



“Think Like a Jaguar”

Anthony R. Cummings, Nelanie LaCruz and Andrew Stoeckel

Cover graphic:

The interactions between humans and wild cats in Guyana has many dimensions. Wild cats are inherently interested in wild prey, the agouti, labba, deer, caimans and similar animals in their habitats. Humans (represented by the center of the figure) and wild cats (bottom of the figure) have long co-existed but human livelihood activities, primarily livestock rearing and keeping domestic animals lead to predation by wild cats. Our challenge is to create an environment in which humans and wild cats can continue to live side-by-side, a process that will require humans to take a more active role in planning for co-existence.

Please cite this toolkit as, Cummings, A.R.*, La Cruz, N., & Stoeckel, A. 2019. Guyana Human-Wild cat Conflict Management Toolkit.

*Corresponding author.

All questions and comments should be sent to Anthony.Cummings@utdallas.edu.

FOREWORD

The interactions between humans and wild cats are as old as the planet itself. For much of human history, wild cats have managed to stay out of the path of humans and thereby continue to be an essential part of the earth's ecosystems. More recently though, and certainly within the past 100 years or so, increasing human populations, land-use and land-cover changes, and our dependence on livestock rearing has brought us and wild cats into more direct contact. Our stronger spatial connectedness to wild cats mean that adverse outcomes (after all these cats are predators) are inevitable. The challenge facing us is how to tailor our activities to ensure that while we operate in a shared space with wild cats, that we do not compromise their ability to survive.

There are several ways in which our activities within wild cat habitat may impact their ability to survive, and the level of interest they show in our places of residence. First, when we hunt animals such as labba, deer and agouti that are the food of the jaguar then they are forced to find new sources of food. Traditionally, our native peoples have used traditional methods to hunt these animals. The level of hunting by Amerindians has managed to keep the balance necessary for them to obtain food while allowing the jaguar to have enough food. Hunters within indigenous peoples' settings use traditional hunting tools (bows and arrows and similar weapons) which, unlike guns, significantly limit the level of hunting. The introduction of guns shifts the dynamics within ecosystems. It allows for more prey to be removed which can lead to a shortage of jaguar food. The shortage of prey increases the chances of a jaguar visiting homes, farms, and mining camps to catch easy prey. This prey may, unfortunately, be someone's dog, sheep or cattle. Guns can be used to hunt jaguars. Hunting jaguars introduces problems for people in our society who depend on traditional farming. An injured jaguar has a decreased ability to hunt and will tend to seek out easy domestic animal prey. Removing jaguars altogether will lead to increased herbivore populations that will make farming difficult. Additionally, as we move into jaguar habitats for gold, lumber, and other natural resources, we disturb their places of residence. These animals are displaced as a consequence of our presence. When the trees that serve as habitat are removed, and their prey is displaced or hunted by resource extractors, the wild cats are forced to find alternatives. Finally, as we rear livestock in jaguar habitat, vulnerable animals are placed in their path leading to inevitable predation and conflict. Wild cats play essential roles in our forests here in Guyana. As they control the population of their prey species, our farmers are allowed to ply their trade, and the density and diversity of plants that make up the forests are maintained. For these reasons, it is vital that we take steps to protect wild cats, their habitats, and their prey.

This document is the first attempt here in Guyana to outline some of the steps we can take towards protecting jaguars and their prey, their habitats, and human populations alike. This document should be viewed as an organic piece, and we expect that new and improved measures will emerge as our understanding of our relationship with wild cats and the dynamics that lead to conflict evolve. Some of the ideas proposed here will require adaptation at local settings, while others will require the engagement between various agencies. As you peruse this document, we hope that it will continue the conversation on the steps that are needed to foster coexistence between wild cats and humans in Guyana. As you read the ideas in the document and think of new ones, please feel free to contact the authors and send them your thoughts. Protecting Guyana's wilderness and people is all of our responsibilities. I invite you to join us on this journey that will lead to a richer and more prosperous Guyana.

