



IUCN SSC
Human-Wildlife
Conflict & Coexistence
SPECIALIST GROUP

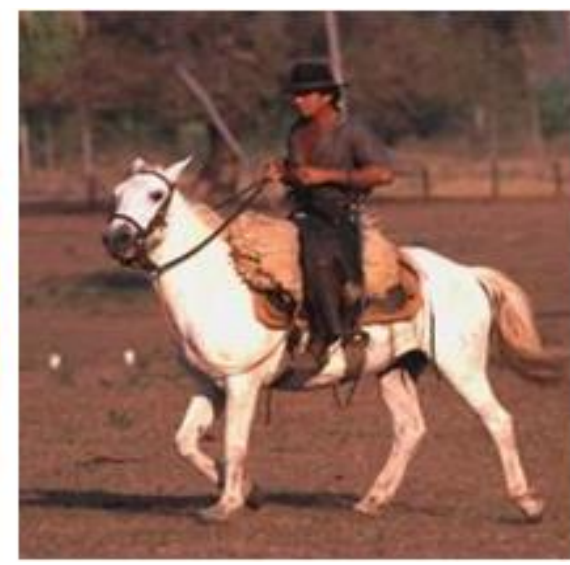
IUCN SSC Guidelines on Human-Wildlife Conflict and Coexistence



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Second Meeting of the Range States of the Joint CITES-CMS
African Carnivores Initiative, *1-4 May 2023, Entebbe, Uganda*

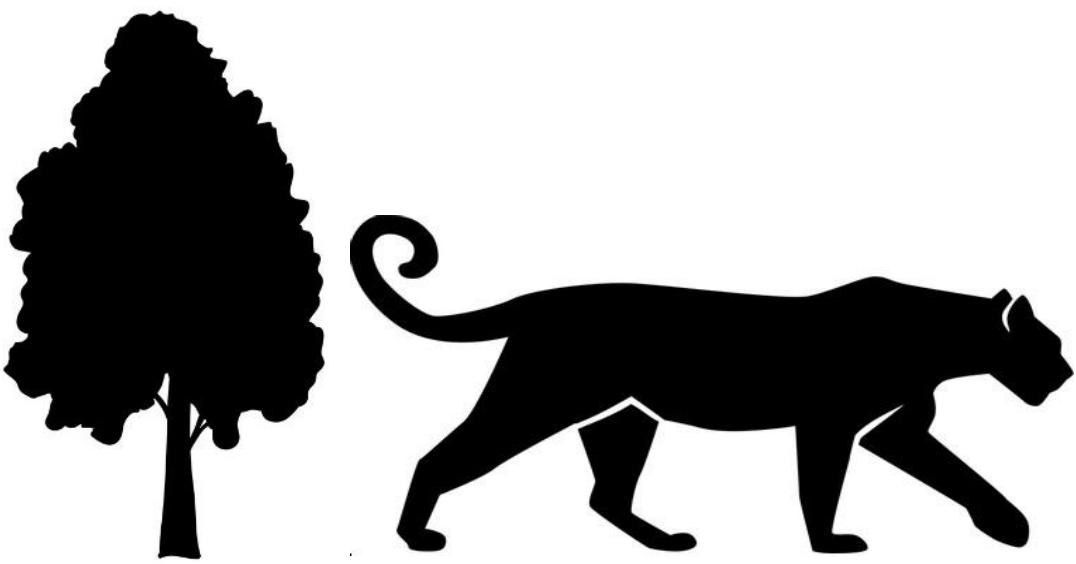




HWC is a global challenge



HWC appears to be about **people vs wildlife** but is about ***people vs people***



Interaction between **biodiversity** & people

Interaction between **groups of people** with different interests

Three inconvenient truths about HWCs

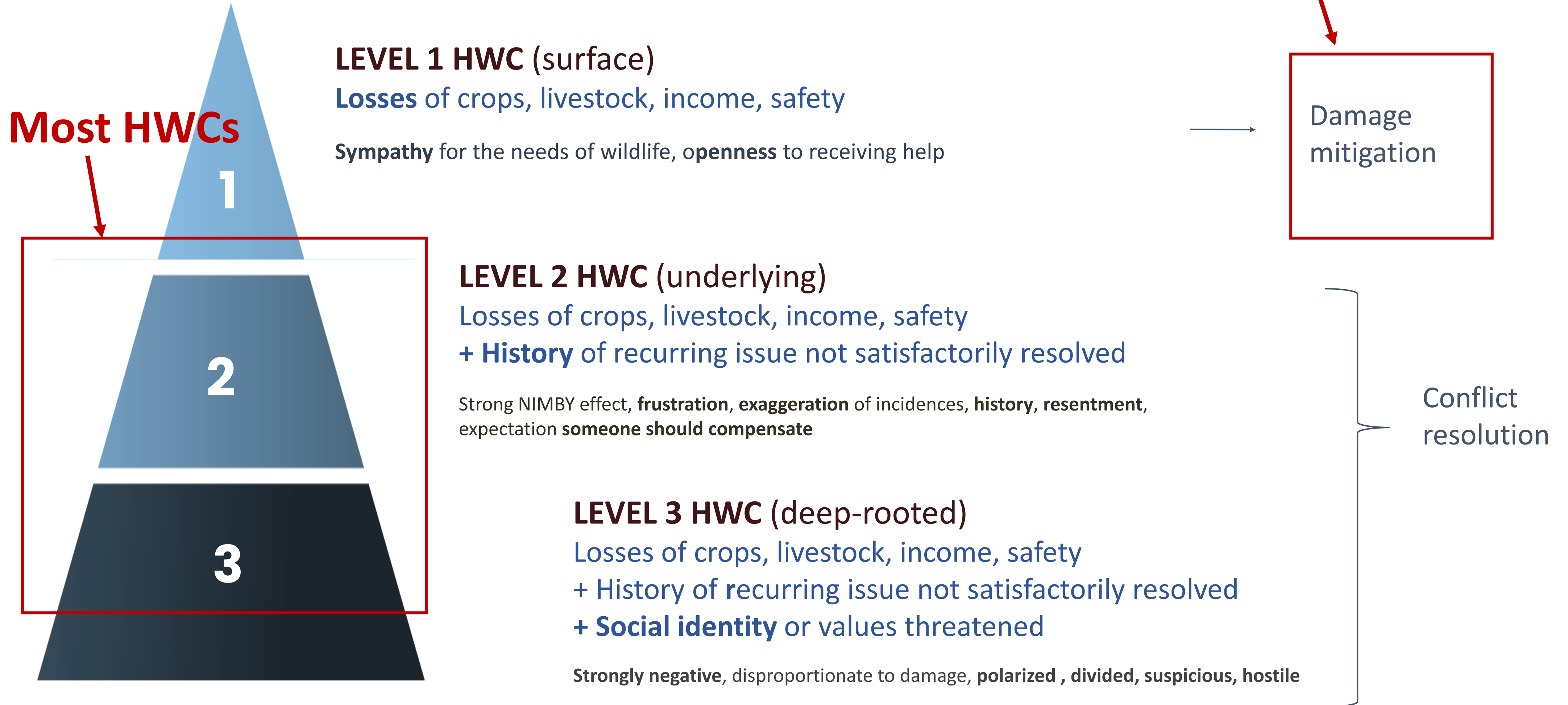


Each HWC situation is **different** from the next

HWCs have **hidden layers** of social tensions

All HWCs are **complicated** and dynamic
(but some are more complicated than others)

The Levels of Conflict





Mitigation

Mediation

Human-wildlife conflict and coexistence needs
a deeper understanding of the issues & a shift how we develop solutions



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**Human-Wildlife
Conflict & Coexistence**

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Human-Wildlife Conflict & Coexistence LIBRARY

www.hwctf.org

- Used in 195 countries
- Updated monthly
- Email newsletter



Policy & Briefing Documents



Articles, Editorials & Blogs



Key Topics

Engaging with stakeholders	Conflict analysis & theory
Social research methods	Political ecology of conflicts
Historical perspectives	Cultural dimensions
Behaviour change & social marketing	Human dimensions theory

Key Species

African Elephant
Asian Elephant
Bears
Cheetah
Crocodilians
Jaguar
Leopard

Further Resources

Case Studies
Latest Additions
March 2022
February 2022
January 2022
December 2021

Briefing & Policy Papers



IUCN International Union for Conservation of Nature
ISSUES BRIEF
JUNE 2022

HUMAN-WILDLIFE CONFLICT

- Wildlife can threaten people's safety and livelihoods, which can lead to conflicts between groups of people over how to resolve the situation; experts call this 'human-wildlife conflict'.
- Human-wildlife conflicts are becoming more frequent, serious and widespread as human populations grow and habitats are lost.
- Effectively managing human-wildlife conflicts protects communities, stops conflicts escalating, builds trust in conservation and avoids retaliation against wildlife.
- Human-wildlife conflicts have unique ecological, cultural, social, historical, physical, economic and political characteristics which strategies to manage conflicts must consider.

