UNITED STATES OF AMERICA

NAME Petrified Forest National Park

TYPE NP

Biotic Province 1.8.2

Legal Protection Total

Date Established 8 December 1906 (National monument by Presidential Proclamation); 9 December 1962 (National Park)

Geographical Location North-east Arizona: N 34°45'00"-35°10'30"; W 109°40'00"-109°55'00"

Altitude 1524-1900 metres

Area 38,089 ha

Land Tenure Federal Government owned

Physical Features Painted Desert section of the Colorado Plateau, where erosion has dissected the alternating sandstones and clays of the triassic Chinle formation into mesas, buttes and badlands. Six separate concentrations of petrified wood, silicified logs of fossil trees Araucarioxylon of triassic age, occur in the park.

Mid-latitude steppe climate with average diurnal temperature range from 13°C to 32°C in summer and -8°C to 8°C in winter; average annual rainfall 240 mm, mostly falling in summer in the form of convective thunderstorms and accompanied by high evapotranspiration.

Vegetation Original vegetation cover of blue grama Bouteloua gracilis and galleta Hilaria jamesii, now reduced to 30% following heavy grazing by domestic stock in late 19th century and subsequent shrub invasion. Other important grasses include Indian ricegrass Oryzopsis hymenoides, sand bluestem Andropogon halii and side-oats and hairy grama Bouteloua curtipendula and hirsuta. Some 40% of the area has been converted into badlands with almost no vegetation and the remaining 30% is shrubland of saltbush Atriplex canescens, greasewood Sarcobatus, sacaton Sporobolus and other halophytic species such as Mormon tea Ephedra spp., Yucca spp., and sagebrush Artemisia spp.

Noteworthy Fauna Common species include black-tailed jackrabbit Lepus californicus, desert cottontail Sylvilagus auduboni, prairie dog or marmot Cynomys gunnisoni, ground squirrel Citellus leucurus, bannertail kangaroo rat Dipodomys spectabilis, porcupine Erethizon dorsatum, coyote Canis latrans, badger Taxidea taxus, skunk Mephitis mephitis, bobcat Felis rufa, white-tail deer Odocoileus virginianus and pronghorn Antilocapra americana. Avifauna includes horned lark Eremophila alpestris, raven Corvus corax and house finch Carpodacus mexicanus. Reptiles include Bailey's collared lizard Crotaphytus collaris baileyi, prairie rattlesnake Crotalus v. viridis, king snake Lampropeltis getulus, western bull snake or gopher snake Pituophis catenifer deserticola and garter snake Thamnophis sirtalis.

Zoning None

Disturbances or Deficiencies Effects of past intensive grazing by domestic livestock still apparent; theft of petrified wood by visitors.

Tourism High incidence due to proximity to major highway: 1,073,444 visitors in 1973. Visitor centre and facilities at park entrances.

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SCIENTIFIC RESEARCH  Individual research projects; some funding for research and publications by Petrified Forest Museum Association

SPECIAL SCIENTIFIC FACILITIES  Reference library and herbarium available to scientists working in the area

PRINCIPAL REFERENCE MATERIAL


STAFF  Total 32 (administration 3, interpretation 4, maintenance 12, resource management and visitor protection 12, superintendent 1).

BUDGET  US$ 463,000 for fiscal year 1975

LOCAL PARK ADMINISTRATION  Superintendent, Petrified Forest National Park, Arizona 86025, USA.
UNITED STATES OF AMERICA

NAME  Ozark National Scenic Riverways

TYPE  MR

BIOTIC PROVINCE  1.4.1/1.4.2

LEGAL PROTECTION  No information but presumably similar to that applied to National Parkways and therefore effective within certain limits

DATE ESTABLISHED  27 August 1964

GEOGRAPHICAL LOCATION  Southern part of State of Missouri: N 37°; W 91°

ALTITUDE  116-280 metres

AREA  32,376 ha

LAND TENURE  Most land in Federal ownership, some land in State or private ownership, but scenic easement on all lands Federally owned

PHYSICAL FEATURES  Heavily forested slopes with some open flood plain areas along 225 km (140 miles) of the Current and Jack rivers. Many large clear springs and sheer dolomite cliffs are found along or near the rivers.

VEGETATION  Riverine forests: oak-hickory-pine forests with dominant species hickory Carya spp., shortleaf and loblolly pines Pinus echinata, and P. taeda, white oak Quercus alba and post oak Q. stellata.

NOTEWORTHY FAUNA  No information

ZONING  Hunting and fishing is allowed in accordance with State regulations, but hunting is prohibited in heavy public use areas

DISTURBANCES OR DEFICIENCIES  Vulnerable to outside interests due to narrowness of the park corridor.

TOURISM  Over 1.5 million visitors in 1973; camp and picnic sites with related facilities

SCIENTIFIC RESEARCH  Water quality studies, recreation use, fisheries and resource inventory

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL  Park brochure: Ozark National Scenic Riverways, Missouri.

STAFF  50 off-season, 125 peak season

BUDGET  Approximately US$ 1,143,000 per annum

LOCAL PARK ADMINISTRATION  Superintendent, Ozark National Scenic Riverways, P.O. Box 443, Van Buren, Missouri 63965, USA.
UNITED STATES OF AMERICA

NAME
Saguaro National Monument

TYPE
NP

BIOTIC PROVINCE
1.11.2

LEGAL PROTECTION
Total (except for two cattle grazing allotments)

DATE ESTABLISHED
East section: 1 March 1933; West section: 16 November 1961

GEOGRAPHICAL LOCATION
East and west of Tucson, Arizona. East section: N 32°7'-32°14'; W 110°30'-110°44'; West section: N 32°15'-32°20'; W 111°07'-111°14'.

ALTITUDE
East section: 853-2641 metres; West section: 616-1429 metres

AREA
Total: 31,963 ha; East section: 25,605.5 ha; West section: 6357.5 ha

LAND TENURE
Federal Government owned

PHYSICAL FEATURES
Rincon Mountains, east of Tucson, a complex of Catalina gneiss situated on a rock pediment extending north-west from Tanque Verde ridge. Six distinct biotic communities are present ranging from desert scrub to Douglas fir. Distinct bi-seasonal rainfall of 279 mm evenly divided between winter and summer months. West of Tucson the Tucson Mountains, sedimentary rock overlain by Tertiary volcanics, extend into the West section. Communities include desert grassland and scrub and the eastern limit of desert ironwood.

VEGETATION
30% oak-pine woodland, 22% desert scrub, 16% oak-woodland, 13% transitional grassland, 12% ponderosa pine forest, 7% Douglas fir-white fir forest. Western section: 85% desert scrub, 15% transitional desert grassland. The reserve was created to protect the saguaro cactus *Carnegia gigantea* as well as other elements of the Sonoran flora, including prickly pear *Opuntia englemannii*, barrel cactus *Ferocactus vialiseni*, yellow paloverde *Cercidium microphyllum*, blue paloverde *C. floridum*, ironwood *Olneya tesota* (here at its eastern limit), trumpet bush *Tecoma stans*, feather tree *Lysiloma thornberi*, nightblooming cereus *Peniocereus greggii* and Arizona pine *Pinus ponderosa* var. *arizonica*.

NOTEWORTHY FAUNA

ZONING
None specifically applied

DISTURBANCES OR DEFICIENCIES
Continued cattle grazing, vandalism and other inappropriate visitor use

TOURISM
Visitor Centre, scenic drives, nature trails, hiking trails and picnic areas
SCIENTIFIC RESEARCH  Ecology of the saguaro cactus *Carnegia gigantea*

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL


STAFF  16 permanent and 9 temporary

BUDGET  US$ 400,000

LOCAL PARK ADMINISTRATION  Superintendent, P.O. Box 17210, Tucson, Arizona 85731, USA.
UNITED STATES OF AMERICA

NAME Carlsbad Caverns National Park

TYPE NP

LEGAL PROTECTION Total

DATE ESTABLISHED 25 October 1923 by Presidential Proclamation; enlarged and designated as National Park by Act of Congress, 14 May 1930

BIOTIC PROVINCE 1.11.2

GEOGRAPHICAL LOCATION South-western USA, near south-east corner of New Mexico: N 32°11'; W 104°11'

ALTITUDE 1097-1935 metres

AREA 18,921 ha

LAND TENURE 18,792 ha Government owned; private inholding of 129 ha

PHYSICAL FEATURES The Capitan dolomitic fossil limestone reef is one of the best preserved and most extensive of its kind. It is exposed in deep canyons in the rugged foothills of the Guadalupe mountains and contains numerous caves, highly decorated with spelean formations, one group of which has some of the largest of the 60 known caves and constitutes this park. One chamber is more than 5.5 ha in extent: this and some associated caves are artificially illuminated and have marked trails. Others like New Cave are open but not developed. Semi arid climate with average annual rainfall of 363 mm and mean annual temperature of 17°C.

VEGETATION Over 600 recorded species of vascular plant. Desert scrub with creosote bush Larrea tridentata covers 51% of the park, the rest being mountain shrub and evergreen woodland of pinyon Pinus edulis, one-seed juniper Juniperus monosperma, alligator juniper J. deppeana and grey oak Quercus grisea intermixed with some grassland. Other formations include desert dwarf scrub, with lechuguilla Agave lechuguilla and sotol Dasylirion sp., and deciduous woodland with the walnut Juglans microcarpa, especially in riparian habitats.

NOTEWORTHY FAUNA Spectacular evening exit flight from the caverns by large colony of Mexican free-tailed bats Tadarida brasiliensis mexicana. 18 other species of bat, some of limited distribution, are also found in the caverns and canyons. 49 other mammal species, a number of local forms such as the raccoon Procyon lotor mexicanus, grey fox Urocyon cinereoargentus scottii, coyote Canis latrans texensis, the chipmunk Tamias cinereicollis canipes and rock squirrel Spermophilus variegatus grimmatus, and also mule deer Odocoileus hemionus; 213 recorded bird species including reintroduced wild turkey Meleagris gallopavo and golden eagle Aquila chrysaetos; 17 species of reptiles and amphibians.

ZONING It is proposed to designate about two-thirds of the park, 12,230 ha, as wilderness area

DISTURBANCES OR DEFICIENCIES Access problems to some areas of the park, minor vandalism and inadequate trails in wilderness area

TOURISM Visitor centre, trails and lighting in Carlsbad Caverns, nature trails, roads and interpretive exhibits
SCIENTIFIC RESEARCH  Principal projects include: study of population dynamics of bat colony, study of cave climate and ecology of fire (including possible use as a management tool).

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL
GEHLBACH, F.R. 1964. Amphibians and reptiles of Carlsbad Caverns National Park, New Mexico, and adjacent Guadalupe Mountains. Roneo. NPS.

Check-lists of mammals, birds, reptiles and amphibians, plants, etc., are available and frequently updated by the Park's scientific staff.

STAFF  Superintendent and staff of 45 permanent employees, 16 impermanent employees and 3 temporary employees; additional summer staff of 50.

BUDGET  US$ 580,800 in 1975 fiscal year

LOCAL PARK ADMINISTRATION  Superintendent, Carlsbad Caverns National Park, 3225 National Parks Highway, Carlsbad, New Mexico 88220, USA.
UNITED STATES OF AMERICA

NAME Ice Age National Scientific Reserve

TYPE PP/MR

BIOTIC PROVINCE 1.4.2

LEGAL PROTECTION Total but timber management and hunting is permitted in accordance with applicable State and Federal regulations

DATE ESTABLISHED 29 May 1971, by public notice (P.L. 89-655, P.L. 91-483)

GEOGRAPHICAL LOCATION In 9 widely separated units within the State of Wisconsin: N 43°108'-43°15'; W 87°30'-92°45'

ALTITUDE 177-469 metres

AREA 16,149 ha

LAND TENURE Lands owned or to be purchased by the State of Wisconsin or local government units

PHYSICAL FEATURES The area includes nationally significant remains of continental glaciation: kames, drumlins, moraines and related geological formations. A portion of the vast driftless area of south-west Wisconsin is also included. Outstanding features include portions of the Moulin kame and drumlin fields of south-east Wisconsin, the well-known Two Creeks Buried Forest area on the western shore of Lake Michigan, the stagnant ice-produced elevated inwash plains of the Chippewa Moraine, west central Wisconsin, and the glacier-produced Devils Lake of south central Wisconsin. Average annual temperatures range from a low of -4°C to a high of 38°C; average annual precipitation is 749 mm.

VEGETATION Diverse vegetation cover due to wide geographical distribution of the units. Of the original cover an estimated 1-2% remains, the rest is second growth following farming and widespread logging. Dominant tree species of the east units are northern red oak and white oak Quercus borealis and Q. alba, basswood Tilia americana, sugar and red maples Acer saccharum and A. rubrum, and shagbark hickory Carya ovata. In the western and northern units are pines Pinus spp., hemlock Tsuga spp., firs Abies spp., spruce Picea spp., and cedar Thuja spp., and also some deciduous species. The Devils Lake unit has 700 kinds of ferns and flowering plants.

NOTEWORTHY FAUNA The reserve supports a large and varied animal population due to its diversity. Common animal species include woodchuck Marmota monax, beaver Castor fiber canadensis, porcupine Erethizon dorsatum, raccoon Procyon lotor, striped skunk Mephitis mephitis, otter Lutra canadensis, and white-tailed deer Odocoileus virginianus. 175 bird species have been recorded from Devils Lake alone and during migration periods the eastern units of the reserve have abundant waterfowl, hawks and warblers. The bald eagle Haliaeetus leucocephalus is often observed in the westernmost unit and numerous owls, especially the great horned owl Bubo virginianus and barred owl Strix varia, are common. The uncommon pileated woodpecker Dryocopus pileatus is a resident of the Chippewa Moraine unit. Wood warblers Vermivora spp., are numerous.

ZONING None

DISTURBANCES OR DEFICIENCIES Shifting land use patterns towards residential development and extraction of glacial sand and gravel threaten destruction of some areas not yet in public ownership. As noted under 'Legal Protection' timber management and hunting are allowed but regulated.
TOURISM

Public visitation is encouraged; there are 3 million visitors a year to the units which are already constituted as recreational parks and forests, and the remaining units will in due course be included in the same category; Devils Lake alone accounts for 1.5 million visitors.

SCIENTIFIC RESEARCH

An overall glaciology survey to identify areas was completed in 1966, and a further research programme is being developed.

SPECIAL SCIENTIFIC FACILITIES

None

PRINCIPAL REFERENCE MATERIAL


STAFF

5 unit superintendents, 3 unit interpreters, 26 rangers: total 34 full-time

BUDGET

US$ 607,000 for 1975 fiscal year

LOCAL PARK ADMINISTRATION

Director, Bureau of Parks and Recreation, Wisconsin Department of Natural Resources, 4610 University Avenue, Box 450, Madison, Wisconsin 53701, USA.
UNITED STATES OF AMERICA

NAME  Acadia National Park

TYPE  NP  BIOTIC PROVINCE  1.2.1/1.4.2

LEGAL PROTECTION  Total


GEOGRAPHICAL LOCATION  State of Maine, 32 km south of Ellsworth Park, including six offshore islands: N 44°12'–44°27'; W 68°10'–68°27'.

ALTITUDE  Sea level to 466 metres

AREA  13,901 ha

LAND TENURE  Federal Government owned

PHYSICAL FEATURES  Forest covered granite mountains descend to ocean's edge with Somes Sound, a fjord almost bisecting Mount Desert Island. Schoodic Peninsula is part of mainland, otherwise park is on six offshore islands. Islands, mountains, forests, lakes and seashores create spectacular scenery with small glacial lakes in valleys. Average temperatures are January –4.4°C, July 20.4°C, with annual precipitation of 1524 mm. Tides of 3 m expose four different life zones with associated flora and fauna.

VEGETATION  Junction of temperate deciduous forests and northern coniferous forests giving exceptional variety of trees, shrubs and herbaceous plants. 35% spruce/fir, with white spruce Picea alba, balsam fir Abies balsamea and red spruce Picea rubens; 20% deciduous forest with American beech Fagus grandifolia, red oak Quercus rubra, red maple Acer rubrum and striped maple A. pensylvanicum; 40% mixed forest with eastern hemlock Tsuga canadensis, white cedar Thuja occidentalis, aspen Populus tremuloides and P. grandidentata, grey birch Betula populifolia and white birch B. papyrifera, also some white pine Pinus strobus and pitch pine P. rigida.

NOTEWORTHY FAUNA  50 species of mammals include snowshoe hare Lepus americanus, beaver Castor fiber canadensis, harbour porpoise Phocoena phocoena, red fox Vulpes vulpes fulva, raccoon Procyon lotor, mink Mustela vison, skunk Mephitis mephitis, harbour seal Phoca vitulina and white-tailed deer Odocoileus virginianus. 275 bird species have been reported as well as amphibians and reptiles. Tide pools support many marine invertebrates with lobsters and crabs frequent in the offshore areas.

