

National Conservation Action Plan for Cheetah and African Wild Dog in Botswana

2019 to 2023





Background and Introduction

The cheetah (*Acinonyx jubatus*) and the African wild dog (*Lycaon pictus*, hereafter ‘wild dogs’) present major challenges for modern conservationists. All large carnivores need large areas to survive; but wild dogs and cheetah range more widely, transcending different land use types and hence need larger areas than almost any other terrestrial carnivore species anywhere in the world.

Both cheetah and wild dogs have experienced major contractions in their geographic range within southern Africa, with resident populations known to remain in just 22.6% (cheetah) and 17% (wild dogs) of their historical range within the region (IUCN/SSC 2015). Across the continent, the majority of these animals reside outside the protected areas: 77% of global cheetah resident range (Durant et al 2017), and 70% of wild dog resident range, falls on community and private lands, outside of formally protected areas. This is particularly true in Botswana, where (in 2018) 51.5 % of resident cheetah range and 46.3% of resident wild dog range is on non-protected land; mostly communal and commercial farmland. Including the Wildlife Management Areas as non-protected land increases these figures to 76.9% for cheetah and 76.4% for wild dog!

By number, **Botswana holds 24% of the global cheetah population (1,694 out of 7,100 individuals) and 20% of the global population of wild dogs (1,310 out of 6,600 adults and yearlings)** (IUCN/SSC 2015) and both species are widely distributed across much of the country (See Figures 2 and 3).

These populations are also connected with those in all of Botswana’s neighbouring countries. The populations of both species in Botswana are thus critical components of (and possibly a source for) the entire southern African population. It is therefore essential that Botswana continues with its excellent custodianship of these endangered and vulnerable species and that connectivity is not lost with populations in neighbouring countries.

To help guide conservation efforts for cheetah and wild dogs in Botswana, a National Conservation Action Plan was first developed in 2009. This was comprehensively revised and updated in 2018, at a participatory workshop comprising, among others, representation from the Department of Wildlife and National Parks, Botswana Wildlife Training Institute (BWTI), species experts, NGOs, farmer associations, Department of Animal Production and tourism sector. The Action Plan was guided by the Regional Conservation Strategy for the Cheetah and African Wild Dog in Southern Africa (IUCN/SSC 2015) and intends to provide a framework to alleviate the threats facing the species and ensure their long term survival in Botswana.



The National Conservation Action Plan for Cheetah & African Wild Dogs in Botswana

The regional strategic plan for the species' conservation in southern Africa recognizes the need to (i) develop capacity in all aspects of cheetah and wild dog conservation in the region; (ii) improve knowledge on the conservation of both species; (iii) ensure that information relevant to both species is disseminated to stakeholders; (iv) minimise conflict and promote coexistence between cheetah, wild dog and people; (v) minimise the adverse effects of land development and implement best land use practice for cheetah and wild dog; (vi) obtain political commitment to cheetah and wild dog conservation; (vii) review and harmonise existing legislation and policy affecting cheetah and wild dog conservation; and (viii) facilitate the development and implementation of national conservation plans for both species.

All of these themes were adopted in the Botswana national plan, but made relevant at the local scale and practical for implementation at the national level. The workshop to develop this national action plan was also able to include a greater array of local expertise, providing a wider degree of knowledge and understanding of the issues and legal framework of Botswana, something that cannot be fully addressed at the regional level of planning.

The workshop

The second national action planning workshop for Botswana was held in Maun on the 30th and 31st May 2018 (agenda available in Appendix 1). A total of 43 people attended the workshop, including 17 representatives of the Department of Wildlife and National Parks, 12 representatives of Botswana-based NGOs, 1 international NGO (RWCP), 2 Farmers Association representatives, 3 participants from Botswana research institutes (BWTI and University of Botswana), 2 representatives from the tourism sector, 4 from the Department of Animal Production, 1 Department of Veterinary representative, and 1 Community Trust representative (HABU Elephant Development Trust). A full list of participants is available in Appendix 2.



Figure 1: Participants at the May 2018 National Conservation Action Planning Workshop, Maun, Botswana

After presentations giving an update on the population, trends, occurrences and conservation issues for wild dogs and cheetah in Botswana, and an update on the occupancy modelling undertaken by the Botswana Carnivore Forum (BCF), participants were tasked with revising and updating the distribution maps for both species in Botswana. Thereafter, participants translated the vision, goal, objectives, targets and actions incorporated in the regional strategy into a National Conservation Action Plan for Botswana. The vision and goal were discussed and agreed in plenary and then four working groups were given two themes each in order to develop objectives targets and activities. In order to make sure original ideas and Botswana-specific issues were captured, each working group was given an hour to brainstorm relevant targets and activities under each theme, before being given the regional logical framework (logframe) to use as a guide.

After each working group finished their sections, everything was presented in plenary and discussed in detail, such that the final plan represents a consensus opinion of all participants. The formation of the National Conservation Action Plan is described below and the logframe of the plan included at the end of the report.

Revised range maps for cheetah and wild dog in Botswana

One of the key activities of a national planning workshop is the revision of, and addition of detail to, range maps created at the regional workshop, or a previous national workshop.

Categories of current geographic range

At the southern African regional workshop, held in Johannesburg in August 2015, the following range category definitions were agreed on. Further details on range definitions are provided in Appendix 3. At the start of the process, Botswana cheetah maps included only resident and possible range. During the revision process in 2018, all range categories except recoverable range were used for cheetah (Figure 2). For wild dogs, the 2018 maps include resident, possible, transient, unknown and extirpated range (Figure 3).

- (1) **Resident range:** land where wild cheetah or wild dogs are known to still be resident. (A **Resident fenced** category is used for areas <1,000km² which are well fenced – currently applicable only in South Africa)
- (2) **Possible resident range:** land where wild cheetah or wild dogs may still be resident, but where residency has not been confirmed in the last 10 years.
- (3) **Transient range:** habitat used intermittently by cheetah or wild dogs, but where the species are known not to be resident and which does not connect to other resident ranges.
- (4) **Connecting range:** land where cheetah or wild dogs are not thought to be resident, but which dispersing animals may use to move between occupied areas, or to recolonise extirpated range. Such connections might take the form of ‘corridors’ of continuous habitat or ‘stepping stones’ of habitat fragments.
- (5) **Recoverable range:** land where habitat and prey remain over sufficiently large areas that either natural or assisted recovery of cheetah or wild dogs might be possible within the next 10 years if reasonable conservation action were to be taken.
- (6) **Extirpated range:** land where the species has been extirpated, and where habitat is so heavily modified or fragmented as to be uninhabitable by resident cheetah for the foreseeable future.
- (7) **Unknown range:** land where the species’ status is currently unknown and cannot be inferred using knowledge of the local status of habitat and prey.

The revisions made to the maps created at the 2015 regional workshop, during the 2018 national workshop were important, and demonstrate the improved knowledge of the participants, and the new information available. Final maps are presented in Figures 2 and 3 below.

