

Namibia Large Carnivore Atlas

July 2004 Vol.1



Photo: Lise Hanssen

Report by: L. Hanssen and P. Stander

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Windhoek
Namibia

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National Biodiversity Task Force
Directorate: Environmental Affairs



Ministry of Environment and Tourism
Division Specialist Support Services



A note to Contributors

The Namibia Large Carnivore Atlas is an ongoing project aimed at improving the quality of data on large carnivore numbers and their distribution. Atlas data are analysed every six months and a new Atlas Report is produced with updated results. In time the Atlas Project will become a valuable tool in the monitoring of large carnivore populations.

Since the last Atlas Report (Vol. 2) in December 2003 we have received 229 observations. This brings the total number of observations to 5410 covering 11436 individual carnivores. The information presented within this report is based on all carnivore sightings and spoor observations from 1999 until 2004.

Distribution of the Report has increased substantially with almost 600 hard copies posted within Namibia and email distribution exceeding well over 200. Due to high costs, we do not post reports outside Namibia, but if you would like to be added to our email list, send us your contact details. The report can also be downloaded from our website. The Predator Conservation Trust (UK) circulates the report internationally as part of their newsletter mailings. For more information on this distribution, please contact:

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Thanks to Ingrid Wiesel from the Brown Hyaena Research Project for submitting her brown hyaena research data.

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Your ongoing participation is very much appreciated. We hope you enjoy the latest edition of the Atlas Report. We look forward to your continued involvement, which is essential to the ongoing success of the Namibia Large Carnivore Atlas.

Yours sincerely



Lise Hanssen
Project Co-ordinator

Namibia Large Carnivore Atlas

Namibia is one of few African countries that support six species of large carnivore. Lions, leopards, cheetahs, spotted hyaenas, brown hyaenas and wild dogs occur primarily in the northern and western sections of Namibia. With the possible exception of lions and leopards we have a poor understanding of the exact distribution and density of these species, although available information suggests that the populations are stable. The Namibia Large Carnivore Atlas was launched to involve the tourism industry and the Namibian public in collecting baseline data on the six large carnivore species. The Atlas data improves our understanding of large carnivore distribution and density, and as key species, contributes to the monitoring of biodiversity in Namibia.

A list of the names of participants followed by the number of Atlas forms submitted

#Oma	10	Awarab, J	5	Botha, E	3	Chameleon Safaris	4
!Ui	16	Bader, W	5	Botha, L	1	Chandler, B	1
Abraham, Mr - NRNR	3	Bakkes, C	6	Braine, D - Hobatere	4	Chapu, K - MET	4
Absolute Africa	2	Balderson, GC	1	Braine, S - Hobatere	106	Childs, K	4
Adams, J	11	Barlsol, C	1	Braine, S & Kotze, T - Hobatere	6	Chiza, C & Lifumbela, J	5
African Extravaganza	1	BBC	8	Braine, S & tourists - Hobatere	5	Chizabulyo, CM - MET	2
Africat	106	Beamish, E	1	Brandenburg, S	1	Cilliers, A	8
Ahlert, K	1	Behrenbeste	1	Brell, B - SRT	31	Clapham, L	2
Alberts, A - MET	157	Bell, S & K	1	Brell, B & Linus - SRT	1	Clark, R	1
Alberts, K - MET	14	Berents, G	1	Brell, B & Loutit, R - SRT	1	Clayton, M	1
Alberts, M	2	Berriman, N - MET	20	Brell, B, SRT & MET staff	3	Cloete, C & Green, H - NRNR	1
Alfred, A	1	Berry, M - MET	44	Bridgford, P - NRNR	8	Cloete, R	3
Alpheus	7	Bertel, A	1	Britz, C	1	Codling, L	2
Anderson, S	1	Besser, M	2	Brunzil, D - NRNR	1	Coke, R	2
Appleton, S	8	Beytell, B - MET	1	Buchert, J	2	Combrard, B	1
Ariseb, Sagarias	136	Blaine, L	1	Buekley, C - Raleigh	1	Connan, P	1
Arnold, M	15	Bock, B	1	Burger, H	1	Conrad	2
Ashipala, V - MET	1	Bockmann, J & H	2	Carstens, J	1	Cooper, T - MET	21
Asugeo, D	1	Booth, G - NRNR	1	Caspary, T	1	Cooper, Z	10
Awarab, B	9	Botha, A - MET	1	CB	4	Cowan, G	2

