

PROTOCOL OF CONDUCT

What to do in case of a jaguar encounter in Tortuguero National Park, Costa Rica?



The 'Coastal Jaguar Conservation' project has the mission to study wild felid populations, and their prey species in the Caribbean Coast of Costa Rica, in order to promote management and conservation strategies

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ABOUT THIS PROTOCOL

This document provides basic guidelines of conduct that every person should follow in case of a jaguar sighting, or other wild felid, in Tortuguero National Park, Costa Rica. This protocol can be applied to other areas of the country and to any species of wild cat. Recommendations are also given on what to do during sightings in urban areas.

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GRAPHIC DESIGN AND LAYOUT

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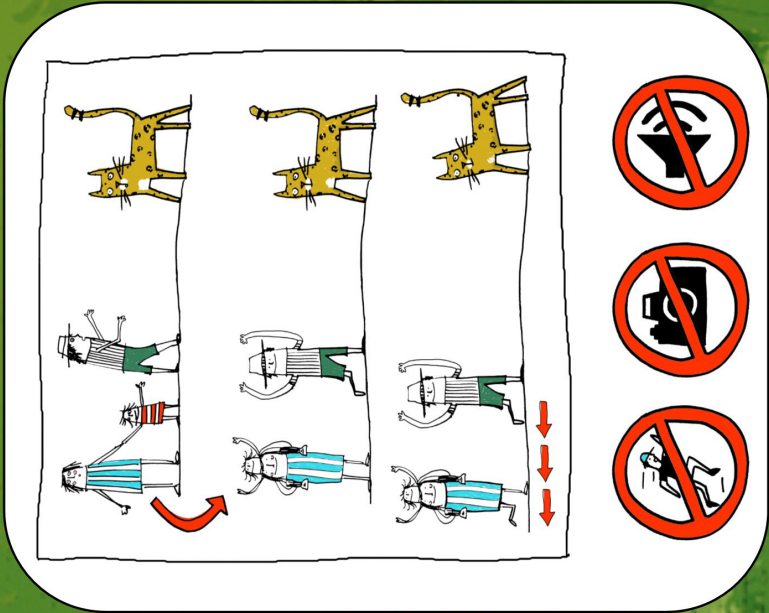
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¿QUÉ HACER EN CASO DE ENCONTRARSE CON UN JAGUAR?

What to do in case of a jaguar sighting?

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Ilustraciones: Viviana Araya Gamboa

Paso 1. Siempre mantenga la calma

Step 1. Always keep calm

Paso 2. Levante los brazos lentamente, sin hacer movimientos bruscos o repentinos

Step 2. Raise your arms slowly, avoid sudden or abrupt movements

Paso 3. Si va acompañado de niños, levántelos lentamente sin agacharse

Step 3. If children accompany you, lift them up slowly without bending over

Paso 4. Alejese del jaguar lentamente sin darle su espalda

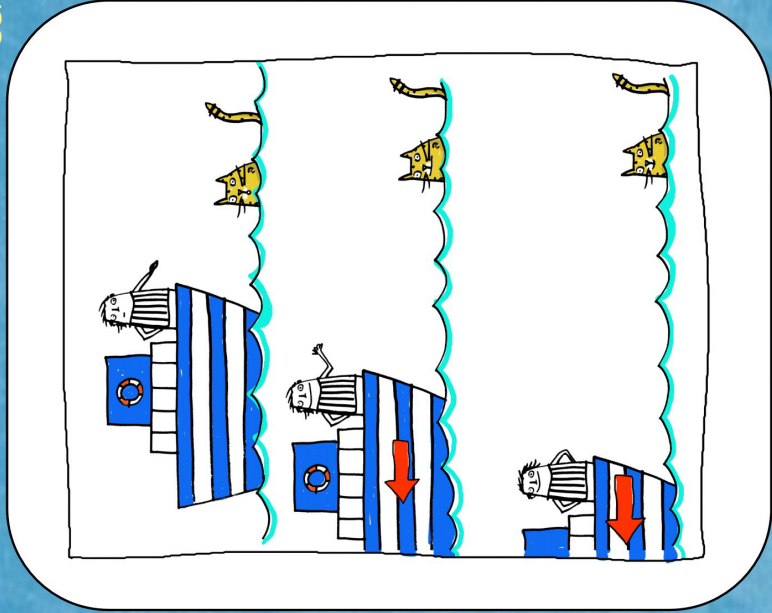
Step 4. Slowly back away, never turn your back on the animal