Alona Sankar
Commissioner
Guyana Wildlife Conservation and Management Commission
July 2019

INTRODUCTION

The interactions between humans and wild cats in Guyana can be traced back thousands of years. Among each of Guyana's nine indigenous nations, stories of the power of wild cats, strife between wild cats and humans, admiration for wild cat majesty and indeed humans trying to mimic various aspects of their character abound. Humans conquering wild cats, often manifested through fangs hanging on jewelry worn by traditional hunters, perhaps best epitomizes the admiration people hold for wild cats. The respect native peoples hold for wild cats and perhaps a reflection of the minimal impacts wild cats have had on their populations has led to co-existence for centuries. Occasionally, a wild cat will change the dynamic by preying on domestic animals or injuring a person. The oral history of such changes are passed on from one generation to another through stories and folklore. Often such stories diffuse into the non-native population's consciousness, triggering fear of wild cats even when they are absent. More recently, more non-native Guyanese have come into contact with wild cats and the accounts of such encounters have increased interests in wild cats. Collectively, the account of human-wild cat interactions have lead to people devising plans to harm wild cats on sight as they move into their habitats, rather than think of ways to co-exist.

Over the years, scholars and conservation biologists, have proposed and tried methods to promote coexistence between humans and wild cats in various settings. In Africa, for example, Begg & Kushnir (2011) proposed various strategies for living alongside lions. In Latin America, Marchini et al. (2010) and Hoogesteijn & Hoogesteijn (2014) have developed strategies for co-existing with jaguars (and pumas), especially so in cattle rearing settings. Marchini et al. (2010) also provided excellent insights into the behavior of jaguars versus pumas, the range of jaguars, and their life cycle stages. But while the focus of past efforts have been on cattle farming, the key area of conflict between people and wild cats (see Hoogesteijn & Hoogesteijn 2014), other conflict scenarios exists that increase the chance of wild cats being killed. These additional scenarios are observed in Guyana and this document aims to propose methods for responding to these by drawing on the work of Begg & Kushnir (2011), Marchini et al. (2010) and Hoogesteijn & Hoogesteijn (2014), along with suggestions from local people.

Guyana is home to six (6) wild cat species, jaguars (*Panthera onca*), pumas (*Puma concolor*), ocelots (*Leopardus pardalis*), jaguarondis (*Puma yagouaroundi*), margays (*Leopardus wiedii*), and oncillas (*Leopardus tigrinus*). Despite their varying sizes and location in the Neotropics, all of these species are colloquially referred to as "tiger" in Guyana. In fact, in casual conversation with Guyanese, it is common place for the term 'tiger' to be used to refer to all wild cats (some other wildlife species are also referred to as tiger in some locations). Local people do, however, despite the broad scale referral to 'tiger', pay attention to the characteristics of the cats they encounter. As a consequence, while completing research, for example, one should pay attention to colloquial terms used to refer to each wild cat species. The larger three wild cat species, the jaguar, puma and ocelot, are referred to 'turtle tiger', 'deer tiger' and 'labba tiger', respectively (Cummings, 2019) and using these terms can be significant in drawing distinctions between cat species and their activities. In essence, though, the names local people use to refer to wild cats relate the resemblance of these species with the animals that indigenous peoples have

traditionally hunted in Guyana. The jaguar share coat patterns with the tortoise (turtle in Guyana), the puma with the deer and the ocelot with the labba (paca). Because all wild cats are referred to as ‘tiger’, predation of one species on livestock and domestic animals can trigger retaliation against all species, even when they are innocent.

Recently, as more people move into the Guyanese forested landscapes for logging, mining, farming and other resource extraction activities, the nature of the relationship with wild cats have changed. The situation is further compounded when global-level conditions of weather and climate, such as *El Nino* events, trigger changes within ecosystems that places pressure on wild cat survivability. Droughts brought on by *El Nino*, for example, lead to the dispersal of jaguar prey, making domestic animals more vulnerable to predation. Further, as more people move into new areas for resource extraction, their increasing need for food lead to increased levels of hunting and the removal of the prey species that are important to the diet of wild cats, in particular jaguars and pumas. Many persons moving into the forests for resource extraction activities take dogs and other domestic animals with them, inviting visits from wild cats that trigger conflict.

