

STAKEHOLDER REVIEW
CHAPTER 6: Past and current management of predation on livestock

Stakeholder Name	Page/s	Line/s	Table/Figure	Stakeholder Comment	Author Response
John Power	2	42		Convention on Biodiversity (CBD) etc, rather than that chapter?	Not changed: Chapter 5 gives detail on the various conventions/agreements that applies. It is not necessary to mention specifics here.
John Power	2	48		Also nationally used stuff	Inserted: In this chapter, we assess the various predation management methods used in South Africa and internationally and consider their application in the South African context.
John Power	4	81		lacking rather than poor?	Not changed: "poor" is more appropriate in this context.
John Power	4	98		either to/ or for mitigating	Changed as requested
John Power	4	106		spelling - fluoroacetate?	Changed as requested
John Power	4	107		4600 km	Changed as requested
John Power	4	112		Can remove rabbits I guess, feral dogs rather than wild dogs (sensu <i>Lycaon pictus</i>)?	Not changed as suggested: Rabbits are also controlled by poison. Our understanding is that wild dogs and feral dogs are technically two different things in Australia. Wild dogs refer to dingoes x feral dogs. Also, we refer to <i>Lycaon pictus</i> as African Wild Dogs throughout the chapter. We did change the previous sentence: Control techniques for damage causing animals include extensive state-managed poison baiting (using 1080 or sodium fluoroacetate) programmes and the 4600 km Dingo Barrier Fence (DBF), that aims to exclude dingoes or wild dogs <i>Canis familiaris</i> from the entire south-eastern section of the continent (Yelland 2001).
John Power	5	133-136		Reference needed - guess a Kenyan situational one	References added: Mburu, J. (2007). Emergence, adoption, and implementation of collaborative wildlife management or wildlife partnerships in Kenya: a look at conditions for success. <i>Society and Natural Resources</i> , 20: 379-395.; Kellert, S.R., Mehta, J.N., Ebbin, S.A. & Lichtenfeld, L.L. (2000). Community natural resource management: promise, rhetoric, and reality. <i>Society and Natural Resources</i> , 13: 705-715.
John Power	5	138		Can just one of these Ripple references be used = brevity & less references?	Not changed: The one study refer to the status of large carnivores and the other to the status of herbivores. Both are included since we refer to the "decline of mammal populations" in the sentence
John Power	6	178		can delete... and advances .. ?	Not deleted: "and advances" should also be included
John Power	7	210		Mcmanus reference - not more relevant in next statement, ie. line 213?	Reference added to next sentence, but also retained in the current sentence since McManus <i>et al.</i> 2015 make various references to farmers that only use lethal methods
John Power	8	225-226		Point 4 may also need at least a reference a with other points..	Reference added: Steyaert, S.M.J.G., Kindberg, J., Jerina, K., Krofel, M., Stergar, M., Swenson, J.E. & Zedrosser, A. 2014. Behavioral correlates of supplementary feeding of wildlife: can general conclusions be drawn? <i>Basic Appl. Ecol.</i> 15: 669-676
John Power	9		1	Good info in Table ! Maybe to make simpler - less by 1-2 columns, and each page being of same generic thing?	Formatting fixed but not split or reduced: by taking out or merge columns some valuable information could get lost
John Power	16	25-27		Crop raiding by primates can be left out - think rather focus on predators only.. (Human herders section etc) - guess not serious.	Not deleted: The implication here is that human herders also likely to be successful in stopping predation by primates on livestock.
John Power	17	52		Human herders etc - may be good as far as job creation, and 'Working4Herders' whatever are ideas that can be mooted, when it comes to national level schemes of job creation - Mindful that gov would rather fiscus go to a person than a fence or bullets etc. :)	Already alluded to in the Table; Inserted: Added advantages is that herders may be in a good position to make field observations on the condition of fences, presence of predators and the condition of the veld which can be of value for any adaptive management used by the farmer (Palmer <i>et al.</i> 2010; Hawkins 2012) and employing herders may provide a good opportunity for job creation through new or existing government supported initiatives (e.g. Jobsfund; Extended Public Works Program).