Craig, C	1	Fredricks, A - WS	2	Herzog, S	2	Koep, M	2
Crazy Kudu Safari	3	Freyer, R - MET	2	Hess, S	1	Kolar, B & Jäkel, T - BHRP	58
Cristophe, J	1	Friede, J	3	Heynes, C	1	Kolberg, H - MET	1
Cunningham, A - BHRP	1	Fulai, J	3	Hoab, G	71	Kolbooi, J - MET	2
Damaraland Camp - WS	14	Funke, A	4	Hobatere staff	9	Korff, W	3
David, R	1	Gabes	1	Hoeb, M	1	Korol, R	1
Davis, T	1	Ganuseb, I	5	Hoffman, Mr - DAS	2	Kotting, B & S	15
De Beer, B - BHRP	2	Garbade, T	4	Hoffmann, R	12	Kotze, J - Erindi	1
De Bryn, N	2	Gawuseb, A	2	Holtzhausen, T	2	Kramwinkel, F - BHRP	1
De Goede, P	4	Gebhardt, E	1	Holzhausen, H	2	Krauth, J	3
De Wet, P	1	Gerdes, Mrs	1	Holzhausen, J+N	3	Kreiner, H	1
Debe, T	6	Gibson, C & Rice, M	6	Hoth, U & T	8	Kronitz, A	2
DeBels, J	1	Gieraths, V	8	Huckett, B	3	Krück, N	3
Delpont, T - MET	2	Gilcrest, D	13	Hungua, F	1	Kruger, C - Erindi	1
Diamond miner	1	Ginartig, T	1	Hutchence, W	1	Kuhnelt, H	2
Dickmann, H	7	Gortz, S	1	Immanuel, K	2	Kuispel	1
Diekmann, A	3	Gous, E - WS	5	IUCN	1	Kuno, Moses, Obed	1
Dillmann, H	24	Gous, T	1	Jager	3	Kupzyk, T	1
Donovan	1	Gouws, E	24	Jagger, A	2	Kuvare, T - MET	2
Doray, I	1	Gowtage, S	13	Jahnke, V	5	Kuyler, S	1
Dougab, W	23	Graham, K	1	Jäkel, T - BHRP	10	Lamek, J - MET	3
Drea, C	1	Griem, R	1	Jalh, H	1	Lane, P - MET	1
Dreyer, N	3	Griffin, M - MET	21	Jan, Bern, Fly	2	Lang, M	1
Du Plessis, C	1	Grobler, G	1	Jerasmud	2	Le Roux, JP	1
Du Preez, P - MET	7	Grobler, K	1	Johannes SRT	2	Le Seur, M	1
Duffus, J	7	Groenewald, F	2	Jonas, SRT	2	Leech, J	1
Dunkley, R	1	Groenewald, G	2	Jonny	3	Legget, K	1
DuPlooy, Mr	1	Grumblies	1	Jooste, K	9	Lenssen, J - NRNR	135
Durr, M - NRNR	13	Gruttemeyer, J	14	Josef, Andreas - SRT	2	Leuschner, A	1
Ehrovipuka Conservancy	5	Gudde, E	19	Jsafo, G	3	Liebenberg, D	30
Elix	1	Guerin	5	Junker, J	33	Liebenberg, W	1
Elmendorf Family	2	Hagman, C	1	Kail, S	1	Lifumbela Jn, C	4
Engelbrecht, A & Ashipala, V - MET	3	Halenke, H	8	Kalkheuwel	1	Lindeque, M & P	1
Engelbrecht, A - MET	5	Hall, T	193	Kanaela, F - MET	8	Linacher, B	1
Engelbrecht, A & Hango, M - MET	1	Hall, T & Summers, C	3	Kapner, F	46	Lister, M	78
Engelhard, H	1	Hammond, N	6	Karsten, C	3	Lombard, J	9
Epler, C	8	Hanssen, L	318	Kasaona, E	1	Loutit, B - SRT	1
Erasmus, J	12	Hanssen, W	1	Katangara, A	4	Loutit, R - SRT	34
Erdmann, L	2	Hanstein, E	2	Katjalanja, B	1	Louw, P	1
Erindi Ranch	2	Haradoeb, P - MET	6	Katuuo, J	7	Louw, T	1
Erpf, H	2	Haraseb, O - Hobatere	19	Kaum, R	1	Luderitzbuchter - BHRP	2
Esterhuizen, A	17	Harnas	3	Kayser, C	4	Maclennan, S	47
Etosha Aoba Lodge	18	Haroua, G	2	Keding, A	2	Mafuta Isak	35
Etosha Game Viewers	1	Hartung, O	1	Kefas, E	1	Manns, H	1
Eyre, C - MET	1	Hatton, B	2	Kemper, J - BHRP	17	Mapanka, A - MET	3
Faithfull, N	2	Hearn, M - SRT	15	Kemper, J & Roux, JP	1	Margante, J	1
Falk, H	2	Hedt, B	2	Kenahama, A	1	Marsh, S	3
Fallows, C	1	Heger, F	2	Keuning, L & French, D	1	Martin, Jonas - SRT	3
Ferguson, D	1	Hein, J	5	Khoadi Hoas Conservancy	7	Martinez, A	1
Florry, V	5	Heinrich, D	46	Killian, W - MET	23	Masen, D - MET	17
Fortin	3	Hendrick - SRT	1	Kirkman, S	2	Matomola, C	1
Fourie, J - MET	3	Hennig, J	9	Kleinlosen, B	1	Matson, T	20
Fox - Erindi	1	Henry, V	3	Kneib, M & U	2	Mattheus - DAS	3
Fox, B - MET	1	Herbert, D	3	Knox, N	6	Maulhard, B	1

May, A	11	Oosthuisen, E	1	Schock, S	1	Tjiondu, J	1
May, J	1	Oosterhuisen, J	2	Schreiber, Z	1	Tjipepa, U - MET	3
McClure, N	31	Owen-Smith, G	2	Schreiber, S	5	Torra Conservancy	20
McMahon, C & Wynen, L	4	Owuseb, J	2	Schunemann, H & W	5	Tourists	355
McWhinney, S	1	Pack Safari	2	Scott, P	1	Tyldesley, P	1
Medais, D	7	Patric, S	3	Seblon - SRT	1	Tyndal, B - MET	9
Meeser, J - MET	1	Patterson, J & B - MET	6	Seibeb, W	1	Uakalapi, S	3
Mehrdadfar, F	2	Paulick, V	3	Seidel, D	7	Uarje, A	3
Mentrup, C	2	Paxton, H & M	1	Seufert, J	3	Uaroua, G	4
Mercier, X	1	Perry, C	3	Shackleton, C	1	Uri-khob, S - SRT	3
Meszaros, M	3	Petrus	4	Shadreck	4	Utz, G	7
MET Kaudom	28	Pienaar, K -WS	43	Shatumba, G	2	Valsparg	3
MET Tsumkwe	35	Ponas, M	3	Sherriff, M	3	Van der Gruen, W	1
MET Gam	3	Pottas, J	3	Shiern, S	3	Van der Heever, I & J	2
MET Ganab	1	Prasch, P & Kirkman, S	3	Shilipipo, J	7	Van der Merwe, R	2
MET Namib Naukluft	1	Pretorius, F	1	Shilombella, S	3	Van Rooyen, B	1
Mezies, D	2	Pretorius, L	2	Shout, P - BHRP	1	Van Wyk, C	1
Michels, G	3	Purros Conservancy	17	Sichombe, S	2	Van Zyl, A	1
Mitchell, Y	1	Purser, H	2	Siehl	1	Verhagen	1
Moller, W - MET	5	Queck, G	3	Silke, H & Steiger, H	1	Versfeld, W - MET	26
Momberg, A	2	Rabie, J	1	Silvaro and Stefy	1	Vezhagen, H	1
Mooy, R	1	Rahn, B	1	Simmons, R	12	Vickers, J & T	5
Morgan, I	1	Raleigh International	2	Simon, P	5	Viljoen, A	3
Morris, L	1	Ras, J	12	Simpson, D - BHRP	2	Vinjevoid, R	11
Mostert, A	1	Rathje, D	1	Simpson, J	1	Von Gossler, O	12
Mouton, D	4	Raubenheimer, J	1	Smith, C	1	Von Schutz, A	2
Mouton, K	1	Raue, R	17	Sobotta, D	4	Von Seydlitz, F	1
Mr Marais	1	Redecker, F	1	Soeffner, A, H & G	2	von Seydlitz, H	1
Muhewe, M	8	Regina, Peter	3	Solitaire Press	2	Von Willigh, J	1
Muhewe, M & Uakalap, S	1	Rehm, P & Kirkman, S	6	Solomon	1	Vossie - MET	2
Mulisa, C	1	Reinhardt, E - SRT	8	Soroczynski, M - BHRP	1	Wagner, K	10
Muller, Dr	1	Rental, W	1	Stainthorpe, A	9	Wagner, M	1
Munembome, H - MET	17	Reuter, HO	3	Stander, P	542	Wagner, R	58
Murray, D	9	Rhachford, J	1	Stander, P & De Goede, P	13	Waines, S	1
Muundja, B	1	Riedel, H	1	Stander, P & Gilcrest, D	14	Walter, J	19
Nadolshi, U	1	Rimmermann, R	1	Stander, P & Hanssen, L	371	Ward, D	54
Namdeb	5	Risser, D	2	Steenkamp, J	6	Ward, P	1
Namib Office Machines	1	Ritter, E	2	Steenkamp, P	2	Wauschkuhn, R	2
Ncube, C	1	Robertson, D	1	Steer, M	2	Way, S	1
Ndishishi, V	1	Roesener, Mrs	1	Steinbrink, H	1	Weeks, D	1
Nebe, B	17	Rolt, G	2	Steyn, D	10	Weinmann, K	15
Nethersole, P	1	Roman, B	1	Suiter, P	1	Welsh, A	2
Neubert, S	3	Rössler, R	21	Swart, W	6	Wetevrede	1
Neubert, S & Wieloch, E	49	Rotersin, C	2	Swiegers, W	1	Whalley	1
Neudorfer, P	2	Roux, JP	3	Sylvester, P	2	Wiesel, I - BHRP	229
Ngarangombe, M	2	Rudiger & Bethem	1	Syvertsen, H	3	Wilckens, I	6
Nicola	1	Rudke	1	Tarr, P	1	Wild Things	5
Noli, G	7	Rudman, D - MET	5	Tatjana	1	Wilson, G	3
NRNR staff	34	Rutherford, S	2	Taylor, M	6	Wirriehausen, K	1
Okatumba Wildlife Research	14	Salvato	2	Teichard, W	2	Witbeen, M	4
Oliver & Randall	1	Sauber, E	1	Thomas, A	1	Wohlberedt, G	2
Oliver, J	3	Scheepers, L - MET	1	Thys - SRT	3	Wolfe, P	2
Omatendeka Conservancy	4	Schlechter, Mr	1	Tirronen, G	1	Woneseredt, S	1
Oosthuisen, A	22	Schnauffer, C & H	2	Tjihukununa, H	3	WWF	1
						Zamzow, E	2
						Zandberg, C	4
						Zebra Film Productions	26