ZONING  No information

DISTURBANCES OR DEFICIENCIES  Park boundaries are characterised by lack of continuity, inholdings and scatter of units due to legislation limiting land acquisition to donation.

TOURISM  Visits by 2,750,000 people annually; campgrounds and picnic areas provided in park

SCIENTIFIC RESEARCH  Research on ecology, natural history, visitor impact, archaeology and other subjects depending on available funding. Study of harbour seal recently completed.
SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL  None specifically listed but a considerable number of publications are available

STAFF  18 permanent (5 administration, 3 protection, 7 maintenance, 2 interpretation, 1 mechanic); 72 additional seasonal staff (21 protection, 32 maintenance, 10 interpretation, 1 mechanic, 9 youth conservation corps).

BUDGET  US$ 657,800 for 1975 park administration programme

LOCAL PARK ADMINISTRATION  Superintendent, Acadia National Park, RFD No. 1, Box 1, Bar Harbor, Maine 04609, USA.
NAME Cape Hatteras National Seashore
TYPE NP
BIOTIC PROVINCE 1.4.1
LEGAL PROTECTION Total
DATE ESTABLISHED 12 January 1953 (authorised 17 August 1937)
GEOGRAPHICAL LOCATION East coast, on barrier islands known as the Outer Banks, North Carolina: N 35°50'; W 76°50'
ALTITUDE Sea level to 18.3 metres: average 1.6 metres
AREA 11,724 ha
LAND TENURE Government owned

PHYSICAL FEATURES Barrier islands of Atlantic coast composed of sand and gravel deposits with sand dunes forming along eastern shores and extending as shoals offshore. Western coasts of islets face the shallow sounds of the North Carolina coast. Low lying and broken by occasional inlets. Cape Hatteras, from which the area takes its name, is a prominent headland and the most easterly point of the whole US coast from the Delaware river southwards.

VEGETATION The major habitats are dunes, both natural and man-made, freshwater marsh, tidal brackish marsh, woods and herb-shrub areas. The flora is predominately southern with some northern and southern plants reaching the limits of their range. Park boundaries end at shore line so no marine vegetation is included. Trees include red cedar Juniperus virginiana, bald cypress Taxodium distichum, maritime pine Pinus pinaster and other pines, palmetto Sabal minor, black willow Salix nigra, southern live oak Quercus virginiana, laurel oak Q. laurifolia and water oak Q. nigra. Cordgrasses Spartina alterniflora, S. patens and S. cynosuroides are widespread.

NOTEWORTHY FAUNA Mammals include Virginia opossum Didelphis virginiana, marsh rice rat Oryzomys palustris, muskrat Ondatra zibethica, nutria Myocastor coypus, grey fox Urocyon cinereoargenteus and river otter Lutra canadensis. A rich avifauna, especially of large and conspicuous water and marsh birds. Osprey Pandion haliaetus still nests but bald eagle Haliaeetus leucocephalus and peregrine Falco peregrinus are now only occasional and the brown pelican Pelecanus occidentalis a rarity. Reptiles include loggerhead Caretta caretta (rated by the Red Data Book as everywhere endangered) and other nesting turtles, skinks and snakes.

ZONING Mostly managed natural area, but includes two historic sites, a major wildlife refuge and recreational areas

DISTURBANCES OR DEFICIENCIES Pressure to maintain an antiquated erosion control programme which is causing major vegetation changes, leading to unstability of the islands and could end in major destruction in the event of an exceptional storm.

TOURISM Five visitor centres, guided tours and interpretive programmes

SCIENTIFIC RESEARCH Numerous studies carried out in the park. Current research involves beach dynamics, coastal vegetation and dune studies
SPECIAL SCIENTIFIC FACILITIES
The research library of technical papers dealing with the area.

PRINCIPAL REFERENCE MATERIAL


STAFF
Total permanent staff: 62 (administrative 10, protective 11, maintenance 33, interpretative 8)

BUDGET
US$ 1,901,500 (for historic sites as well)

LOCAL PARK ADMINISTRATION
NAME
Pictured Rocks National Lakeshore

TYPE
MR

BIOTIC PROVINCE
1.4.2

LEGAL PROTECTION
Fully protected as a National Recreation Area: hunting and fishing permitted

DATE ESTABLISHED
15 October 1966 (PL 89-668)

GEOGRAPHICAL LOCATION
A narrow strip of the shore of Lake Superior, Michigan: N 46°26'-46°41'; W 86°00'-86°36'

ALTITUDE
183-305 metres

AREA
11,098 ha

LAND TENURE
Federal Government owned

PHYSICAL FEATURES
A strip of land along the south shore of Lake Superior, with 24 km of sandstone cliffs 45-60 m in height, from which is derived the name "Pictured Rocks", also a long sandy beach and a 90 m high section composed of glacial sand crowned by 1300 ha of dunes. Inland are lakes, streams and waterfalls bordered by forests of hardwoods and northern conifers. Soils are poor, sandy and glacial. The climate is warm in summer, cold in winter, with annual snowfall averaging 3810 mm.

VEGETATION
Transitional between northern hardwoods and boreal spruce-fir forests. Dominant species of hardwood sectors are sugar maple Acer saccharum, beech Fagus grandifolia and paper birch and yellow birch Betula papyrifera and lutea. The coniferous forests are eastern white pine Pinus strobus, red pine P. resinosa, jack pine P. banksiana, hemlock Tsuga canadensis, balsam fir Abies balsamea, black spruce and white spruce Picea mariana and glauca, and northern white cedar or tree of life Thuja occidentalis. There is a great variety of flowering plants, notably of the orchid family.

NOTEWORTHY FAUNA
Beaver Castor fiber canadensis, porcupine Erethizon dorsatum, black bear Ursus americanus, raccoon Procyon lotor, weasel Mustela spp., otter Lutra canadensis and white-tail deer Odocoileus virginianus.

ZONING
Class II (general outdoor recreation) 1609 ha (14.3%); Class III (natural environment) 6794 ha (60%); Class IV (outstanding natural feature) 615 ha (5.4%); Class V (primitive area) 2072 ha (18.7%); Class VI (historical and cultural) 8.09 ha (0.7%).

DISTURBANCES OR DEFICIENCIES
Extent and impact of fishing and hunting not assessed.

TOURISM
Increasing visitor use of lakeshore is also having an impact and the protection of the park resources is said to be the principal concern of the law enforcement agencies.

SCIENTIFIC RESEARCH
Study of vascular plants completed. Scientific study of Beaver Basin deer herd was to have been undertaken in winter 1974/1975.

SPECIAL SCIENTIFIC FACILITIES
None

WDNP IUCN © 1975 9(1)F Code: UNI(3).4.22
PRINCIPAL REFERENCE MATERIAL

REED, R. No date. Vascular Plants of Pictured Rocks National Lakeshore.

A Master Plan and Development Concept Plan of Pictured Rocks National Lakeshore has been drawn up, but it is not clear whether it has been published or available for reference.

STAFF Total: 5 full-time (superintendent, 2 interpretation and resource management, 1 administration, 1 maintenance); up to 22 seasonal or part-time (2 technicians, 2 maintenance, 1 administration, 4 interpretation and resource management, 5-12 seasonal labourers).

BUDGET Total US$ 214,000 (administration $ 62,000, interpretation and resource management $ 42,000, maintenance $ 110,000)

LOCAL PARK ADMINISTRATION

Superintendent, P.O. Box 40, Munising, Michigan 49862, USA.
NAME  Buck Island Reef National Monument

TYPE  NP

BIOTIC PROVINCE  3.12.6

LEGAL PROTECTION  Total from outer fringes of barrier reef to shoreline; other waters open to taking fish and other marine life subject to limits.

DATE ESTABLISHED  28 December 1961 by Presidential Proclamation

GEOPGRAPHICAL LOCATION  In Caribbean sea approximately 2.4 km off north-east coast of St. Croix, US Virgin Islands: N 17°47'00"-17°47'58"; W 64°36'32"-64°38'37".

ALTITUDE  From a sea depth of 9 metres to 111 metres above sea level

AREA  344 ha

LAND TENURE  US Government owned with concurrent local jurisdiction

PHYSICAL FEATURES  Coral reef with barrier reef beginning in middle of southern shore and encircling the eastern tip of island in a nearly unbroken line and extending along northern shore as a series of coalescing patch reefs. The reef lies approximately 154 m from southern shore line where lagoon water is clear with bottom of white sand. The seaward side of the reef is elkhorn coral Acropora palmata, the lagoon side is stinging coral Millepora and brain coral Diploria clivosa. Off the north-west are isolated coral heads. Buck Island is volcanic in origin, with 767 mm rainfall.

VEGETATION  Seasonal deciduous forest with water mangrove Pisonia subcordata, manjack Cordia alba, Bursera simaruba and other species forming open forest about 6 m high. Shrub thickets over other areas, including exposed windswept eastern uplands, are 1-2 m high with Acacia tortuosa, Croton rigidus, prickly pear Opuntia rubescens and Lantana involucrata. Exposed seaward ridges have wild frangipani Plumeria alba. Beach forest in the west has trees of manchineel Hippomene mancinelle, Pisonia subcordata, Ficus citriodora and Tamarindus indica up to 10 m high. The narrow mangrove zone is principally Avicennia germanium. Marine vegetation includes turtle grass Thalassa and many algae.

NOTEWORTHY FAUNA  The reef fish fauna is typical of Antillean reefs, featuring surgeon fishes Acanthurus bahianus, A. chirurgus and A. coeruleus, parrot fish Scarus and Sparisoma spp., grunts Haemulon spp., and others. Sport fish include barracuda Sphyraena barracuda. Corals include Porites astreodes, P. porites, staghorn Acropora prolifera, Siderastrea radians, Montastrea annularis and M. cavernosa. Invertebrates include pink conch Strombus gigas and spiny lobster Palinurus argus and many sea anemones. Green, hawksbill and leathery turtles of the genera Chelonia, Dermochelys and Eretmochelys, all of which are raced as vulnerable or endangered in the Red Data Book, lay their eggs on the beaches. Among the seabirds breeding on the island are the brown pelican Pelecanus occidentalis, a greatly diminished species (only 50 left in this rookery) and the man-o-war bird Fregata magnificens; hummingbirds are one of the commoner land species.

ZONING  None
DISTURBANCES OR DEFICIENCIES  Poaching of fish and lobsters and pollution from large oil tankers. Eradication programme for introduced brown rat Rattus rattus and mongoose Herpestes auropunctatus.

TOURISM  Underwater trail and two picnic areas; no onshore camping

SCIENTIFIC RESEARCH  Studies of flora, insects and lizard populations completed; no current research

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL  None

STAFF  Full-time staff include ranger and lifeguard plus an additional lifeguard for 9 months. The superintendent has ¼ time duties here

BUDGET  Approximately US$ 20,000 for personnel, allocated from a combined budget with Christiansted National Historic Site, St. Croix.

LOCAL PARK ADMINISTRATION  Superintendent located in Christiansted. Superintendent, Virgin Islands National Park, P.O. Box 906, Charlotte Amalie, St. Thomas, US Virgin Islands, 00801, USA.
UPPER VOLTA

AREA 259,000 sq. km

POPULATION 5,514,000 (1972 estimate)

PARKS AND RESERVES LEGISLATION The creation of National Parks and Reserves is governed by Ordonnance No. 68-059/PRES/AGRI-EL. Article 6 applies to strict nature reserves (réserves naturelles intégrales), Article 7 to national parks, Article 8 to total or partial fauna reserves and Article 9 to special reserves or sanctuaries. Only national parks and fauna reserves have been established to date.

PARKS AND RESERVES ADMINISTRATION This is the responsibility of the Ministère du plan du développement rural de l'environnement et du tourisme, acting through the agency of the Service des Eaux et Forêts. The relevant division of the latter is entitled the Direction des services forestiers de l'environnement et de la protection de la nature, which in turn comprises four subdivisions concerned, respectively, with sylviculture and reforestation, administration and management of forest land, fishing and fisheries, and hunting and nature protection. The last-mentioned subdivision is, however, largely of a secretarial nature, concerning itself with the issue of hunting permits; and the over all responsibility lies with the forest service as a whole, which has four main geographical subdivisions, each headed by a Chef d'Inspection and served by a number of district forest offices. There is also a Superior Council for hunting and nature protection, which meets twice a year to discuss policy matters and advise the forest service.

ADDRESS Service des Eaux et Forêts, Ouagadougou

TOTAL AREA UNDER PROTECTION Estimated at approximately 3.8 million hectares in all categories, but this includes several protected areas which have been developed for agricultural purposes.

PROTECTED AREAS

| 2.1 | "W" National Park | 350,000 ha |
| 3.1 | Arly Total Reserve | 76,000 ha |
| 3.2 | Po Total Reserve | 43,500 ha |
UPPER VOLTA

NAME "W" National Park

TYPE NP

BIOTIC PROVINCE 4.6.1

LEGAL PROTECTION All disturbance or exploitation prohibited, including hunting or collecting of flora and fauna; access by permit only.

DATE ESTABLISHED 1953 (as flora and fauna reserve); declared as National Park in 1954.

GEOGRAPHICAL LOCATION On the eastern border with Niger and Benin, each of which also maintains a section of the overall park area: N 12°; E 2°

ALTITUDE 230-373 metres

AREA 350,000 ha

LAND TENURE State ownership

PHYSICAL FEATURES Partly a lateritic peneplain deeply incised by watercourses, notably the Mekrou river which marks the border with Dahomey, but a range of low hills, the Atacora, runs diagonally across the south of the park. The park gets its name from the great double bend of the River Niger, situated in the territory of the Niger Republic and 150 km south-east of Niamey, from which the park extends southwards. The climate is of the Sahelo-Soudanian type, with a very variable rainfall of around 800-900 mm and temperatures ranging from a maximum of 36°C to a minimum of 21°C.

VEGETATION Sahelian savanna to the north and Soudanian savanna woodland elsewhere with some extensive areas of gallery forest along the rivers flowing south from the Atacora hills. The savanna comprises such species as the monotypic Butyrospermum parkii, the oily seeds of which are the source of 'shea butter', Parkia africana and mahogany Khaya sp. The kola Cola laurifolia and Kigelia aethiopica dominate the gallery forests.

NOTEWORTHY FAUNA Species present include patas or hussar monkey Erythrocebus patas, lion Panthera leo, elephant Loxodonta africana, warthog Phacochoerus aethiopicus, bushbuck Tragelaphus scriptus, buffalo Syncerus caffer, grey duiker Sylvicapra grimmia, Kobus kob and other species of kob, particularly waterbuck, roan antelope Hippotragus equinus, hartebeest Alcelaphus buselaphus and oribi Ourebia ourebi.

ZONING None

DISTURBANCES OR DEFICIENCIES Uncontrolled poaching still occurs. Poor roads and lack of suitable accommodation prevent this park from realizing its full potential.

TOURISM Still rather limited. In 1971, the camp hotel at Diapaga, 20 km beyond the western boundary of the park, had accommodation for 25, and there were about 100 km of motorable track within the Upper Volta sector.

SCIENTIFIC RESEARCH None
SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL  The archives of the Forest Service contain reports on the area.

STAFF  Three guard posts are maintained at La Tapoa, Kabougou and Kondio, but no details are available of the personnel involved.

BUDGET  No information, but estimated at the equivalent of U.S. $14,000 in 1968.

LOCAL PARK ADMINISTRATION  None
UPPER VOLTA

NAME  Arly Total Reserve
TYPE  NP
BIOTIC PROVINCE  4.6.1
LEGAL PROTECTION  Uncertain: the area has long been treated as a National Park but no effective legislation provision for this can be traced.
DATE ESTABLISHED  13 December 1954, as Total Reserve

GEOGRAPHICAL LOCATION  On the south-eastern border, adjoining Pendjari National Park of Benin (formerly Dahomey), 300 km ESE of Ougadougou: N 11°30'; E 1°30'

ALTITUDE  Averaging about 300 metres
AREA  76,000 ha

LAND TENURE  State ownership

PHYSICAL FEATURES  A mainly flat area, but with some spectacular cliffs and hills in the south-west and the Pendjari River, marking the border with Benin, on the south-east. Several small lakes add scenic value. Annual rainfall is higher than other regions in the country, but no accurate data exist.

VEGETATION  Soudanian woodland savanna, with some extensive gallery forests in the north and along the Pendjari River.

NOTEWORTHY FAUNA  Mammal populations which are a tourist attraction, are quite varied: baboon Papio sp., green monkey Cercopithecus aethiops, patas monkey Erythrocebus patas, lion Panthera leo (fairly common), leopard P. pardus (rated as a vulnerable species by the Red Data Book), elephant Loxodonta africana, hippo Hippopotamus amphibius, bushbuck Tragelaphus scriptus, buffalo Syncerus caffer (a large population frequents the park and neighbouring wetland to the north-east), Buffon’s kob Kobus kob, common waterbuck K. ellipsiprymnus, roan antelope Hippotragus equinus, hartebeest Alcelaphus busefalaphus and oribi Ourebia ourebi.