What is the issue?

Wildlife can pose a direct threat to the safety, livelihoods and wellbeing of people. For example, when elephants forage on crops, seals damage fishing nets or jaguars kill livestock, people can lose their livelihoods. Retaliation against the species blamed often ensues.

The term human-wildlife conflict has traditionally been applied only to those negative interactions between people and wildlife, but this implies deliberate action by wildlife species and ignores the conflicts between groups of people about what should be done to resolve the situation.

The IUCN Species Survival Commission (SSC) Human-Wildlife Conflict & Coexistence Specialist Group defines human-wildlife conflict as:

struggles that emerge when the presence or behaviour of wildlife poses an actual or perceived, direct and recurring threat to human interests or needs, leading to disagreements between groups of people and negative impacts on people and/or wildlife.

Human-wildlife conflicts are becoming more frequent, serious and widespread because of human population growth, agricultural expansion, infrastructure development, climate change and other drivers of habitat loss. Human-wildlife conflicts can occur wherever wildlife and human populations overlap, so any factor that forces wildlife and people into closer contact makes conflicts more likely.

Much work to date has focussed on interventions to reduce impacts on people and retaliation against wildlife such as creating barriers, deploying deterrents or moving wildlife.

In the absence of consultative, collaborative processes with stakeholders, these measures often have limited success.



A lion kills a donkey on the boundary of Makgadikgadi Pans National Park, Botswana © James Stevens

Why is this important?

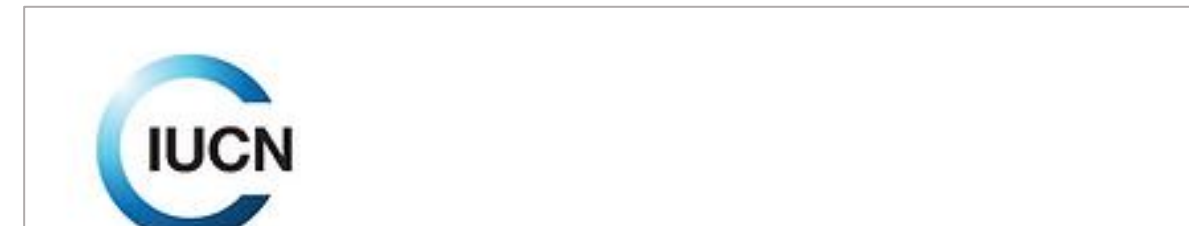
Healthy ecosystems and the vital services they provide to people depend on wildlife. Managing human-wildlife conflicts is therefore crucial to achieve the UN Vision for Biodiversity 2050 in which 'humanity lives in harmony with nature and in which wildlife and other living species are protected'.

Human-wildlife conflicts have severe implications for communities' livelihoods, safety and wellbeing, and risk undermining conservation efforts by eroding support for protected areas, wildlife and biodiversity.

Retaliation against wildlife can pose a serious threat to a species' survival, and reverse previous conservation progress.

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IUCN

Position Statement

On the Management of Human-Wildlife Conflict



IUCN SPECIES SURVIVAL COMMISSION
SSC Human-Wildlife Conflict

What is Human-Wildlife Conflict?



IUCN Resolution on Human-Wildlife




Human-Wildlife Conflict in the UN CBD Post-2020 Global Biodiversity Framework

The IUCN SSC Human-Wildlife Conflict Task Force's recommendations on the Convention on Biological Diversity (CBD) Post-2020 Global Biodiversity Framework.




IUCN SSC HWCTF (2021) Information document on the inclusion of a target on Human-wildlife conflict in the framework. IUCN Species Survival Commission (SSC) Human-Wildlife Conflict Task Force.


English 





IUCN SSC HWCTF (2022). Information document on developing indicators for a target on human-wildlife conflict in the framework. IUCN Species Survival Commission (SSC) Human-Wildlife Conflict Task Force.

English 

English 

French 

Portuguese 

Spanish 



Kunming-Montreal

GLOBAL BIODIVERSITY

CBD FRAMEWORK

Target 4

*Ensure active management actions to enable the recovery and conservation of species and the genetic diversity of wild and domesticated species, including through ex-situ conservation, **and effectively manage human-wildlife interactions to avoid or reduce human-wildlife conflict.***





Kunming-Montreal GBF
MONITORING
FRAMEWORK



Component Indicator

**Trends in effective and sustainable
management of human-wildlife conflict and
coexistence**

*June 2023: Open call to join **technical working group***

Human-Wildlife Coexistence Case Studies



Co-developing a community camera trapping programme to deliver benefits of living with wildlife



Reducing human-carnivore conflict through participatory research



Coexistence with large cats: experience from a citizen science project



Developing and evaluating a beehive fence deterrent through stakeholder involvement



Fostering coexistence through a poverty reduction approach



Building communities capacities to coexist with wildlife



INTERNATIONAL CONFERENCE ON
HUMAN-WILDLIFE
CONFLICT and COEXISTENCE

Oxford, UK
30 March – 1 April 2023



IUCN SSC
**Human-Wildlife
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Keynotes



John Kamanga
A community governance perspective



David Macdonald
A natural sciences perspective



Mariano Castro Jimenez
A policy perspective



Brian McQuinn
A peacebuilding perspective



Ganesh Ramani
A donor perspective



Ivonne Higuero
A resource economics perspective



Barbara Chesire
A social enterprise perspective



Gabriela Lichtenstein
A species perspective

Major Panel Sessions



What future for large carnivores in Europe?



The role of policies in mitigating human-wildlife conflict



The new IUCN SSC Guidelines on HWC



Next steps for HWC in the Global Biodiversity Framework

Symposia

Working with stakeholders



Amal Dissanayaka
The changing role from defenders to challengers



Isla Hodgson
Thinking like a Local: an ethnographic approach to understanding conflicts



Katrina Marsden
Exchange between multi-level stakeholder platforms focusing on conflict species: learning from the EU Large Carnivore Platform experience



Bill Hunt
Managing grizzly bears and other large carnivores in Banff National Park - creating a toolkit for transboundary cooperation



Susan Canney
Managing HWC in the Sahel of central Mali: the Mali Elephant Project



Kai Williams
Changing the narrative: how wildlife rehabilitators help manage human-wildlife interactions

Understanding human dimensions and behaviour



Marina Tavolara
Understanding CBNM in Namibia



Ruth Kinsky
Factors driving tolerance of people towards damage-causing mammalian wildlife - global case studies using the Wildlife Tolerance Model



Sayan Banerjee
'En-gendering' human-wildlife conflict and implications to conservation