John Power	17	65		the much celebrated Anatolian dogs.. As eg.	Not included: Various breeds are used and there are many personal likes and dislikes with every breed, hence we prefer to discuss LGD's in general rather than to highlight specific breeds
John Power	18	92		Hansen and Bakken (1999) - not sure conventions?	Not changed: We used the correct convention, but this should be sorted out by the "Assessment editors"
John Power	19	122		US	Changed as requested
John Power	20	156		At least two South African NGO's assist farmers in the placement of LDGs.	Not included: not relevant to the discussion in question
John Power	20	168		FYI - the reverse of this - predators having the collars, and their presence is conveyed to landowners. This is done in North West by the conservation unit, where livestock can be moved in response to presence of a collared leopard, and leopards in no-go areas are also physically chased away by using sound (ie. vehicle hooting, firearm shots), and this is when approaching midday rest spots/ kill sites in no-go zones. Experimentation with car-tracking technology is on the go too (cheaper than satellite tech.), and geo-fence creation is possible so as to be alerted as to exits of "preferred" ranges of subjects. Optional info FYI.	Inserted: Cellular technology can be incorporated into an animal collar which sends a cellular signal to the farmer when abnormal behaviour (e.g. running) is detected within a livestock herd (Lotter 2006; Viljoen 2015; PMF 2016) or when a collared predator cross a predetermined boundary (also see Box 2).
John Power	21	200		Box 2 - nice information, but boxes should not be overly complicated, and think it can be shortened a great deal, and made relevant to predators in some way, say remove the Figure, and make more summarised, it basically does work, just shortened id say.	Not changed as suggested: the box was included as specific case study/example and it is important to include the details; added a sentence in the last paragraph under "Destructive stimuli " However, an emerging concept which integrate a combination of disruptive stimuli to form a virtual fence against predators could proof more effective in the long term (see Box 2). "
John Power	25	235		Octagonal or Hexagonal Jackal-proof fence mesh - a picture of one these fence meshes might work ?	Picture added as an example
John Power	25	244		think - and Perkins (xxxx) not &	Changed as requested
John Power	26	261		DBF	Changed as requested
John Power	27	309-312		Reference	Reference added: GORDON, I. 2017. Reproductive technologies in farm animals. CABI, Boston, US
John Power	28	329		Flerding ? Wtf?	Not changed: Haha - the term is used in the scientific literature
John Power	General			Blaum, N., Tietjen, B. and Rossmannith, E. 2009. Impact of Livestock Husbandry on Small- and Medium-Sized Carnivores in Kalahari Savannah Rangelands. <i>The Journal of Wildlife Management</i> , 73: 60-67. doi: 10.2193/2008-034. This reference might be useful somewhere - links to lethal control of jackals mesopredators, and maybe rangeland management ?	Reference included under "Grazing and natural prey management". It has also been suggested that through proper grazing management, by reducing herd sizes and preventing over-grazing, the habitats where natural prey occur will be less disturbed, resulting in higher prey diversity and numbers (Avenant & Du Plessis, 2008; Blaum, Tietjen & Rossmannith, 2009; PMF, 2016).
John Power	28	363-365		Following this - concept of protecting buffer species, may have merit, ie. protecting dassies colonies, mountain reedbeek in hills etc - but as alluded to, much research must go into this, but from farmers are easily impressed by this as a holistic management suggestion, and it has positive biodiversity outputs.	Already covered under "6.3.2.7. Grazing and natural prey management". Unfortunately there is a lack of scientific evidence to expand in more detail on this idea
John Power	29	375		However, the majority..	Changed as requested

John Power	31	446-447		The concept of jackal restaurants, following vulture restaurants (which is more conventional), is used a lot in North West, and farmers appear to be impressed by it, though goal is minimising predation on game ungulates, guess research on the merits of this method would be well worth doing	Inserted: Although supplemental feeding has been used successfully in the Cape Peninsula, Western Cape to temporarily distract chacma baboons from raiding urban areas (Kaplan et al. 2011), it has not yet been tested extensively in the livestock predation context. Some game farmers in the North West Province make use of "jackal restaurants" to curb black-backed jackal predation on game species (John Power, North West Provincial Government, Mafikeng, pers. comm.), but the methods effectivity in this context has not yet been scientifically verified.