ZONING  None

DISTURBANCES OR DEFICIENCIES  A fine reserve which suffers from lack of effective management policies and insufficient staff.

TOURISM  From 3000-4000 visitors each year, this being the best area in the country for viewing larger species of wildlife. The facilities include a modern and attractive hotel.

SCIENTIFIC RESEARCH  Ecological survey recently completed by a U.S. Peace Corps volunteer.

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL


WDNP  IUCN © 1977 (1)F  Code: UPP.3.1
STAFF  4 rangers
BUDGET  No information
LOCAL PARK ADMINISTRATION  None
UPPER VOLTA

NAME Po Total Reserve

TYPE NP BIOTIC PROVINCE 4.6.1

LEGAL PROTECTION At present under Total Reserve jurisdiction: all exploitation and disturbance prohibited; will be declared a National Park in the near future.

DATE ESTABLISHED 1953

GEOGRAPHICAL LOCATION North-east of the township of Po, which is about 140 km from Ouagadougou on the main road to Ghana and 24 km from the frontier; bordering the Red Volta river: N 11°10'-11°50'; W 0°50'-1°50'

ALTITUDE 200-400 metres

AREA 43,500 (a further area is scheduled under new legislation, bringing the total to 155,000 ha).

LAND TENURE State ownership

PHYSICAL FEATURES Both banks of a stretch of the Volta Rouge. The climate is typical of the Sahelo-Soudanian zone, with great variations in annual rainfall, although the average is estimated at around 950 mm. The rainy season is from June to September and the average temperature is 20-35°C.

VEGETATION Approximately 72% of the area is woodland savanna dominated by Butyrospermum parkii, a further 21% by Anogeissus leiocarpus (Combretaceae) and 1% by Isoberlinia doka. Gallery forest, in which the Rubiaceous Mitragyna inermis and leguminous Daniellia oliveri are dominant species, accounts for about half the remaining 6%.

NOTEWORTHY FAUNA An estimate of the populations of larger mammals present in the area gave a figure of 4,568 individuals of 16 species, which works out at a biomass of 1981 kg per square km. Common species include green monkey Cercopithecus aethiops, patas monkey Erythrocebus patas, baboon Papio sp., elephant Loxodonta africana (around 300), warthog Phacochoerus aethiopicus, bushbuck Tragelaphus scriptus, buffalo Syncerus caffer, grey duiker Sylvicapra grimmia, waterbuck Kobus ellipsiprymnus, bohar reedbuck Redunca redunca, roan antelope Hippotragus equinus, hartebeest Alcelaphus buselaphus and oribi Ourebia ourebi.

ZONING None

DISTURBANCES OR DEFICIENCIES Poaching, grazing of domestic animals and cutting of timber by the local population, constitute major problems. These are, however, all capable of being brought under control if more effort could be made.

TOURISM 1800 visitors during the 1975 season.

SCIENTIFIC RESEARCH Vegetation and animal surveys have been completed very recently by U.S. Peace Corps volunteers.

SPECIAL SCIENTIFIC FACILITIES None
**PRINCIPAL REFERENCE MATERIAL**


**STAFF** 1 Park Administrator and 3 guards

**BUDGET** No information

**LOCAL PARK ADMINISTRATION** No address quoted
URUGUAY

AREA 186,925 sq. km

POPULATION 3,035,000 (estimated 1972)

PARKS AND RESERVES LEGISLATION Decree No. 269/67 of 27 April 1967, incorporates the National Park Department into the Ministry of Agriculture (Ministerio da Ganadería y Agricultura) under the title Dirección Forestal, Parques y Fauna. This Department is in charge of national parks apart from Santa Teresa National Park and San Miguel National Park which are under the Ministerio de Defensa Nacional. The Department has the right to expropriate lands, inspect and seize vehicles, instruments and arms employed in illicit activities.

PARKS AND RESERVES ADMINISTRATION The Dirección Forestal, Parques y Fauna has the ultimate authority for management of territory within national parks.

ADDRESS Dirección Forestal, Parques y Fauna, Ministerio de Ganadería y Agricultura, Montevideo, Uruguay.

TOTAL AREA UNDER PROTECTION 26,497 ha

PROTECTED AREAS

4.1 Cabo Polonio National Park 14,250 ha
4.2 Santa Teresa National Park 5,690 ha
5.1 Rio Negro Complex 1,800 ha
5.2 F.D. Roosevelt National Park 1,500 ha
5.3 San Miguel National Park 1,495 ha
6.1 Arequita National Park 1,000 ha
6.2 Bartolome Hidalgo National Park 598 ha
7.1 Meseta de Artigas National Park 164 ha
URUGUAY

NAME Cabo Polonio National Park

TYPE MR  BIOTIC PROVINCE  3.10.1

LEGAL PROTECTION  Total

DATE ESTABLISHED  16 September 1942, by Decree, extended 2 June 1966.
Decree No. 266/966.

GEOGRAPHICAL LOCATION  Atlantic coast, Rocha Province:  S 34°20';  W 53°30'

ALTITUDE  Sea level to 60 metres

AREA  14,250 ha

LAND TENURE  80 per cent of the area is private land under expropriation.

PHYSICAL FEATURES  The boundaries extend from the Atlantic Ocean to the eastern shore of Laguna Castillos. Most of the area consists of sand dunes, reaching 60 metres in height, of which 1000 ha have been designated a national monument. There are some swampy dune slacks and long beaches of white sand border the sea, culminating at the cape where there is a lighthouse and a sealing station. Some small offshore islands.

VEGETATION  An area of marshland has been designated as a faunal reserve and this is rich in autochthonous plant species. Another area, set aside as a forest reserve, has been planted for dune stabilization and timber production with Corsican pine Pinus marítima.

NOTEWORTHY FAUNA  Mammals include Azara's opossum Didelphis azarae, six-banded armadillo Euphractus hexcinctus, capybara Hydrochoerus hydrochaeris, coypu Myocastor coypus, lesser grison Galictis cuja, La Plata otter Lutra platensis (a Red Data Book 'endangered' species), tiger cat Felis geoffroyi, margay F. wiedi and pampas cat F. colocolo. Marine mammals include South American sea lion Otaria byronia and fur seal Arctocephalus australis. The marsh deer Blastoceros dichotomus and pampas deer Ozotoceros bezoarticus (classified in the Red Data Book as 'vulnerable' and 'indeterminate' respectively) are also present. More than 150 bird species have been recorded, including the rhea Rhea americana intermedia, grebes Podiceps rolland chilensis, P. major and Podilymbus podiceps, magnificent frigate bird Fregata magnificens, whistling heron Syrigma sibilatrix; flamingo Phoenicopterus chilensis, black-necked swan Cygnus melancoryphus, tree ducks Dendrocygna bicolor and D. viduata, 10 other duck species, 9 species of raptor, a wide range of shorebirds such as two-banded plover Charadrius falklandicus, red knot Calidris canutus and Wilson's phalarope Steganopus tricolor, gulls, kingfishers and numerous passerines including some sparsely distributed species such as the marsh seedeater Sporophila palustris.

ZONING  a) National Dune Monument; b) reafforestation and stabilization zone; c) faunal reserve of lake and marshes; d) beach zone with settlement and sealing.

DISTURBANCES OR DEFICIENCIES  The coypu are hunted for nutria fur, grazing takes place and the sea-lions are exploited.

TOURISM  Good potential for development.

WDNP IUCN © 1977  (1)F  Code: URU.4.1
SCIENTIFIC RESEARCH  Studies of sea-lion biology, wildlife research, introduction of new species, archaeology.

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL  None listed

STAFF  One forestry engineer responsible for the land area; labour force of 11

BUDGET  No information

LOCAL PARK ADMINISTRATION  Supervisor, Jefe de Distrito Forestal IV, Dirección Forestal, Parques y Fauna, Ministerio de Ganadería y Agricultura, Montevideo.
NAME Santa Teresa National Park

TYPE NP

BIOTIC PROVINCE 3.10.1

LEGAL PROTECTION Total

DATE ESTABLISHED 1927

GEOGRAPHICAL LOCATION Atlantic coast, Rocha Province: 40 km north-east of Castillos; S 33°58'; W 53°29'.

ALTITUDE Sea level to 50 metres

AREA 5690 ha

LAND TENURE Government expropriated lands

PHYSICAL FEATURES An area between the sea and the Laguna Difunto o Negra, originally reserved for the purpose of dune stabilization. There are some beautiful beaches and a main feature is a well maintained fortress dating from the 18th century colonial war between the Spanish and the Portuguese. Monthly mean temperatures range from 10°C to 22°C.

VEGETATION Almost entirely made up of exotic species including pines Pinus spp., Eucalyptus spp., palms and many others. However, there are still some areas of marshland supporting original vegetation.

NOTEWORTHY FAUNA Species still able to survive in the plantations and, particularly, marshland include capybara Hydrochoerus hydrochaeris, coypu Myocastor coypus, La Plata otter Lutra platensis (classified as 'endangered' in the Red Data Book), margay Felis wiedi and brocket deer Mazama simplicornis.

ZONING A zone for cattle production and an administrative zone; the whole area is open to visitors.

DISTURBANCES OR DEFICIENCIES Occasional forest fires; many introduced plant species.

TOURISM Approximately 250,000 visitors annually, mainly for camping. Facilities and sites of touristic interest include an old 'Estancia', a 19th century school, a bird museum, hothouses for tropical plants, an information centre and sports grounds.

SCIENTIFIC RESEARCH Mainly on archaeology

SPECIAL SCIENTIFIC FACILITIES None
PRINCIPAL REFERENCE MATERIAL


STAFF 85 military and civilian workers

BUDGET No information

LOCAL PARK ADMINISTRATION Superintendent, Parque Nacional Santa Teresa, Ministerio de la Defensa Nacional, Montevideo, Uruguay. (Administered by an honorary commission with 5 members, 2 civilian and 3 military).
URUGUAY

NAME F.D. Roosevelt National Park

TYPE N.P. BIOTIC PROVINCE 3.10.1

LEGAL PROTECTION Total

DATE ESTABLISHED 1916

GEOGRAPHICAL LOCATION 20 km east of the centre of Montevideo, Uruguay: S 34°55'; W 56°09'.

ALTITUDE Sea level to 10 metres

AREA 1500 ha

LAND TENURE Government owned

PHYSICAL FEATURES A narrow strip of land extending inland from the Atlantic shoreline beach which forms the southern boundary. In the north there was a marshland which has been largely drained. The topography is mainly flat apart from sand dunes. Three major highways cross the Park and the city has now extended so as to surround it.

VEGETATION Almost totally exotic, including the former marsh area. Species include Eucalypts and Corsican pines Pinus marítima; also poplars, cypresses, acacias and oaks.

NOTEWORTHY FAUNA No information, but it would be of interest to know the extent to which birds and invertebrates have become adapted to utilizing the exotic vegetation.

PURPOSE OF THE RESERVE Originally created to stabilize sand dunes but now serves as a recreational area for Montevideo.

ZONING None

DISTURBANCES OR DEFICIENCIES 3 major highways cross the Park. Some problems from theft of firewood, also fires and problems caused by wind. The area is very heavily used for recreational purposes.

TOURISM No control of access. An administrative centre exists and one building is planned for use as a visitor centre.

SCIENTIFIC RESEARCH Used by students at the Facultad de Agronomía, Montevideo, for work on tree growth, pathology and entomology.

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL None listed

STAFF Superintendent, 3 technicians, 28 guards and workers.

BUDGET No information

LOCAL PARK ADMINISTRATION Superintendent, Parque Nacional Roosevelt, Dirección Forestal, Parques y Fauna, Ministerio de Ganadería y Agricultura, Montevideo, Uruguay.

WDNP IUCN © 1977 (1)F

Code: URU.5.2
NAME: San Miguel National Park

TYPE: NP

BIOTIC PROVINCE: 3.10.1

LEGAL PROTECTION: Total

DATE ESTABLISHED: 1927

GEOGRAPHICAL LOCATION: 10 km west of the Brazilian border town of Chui and 15 km from the Atlantic coast: S 33°41'; W 53°30'.

ALTITUDE: 20-60 metres

AREA: 1495 ha

LAND TENURE: Government expropriated lands by law

PHYSICAL FEATURES: A hilly and stony area, which includes a well-restored fort dating from the 18th century boundary disputes between Spain and Portugal, situated between the rivers flowing into the southern end of the vast Lagoa Mirim.

VEGETATION: No introduced species; the autochthonous vegetation consists mainly of xerophytes but has been considerably modified by very many years of grazing by introduced domestic stock. Species include urunday Astronium urundeuva and quebracho Schinopsis spp., both belonging to the Anacardiaceae.

NOTEWORTHY FAUNA: Capybara Hydrochoerus hydrochaeris, coypu Myocastor coypus, and Azara’s fox Dusicyon gymnocercus still occur. A breed of domestic 'criollo' cattle, a remnant of the herd originally introduced by the Spaniards, is maintained in the area.

ZONING: None yet established

DISTURBANCES OR DEFICIENCIES: Some illegal hunting and trapping of coypu for nutria fur

TOURISM: Approximately 15,000-20,000 visitors annually to the fort and museum. Hotel facilities available nearby.

SCIENTIFIC RESEARCH: None

SPECIAL SCIENTIFIC FACILITIES: None

PRINCIPAL REFERENCE MATERIAL:


STAFF: Varies from 8-9 in summer to 19-20 in winter (1973). This is made up of both the military and labourers.

BUDGET: No information

LOCAL PARK ADMINISTRATION: Superintendent, Parque Nacional San Miguel, Ministerio de la Defensa Nacional, Montevideo, Uruguay. (Park is administered by an honorary commission of 5 members).

WDNP IUCN © 1977 (1)F Code: URU.5.3
NAME Arequita National Park

TYPE NP

BIOTIC PROVINCE 3.10.1

LEGAL PROTECTION Total

DATE ESTABLISHED 1964

GEOGRAPHICAL LOCATION 10 km north of Minas, Lavalleja Province: S 34°12'; W 55°13'

ALTITUDE 40-240 metres

AREA 1000 ha

LAND TENURE Government expropriated land; some land still in course of expropriation

PHYSICAL FEATURES Two flat-topped mountains separated by the upper reaches of the Santa Lucia river are a main feature of the area. They are composed of quartzite. The geology of the area is of interest and there are a number of caverns in various parts of the Park.

VEGETATION The flora is indigenous, with a notable forest of *Phytolacca dyaica*. Much of the area has been grazed and has been invaded by myrtle, mimosa and algaroba *Prosopis* spp..

NOTEWORTHY FAUNA These include crab-eating raccoon *Procyon cancrivorus*, grison *Galictis cuja* furonax, La Plata otter *Lutra platensis* and pampas deer *Ozotocerus bezoarticus* (the last two classified respectively as 'endangered' and 'indeterminate' by the Red Data Book).

ZONING None as yet but proposed zones include a recreation zone, an intensive use zone and a wilderness zone

DISTURBANCES OR DEFICIENCIES None reported at present

TOURISM Estimated 5000 visitor-days annually, a low figure due to lack of facilities

SCIENTIFIC RESEARCH Mainly on geology. A vegetation study is being undertaken.

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL None listed

STAFF 6 guards and workers

BUDGET No information


WDNP IUCN © 1977 (1)F Code: URU.6.1
VENEZUELA

AREA  916,586 sq. km

POPULATION  11,519,582 (1973 estimate)

PARKS AND RESERVES LEGISLATION  The 'Ley Forestal, de Suelos y de Aguas' of 30 December 1965 gives the Ministerio de Agricultura y Cria the power to establish national parks and other reserves by Executive Decree of the Council of Ministers. Once created, such designations can only be changed by a Congressional Act. The Parks Division, through the Ministry, has the right to expropriate land, inspect any rural property, or seize vehicles, arms and equipment used in illicit activities. The 'Ley Forestal' includes a clause specifying procedures, penalties and sanctions.

PARKS AND RESERVES ADMINISTRATION  División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cria.

ADDRESS  División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cria, Torre Norte, Piso 10, Caracas 101, Venezuela.