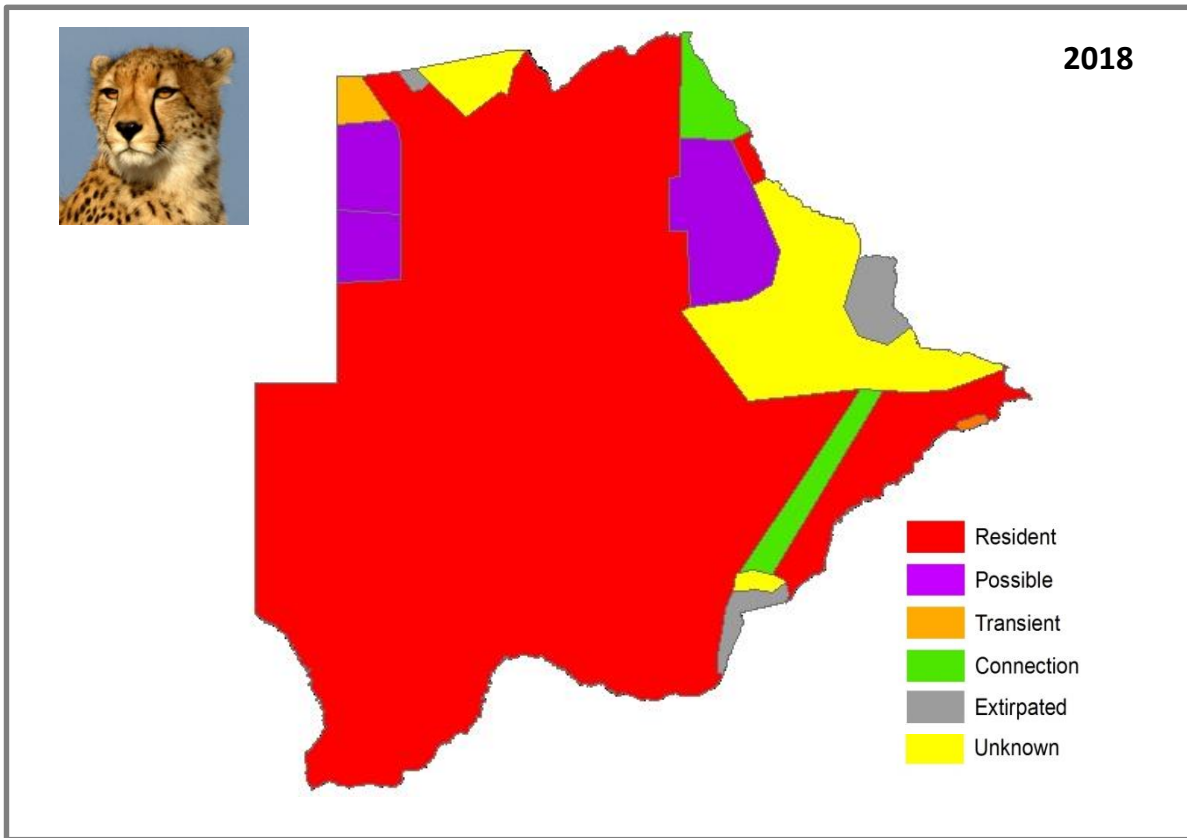


Figure 2: Cheetah Distribution in Botswana, updated at the National Action Planning Workshop, May 2018 (with thanks to Leanne van der Weyde, Cheetah Conservation Botswana).

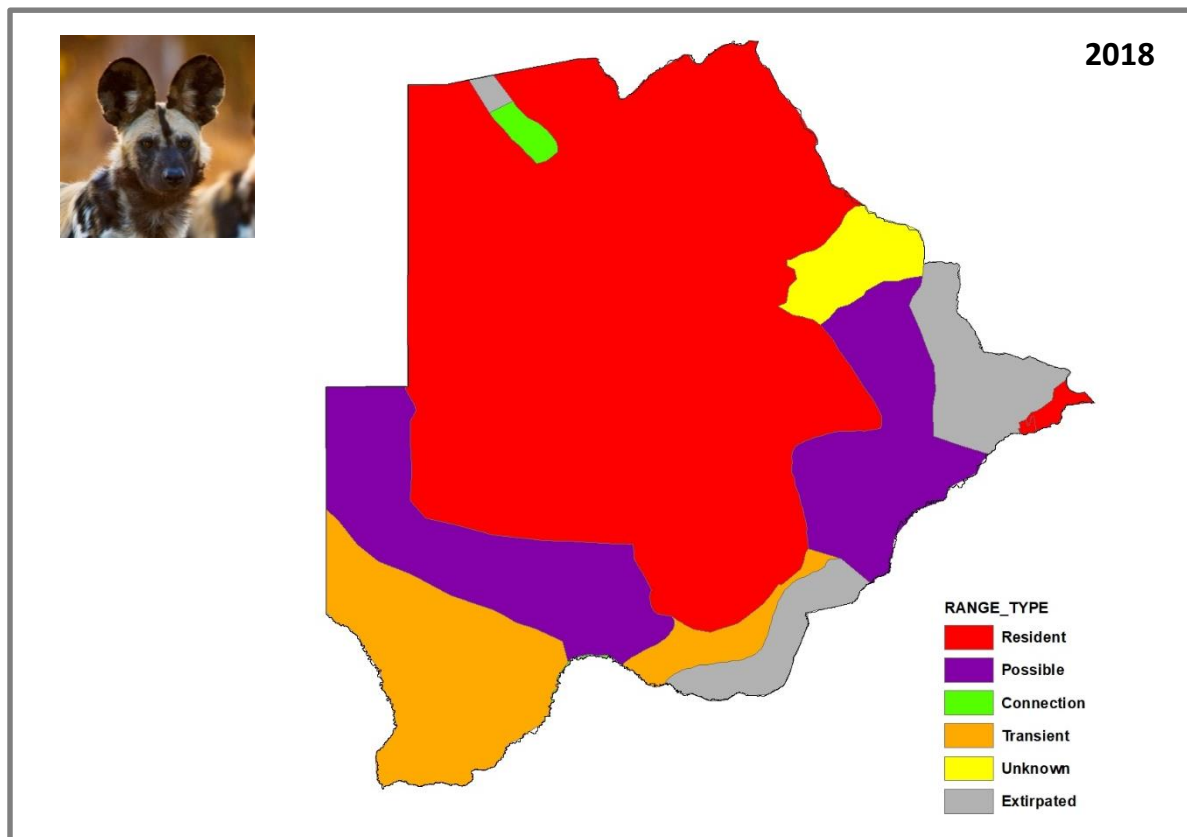


Figure 3: African Wild Dog Distribution in Botswana, updated at the National Action Planning Workshop, May 2018 (with thanks to Leanne van der Weyde, Cheetah Conservation Botswana).

These updated range maps are useful in a number of ways:

- They are the recognised basis for the IUCN red list updates for distribution and numbers of both cheetah and African wild dogs
- They provide a documented history of changes in range of the two species over time
- They can be used to prioritise different types of conservation intervention

In principle, conservation activities for these species (e.g. management interventions, surveys, monitoring) might be conducted in any of these types of geographic range. Even in unrecoverable (extirpated) range, outreach and education activities may be vital for long-term conservation efforts on neighbouring lands. However, in order to improve our understanding of both cheetah and wild dogs' distribution and abundance across the region, surveys should be prioritised in areas currently designated as unknown or possible range. Direct conservation efforts should be focussed in and around areas of resident range and areas of connecting range. The latter will most likely include community outreach and education, such that dispersing individuals are tolerated.

Changes to the Botswana range maps between 2009 and 2018

As illustrated in the series of range maps presented in Figure 4, there have been some fairly significant changes made to both cheetah and wild dog distribution maps since 2009.

Wild Dogs:

The area of resident range for wild dogs remained largely unchanged between 2009 and 2015, but was expanded slightly in the south west at the 2018 workshop, to include a larger area of the Kgalagadi district wildlife management areas (WMA's) to the west of Hukuntsi. This slightly increased the total area known to be resident range for wild dogs in Botswana. The area south and west of this has remained categorised as possible range since 2009, but the very south west corner has changed from marginal to transient, largely reflecting a change in the category name rather than the designation. Both marginal and transient reflect an area where wild dogs move into occasionally, but where they do not stay, and which does not connect to any other area of resident range.