John Power	General			Van der Merwe, I, Craig J. Tambling, C.J., Thorn, M. & Dawn M. Scott, D.M., Yarnell, R.W & Green, M., Cameron, E.Z & Bateman, P.W. 2009. An assessment of diet overlap of two mesocarnivores in the North West Province, South Africa. <i>Afr. Zool.</i> 44(2): 288–291. - Idea that jackals may scavenge more when apex predators provide food for them, similar to humans providing carcasses ? Following above stuff FYI	Reference included under "Supplemental feeding": Although supplemental feeding has been used successfully in the Cape Peninsula, Western Cape to temporarily distract chacma baboons from raiding urban areas (Kaplan, O'Riain, Van Eeden & King, 2011), it has not been tested extensively in the livestock predation context (but see Van der Merwe et al., 2009).
John Power	31	465		Following translocation - FYI - North West Province - translocate = excess of diameter leopards known home range, and relocation = < than this diameter, mostly relocation is policy, obv sex, and area dependent. Only works when transloc to unsaturated reserves, and often a short-medium term solution, as after say return time of a year, predation still occurs at origin - but this information is unpublished. Often there is pysical benefit where there is perception that something is being done from landowners perspective, and they often like to be involved with such drama etc. NW does all the relocs of leopard, brown hyaena, and cheetah, unless a permit can be motivated and of some bona fide reason.	Not changed: there is a large body of evidence to suggest that translocation of predators is very poor management response even though it may have a positive psychological effect on landowners. Although we agree that the "human-dimension" is a very important aspect of HPC, but it is dealt with in detail in another chapter.
John Power	33	519		Might be worth mentioning De Wildts failed compensation efforts - where ZAR 1, 000 offered to farmers for cheetahs, and this became a financial incentive to farmers, in lieu of tolerance. Many ended up in captivity and free-range population was dented by this. Second point - Parks, ie. North West and Sanparks to my knowledge will award compensation for animals that originate from park, ie. lions, wild dogs, cheetah, while they wont for leopard which is res nullius. Proof needs to be availed, but they generally sympathetic to neighbouring communities.	Not included: already covered
John Power	33	529		particularly	Changed as requested
John Power	34	568		Box 3 - not too long this section - seems ok. FYI - NW province devolved some control to landowners, where landowners consent needed to hunt/ control black-backed jackal - not sure if a good thing ? Caracal however listed now as protected needing permit to hunt/ control.	Inserted: Predation management is widely guided by various laws and regulations which attempt to control how certain predation management methods are applied, or to force producers to not use certain methods or not to kill certain species (also see Chapter 5).
John Power	35	578		Can mention Sanparks have shot jackals to control ungulates, and there is reference where Rietvlei culled jackals to improve blesbok lambing crop - the latter - think they claimed success ? FYI	Not included: already covered
John Power	36	626		reinforced not developed?	Not changed
John Power	36	629		Cultural tradition - farmers recreationally enjoy this??	Inserted: Currently, shooting is the most frequently used predation management method across all types of livestock farms in South Africa (Van Niekerk, 2010; Badenhorst, 2014; Schepers, 2016) which can often be linked to its recreational value.
John Power	37	656		at the predator?	Changed as requested
John Power	38	685		EWT in brackets	Changed as requested
John Power	38	686		EWT -following above	Changed as requested
John Power	38	689		6.3.7.4.2 - ? Can this poison stuff be in 3 categories, with this the second one on getters?	Not changed: although it is different methods it all relates to the application of poison and thus we kept it under one heading
John Power	39	716		Following above, 3rd section under Poisons - collars?	Not changed: see previous
John Power	39	740		Cage-trapping as a section, and maybe have subsections - leg holds and snares, as above	Not changed: although it is different methods it all relates to "trapping" and thus we kept it under one heading
John Power	40	756		Leg-hold traps section?	Not changed: see previous
John Power	40	762		EWT	Changed as requested
John Power	40	771		McKenzie, A.A. 1989. Humane modification of steel foothold traps. <i>S. Afr. J. Wildl. Res.</i> 19(2): 53- 56. Guess this reference suffices here	Reference included: Indeed, McKenzie (1989) and Kamler, Jacobsen & MacDonald (2008) showed that specially modified traps captured fewer non-target species and caused limited injuries to the captured individual.