TOTAL AREA UNDER PROTECTION  1,709,293 ha

PROTECTED AREAS

1.1 Canaima National Park  1,000,000 ha
2.1 Archipiélago Los Roques National Park  225,153 ha
2.2 Sierra Nevada de Mérida National Park  190,000 ha
3.1 Guatopo National Park  92,640 ha
3.2 El Avila National Park (with annex)  90,000 ha
3.3 Henri Pittier National Park  90,000 ha
4.1 Yacambú National Park  9,000 ha
4.2 Cueva de la Quebrada del Toro National Park  8,500 ha
5.1 Yurubi National Park  4,000 ha
VENEZUELA

NAME Canaima National Park

TYPE NP BIOTIC PROVINCE 3.9.1

LEGAL PROTECTION Total

DATE ESTABLISHED 12 June 1972, by Executive Decree No. 770

GEOGRAPHICAL LOCATION South-eastern Venezuela, N 5°05'-6°16'; W 61°05'-62°53'

ALTITUDE c. 450-2772 metres

AREA 1,000,000 ha

LAND TENURE Government ownership; an uninhabited region

PHYSICAL FEATURES Highlands of Bolivar State, adjoining the Caroni river. Cretaceous sandstones and quartzites with Pleistocene igneous intrusions forming huge flat-topped formations culminating in Mt. Roraima (2772 m). Gold and diamonds said to be present. Temperatures vary widely within the park; dry seasons from January to March and June to July. Several fine water falls within the park including Angel Falls, the highest in the world (972 m).

VEGETATION Very varied and ranging from savanna and semi-evergreen seasonal forest to gallery forest and montane forest. Rich in plant species, including several endemic orchids such as Cattleya superba, C. lawrenciana and Catasetum pileatum, but no comprehensive inventory has yet been made.

NOTEWORTHY FAUNA The paca Cuniculus paca, jaguar Panthera onca (placed in the 'vulnerable' category in the Red Data Book), puma Felis concolor, more than one species of tapir and peccary Tayassu sp. among the mammals and Caiman latirostris or broad-nosed caiman among the reptiles; but the fauna seems to be less rich than one might expect in such a locality, although it has yet to be properly listed and assessed.

ZONING Master plan for the park now in final stages of preparation by the National Parks Division, includes zoning provision.

DISTURBANCES OR DEFICIENCIES Pressure from squatters, illegal clearing of the forest and hunting. No guards.

TOURISM Access by air (expeditions to Angel Falls); about 8000 visitors in 1973. A first-class hotel is situated in the region and there is a luxury 'jungle camp' at Ucaina, from which visits to the Falls are arranged.

SCIENTIFIC RESEARCH The orchid, fern and tree species have received most attention.

SPECIAL SCIENTIFIC FACILITIES None


WDNP IUCN © 1975 6(1)F Code: VEN.1.1
STAFF  None: the proprietor of the Ucaima camp is supposed to look after the Park.

BUDGET  No information

LOCAL PARK ADMINISTRATION  División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cría, Caracas, Venezuela.
NAME  Archipiélago Los Roques National Park

TYPE  NP-M  BIOTIC PROVINCE  3.6.9

LEGAL PROTECTION  Total

DATE ESTABLISHED  9 August 1972, by Executive Decree No. 1061

GEOGRAPHICAL LOCATION  In the Caribbean Sea, 125 km north of La Guaira: N 11°42’-12°04’; W 66°30’-67°00’

ALTITUDE  Sea level to 40 metres

AREA  225,153 ha

LAND TENURE  Government ownership, but some parts of the larger islands are still privately owned.

PHYSICAL FEATURES  Atoll with more than 30 islands and 300 smaller coral reef islets, all, except for El Grand Roque, very low and composed of sand and coral. Climate dry with occasional rainstorms, mainly from September to January. Mean annual temperature 28.9°C with maximum of 33.9°C in July and minimum of 23.6°C in January.

VEGETATION  Not very rich due to the climate. Mangroves common with species of Rhizophora and Avicennia. Cacti include prickly pear Opuntia and one Melocactus species. Grasses include Sporobolus virginatus.

NOTEWORTHY FAUNA  Terrestrial fauna very poor. Aquatic avifauna include: breeding species of gull Larus atricilla, tern Sterna hirundo hirundo, S. dougalli dougalli, S. anaethetus recognita, Thalasseus maximus maximus, T. sandvicensis eurygnathus, noddy Anous stolidus stolidus, A. minutus americanus, shearwater Puffinus herminieri and tropic-birds Phaeton aethereus mesonauta. Marine fauna include brain and horny corals, three species of spiny lobster Palinurus, conch Strobus gigas and fish.

ZONING  Zoning under discussion

DISTURBANCES OR DEFICIENCIES  Transitory fishermen and some illegally constructed summer houses on some of the major islands. Village of 900 inhabitants on Grand Roque.

SCIENTIFIC RESEARCH  Studies of: geology, flora, fish, algae, insects, birds, reptiles and ecology, mainly inventory.

SPECIAL SCIENTIFIC FACILITIES  A biological station

PRINCIPAL REFERENCE MATERIAL  At least 50 papers and reports have been published, among which may be mentioned:

STAFF 1 superintendent, 3 workers

BUDGET US$ 18,000

LOCAL PARK ADMINISTRATION Intendent, Parque Nacional Archipiélago Los Roques, División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cría, Caracas, Venezuela.
VENEZUELA

 NAME Sierra Nevada de Mérida National Park

 TYPE NP

 BIOTIC PROVINCE 3.6.5

 LEGAL PROTECTION Total

 DATE ESTABLISHED 2 May 1952, by Executive Decree No. 393

 GEOGRAPHICAL LOCATION Western Venezuela, State of Mérida: N 8°26'-8°54'; W 70°38'-71°17'

 ALTITUDE 600-5007 metres

 AREA 190,000 ha

 LAND TENURE Government expropriated land

 PHYSICAL FEATURES Part of the Cordillera de Mérida, an eastern extension of the Andean chain. Bolivar mountain, the highest peak in Venezuela with perpetual snowfields, is included in the Park. Geologically composed of metamorphic and igneous schists and gneisses with granite intrusions. Glacier lakes at high altitudes. Temperatures range from an annual mean of 19°C on the lower slopes to minima of between 0°C and -6°C on the peaks, precipitation from 700-1800 mm.

 VEGETATION Several ecological life zones corresponding to altitude and ranging from very humid tropical forest, through humid or very humid low montane forest to montane rain forest and sub-alpine moorland. Rich flora includes Podocarpus spp., alder Alnus jorullensis, Polylepis sericea, Calycolpus moritzianus, Espeletia sp., a characteristic plant of the high páramo zone, and various Senecio and Lupinus species.

 NOTEWORTHY FAUNA The mammals are mostly small species, of which several local forms have been named, such as mouse opossum Marmosa demararae meridae, opossum Didelphis paraguayanensis meridensis, short-tailed shrew Blarina meridensis, rice rats Oryzomys tenuipes and O. flavicans flavicans, mountain paca Stictomys taczanowskii sierrae and kinkajou Potos flavus meridensis. Avifauna includes the crested bobwhite Colinus cristatus horvathi, the condor Sarcorhamphus gryphus, barn owl Tyto alba contempta, white-throated screech owl Otus albogularis meridensis and lyre-tailed nightjar Uropsalis lyra.

 ZONING Situation uncertain

 DISTURBANCES OR DEFICIENCIES It is not clear to what extent the considerable disturbance caused by various forms of settlement, which have previously been recorded, have now been eliminated but some 'squatters' and also privately-owned properties are said to be still present.

 TOURISM Fairly good facilities include a guesthouse, overnight shelters for alpinists and walkers, restaurants and trails, and some such as a funicular and motor road could constitute a further disturbing factor.

 SCIENTIFIC RESEARCH None reported

 SPECIAL SCIENTIFIC FACILITIES Forest experimental station and a fish culture station.

 WDNP IUCN © 1975 6(1)F Code: VEN.2.2
PRINCIPAL REFERENCE MATERIAL

STAFF 1 intendent, 2 technicians, 47 guards and workers (1969)

BUDGET About US$ 90,000 in 1972

LOCAL PARK ADMINISTRATION Oficina de Parques Nacionales, Ministerio de Agricultura y Cria, Mérida, Venezuela.
NAME Guatopo National Park

TYPE NP

BIOTIC PROVINCE 3.6.9

LEGAL PROTECTION Total

DATE ESTABLISHED 31 March 1958, Executive Decree No. 122; 8 April 1960, Executive Decree No. 258; 14 March 1961, Executive Resolution No. RNR-68

GEOPGRAPHICAL LOCATION 80 km SSW of Caracas on the border of Miranda and Guarico States: N 9°57'-10°11'; W 66°19'-66°43'

ALTITUDE 400-2200 metres

AREA 92,640 ha

LAND TENURE Government expropriated lands

PHYSICAL FEATURES Granitic mountain region south of the Central Coastal Range, topography exceedingly rough and broken. Mean annual temperatures from 18°C to 24°C with annual precipitation of 900-2000 mm. Park includes ancient roads ('guzmanera') and ruins of abandoned Spanish village of San Antonio, also a 100 year old coffee farm, the Hacienda La Elvira, one of the largest in Venezuela, the house of which is under restoration.

VEGETATION 70% of the area is covered by humid tropical forest, the remainder with dry tropical forest and savanna. Species present in the wet forest include the bread-nut Brosimum utile, guava Psidium striatulum, Vitis tiliafolia and Pterocarpus, Podocarpus and Protium spp. Several orchid species. Some new species of peppers have been described from the area, e.g. Piper patulipilum and P. guatopoense.

NOTEWORTHY FAUNA Mammals include two species classed as 'vulnerable' in the Red Data Book, jaguar Panthera onca and ocelot Felis pardalis; also nine-banded armadillo Dasypus novemcintus, agouti Dasyprocta rubrata, kinkajou Potos flavus, margay cat Felis wiedi, common tapir Tapirus terrestris and white-lipped peccary Tayassu albirostris. Avifauna includes grey tinamou Tinamus tao, yellow-legged tinamou Crypturellus noctivagus, rufous-vented chachalaca Ortalis ruficauda, crested guan Penelope purpurascens, band-tailed guan P. argyrotis, black curassow Crax alector, helmeted curassow Pauxi pauxi, and various species of macaws and parrots in the genera Ara, Amazonia, Aratinga, Touit and Forpus.

ZONING Zoning not yet formally established but in practice the area is subdivided into recreation, historic and wilderness (reserve) zones.

DISTURBANCES OR DEFICIENCIES Earlier reports indicated some cultivation and it needs to be confirmed whether this has ended with the purchase by the Government of private holdings in the park area.

TOURISM 120,000 visitors annually; facilities include picnic sites, information centre, administrative area and guesthouse, motorable roads and fenced bathing-places along the river.

SCIENTIFIC RESEARCH On rodents, human sickness, jaguar (Panthera onca) and orchids. A complete inventory of flora and fauna is planned.
SPECIAL SCIENTIFIC FACILITIES  None. The biological station planned to be established by the Universidad Central de Venezuela at Agua Blanca does not yet exist.

PRINCIPAL REFERENCE MATERIAL


STAFF 1 superintendent, 1 assistant and 23 guards and full-time workers

BUDGET About US$ 60,000 provided by the Government in 1973

LOCAL PARK ADMINISTRATION

Superintendent, Parque Nacional Guatopo, División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cría, Caracas, Venezuela.
### NAME
El Avila National Park

### TYPE
NP

### BIOTIC PROVINCE
3.6.9

### LEGAL PROTECTION
Total

### DATE ESTABLISHED

### GEOGRAPHICAL LOCATION
Between the Caribbean coast and Caracas on the boundary of the Federal District with Sucre, Plaza and Zamora Districts of Miranda State: N 10°24'-10°38'; W 66°27'-67°01'

### ALTITUDE
Sea level to 2762 metres

### AREA
66,192 ha; with the addition of an 'annex', the total area is estimated to be approximately 90,000 ha and it is believed that this figure is more accurate than the 100,000 ha quoted in the 1974 and 1975 editions of the UN List.

### LAND TENURE
Government expropriated land; some still privately owned

### PHYSICAL FEATURES
Mountainous area separating the city of Caracas from the Caribbean. Metamorphic rocks. Great variation in climate and precipitation, with mean annual temperature varying from 27°C on the Caribbean coast to 22°C in Caracas, but below zero on occasions on the peaks.

### VEGETATION
Ranging from dry tropical forest to montane and cloud forest. Xerophytic forest dominates the north slope from sea level to 500 m, and contains numerous cactus species such as Opuntia caracasana, O. depauwera and O. shumani, Cereus griseus and C. hexagonus, as well as Agave and Capparis species. From 500-1000 m one finds deciduous dry forest with the sandbox tree Hura crepitans, Tabebuia chrysanth, Albizzia polycepha and avocado Persea caerulea. Mountain savanna extends from 1000-1800 m on southern slopes, with grassland interspersed by dense thickets of Roupala, Clusia and Psidium spp. Cloud forest takes over at 1000-2400 m on north and 1800-2400 m on south slopes, dominated by Ormosia and Ficus spp. Above 2400 m Chusquea spencei forms dense bamboo-like stands.

### NOTEWORTHY FAUNA
Generally poor but includes opossum Didelphis karikinophaga, nine-banded armadillo Dasypus novemcinctus, rabbit Sylvilagus sp., squirrel Sciurus g. griseogena, tree porcupine Coendou prehensile, paca Cuniculus paca, weasel Mustela sp., and brocket deer Mazama americana. Avifauna includes barred forest-falcon Micrastur ruficollis, band-tailed guan Penelope argyrotis, humming birds such as Phaethornis auguti and Amazilia tobaci, groove-billed toucanet Aulacorhynchus sulcatus, strong-billed woodcreeper Xiphocolaptes promeropirhynchos, rufous spinetail Synaxallis unirufa, tyrants such as the paltry tyrannulet Tyranniscus vilissimus and orioles Icterus spp.

### ZONING
Not yet established

### DISTURBANCES OR DEFICIENCIES
Some fairly large old settlements on the northern slope; vandals cause problems with forest fires.

### TOURISM
Estimated 750,000-1,000,000 visitors in 1972. Facilities include trails, a funicular from Caracas to summit ridge and down to the seashore, camp sites, picnic sites, visitor centre, guesthouse, group accommodation, etc.
SCIENTIFIC RESEARCH
Studies of rodents, vegetation and birds

SPECIAL SCIENTIFIC FACILITIES
None

PRINCIPAL REFERENCE MATERIAL
COMMISSION NACIONAL DE URBANISMO (Ministerio de Obras Publicas), 1954.

STAFF
2 intendants, 3 technicians, 140 workers, 37 guards

BUDGET
US$ 540,000 for 1973 provided by the Federal Government

LOCAL PARK ADMINISTRATION
Intendent, Parque Nacional El Avila, División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cría, Caracas, Venezuela.
NAME: Henri Pittier National Park

TYPE: NP

LEGAL PROTECTION: Total

DATE ESTABLISHED: 13 February 1937 by Executive Decree

GEOGRAPHICAL LOCATION: Northern Venezuela, in the State of Aragua near Maracay: N 10° 16'-10° 32'; W 67° 25'-67° 53'

ALTITUDE: Sea level to 2344 metres

AREA: 90,000 ha

LAND TENURE: Government expropriated land; 20% still privately owned

PHYSICAL FEATURES: Central part of the Cordillera de la Costa, between the Caribbean Sea and Lake Valencia. Rainfall and temperature vary widely, the former from 600-900 mm on southern slopes and 1500-1800 mm on central and northern slopes.

VEGETATION: Varying with altitude and aspect. Coastal slopes: 0-400 m, mangrove swing way to tropical dry forest with species of Mimosa, Cactaceae and Caesalpiniiaceae, ('matoral costeño'). Continental slopes: 0-400 m, no forest, due to human influence, but some Samanea saman, Byrsonima crassifolia, etc. Both slopes 400-1200 m, transition forest, with Ficus spp., epiphytes and lianes, followed by subtropical humid forest from 1200-1600 m, with Bromeliaceae, Araceae and Filicidae. From 1600-2344 m sub-tropical to temperate wet forest on coastal side and wet to montane forest on continental side.

NOTEWORTHY FAUNA: Mammals of lower slopes include rabbit Sylvilagus sp., crab-eating racoon Procyon cancrivorus, crab-eating fox Cerdocyon thous and, jaguarondi Felis yaguaroundi, crested caracara Polyborus plancus, and a variety of plovers Charadriidae, sandpipers Scolopacidae, hummingbirds Trochilidae, kingfishers Alcedinidae and Troupials Icteridae. Upper slopes have puma Felis concolor and peccary Tayassu tajacu, among the mammals and birds such as tinamous Tinamidae, guans Cracidae, birds of prey Falconiformes, parrots Psittacidae, owls Strigidae, toucana and cotingas like the bellbird Procnias sp., to swell the over-all total of birds in the Park to over 530 species.

ZONING: Not yet established but in effect the park is divided into a wilderness zone and a recreation zone.

DISTURBANCES OR DEFICIENCIES: Clearance of forest by squatters; also uncontrolled summer house construction along the coast; Park boundaries not clearly defined or marked.