The eastern and south eastern part of the country has, since 2009, been classified as either extirpated or connecting range. In 2015, some of the connecting range was changed to unknown, but the biggest changes were made in 2018, where problem animal control (PAC) reports enabled a large area of communal farming land in the Central district - previously designated as extirpated or connecting - to change to possible range (Figure 4). These PAC reports were over several years, and stated the presence of wild dogs in this area, with potential reports also including breeding activity. This is very positive and exciting, and survey work should be prioritised in this area to see whether in fact wild dogs are resident there. Some other connecting range was changed to transient, to reflect the fact that it doesn't really connect to any other resident populations.

The northern Tuli game reserve in the very eastern tip of the country was changed from recoverable range to resident range based on up to date knowledge of packs in the area (See Fig 4). The

permanent swamp of the Okavango remained as connecting range as wild dogs are not resident in these permanently flooded parts of the delta, but in addition the densely human populated edges of the panhandle to the north west were newly designated as extirpated.

Cheetah:

In both 2009 and 2015, the whole of Botswana was designated as either resident range or possible resident range for cheetah. Much more detail was added in 2018, particularly in the eastern part of the country, and the north west corner (Figure 4). This was based on improved knowledge and records from the relevant areas.

The main changes were to the area in the east of the country, including communal farming lands in the north of the Central district, and along the main A1 highway north of Gaborone, previously designated as possible and resident range. This was reclassified in 2018 as some resident, unknown and connecting range, as well as extirpated for areas of high human population around the major cities (Gaborone and Francistown).

Encouragingly, relatively little resident range was de-classified as such (a small area in the north of the Central district was changed from resident to unknown), despite the wealth of knowledge and expertise at the workshop.

Areas of Range Types in Botswana, 2018

The table below provides the areas of the different range types in Botswana in 2018, together with a comparison of what they were in 2009, and the difference. All figures are from the maps agreed on at the national conservation planning workshops.

Table 1. Summary of the percentage extent of each type of range for wild dogs and cheetah within Botswana in 2009 and 2018, with the change between the years indicated.

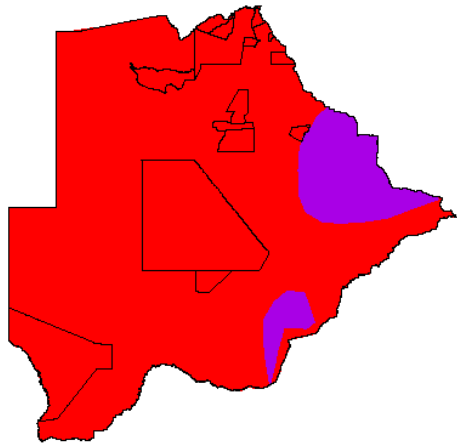
Range Type	CHEETAH			AFRICAN WILD DOGS		
	2009	2018	% change	2009	2018	% change
Resident	90.4	79.0	-11.4	53.2	59.6	+6.4
Possible resident	9.6	6.7	-2.9	15.2	18.7	+3.5
Connecting	-	2.7	+2.7	10.9	0.6	-10.3
Transient (Marginal)	-	0.5	+0.5	8.3	11.5	+3.2
Recoverable	-	-	-	0.4	0.0	-0.4
Extirpated	-	1.8	+1.8	12.0	6.8	-5.2
Unknown	-	9.3	+9.3	-	2.8	+2.8
Total	100%	100%		100%	100%	

For cheetah, the % of Botswana classified as resident range decreased by just over 11% between 2009 and 2018. Most of this loss was in the north west and eastern parts of the country, but encouragingly, despite good knowledge, only 1.8% of the country has been designated as extirpated for cheetah. Instead there have been small increases in various other range categories, including connecting, transient and unknown. It is likely that this decrease in resident range represents better knowledge and a more cautious approach, rather than a real loss of 11.4% of previously genuine cheetah range. For example, the new designation of 9.3% of land area as unknown, demonstrates the greater caution (also see Weise et al 2017).

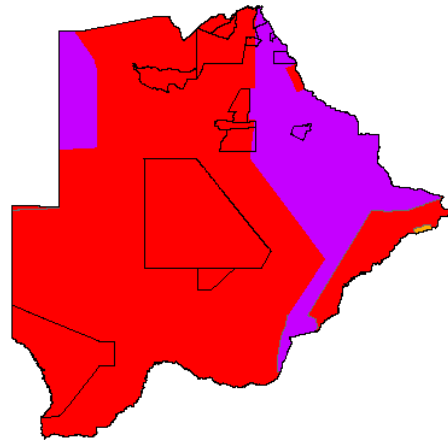
For wild dogs, the overall % of resident range has increased by 6.4% since 2009. Connecting range has declined by almost 5% (changed mainly to unknown or possible range) and encouragingly there has been a 5.2% reduction in the land area previously classified (perhaps mistakenly) as extirpated.

