken place in the structure of the wildlife authority and protection forces. The relevant ones still in force are No. 32 of 7 March, 1977, which placed the Wildlife Department in the Ministry of Livestock, Forestry and Range, and No. 4 of 10 January 1980 which transferred the anti-poaching rangers to the Somali Police Force and formally involved the latter in wildlife protection activities. Arguments for centralising control of the Anti-Poaching Unit in the Wildlife Department are given in Section 3.3 and, if accepted, would obviously require emendment of Law No. 4.

4.3.2 Attempts to revise wildlife legislation

There have been a number of recommendations regarding the need for and nature of revision of the existing wildlife laws. Indeed, several drafts to this end are in existence, representing attempts at either total revision or merely amendment or addition. It is not within the competence of the present consultant to evaluate these documents nor to attempt yet a further "final" revision based on them. An expert in conservation legislation, with a knowledge of the wildlife scene in Africa, should be engaged for this purpose. However, a summary of the present situation regarding draft revisions may be useful in framing the terms of reference of such a legal consultant.

Abel (1976,b) working within UNDP/FAO Project SOM/72/012, produced a comprehensive draft revision of the wildlife legislation, which included detailed provision for setting up of national parks in Somalia. However, the history of wildlife legislation since 1976 makes some sections of Abel's model out-of-date.

In 1983 A.M. Simonetta, at the request of the N.R.A., prepared another comprehensive draft which included provision for seven different types of reserve, four of which related directly to wildlife preservation, viz national parks, wildlife reserves (where limited grazing is allowed), special reserves (to protect a particular, localised, species) and turtle reserves - a good addition, taking into account the importance of marine wildlife. There are also provisions for reintroducing licenced hunting on the basis of an area/species quota system. The consultant only managed to see a Somali language version of Simonetta's draft, so can not comment further but it is clearly an important document.

Further recommendations were made by Toth and Qabile (1984), who comment on the Simonetta draft and draw attention to Kenya's wildlife legislation as a possible model for Somalia. Stephenson (1988,b) in turn comments on Toth and Qabile's proposals.

The consultant was also shown (in translation) some correspondence during 1985-86 written by the Minister of Livestock, Forestry and Range and the Attorney-General, concerning an attached draft amendment providing for the return of the Anti-Poaching Unit to the full control of the Director of Wildlife, within the N.R.A. There seemed to be general agreement that this should be done but the draft was apparently never passed into law.

4.3.3 General requirements of a revised law

The following is a list of points which have come to the attention of the consultant that should be taken into account when the proposed definitive revision of the law is undertaken.

The present wildlife legislation is cumbersome because it is scattered among too many different laws, some portions of which are superceded or partially superceded. The emphasis on wildlife as game (to be hunted) does reflect modern policy which emphasises its conservation. Enforcement of many articles has proved difficult and it should be determined whether this is partly due to the way the present law is framed. Is it too complicated? On the other hand, sections which have strengthened the effectiveness of the wildlife protection forces, such as the stiff penalties for poaching and handling of illegal trophies, should be retained, at least in some appropriate form.

Obviously, redundant or superceded portions of existing laws should be discarded, such as present provisions for the issue of hunting licences and the schedules pertaining thereto. If the reintroduction of licenced hunting is anticipated, entirely fresh provisions should be framed. The present list of protected animals should be dispensed with, as no longer applicable (but see below re schedules). Law No. 34 setting up a National Parks Agency can be scrapped in its entirety.

Portions requiring revision and updating include the list of "prohibited game". Perhaps this should be replaced by a system of schedules, conferring varying degrees of protection according to the rarity and degree to which a species is under threat. These would be similar to the CITES appendices but would obviously apply to the current status of a species within Somalia. For example, whilst the African elephant is in Appendix II of CITES (as not being endangered throughout its range as a whole) it clearly should be in the schedule conferring the maximum degree of protection, and banning all trade in its products, within Somalia itself where it is bordering on extinction. The present listing of certain species as "vermin" should be incorporated in to the same scheduling system - as the schedule accorded the least degree of protection. In doing this care should be taken to delete from the list animals such as the Hunting dog and striped hyaena which are now too rare to be destroyed without specific authorization. The position of the porcupine on this list also appears to be without current justification.