TOURISM: 85,000 visitors, largely local and for picnicking, bathing and camping.

SCIENTIFIC RESEARCH: Mainly on birds and the ecology.
SPECIAL SCIENTIFIC FACILITIES
Biological station at Rancho Grande on the road from Maracy to the coast

PRINCIPAL REFERENCE MATERIAL

STAFF
2 intendants, 27 guards and workers

BUDGET
US$ 70,000 for 1973 provided by the Government

LOCAL PARK ADMINISTRATION
Intendent, Parque Nacional Henri Pittier, División de Parques Nacionales, Dirección de Recursos Naturales Renovables, Ministerio de Agricultura y Cría, Caracas, Venezuela.
NAME Yacambu National Park

TYPE NP

BIOTIC PROVINCE 3.6.5/3.8.3

LEGAL PROTECTION Total

DATE ESTABLISHED 12 June 1962, by Executive Decree No. 771

GEOGRAPHICAL LOCATION Western Venezuela at northern end of Cordillera do Merida, Lara State: N 9°38'-9°44'; W 68°30'-69°37'

ALTITUDE No information but presumably c. 1500-2000 metres

AREA 9000 ha

LAND TENURE Government expropriated lands

PHYSICAL FEATURES Part of the Sierra Portuguesa in the Cordillera do Merida which forms an eastern extension of the Andes. Includes the sources of many rivers and streams.

VEGETATION Dry premontane forest, humid low montane forest, humid premontane forest and very humid low montane forest (Holdridge life zones me-P, bh-MB, bh-P and bmh-MB). Reputed to have a very varied flora.

NOTEWORTHY FAUNA No information, but said to be rich in species

ZONING Not yet established

DISTURBANCES OR DEFICIENCIES None reported but a public road transects the park and tourist facilities were reported to be under development some years ago and are now known to include an administrative centre and several 'recreation areas'.

SCIENTIFIC RESEARCH No information

SPECIAL SCIENTIFIC FACILITIES A laboratory at the administration centre, also a meteorological station

PRINCIPAL REFERENCE MATERIAL No information

STAFF 1 intendent, 12 guards and workers (1969)

BUDGET US$ 25,000 (estimated)

LOCAL PARK ADMINISTRATION Oficina Parques Nacionales, Ministerio de Agricultura y Cria, Barquisimento, Lara, Venezuela.
NAME: Cueva de la Quebrada del Toro National Park

TYPE: NP

BIOTIC PROVINCE: 3.6.9

LEGAL PROTECTION: Total

DATE ESTABLISHED: 21 May 1969, by Executive Decree No. 56

GEOGRAPHICAL LOCATION: Western Venezuela, near Caribbean coast, Falcon State:
N 10°50'-10°52'; W 69°04'-69°10'

ALTITUDE: No information

AREA: 8500 ha

LAND TENURE: Government expropriated lands

PHYSICAL FEATURES: Area of great scenic beauty with gorge and important watershed. Famous for one of the biggest caverns in Venezuela, the 'Bull's Gorge Cave' from which the Park gets its name, together with an underground river and several rapids. Precipitation from 1000-2000 mm annually.

VEGETATION: Humid premontane forest (Holdridge life zone bh-P)

NOTEWORTHY FAUNA: The cavern is the breeding place of the oil bird or guachero Steatornis caripensis.

ZONING: None established

DISTURBANCES OR DEFICIENCIES: Some cultivation and grazing by domestic stock were reported in the early days of the park but hopefully have by now been eliminated.

SCIENTIFIC RESEARCH: No information

SPECIAL SCIENTIFIC FACILITIES: None

PRINCIPAL REFERENCE MATERIAL: No information

STAFF: No information

BUDGET: No information

NAME Yurubi National Park

TYPE NP

LOCAL PROTECTION Total

DATE ESTABLISHED 18 March 1960 by Executive Decree No. 235

GEOGRAPHICAL LOCATION Western Venezuela, 4 km from San Felipe, Yaracuy State: N 10°22'-10°25'; W 68°44'-68°48'

ALTITUDE No information

AREA 4000 ha

LAND TENURE Government expropriated lands

PHYSICAL FEATURES Wooded region with rugged terrain in the upper reaches of the Yaracuy and Aroa rivers. Important watershed mainly forested or with savanna woodland. Estimated annual precipitation from 700-3000 mm.

VEGETATION Dry tropical forest, very humid premontane forest, humid tropical forest, humid premontane forest and very humid low montane forest (Holdridge life zones bs-T, bmh-P, bh-T, bh-P, bmh-MB).

NOTEWORTHY FAUNA No information, although said to be quite rich in species.

ZONING Not yet established

DISTURBANCES OR DEFICIENCIES None reported. Despite the close proximity of San Felipe, tourism in the park is described as 'insignificant'.

SCIENTIFIC RESEARCH No information

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL No information

STAFF 4 guards and workers (1970)

BUDGET US$ 7500 in 1970 (estimated)

LOCAL PARK ADMINISTRATION Oficina Parques Nacionales, Ministerio de Agricultura y Cria, Barquisimeto, Lara, Venezuela.
ZAIRE

AREA 2,345,236 sq. km

POPULATION 22,480,000 (1971 estimate)

PARKS AND RESERVES LEGISLATION The legislation enforced in the natural reserves is a special legislation more severe than the ordinary penal law and makes provision for penalties of up to 10 years penal servitude and fines of 1000 Zaires (US$ 2000). The guards have the right to open fire on offenders after giving warning. National parks are established under Presidential Order on the recommendation of the Institut National pour la Conservation de la Nature. Provision is being made for 15% of the country (estimated at 300,000 sq. km) to be established as reserves by 1980.

PARKS AND RESERVES ADMINISTRATION Until 1969 the management of National Parks was vested in the Institut des Parcs Nationaux du Congo attached to the Department of Agriculture. Ordonnance-Loi 69-041 of 22 August 1969, modified 21 February 1972, established the Institut National pour la Conservation de la Nature (INCN) to take over responsibility for National Parks from the dissolved IPNC, as well as for all problems concerning the human environment. The INCN under its Director General, has overall responsibility for all National Parks. Each park is divided into one or more sectors administered by a National Park Conservation officer of the judicial police who is responsible for his sector to the Director General, who in turn is responsible to the President.

ADDRESS Institut National pour la Conservation de la Nature, B.P. 4019, Kinshasa II.

TOTAL AREA UNDER PROTECTION 7,486,000 ha

PROTECTED AREAS

1.1 Salonga National Park 3,656,000 ha
1.2 Upemba National Park 1,173,000 ha
1.3 Maiko National Park 1,083,000 ha
2.1 Virunga National Park 809,000 ha
2.2 Garamba National Park 492,000 ha
2.3 Kundelungu National Park 213,000 ha
3.1 Kahuzi-Biega National Park 60,000 ha
ZAIRE

NAME: Salonga National Park

TYPE: NP

BIOTIC PROVINCE: 4.8.3

LEGAL PROTECTION: Total

DATE ESTABLISHED: 30 November 1970 by Order No. 70-318 of the Head of State

GEOGRAPHICAL LOCATION: Central Zaire basin: S 1°00'–3°30'; E 20°–23°

ALTITUDE: 350–700 metres

AREA: 3,656,000 ha

LAND TENURE: State property

PHYSICAL FEATURES: The park encompasses a large section of the central basin of the river Zaire, a very isolated region only accessible by water transport. Three types of landscape can be recognized: low plateaux, river terraces and high plateaux, each with their associated vegetation. Soils are composed of a thin humus layer over Kalahari sands with several lateritic flushes. Mean annual precipitation is 1300 mm with a slightly drier season from June to August. Temperatures are stable with a daily variation from means of 20°C at night to 32°C during the day. Cloud cover in mornings to 10.00 hrs., associated with fog; storms from midday to 15.00 hrs., but skies are often clear at night to 04.00 hrs. The park is divided into two sections by an inhabited zone 40 km wide between the rivers Loile and Luilaka.

VEGETATION: Almost entirely covered with equatorial forest of three types corresponding to the geomorphology: swamp forests, riverine forests and dry-land forests. In the northern sector a grassland vegetation rather than savanna is found, known locally as 'botoka-djoku' or elephant's bath. Southwards the vegetation is more open, with 'esobe' clearings.

NOTEWORTHY FAUNA: No systematic faunal survey has been made but most of the forest animals appear to be present. The most important include Pygmy chimpanzee Pan paniscus (a vulnerable species, found only in its Zaire habitats), colobus monkeys Colobus polykomos angolensis and C. badius, various species of Cercopithecus, leopard Panthera pardus (a vulnerable species), pygmy elephant Loxodonta africana cyclotis and L. africana pumilio, yellow-backed duiker Cephalophus sylvicultor, water chevrotain Hyemoschus aquaticus, sitatunga Tragelaphus spekei, bushbuck Tragelaphus scriptus, bongo Taurotragus eurycerus and pygmy Cape buffalo Syncerus caffer nanus. Birds include the herons Casmerodius albus melanorhynchus and Bubulcus ibis, black stork Ciconia nigra (on migration), yellow-billed stork Ibis ibis and the Congo peacock Afropavo congensis (an endemic species). Reptiles include African slender-snouted crocodile Crocodylia cataphractus (classified as an endangered species in the Red Data Book).

ZONING: Totally protected natural reserve with controlled public access. A 20 ha zone is planned for administrative services and guard posts. Studies are planned prior to opening a small area of the reserve to the public.

DISTURBANCES OR DEFICIENCIES: Some poaching recorded in 1972 but this is considered negligible.

WDNP: IUCN © 1975 8(1)F Code: ZAI.1.1
Phytosociological studies and studies of *Pan paniscus* have already commenced but the INCN is in the process of planning a programme of research.

SPECIAL SCIENTIFIC FACILITIES

None; but a biological station is planned

PRINCIPAL REFERENCE MATERIAL

None yet listed

STAFF

Total 52 (Conservateur, Chef de Poste, 30 guards, 20 workers)

BUDGET

Variable annual budget

LOCAL PARK ADMINISTRATION

Parc National de Salonga, B.P. 10 à Monkoto, (via Boende), Région de l’Equateur, Zaire.
NAME Maiko National Park

TYPE NP

BIOGIC PROVINCE 4.8.3

LEGAL PROTECTION Total natural reserve

DATE ESTABLISHED 20 November 1970, Ordonnance-loi 70-312

GEOGRAPHICAL LOCATION Administrative regions of Kivu and Haut-Zaire, eastern Zaire: S 0°-1°; E 27°-29°

ALTITUDE 700-1300 metres

AREA 1,000,000 ha

LAND TENURE State owned

PHYSICAL FEATURES Semi mountainous region between the central part of the Zaire river basin and the mountain ranges of the west side of the Rift valley at Massisi and Béni. The north and southern regions are undulating, the central portion is almost flat. Precipitation is the highest in Zaire with almost no dry season. The whole area is extremely remote with no inhabitants except for a few widely scattered groups.

VEGETATION Dense humid equatorial forests of low to medium altitude forming a transitional zone between the lowland forests of the Zaire basin and the mountain forests. The forest appears to be 90% primary.

NOTEWORTHY FAUNA The fauna includes the classic elements of the forest fauna but the most important and characteristic are three rare species: the mountain gorilla Gorilla gorilla beringei (classified as endangered in the Red Data Book), the okapi Okapia johnsoni and the Zaire 'peacock' Afropavo congensis. Elephant Loxodonta africana, duikers Cephalophinae and Cape buffalo Syncerus caffer are also present.

ZONING None; entirely classified as natural reserve

DISTURBANCES OR DEFICIENCIES Felling of the forest, poaching of okapi and duikers. There were some gold mines in the north but these are now abandoned.

TOURISM Not yet accessible although there is a long term potential for tourist development

SCIENTIFIC RESEARCH Studies on raising of okapi in captivity (at Epulu) and phytosociology are planned

SPECIAL SCIENTIFIC FACILITIES Not yet developed

PRINCIPAL REFERENCE MATERIAL Information on the area available from: Agricultural training school (Ecole Technique Agricole) at Butembo; the Administrative Service of the area; and the Geological Service at Bukavu (Kivu).

STAFF Total 18 (Conservateur and 17 guards)

BUDGET A variable annual budget

LOCAL PARK ADMINISTRATION None

WDNP IUCN © 1975 8(1)F Code: ZAI.1.3
ZAIRE

NAME Kundelungu National Park

TYPE NP

Biotic Province 4.6.3

LEGAL PROTECTION Total

DATE ESTABLISHED 30 November 1970, Ordonnance-loi 70-317

GEOGRAPHICAL LOCATION South-east Zaire; S 10°; E 27°

ALTITUDE 1200-1700 metres

AREA 220,000 ha

LAND TENURE State property

PHYSICAL FEATURES A plateau characteristic of the Shaba region and including its foothills. The western limit is formed by 400m cliffs which fall perpendicularly to the valley of the Lufira river; the falls on the Lofoi tributary, 342 m high, are reputed to be the highest in Africa.

VEGETATION Open woodland dominated by Brachystegia, grassy savanna and woody savanna; also gallery forests along the drainage lines.

NOTEWORTHY FAUNA Fauna especially rich in ungulates. Primates include Cercopithecus aethiops and C. mitis kandti, baboons Papio cynocephalus and P. doguera and bushbabies Galago crassicaudatus, G. demidovi and G. senegalensis. Felidae include leopard Panthera pardus and cheetah Acinonyx jubatus (both vulnerable species). Ungulates include at least 15 species such as zebra Equus burchelli, duikers, klipspringer Oreotragus oreotragus, reedbuck Redunca arundinum, defassa waterbuck Kobus defassa, roan and sable antelope Hippotragus equinus and H. niger, bushbuck Tragelaphus scriptus, greater Kudu T. strepsiceros and eland Taurotragus oryx. Birds include wattled crane Bugeranus carunculatus and the ground hornbill Bucorvus leadbeateri.

ZONING Not specifically applied, but most of the park is classified as natural reserve, with some areas set aside for tourist facilities.

DISTURBANCES OR DEFICIENCIES Numerous attempts at poaching require vigorous supervision if they are to be kept under control.

TOURISM Accessible from Lubumbashi by road suitable for four-wheel drive vehicles. Airstrip at Katwe for use of light aircraft (up to 3000 kg). Several camping areas have been designated.

SCIENTIFIC RESEARCH Not yet commenced but studies will embrace geology, petrography and botanical and phytosociological studies

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL Information available from the Faculty of Geology at UNAZA (Lubumbashi) and "Gécamines".

WDNP IUCN © 1975 8(1)F Code: ZAI.2.3
STAFF Total 39 (Conservateur, Chef de Poste, 30 guards, 7 workers)

BUDGET Varying annual budget

LOCAL PARK ADMINISTRATION Parc National de Kundelungu, 972 Avenue du Kasai, B.P. 309, Lubumbashi, Zaire.
### Kahuzi-Biega National Park

**Name:** Kahuzi-Biega National Park  
**Type:** NP  
**Biotic Province:** 4.8.3

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<thead>
<tr>
<th><strong>Legal Protection</strong></th>
<th>Total</th>
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<tr>
<td><strong>Date Established</strong></td>
<td>30 November 1970, Ordinance-loi 70-316</td>
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**Geographical Location:** Eastern Zaire, west of the town of Bukavu, S 2°-3°; E 28°-29°

**Altitude:** 1000-3000 metres

**Area:** 60,000 ha

**Land Tenure:** State property

**Physical Features:** Western mountains of the Great Rift valley, in the basin of the river Zaire between Walungu and Massisi. The western part is very undulating and forms a belt between the lowland forests and those of high altitude.

**Vegetation:** Mountain forest: about two-thirds of the area are covered by dense primary forest intermixed with bamboo especially at higher levels and with a few patches of lower and more open vegetation: remaining third with mesophytic woodland in which Hagenia trees are particularly striking.

**Note-worthy Fauna:** Primates include chimpanzee Pan spp., 250 individuals of the mountain gorilla Gorilla gorilla beringei (both of these being included in the Red Data Book, the gorilla being endangered) as well as numerous Cercopithecidae and Colobidae. The forest hog Hylochoerus sp., is present in some areas; also about 100 elephant Loxodonta africana and many antelopes and duikers. Bird and insect life is abundant and interesting.

**Zoning:** None; the whole park is classified as natural reserve

**Disturbances or Deficiencies:** Agricultural activities on the periphery, notably tea-growing

**Tourism:** Accessible to tourism via Bukavu; the mountain gorillas, of which one or two groups are well-acclimated to being watched, are the unique attraction. An asphalted road crosses the park from east to west and some paths are kept open to facilitate gorilla observation. A base camp for the park guards and guides near the main entrance, also provides shelter for visiting parties.

**Scientific Research:** Studies of geology and botany are planned in collaboration with the Institut des Recherches Scientifiques en Afrique Centrale (IRSAC).