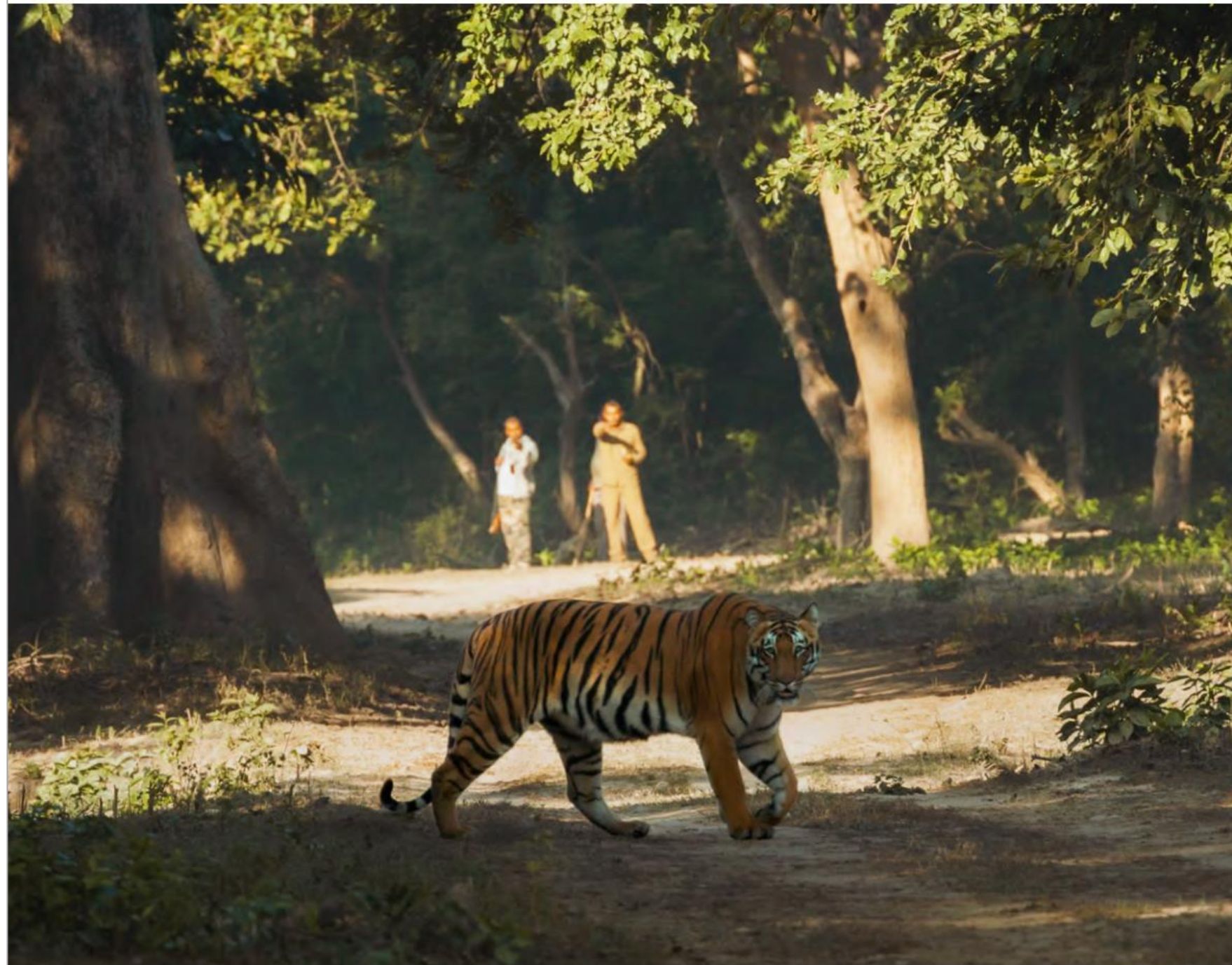


Nuno Miguel Negroes
Jaguar persecution without "cowflict": insights from protected territories in the Bolivian Amazon



IUCN SSC guidelines on human-wildlife conflict and coexistence

First edition



Available at
[hwctf.org/guidelines](https://www.hwctf.org/guidelines)



Aim

Deconstruct the complexity

Provide guiding principles

Explain processes step-by-step

First Edition



IUCN SSC
Human-Wildlife
Conflict & Coexistence
SPECIALIST GROUP

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2. The role of the conservationist

Catherine Hill, Vidya Athreya, John D. C. Linnell, Brian McQuinn, Stephen Redpath, Juliette Youn Alexandra Zimmermann

3. Interventions: to act or not to act?

Simon Hedges & Joshua M. Plotnik

4. Avoiding unintended consequences

James Stevens, Simon Hedges & Juliette Young

5. Assessing the impacts of conflict

John D. C. Linnell, Gladman Thondhlana & Simon Hedges

6. Natural drivers of human-wildlife conflict

Mayukh Chatterjee, James Stevens & Sugoto Roy

7. Animal behaviour

Joshua M. Plotnik, Robbie Ball, Matthew S. Rudolph, Simon Pooley, James Stevens, Chloe Inskip & Richard Hoare

8. Attitudes, tolerance and human behaviour

Silvio Marchini, Jenny A. Glikman, Michael Manfredo & Alexandra Zimmermann

9. Culture and wildlife

Catherine Hill, Vidya Athreya, Jenny A. Glikman, John D.C. Linnell & Simon Pooley

10. How histories shape interactions

Simon Pooley, Catherine Hill & John Linnell

11. Livelihoods, poverty and well-being

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Vidya Athreya, Dhee, John D. C. Linnell, Sahil Nijawan & Juliette Young

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16. Dialogue: a process for conflict resolution

Brian McQuinn, Alexandra Zimmermann, James Stevens & Gladman Thondhlana

17. Resolving conflicts between people

Alexandra Zimmermann & Brian McQuinn

18. Engaging with the media and social media

Virat Singh, Vidya Athreya, Chloe Inskip, Alexandra Zimmermann & Ranjeet Jadhav

19. Social science research

Jenny A. Glikman, Silvio Marchini, Niki Rust, Simon Pooley, Juliette Young & Catherine Hill

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Anna Songhurst, James Stevens, Michael Manfredo & Graham McCulloch

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23. Law and human-wildlife conflict

Arie Trouwborst, John Linnell & Camilla Sandström

24. Policy instruments

Camilla Sandström & Amy Dickman

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27. Preventing damage by wildlife

James Stevens & Simon Hedges

28. Response teams

Sugoto Roy, Mayukh Chatterjee, Chloe Inskip, Rachel Hoffmann, Piero Genovesi & Claudio Groff

29. Social marketing and behaviour change

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30. Economic incentives

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31. Compensation and insurance

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32. Evaluating interventions

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Afterword

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Principles



1

Do no harm



2

**Understand issues
and context**



3

Work together



4

**Integrate science
and policy**



5

**Enable sustainable
pathways**

Good practice checklist

10 guiding questions for turning the *Principles* into practice

This checklist, building on the foundational *Principles*, is considered from the perspective of parties seeking to support and manage the mitigation of human-wildlife conflicts and conflicts over wildlife, and facilitate progress towards coexistence. These parties include conservation organisations, government agencies, local organisations and grant-giving institutions.

Has the level of conflict been identified?

Principle: Do no harm

Chapters: 1) Levels of conflict over wildlife, 2) The role of the conservationist

Have the ethics, consequences and roles of actors been considered?

Principle: Do no harm

Chapters: 3) Interventions: to act or not to act? 4) Avoiding unintended consequences

Have the natural, ecological and land-use factors been considered?

Principle: Understand issues and context

Chapters: 5) Assessing the impacts of conflict, 6) Natural drivers of human-wildlife conflict, 7) Animal behaviour

Have the underlying social, cultural, historical and political contexts been



1

Do no harm

Good practice checklist

- Has the level of conflict been identified?**
- Have the ethics, consequences and roles of actors been considered?**

Chapters

- 1) **Levels of conflict over wildlife**
- 2) **The role of the conservationist**
- 3) **Interventions: to act or not to act?**
- 4) **Avoiding unintended consequences**



1

Do no harm



2

Understand issues
and context

Good practice checklist

- Has the level of conflict been identified?
- Have the ethics, consequences and roles of actors been considered?
- Have the natural, ecological and land-use factors been considered?
- Have the underlying social, cultural, historical and political contexts been understood?

Chapters

- 1) Levels of conflict over wildlife
- 2) The role of the conservationist
- 3) Interventions: to act or not to act?
- 4) Avoiding unintended consequences
- 5) **Assessing the impacts of conflict**
- 6) **Natural drivers of human-wildlife conflict**
- 7) **Animal behaviour**
- 8) **Attitudes, tolerance and human behaviour**
- 9) **Culture and wildlife**
- 10) **How histories shape interactions**
- 11) **Livelihoods, poverty and well-being**
- 12) **Governing human-wildlife conflicts**



1

Do no harm



2

Understand issues
and context



3

Work together

Good practice checklist

- Has the level of conflict been identified?
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- Have the natural, ecological and land-use factors been considered?
- Have the underlying social, cultural, historical and political contexts been understood?
- Has the project/intervention been planned together with stakeholders?**
- Is the initiative benefiting from multidisciplinary teams across sectors?**

Chapters

- 1) Levels of conflict over wildlife
- 2) The role of the conservationist
- 3) Interventions: to act or not to act?
- 4) Avoiding unintended consequences
- 5) Assessing the impacts of conflict
- 6) Natural drivers of human-wildlife conflict
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- 17) Resolving conflicts between people**
- 18) Engaging with the media and social media**



1

Do no harm



2

Understand issues
and context



3

Work together



4

Integrate science
and policy

Good practice checklist

- Has the level of conflict been identified?
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- Have the natural, ecological and land-use factors been considered?
- Have the underlying social, cultural, historical and political contexts been understood?
- Has the project/intervention been planned together with stakeholders?
- Is the initiative benefiting from multidisciplinary teams across sectors?
- Are planning and actions based on evidence and sound science?**
- Are relevant aspects of governance and policies incorporated?**
- Are interventions based on best available and jointly led knowledge?
- Is there an exit strategy from financial or technical dependence?