John Power	40	775		Snares as subsection	Not changed: although it is different methods it all relates to "snares" and thus we kept it under one heading
John Power	40	781		Successful in pumas, lions, hyaenas and leopards	Not included
John Power	41	787		Neck-placed snares will never be implemented across the board as they are too similar to the cruelly-set wire snares which bush-meat poachers use, so practitioners will have an aversion to their use, as they are abhorrent on all grounds.	Agreed. But covered in the discussion already.
John Power	42	826-827		Reference	Reference added: Box, H.O. & Gibson, K.R. (2009). <i>Mammalian social learning: comparative and ecological perspectives.</i> Cambridge, UK: Cambridge University Press.
John Power	42	849		Box 4 - a) adapative management needs rephrasing, b) cant say virtually no research is done, maybe some ?, and c) shortened a bit?	Not changed
John Power	45	882		7. Although, less popular, not to err away from lethal control, especially when a particular predator is designated as guilty, and non-lethal options may be futile.	Inserted in subsequent paragraph: We advocate the livestock owner utilizing a wide variety of complementary strategies (including lethal methods where necessary) in order to protect his/her animals (see Box 4).
John Power	General			Use of Biofence - Simulating a territory edge/range of a conspecific using its scent/ faeces etc - has been used successfully with Wild Dogs - search C. Jackson, think Peter Apps, McNutt involved too. Of use in very localised circumstances where known groups can traverse areas on boundaries. Further research can be worthwhile if it can deter jackals/ caracals? Surprised not done in USA? Might be worth adding somewhere, or mentioning at least. Have seen that the wild dogs do move away from areas when you cordon an area like a fence of scats from elsewhere. FYI	Included a section on bio-fences

John Power	General			Incentives - financial - trophy hunting of problem animals, ie. leopard has been brought up, which would be preferred to other healthy animals elsewhere?, though can be open to fraudulent claims, but idea worth a discussion.	Included a paragraph under "Financial Incentives"
Quinette Kruger	General comment		Table 1	I'm sure the authors are aware of it, but the table headings should be adjusted to fit properly and to be visible. Suggestion: break table up into separate tables to correspond with each of the subheadings of Predation management methods. For example: Table1 - Disruptive deterrents, Table 2 - Husbandry practices, etc.	Formatting fixed but not split
Quinette Kruger	7		Table 1	Under "Cellular technology - Application for SA": remove "or" to read "...transfer a signal in extensive..."	Changed as requested
Quinette Kruger	11		Table 1	Under "Coyote getter/M44 - Effectiveness": change to "...decreases livestock predation"	Changed as requested
Quinette Kruger	15	62		It would probably be best to explain in this paragraph that LGD's include various different breeds of dogs, because the reader may interpret "the livestock guarding dog" as being a specific breed of dog.	Inserted sentence and pictures: The most commonly used, and hence most well-studied, guarding animal is the livestock guarding dog (LGD) (Rigg 2001; Gehring et al. 2010; van Bommel & Johnson 2012; Allen et al. 2016). A variety of specifically bred LGD's are available (Rigg 2001), although some local, mixed breeds are also employed in some areas (Figure 1).
Quinette Kruger	19	200	Box 2	In the second paragraph, give a short description of a bearbanger, because up to this point, it has not been mentioned before, and the description of how it works is only given in paragraph 4.	Inserted: Over the past five years, teams of rangers, using aversive tools like paintball markers and bearbangers (≈ .22-calibre blank powered flare gun that fires cartridges that travel 20 m then explode with a bang), have kept baboons out of the urban areas of Cape Town for over 98.5% of the time (Richardson et al. 2016).