BHRP - Brown Hyena Research Project; DAS - Desert Adventure Safaris; MET - Ministry of Environment and Tourism;
NRNR - Namib Rand Nature Reserve; WS - Wilderness Safaris

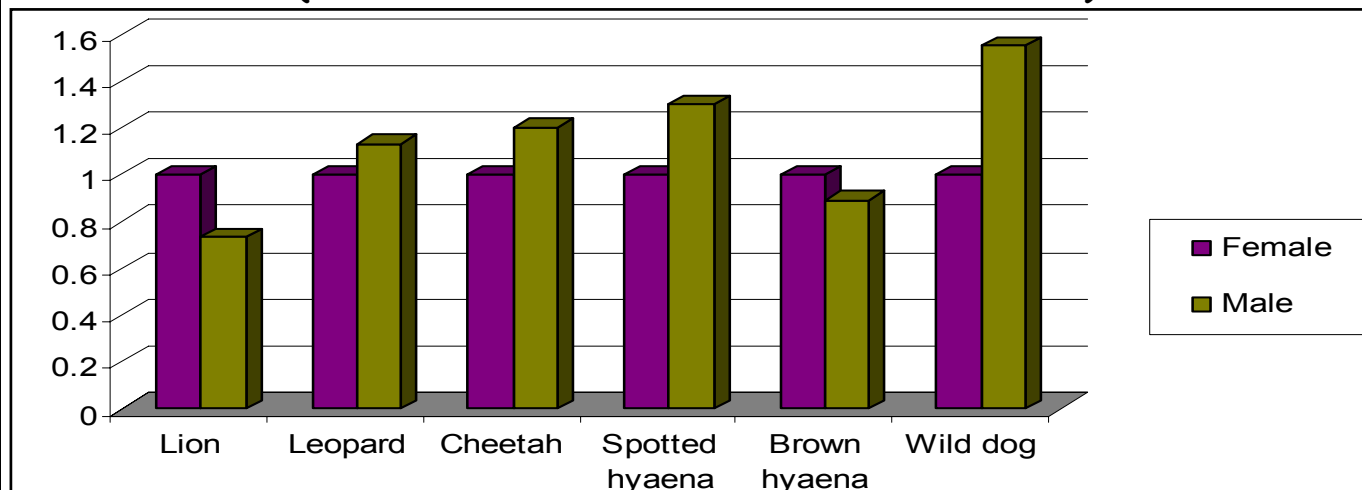
Results (1999 - 2004)