**Special Scientific Facilities:** None

**Principal Reference Material:** Not yet listed

**Staff:** Total 40 (2 Conservateurs, 14 guards, 5 guides, 19 workers)

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**WDNP IUCN © 1975 8(1)F Code: ZAI.3.1**
BUDGET  Annual budget varies but covers staff and maintenance

LOCAL PARK ADMINISTRATION
ZAMBIA

AREA 752,618 sq. km

POPULATION 4,336,000 (1971 estimate)

PARKS AND RESERVES LEGISLATION The National Parks and Wildlife Act, Chapter 316 of the Laws of Zambia, gives authority for the President to declare any area to be a National Park, with the consent of the National Assembly signified by resolution. Full legislation is also provided to cover management.

PARKS AND RESERVES ADMINISTRATION Responsibility for soil, flora, fauna and water in National Parks lies with the Ministry of Lands, Natural Resources and Tourism, through the National Parks and Wildlife Service.

ADDRESS The Department of Wildlife, Fisheries and National Parks, P.O. Box 1, Chilanga, Zambia.

TOTAL AREA UNDER PROTECTION 5,945,000 ha

PROTECTED AREAS

1.1 Kafue National Park 2,240,000 ha
1.2 South Luangwa National Park 905,000 ha
1.3 Sioma Ngwezi National Park 527,600 ha
2.1 North Luangwa National Park 463,600 ha
2.2 Liuwa Plain National Park 366,000 ha
2.3 Mweru-Wantipa National Park 313,400 ha
2.4 Lukusuzi National Park 272,000 ha
2.5 Sumbu National Park 202,000 ha
2.6 West Lunga National Park 168,400 ha
2.7 Lavushi Manda National Park 150,600 ha
3.1 Lusenga Plain National Park 88,000 ha
3.2 Isangano National Park 84,000 ha
3.3 Blue Lagoon National Park 45,000 ha
3.4 Lochinvar National Park 41,000 ha
3.5 Kasanka National Park 39,000 ha
3.6 Lumbe National Park 25,400 ha
4.1 Nyika National Park 8,000 ha
4.2 Mosi-oa-Tunya National Park 6,600 ha

ZAMBIA

NAME Kafue National Park

TYPE NP   BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining

DATE ESTABLISHED 25 February 1972, Statutory Instrument No. 44 of 1972, and previously on 15 September 1951 by Proclamation No. 8 of 1951

GEOGRAPHICAL LOCATION South central Zambia, west of Lusaka, parts of Central, Southern and North-Western provinces: S 14°00'-16°40'; E 25°15'-26°45'

ALTITUDE 970-1470 metres

AREA 2,240,000 ha

LAND TENURE Government land expropriated by law

PHYSICAL FEATURES A gently undulating plateau area with a few hills situated along the mid reaches of the Kafue river and its two major tributaries, the Lufupa and the Lunga, which flow into the park from the north. At the extreme north-west corner of the park there is a perennial swamp which drains into the Lufupa via the Busanga flood plain. Alluvial areas of varying size also occur along the Kafue and its other tributaries. Karroo sediments occur centrally and to the north-east, with Kalahari sands forming the underlying geology of western areas.

VEGETATION Mainly miombo or Brachystegia dominated woodland, with areas of mopane Colophospermum mopane in the south. In the north, the miombo-termitaria woodland surrounds areas of open grassy flood plains or 'dambos'. Patches of teak Baikiaea plurijuga occur throughout but are more common in the south, the Ngoma forest being one example.

NOTEWORTHY FAUNA Two species of baboon Papio cynocephalus and P. ursinus occur within a few kilometres of each other with no signs of morphological intergrading. Numerous large mammals include lion Panthera leo, an increasing number of elephant Loxodonta africana, well distributed black rhino Diceros bicornis (classified as vulnerable in the Red Data Book), abundant buffalo Syncerus caffer including a herd of over 2000 in the Busanga area, yellow-backed duiker Cephalophus silvicultor, numerous waterbuck Kobus ellipsiprymnus crayshawi, puku K. vardoni, red lechwe K. leche leche (also a 'vulnerable' species, found in the northern area), reedbuck Redunca arundinum and the hartebeest Alcelaphus lichtensteini. The variety and large numbers of waterfowl are a noteworthy feature of the birdlife.

ZONING Three zones: 1) visitors allowed in vehicles or on foot; 2) visitors allowed on foot; 3) visitors not allowed

DISTURBANCES OR DEFICIENCIES A dam is being constructed at Itezhitezhi just outside the eastern boundary of the park on the Kafue river, but the resulting lake will occupy at least 370 sq. km. (some estimates put it as high as 1000 sq. km. of the park area). The main road from Lusaka to Mongu bisects the park from east to west. Uncontrolled bush fires occur.

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TOURISM  A catering lodge at Ngoma (with 42 beds) and five non-catering camps (with a total of 36 beds). Safaris conducted partially on foot in the Busanga plains area. A fully catering safari village at Chunga is just outside the park on the east, a short distance south of the Mongu road. It has an adjacent airstrip and there are two others in the north.

SCIENTIFIC RESEARCH  A biologist is responsible for management plans of the park

SPECIAL SCIENTIFIC FACILITIES  Mapping facilities and a herbarium

PRINCIPAL REFERENCE MATERIAL
ANON.  Annual reports of the Department of Wildlife, Fisheries and National Parks, which also publishes occasional papers in the journal Puku.

STAFF  Warden, 100 supporting staff, biologist and assistants

BUDGET  About US$ 300,000 per annum

LOCAL PARK ADMINISTRATION  Wildlife Warden, P.O. Box 109, Kalomo, Zambia.
NAME South Luangwa National Park

TYPE NP

BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION East centre, north-east of Lusaka and mainly to the west of the middle reaches of the Luangwa river: S 12°28'-13°14'; E 30°58'-32°08'.

ALTITUDE 500-1100 metres

AREA 905,000 ha

LAND TENURE Government owned, expropriated by law

PHYSICAL FEATURES The park sector of the Luangwa river averages about 580 m a.s.l. and from it the valley floor rises gently westwards to 760 m at the foot of the 1400 m Muchinga escarpment, which forms the north-western boundary. Structurally the valley is a rift, filled with Karroo sediments and overlain by recent sediments along the main river courses. These sediments are finely dissected into ridges with low interfluves. Mudstone plains occur at Chifungwe and Lunda. The main river and tributaries have a meander belt. Mean annual temperature 25°C, wet season from November to March, when heavy storms giving 832 mm rainfall.

VEGETATION Woodland savanna with Acacia sp., Combretum sp. and Terminalia sericea on freely draining alluvium; also thickets. Older alluvial soils support patches of Colophospermum mopane woodland with a 15 m canopy. The floodplain grassland is composed of Oryza, Echinochloa and other species, bordered by some riparian forest. Miombo woodland, mainly Brachystegia sp., Julbernardia sp. and Isoberlinia angolensis, is widespread and up to 25 m tall on deeper sandy soils. In the shallow stony soils near the escarpment Brachystegia stipulata and Julbernardia globiflora are the dominant species.

NOTEWORTHY FAUNA The park is remarkable for the great abundance and variety of larger mammals, especially ungulates. Equally characteristic, however, are primates such as the vervet monkey Cercopithecus aethiops, Moloney's monkey C. mitis moloneyi and baboon Papio ursinus; carnivores, including wild dog Lycaon pictus (classified as vulnerable in the Red Data Book), hyena Crocuta crocuta, leopard Panthera pardus and cheetah Acinonyx jubatus (both 'vulnerable' species); elephant Loxodonta africana, which occur at very high densities, and black rhinoceros Diceros bicornis (another vulnerable species) in fair numbers. The common ungulates include hippo Hippopotamus amphibius, giraffe Giraffa camelopardalis (of the subspecies named for Thornicroft and endemic to the valley, being found mainly in the southern sector), impala Aepyceros melampus (in great numbers), greater kudu Tragelaphus strepsiceros, buffalo Syncerus caffer, puku Kobus vardoni, sable and roan antelope Hippotragus niger and H. equinus, hartebeest Alcelaphus buselaphus and Cookson's wildebeest Connochaetes taurinus cooksoni, a local subspecies present in small numbers. Birdlife is prolific and particularly noted for storks, geese and cranes and for the riparian colonies of carmine bee-eaters. For the Nile crocodile (a threatened species) the Luangwa river is now one of the major remaining refuges.

ZAMBIA
ZONING 3 zones: 1) part of the Luangwa riverine area, with visitor access by vehicle or foot; 2) the Luangwa itself and its two major tributaries, with access on foot only; 3) remaining areas, with no visitor access.

DISTURBANCES OR DEFICIENCIES Prospecting for minerals and uncontrolled bush fires

TOURISM Access by air or road. Facilities include 2 catering lodges (48 beds) and 3 non-catering lodges (30 beds). Walking safaris conducted in zone 2. Park open from June to October inclusive.

SCIENTIFIC RESEARCH A team from the GRZ (Game research department) and FAO have been active

SPECIAL SCIENTIFIC FACILITIES Laboratory and office accommodation; transportation facilities including road vehicles, aircraft and boats.

PRINCIPAL REFERENCE MATERIAL


STAFF 60 wildlife officers and assistants (ranges and guards) responsible to a wildlife warden, 2 biologists

BUDGET About US$ 400,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 37, Chipata, Zambia.
NAME Sioma Ngwezi National Park

TYPE NP

BIOTIC PROVINCE 4.6.4

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION South-west, bordering the Caprivi Strip: S 16°55'-17°40'; E 23°02'-23°50'

ALTITUDE 900 metres

AREA 527,600 ha

LAND TENURE Government expropriated by law

PHYSICAL FEATURES A relatively flat area west of the Zambezi and bordered by the Mashi River on the south-west. Very sandy, underlain by Kalahari sands, with a mosaic of woodland and sandy plains. Very arid apart from a few isolated waterholes.

VEGETATION Kalahari sandveld with good stands of teak *Baikiaea plurijuga*, areas of mopane *Colophospermum mopane* and small patches of a mixed woodland of *Burkea* - *Colophospermum* - *Baikiaea* associations.

NOTEWORTHY FAUNA Large mammals include lion *Panthera leo*, cheetah *Acinonyx jubatus* (a vulnerable species), elephant *Loxodonta africana*, especially abundant giraffe *Giraffa camelopardalis* (one of only two populations in Zambia), kudu *Tragelaphus strepsiceros*, buffalo *Syncerus caffer*, roan and sable antelope *Hippotragus equinus* and *H. niger*, and tsessebe *Damaliscus lunatus*. Steinbok *Raphicerus campestris* are present but rarely seen. While there are no spectacular concentrations of large birds, a number of interesting and varied dry country species are to be seen, including the greater kestrel *Falco rupicoloides*, Bradfield's hornbill *Tockus* bradfieldi, the pied barbet *Lybius leucemas*, Burchell's glossy starling *Lamprotornis australis* and black-cheeked waxbill *Estrilda erythronotos*. The ostrich formerly occurred but is extinct in this area.

ZONING None

DISTURBANCES OR DEFICIENCIES 1) Poaching; 2) uncontrolled bush fires; 3) possible extraction of teak for timber.

TOURISM None; no road system, apart from tracks for four-wheel drive vehicles, exists at present. No visitor accommodation and no visitor permits are issued at present.

SCIENTIFIC RESEARCH Vegetation and habitat mapping are underway

SPECIAL SCIENTIFIC FACILITIES None
PRINCIPAL REFERENCE MATERIAL


STAFF 6 guards and a ranger under a warden

BUDGET About US$ 35,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 158, Mongu, Zambia.
ZAMBIA

NAME North Luangwa National Park

TYPE NP

BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION East central Zambia, in the upper Luangwa valley: S 11°30'–12°20'; E 31°45'–32°35'

ALTITUDE 500–1100 metres

AREA 463,600 ha

LAND TENURE Government expropriated by law

PHYSICAL FEATURES Extends from the 1400 m Muchinga escarpment in the west to the northern part of the Luangwa river in the east. The valley floor is a wide area of alluvial flats extending over the underlying Karroo rocks. The river is seasonally flooded. Grassy plains are absent. Mean annual temperature is 22°C and mean annual rainfall of 800 mm comes in a single wet season from November to April.

VEGETATION Miombo Brachystegia woodland on the freely draining sandy soils and miombo scrubland mixed with Colophospermum mopane on heavier soils. A complex of riverine forests is found on meander belt.

NOTEWORTHY FAUNA Mammals include vervet monkey Cercopithecus aethiops, baboon Papio ursinus, leopard Panthera pardus (a vulnerable species), lion P. leo, elephant Loxodonta africana, zebra Equus burchelli, black rhinoceros Diceros bicornis (a vulnerable species), hippo Hippopotamus amphibius, kudu Tragelaphus strepsiceros, eland Taurotragus oryx, buffalo Syncerus caffer, puku Kobus vardonii, Cookson's wildebeest Connochaetes taurinus cooksoni and impala Aepyceros melampus. The river provides a habitat for the crocodile Crocodylus niloticus (an endangered species).

ZONING A single zone providing for strict National Park status with access by visitors restricted to walking trails.

DISTURBANCES OR DEFICIENCIES Poaching and uncontrolled fires

TOURISM Access track but no lodges are present in the park. The only form of tourism permitted is conducted camping and walking on wilderness trails.

SCIENTIFIC RESEARCH A GRZ/FAO team is currently responsible for research and a report on the first phase was made in March 1973.

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL


STAFF 30 wildlife officers (rangers, scouts and guards) responsible to a wildlife warden

BUDGET About US$ 120,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 37, Chipata, Zambia.
NAME  Liwua Plain National Park

TYPE NP  BIOTIC PROVINCE  4.6.4

LEGAL PROTECTION  Total, except against mining


GEOGRAPHICAL LOCATION  Western province, Kalabo district: S 14°10'-14°48'; E 22°07'-23°00'

ALTITUDE  About 1000 metres

AREA  366,000 ha

LAND TENURE  Government expropriated by law

PHYSICAL FEATURES  An extremely flat sand plain at 1000 m, flanked by the Luambimba river to the east and the Luanginga river to the west. Seasonally inundated areas occur along the rivers.

VEGETATION  Mainly Kalahari short grass sand plains and some watershed grasslands. Around the edges of the sand plains, except in the west, is a belt of Burkea africana with some Zambian teak Baikiaea plurijuga, forming Burkea-Colophospermum-Baikiaea woodland. The river valleys have a narrow belt of valley and floodplain grasslands.

NOTEWORTHY FAUNA  Large mammals include zebra Equus burchelli, some buffalo Syncerus caffer, red lechwe Kobus leche leche (a vulnerable species), roan antelope Hippotragus equinus, lesser numbers of tsessebe Damaliscus lunatus and the largest population of wildebeest Connochaetes taurinus in Zambia. Birdlife includes a variety of waterfowl on the pans and such species as the secretary bird Sagittarius serpentarius, crowned crane Balearica pavonina and wattled crane Bugeranus carunculatus.

ZONING  None

DISTURBANCES OR DEFICIENCIES  Poaching and uncontrolled bush fires

TOURISM  None: no road system other than four-wheel drive tracks and no visitor accommodation.

SCIENTIFIC RESEARCH  Vegetation and habitat mapping now under way

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL

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STAFF 6 guards and a ranger under a warden; 1 biologist includes the park in his terms of reference

BUDGET About US$ 35,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 158, Mongu, Zambia.
ZAMBIA

Mweru Wantipa National Park

NP

4.6.5

Total, except against mining


Close to northern border, between lakes Mweru and Tanganyika, Luapula and Northern provinces: S 08°27'-09°00'; E 29°15'-30°00'

900-1400 metres

313,400 ha

Government expropriated by law

The eastern half of the park changes periodically from grassland and swamp to a large open lake: Lake Mweru Wantipa. The cycle is erratic but the water level appeared to reach its high point in 1974. The area is very young geologically with marked faults around the high water mark. To the west of the lake basin the land slopes upwards gently to a range of highly dissected hills of granites, quartz and porphyrites. In about one year in five total rainfall may be as much as 1500 mm, the wet season falling mainly between November and April.

The swamp and lake area are dominated by dense Papyrus thickets with some reed Phragmites. The area close to the lake has thickets of Bussea and Combretum. The remainder is covered with miombo Brachystegia-Julbernardia woodland on the sandy-loam soils derived from underlying igneous rocks. Large grassy acid dampbos occur in the miombo woodland and there is another small permanent swamp, Kabwe marsh, some distance from the main lake.