Chapters

- 1) Levels of conflict over wildlife
- 2) The role of the conservationist
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- 4) Avoiding unintended consequences
- 5) Assessing the impacts of conflict
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- 19) Social science research**
- 20) Ecological research methods**
- 21) Planning across landscapes**
- 22) Political ecology of wildlife**
- 23) Law and human-wildlife conflict**
- 24) Policy instruments**
- 25) Animal capture and translocation**
- 26) Lethal control tools**

Good practice checklist



1

Do no harm



2

Understand issues
and context



3

Work together



4

Integrate science
and policy



5

Enable sustainable
pathways

- Has the level of conflict been identified?
 - Have the ethics, consequences and roles of actors been considered?
 - Have the natural, ecological and land-use factors been considered?
 - Have the underlying social, cultural, historical and political contexts been understood?
 - Has the project/intervention been planned together with stakeholders?
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 - 27) Preventing damage by wildlife**
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 - 30) Economic incentives**
 - 31) Compensation and insurance**
 - 32) Evaluating interventions**



Attitudes, tolerance and human behaviour

Silvio Marchini, Jenny A. Glikman, Michael Manfredi & Alexandra Zimmermann

Human thoughts, feelings and behaviours

The human dimension aspects of conflicts over wildlife are largely determined by the thoughts, feelings and, ultimately, behaviours of people (Manfredi & Dayer, 2004). Because all human-wildlife conflicts involve people, approaches that provide a better understanding of human behaviour – and facilitate behaviour change – are crucially important for helping manage such conflicts.

Efforts to mitigate human-wildlife conflict commonly include actions to try to influence or change the attitudes or behaviours of the people involved. Another extremely common approach for reducing human-wildlife conflict is to conduct education and awareness campaigns. These activities are well intentioned in attempting to change the human dimension of the human-wildlife conflict, but unfortunately are often ineffective for one very common reason – they are based on incorrect assumptions about cause-and-effect relationships of concepts within social psychology.

Common misconceptions

1) Information and tolerance: the assumption that *tolerance* of wildlife can be increased by improving people's *knowledge* about wildlife has rarely proven true, as people's tolerance of wildlife is determined by a number of factors, not just knowledge (Bruskotter and Wilson (2014). Thus, providing people with information will not necessarily influence their actions.

2) Attitudes and behaviour: measuring attitudes and aiming to change these in order to alter behaviour is also an incomplete link. Although attitudes do influence people's actions, there are characteristics about attitudes that make some of them very influential, but others only marginally impactful (e.g. strong versus weakly held attitudes). Focusing on attitudes alone neither provides a complete picture of the conflict, nor does it offer sufficiently holistic solutions for reducing it (Heberlein, 2012).

Less commonly studied are further aspects of the human dimensions of human-wildlife conflicts, such as values, beliefs, emotions and norms. In this chapter we disentangle these various terms and concepts to provide an introduction to the social psychology of human-wildlife conflict. Social psychology – the scientific study of the way in which people's thoughts, feelings and behaviours are

influenced by their actual and imagined interactions with the environment (Vaske & Manfredi, 2012) – has helped researchers and managers to understand, predict and influence tolerance and behaviour in a range of biodiversity conservation contexts, including human-wildlife conflict.

While this chapter is intended to provide an introductory overview of some key concepts, in order to design and conduct fully robust and reliable research it is very important that these components of any human-wildlife conflict assessment or project are carried out by a social scientist (Martin, 2020) (see Chapter 19, Social science research).

Key concepts from social psychology

Attitude

Attitude is defined as 'an individual's favourable or unfavourable evaluation of a person, object, concept or action' (Ajzen & Fishbein, 2000). Attitude studies are useful predictors of human behaviour only when the attitude measured relates specifically to the behaviours of interest. For attitudes to predict behaviour, the attitude and behaviour must correspond on four levels of specificity: action, target, context and time. For example, attitudes about objects (such as sharks) will not necessarily predict behaviours (such as killing sharks). Instead, one would need to understand attitudes towards killing (action) sharks (target) that enter swimming zones (context) when people are present (time).

Belief

Beliefs are what people think are true about a person, object or action, which may or may not necessarily be objectively factual (Eagly & Chaiken, 1993; Vaske & Manfredi, 2012). Beliefs about wildlife are based on attributes associated with the species (Knox et al., 2019). Regardless of their accuracy, they can be major drivers of behaviour in an human-wildlife conflict context, hence the importance of assessing them. They can carry evaluative meaning – for example, an individual may believe that trophy hunting is right or wrong. However, beliefs do not need to be tied to evaluations. One might believe that lethal control is the most suitable intervention, for example, without attaching any particular evaluative meaning to that proposition.

Emotion

Emotions such as fear, anger, disgust, happiness and love are fundamental in understanding human-wildlife relationships (Jacobs & Vaske, 2019). They are a mixture of instinctive reactions, physiological responses and subjective interpretation of the associated feelings. Emotions are complex and not prone to easy measurement, but properly understanding them is a part of effective management of collaborative groups, conflict resolution and effective communication in the context of human-wildlife conflict. *Affect* and *feeling* are terms often used interchangeably with emotion in the human-wildlife conflict literature; however, the psychology literature usually makes a distinction between these concepts, with proposed definitions varying significantly across authors).

Knowledge

Knowledge refers to a theoretical or practical understanding of a subject. It can be implicit, as with practical skill or expertise, or explicit, as with the theoretical understanding of a subject (Oxford English Dictionary). Knowledge is closely related to belief: all knowledge is a belief, as people believe what they know, but not all belief is knowledge, as beliefs may or may not be accurate (Eagly &



Working with stakeholders and communities

Juliette C. Young, Jenny A. Glikman, Beatrice Frank, Simon Hedges, Kate Hill & Rachel Hoffmann

Over the last 30 years there has been increasing recognition of the importance of engaging stakeholders for achieving more sustainable, long-term and inclusive decision-making processes, including efforts to reduce or mitigate the negative impacts of conflicts. Here we refer to 'stakeholders' as people, groups or organisations with an interest in the situation or the issues surrounding it. This includes local communities directly involved in human-wildlife conflict situations, but also other groups, with the aim of sharing knowledge, discussing possible ways forward and taking joint action to address conflicts.

The need for, and importance of, this broader engagement is also reflected in international policy. The United Nations, for example, has propelled engagement at the most relevant level of decision making with regard to sustainable development, through Agenda 21. As a consequence, public engagement is now firmly rooted in public policy and a requirement under legislation such as the Aarhus Conventions and associated EU Directive. The need for engagement with local communities in the context of conservation is embedded in the 2020 Aichi biodiversity targets, and is widely thought to be critical to the long-term success of conservation efforts.

Certain questions need to be answered in order to carry out successful engagement with stakeholders and local communities. These include the what, who, when and how of engagement (Figure 9).



Figure 9. Engaging with stakeholders. (Source: Compiled by the chapter authors)

What is the purpose of engagement?

Engaging with stakeholders can have a number of different purposes, depending on what needs to be, or can be, achieved (Arnstein (1969); Beierle and Cayford (2002); Creighton (2005); Dovers et al. (2015); Durham et al. (2014); Frank (2017). For example, the aims of the engagement process could be to:

- better understand problems and contextual opportunities by developing communication with stakeholders;
- generate innovative ideas;
- develop a common understanding and shared solutions between stakeholders;
- increase learning and trust between stakeholders;
- make decision making more collaborative, thereby increasing the legitimacy and credibility of decisions;
- foster more 'ownership' of solutions by the people most affected by, or having the most effect on, the issues and problems;
- help ensure the effectiveness and long-term sustainability of efforts to reduce or mitigate conflicts over wildlife.

Table 6 shows some of the different purposes behind engaging stakeholders (once framing and analysis are under way), and the tools that can be used to implement passive to active participation. Related to this, it is worth bearing in mind the conditions under which participation is likely to work (or not) and what it can achieve in different circumstances (for a useful illustration of circumstances regarding the nature and goal of stakeholder participation, see Hurlbert and Gupta (2015)). The key is to communicate early on in the process, and in a transparent way, the purpose of involving



Planning across landscapes

Anna Songhurst, James Stevens, Michael Manfredo & Graham McCulloch

Why do we need to plan?

A common factor attributed to causing many conflicts between humans and wildlife is land-use change (see Chapter 6, Natural drivers of human-wildlife conflict). When natural ecosystems are converted to agricultural land or human settlements, wildlife habitats can become reduced and fragmented, which leads to increased competition for space and resources, resulting in more frequent interactions between people and wildlife (Agetsuma, 2007; Linkie et al., 2003; Woodroffe et al., 2005). As existing habitat becomes progressively fragmented and human-wildlife interactions become more frequent, human-wildlife conflict can ultimately increase (Nyhus & Tilson, 2004). Indeed, conversion of habitat has been identified as the most important underlying driver of human-wildlife conflict, particularly crop damage by herbivores among rural crop lands (e.g. Songhurst and Coulson (2014); Pozo et al. (2017). Finding ways for people and wildlife to coexist in socio-ecological landscapes requires affording both people and wildlife access to critical resources and space (Songhurst et al., 2016). Spatial planning and appropriate land use zoning that considers shared space and critical resource needs is, therefore, imperative in any human-wildlife conflict management strategy, if landscapes of coexistence are to be successful (Woodroffe et al., 2005).

What is spatial and landscape planning in human-wildlife conflict management?