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Paso 1. Disminuya la velocidad del bote

Step 1. Reduce the speed of the boat

Paso 2. Aleje el bote del jaguar lentamente y siempre mantenga una distancia mínima de 50m


Step 2. Move the boat slowly away from the jaguar and always maintain a safe distance (minimum of 50m)

Paso 3. Nunca acerque el bote al jaguar con el fin de observarlo mejor o tomarle una fotografía

Step 3. Never move the boat towards the jaguar to get a better look or photograph



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A photograph of a jaguar (Panthera onca) camouflaged in dense green vegetation. The jaguar is partially obscured by large, glossy green leaves, with only its head and front legs visible. It is looking towards the camera. The background is filled with more green foliage, and a grey rock ledge is visible at the bottom of the frame.

A jaguar (*Panthera onca*) camouflaged
in the vegetation

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Importance of the coastal habitat for jaguars

The coastal habitat has been identified as an important area for jaguar conservation in Tortuguero National Park because:

- A. It is a feeding site:
 - There is a high availability of prey species, specifically marine turtles (*Chelonia mydas*, *Dermochelys coriacea*, *Eretmochelys imbricata*, *Caretta caretta*) which form an important component of the local jaguar population diet
- B. It has a resident jaguar population as well as a migratory population
- C. It is a breeding area containing:
 - Sexually mature individuals (male and female)
 - Juvenile individuals (male and female)
 - Parenting site (females with cubs)

► REFERENCE LITERATURE

The following literature explains in detail the importance of Tortuguero National Park for the conservation of the jaguar, and other wild cats. It also highlights the interaction between jaguars and marine turtles, as well as the effect of this interaction on the jaguar social behavior.

Arroyo-Arce, S. 2013. Selección de hábitat del jaguar (*Panthera onca*) en el Parque Nacional Tortuguero y su área de amortiguamiento, Costa Rica. Tesis de Maestría. Instituto Internacional en Conservación y Manejo de Vida Silvestre. Universidad Nacional, Heredia, Costa Rica.

Arroyo-Arce, S., J. Guilder & R. Salom-Pérez. 2014. Habitat features influencing jaguar *Panthera onca* (Carnivora: Felidae) occupancy in Tortuguero National Park, Costa Rica. *Revista de Biología Tropical* 62: 1449-1458.

Arroyo-Arce, S., I. Thomson & K. Cutler. 2016. King vulture (*Sarcoramphus papa*) scavenging at green turtle (*Chelonia mydas*)

carcasses in Tortuguero National Park, Costa Rica. *Vulture News* 70: 30-36.

Arroyo-Arce, S., I. Thomson, K. Cutler & S. Wilmott. 2018. Feeding habits of the jaguar *Panthera onca* (Carnivora: Felidae) in Tortuguero National Park, Costa Rica. *Revista de Biología Tropical* 66: 70-77.

Arroyo-Arce, S., I. Thomson, D. Guy & A. Searcy. 2019. First confirmed record of *Leopardus wiedii* (Carnivora: Felidae) in Tortuguero National Park, Costa Rica. *Catnews* 69: 6-7.

Arroyo-Arce, S., I. Thomson, E. Harrison, G. Baker & S. Wilmott. 2017. First record of jaguar (*Panthera onca*) predation on a loggerhead sea turtle (*Caretta caretta*) in Tortuguero National Park, Costa Rica. *Herpetology Notes* 10: 17-18.