Total number of observations for each species

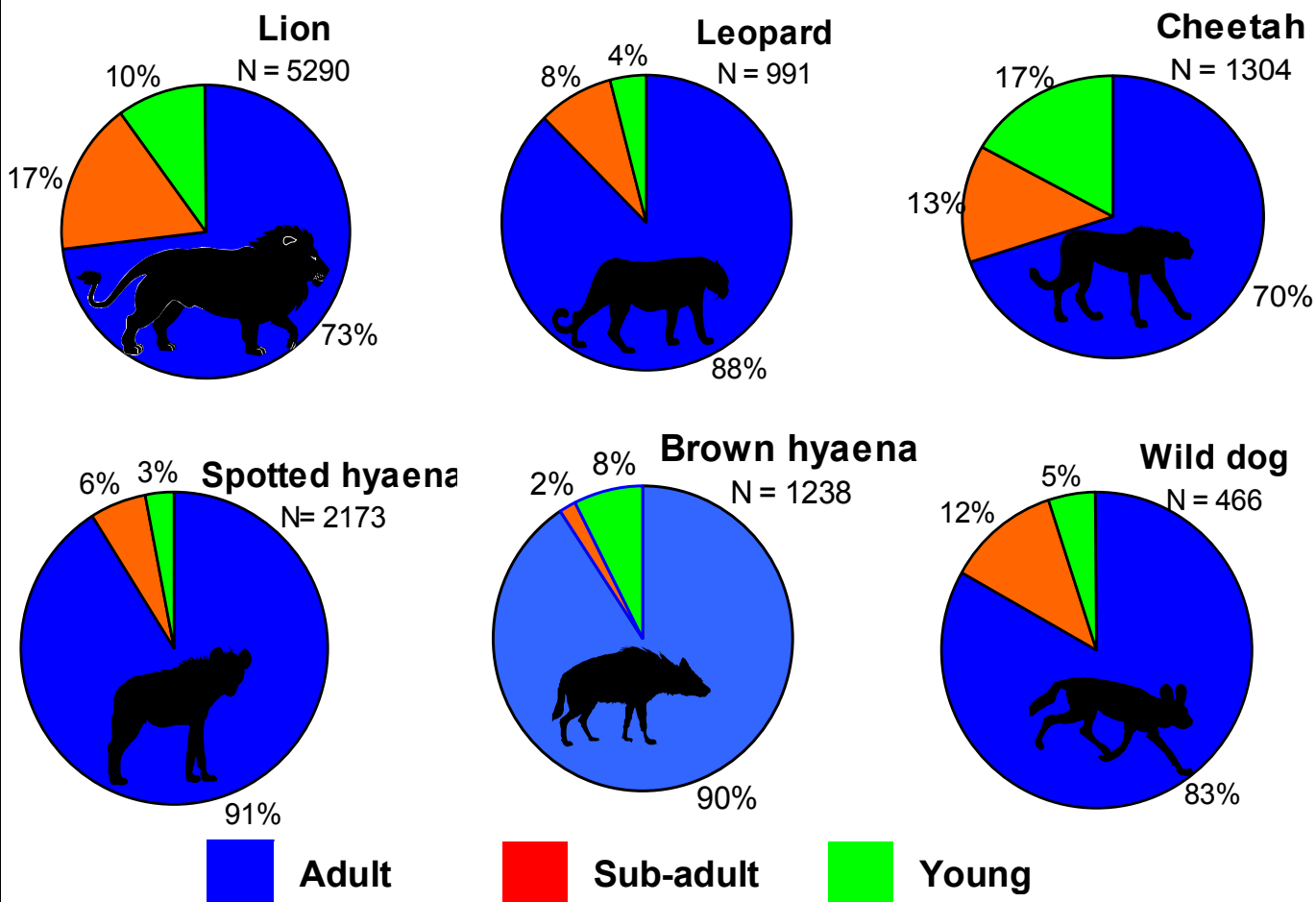
Lion	1788	Spotted hyaena	1076
Leopard	939	Brown hyaena	1007
Cheetah	701	Wild dog	91

The sex ratios of the six large carnivores

(Ratio of one female to x number of males)



The age structure of the six large carnivores



Different habitats where carnivores were observed

Habitat	Cheetah	Leopard	Lion	Spotted Hyaena	Brown Hyaena	Wild dog
Woodlands	19%	20%	23%	19%	11%	51%
Plains	43%	22%	9%	37%	2%	5%
Waterholes	4%	18%	28%	24%	4%	27%
Dry river beds	9%	9%	11%	7%	5%	2%
Mountains	6%	16%	16%	3%	4%	0%
Coastal areas	0%	0.2% *	1%	1%	66%	0%
Other habitats	19%	15%	12%	9%	8%	15%
Sample size (n)	746	927	1794	1082	1074	94

* Percentages are rounded off to whole numbers, except for leopards observed along the coast

Density and Population Estimates

Species	<i>Low density</i>				
	Area (km ²)	Animals per 100km ²		Numbers	
		Min	Max	Min	Max
Lion	127000	0.05	0.1	64	127
Leopard	417831	0.5	1	2089	4178
Cheetah	356636	0.05	0.1	178	357
Spotted Hyaena	255982	0.01	0.1	26	256
Brown Hyaena	334700	0.07	0.1	234	335
Wild Dog	117321	0.01	0.05	12	59
	<i>Medium density</i>				
	Area (km ²)	Animals per 100km ²		Numbers	
		Min	Max	Min	Max
Lion	19600	0.5	0.7	98	137
Leopard	132149	1	2.5	1321	3304
Cheetah	125058	0.7	1.5	875	1876
Spotted Hyaena	64982	0.5	1.5	325	975
Brown Hyaena	205730	0.1	0.15	206	309
Wild Dog	20602	0.5	1	103	206
	<i>High density</i>				
	Area (km ²)	Animals per 100km ²		Numbers	
		Min	Max	Min	Max
Lion	28642	1.4	2.2	401	630
Leopard	82320	2.5	3.8	2058	3128
Cheetah	104203	2	3.4	2084	3543
Spotted Hyaena	94498	5	8	4725	7560
Brown Hyaena	54370	0.15	1	82	544
Wild Dog	24046	1	1.4	240	337

Note: Population densities are based on results from ongoing research projects and published data.

National Population Estimate

Lion
562 - 894

Leopard
5469 - 10610

Cheetah
3138 - 5775

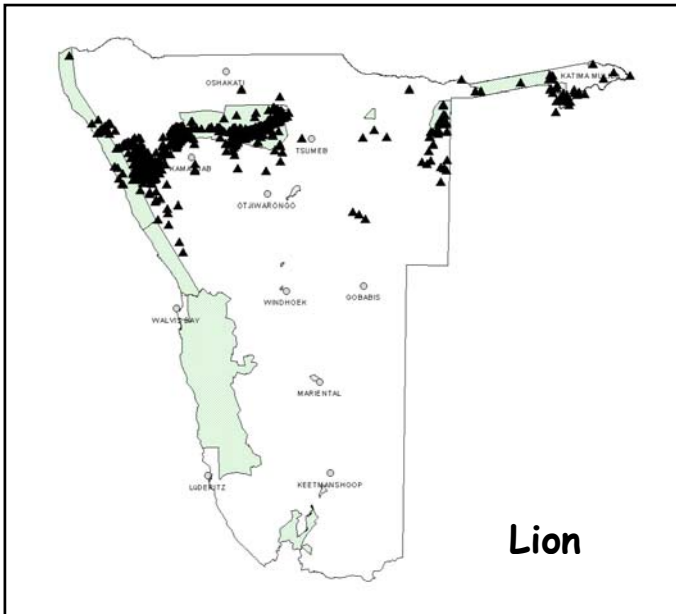
Spotted hyaena
5075 - 8791

Brown hyaena
522 - 1187

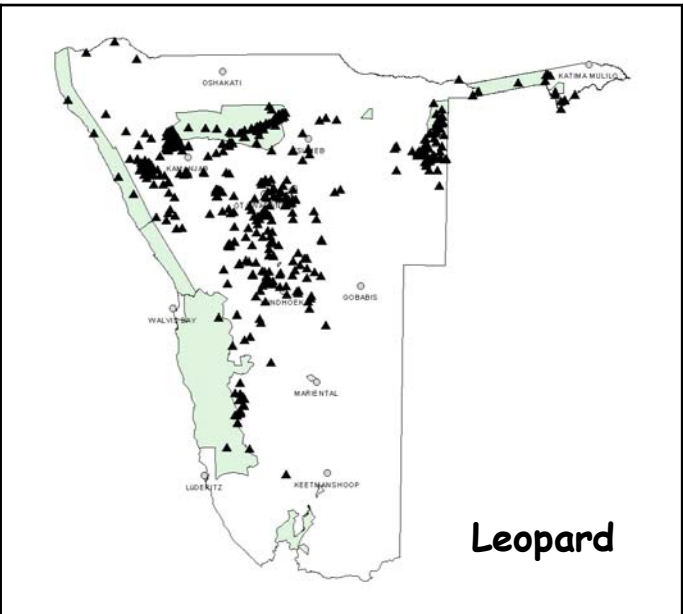
Wild dog
355 - 601

The recent data of carnivore distribution patterns are similar to those presented in the last report. As a result the population estimates and density distribution have not changed.

