

MEDICAL PROBLEMS IN SAN DIEGO WILD ANIMAL PARK

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The practice of veterinary medicine in a wild animal park does not differ materially from that in any other medium, however, there are some aspects which make it more difficult. A number of factors are common to all preserves and some are unique to individual parks; weather, terrain, size and possibly management. Park location and terrain, size of units, types of transportation systems, etc. are factors of design that involve animals only indirectly. Other factors are inherent to the animals themselves including intra and inter species conflicts and aberrant social behavior. In short, problems arise when man creates a new environment for groups of animals and attempts to dictate their social behavior.

The San Diego Wild Animal Park comprises 1800 acres of which approximately 600 acres has been developed to date. Our largest unit, East Africa, encompasses about 120 acres, followed in size by South Africa, 90 to 100 acres; Asian Plains, 60 acres; North Africa, 50 acres; Asian Swamp, 30 to 40 acres. A monorail skirts these areas with all of the large units except North Africa being on the right side. The railbed is halfway up the hillsides of two valleys, one of which forms the floor of Asian Plains and East Africa and the other the Asian Swamp and South African areas.

The region receives only 10 to 12 inches of rainfall annually mostly in the months of December, January and February, with summer temperatures consistently 90 to 100 degrees. We cannot sustain vegetation without irrigation. Because of the size of the units, lack of funds has precluded the development of the necessary systems. Consequently erosion is a fact of life during the rains. As a result we suffer a loss of roads and fence lines. The latter permits animal escapes at times and all too often allows predators access to the units.

Night and morning fog, burning off around noon, is a common weather forecast from November through May. Often times head counts of animals are not completed until 1400 to 1600 hours.

Unfortunately wild animal parks require revenue so the needs of the public must be considered. The San Diego Wild Animal Park has a perimeter monorail permitting visitors to view the exhibits while preventing any contact with the animals. This does keep them under better control than in drive-through parks, but the system creates problems for us. To cross the rail we must go to an underpass or overpass which can be a severely limiting factor when attempting to dart an animal. It causes serious loss of time in trying to reach an animal found in critical condition.

Predators, mentioned earlier, posed one of our more serious problems during the first two years we had animals in the area. Trauma is now the most frequent clinical entity. Most of these involve fights between different species, some among members of the same species, and some of unknown causes. The best way to illustrate the intra and inter species incompatibilities is by geographical area.

East African Unit

Grevy Zebra are aggressive to almost all other animals including female Grevys. They attempt to kill the newborn foals of other Grevy mares. After removing the Grevys to a separate unit, the Grants Zebras presented much the same problem. They took Eland babies away from their mothers. Eland are not always docile. When we darted the last Grants Zebra, the Eland chased her into the water and she drowned. Males constantly harrass female Buffalo. We can only keep one White-bearded Gnu in a unit at a time. One hundred and twenty acres is not large enough for a separate bachelor herd. In one instance a male went through three fences to attack and kill another male. Gnus have gored Grants Zebra.

A male Topi, less than a year old, was killed by an adult male of the same species. Another male Topi attempted to investigate a newborn Roan Antelope baby, but the male Roan warned him away, decisively.

In the Uganda Kob we have not seen the instinct to territorialize. We have had as many as three males in a unit but all of them were seen in all sections. Females have stayed together but apart from males except during estrus.

If the Black Rhinos are compatible, there is no problem. If not, a male can kill a female even in such a large enclosure. As yet we have had no problems between black and white Rhinos.

South Africa

Two female White Rhinos have been drowned during the night. One is known to have been chased into the waterhole by a male. Generally they have not molested other species; however, they did chase a lame juvenile Sable. They will fight back when challenged by other species, but there have been no fights among male Rhinos. We have had several problems with females leaving their own offspring and stealing others. Thus, we have had to hand rear some young.

With respect to Waterbuck, Gemsbok, Sable, Blesbok and Hartbeest, males and sometimes females are daily reported harrassing other animals. There have been injuries in all of these species as well as injuries inflicted by these to Eland, Kudu, Lechwe, Springbok, Mountain Zebra and Ostrich.

A specialized problem that we have encountered is Lechwe-Waterbuck and Eland-Kudu interbreeding.

The dominant Springbok male will tolerate the bachelor herd within three hundred yards. The male wants to fight Eland, Rhino, White-tailed Gnu; he is short lived. The male White-tailed Gnus is very pugnacious but will only challenge other species when they pass too close.

North Africa

An adult Dromedary Camel male has killed two Addax babies. Within the Addax herd there have been no problems to date other than that females are very aggressive toward keepers until their young are two to three months old.

Within the Dama Gazelles there has been one fight between the dominant male and the number two male. The number two male died post surgery on fracture but there was little damage from goring.

Asian Plains

The conflicts between male and female Indian Rhino and between male Rhino and male Gaur overshadow all others combined. There are few other problems except with male Blackbuck and then only if others intrude into their area. Most seem satisfied with a fairly small territory generally outlined by erosion cuts.

Asian Swamp

In this area we have again encountered interbreeding, between Sambar and Eld's. There is intra herd conflict between males in the Water Buffalo and Sika. Our major concern in the Asian Swamp is the rejection of offspring by the mothers. This necessitates hand rearing. The area is located in an extreme corner of the developed park at the base of a range of foothills. Because of this the daily headcount is particularly difficult. The fact that the adjacent territory is undeveloped has given rise to numerous incidents of snakebite.