In this toolkit, the various scenarios that trigger human-wild cat conflict, with particular emphasis on the jaguar, are outlined. In addition to describing the situations that trigger conflict, the document describes some actions that may be taken to remedy such situations. In recognition of the fact that conflict between humans and wild cats occurs across various spatial scales, and that the responses should be similarly multi-scalar, the potential responses are described from the local through to national and international options. The toolkit begins by describing the steps the authors followed to understand the conflict landscape, and how potential solutions were laid out to local people. In this regard, the toolkit must be viewed as a first step in the process of dealing with human-wildlife conflict and should be viewed as having significant room for growth and improvement. The authors recognize that the suggestions are no silver bullets, and like any place where conservation is successful, there will be a need for changes in behavior and attitude. There is also a need for extensive research, and indeed some of the approaches suggested here speak to the need for such measures with the emphasis that it is completed in tandem with local people.

APPROACH FOR DEVELOPING TOOLKIT

To understand the dimensions of human-wild cat interactions in Guyana, we held workshops, interview sessions and one-on-one interviews with local people, experts, and other stakeholders at twenty-four (24) locations across Guyana (Figure 1). Data collection through workshops was an interactive process. Participants, groups of between 20 to 40 persons at each site, were chosen by village leaders and local authorities. Prior to the authors arriving at respective sites, local leaders were asked to identify persons that had a likelihood of being engaged in conflict with wild cats (indigenous peoples, gold miners, cattle farmers, crop farmers and loggers) and who were available to spend 4-5 hours engaging the authors. Each workshop, essentially a group discussion, aimed at answering three questions that would allow the authors to develop a sense of human-wild cat interactions in that locale and the methods that people have used to respond to conflict. The three questions were:

- 1) What are the current types and levels of human-wild cat conflict in your village/town?
- 2) What measures are you currently using to respond to human- wild cat conflict in your village/town?
- 3) For the methods that are being used, where did you learn of these?

The discussion focussed on all wild cats, including jaguars and pumas. Prior to commencing discussions to address the questions above, participants were given an introduction to the project and were required to provide verbal consent for the continuation of the discussions. Once consent was received from participants, a presentation was completed to make participants familiar with the six wild cat species that live within Guyana's forests. Presentations were completed using Microsoft PowerPoint and an overhead projector and were supplemented by printed photographs of wild cats. In cases where power was not available, the printed photographs were used to ensure participants were familiar with the six wild cat species. Participants then presented their responses to each question which were then recorded.

At the end of presentations on the questions above, the authors presented initiatives for responding to conflict as developed by people in other areas of Latin America. The presentation was essentially a summary of the work of Hoogesteijn & Hoogesteijn (2014). In total, sixteen workshops were held (see Figures 1 and 2) and six other interview sessions/mini-workshops.

Location	Date
St. Cuthbert's Village	May, 25 th
Mocha Arcadia	
Surama Village	June, 3 rd
Wowetta Village	June, 4 th
Rupertee Village	June, 5 th
Kwatamang Village	
Matthew's Ridge	June 10 th
Arakaka & (4 and 5 miles)	June 11 th
Port Kaituma	June, 12 th
White water Village	June, 14 th
Kamwatta Village	June, 15 th
Highburry/ Sisters	June, 19 th
Moleson Creek	June, 20 th
Parika	June, 21 st
Alik, Berbishabali, Saxacalli	June, 22 nd
Bartica	June, 25 th
Hogg Island	June, 26 th
Mainstay Village	June, 27 th
Capoey Village	
Tapakuma Village	June, 28 th
Lima sands	
Paruima	July 6 – 10 th
Supenaam	July, 14 th