The implications of indigenous hunting as presently loosely defined need careful consideration. The article defining it should also emphasise the specific prohibitions, such as not taking females and young of any species nor hunting in certain categories of protected area. At present these important restrictions are only discovered by reading other sections of a rather large body of legislative jargon and many people seem unaware that they apply to indigenous hunting.

The issue of Minister's licences, as at present practised, should also be considered. Should the right to issue licences to state guests and similar dignitaries be confined to the President, while retaining the Ministr's licence only for control of emergencies such as serious diseases or over-abundant populations?

As indicated above (Section 4.3.1), the system of rewards for information or participation in the arrest of poachers and confiscation of trophies should be examined and revised accordingly.

An important implication of the change to a protection emphasis in the new law should be a prominent position for the definition of protected areas and rules for their management. As already pointed out, the country must decided which types of protected area it needs in order to carry out its stated wildlife policy. From the point of view of land-use demands and cost of up-keep, how much area can be set aside for wildlife and wilderness? What forms of economic return from wildlife can be reasonably expected in the long-term?

If they include tourism and safari hunting, for example, legal provision for national parks and controlled hunting areas must be made, in addition to areas with a strictly conservation objective such as the proposed strict nature reserves (Section 3.10). I.U.C.N. provides a list of internationally accepted definitions of various types of protected area and it would be wise to follow these in designing legislation regarding Somalia's network of protected Areas.

A word of warning, however. Many nations have, with good conservation intentions and an eye to the tourist industry, declared considerable areas as national park, only to discover that they do not have adequate resources to protect the wildlife nor develop tourist facilities of the required standard to attract foreign visitors. Moreover, they have overlooked the fact that there are special reasons why wildlife-viewing tourism has flourished in countries like Kenya which are not necessarily present elsewhere. As far as Somalia is concerned, for example, most of its wildlife areas have a dense, closed type of habitat with poor visibility, very different from that of Kenya's popular tourist areas such as Amboseli or the Masai Mara. Areas such as Tsavo where there are plenty of animals but vegetation similar to that in much of Somalia, are not at all popular with tourists. Hence, whilst a few areas such as a portion of Bushbush, could be declared as national park, the consultant strongly urges Somalia to concentrate on facilitating the survival of its heavily threatened fauna at the present time and for this strict nature reserves, of more limited area than national parks, are the most appropriate form of protected area. At a later stage, when some of the wildlife populations are more robust, well controlled safari hunting could be introduced in buffer areas adjacent to national parks and strict nature reserves. Harvesting for meat, on a quota basis, by local people could also be introduced in these buffer zones, as well as limited grazing of domestic stocks in times of special need, such as drought periods.

From the legal point of view therefore, the consultant recommends <u>three</u> types of protected area, as follows:-

1) <u>Strict nature reserves</u> from which all human activities, except those connected with management, are totally eliminated. The objective is to protect a self-sustaining portion of wilderness in which wildlife populations and their habitats follow the normal course of nature.

2) <u>National parks</u> are like strict nature reserves, except that they cater for recreational tourism and wildlife education, at least in a portion of their total area. Other forms of human influence such as settlement (residence), cultivation, hunting or pastoralism are excluded. It should be noted that a national park may have a core area which has strict nature reserve status (and legal provisions).

3) Multiple-use (or utilization) areas which, whilst retaining a predominently wildlife conservation objective, permit well controlled utilization of natural resources in the area in a manner which does not adversely affect the wildlife. Such utilization may include licenced hunting, by visiting sportsmen or local people, on wildlife species with suitably abundant populations and in strict accordance with a scientifically calculated quota in a particular time period and specified area. Other forms of utilization, which must be controlled by appropriate legislation and regulations, include selective removal of forest products such as timber or thatching grass, emergency grazing of specified numbers of domestic stock (no goats or camels whose browzing damages the woody vegetation) and fishing.

In setting up these protected areas, the law must be careful to specify procedures for acquisition of the land, if it is already being used for some other purpose. Compensation should be prescribed where appropriate. Unless the views and legitimate land needs of local people are adequately recognised in the law, the setting up of protected areas will generate local tensions and the public appreciation of conservation which is so desirable will never be allowed to take root.