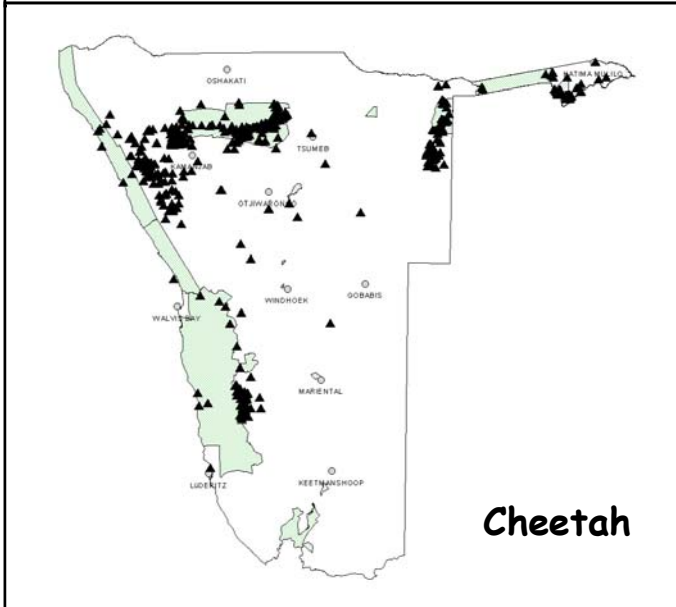
Large carnivore observations based on Atlas forms