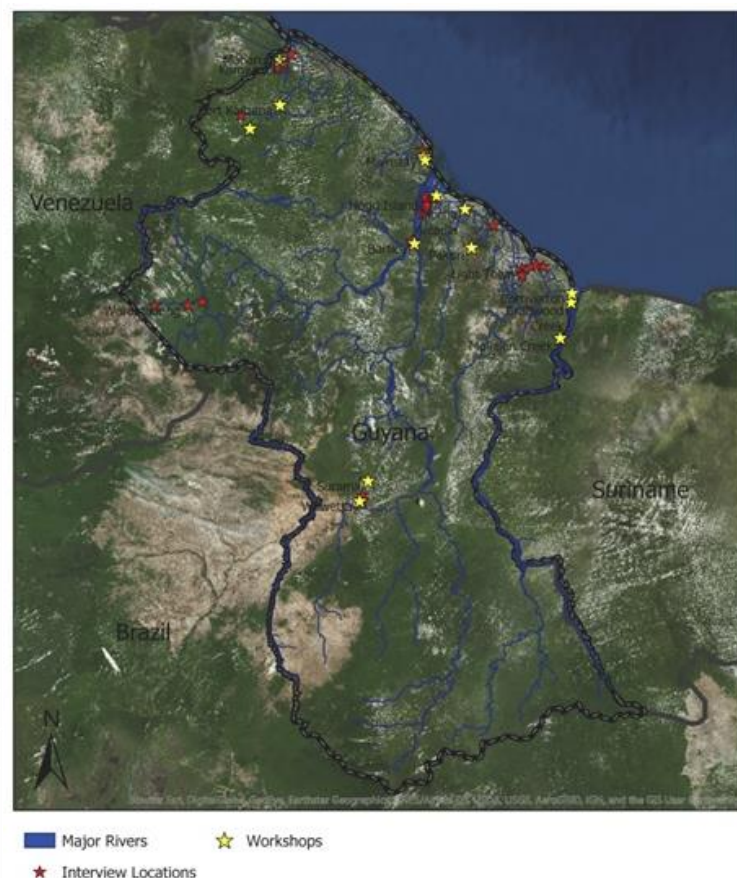


Figure 1: Locations where data on conflict were collected across the Guyanese landscape in 2018.



Figure 2: Scenes from four workshops.

DIMENSIONS OF HUMAN-WILD CAT INTERACTIONS IN GUYANA

Humans and their domestic animals and livestock are brought into contact with wild cats through four primary modes in Guyana (Figure 3). The dominant interactions here, like other places across Latin America, occurs within cattle farming settings (Mode 1). Cattle farmers have long lived within the range of the jaguar and their livestock have faced jaguar predation. Cattle farmers have used various methods, mostly aimed at killing an offending jaguar, to deal with conflict situations.

In addition to cattle farmers, there is also movement of people, into rural and forested settings for gold mining and logging (Mode 2). While the obvious destruction of jaguar habitat that accompanies the movement of the new people into the forest is evident in Guyana, it is the fact that they are accompanied by domestic animals that triggers conflict. Many small and medium scale miners and loggers tend to move into landscapes where the social and security services have not yet arrived (see Cummings 2019). Some miners also struggle to get food or need to find the means to obtain cheap food. For both of these scenarios (security and food) the miner or logger keeps the dog to act as an alarm system for visitors or for its hunting services. The presence of the dog places humans and jaguars in direct contact and often leads to conflict.

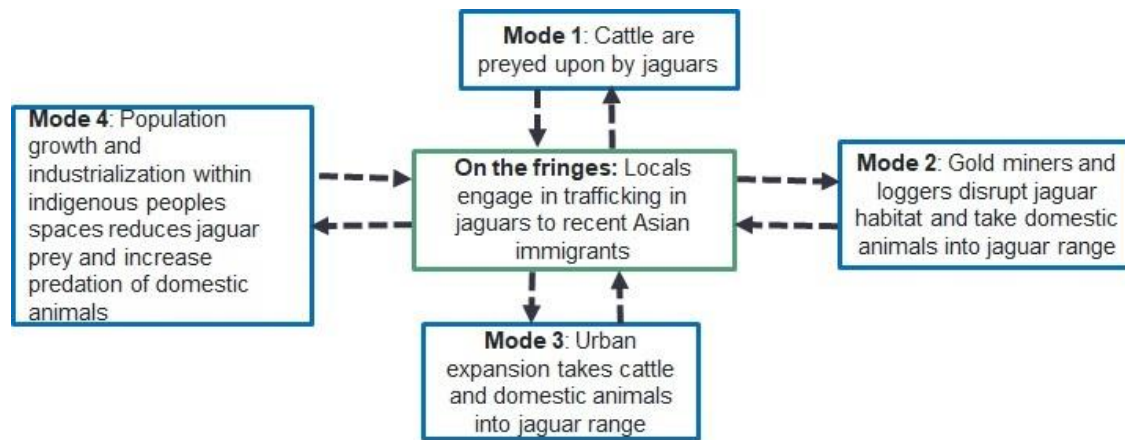


Figure 3: A schematic representation of the various dimensions of human-wild cat interactions observed in Guyana.

While smaller scale miners and loggers keep dogs, larger scale operators may be able to legally obtain guns to provide for their security. The access to the gun triggers the desire to hunt for some miners, leading to either the removal of jaguar prey or jaguars being hunted to satisfy the thrill.