Arroyo-Arce, S. & R. Salom-Pérez. 2014. First record of *Puma concolor* in Tortuguero National Park, Costa Rica. *Brenesia* 81-82: 115-118.

Arroyo-Arce, S. & R. Salom-Pérez. 2015. Impact of jaguar *Panthera onca* (Carnivora: Felidae) predation on marine turtle populations in Tortuguero, Caribbean coast of Costa Rica. *Revista de Biología Tropical* 63: 815-825.

Guilder, J., B. Barca, S. Arroyo-Arce, R. Gramajo & R. Salom-Pérez. 2015. Jaguars (*Panthera onca*) increase kill utilization rates and share prey in response to seasonal fluctuations in nesting green turtle (*Chelonia mydas mydas*) abundance in Tortuguero National Park, Costa Rica. *Mammalian Biology* 80: 65-72.

Thomson, I., S. Arroyo-Arce & F. Spooner. 2014. Record of two jaguar cubs suckling from their mother in the wild. *Catnews* 61: 8.

A male jaguar (*Panthera onca*) about to feed from the carcass of a green marine turtle (*Chelonia mydas*)



© Ian Thomson / Coastal Jaguar Conservation.

Potential impacts on the jaguar population as a result of human activity in the coastal habitat

► DISTRIBUTION AND AVAILABILITY OF PREY SPECIES (MEDIUM AND SMALL MAMMALS, MARINE TURTLES)

Human presence can cause (Moreira et al. 2011, Bhattarai & Kindlmann 2013):

- A. Reduction in available prey species due to poaching
- B. Change the behavior and or distribution of prey species due to human disturbance

► JAGUAR DISTRIBUTION AND BEHAVIOR

Jaguars tend to avoid human presence (Foster et al. 2010, Moreira et al. 2011, Leblond et al. 2013) therefore human activity in the coastal habitat could cause the following:

- A. Change the current habitat selection of the jaguar in the coastal habitat, which could:
 - Drive the resident coastal population of jaguars into the interior of the Park or adjacent areas (e.g. Barra del Colorado Wildlife Refuge)
 - Force the jaguar towards communities and areas of livestock farming located along the buffer area of the Park, increasing the potential risk of predation of livestock, and the persecution of the jaguar as retaliation for the economic losses
- B. Change the unique social behaviors described regarding jaguars in the coastal habitat

► INCREASE THE CHANCE OF AN ATTACK ON HUMANS

Jaguar attacks on humans are uncommon (Campos et al. 2011, Iserson & Adama 2015, Hoogesteijn et al. 2016), and generally caused by inappropriate human behavior.

Also, unlike other big cats of the genus *Panthera* (tiger *Panthera tigris*, lion *Panthera leo*), the jaguar displays a non-aggressive behavior toward humans, always avoiding confrontation.

However, some reasons why a jaguar (or any other animal) could attack a person are:

- A. Protect cubs
- B. Protect kills, which they are feeding from (e.g. marine turtles)
- C. Increase in habituation to the presence of humans
- D. The failure of people to conduct themselves in a responsible manner during chance encounters with jaguars

A red brocket deer (*Mazama temama*) walking along a forest trail during the night

► LITERATURE

The following literature refers to the subject of interactions between jaguars and humans, and their potential danger:

Hoogesteijn R., A. Hoogesteijn & F. Tortato. 2014. Peligrosidad del jaguar para los humanos, ¿realidad o exageración? Simposio: conservación de felinos en las Américas. Panthera Costa Rica: 8-9.

Hoogesteijn, R. & E. Mondolfi. 1992. El Jaguar, Tigre Americano. Ediciones Armitano, Caracas. Venezuela.

Hoogesteijn R., F.R. Tortato, A. Hoogesteijn, E. Payán & S. Marchini. 2011. Interacciones humanos-jaguares. ¿son realmente peligrosos los jaguares para los seres humanos? Simposio: coexistencia entre grandes carnívoros y el ser humano en América: estado actual y soluciones prácticas. Mesoamericana 15(2): 343.