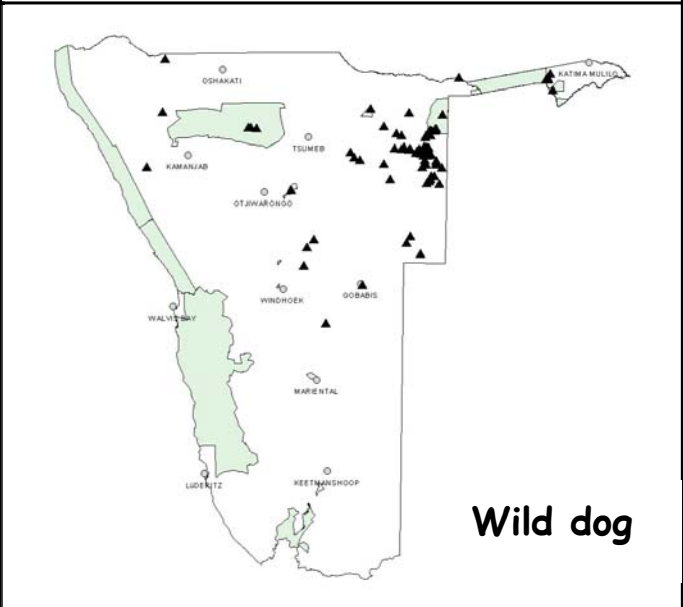
Lion



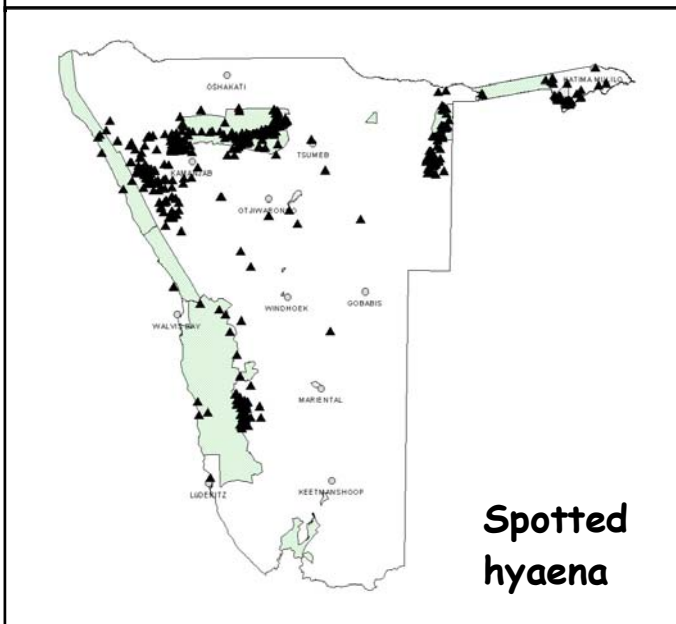
Leopard



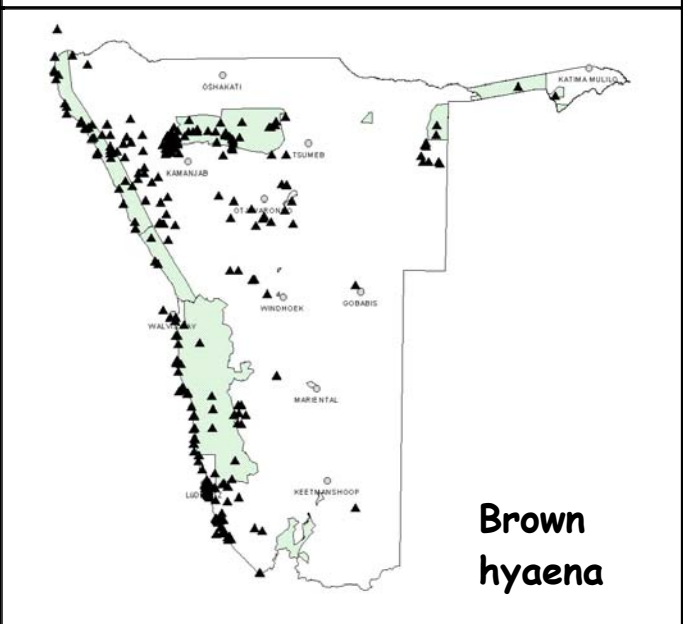
Cheetah



Wild dog

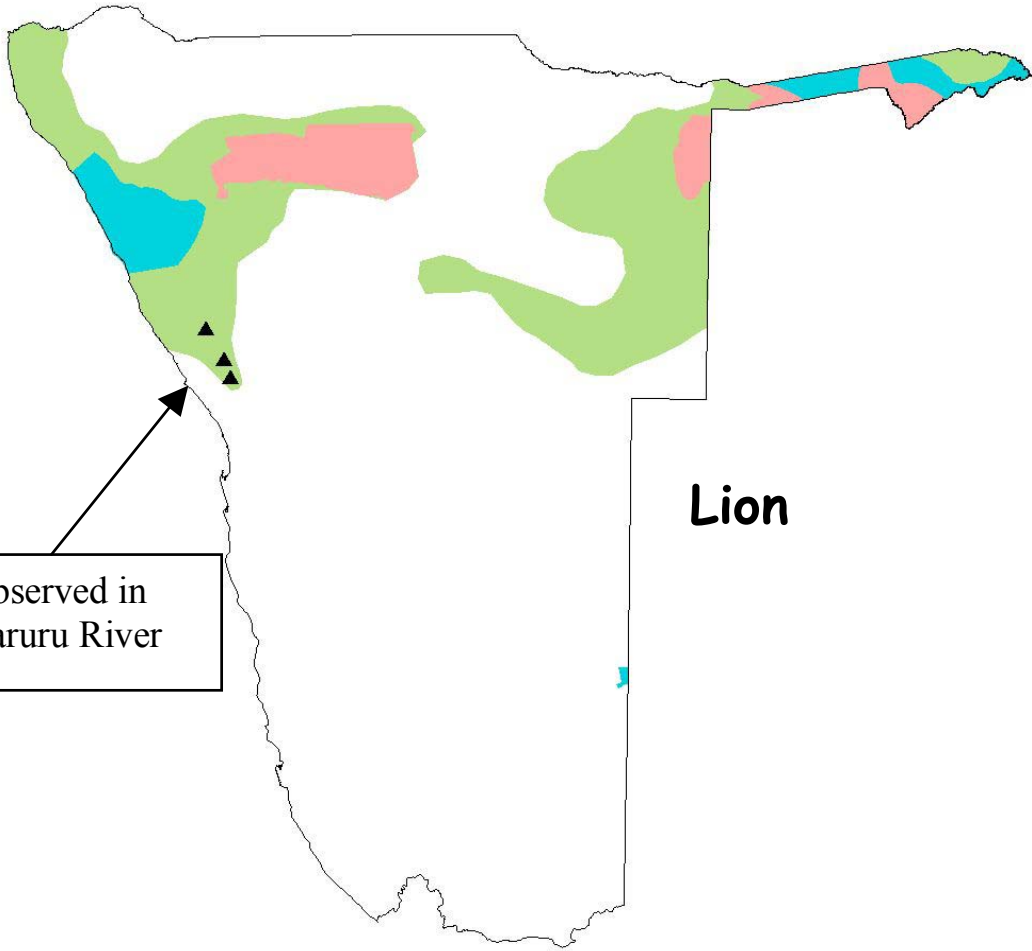


Spotted hyaena



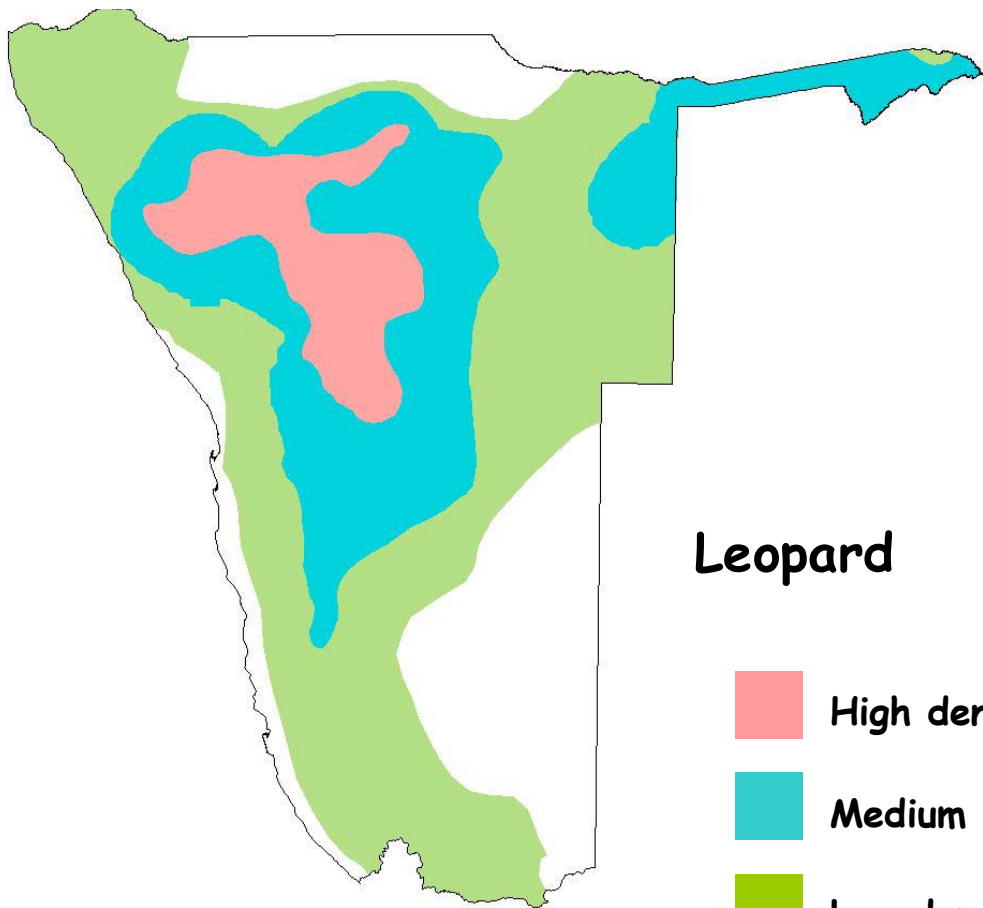
Brown hyaena

Density distribution of large carnivores