In addition to utilization by hunting in multiple-use areas, provision should also be made for cropping of over-abundant species, by licenced hunting or on a contract basis. The legal implications of wildlife farming (captive husbandry) or ranching (semi-captive conditions) should also be addressed, with provision for the initial stocking and later replenishment of farms from wild stocks.

It is important that in any form of wildlife management where revenue is generated, the law specifies where the proceeds are to be deposited. It would be ideal if such funds could be used, or even partially used, for financing conservation work such as the up keep of S.N.R.'s or equipping of the A.P.U.

Another major area of the proposed new legislation will be concerned with the revised and enlarge structure of the Wildlife Department, including provision for various statuatory grades (not numbers) of staff covering the needs of the H.Q., Mogadishu Wildlife Park, a research and monitoring unit, a conservation education (public awareness) unit and field staff manning protected areas and regional offices. A discrete section will need to be devoted to the new position

of the the Anti-Poaching Unit within the Wildlife Department, with particular attention paid to a military code of discipline and the command structure. Such matters as powers of search and arrest will need to be defined, on similar lines to other law enforcement agents such as the police.

A further matter which may require minor attention in the law is the needs of research personnel, both government servants and private researchers, to intervene in the lives of scheduled animals by such means as drug immobilisation (or other forms of capture) or even deliberately kill individuals for purposes of removal of material for examination. With whom does such permission rest and what are its limitations?

Capture for other purposes is covered in the present law (No. 15) and may merely require appropriate revision.

4.4 Regulations

The need for regulations separate from the actual law has already been mentioned (4.1). Matters to be covered by regulations and their general format should be specified in appropriate places in the wildlife law, as should the question as to who is empowered to make changes in them. An initial set of regulations should be drafted by the legal consultant who drafts the legislation, so that an appropriate pattern and form of wording is established. The following are some of the matters which it is recommended should be covered by regulations attaching to the new wildlife law. It should be noted, however, that this is not an exhaustive list but merely illustrative.

With regard to the running of the Wildlife Department, regulations should indicate levels of staffing, indicating the normal number of each grade (specified in the law itself) for a particular situation, such as a national park up to 400 sq.km. in area. Responsibilities at each grade should be indicated, together with emoluments and other entitlements such as salary (scale) field allowance, pension, housing and uniforms. Rules for the operation of departmental equipment such as vehicles must also be included.

The operation of the A.P.U. will need particular attention in the regulations, where ratio of officers to rangers and the normal composition of a field unit should be indicated. Similarly deployment of field units, their standard mode of patrolling, frequency of rotation between duty stations and the like should be laid down in consultation with an expert in anti-poaching operations. Aspects of the care and use of arms not covered in the military code (which should be enshrined in the law) will need to be covered.

Mode of establishment and adminsitration of hunting quotas, e.g. in multiple-use areas, is a further area which the regulations will need to address.

With regard to other forms of utilization, such as the proposed crocodile farming scheme, the regulations will need to lay down details of training and other assistance to be given to farmers prior to the issue of a licence, the conditions of the licence itself and the manner of issue of stock (eggs, hatchlings)by the Wildlife Department to licenced farmers. Conditions governing the consession to buy, process and export crocodile skins and the formula for establishing royalties, licence fees etc will need to be spelled out.

If and when tourism becomes a feature of some of the national parks there will need to be regulations governing such matters as entry into parks, fees payable and a code of conduct for visitors while in the protected area, including use of vehicles, camping, the lighting of fires and other practical details.

All these and much more will need to be worked out by the drafting expert in consultation with appropriate officers and after examining similar documents in use elsewhere.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

As outlined in Chapter 2, the Somali fauna has undergone serious decimation in recent decades such that more than half the species are threatened at the present time, several almost certainly being already extinct. With the exception of a few riverine forest or swamp species, most of the destruction has been brought about by illegal hunting for either meat or trophies. The formation of an anti-poaching force in the mid-seventies and its later transfer to police control demonstrate an awareness of the root of the problem on the part of Government and sincere attempt to deal with it. However, the continuance of heavy losses of elephant and rhino until the mid-eighties and widespread reports and evidence of poaching on a variety of meat yielding animals even today, indicates that these efforts have been at best only partially successful. To some extent this can be attributed to an inadequate number of personnel (the Anti-Poaching Unit declined in size from 200 in 1980 to 120 in 1989), an almost total lack of equipment and deployment of the force in a manner not wholly appropriate to a wildlife protection operation. A well intentioned system of rewards, linked to the confiscation of illegal ivory, may have contributed to the elephant poaching problem it was meant to solve.