CHEETAH

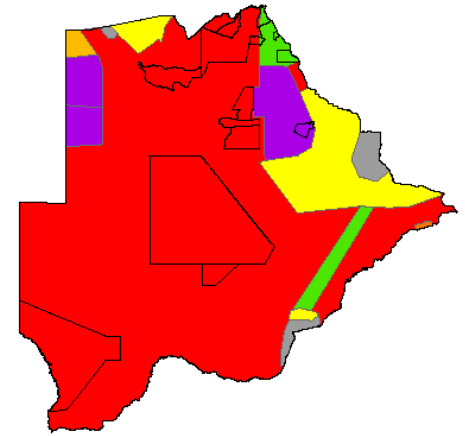
2009



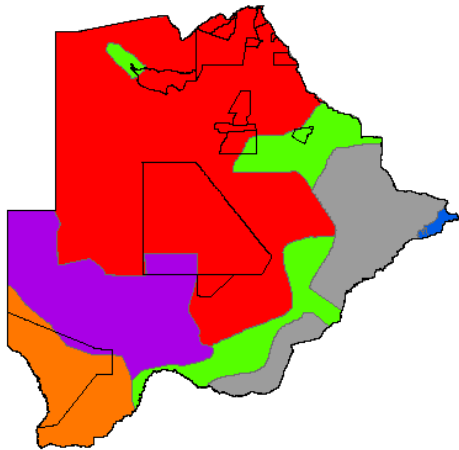
2015



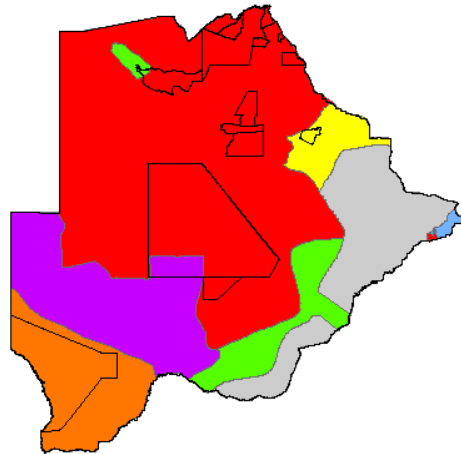
2018



2009



2015



2018

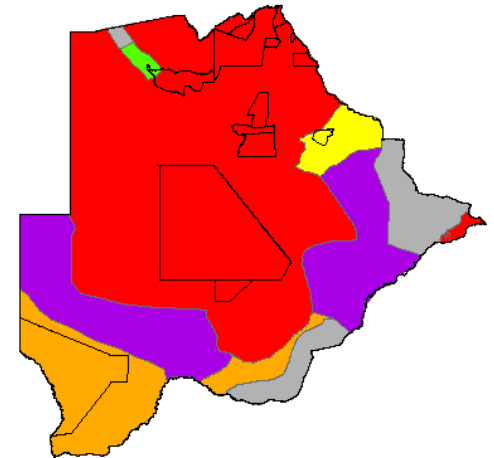
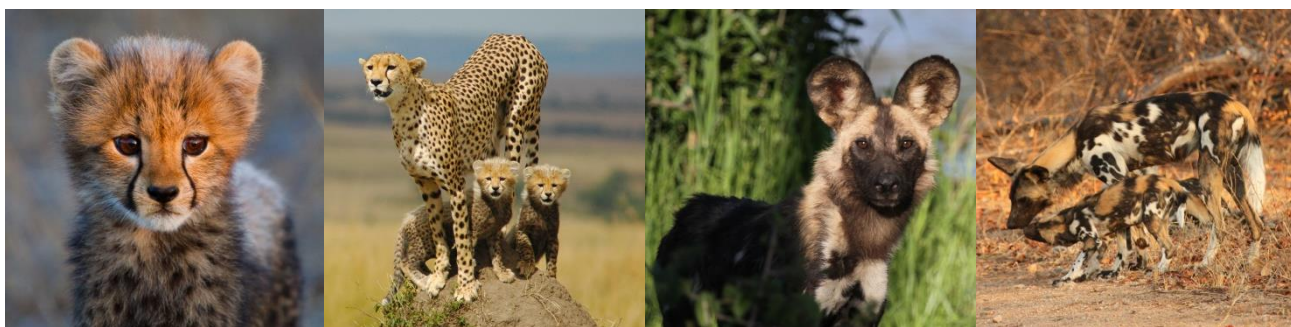


Figure 4: The range distribution maps for wild dogs and cheetah in Botswana from 2009, 2015 and 2018, showing changes between the years (with thanks to Leanne van der Weyde, CCB)



The 2018 National Conservation Action Plan for Cheetah and Wild Dogs in Botswana

Vision and Goal

Both the vision and goal from the 2009 national action plan were slightly re-worded. For the vision, the wording ‘across a range of ecosystems’ was changed to ‘across a range of different land uses’ to reflect the importance of ensuring the species is valued in all the various land use types across the country (e.g. commercial and communal farmlands as well as wildlife management areas, reserves and national parks). It was also re-emphasized that ‘value’ referred to intrinsic, economic, cultural and political values.

For the goal, the wording was changed from ‘secure additional viable populations’ to ‘maintain viable populations’ in order to reflect that Botswana already has strong and widespread populations of both species, and it was considered more of a priority goal to conserve what is already present than to try and secure additional populations. Viable is taken to mean a combination of viable numbers as well as connectivity within the system allowing for populations to disperse and interact, with the system ultimately being a naturally functioning metapopulation.

The final vision and goal statements for Botswana from 2018 were agreed as follows:

Vision

Secure, viable cheetah and wild dog populations across different land uses that successfully coexist with, and are valued by¹, the people of Botswana.

¹ – ‘Value’ assumed to include intrinsic, economic, cultural and political values

Goal

Improve the status² of cheetahs and wild dogs, and maintain viable populations across their range in Botswana

² – Participants wanted to retain the multiple meanings of ‘status’ (e.g. political status, as well as population status)

Objectives

The objectives of the 2015 revised regional strategy were used to guide the development of the objectives (as well as targets and activities) of this 2018 National Conservation Action Plan. Objectives were discussed in four working groups and then presented in plenary for final approval by all participants. The final objectives agreed on are as follows:

Objectives

1. To **develop capacity** in all aspects of cheetah and wild dog conservation in Botswana (*Capacity Development*)
2. To **improve knowledge and generate information** for the conservation of cheetah and wild dogs across Botswana (*Knowledge and information*)
3. To increase active commitment of stakeholders and awareness of the wider public by **transferring information** relevant to cheetah and wild dog conservation (*Information transfer*)
4. To minimise conflict and **promote coexistence** of cheetah and wild dogs with people across Botswana in an ecologically, economically and socially acceptable manner (*Coexistence*)
5. To **promote best land use practice** for cheetah and wild dog conservation and minimise adverse effects of land development (*Land use*)
6. To advocate for **increased political commitment** to the conservation of cheetah and wild dogs in Botswana (*Political commitment*)
7. To review and where necessary **revise and strengthen national, international, and local legislation, policies and protocols** to support cheetah and wild dog conservation and lobby for compliance to existing legislation (*Policy and legislation*)
8. To maintain and efficiently **implement an up-to-date National Conservation Action Plan** for Cheetah and Wild dogs in Botswana (*National Planning*)

Targets and Activities

As with the objectives, the revised regional strategy was used to guide the development of the targets and activities of this 2018 National Conservation Action Plan. These were also discussed initially in four working groups, after which they were presented and agreed on in plenary. The updated targets and activities for Botswana are presented, with objectives, in the logframe below.

The Strategic Logframe of the Revised and Updated National Conservation Action Plan for the Cheetah and African Wild Dog in Botswana (2018)

Vision: Secure, viable cheetah and wild dog populations across different land uses that successfully coexist with, and are valued by, the people of Botswana.

Goal: Improve the status of cheetahs and wild dogs, and maintain viable populations across their range in Botswana

Theme	Objective	Results	Activities	Actors	Timeframe		
Capacity Development	1. To develop capacity in all aspects of cheetah and wild dog conservation in Botswana.	1.1 National gaps in capacity in all areas of cheetah and wild dog conservation in Botswana are identified and documented.	1.1.1 Secure funds & conduct workshops to identify specific local capacity needs involving relevant stakeholders (one workshop for conservation & agriculture practitioners (relevant government institutions (e.g. DWNP, DVS, DAP), NGOs, researchers), and one workshop for community members (people that coexist with cheetahs and wild dogs) in each major range area of wild dog and cheetah (Ghanzi (W), Kang (S), Maun (N), Serowe (E))	DWNP, KRC, CCB, BPCT, research groups	Year 1 & 2		
			1.1.2 Collate report that lists & prioritizes the training needs & stakeholder groups for research & monitoring, community engagement, human-wildlife conflict management, law enforcement, education & awareness-raising and livelihood development programs	BPCT (lead), CCB & DWNP	Year 2		
			1.1.3 Identify appropriate training courses & individual practitioners with the relevant skills (research & monitoring, community engagement, human-wildlife conflict management, law enforcement, education & awareness-raising, livelihood development programs) at Botswana academic institutions (BUAN, BWTI, ORI, UB, guiding schools) as well as NGO's, researchers and other relevant groups with potential training or skill sharing opportunities.	DWNP (lead), NGOs, research groups	Year 1		
		1.2 Resources mobilized and training plans implemented to address gaps identified in 1.1	1.2.1 Identify funding sources (e.g. NEF, Tlhokomela Trust) & secure funds to address the priority training needs identified in 1.1.1 and 1.1.2	DWNP (lead) & NGOs	Year 1 & 2		
			1.2.2 Conduct capacity development training courses and workshops as per identified needs. Utilize available facilities and courses where available and design and hold other training courses to fill gaps.	Training institutions, with NGOs (facilitate/assist)	Year 2 & 3		
			1.2.3 Develop and implement feasible alternative capacity building initiatives, e.g. mentorship, internships, teacher training, exchange visits, etc.	DWNP (lead), NGOs, research groups	Year 2-5		
		1.3 The extent to which the trainings have achieved the goal of meeting capacity gaps (comparing baseline to final assessment) is evaluated.	1.3.1 Engage BWTI (or other) student(s) to conduct a project that evaluates the effectiveness of the capacity development approach defined in 1.1 and carried out in 1.2.	BWTI (lead) with BPCT, CCB, KRC mentorship	Year 4 & 5		
			1.3.2 Adapt or expand the capacity building approach according to the results of the evaluation, through a meeting of relevant stakeholders listed in this section of the logframe	Training institutions, with NGOs (facilitate/assist), BPCT, CCB, DWNP, KRC	Year 4 & 5		
			2. To improve knowledge and	2.1 A better understanding of	2.1.1 Ground-truth and improve current distribution maps for cheetah and wild dog based on new knowledge and occupancy modelling.	BCF	Year 1