As the population of urban areas grow people, including small-scale cattle farmers, move into what would have been considered the forest edge for both housing and food production (Mode 3). In many instances in Guyana, cattle farmers who own a few cows may have historically used areas of coastal land to raise their herd, but as demand for land increases, such farmers are displaced. The response is usually to move into the forest edge for keeping their herds or using very small spaces to keep cattle. Keeping cattle in small spaces usually dictates that the animals, primarily cows that are kept for their milk, are tethered to a tree or similar anchor. The animal being kept on a rope is an easy target for jaguar predation, especially when they are kept within poorly maintained landscapes.

Indigenous peoples have hunted jaguar prey and often dogs are included in hunting parties for centuries (Mode 4). The presence of the dogs within indigenous peoples settings trigger conflict with jaguars. In some instances, jaguars are caught in traps meant for jaguar prey. As indigenous peoples populations grow and some communities transition away from traditional agricultural practices, increased contact is made with jaguars and other wild cats.

The four modes of interactions create tensions between cattle farmers, gold miners, loggers, farmers on the urban-rural interphase and indigenous peoples and wild cats, in particular jaguars. The frustration that results from jaguar predation on livestock, for example, creates the opportunity for people to want to get rid of a jaguar at all costs. In some cases, recent migrants to Guyana have offered an outlet for such offending jaguars, offering local people money to capture the jaguar. Colloquially, these migrants are referred to as “Chinese” but they may have roots in Indonesia, Malaysia, China, and the Philippines. Many of these migrants come from places

where native wild cat populations have been pressured and reduced, and they appear to want to substitute the taste of the jaguar for what they missed at home.

RESPONDING TO CONFLICT

Describing the Conflict Situation – The Interview

The various dimensions of interactions between people and wild cats require a careful analysis of the situation. From the discussions at workshops and interview sessions, it became apparent that, as observed elsewhere in Latin America, stakeholders can often confuse the actions of wild cats with other actors and even the wild cat species that may be responsible (see Marchini et al. 2010). It was obvious from interactions though that despite the actions of wild cats being conflated between species and other actors, including rustling, the response needed to be multi-scalar. As the situation is being assessed, it is critical that the person responding to conflict (responder hereafter) needs to be clear that there are no silver bullets that will magically remove their problems.

Through the initial interaction, the responder will:

- **Develop a rapport with the person being impacted by conflict**, be it for the presence of wild cats or whatever it is that is challenging. It is critical the responder listen carefully to the person being impacted as they are more than likely experiencing some kind of trauma. In addition to caring for their domestic animals and livestock, the person being impacted may be concerned for the safety of their children. The persons are more likely to listen and react in a rational manner if they know that they are being listened to and are not being judged.
- **Collect careful records** to cover the following, but not limited to:
 - identifying the problem – analyze the situation – take pictures, time of day the person was affected, the person's observations (what they saw, heard), what their neighbors saw
 - pictures of the surroundings, where appropriate take scaled pictures of the tracks of the offending animal (if it is an animal) using a pen or ruler to measure the size of tracks and to provide insights into the animal in the area.
 - if it is a wild cat, assess whether there are still domestic animals that may be vulnerable to predation
 - whether people are vulnerable, especially younger children and provide them with measures to avoid contact with the wild cat.
- **Remain professional and sympathetic** as the person may have lost an animal that has special value to them.

The point that there are no magic solutions to responding to conflict cannot be overemphasized. The responder should seek to assure the persons impacted that they have been heard and that everything is being done to understand their situation. Once the responder establishes that a wild

cat is in the area, the next step will be to work with the persons and community impacted to develop appropriate responses. The responder should also bear in mind that in many settings in Guyana the way to respond is to get someone with a gun to kill an offending cat. The persons impacted are likely hoping that the responder will endorse such a ‘solution’. In addition, the persons impacted will have ‘solutions’ in mind, including that the offending wild cat should be killed or relocated to another area. These are the moments where the responder needs to remain calm and explain to the person impacted that killing or relocating a jaguar can have fatal consequences for the wild cat. In the process of capturing a wild cat a person can be hurt as well, while killing the jaguar will have implications for farming practice in the area. Further, removal of a jaguar will not solve the problem as another one will soon take its place and lead to wider ecological degradation. Responding therefore, is multi-scalar and will range from local or proximate actions that the person impacted can take, through to the need for larger level research and collaboration efforts across the Guyanese landscape.