Quinette Kruger	28	406		black bears should be: black bears'	Changed as requested
Quinette Kruger	30-31	499-519		Some other factors that may limit the effectiveness of compensation schemes include: a) many developing countries face budget constraints, and usually only pay on an irregular basis and to a limited extent - Distefano (date?). Human-Wildlife Conflict worldwide: collection of case studies, analysis of management strategies and good practices; and b) Lamarque et al. (2009 - Human-wildlife conflict in Africa_causes, consequences and management strategies) state that "The failure of most compensation schemes is attributed to bureaucratic inadequacies, corruption, cheating, fraudulent claims, time and costs involved, moral hazards and the practical barriers that less literate farmers must overcome to submit a compensation claim. They are also difficult to manage, requiring among other things reliable and mobile personnel, able to verify and objectively quantify damage over wide areas (Muruthi, 2005). This often leads to delays in decision-making, low rates, irregular and inadequate payments or the rejection of compensation claims."	Some information already included. Inserted: Although there are examples of compensation schemes that have successfully decreased the retaliatory killing of predators (Bauer et al. 2015), Bulte & Rondeau (2005), Lamaque et al. (2009) and Rajaratnam et al. (2016) highlighted a number of significant shortcomings associated with compensation schemes. When compensation schemes are available, producers may stop putting sufficient effort into protecting their stock. Consequently, livestock losses may actually increase (although it is possible to counter the latter behaviour – see Bauer et al. 2015). It is also often difficult to monitor or verify predation claims or whether producers are complying with any terms associated with a specific compensation programme. Compensation could be paid out irregularly, especially in developing countries, due to budget constraints. It could be difficult for less literate or rural farmers to make a claim. People may be discouraged from claiming compensation because of the time and cost involved in the process (Bulte & Rondeau 2005; Lamaque et al. 2009 , Rajaratnam et al. 2016).
Quinette Kruger	35		650-661	Pringle & Pringle (1979) used this method with success: "...most of the lynxes chased by the hounds were killed." Van der Merwe (1953) argued that, provided the dogs found the spoor of the predator, and that the spoor is followed within 8 hours, one can achieve considerable success with this method. He also stated: "It has been suggested that a full-time official be stationed in every town with a pack of trained hounds. Where there are various clubs in one district, this can easily be brought about by co-operation. There are a few progressive farming communities which have adopted this plan and to them the black-backed jackal is no longer a problem."	Some points already covered. Inserted: Dogs have been used extensively in the past to capture predators in South Africa (Hey 1964; Rowe-Rowe 1974; Pringle & Pringle 1979).
Quinette Kruger	35	658-660		Huntign with hounds seems to have had a low success rate, Gunter noted that climatic conditions, the fact that hunters sometimes persued predators long after damage was reported, as well as the capability and motivation of hunters played a role in the low success rate. Furthermore, Gunter (2008) cautioned that drawing conclusions from such historical data is of limited use, owing to the incomplete nature of the data.	Inserted: Further, based on an interpretation of the information obtained from historical hunting records in South Africa, the efficacy of dog hunts is questionable (Gunter 2008). According to Gunter (2008), when hunting clubs used dogs to remove predators, neither predator numbers nor livestock predation decreased considerably. This was attributed to climatic conditions, the fact that hunters sometimes persued predators long after damage was reported, and the the capability and motivation of hunters. However, Gunter (2008) did caution that drawing conclusions from such historical data may be limited owing to the incomplete nature of the data.
Quinette Kruger				6.3.7.4 - poisons. Hey (1967) believed the coyote getter to be the most effective and most economical method for controlling black-backed jackal, although admitting that a variety of non-target animals are also attracted to the bait, and that some mechanical defects would have to be addressed to improve efficiency. Proved successful where hounds were no longer effective.	Already covered
Quinette Kruger	38	756		Is "interlocking" the correct description? I believe that for the older gin traps, this was the case. But the modern, more "acceptable" form of the leghold device has offset jaws.	Not changed: see later on in the paragraph
Quinette Kruger	40		Box 4	walk in traps should be walk-in traps	Changed as requested
Quinette Kruger	42		Box 4, 5th line	add commas: "...the farmer, in consultation with a professional, should..."	Changed as requested
Quinette Kruger	42		Box 4, 10th line	remove the "a" before direct	Changed as requested
Robert Snelling	37	658-661		We use most control methods except poison and find dogs to be by far the most effective tool in the box in our mountainous and bushy terrain. However, the dogs must be well trained and under the control of a competent handler. Training collars (radio controlled shock collars) and GPS locating collars are a big help for this.	Included at the end of the Section on "Hunting dogs": Currently, hunting dogs may be a good option to track down damage-causing predators in certain circumstances (e.g. in mountainous or bushy terrain) but it is important to ensure that the dogs are then well trained and under the control of a competent handler. It remains, however, important to gather more information on the efficacy of this method.