Hoogesteijn R., A. Hoogesteijn, F. Tortato, E. Payán, W. Jedrzejewski, S. Marchini, C. A. Valderrama-Vásquez & E. O. Boede. 2016. Consideraciones sobre la peligrosidad del jaguar para los humanos: ¿quién es letal para quién? Pp. 445-466. En: Castaño-Uribe, C., C. A. Lasso, R. Hoogesteijn, A. Diaz-Pulido & E. Payán (Editores). II. Conflictos entre felinos y humanos en América Latina. Serie Editorial Fauna Silvestre Neotropical. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH), Bogotá, D. C., Colombia.

Marchini, S., R. Luciano & R. Hoogesteijn. 2009. Guía de convivencia: gente y jaguares. Amazonarium Ltda. Brasil

■ In Pantanal, plain covering the western part of Brazil and surrounding areas to Bolivia and Paraguay, there have been reports of 'mock attacks'. In these cases, male jaguars that were with females in heat simulated attacks towards people (who try to approach them) as a warning sign!!

(Rafael Hoogesteijn, personal communication)



Protocol of conduct while in the coastal habitat of Tortuguero National Park, Costa Rica

This protocol was modified as proposed by Moreira et al. (2011).

In the coastal habitat remember:

1 Always walk near the high tide line in order to have a better view of the beach and to facilitate a possible sighting

2 Never walk near the vegetation as jaguars tend to rest or feed in these areas

A group of black vultures (*Coragyps atratus*) scavenging from the carcass of a freshly predated green marine turtle (*Chelonia mydas*)



If you see a dead marine turtle on the beach, consider the following points:

3

- Probably the turtle was predated by a jaguar
- If the turtle was recently predated (e.g. remnants of internal organs, blood) it is very possible that the jaguar will return to feed
- Therefore, before approaching the remains of the turtle check carefully that there is no a jaguar in the vicinity. Never approach if you see fresh jaguar tracks. Be especially careful if the turtle is located near the vegetation, as it will be harder to spot a jaguar
- Sometimes the jaguar drags the turtle into the vegetation to prevent other jaguars, or the vultures feeding on their prey. Therefore, never try to venture into the vegetation to find the remains of a turtle, as it can increase the likelihood of an attack

If you see a group of vultures on the beach, consider the following points:

4

- They may be around a predated marine turtle
- If the vultures are roosting in nearby trees of a kill site, and are not on the ground, it is probably there is a jaguar feeding on the predated turtle or is in the vicinity
- Never run toward them in order to scare them away, because there could be a jaguar nearby. Always approach cautiously, following the guidelines established in this protocol

The carcass of a green marine turtle (*Chelonia mydas*) recently predated by a jaguar (*Panthera onca*)



© Ian Thomson / Coastal Jaguar Conservation.

The carcass of a leatherback marine turtle (*Dermochelys coriacea*) recently predated by a jaguar (*Panthera onca*)



© Ian Thomson / Coastal Jaguar Conservation.

Jaguar tracks
(*Panthera onca*)



► BASIC STEPS: what to do if you encounter a jaguar?

1

Always remain calm; do not make loud noises or sudden movements

2

Raise your arms slowly to increase your size. This is done in order to convince the animal that you are not a prey, and that you could be dangerous to the animal

- If infants accompany you, lift them up slowly without bending over; try to raise them as high as possible and they should also raise their arms to further increase the appearance of size to the animal. Children may be seen as prey for the jaguar, due to their size
- If you are accompanied by other adults, use one hand to hold on to another member (while keeping the other arm raised) in order to form a tight group so no individual becomes separated