Local Measures - “Think Like a Jaguar”

Local measures are the proximate direct measures that the persons impacted by conflict can take to prevent conflict. At the core of these responses is for the persons impacted to “*Think Like a Jaguar*”. By thinking like the jaguar, the persons impacted are encouraged to:

- Adapt their thinking in such a manner that they begin to consider the things that are drawing the jaguar to their home, farm or mining camp;
- Think of measures that they can put in place to respond once they can identify what the jaguar is after, which is generally their domestic animals and livestock; and
- Describe their situation and map out what is happening. There is a good chance that as they map out their situation, the persons and the responder will hear the solution to their challenges. An example is outlined below:
- *Someone may tell you that his dog was out running in the yard last night when it was attacked by a jaguar. It was raining at the time and he heard other dogs in the area barking. He may go on to tell you that his dog was attacked after a series of other dogs were similarly attacked within the locale. This offers you the opportunity to suggest to him, gently, that perhaps it might be a good idea to keep his dog in a kennel once he heard reports of jaguars attacking his neighbour’s dogs.*

People lose animals that have various purposes for them or provide different kinds of services. A dog, for example, may provide the following services to an owner:

- Security;
- Companionship; or
- Hunting.

Therefore, when persons lose a dog they suffer in all or multiple dimensions of these ways. The discussion in responding to this conflict is to work with the person to see how the dog can be protected while still providing these services.

Locally too, the responder may pose the following questions to the person impacted, in a calm and concerned manner as possible:

- Can you describe what happened?
- Can you tell me what time of day the incident occurred?
- What time of year are the jaguars/pumas coming to your home?
- Can you tell what is attracting the jaguar/wild cat to your home?
- What can the village and I do to prevent the jaguar from getting what it is being attracted to in the future without injuring or killing the jaguar?
- Is there a pattern in terms of the type of dogs, age, and locations/building types, yard types, distance to vegetation or water, that are more likely to be attacked by the big cat?

Once these questions are answered, it is very likely that the person impacted would identify the circumstances of the interaction and they will better understand the measures they can take to prevent conflict.

The person impacted may reveal that their dog used to be in a kennel and it was attacked the same day that they let it out. Maybe their calves were attacked in an area where they have very little supervision over or during the night when it was raining, and hence the jaguar had cover. Under such situations, the responder may suggest better cattle farming and husbandry practices to the person impacted. The measures below may not yield immediate results, and there is a good chance that the problem being encountered will require long term intervention measures. While each conflict situation is different, it is possible that one or more of the measures below may be applicable:

The following can be suggested:

- Building kennels;
- Identifying jaguar prints around the village and asking everyone to protect their animals; and
- Tracking the stage of pregnancy of cows and planning for the birth of the calves. Young calves are most vulnerable and should be kept indoors as much as possible. Respondents suggested that while some larger cows are vulnerable to attack by wild cats, calves younger than 2 years old were most vulnerable. They should keep a look out for young calves from the time they are born through to when they are around two (2) years old.

The responder should take note of the cultural situation, where the practices being proposed may not be applicable.

Beyond cattle and domestic animals, people were also concerned for the safety of their children. In such cases, children should:

- Be told to be vigilant. Don't be careless, rather be assertive and be ready to stand and be brave if you see a big cat. Do not turn your back or run. Look the jaguar in the face, and slowly move away. The same life skills that are used to confront bullies, abusers, and staying vigilant for people who may mean harm to children can be used to protect

children from attack. Generally, jaguars and other wild cats want to be away from us, we should therefore respect them, stay out of their way and they will more than likely do the same.

- If it is known that wild cats are in the area, children should not walk alone. Avoid being out late in poorly lit areas. Employ a buddy system.

Locally too, workshop respondents and interviewees suggested a series of measures that may be appropriate for keeping wild cats away. The following were suggested:

- Keep your surroundings clean, remove excess vegetation in places that may provide a cover for wild cats and make domestic animals vulnerable to predation;
- Do not leave meat and other animal parts in places where they may be accessible to jaguars and other wild cats. These animals will quickly realize where food is located;
- Reduce hunting especially for animal species that are the prey to big cats. Remember the wild animals still need to eat and if they can't find their food or if they are incapacitated in some way they will go after the next available thing which might be livestock or domestic animals; and
- Stop hunting and trafficking jaguars. Without the jaguar our lives will be very different.