In addition to problems of traumatic origin, we do have the usual parasitism, overgrown and cracked hooves, diarrhea from obscure causes, neoplasms, coccidiodmycosis, cryptococcosis, abscesses, dystocias, and dietary problems common to all animal collections. Obviously it is more difficult to observe, isolate, and treat an individual or an entire group in a space of one hundred acres than in a small enclosure, but we feel we now know the areas of greatest concern and are concentrating our efforts on correcting these first. The old adage of an ounce of prevention, so well known to people responsible for animal health, and especially exotic animals, cannot be over emphasized in a wild animal park.

EAST AFRICA

Eastern White-bearded Gnu	<u>Connochaetes taurinus albojubatus</u>	1.13.11*
Topi	<u>Damaliscus lunatus topi</u>	1.4
Uganda Kob	<u>Kobus kob thomasi</u>	2.5
Fringe-eared or Kilimanjaro Oryx	<u>Oryx gazella callotis</u>	3.6
Angolan Roan Antelope	<u>Hippotragus equinus cottoni</u>	1.2
East African Eland	<u>Taurotragus oryx pattersonianus</u>	3.6
Kenya Impala	<u>Aepyceros melampus rendilis</u>	3.3
Slender-horned Gazelle	<u>Gazella leptoceros letoceros</u>	1.3
Roosevelt's Gazelle	<u>Gazella granti roosevelti</u>	2.2
Cape Buffalo	<u>Bubalus (Syncerus) caffer caffer</u>	2.3
Uganda Giraffe	<u>Giraffa camelopardalis rothschildi</u>	2.1
Black Rhinoceros	<u>Diceros bicornis bicornis</u>	1.1
Northern White Rhinoceros	<u>Ceratotherium simum cottoni</u>	2.1
Marabou Stork	<u>Leptoptilos crumeniferus</u>	8
Whooper Swan	<u>Cygnus cygnus cygnus</u>	2
Secretary Bird	<u>Sagittarius serpentarius</u>	4
East African Crowned Crane	<u>Balearica pavonina gibbericeps</u>	3
North African Ground Hornbill	<u>Bucorvus abyssinicus</u>	4
African Ostrich	<u>Struthio camelus australis</u>	5

* 1.13.11
0 ♀ unsexed

SOUTH AFRICA

Lowland Nyala	<u>Tragelaphus angasii</u>	2.3
South African Greater Kudu	<u>Tragelaphus strepsiceros strepsiceros</u>	3.4
Cape Eland	<u>Taurotragus oryx oryx</u>	2.2
South African Sable Antelope	<u>Hippotragus niger niger</u>	2.5
Gemsbok	<u>Oryx gazella gazella</u>	2.2
Elipsen Waterbuck	<u>Kobus e. ellipsiprymnus</u>	5.4
Red Lechwe	<u>Kobus lechwe lechwe</u>	1.2
Cape Hartebeest	<u>Alcelaphus buselaphus caama</u>	3.1
Blesbok	<u>Damaliscus dorcas phillipsi</u>	2.2
White-tailed Gnu	<u>Connochaetes gnou</u>	1.12
Angolan Springbok	<u>Antidorcas marsupialis angolensis</u>	7.10
Hartmann's Mountain Zebra	<u>Hippotigris zebra hartmannae</u>	1.6
Southern White Rhinoceros	<u>Ceratotherium simum simum</u>	7.16
Cape Shalduck	<u>Tadorna cana</u>	1.1

NORTH AFRICA

Addax	<u>Addax nasomoculatus</u>	5.18
Chad Dama Gazelle	<u>Gazella dama dama</u>	3.9

ASIAN PLAINS

Nilgai	<u>Boselaphus tragocamelus</u>	9.11
Blackbuck	<u>Antilope cervicapra</u>	13.17.13
Persian Goitered Gazelle	<u>Gazella s. subgutturosa</u>	11.11
Russian Saiga	<u>Saiga tatarica tatarica</u>	1.1
Indian Gaur	<u>Bos gaurus gaurus</u>	2.1
Barasingha Deer	<u>Cervus duvaceli duvaceli</u>	5.4
Indian Axis Deer	<u>Cervus axis axis</u>	10.27.3
Malayan Sambar	<u>Cervux unicolormalaccensis</u>	1.2
Red Sheep		1.2
Great Indian Rhinoceros	<u>Rhinoceros unicornis</u>	1.1. $\frac{1}{2}$
Lilford's Crane	<u>Grus grus lilfordi</u>	37
Indian Blue Peafowl	<u>Pavo cristatus</u>	51
Indian Red Junglefowl	<u>Gallus gallus murghi</u>	TNTC

ASIAN SWAMP

Water Buffalo	<u>Bubalus arnee f. bubalis</u>	5.7
Urial		1.3
Formosan Sika	<u>Cervux nippon taiouanus</u>	9.9
Luzon Sambar	<u>Cervus mariannus mariannus</u>	3.3
Burmese Eld's Deer	<u>Cervus eldi thamin</u>	1.2
Indian Hog Deer	<u>Cervus porcinus porcinus</u>	2.4
Milu or Pere David's Deer	<u>Elaphurus davidianus</u>	3.1

ASIAN SWAMP (con't)

Sarus Crane	<u>Grus antigone antigone</u>	6
Ruddy Shelduck	<u>Tadorna ferruginea</u>	12
Swan Goose	<u>Anser cygnoides</u>	12
Indo-Chines Green Peafowl	<u>Pavo muticus imperator</u>	2