Knowledge and Information	generate information for the conservation of cheetah and wild dogs across Botswana.	dispersal, habitat use, and connectivity for cheetah and wild dogs in Botswana is acquired	2.1.2 Determine presence/absence, produce density estimates for the possible and unknown ranges of cheetah and wild dogs	BCF (lead), DWNP (facilitate), Independent researchers	Year 1-3
			2.1.3 Improve understanding of dispersal behaviour for cheetah and wild dogs using satellite data and modelling (source-sink dynamics nationally, transboundary movements).	BPCT, CCB	Year 1-5
			2.1.4 Prioritise studies on cheetah (particularly) and wild dogs in communal farming areas, beyond PAs (including on WMAs).	DWNP (lead), BCF, CCB, new researchers	Year 1-5
			2.1.5 Conduct studies for wild dogs on communal farmland: factors influencing sub-populations (e.g. persecution, conflict, reproductive success).	BPCT (lead), BCF, DWNP	Year 1-5
			2.1.6 Conduct a study to investigate the viability of the wild dog population in Botswana if they were to be removed from commercial farmlands, where they are already heavily targeted and persecuted.	BPCT, NGOs, DWNP	Years 3-5
	2.2 Best practice guidelines for comparable ecological research and monitoring methods for cheetah and wild dogs in Botswana are provided	2.2.1 Create a Botswana-specific handbook of ecological research methods for carnivores (including cheetah and wild dog).	BCF (lead), BPCT, CCB, DWNP, KRC, SAREP, WildCRU	Year 1-2	
		2.2.2 Disseminate handbook hardcopies via DWNP offices, make handbook available on online platforms, and to selected tour operators (those with ecological research/management teams).	BCF (lead), DWNP, NGOs	Year 2-3	
		2.2.3 Hold at least one pilot training course for ecological research methods aimed at wildlife management students, DWNP field officers, and interested parties.	CCB (first course), BCF, (with students from, BIUST, BUAN, BWTI, LEC, ORI)	Year 1	
		2.2.4 Raise funds for and create a standardised central database for DWNP PAC data.	NGOs, DWNP	Year 1-2	
		2.2.5 Explore options to improve location data for PAC records and MOMS – GPS units, software available (e.g. Cybertracker, SMART), compile report for DWNP.	Limpopo Limpadi, Okavango Wilderness Safaris for DWNP	Year 1	
		2.2.6 Support DWNP research officers, especially with statistical analysis and GIS training – e.g. through the annual WildCRU Panther Course	NGOs, ORI, WildCRU course	Ongoing	
		2.2.7 Create a standardised minimum list of questions to be asked in all new questionnaires developed to ask communities/farmers about carnivores (including cheetah and wild dog), to minimise overlap between studies and allow for comparisons (e.g. as already exists for lions).	BCF (lead), NGOs, independent researchers	Year 2	

			2.2.8 Support implementation of the DWNP monitoring system in tourism areas; monitoring includes all cheetah and wild dog sightings.	OLMP	Ongoing
		2.3 Information regarding threats and their mitigation are generated and disseminated across Botswana, prioritising retaliatory /preventative killing and illegal trade.	2.3.1 Work with and build capacity of relevant authorities to increase the priority of cheetah (particularly) and wild dogs in illegal trade forums (currently focussed mainly on rhino horn and ivory)	DWNP, NGOs, IWT organisations, TRAFFIC	Ongoing
			2.3.2 Maintain good databases on retaliatory killing of cheetah and wild dog, and disseminate information to broader stakeholder group. Repetition of Coexistence section?	DWNP, BCF	Ongoing
		2.4 Information on tools and techniques to mitigate conflict with cheetah and wild dogs in Botswana is collated, generated and disseminated within two years.	2.4.1 Prioritise studies to determine effectiveness of conflict mitigation methods for wild dogs (particularly) and cheetah.	BCF (lead), new researchers, BPCT, CCB DWNP (facilitate)	Ongoing
			2.4.2 Discuss conflict mitigation methods with other countries, researchers and governments and tap into RWCP Coexistence working group for conflict mitigation ideas and toolkits.	DWNP, NGOs, RWCP, Independent researchers	Ongoing
			2.4.3 Conduct research into new and novel mitigation measures and produce a comprehensive review document	DWNP, NGOs, RWCP, Independent researchers	Ongoing
Information transfer	3. To increase active commitment of stakeholders and awareness of the wider public by transferring information relevant to cheetah and wild dog conservation	3.1 Multimedia projects continue to be developed in Botswana, building on the best existing material.	3.1.1 Increase use of TV, radio (aim for monthly broadcast), and newspapers to raise community awareness. Create a list of people who are willing to be interviewed on specific topics.	BCF (lead), CCB, DWNP	Year 1
		3.2 Information pertaining to suitability of translocations of cheetah and wild dog shared	3.2.1 Hold a workshop for practitioners on best practices for responding to problem carnivore incidents, including animal welfare, successes and failures.	DWNP, Vets, NGOs	Year 1-2
			3.2.2 Adopt and use the decision-making tree from the Translocation Guidelines document for responding to incidents where carnivores are captured.	DWNP (lead), Vets, NGOs	Year 1-2
			3.2.3 Advocate for the endorsement of these Translocation Guidelines.	NGOs, ORI, WildCRU course, DWNP	Year 1-2
	3.3 Increased national awareness of local threats to cheetah and wild dogs.	3.3.1 Develop standardised curricula regarding cheetah and wild dogs and integrate with activities of youth conservation clubs.	CCB (lead), other NGOs working in environmental education, DEA / MOE, NEEC, Wilderness Safaris	Year 2-3	