Regional Measures - “Think for the Jaguar”

These measures are medium to long term and require working with the persons affected to be developed and implemented:

- educational outreach;
- present data on the importance of the jaguar and connections to forest processes;
- complete research at the village level to determine jaguar density; and
- complete research at the village level to determine jaguar prey density and behavior and the relationship to plant species that provide food for jaguar prey in specific settings.

National Measures - “Think To Protect The Jaguar”

In Guyana, data on the biology and behavior of the jaguar are still being obtained. There is little known on where jaguars are located and how their prey are distributed in various habitats. Being able to respond to conflict requires national-level methods to complement local measures. These measures are longer term in nature but require immediate actions:

- develop national level estimates of jaguars and their prey;
- develop national level outreach and educational programs – “Think Like a Jaguar” – for schools and school-aged children and for their parents;
- develop life skills measures and clubs to foster a greater appreciation of wildlife, including wild cats, that explain their biology and importance in the Guyanese landscape;

- work with local stakeholders, including churches, clubs, and others to educate the public on the importance of jaguars and other wild cats;
- address trafficking by recent migrants through official government-to-government channels;
- arrest offenders and discourage Guyanese from supplying jaguars and other wildlife to these buyers. The penalties for such offenses should be made clear to the public through media and other outreach; and
- commit to conducting Environmental Impact Assessments for all medium to large scale projects in the agricultural, mining or forestry sector as they are likely to affect jaguars, and other wild cats, all of which are protected species.
- develop a national jaguar plan and support conservation initiatives by government agencies, NGOs and CSOs.

These measures are long term but require immediate actions:

- stronger collaboration between government and non-government agencies;
- stronger zoning and allocation of lands for pasture and other purposes; and
- encourage farmers and other stakeholders to make better decisions on keeping livestock.
- Professionalize cattle farming and gold mining (and similar activities) so that contact with wildlife is considered a part of their jobs and persons are prepared to deal with their presence;
- Stronger regulation for non-traditional hunting and the development of hunting seasons and zones for wildlife removal if this action is to be continued;
- Stronger support for farmers as their neighbours migrate overseas since their absence may create a landscape management concerns. Two farmers living side-by-side may collectively keep their surrounding clean. When one farmer moves away, and the level of effort is reduced on his farm, the regrowth of vegetation, for example, may provide cover for wild cats.

Acknowledgements

This toolkit was prepared after interactions with the people of St. Cuthbert's Mission, Mocha Arcadia, Surama Village, Wowetta Village, Rupertee Village, Kwatamang Village, Matthew's Ridge, Arakaka, Port Kaituma, White water Village, Kamwatta Village, Highbury Park, Moleson Creek, Parika Backdams, Alik, Saxacalli, Bartica, Hogg Island, Mainstay Village, Capoey Village, Tapakuma Village, Lima Sands, Paruima Village, Supenaam. We are grateful to them for allowing us to talk to about wild cats, to share their stories with us, and listen to our ideas for dealing with this important subject. Nicole Stoeckel was instrumental in developing the cover image – thank you! The field work associated with visiting the various study areas was supported through a grant from the National Geographic Society. The Guyana Wildlife Conservation and Management Commission and Commissioner Alona Sankar also provided invaluable support to the creation of this document. The views expressed in this report are those of the authors and do not represent those of our sponsors and supporters.

References

Begg, C. & Kushnir, H. (editors; 2011). Human-Lion Conflict Tool Kit. <http://rateltrust.org/wp-content/uploads/2018/11/2015-English-Toolkit.pdf>.

Cummings, A.R. (2019). An Exploratory Analysis of Stakeholders and their Influence on Human-Jaguar Conflict in Guyana. Human Dimensions of Wildlife (*under review*).

Hoogesteijn, R. & Hoogesteijn, A. (2014). Anti-Predation Strategies For Cattle Ranching in Latin America: A Guide. Panthera. Eckograf Solucoes Impressas Ltda., Campo Grande, MS, Brazil. 64 pp. (English Edition)

Marchini, S., Luciano, R. & Hoogesteijn, R. (2010). People and Jaguars: A Guide for Coexistence. Panthera, Piracicaba, Sao Paulo, Brazil.