Spatial and land-use planning involves the identification of land uses or zones that consider people and wildlife in a way that minimises overlap and competition for space and resources between humans and wildlife, thus reducing the likelihood of negative interactions, property damage and injury or death for either party.

A particular approach that has been used by land use planners is zoning. This has been widely used in biodiversity conservation, with the creation of national parks, nature reserves and other protected areas (Linnell et al., 2005). Theoretically, though, large mammal populations are best conserved in landscapes where large protected areas are surrounded by buffer zones, connected to other areas of

critical resources by corridors and integrated into broader ecological landscapes (Nyhus & Tilson, 2004).

Land-use planning for coexistence landscapes, where conservation goes beyond the boundaries of protected areas, is critical for the conservation of wide-ranging mammals like elephants (Fernando, 2005; Hoare, 2000; Noss et al., 1996; Wikramanayake et al., 1998) and carnivores (Cushman et al., 2016; Treves et al., 2004; Woodroffe et al., 2005). As a result, correctly managed buffer zones and/or appropriately zoned multi-use, adaptive management areas around protected areas may be as important as wildlife reserves to the long-term viability of wide-ranging species (Noss et al., 1996). Such conservation strategies, however, require appropriate land-use zoning in these multi-use, socio-ecological landscapes, which considers the needs of both people and critical wildlife habitat and resource use (Fernando, 2005; Linnell et al., 2005).

How do we assist spatial planning to reduce human-wildlife conflict?

Appropriate zoning of socio-ecological landscapes requires a good understanding of how people and wildlife utilise space and resources. A greater understanding of the routes used to move between these critical resource use areas, as well as the risk-avoidance behaviours used by wildlife, can significantly improve the efficacy of land-use zoning to achieve landscapes of coexistence. For example, Treves et al. (2004) found that wolves appeared to prey on livestock where there were high proportions of pasture, but low proportions of crop land, coniferous forest, herbaceous wetlands and open water, helping to identify areas where human-wildlife conflict interventions could be targeted. Similarly, Fernando et al. (2005) and Pozo et al. (2017) found that land-use patterns, land conversion to agriculture and agricultural practices influenced the intensity of human-elephant conflict in Sri Lanka and Botswana, respectively. Fernando et al. (2005) found that a fragmented mosaic of small forest patches (protected areas) utilised by elephants, scattered throughout a human-dominated landscape of irrigated agriculture, exacerbated human-elephant conflict. However, adaptive management (common-use) areas, managed according to traditional agricultural practices, provided essential resources to elephants, and allowed coexistence of humans and elephants through temporal and spatial resource partitioning.

Songhurst et al. (2016) pioneered a strategy that involves identifying and ensuring appropriate protection of critical elephant pathways in land-use allocation systems in Botswana. Working with land authorities and using development-free buffer zones, combined with mitigation techniques along the interface with agricultural lands, human-wildlife conflict practitioners, with communities and other key stakeholders, can assist with the effective zoning of these critical wildlife corridors. This creates lower risk levels outside them to make agricultural areas easier to protect and reinforce human-wildlife interface boundaries that contribute to coexistence across shared landscapes.

At local scales, allocation of land for human use is typically determined by soil fertility, with the most fertile soils being dedicated to agriculture and livestock production, and the least fertile soils to non-agricultural uses (Happold, 1995; Martin & Taylor, 1983). Participatory resource mapping is therefore an essential component of land-use planning. A full understanding of how people choose land and utilise resources in an area experiencing human-wildlife conflict is essential to determining how land-use planning can be improved in the future to minimise conflicts and increase the likelihood of coexistence.



Compensation and insurance

James Stevens, Paul Steele, Barbara Chesire, Nurzhafarina Othman,
Betty Chebet & Zipporah Muchoki

What are compensation and insurance?

Compensation schemes work by reimbursing (fully or partially) people negatively affected by wildlife, without requiring the individuals' financial input, and are usually funded by an external agency (Wilson-Holt & Steele, 2019). Here we use 'compensation' as the collective term for this approach. In some countries other terms are used for the same concept, such as ex-gratia payment or relief payment, with the term used relating to whether the compensating body is contractually obliged to provide the reimbursement (compensation) or whether it is provided 'by favour' without accepting liability (ex-gratia) or as a consolation payment (relief payment). Generally, compensation is provided after the losses have occurred (also called 'ex-post' payments); however, there are also some examples of payments made before incidences have occurred, i.e. 'ex-ante' payments (Schwerdtner & Gruber, 2007; Swenson & Andrén, 2005).

Insurance-based schemes, on the other hand, work like a traditional insurance product, requiring the beneficiary to make regular payments (the 'premium') (financial or non-monetary) in the event of a future loss, which are pre-defined under a specific set of conditions. Microinsurance is a form of insurance that protects low-income individuals or individuals who have few savings against specific risks, in exchange for regular premiums that are proportionate to the livelihood and cost of the risk involved. Microinsurance premiums are often much smaller, but so is the amount insured.

Microinsurance typically covers specific assets and is index based rather than indemnity based. Under an index-based scheme, the scheme reimburses the value of an index rather than a measurable loss (Box 25). A threshold is set, and the individuals will be insured if the index goes below that threshold (Sandmark et al., 2013).

Box 25

Microinsurance in agriculture

In the quest to increase their market share, overall growth and customer base, insurance companies in developing countries have adopted and embraced key factors that ensure

success in microinsurance. Due to the nature of microinsurance products and customers, these companies have had to adopt innovative and non-traditional ways of product design and alternative distribution models.

Some of the innovations in the field of agriculture include index-based insurance solutions, which, unlike conventional agriculture insurance, are designed for smallholder farmers. The index could be precipitation levels that weather stations in the scheme locations measure, the level of yield among crop farmers and vegetation cover for livestock farmers.

In some cases, the crop farmers are enrolled or 'onboarded' into the insurance scheme by filling in a simple form attached to certified seeds and/or other farm inputs whose price has a small loading to cater for the insurance premium. Once they sign up, they are eligible for a payout should there be prolonged dry spells (drought), either early or later into the season. Should the rains fail early in the season, leading to low germination, the farmer gets a payout in the form of a voucher that they can use to get certified seeds and fertiliser for the replanting season. It does not involve tedious claim processes like conventional insurance, because the value is predetermined and pegged on an index.

During the initial sign-up, the government or development partners highly subsidise the premium for the farmers. The subsidies are gradually withdrawn 5 years into the scheme; thus, the farmer pays the entire premium. This ensures the economic sustainability of these schemes and personal responsibility among the farmers.

The compensation and insurance process

Reporting of damage and its verification

When wildlife causes damage to property or livelihoods, people are required to report the damage to the appropriate administration and notify them of the incident (Figure 23). The administration managing the scheme then needs to attend to the incident to verify that the damage has occurred and that the claimant is eligible for payment. People tasked with verifying can include wildlife officers, community members, NGO staff, police, insurance agents or rapid response teams (Leslie et al., 2019) (Chapter 28 Response teams). Schemes will often have conditions attached to them, such as being limited to certain wildlife species or requiring measures to be in place to limit damage.

Making payments

If the claim is approved, then payment is made to the claimant. Depending on the scheme, payments can take various forms and cover varying percentages of the market value for the damaged assets. Some schemes will provide financial payment while others may replace damaged assets. Schemes can cover the entire costs of the assets or only partially cover the costs. For example, Botswana's state-funded governmental compensation scheme provides compensation for livestock and



Resolving conflicts between people

Alexandra Zimmermann & Brian McQuinn

In these Guidelines and recent literature, human-wildlife conflict is explained as a conflict *between people about wildlife*. Tensions are triggered by a negative interaction with animals, which, for various reasons and to differing extents, fuels a disagreement among individuals or groups about what should be done to address the situation. In short, efforts to improve wildlife-human interactions can *only succeed* if the human-human conflict is also solved. Thus, human-wildlife conflict cannot be resolved without resolving the human-human element of conflict.

In 2020, building on previous work by CICR (2002) and Madden and McQuinn (2014), Zimmermann and McQuinn published the *levels of conflict over wildlife* conceptual model, which is described in detail in Chapter 1. In brief, the model explains why some human-wildlife conflicts are more difficult to resolve than others. The concept outlines that Level 1 conflicts are disputes over issues such as crop or livestock loss or concerns about safety, yet typically involve relatively high tolerance of the damage-inducing species. Level 2 conflicts, in addition to the visible impact of wildlife, are burdened by a history of unsatisfactory attempts to address these issues, creating underlying resentment, tensions and a sense of injustice. Level 3 conflicts are deep-rooted and become intertwined with the identities of the parties and community involved, and extend to broader tensions over social identities and clashing values and beliefs. Chapter 1 also explains the typical signs and symptoms of these levels in order to be able to identify them. Once identified, the next questions naturally follow:

- What approaches and methods are available for conservationist to address conflict?
- When can human-wildlife conflict be managed by conservationists?
- When is third-party mediation advisable?