Lions observed in the Omaruru River

Lion

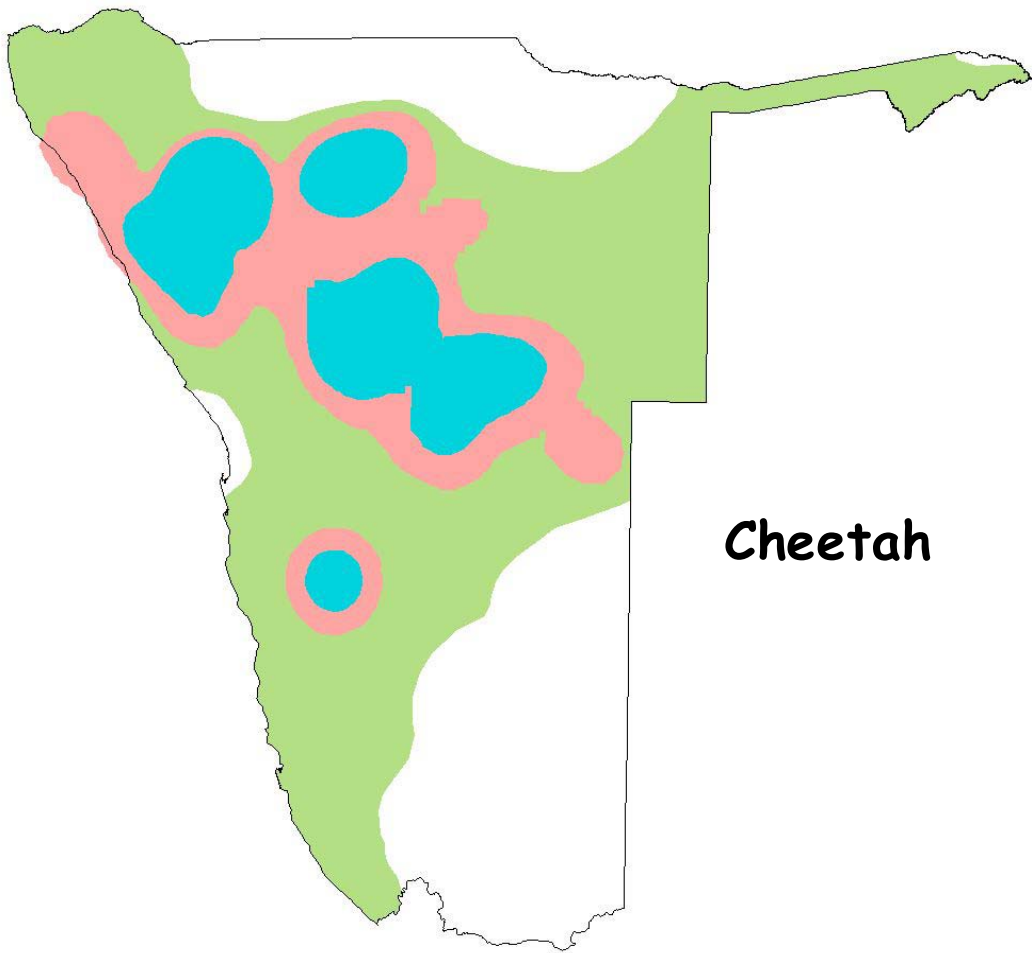


Leopard

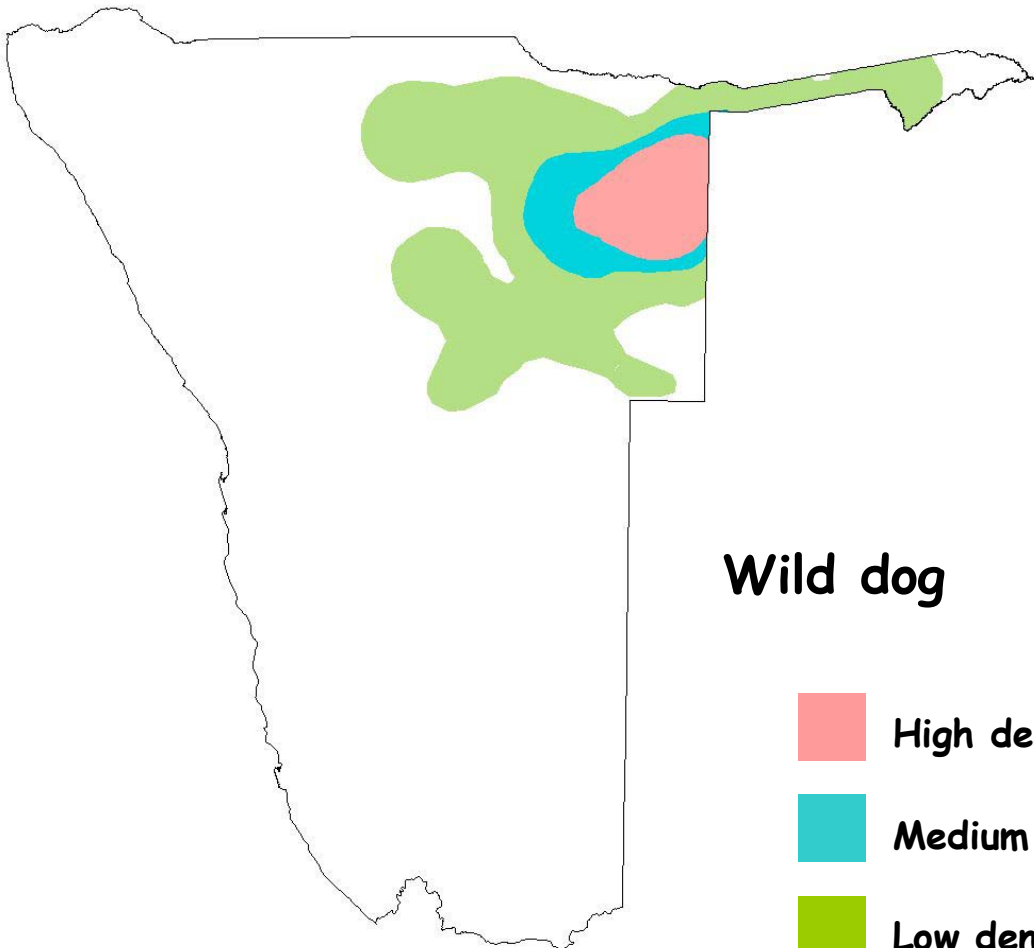
High density

Medium density

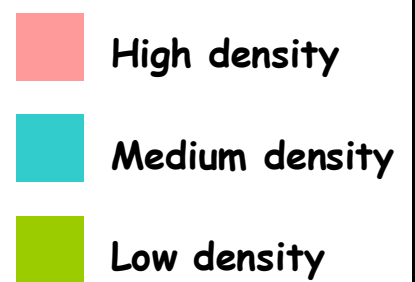
Low density

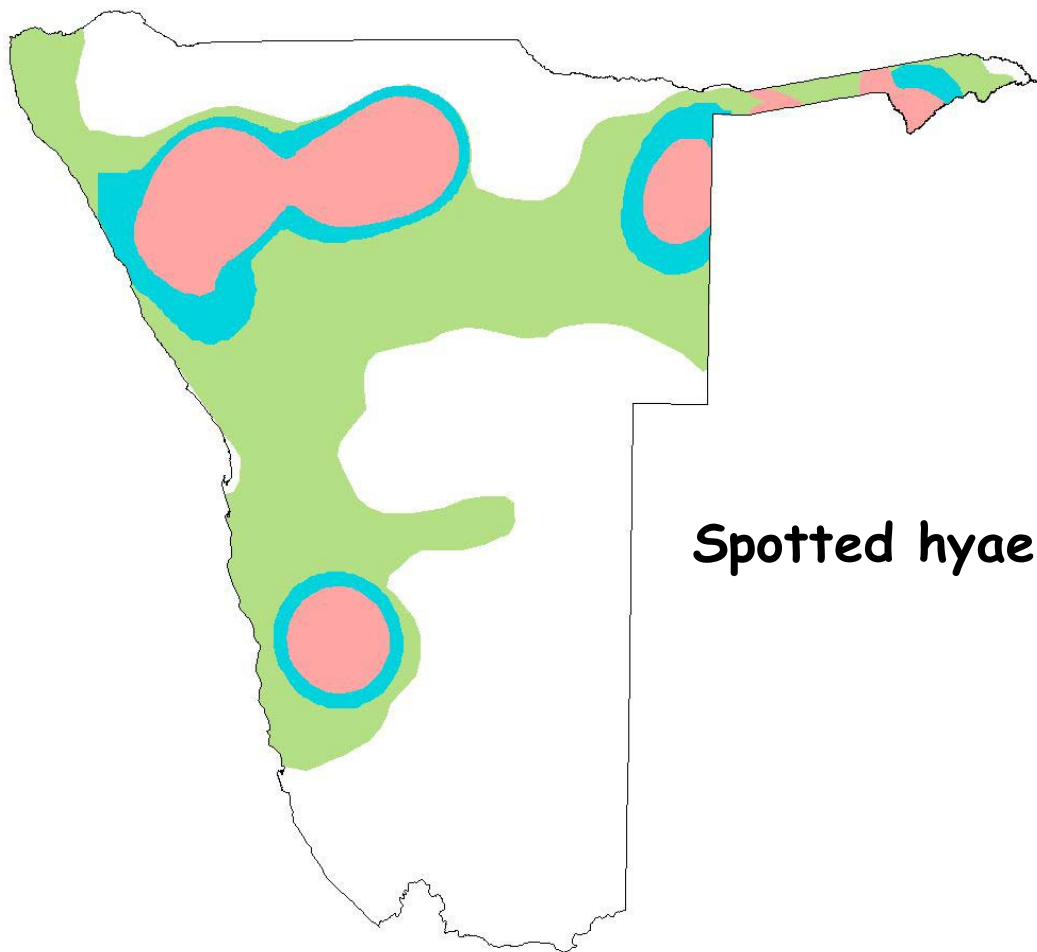


Cheetah