On the positive side, a few wildlife species have abundant populations and the crocodile, in particular, could become a significant earner of foreign exchange. Somalia still has some extensive areas of relatively intact natural habitat which could provide a good basis for the rehabilitation of many of its threatened animals. However, the extent of such a programme calls for enormous determination on the part of Government and, as evidence of this, the commitment of funds and human resources to significantly strengthen the Wildlife Department which, considering the size of Somalia and the potential of its wildlife resources, is at present totally inadequate. The full integration of all wildlife protection work, including the Anti-Poaching Unit, into the Wildlife Department should be seen as an essential part of this reinforcement process.

Even with overwhelming commitment, it is unrealistic to expect the Government of Somalia alone to bear the enormous cost of revitalising its wildlife, much of which is unique and of great significance globally. Very considerable assistance from the international community is clearly needed. Indeed,

the beginnings of this are already evident in the form of the several major projects at the commencement stage. The World Bank's support for Phase II of the Central Rangelands Development Project includes valuable support for wildland conservation in the area, as well as funds for protection of the Somali wild ass and threatened forests in northern Somalia. In the south, compensatory funding from the SMRAP project will assist the development of the Alifootu Swamp conservation area and E.C. involvement in establishing management in the Bushbush National Park has recently begun. Furthermore, the new UNDP/FAO Project, Forestry Sector Support and Training, has a considerable wildlife component, notably the provision of transport and radio-communication equipment and some overseas training, in addition to the present consultancy.

However, much more assistance is required and, as pointed out in both of Stephenson's reports (1988a and b), the provision of an experienced expatriate adviser to the Director of Wildlife is a high priority. In particular, such assistance would help develop a comprehensive programme for wildlife, including framing proposals for specific aspects of donor financing. In order to achieve some immediate progress in this direction, a project document has been drawn up for funding by the F.A.O. T.C.P. programme and a Government request forwarded to F.A.O. Headquarters. The draft project document is attached as Appendix VI. It's main components are the provision of an adviser for one year, two short-term consultancies to initiate key aspects of the recommendations re wildlife management and modest equipment and training provisions. However, it needs to be strongly emphasised that this is an emergency operation which will fail unless it leads to much more substantial international commitment to the strengthening of wildlife management in Somalia. A major core project of at least 5-years duration is required, as well as a number of projects supporting specific aspects of the total conservation effort on behalf of Somalia's wild resources. A preliminary list, drawing attention to some of the more obvious opportunities for international assistance at the present time, is given in Appendix IV. A list of equipment needs is provided in Appendix V.

5.2 Summary of recommendations

For ready reference, a summary of the main recommendations made in Chapters 2 to 4 of the report is given below.

5.2.1 The structure and staffing of the Wildlife Department should be expanded as appropriate to include five sections, viz 1) H.Q. Administrative Unit, 2) Anti-Poaching Unit (see below), 3) Field staff (Mogadishu Wildlife Park, Swamp Project, Protected Areas, Crocodile Scheme etc), 4) Wildlife Education/Extension Unit and 5) Research and Monitoring Unit. Requisite staff grades should be included in the new legislation. Provision for an adequate cadre of field staff in addition to the A.P.U. is especially important for manning protected areas, rehabilitation and utilization schemes.

5.2.2 Equipping of the H.Q. section and the various units should be carried out as per Appendix V.

5.2.3 The Anti-Poaching Unit should be fully transferred to the Wildlife Department as soon as possible; its strength should be increased to a minimum of 200 rangers; the Unit should be equipped as per details in Appendix V; specialised training in wildlife protection and anti-poaching strategy should be given, including instruction in the use of the new equipment; a revised system of deployment and field patrolling should then be instituted.

5.2.4 A network of protected areas should be set-up as a matter of urgency in accordance with details given in Section 3.10 (pp. 40-42 in particular) and Section 4.3.3 (pp. 59-60). Pending appropriate legislation, proposed Strict Nature Reserves can be brought under "Game Reserve" status under existing legislation (Law No. 15 of 1969) and management and protection staff installed.