			3.3.2 Continue to hold workshops among farmers (including women) to raise awareness about cheetah and wild dogs, and conflict mitigation methods	All NGOs (lead), DWNP	Ongoing
			3.3.3 Explore the use of different online platforms (social media) and hardcopy media (newspapers, magazines) to disseminate information about cheetahs and wild dog.	BCF (lead) Conserve Botswana, Communication for Conservation	Ongoing
			3.3.4 Raise awareness about cheetah and wild dogs among potential funders using multimedia platforms and face-to-face meetings (including working with lodges and tourism industry).	NGOs, Wilderness Safaris	Ongoing
			3.3.5 Encourage and where possible ensure (through research permit requirements) that research projects working with communities report their results back to the relevant communities in an appropriate way (e.g. verbally), beyond their usual reports to DWNP.	DWNP (Facilitate), NGOs, CBOs	Year 1?
		3.4 National research symposiums, meetings and workshops promoted in Botswana	3.4.1 Promote workshops on cheetah and wild dogs at national scientific symposiums, e.g. Biodiversity Symposium and BCF meetings, and try to make these an annual event	CCB, DWNP, BPCT, BCF	Ongoing
			3.4.2 Continue to participate in National research and conservation symposiums and meetings = e.g. Maun Research Talks and Communication for Conservation Meetups	NGOs, Independent Researchers, DWNP	Ongoing
			3.4.3 Continue to participate in a wider range of meetings and stakeholder interest groups (i.e. those not directly concerned with conservation) to disseminate information about cheetah and wild dog conservation	DWNP, NGOs, researchers	Ongoing
Coexistence	4. To minimise conflict and promote coexistence of cheetah and wild dogs with people across Botswana in an ecologically, economically and socially acceptable manner.	4.1 Deliberate killings of cheetah and wild dogs are minimised, to ensure sustainable populations	4.1.1 Improve, standardise and make more transparent the monitoring of the causes and extent of intentional killing and conflict (e.g. accurate GPS coordinates for conflict incidences; PAC and MOMS, collaborate with researchers), and analyse and use data productively, including to guide future conflict mitigation efforts	DWNP, NGOs	Ongoing
			4.1.2 Clarify and advocate for enforcement of laws pertinent to killing of cheetah and wild dogs in Botswana, on an ongoing basis.	MENT, DWNP, NGOs	Ongoing
			4.1.3 Identify conflict areas and clarify extent of actual versus perceived losses caused by cheetah and wild dogs, particularly in the context of expanding human footprint on the landscape (e.g. agricultural expansion).	DWNP, NGOS, academic institutions	Ongoing
			4.1.4 Engage relevant stakeholders and support them to implement livestock husbandry and conflict mitigation practices proven to reduce	CBOs, FAs, NGOs, DAP, RWCP, DWNP	Ongoing

			depredation (e.g. including through workshops, meetings, demonstrations of techniques etc.).		
			4.1.5 Continue and improve human-wildlife conflict rapid response teams to react quickly and effectively to conflict situations. Consider a decentralisation of responsibility to local level, e.g. use of special scouts, via NGOs, CBOs etc., who would follow a decision making tree	DWNP, NGOs, FAs, CBOs	Ongoing
			4.1.6 Support the recovery of cheetah and wild dog prey species to help minimise conflict and persecution (e.g. by curbing bushmeat poaching)	DWNP, NGOs, research institutions, independent researchers, CBNRMs, CBOs, Anti-Poaching units, tourism operators	Ongoing
		4.2 The intrinsic and economic value of cheetah and wild dogs to all stakeholders are measurably increased	4.2.1 Promote wildlife based economic activities that promote coexistence with cheetah and wild dog and directly benefit communities and other stakeholders across all land uses, e.g. community crafts, community campsites curio shops, community tourism ventures and sustainable utilisation of wildlife.	BTO, MENT/DWNP, CCB, NGOs, Land Board, CBNRMs, CBOs, tourism operators	Ongoing
			4.2.2 Promote the implementation of livestock production systems that benefit people and cheetah and wild dogs; and ensure the benefits of the schemes are closely linked to wildlife and particularly carnivores e.g. CBT, predator-friendly beef.	BPCT, CI, AHEAD, CCB, WildCRU, DWNP, Landboard, DVS, DAP, CBOs, UB, independent researchers, farmer associations	Ongoing
			4.2.3 Investigate the viability of game farms as buffer zones to reduce the levels of human-wildlife conflict on farms that lie in close proximity to wildlife areas	DWNP, NGO/Researchers, Farmers Associations, Dept. Animal Production, DVS, CBOs/CBNRMs	Year 2 and ongoing
			4.2.4 Investigate the potential for allowing controlled subsistence hunting on communal livestock farms and/or wildlife management areas for increasing wild prey populations for cheetah and wild dogs	DWNP, NGO/Researchers, Farmers Associations, Dept. Animal Production, DVS, CBOs/CBNRMs	Year 2 and ongoing
			4.2.5 Encourage and help capacitate the promotion of CBNRMs, where appropriate, to increase local ownership and diversify economies.	CBOs and CBNRMs, NGOS, DWNP	Ongoing

		4.3 Initiatives that support farmers are encouraged and promoted	4.3.1. Promote proactive (as well as reactive) approaches to conflict via demonstrations of herding and kraaling benefits and revive owner responsibility for livestock safety.	DVS, CBNRMs, NGOs (BPCT, CLAWS, WildCRU, CCB, (AHEAD & Conservation South Africa))	Ongoing
			4.4.2. Raise awareness of policy and responsibilities (e.g. legal rules) regarding livestock husbandry with local community via workshops, infographics and social media	DWNP, NGOs, MENT, DVS, independent researchers	Ongoing
			4.4.3. Support the regulated and limited lethal control of true (persistent and verified) problem animals on farmlands (after careful evaluation of each case).	DWNP	Ongoing
Land Use	5. To promote best land use practice for cheetah and wild dog conservation and minimise adverse effects of land development	5.1 The effects of current land use on wild dog and cheetah are identified	5.1.1. Overlay land use and range maps to identify relationships between land use distribution of cheetah and wild dog	CCB, BCPT, BCF	Within 1 year
			5.1.2 Produce a report and draft guidelines related to cheetah and wild dog distribution and how land use relates to successful cheetah and wild dog conservation. Disseminate report/guidelines to Land Boards in relevant areas.	CCB, BCPT, KRC	
		5.2 Minimise negative effects of future infrastructural development and land use changes on cheetah and wild dog conservation, e.g. through EIAs	5.2.1 Identify and recommend, or promote existing guidelines that relate to social and environmental responsibility aligned with cheetah and wild dog conservation, e.g. Conservation of African wild dog across the KAZA TFCA landscapes	DWNP, DEA, DVS, NGO, RWCP and Researchers	Within 1 year
			5.2.2 Improve participation by cheetah and wild dog groups in the EIA processes where relevant	DWNP, DEA	Ongoing
			5.2.3 Encourage and coordinate inclusive cross sectoral participation of stakeholders in relevant meetings relating to land use and infrastructure where cheetah and wild dogs may be impacted e.g. Land boards and farmers associations	Coordinator, DEA, DWNP and other stakeholders	Ongoing
		5.3 Wildlife based land uses and community participation in natural resource management are promoted in areas with priority for cheetah and wild dog conservation.	5.3.1 Promote use of areas identified in 5.1.2 as important cheetah and wild dog habitats/corridors, and identify areas with potential for natural resource based land uses conducive to cheetah and wild dog conservation e.g. new CBNRM areas	DWNP, CCB, LB, BPCT, KRC. BTO	Within 1 year and ongoing
			5.3.2 Link local capacity, resources, services and expertise to maximise partnership opportunities to encourage CBNRMs in priority areas for cheetah and wild dogs.	DWNP, CCB, LB, BPCT, KRC, S&CD, KCS	Ongoing
			5.3.3 Evaluate the effectiveness of wildlife based land uses and their outcomes for cheetah and wild dog conservation to enable adaptive management.	DWNP, CCB, LB, BPCT, KRC, S&CD, BTO	Within 2 years and ongoing