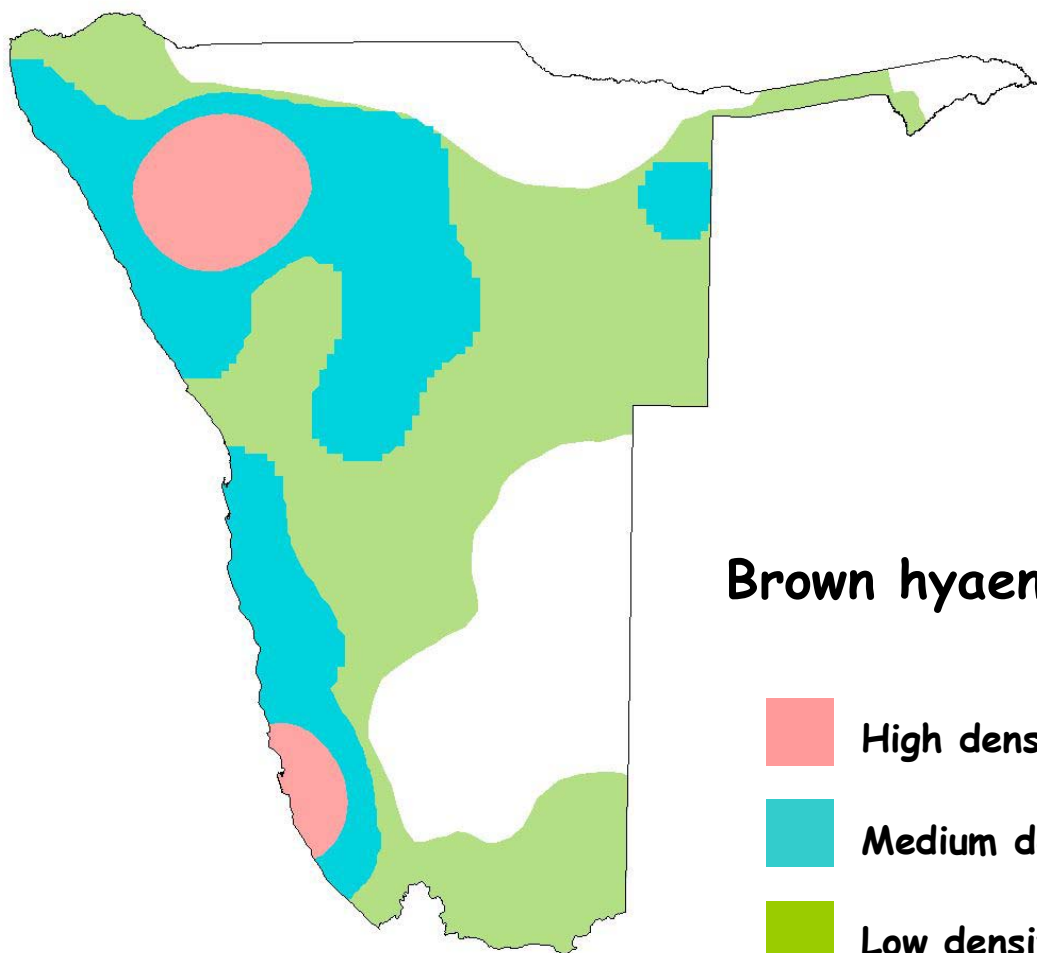


Wild dog

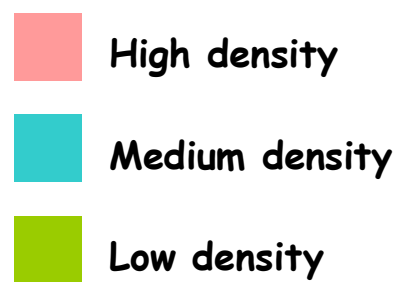




Spotted hyaena



Brown hyaena



Acknowledgements

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Namibia Nature Foundation



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Dr. Flip Stander, Ulla Von Holtz