Mammals include large numbers of the blue monkey Cercopithecus mitis, baboon Papio sp. and possibly occasional vagrant colobus monkeys Colobus angolensis from Zaire. The scarce bushy-tailed mongoose Bdeogale crassicauda has been collected in the area. Leopard Panthera pardus, lion P. leo, black rhinoceros Diceros bicornis (in the vulnerable category of the Red Data Book), elephant Loxodonta africana, zebra Equus burchelli, Hippopotamus amphibius and buffalo Syncerus caffer are all present. Other ungulates are plentiful bushbuck Tragelaphus scriptus, sitatunga T. spekei (in the Kabwe marsh), eland Taurotragus oryx, yellow-backed duiker Cephalophus sylviculus, blue duiker C. monticola, klipspringer Oreotragus oreotragus, grysbok Raphicerus sharpei, puku Kobus vardoni, waterbuck K. ellipsiprymnus and reedbuck Redunca arundinum. Among the more spectacular birds are white pelican Pelecanus onocrotalus, several species of heron, shoebill Balaeniceps rex, saddlebill Ephippiorhynchus senegalensis, openbill Anastomus lamelligerus, greater and lesser flamingos Phoenicopterus ruber and Phoeniconaias minor. The crocodile Crocodylus niloticus (an 'endangered' species) is common.

3 zones: total wilderness, authorised personnel only; a public access and restricted residence zone; and one set aside for commercial fishing.

There is a seasonal fishing village near the lake as well as a permanent village on the road which bisects the park. Poaching and uncontrolled fires are still sometimes reported and control measures directed at...
the red locust, which, particularly in the 15 years up to 1944, bred in great numbers on the short grass plain left by the receding lake, have been a recurrently disturbing factor.

TOURISM Little, but there is access by motorable road from east and west and suitable camping places outside the park.

SCIENTIFIC RESEARCH Investigation of the red locust by the International Red Locust Institute afforded opportunities for botanical and zoological research.

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL

STAFF 26 wildlife officers (guards and scouts) under a ranger and a warden

BUDGET About US$ 45,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 5, Kasama, Zambia.
NAME  Lukusuzi National Park

TYPE  NP  BIOTIC PROVINCE  4.6.5

LEGAL PROTECTION  Total, except against mining


GEOGRAPHICAL LOCATION  Eastern province plateau, between Lundazi and Chipata: S 12°30'-13°07'; E 32°25'-32°50'

ALTITUDE  800-1240 metres

AREA  272,000 ha

LAND TENURE  Government expropriated by law

PHYSICAL FEATURES  The eastern half is level plateau, while on the west more hilly broken country leads to the escarpment overlooking the Luangwa valley. Largely underlain by a variety of gneissic and granitic rocks with numerous outcrops and metamorphic quartzite hills. The climatic pattern comprises a long cool dry season and a short hot wet season.

VEGETATION  Principally miombo Brachystegia-Julbernardia woodland on both the plateau and escarpment soils. Different types of vegetation are, however, associated with the frequent granitic outcrops and the riverbanks. Edaphic dambo grasslands follow drainage lines on the plateau.

NOTEWORTHY FAUNA  Hyaena Crocuta crocuta, elephant Loxodonta africana, zebra Equus burchelli, black rhinoceros Diceros bicornis (the only Red Data Book species), warthog Phacochoerus aethiopicus, eland Taurotragus oryx, buffalo Syncerus caffer, roan and sable antelope Hippotragus equinus and H. niger, and the hartebeest Alcelaphus lichtensteinii, are the principal mammal species. Cookson's wildebeest Connochaetes taurinus cooksoni occurs sparsely. For klipspringer Oreotragus oreotragus, the rocky outcrops of this park are one of its principal Zambian habitats.

ZONING  None

DISTURBANCES OR DEFICIENCIES  Uncontrolled fires

TOURISM  Public access is by a bush track from the main road to the east: the track traverses the park and descends the escarpment to the Luangwa. There are no tourist facilities.

SCIENTIFIC RESEARCH  Preparation of a management plan to ensure the maintenance of the major habitats and preservation of key areas.

SPECIAL SCIENTIFIC FACILITIES  None
PRINCIPAL REFERENCE MATERIAL


STAFF 30 wildlife officers (rangers, scouts and guides) responsible to a wildlife warden

BUDGET About US$ 90,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 37, Chipata, Zambia.
NAME  Sumbu National Park
TYPE  NP
BIOTIC PROVINCE  4.6.5

LEGAL PROTECTION  Total, except against mining


GEOGRAPHICAL LOCATION  Northern province, on the south-west shore of Lake Tanganyika: S 08°30'09.05"; E 30°15'30.45'

ALTITUDE  800-1250 metres

AREA  202,000 ha

LAND TENURE  Government expropriated by law

PHYSICAL FEATURES  About 100 km of the rocky shoreline of Lake Tanganyika, interspersed with some small beaches and including Cape Nundo which features a great balanced boulder of local ritualistic significance. Most of the area away from the lake is a plateau but it is traversed by the Lufubu river, which also forms the northern half of the eastern boundary before entering the lake. Above the river to the north-west is the 700 m Chansamansaka escarpment and another escarpment, the Kapembwa bounds the view to the east. Annual rainfall of 1400 mm, mainly falling between November and April. The area has numerous small sites of archaeological interest, usually near the beaches.

VEGETATION  The valleys opening on to the lake are dominated by tall Acacia albida and Trichilia roka. Valley sides, the hills near the lake and some plateau areas have dense Bussea-Combretum thicket. At higher elevations and further from the lake the vegetation is either light miombo dominated by Afrormosia angolensis or the denser Brachystegia-Julbernardia type of miombo woodlands. Wide alluvial flats with open grassland and Pteleopsis anisoptera gallery forest occur along the Lufubu and Nkamba rivers.

NOTEWORTHY FAUNA  A varied mammal fauna includes leopard Panthera pardus, lion P. leo, elephant Loxodonta africana, zebra Equus burchelli, hippo Hippopotamus amphibius, eland Taurotragus oryx, buffalo Syncerus caffer, yellow-backed and blue duiker Cephalophus sylvicultor and monticola, puku Kobus vandoni, waterbuck K. ellipsiprymurus, reedbuck Redunca arundinum, roan and sable antelope Hippotragus equinus and H. niger, hartebeest Alcelaphus lichtensteini, grysbok Raphicerus sharpei and klipspringer Oreotragus oreotragus. Grey-headed and lesser black-back gulls Larus cirrocephalus and fuscus, white-winged and whiskered terns Chlidonias leucophtera and hybrida and skimmers Rhynchops flavirostris are among the more obvious bird species of the rivers and shores of the lake, in which the Nile crocodile is still to be seen and the Tanganyika water cobra Boulengerina annulata can also be commonly observed.

ZONING  Two zones have been defined: the lake shore for tourist development, and the remainder as a wilderness area.

DISTURBANCES OR DEFICIENCIES  One permanent and one temporary fishing village; poaching and uncontrolled bush fires.
TOURISM
Two tourist lodges, one catering for 32 and the other for 18 guests, both open all year. A small non-catering lodge has been established at Nsumbu. Access by all-weather airstrip at Kasaba Bay or by gravel road. About 3500 visitors annually.

SCIENTIFIC RESEARCH
Management plans for monitoring future development and conservation in preparation.

SPECIAL SCIENTIFIC FACILITIES
None

PRINCIPAL REFERENCE MATERIAL

STAFF
25 wildlife officers (guards) under a ranger and a warden

BUDGET
About US$ 100,000 per annum

LOCAL PARK ADMINISTRATION
Wildlife Warden, P.O. Box 5, Kasawa, Zambia.
NAME West Lunga National Park

TYPE NP

BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION Mwinilunga district, North Western Province: S 12°30'-13°07'; E 24°35'-25°00'

ALTITUDE 1120-1200 metres

AREA 168,400 ha

LAND TENURE Government expropriated by law

PHYSICAL FEATURES A flat or gently undulating area with a few rocky outcrops lying between the West Lunga river on the west and the Kabompo river on the east. The junction of the rivers is at the south-west corner of the park. Permanent swamps occur along the Kabompo and there are also three seasonally inundated grassy plains.

VEGETATION Most of the park is covered by dry evergreen Cryptosepalum pseudotaxus forests, characterized by dense thickets of shrubs, climbers, scramblers and saplings. These are found on the Kalahari sands but small patches of Brachystegia-Julbernardia miombo woodland occur on the alluvial soils. There is also an intermediate type of woodland, known as Chipya, dominated by Acacia goetzei and Burkea africana but with an admixture of Cryptosepalum forest. Significant amounts of open grassland occur and some Papyrus swamp.

NOTEWORTHY FAUNA The blue monkey Cercopithecus mitis is found along the major rivers and most major carnivores are present. Elephant Loxodonta africana particularly favour the Cryptosepalum forest and are common. Other ungulates include zebra Equus burchelli, numerous bush pig Potamochoerus porcus, Hippopotamus amphibius less commonly, sitatunga Tragelaphus spekei, eland Taurotragus oryx, buffalo Syncerus caffer, yellow-backed and blue duiker Cephalophus sylvicultor and monticolia, puku Kobus vardoni, hartebeest Alcelaphus buselaphus, klipspringer Oreotragus oreotragus, oribi Ourebia ourebi and impala Aepyceros melampus. Birdlife is varied and abundant and includes a local red-throated subspecies of crested guinea fowl Guttera edouardi kathleenae. Crocodile are present.

ZONING None

DISTURBANCES OR DEFICIENCIES Poaching and uncontrolled bush fires

TOURISM No visitor accommodation but good camping sites on the Kabompo river and near the park headquarters at Jivindu, from which a pontoon ferry gives access to the park and its system of rough tracks.

SCIENTIFIC RESEARCH Vegetation and habitat mapping underway
SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL

STAFF 10 guards and a ranger under a warden (one biologist includes the park in his terms of reference).

BUDGET About US$ 30,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 1, Chilanga, Zambia.
NAME: Lavushin Manda National Park

TYPE: NP

BIOTIC PROVINCE: 4.6.5

LEGAL PROTECTION: Total, except against mining


GEOGRAPHICAL LOCATION: South-west of Mpika, Northern Province: S 12°00'-12°40'; E 30°35'-31°10'

ALTITUDE: 1100-1800 metres

AREA: 150,000 ha

LAND TENURE: Government expropriated by law

PHYSICAL FEATURES: The Lavushi Manda hills, some 500-600 m in height, along the south-eastern side of the park roughly divide the plateau series to the west from the basement rocks to the east. They are extremely rugged, with high vertical cliff faces on the south-east and dissected by several narrow canyons containing perennial water courses. A fair-sized river, the Lukulu, flows through the northern half of the park to its south-western corner before turning westwards to the Zaire border. The park is noted for its dambos and there is a small sandy plain in the north. Rainfall totals 1300 mm mainly falling between November and April.

VEGETATION: Most of the area supports miombo Brachystegia-Julbernardia woodland, interspersed with dambo plains. Dense gallery forest occurs along the rivers, with palms in the canyons. Numerous euphorbiaceae and aloes are a feature of the hill vegetation.

NOTEWORTHY FAUNA: The rock rabbit or Smith's red hare Pronolagus rupestris should occur in the hills but has not yet been reliably recorded. Larger mammals are not numerous but include leopard Panthera pardus, lion P. leo, elephant Loxodonta africana, zebra Equus burchelli, possibly an occasional black rhinoceros Diceros bicornis (the only Red Data Book species), which has been seen just to the north, common duiker Sylvicapra grimmia, waterbuck Kobus ellipsiprymnus, reedbuck Redunca arundinum, roan and sable antelope Hippotragus equinus and niger, hartebeest Alcelaphus lichtensteini and klipspringer Oreotragus oreotragus. There are no spectacular concentrations of birds, but some interesting small species such as the bar-throated apalis Apalis thoracica and the double-collared sunbird Nectarinia chalybea are found in the hills.

ZONING: None

DISTURBANCES OR DEFICIENCIES: Uncontrolled fires and poaching. Low protection priority under game reserve legislation has resulted in low stocks of wild animals.

TOURISM: No accommodation available, but the park is close to and readily accessible from the Great North Road in the dry season.

SCIENTIFIC RESEARCH: A National Parks and Wildlife Service field base has been established to the west of the park at Chiundaponde.
SPECIAL SCIENTIFIC FACILITIES

None

PRINCIPAL REFERENCE MATERIAL


STAFF
2 wildlife officers (guards)

BUDGET

LOCAL PARK ADMINISTRATION
Wildlife Warden, P.O. Box 5, Kasama, Zambia.
NAME Lusenga Plain National Park

TYPE NP

BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION North of Kawambwa, Luapula Province: S 09°15'-09°30'; E 29°05'-29°20'

ALTITUDE 800-1300 metres

AREA 88,000 ha

LAND TENURE Government expropriated by law

PHYSICAL FEATURES In the south-western corner a plain formed by the weathering of a volcanic plug dome, leaving rocky outcrops of syenite in concentric rings separated by weathered softer rock, forms a saucer-shaped depression. This plain with its ridges form the highest point, the ground sloping away to north and east to the Kalungwishi river, on which there are three big waterfalls. Rainfall totals 1400 mm, falling mainly between November and April.

VEGETATION The plain has grassland fairly typical of Northern Province upland dambos. Around the margins are remnants of 'mushitu' swamp forest and dry evergreen forest of Marquesia acuminata and macroura. The remaining area is covered with dense Brachystegia-Julbernardia miombo with a few patches of Pteleopsis anisoptera on alluvial soils.

NOTEWORTHY FAUNA Fauna is depleted but includes remnant populations of vervet and blue monkeys Cercopithecus aethiops and mitis, leopard Panthera pardus (the only Red Data Book species), elephant Loxodonta africana, zebra Equus burchelli, warthog Phacochoerus aethiopicus, bushbuck Tragelaphus scriptus, eland Taurotragus oryx, buffalo Syncerus caffer, yellow-backed and blue duiker Cephalophus sylvicultor and monticola, waterbuck Kobus ellipsiprymnus, reedbuck Redunca arundinum, roan and sable antelope Hippotragus equinus and niger and hartebeest Alcelaphus lichtensteini. No account of the birdlife appears to be available.

ZONING None

DISTURBANCES OR DEFICIENCIES Uncontrolled fires and poaching. Low priority for protection under game reserve legislation has resulted in depleted animal populations

TOURISM No accommodation or roads in park, but two good camping sites just outside the boundary and not far from two of the waterfalls.

SCIENTIFIC RESEARCH Vegetation and habitat mapping for preparation of management plans.

SPECIAL SCIENTIFIC FACILITIES None

WDNP IUCN © 1977 (1)F Code: ZAM.3.1
PRINCIPAL REFERENCE MATERIAL


STAFF 9 wildlife officers (guards)

BUDGET Reported as US$ 5000 in 1971

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 5, Kasama, Zambia.
NAME Isangano National Park

TYPE NP

B I O T I C  P R O V I N C E  4.6.5

LEGAL PROTECTION Total, except against mining


G E O G R A P H I C A L  L O C A T I O N  At the north-eastern edge of the Lake Bangweulu flats, Northern Province: S 11°00'-11°25'; E 30°20'-30°45'

A L T I T U D E  About 1100 metres

A R E A  84,000 ha

L A N D  T E N U R E  Government expropriated by law

P H Y S I C A L  F E A T U R E S  Flats and flood plain areas on granite and quartzitic sandstones and shales of the plateau series. The eastern boundary is formed by the Chambeshi river and the Lubansenshi river runs through the centre of the park. High rainfall totals 1500 mm or more in some years.

V E G E T A T I O N  Swamp forest dominated by Erythrophleum and Pterocarpus together with tall grasslands and watershed plain grasslands. Along the main rivers there are some Papyrus and Phragmites areas and lake basin chipya woodland of Acacia albida and afrormosia Pericopsis angolensis also occurs.

N O T E W O R T H Y  F A U N A  Larger mammals include elephant Loxodonta africana, zebra Equus burchelli, warthog Phacochoerus aethiopicus, bushbuck Tragelaphus scriptus, eland Taurotragus oryx, buffalo Syncerus caffer, black lechwe Kobus leche smithemani (in the vulnerable category of the Red Data Book), which enters the park seasonally although most remain outside its borders in the Bangweulu Game Management Area to the south-west, reedbuck Redunca arundinum, roan antelope Hippotragus equinus and hartebeest Alcelaphus lichtensteini. Water birds are well represented by many species of heron, Ibis and duck, and the Nile crocodile inhabits the rivers.

Z O N I N G  None

D I S T U R B A N C E S  O R  D E F I C I E N C I E S  Poaching, uncontrolled bush fires, fishing villages and illegal entry. Low priority under game reserve status has resulted in reduced animal populations.

T O U R I S M  No accommodation or other facilities. Very rough tracks unsuitable for normal motor vehicles come fairly close to its borders but access can only be achieved by foot and boat.