5.2.5 Pending capability being developed for the preparation of full management plans, preliminary plans should be drawn up for each reserve which clearly define objectives and contain a time based work plan, staff requirement and budget for the first 2 years of operation.

5.2.6 The Alifootu Swamp Project should be incorporated into the scheme of protected areas as a national park, with the core area constituting a S.N.R. and the buffer zone a multiple-use area. The present management plan should be revised accordingly. Clear instructions should then be issued to staff regarding livestock and tourists in various parts of the area. At least three ranger posts

should be established to increase the protection away from the main H.Q. Frequent supervisory visits from H.Q. should be made to ensure that such instructions are being followed and that development is progressing as per the management plan.

5.2.7 In conjuction with the Forest Department, reserves with habitat protection as the prime objective should be effectively managed at the three riverine Forest Reserves on the Juba (Section 3.10, p. 39) which are already gazetted. Additional Forest Reserve gazettement is recommended for a section of mangrove forest bordering Lag Badana (unless this will be well protected by national park status under the E.C. proposals for managing Bushbush National Park) and a small selection (3 or 4) of the Bajun Islands, having different examples of vegetation and littoral habitat.

5.2.8 Carefully planned surveys should be carried out to determine the precise status (abundance, distribution and trends in numbers) of the following species: rhino, Grevy's zebra, wild ass; Greater kudu, leopard, elephant, dungong, dibatag, Pelzeln's gazelle and marine turtles. Where shown to be necessary (e.g. rhino if it is in fact not extinct), an appropriate rehabilitation scheme should be designed to rescue the species from extinction. Special funding will need to be sought for most such schemes, once the strategy has been identified.

5.2.9 Clear objectives, giving priority to conservation education, need to be established for the Mogadishu Wildlife Park and a management plan based on these drafted (Section 3.4). An interpretation/education officer should be trained and posted on the Park staff in conformity with the objectives.

5.2.10 A scheme for utilization of the Juba crocodile population should be drawn up, with the assistance of an appropriate expert, and implemented at an early date (Section 3.11.2). An application to CITES for a crocodile export quota should be made as per the advice of the consultant regarding numbers and, if necessary, drafted by the legal consultant who revises the wildlife legislation.

5.2.11 Ways must continually be sought of reducing the illegal hunting which is widespread and constitutes a serious threat to the survival of a number of species (Section 2.4 and 3.6). In particular the widespread poaching of giraffe and oryx must be curbed. Similarly, ways must be explored to rationalise genuine local hunting for meat and ensure that it is confined to the males of abundant species as provided for in existing legislation.

5.2.12 More effective crop protection must be instituted by the Wildlife Department, who should consider posting specially trained field units for this purpose in the worst affected areas. High energy electric fencing should be tried against hippo damage to crops and in this connection UNDP/FAO Project SOM/86/008 has been instructed by the consultant regarding erection of one or two experimental fences in the Lower Juba Region. Sources of appropriate equipment and technical know-how are being provided but logistic support, labourers etc will need to be provided by the Wildlife Department.

5.2.13 Legislation pertaining to wildlife needs comprehensive revision as per Section 4.3.3 (pp. 59-60) with the assistance of a consultant with expertise in wildlife conservation legislation and experience of Africa. The same consultant should assist with the drafting of regulations as per the details in Section 4.4.
(A basic point in this regard, not discussed in the main report is whether the wildlife and forest conservation legislation should be retained within the same law or separated into two different bodies of legislation. The large volume of wildlife legislation required and the fact that forests and wildlife are now administered by two different departments would appear to argue for the latter course of action.)

5.2.14 Government should issue a new and comprehensive wildlife policy manifesto, at the highest possible level, possibly along the lines suggested in Section 4.2.2 (pp. 51-53). The timing of this public statement should co-incide with the beginning of a public awareness campaign (see next recommendation).

5.2.15 A carefullly planned, multi-faceted and sustained public awareness campaign based on the new Government policy (above) should be targetted to politicians, decision-makers, leaders of nomadic society, students and others in an attempt to change public attitudes to wildlife on a large scale. Professional P.R. assistance should be used.

5.2.16 Training in all areas reflected in the above recommendations where Somali expertise is presently lacking should be carefully planned, on a phased and prioritised basis. Appropriate international assistance should be sought with funding and implementation of this training programme (see Appendix IV).

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