Different levels of conflict require different responses

Many efforts to solve human-wildlife conflicts address the wrong level of conflict (Figure 13). For instance, in biodiversity conflicts, disputes over resources or tangible damage or impacts are so

prominent that they can draw attention away from the underlying social issues at the root of the conflict. As a result, attempts to settle these issues tend to address the more obvious manifestation of the problem (e.g. damage caused by wildlife), and are usually focused on technical and practical fixes. Unfortunately, this approach ignores the underlying social, political or cultural issues that fuel the tension and make matters worse (Suliman, 1999; A. Zimmermann, B.P. McQuinn, et al., 2020) (see Chapter 3, Interventions: to act or not to act? and Chapter 4, Avoiding unintended consequences).

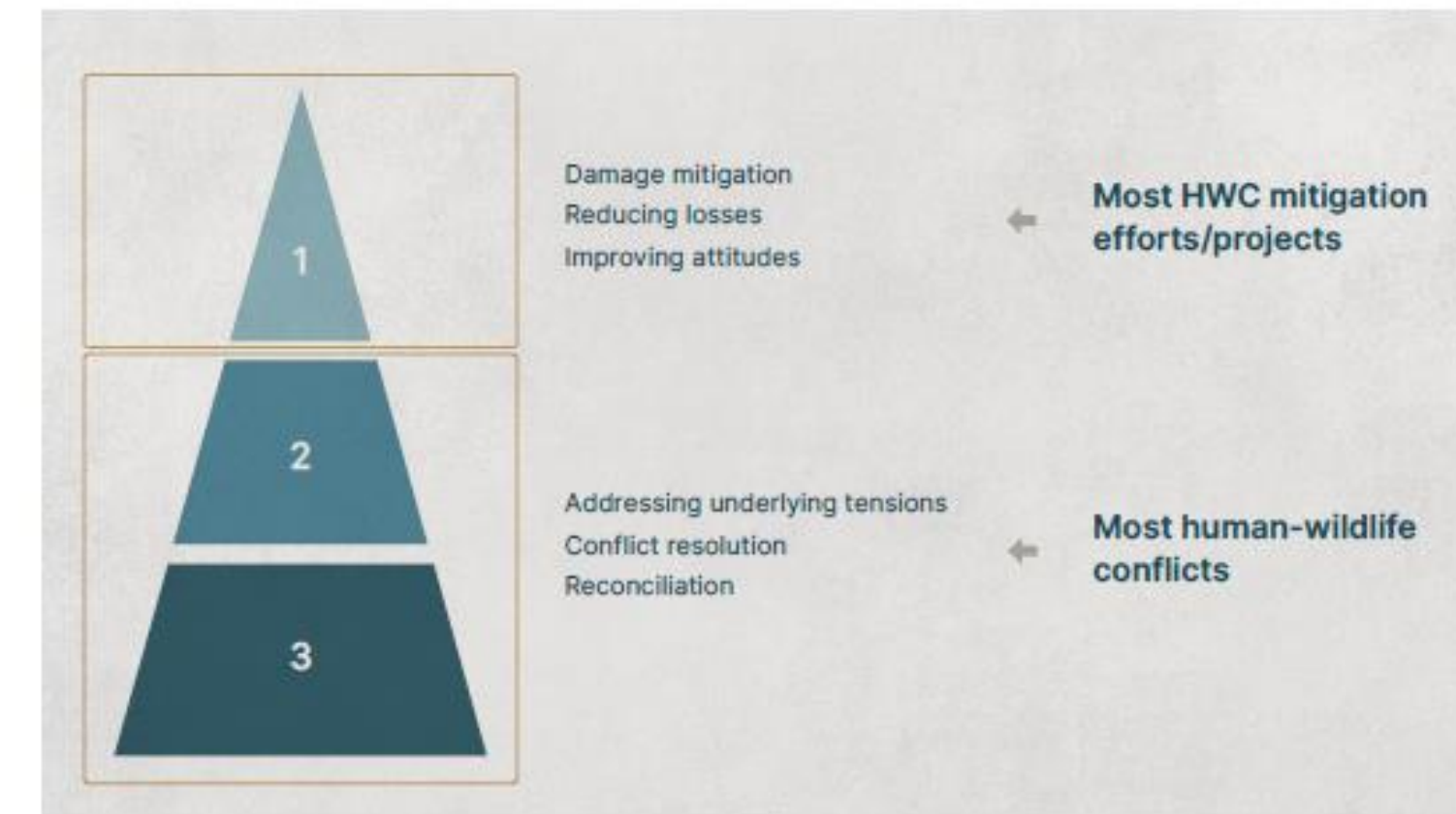


Figure 13. Many human-wildlife conflict interventions focus on the wrong level of conflict. (Adapted from: Zimmermann, 2022, MSc lectures, University of Oxford, with permission)

What approaches are suitable for the levels of conflict?

At Level 1, the aim is to negotiate *practical solutions* that are mutually acceptable and co-designed. Here the emphasis is on approaches that address one or more of the following:

- safeguarding income and security (e.g. barriers, alarms or husbandry improvements);
- reducing perceived risk and actual losses to levels acceptable to the people affected;
- increasing productivity or diversifying income sources to offset risk.



Engaging with the media and social media

Virat Singh, Vidya Athreya, Chloe Inskip, Alexandra Zimmermann & Ranjeet Jadhav

Information provided by the media has the power to shape – either negatively or positively – public perceptions of, and opinions about, wildlife and human-wildlife conflict. Sensational and inflammatory reporting, for example, can do harm by increasing the public's perception of the risk posed by wild animals, exacerbating conflicts and increasing public demand for immediate action. Such public pressure can lead to poorly planned or ill-informed conflict mitigation measures as a means of placating the public and diffusing a potentially volatile situation. While such measures may help calm conflicts in the short-term, they will rarely improve – and can further complicate – conflict in the long-term.

Conversely, sensitive, factual and balanced reporting by the media can enhance understanding of human-wildlife conflict situations and their complexities. This can help foster better relationships between stakeholder groups and garner local support for appropriate conflict responses, allowing for knowledge-based actions to be implemented and thus helping to mitigate human-wildlife conflict.

Given the broad reach of the media and the ability of wildlife-related news to attract a high reader- or viewership, the media have the potential to be powerful positive agents of change for human-wildlife conflict locally. It is important, therefore, for those involved in trying to reduce human-wildlife conflict to be able to engage effectively with the media and to understand the types of information that will help conflict reduction efforts.

Types of media and pathways of engagement

Typically, the media with which there may be engagement include two forms: **traditional media**, which include print media (newspapers, magazines, newsletters), broadcast media (television and radio) and digital media (online versions and sources of news, news portals, online articles and videos), and **social media**, which include blogs, social networking and social media platforms, such as Twitter, Facebook, WhatsApp, Instagram, LinkedIn, Reddit and Quora among others.

Usually conservationists connect with the media after a newsworthy incident occurs and the media seek information or guidance from an expert. Due to time restrictions, journalists may at times write about incidents without professional assistance, resulting in news articles or features that are not

well researched and can compound the problem. Conservationists may approach the media about their work and offer an article or news story in rare circumstances when projects are well resourced and have specialist media personnel on board.

Handling acute human-wildlife conflict media situations

In acute human-wildlife conflict incidences, there is heightened interest from the media in the issue. This is particularly the case when there has been a human injury or death, an animal has become trapped or is in an unusual location or situation, or a direct confrontation between animals and people has been captured on photo or video. Such incidences will always lead to some degree of news coverage, often by both traditional and journalist-led media and or public-led social media.

These situations occur and unfold rapidly, and from the conservationist point of view it is very important to ensure that the information and reporting do not escalate the situation, fuel hostile exchanges or lead to the spread of disinformation. The conservationist's objective here is to try to work with the media rapidly, to ensure objective and correct representation of the story, events and wider context. This is more easily achieved when a positive ongoing collaboration with contacts in the media is already established – guidance for which is provided in the next section below.

During an acute human-wildlife conflict media event, there may be an increased demand from the media for information about the situation due to a desire to provide 'real-time' reports on what is happening. If there is a lack of accurate information in these situations there is an increased risk of media stories becoming sensationalist and inflammatory. Thus, efforts should be taken to ensure that accurate information about the human-wildlife conflict reaches journalists, preferably as it unfolds (WhatsApp groups or similar can be a useful means of achieving this). Where applicable, it may also be useful at such times to repeat advice on how people in the conflict area can keep safe or protect their property.

When reporting on human-wildlife conflict, the information provided by the media can shape – either positively or negatively – public opinion of species and the people and organisations working to resolve the conflicts.