S C I E N T I F I C  R E S E A R C H  None

S P E C I A L  S C I E N T I F I C  F A C I L I T I E S  None


WDNP IUCN © 1977 (1)F

Code: ZAM.3.2

STAFF 2 wildlife officers (guards) under a ranger and a warden

BUDGET About US$ 15,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 5, Kasama, Zambia.
NAME Blue Lagoon National Park

TYPE NP

BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION West of Lusaka, Mumbwa district, Central Province: S 15°21'-15°43'; E 27°15'-27°32'

ALTITUDE 970-1010 metres

AREA 45,000 ha

LAND TENURE Donated to Zambian Government, which added further areas by lawful expropriation.

PHYSICAL FEATURES North bank of the Kafue Flats, part of the south-eastern boundary being formed by the Luwato lagoon, an oxbow lake of the old river channel which tends to dry out only at the end of the dry season. The land slopes up gently northwards from the flood plain. The seasonal inundation reaches its maximum in June when 30% of the park is under water.

VEGETATION Three vegetation zones: 1) flood plain grasses and sedges, principal species near the high flood level being Vetiveria nigritana and wild millets Setaria sphacelata and avettae, while areas more deeply flooded support rice grass Oryza barthii and small patches of Papyrus; 2) a narrow intermediate termitaria grassland zone; and 3) open woodland dominated by Acacia, Combretum and Terminalia with an understorey of tall grass. Fig trees Ficus sycomorus are common locally.

NOTEWORTHY FAUNA Large mammals include wild dog Lycaon pictus as the commonest carnivore, occasional cheetah Acinonyx jubatus, zebra Equus burchelli, bushbuck Tragelaphus scriptus, kudu T. strepsiceros, roan and sable antelope Hippotragus equinus and niger and large herds of Kafue lechwe Kobus leche kafuensis. The latter is one of three subspecies, all classified as vulnerable in the Red Data Book, and about 25,000 are estimated to enter the park seasonally out of a total population of about 100,000 in the Kafue Flats. The park is an important feeding ground for waterfowl, including glossy ibis Plegadis falcinellus and spur-winged goose Plectropterus gambensis.

ZONING None

DISTURBANCES OR DEFICIENCIES Uncontrolled bush fires, poaching of animals and fish. It is expected that the Kafue Gorge dam (see ZAM.1.1) will have a major effect on the flood regime.

TOURISM No lodge but a tented camp with non-catering facilities has been established. Access by a 90 km gravel road branching off the Lusaka-Mumbwa highway; also an airstrip. A 4 km causeway has been built out into the flats to facilitate viewing.

SCIENTIFIC RESEARCH Ecological studies have been started

WDNP IUCN © 1977 (1)F Code: ZAM.3.3
SPECIAL SCIENTIFIC FACILITIES None: the area is covered from Lochinvar National Park on the other side of the Kafue valley.

PRINCIPAL REFERENCE MATERIAL


DOWSETT, R.J. 1966. A preliminary list of the birds of the Kafue Flats.

STAFF 6 guards and a ranger under a wildlife warden

BUDGET About US$ 50,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 1, Chilanga, Zambia.
NAME Lochinvar National Park

TYPE NP

BIOTIC PROVINCE 4.6.4

LEGAL PROTECTION Total, except against mining

DATE ESTABLISHED 25 February 1972, by Statutory Instrument No. 44 of 1972. Originally a privately owned ranch, then a game management area.

GEOGRAPHICAL LOCATION North-west of Monze, Southern Province: S 15°43'–16°01'; E 27°11'–27°19'

ALTITUDE 970-1038 metres

AREA 41,000 ha

LAND TENURE Government expropriated by law

PHYSICAL FEATURES 3 zones: 1) the northern third forms part of the Kafue Flats Floodplain and is subject to a regular pattern of flooding, which commences rapidly in December, reaches a maximum in May and gradually recedes to its lowest level by November; 2) a flat termittaria zone south of the floodplain, with sandy clay to clay soils which become waterlogged in the wet season; and 3) woodland in the southern quarter of the park, two groups of hot springs being located on a fault zone towards the west. Annual rainfall is around 1000 mm.

VEGETATION Floodplain grasses vary from area to area but include rice grass Oryza barthii, Vossia cuspidata, Echinochloa stagnina and Panicum repens. Herbs include AeschynomeneElitana and Nymphaea capensis. The termittaria grasslands are dominated by a wild millet Setaria sphacelata, tree growth being confined to the termite mounds and commonly comprising Euphorbia candelabrum. The woodlands at higher elevations in the south of the park are dominated by such fire climax species as Acacia, Albizia and Combretum.

NOTEWORTHY FAUNA Includes zebra Equus burchelli, eland Taurotragus oryx, large herds of approximately 35,000 Kafue lechwe Kobus leche kafuensis (see comments under ZAM.3.3), wildebeest Connochaetes taurinus and oribi Orebia ouerebi. The southern woodlands also have kudu Tragelaphus strepsiceros, bushbuck T. scriptus, duikers Cephalophus sp., and impala Aepyceros melampus. The area is very rich in birdlife, with almost 400 species recorded, including white and pink-backed pelicans Pelecanus onocrotalus and rufescens, darter Anhinga rufa, purple and goliath herons Ardea purpurea and goliath, spur-winged goose Plectropterus gambensis, fish eagle Puffinus vocifer, secretary bird Sagittarius serpentarius, Swainson's francolin Pternistis swainsoni, helmeted guineafowl Numida meleagris, crowned crane Balearica pavonina, wattled crane Buceranus carunculatus, Denham's bustard Neotis denhami, wattled plover Afrixys senegalitus and red-billed hornbill Toxus erythrorhynchus.

ZONING None

DISTURBANCES OR DEFICIENCIES Gypsum mining, uncontrolled bush fires and poaching of animals and fish. Surrounding dense cattle populations often stray into the park. The Kafue Gorge dam will effect flooding regime.

TOURISM One small non-catering lodge with 10 beds. Access by road, 48 km from the turn-off near Monze, and virtually all-weather. Airstrip near park gate.

WDNP IUCN © 1977 (1)F Code: ZAM.3.4
ECOLOGICAL STUDIES OF THE LECHWE AND STUDY OF SOME DUCKS AND FISH-EATING BIRDS OF THE FLOOD PLAIN.

SPARSELY EQUIPPED LABORATORY WITH A SMALL ABATTOIR AND A HERBARIUM.

PRINCIPAL REFERENCE MATERIAL

DOWSETT, R.J. 1966. A preliminary list of the birds of the Kafue Flats.

STAFF
One biologist and assistants, 8 guards and a ranger under a warden

BUDGET
About US$ 50,000 per annum

LOCAL PARK ADMINISTRATION
Wildlife Warden, P.O. Box 1, Chilanga, Zambia.
NAME  Kasanka National Park

TYPE NP  BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION Total, except against mining


GEOGRAPHICAL LOCATION Serenje district, Central Province: S 12°25'-12°35'; E 30°05'-30°23'

ALTITUDE 1100-1300 metres

AREA 39,000 ha

LAND TENURE Government expropriated by law

PHYSICAL FEATURES A flat to gently rolling plateau area with extensive wetlands. The rocks are mainly sandstone, quartzite, shale and schist of the Katanga and Muva systems. Two large rivers flow through the park, the Kasanka river passing through the extensive Kapabi swamp which lies in the east of the park. There are also several small lakes. Annual rainfall is between 1200 and 1300 mm, falling mainly between November and April.

VEGETATION The area is dominated by miombo Brachystegia-Julbernardia woodlands. The extensive wetlands support Papyrus and Phragmites stands and there are some areas of open grassland and dambos, and also of 'mushitu' swamp forest.

NOTEWORTHY FAUNA The most notable large mammals are the sitatunga Tragelaphus spekei (seen here more easily than in any other park) and numerous puku Kobus vardoni. Other species to be seen are blue monkey Cercopithecus mitis and its subspecies Moloney's monkey C. m. moloneyi, elephant Loxodonta africana, zebra Equus burchelli, warthog Phacochoerus aethiopicus, hippo Hippopotamus amphibius, bushbuck Tragelaphus scriptus, eland Taurotragus oryx, buffalo Syncerus caffer, waterbuck Kobus ellipsiprymnus, hartebeest Alcelaphus buselaphus, and grysbok Raphicerus sharpei. The most obvious feature of the birdlife is, of course, the abundance of waterfowl.

ZONING None

DISTURBANCES OR DEFICIENCIES Poaching and uncontrolled burning

TOURISM No visitor accommodation; accessible only by rough bush track unsuitable for private cars, but suitable sites for camping can be found near the park boundary.

SCIENTIFIC RESEARCH None

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL

WDNP IUCN © 1977 (1)F  Code: ZAM.3.5

STAFF 10 wildlife officers (guards) under a ranger and a warden

BUDGET About US$ 25,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 5, Kasama, Zambia.
NAME  Luambe National Park  

TYPE  NP

BIOTIC PROVINCE  4.6.5

LEGAL PROTECTION  Total, except against mining


GEOGRAPHICAL LOCATION  On east bank of Luangwa river, between the three larger Luangwa valley parks: S 12°25'-12°35'; E 32°10'-32°25'

ALTITUDE  500-710 metres

AREA  25,400 ha

LAND TENURE  Government expropriated by law

PHYSICAL FEATURES  A predominately alluvial area sloping gently to the Luangwa river which forms its western boundary. The valley floor rocks belong to the Karroo system. The climate is hottest in the late dry season (October) and coolest in the mid-dry season (July).

VEGETATION  Alluvial areas dominated by Colophospermum mopane woodland with miombo Brachystegia-Julbernardia woodland on the small areas of free draining sandy soil away from the river.

NOTEWORTHY FAUNA  Lion Panthera leo, numerous elephant Loxodonta africana, occasional black rhinoceros Diceros bicornis (classified as vulnerable in the Red Data Book), bush pig Potamochoerus porcus, hippo Hippopotamus amphibius, eland Taurotragus oryx, buffalo Syncerus caffer, roan antelope Hippotragus equinus, the largest concentration of the subspecies of wildebeest, Connochaetes taurinus cooksoni, which is endemic to the Luangwa valley, and impala Aepyceros melampus.

ZONING  None

DISTURBANCES OR DEFICIENCIES  Uncontrolled bush fire; local overstocking of elephant, impala and hippopotamus.

TOURISM  A 12-bed non-catering lodge with cook/waiter service is available. The park is open from about mid-June to the end of October, the dates depending on the rains (when the gravel or dirt roads become impassable).

SCIENTIFIC RESEARCH  None

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL


WDNP  TUCN © 1977  (1)F  Code: ZAM.3.6
STAFF 10 wildlife officers responsible to a wildlife warden

BUDGET About US$ 30,000 per annum

LOCAL PARK ADMINISTRATION Wildlife Warden, P.O. Box 37, Chipata, Zambia.
ZAMBIA

NAME  Nyika National Park

TYPE   NF  Biotic Province  4.8.3

LEGAL PROTECTION  Total, except against mining


GEOGRAPHICAL LOCATION  Extreme north-eastern Zambia, adjoining the border with Malawi: S 10°32’-10°45’; E 33°35’-33°43’

ALTITUDE  1295-2225 metres

AREA  8000 ha

LAND TENURE  Government expropriated by law

PHYSICAL FEATURES  The small Zambian portion of the high Nyika plateau, a steeply undulating area bounded by precipitous escarpment country on the west, where the terrain slopes sharply down to the lower Shire river valley. The soils are uniformly deep, well drained, sandy clays derived from the underlying basement schists. Rainfall is around 1000 mm, but cloud and mist at ground level is common in the dry season between June and September and keep the park well watered. Frost of -5°C to -10°C may occur between May and October.

VEGETATION  The escarpment soils support miombo Brachystegia-Julbernardia woodland. Relict patches of montane forest remain on the plateau. These do not exceed 20 ha, the largest being the Chowo forest on the east and the Manjanjere forest on the west at the northern end of the park. The three vegetation types of the plateau, which intergrade, are: dry evergreen forest with Myrica, Nuxia, Oles and Rapanea; moist riparian forest with Aningeria, Cola, Parinari and Podocarpus; and wet seasonal swamp forest with Agauria, Maesa and Myrica. Upland grasslands and a great variety and abundance of orchids are other features of a park of outstanding botanical interest.

NOTeworthy Fauna  Moloney's monkey Cercopithecus mitis moloneyi is the largest of an extremely rich small mammal fauna, which includes the bush squirrel Paraxerus lucifer, the four-striped rat Rhombomys pumilus (in its only Zambian locality), the long-tailed pouched rat Beamsys hindei major, three species of the vlei rat Otomys, a sun squirrel Heliosciurus sp., two-spotted palm civet Nandinia binotata and yellow-spotted hyrax or dassie Dendrohyrax brucei. Larger mammals are infrequent but include bushbuck Tragelaphus scriptus, blue and, very rarely, red duiker Cephalophus monticolae and natalensis, reedbuck Redunca arundinum and klipspringer Oreotragus oreotragus. Birds include the secretary bird Sagittarius serpentarius, white necked raven Corvultur albicollis and many sunbirds Nectarinia sp. An endemic subspecies of the chameleon Chamaeleo gossei nyika is present and the dwarf species Rhampoleon nichiensis may also occur. The bush viper Atheris nitchei rungenwensis has been recorded. The area is rich in Lepidoptera, notably the swallowtails Papilio phorcas and brosimus.

ZONING  None

DISTURBANCES OR DEFICIENCIES  Uncontrolled fires

WDNP  IUCN © 1977 (1)F

Code: ZAM.4.1
TOURISM  A non-catering rest house with 10 beds. Walking trails are available. The only motorable access is through Malawi and is all-weather, though tending to be difficult during the rains.

SCIENTIFIC RESEARCH  Comparative studies of avifauna, butterflies and mammals with other montane areas in Central Africa. A vegetation comparison is planned.

SPECIAL SCIENTIFIC FACILITIES  None

PRINCIPAL REFERENCE MATERIAL

STAFF  Two guards under a ranger and a warden

BUDGET  About US$ 8000 per annum

LOCAL PARK ADMINISTRATION  Wildlife Warden, P.O. Box 37, Chipata, Zambia.
NAME Mosi-oa-Tunya National Park

TYPE NP

BIOTIC PROVINCE 4.6.5

LEGAL PROTECTION An enclosed portion of 1000 ha is totally protected, except against mining; the remainder is only protected against hunting, and defacing of vegetation or geomorphological features.


GEOGRAPHICAL LOCATION Southern border with Rhodesia, Victoria Falls: S 17°49'-17°54'; E 25°41'-25°55'

ALTITUDE 790-900 metres (approximately)

AREA 6600 ha

LAND TENURE

PHYSICAL FEATURES The park comprises the left bank of the Zambezi river and half of Victoria Falls together with the series of deep gorges below the falls. The maximum height of the falls is 108 m with a water flow of 540 million litres a minute. These levels occur around March or April. Low water in November can reduce flow to 10.5 million litres a minute. Above the falls the river is 1690 m wide. Archaeological remains of stone and iron age man are present.

VEGETATION Dominant vegetation is mopane Colophospermum mopane forest with small areas of teak and miombo woodlands. The narrow riverine forest along the Zambezi is more extensive in the 'rain forest' area where it is permanently dampened by spray from the falls. Here ferns are widespread and a profusion of flowering plants.

NOTEWORTHY FAUNA Vervet monkey Cercopithecus aethiops pygerythrus and baboon Papio ursinus are common; larger mammals include leopard Panthera pardus, elephant Loxodonta africana, warthog Phacochoerus aethiopicus, hippo Hippopotamus amphibius, bushbuck Tragelaphus scriptus, buffalo Syncerus caffer, common duiker Sylvicapra grimmia and waterbuck Kobus ellipsiprymnus. A 1000 ha fenced Zoological Park, up-river from the Falls, includes some exotic species as well as native animals. Birds include the rare Taita falcon Falco fasciinucha, the black swift Apus barbatus and the Carmine bee-eater Merops nubicoides in the gorge and several passerines such as shrikes, flycatchers and sunbirds in the rain or 'spray' forest.

ZONING None

DISTURBANCES OR DEFICIENCIES Too much building and disturbance pre-existed the park in the vicinity of the Falls, including the hydroelectric power station, railway, major highway, customs and immigration posts and a large hotel. Further inappropriate development will be avoided.

TOURISM One of the most frequently visited national parks in Zambia. Accommodation includes a hotel, two restaurants, a non-catering camp (70 beds) and a camping ground. The park is only a few minutes drive from Livingstone where all tourist facilities are also available.
SCIENTIFIC RESEARCH  None

SPECIAL SCIENTIFIC FACILITIES None

PRINCIPAL REFERENCE MATERIAL
PAGAN, B.M. 1964. The Victoria Falls. Commission for the Preservation of Natural and Historical Monuments and Relics: Northern Rhodesia.

STAFF  10 guards under a wildlife ranger

BUDGET  About US$ 90,000 per annum

LOCAL PARK ADMINISTRATION  Wildlife Ranger, P.O. Box 86, Livingstone, Zambia.