		5.4 Effective and appropriate livestock husbandry, sustainable range management and commercially viable agriculture that support cheetah and wild dog conservation are promoted.	5.4.1 Promote livestock guarding dogs, herding and effective kraals to reduce conflict with cheetah and wild dog.	DWNP, CCB, LB, BPCT, KRC, S&CD, CLAWS	Ongoing
			5.4.2 Coordinate with training institute and organisations to increase the capacity of farmers to practice sustainable range management.	DWNP, BUAN, LEC, BWTI, CCB, BPCT, KRC, UB	Ongoing
			5.4.3 Develop a Wildlife Friendly Beef brand production to enable subsidized marketing of locally grown meat connected to compliance with conservation agreements consistent with Cheetah and wild dog conservation, including through Commodity Based Trade and 'Herding for Health' Programs	BPCT, Habu, CLAWS, AHEAD, CI, PPF,	Ongoing
Political Commitment	6. To advocate for increased political commitment to the conservation of cheetah and wild dogs	6.1 The National Action Plan is endorsed by government and implemented	6.1.1 As per section 8, finalise and lobby for Ministerial endorsement of the updated National Conservation Action Plan for Cheetah and African Wild Dogs in Botswana, 2018	RWCP Southern Africa Coordinator, DWNP	Within 1 year
			6.1.2 Hold workshops with government authorities, as well as with other local and national actors, to inform them of the action plan and motivate for support in achieving results.	DWNP, NGOs, CBOs, Carnivore Coordinator	Within 6 months of endorsement
		6.2 Relevant transboundary agreements that will benefit the conservation of cheetah and wild dogs are promoted.	6.2.1 Maintain and improve current transboundary collaborative efforts (e.g. KAZA, KTP and GMTFCA).	KAZA, KTP, GMTFCA, NGOs, independent researchers, MENT	Ongoing
			6.2.2 Investigate and promote potential new transboundary partnerships (particularly with single countries that border Botswana to complement the multi-country transboundary efforts like KAZA).	MENT, Governments of other nations, NGOs, CBOs	Year 5
		6.3 The harmonisation of national policy and key legislation across all ministries for the management of wildlife (MENT, MOE, MOA, Ministry of Land Management, Water and Sanitation) is promoted	6.3.1 Organise, fund and facilitate trans-ministerial workshops to discuss and update progress being made in relation to the National Conservation Action Plan for Cheetah and Wild Dogs in Botswana	RWCP, DWNP's NCC, MENT/DWNP	Year 2
			6.3.2 Promote and support attendance of various government officials and stakeholders at relevant wildlife meetings to discuss issues relevant to cheetah and wild dog conservation.	Department and Ministerial level, Regional government coordinators, District Councils, CBOs, NGOs, farmers associations, Dikgosi	Ongoing and ad hoc
6.3.3 Collectively push for the endorsement of other policies or strategies that promote cheetah and wild dog conservation (e.g. National Predator Strategy / Human Wildlife Coexistence Strategy)	DWNP, RWCP, BCF, established NGOs,		Year 1 and ongoing		

			6.3.4. Ensure the conservation needs of cheetah and wild dogs are included in the next revision of the National Biodiversity Strategy and Action Plan (NBSAP) for Botswana	DWNP	At next NBSAP revision
Policy and Legislation	7. To review and where necessary revise and strengthen national, international, and local legislation, policies and protocols to support cheetah and wild dog conservation and lobby for compliance to existing legislation	7.1 The relevance and efficacy of current national, regional and international policies, protocols and legislation pertaining to the conservation of cheetah and wild dogs is revised & strengthened	7.1.1 Collate & list existing national & regional legislative frameworks that could help promote the conservation of cheetah and wild dog.	DWNP, Environmental lawyer	Year 1
			7.1.2 Assess policy conflicts & gaps in existing legislative framework, as well as their efficacy and ability to contribute to the short and long term conservation of cheetah and wild dogs.	Environmental lawyer, DWNP & CCB to assist	Year 1
			7.1.3 Advocate for identified revisions to be made to existing policies for wild dogs and cheetah		Year 3 & 4
			7.1.4 Review, revise and promote the endorsement and adoption of the existing Botswana Predator Management Strategy, including to advocate for species-specific updates to the Strategy, with particular relevance to cheetah and wild dog needs	Environmental lawyer, DWNP & CCB to assist	Year 1 & 2
			7.1.5 Continue to advocate for the adoption and implementation of the recently updated Human Wildlife Coexistence Strategy	DWNP	Year 1 & 2
			7.1.7 Test and review a scheme of 100% compensation for cheetah & wild dog induced livestock losses, on the condition that incidents are confirmed in a timely manner (e.g. within 2 days of the event) and livestock owners implemented appropriate livestock management practices (as stipulated in the 2013 government gazette)	DWNP, MENT	Year 2 to 3
National Planning	8. To maintain and efficiently implement an up-to-date National Conservation Action Plan for Cheetah and Wild dogs in Botswana	8.1 This National Conservation Action Plan for Cheetah and Wild Dogs in Botswana endorsed by Director of DWNP	8.1.1 Submit the draft National Conservation Action Plan to Director of DWNP, within 3 months of the workshop	DWNP's NCC	Within 3 months
			8.1.2 Support the Director to have the plan approved, including, if necessary, making changes requested by the Department	DWNP, RWCP, NGOs	Within 6 months
		8.2 The National Action Plan is endorsed by Ministry of Environment Natural Resources Conservation and Tourism	8.2.1 The DWNP-approved draft of the National Action Plan is presented to the Ministry of Environment Natural Resources Conservation and Tourism, within 1 month of the DWNP Director's written approval	DWNP, supported by RWCP	Within 7 months
			8.2.2 The National Action Plan is endorsed at Ministry level	MENT	Within 1 year
		8.3 The National Conservation Action Plan is implemented and	8.3.1 Engage the DWNP's Research and Development Coordinator to work with the National Carnivore Coordinator to drive the implementation process within 3 months of the approval of the plan by the Director of the DWNP	DWNP's NCC and R&D Coordinator	Within 9 months

	progress reviewed after 2.5 years	8.3.2 Identify constraints and where possible provide the means to ensure implementation of the endorsed national plan	DWNP, NGOs, RWCP	Within 1 year and ongoing
		8.3.3 Hold a national stakeholders workshop (including all organisations, departments and individuals listed as actors in this plan) to raise awareness of the plan and identify mechanisms for driving the implementation process, within 6 months of NAP approval by the DWNP Director	DWNP, RWCP, NGOs, private sector, Land owners , Ministries etc.	Within 1 year
		8.3.4 Encourage and support all stakeholders to use the revised national action plan to guide their conservation actions at all times, including through planned workshops as well as at all relevant meetings throughout the 5 years of the plan, and through provision of funding or in-kind or technical support where necessary and possible	DWNP, DWNP's NCC, MENT, RWCP, NGOs	Ongoing
		8.3.5 Annual updates on progress towards implementation of the plan compiled and disseminated by the DWNP NCC	DWNP's NCC	After 1 year and annually
		8.3.6 Arrange a workshop for stakeholders to evaluate progress on the implementation of the national action plan after 2.5 years	DWNP, RWCP, NGOs etc.	2.5 years
		8.4 The National Conservation Action Plan for Cheetah and Wild Dogs in Botswana is formally revised and updated after 5 years	8.4.1 Hold a multi-stakeholder workshop to revise and update the National Conservation Action Plan after 5 years	DWNP, RWCP, NGOs, relevant authorities
	8.4.2 Write up the new, revised National Conservation Action Plan and submit to Ministry for endorsement	DWNP, RWCP	After 5 years	
	8.4.3 Disseminate the new and endorsed National Conservation Action Plan widely and support its implementation	DWNP, RWCP	After 5 years	

List of acronyms used in log frame:

AHEAD	Animal and Human Health for the Environment and Development
BCF	Botswana Carnivore Forum
BPCT	Botswana Predator Conservation Trust
BIUST	Botswana International University of Science and Technology
BTO	Botswana Tourism Organisation
BUAN	Botswana University of Agriculture and Natural Resources
BWTI	Botswana Wildlife Training Institute
CBO	Community Based Organisation
CCB	Cheetah Conservation Botswana
CI	Conservation International
CLAWS	Communities Living Among Wildlife Sustainably
CBNRM	Community Based Natural Resource Management
DAP	Department of Animal Production
DEA	Department of Environmental Affairs
DVS	Department of Veterinary Services
DWNP	Department of Wildlife and National Parks
FAs	Farmer's Associations
GMTFCA	Greater Mapungubwe Transfrontier Conservation Area
IWT	Illegal Wildlife Trade
KAZA	Kavango Zambezi Transfrontier Conservation Area
KCS	Kalahari Conservation Society
KRC	Kalahari Research and Conservation
KTP	Kalagadi Transfrontier Park
LB	Land Board
LEC	Leopard Ecology and Conservation
MENT	Ministry of Environment, Natural Resources Conservation and Tourism
MOE	Ministry of Education and Skills Development
NBSAP	National Biodiversity Strategy and Action Plan
NCC	National Carnivore Coordinator
NEEC	National Environmental Education Committee
NEF	National Environment Fund
NGO	Non-Governmental Organisation
OLMP	Okavango Lion Monitoring Project
ORI	Okavango Research Institute
PA	Protected Area
R&D	Research and Development
RWCP	Range Wide Conservation Program (for Cheetah and African Wild Dogs)
SAREP	Sustainable Agriculture Research and Education Program
S&CD	Department of Social and Community Development
UB	University of Botswana
WildCRU	Wildlife Conservation and Research Unit
WMA	Wildlife Management Area

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Appendix 1: Workshop Agenda

Wednesday 30th May 2018

- 8:00 – 8:30** Arrival and registration of participants
- 8:30 – 8:45** Participant introductions
- 8:45 – 9:00** Welcome and Opening remarks (and opening prayer): ***BWTI Principal***
- 9:00 – 9:30** Background to Conservation of Cheetah and African Wild Dogs in Botswana, and overview of National Action Plan implementation to date – ***DWNP***
- 9:30 – 10:15** Presentations:
9:30 – 9:45 Population, trends, occurrences and conservation issues for Cheetah in Botswana - ***CCB***
9:45 – 10:00 Population, trends, occurrences and conservation issues for Wild Dogs in Botswana - ***BPCT***
10:00 – 10:15 Botswana-wide occupancy modelling of Cheetah and Wild Dogs - ***CCB***
- 10:15 – 10:45** **TEA BREAK**
- 10:45 – 11:00** Summary of presentations, progress, gaps and challenges for Cheetah and Wild Dog Conservation in Botswana ***RWCP Southern African Coordinator***
- 11:00 – 11:15** Introduction to mapping session, and revision of range category definitions ***RWCP Southern African Coordinator***
- 11:15 – 12:30** Revision of the Cheetah Distribution Map for Botswana ***Facilitated by CCB and RWCP Southern African Coordinator***
- 12:30 – 13:30** **LUNCH BREAK (and group photo)**
- 13:30 – 14:30** Revision of the Wild Dog Distribution Map for Botswana ***Facilitated by RWCP Southern African Coordinator and CCB***
- 14:30 – 15:00** Revision of Vision and Goal for Botswana NAP ***Facilitated by RWCP Project Leader***
- 15:00 – 15:30** **Split into 4 Working Groups** and allocate two objectives to each group: Working Groups to start with brainstorming the key points for each objective
- 15:30 – 16:00** **TEA BREAK**
- 16:00 – 17:00** Working Groups continue to work on revising and updating Objectives, Targets and Activities, now with the help of the Regional Strategy template
- 17:00** **END OF DAY 1**
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Thursday 31st May 2018

8:00 – 8:30 Presentation of final updated maps for agreement in plenary

8:30 – 10:30 Return to Working Groups and FINALISE Objectives, Targets and Activities

10:30 – 11:00 TEA BREAK

11:00 – 13:00 Working Groups 1 and 2 report back on Objectives Targets and Activities for plenary discussion and consensus

13:00 – 14:00 LUNCH BREAK

14:00 - 16:00 Working Groups 3 and 4 report back on Objectives, Targets and Activities for plenary discussion and consensus

16:00 – 16:30 Summary and Conclusions ***RWCP Southern African Coordinator***

16:30 – 16:45 Way forward ***DWNP***

16:45 – 17:00 Closing remarks and closing prayer ***DWNP***

17:00 **END OF MEETING**

Appendix 2: List of participants

<u>Name</u>	<u>Position</u>	<u>Organisation **</u>	<u>Email</u>
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** For acronyms please see table of acronyms above

Appendix 3: Full definition of range categories

Below is the full definition of the range categories as agreed at the Southern African regional workshop in 2015.

(1) **Resident range:**

Land where the species was known to still be resident. This recognised the knowledge that both cheetah and wild dogs have excellent dispersal abilities, meaning that not every point location indicates the presence of a resident population; some may indicate transient dispersing animals. Resident range was defined as areas where (i) the species has been regularly detected over a period of several years; (ii) there was evidence of breeding (e.g. young cheetah cubs sighted, or wild dog pups or dens recorded); and (iii) for wild dogs, there were sightings of complete packs (groups containing members of both sexes, usually >3 animals) rather than small groups (≤ 3 animals), or single-sex groups, which are likely to be dispersal groups.

(2) **Possible Resident Range*:**

Land where the species may still be resident, but where residency had not been confirmed in the last 10 years. Usually these would be areas which contain suitable habitat and prey, but which have had little or no ground-based surveying in recent years (aerial surveys are unlikely to detect either species). Some areas were considered to constitute possible range because only unconfirmed reports (e.g. reports from inexperienced observers), or only sparse, irregular sightings were available or there were only reports of transient individuals or groups. This also includes once off surveys that have detected presence but not breeding behaviour.

** In the attribute table, it is made clear whether the range is possible resident with presence recorded (i.e. from a once off survey or sporadic sightings, excluding pups or cubs) or where presence has not been recorded, but expert opinion is of the consensus there would be wild dogs or cheetah resident there (due to suitable habitat and prey availability)*

(3) **Transient Range*:**

Habitat used intermittently by wild dogs or cheetah, but known not to be used regularly, providing no connection to areas of resident, possible or unknown range, and unlikely to be made suitable for use by resident wild dog or cheetah populations through any reasonable form of management. Such areas are likely to be natural habitats that are only marginally suitable for cheetah or wild dogs (e.g. desert), or heavily modified / human impacted areas. Transient range also includes areas which have been used sporadically by dispersing animals (e.g. from collar data).

** The transient range category was newly defined in the 2015 workshop, but is a variation on the 'marginal' range category described for wild dogs only in 2007.*

(4) **Connecting range:**

Land where the species is known not to be resident, but which dispersing animals may use to either move between occupied areas, or to recolonise extirpated range. Such connections might take the form of 'corridors' of continuous habitat or 'stepping stones' of habitat fragments.

(5) **Recoverable range***:

Land where cheetah and wild dogs are currently known to be extirpated, but where habitat and prey remain over sufficiently large areas that either natural or assisted recovery of the species might be possible within the next 10 years if reasonable conservation action were to be taken.

** In designating areas of recoverable range, participants were asked to bear in mind that both species live at low densities and travel very widely, so they would rarely be recoverable in small areas (<3,000km²) unless very intensive management (e.g. predator-proof fencing and active population management) could be implemented.*

(6) **Extirpated range**:

Land where the species is currently extinct, and where habitat has been so heavily modified or fragmented (e.g. by cultivation or urbanisation) as to be uninhabitable by resident animals for the foreseeable future.

(7) **Unknown range**: land where the species' status is currently unknown and cannot be inferred using knowledge of the local status of habitat and prey.