Very important also (for people working with human-wildlife conflicts who need to communicate with members of the media, but also to members of the media writing about human-wildlife conflicts) is careful consideration to the use of language in headlines. Table 7 provides examples and alternatives of sensationalist and objective headlines about human-wildlife conflict events.

Table 7. Examples of sensationalist and more objective news headlines concerning human-wildlife conflict situations

Sensationalist headline	Objective Headline
Man-eating leopard on the prowl – government orders shoot on sight	Government issues orders to shoot a problem leopard
Bloodthirsty tiger ordered to be shot on sight after five humans killed	Shoot-on-sight orders for a tiger believed to have killed five people



Social science research

Jenny A. Glikman, Silvio Marchini, Niki Rust, Simon Pooley,
Juliette Young & Catherine Hill

Social science: what it is and why we need it

Engaging with the social, psychological, economic and political dimensions of wildlife management and conservation is essential for robust and effective actions and policies regarding human-wildlife conflicts. The term social science encompasses a large number of disciplines and sub-disciplines (Bennett et al., 2017). Psychology, anthropology, geography, sociology and political science are examples of the social sciences that have been used to understand the drivers of humans' feelings, values, worldviews, thoughts and actions in the context of human-wildlife conflict, from individual stakeholders' perspectives (e.g. attitudes) to landscape-level management and national-level policies (see Bennett et al. (2017) for an overview). Specifically, in the context of human-wildlife conflicts, understanding different interest groups' perspectives and their different value systems, beliefs, priorities and agendas is necessary to find out how to address challenges for improved actions for people and wildlife.

Social science research

Starting a social science research project begins by identifying the research question(s) or topics to be examined and the perspective used to address that question or topic (for an overview of the different ways of knowing and conceptualising the world within social sciences, see Moon and Blackman (2014) (Figure 15). Based on this, the researcher should undertake a review of what has already been done on the topic and identify the methodology that best fits the research.

A methodology differs from a method because it describes the rationale of why, what and how to address the research question(s) in terms of research design structure, sampling and methods. Methods, on the other hand, are 'the tools of data collection and analysis' (Moon, Blackman, et al., 2019).

Different methods apply to several disciplines of social sciences. Some disciplines have influenced one another with their expertise in a particular method. For example, nowadays, rigorous archival records research is not limited to history, advanced statistical analysis is used beyond economics, social network analysis software is extensively used outside sociology and participatory observation is taken seriously in disciplines other than ethnography. However, methods are tools that always need to be adapted and reflexively tailored to the purposes of a specific piece of research.

One kind of qualitative research involves an inductive methodology (i.e. starting from observation) in which the aim is to avoid preconceptions and understand things that cannot easily be accessed, such as the feelings, experiences and thought processes of stakeholders. Grounded theory, for example, aims to discover concepts and relationships from raw data, requiring long-term immersion in the field, where exposure to context generates questions. These are recorded, coded and organised into a theoretical explanatory scheme (Strauss & Corbin, 1998) (Figure 15).

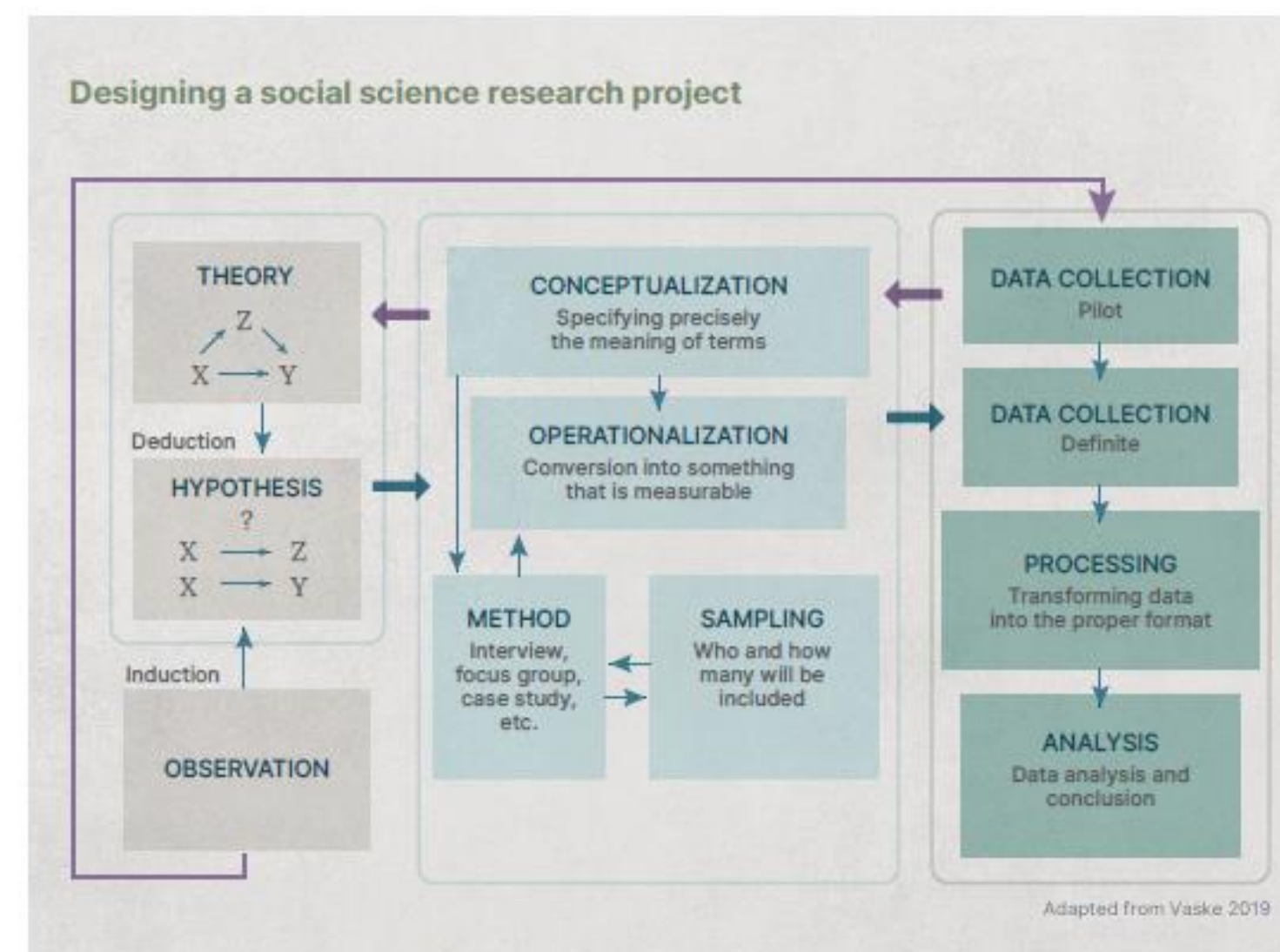


Figure 15. Flowchart of steps to design a social science research process. The purple line indicates the grounded theory process. (Adapted from: Vaske (2019) with permission)



Preventing damage by wildlife

James Stevens & Simon Hedges

Many types of action have been implemented by people around the world to prevent damage from wildlife (Conover, 2001; Nyhus, 2016). This chapter discusses actions and interventions to prevent damage; however, before focusing on preventing damage by wildlife, it is crucial to ensure that a comprehensive understanding of the conflict situation has been achieved. As explained in Chapter 1 (Levels of conflict over wildlife), many human-wildlife conflicts are about deeper issues beyond just the matter of damage caused by wildlife, and need to be approached accordingly.

In many human-wildlife conflict situations there is an urgency to intervene to address damage by wildlife. However, the efficacy of such actions are usually not tested (Hedges & Gunaryadi, 2010; van Eeden, Crowther, et al., 2018) or, when tested, the methods for assessment vary widely, making comparisons less straightforward. Conducting a participatory stakeholder engagement process (Chapter 13, Working with stakeholders and communities) to determine what action (if any) to take, and adopting a theory-of-change-based approach to planning (Chapter 15, Planning and theory of change), substantially increases the chance of the above concerns being addressed and therefore the likelihood that any actions taken will be successful.

Damage prevention interventions can take many forms, and identifying suitable ones requires extensive discussions with affected stakeholders to ensure acceptability, co-design and co-ownership, and sharing of responsibilities. Too often, an intervention that has worked in one human-wildlife conflict situation is applied to another, similar situation but is found to be unsuccessful. This is not because the action itself is not effective but might be because it will only work in particular cultural, physical or social contexts. It is essential that those hoping to mitigate the effects of human-wildlife conflict follow appropriate processes for understanding, planning and adapting for local contexts. By following these processes, the identification and selection of appropriate interventions will emerge from the participatory planning, and these are more likely to be effective when taking into account the full context of the human-wildlife conflict situation being addressed, embedded within the broader existing global human-wildlife conflict actions, successes and failures.

This chapter provides a brief discussion of the different ways of preventing damage by wildlife to crops, livestock and other property, and – to a lesser extent – preventing injuries to, or the death of, people. The interventions discussed in the next section have differing levels of efficacy, ethical considerations, feasibility, perceived functionality and, therefore, differing levels of success between contexts and regions, and depending on the species involved in the conflict (Allen et al., 2019; Gunaryadi et al., 2017; Hsiao et al., 2013; Weise et al., 2018; Zarco-Gonzalez & Monroy-Vilchis, 2014).

While this chapter will focus on actions and interventions that can be implemented to reduce damage at the local or site scale, some can and have been implemented on a wider, landscape scale. Some can be implemented to prevent damage by multiple species, while others are highly species specific.

Physical barriers

A commonly used technique to stop wildlife accessing and damaging property, and impacting human safety, is to construct a physical barrier where the structure alone makes it difficult for animals to cross into an area, thus spatially separating wildlife from people and property. Barriers can take many different shapes or forms, including fences, nets, trenches, moats, walls, buildings and exclusion cages, and may be produced using various materials, both synthetic and natural. While the presence of physical barriers alone may be enough to spatially separate wildlife and people, barriers can be supplemented with additional features to enhance the exclusion effect. For example, a fence can be electrified, resulting in a shock if wildlife touches it, thus adding a deterrent effect to the exclusionary one.

Guarding

The use of people or domestic animals to guard crops or livestock against wildlife has been applied for centuries. Guarding can be used to detect the presence of wildlife and deter it from accessing and damaging property or causing people harm. People guard property not only in static situations, such as community-based crop guarding, but also when herding livestock (van Eeden, Eklund, et al., 2018). Domestic animals have been used primarily to guard livestock from predation, although they have been used in other situations, such as crop guarding. Livestock-guarding dogs have most often been used for this task (Linnell & Lescureux, 2015), with other domestic animals, such as donkeys and llamas, being used under certain circumstances (Andelt, 2004). By integrating dogs into livestock herds from a very early age, the dogs become part of the herd and their ingrained behaviour to detect and deter threats means that predation can be reduced. This integration also prevents the dogs from chasing or killing the livestock themselves because they associate the livestock with their own pack.

Early-warning systems

Early-warning systems aim to ensure that people at risk of damage are made aware of the presence of wildlife as soon as possible. In some cases, this still requires an active guard – such as a lookout person – to detect the wildlife, with information regarding its presence distributed efficiently via various communication methods, such as loudhailers and sirens (Engelbrecht et al., 2017). More automatic systems have traditionally included tripwires that activate alarms (sirens, bells or even tin cans filled with stones) to indicate the approach of wildlife, thus allowing farmers to take appropriate actions, such as driving wildlife away from crops (Gunaryadi et al., 2017).

As technology has advanced, these detection processes have become more automated in various ways, ranging from radio/GPS-collared wildlife setting off alarms when crossing defined virtual boundaries (Weise et al., 2019), to strategically situated remote cameras that can detect and identify certain species of concern (ZSL, 2021). While early-warning systems can reduce the opportunity costs



IUCN SSC guidelines on human-wildlife conflict and coexistence

First edition



Available at
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Next steps

Translations (FR, SP, PO, AR, RU, CH)

User testing (& platform for inputs/feedback)

Complementary & supplementary documents (species, regions, case studies)

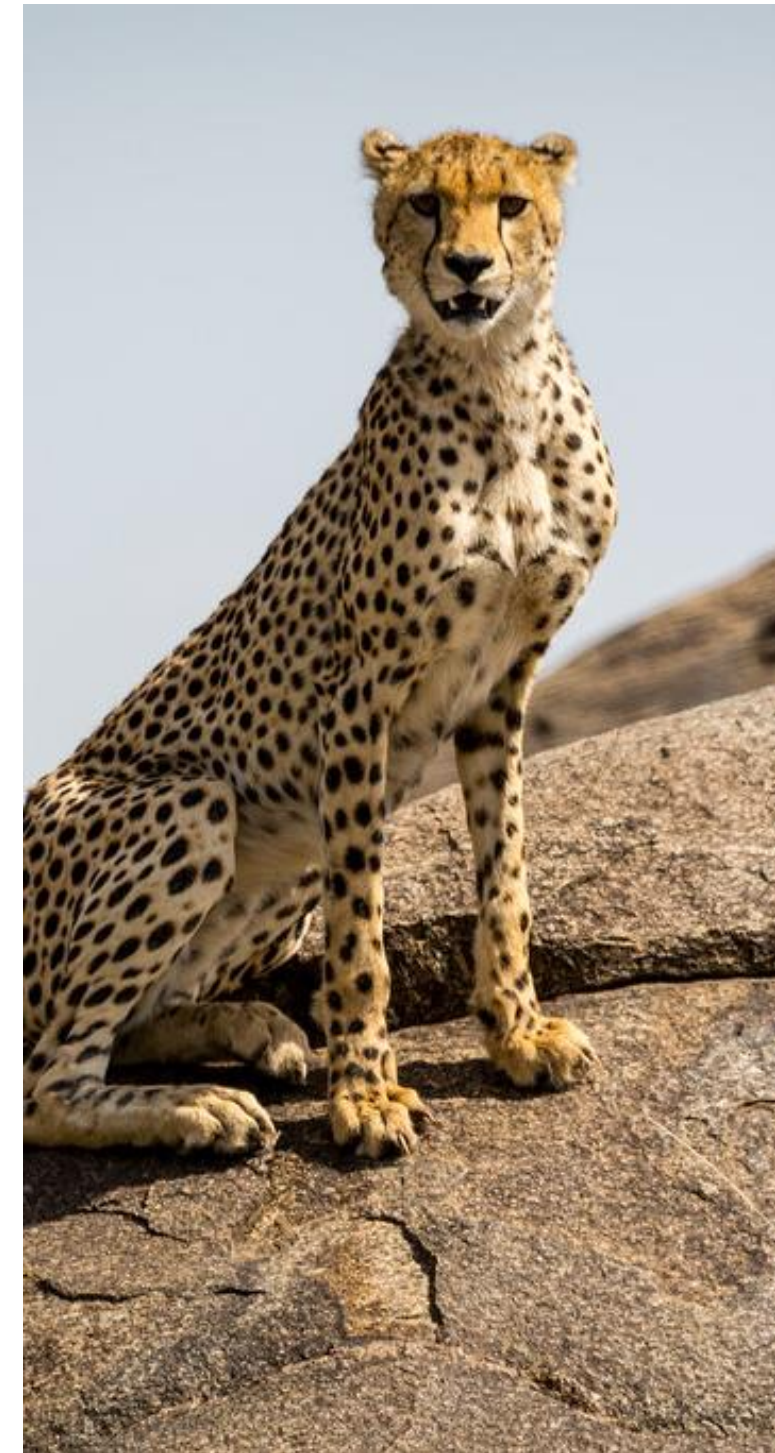


IUCN SSC
Human-Wildlife
Conflict & Coexistence
SPECIALIST GROUP



Objective 5. Conflict and coexistence

CITES-CMS African Carnivores Initiative



Objective 5. Conflict and coexistence

To promote coexistence of local communities with the ACI species through understanding and mitigating human-carnivore conflicts by co-management, and by providing socio-economic benefits and improved livelihoods to communities living with these carnivores.

Result 5.1. Coexistence of local communities with the ACI species is promoted and improved. *Indicators:*

- (1) report on best practice experiences for minimizing conflicts is reviewed
- (2) best practice guidelines for conflict minimization are available
- (3) priority areas with high human-carnivore conflict levels are identified
- (4) conflict mitigation projects are implemented.

Activity 5.1.1. Review best practice experiences for minimizing conflicts of local communities with the ACI species.	13.93(k)	
Activity 5.1.2. Develop best practice guidelines for enhancing the coexistence of local communities with the ACI species and their prey and discuss and promote them at an ACI Range State Meeting.	13.93(k)	
Activity 5.1.3. Identify areas where human-carnivore conflicts are threatening the (local) survival of any of the ACI species and where there is need for urgent actions.		
Activity 5.1.4. Implement and map the best practice guidelines for local communities in the priority areas identified under Activity 5.1.3.		
Activity 5.1.5. Raising awareness of stakeholders living in human-carnivore conflict areas for a better coexistence and enhance coexistence of local communities with the ACI species by including local stakeholders into the development and implementation of sustainable management and conservation plans for the ACI species and their prey (see also Results 3.1 and 3.2).		
Activity 5.1.6. Promote socio-economic benefits for local communities living with the ACI species.		



IUCN SSC GUIDELINES
PRINCIPLE 3 —

Work together

Training/capacity building

Events (online & in-person)

National/regional assessments

Strategy/action plan development

GBF indicator technical working group

Gov Focal Points to HWCCSG



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Human-Wildlife
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