© Coastal Jaguar Conservation

Move away slowly from the animal

3

- While moving away never turn your back on the animal
- Always try to maintain a safe distance, minimum of 100m
- Never walk towards the animal under any circumstance (to get a better look or photograph), this could trigger an attack as it could be viewed by the animal as threatening behaviour or a challenge
- Do not make loud noises (e.g. shout) and under no circumstances run from the animal. To do this you would be behaving in a similar manner to a wild animal (e.g. prey species) in the presence of a jaguar, and could increase the likelihood of an attack
- Never run from the animal. This may trigger the animals hunting instinct and result in an attack
- While walking backwards away from animal avoid direct eye contact (this can be interpreted as challenging behaviour), look at the ground directly in front of the animal to allow you to monitor it while not directly challenging the animal

4

If you lose sight of the animal, or it moves into the vegetation, do not assume that the animal has left the area. You must continue backing up quickly to a safe place



► What to do if you encounter a jaguar on THE BEACH?

Always follow the BASIC STEPS, and the following recommendations:

1 Move away from the jaguar slowly towards the sea (high tide line) and away from the vegetation line

2 If you lose sight of the jaguar, or if it enters the vegetation, do not assume that the animal has left the area. You should keep moving quickly to the high tide line and return to a safe place (e.g. biological station, ranger station)

► What to do if you encounter a jaguar on THE TRAIL?

Always follow the BASIC STEPS, and the following recommendations:

1 Raise your arms slowly to increase your size. This is done in order to convince the animal that you are not a prey, and that you could be dangerous to the animal

If you are accompanied by other people:

2

- A. Use one hand to hold on to another member of the group (while keeping the other arm raised), this will help the group to move as one and ensure no one becomes separated
- B. The person furthest from the animal, at the rear of the group, should turn around to help guide the rest of the group towards the nearest entry point to the beach
 - He/she should must describe quietly any obstacles or hazards the group may encounter (e.g. roots, fallen trees, muddy or swampy areas) to ensure the safe navigation of the group away from the animal
 - Ensure that the group is travelling at a pace suitable for all members

Move away slowly from the animal (never turning your back on the animal) towards the nearest entry point to the beach, and then towards the high tide line

3

- A. If the group begins to fragment, stop immediately! Only continue to move once the group has achieved cohesion
- B. If a member of the group falls down, stop immediately! If this person requires assistance:
 - Only the minimum amount of people should respond to help
 - The remaining members of the group should form up in a line reassembling a wall between this individual and the animal
 - If you are assisting this individual, please do not bend down more than is required (offer a hand from a standing position to assist the individual)

4

If you lose sight of the jaguar, or if it enters the vegetation, do not assume that the animal has left the area. You should keep moving quickly to the high tide line and return to a safe place (e.g. biological station, ranger station)

A female jaguar (*Panthera onca*) returns the following night to the carcass of a predated green marine turtle (*Chelonia mydas*)



© Ian Thomson / Coastal Jaguar Conservation.

► If you observe a jaguar AT NIGHT or during a night turtle survey

Always follow the BASIC STEPS, and the following recommendations:

If you suspect that a jaguar is predating or feeding from a marine turtle DO NOT APPROACH!

Some indicators of jaguar presence are:

- Green eye shine: many nocturnal animals have a reflective layer in their eyes called the 'tapetum lucidum', which is used to improve visibility in low light situation
- Jaguar tracks running parallel to the turtle track
- Noise of disturbance not part of the nesting process or sounds of feeding activity
- Fresh turtle tracks (or nesting activities) that terminate and then show evidence of dragging towards the vegetation line
- Evidence of blood or internal organs
- Evidence of a struggle or defence activity in the turtle track

1

A female green marine turtle (*Chelonia mydas*) returns to the sea in the early hours of the morning after it has nested



► If you observe a jaguar CROSSING A CANAL

In the event that you observe a jaguar crossing a canal from a boat remember:

Do not move the vehicle towards the jaguar because:

1

- This is a high-risk environment, and the stress of a vehicle in close proximity to the animal could result in serious injury or the death of the animal
- You may cause a family group to become separated, thereby increasing the risk of fatality in juveniles or young that are not independently able to support themselves

2

Try to maintain a minimum safe distance of 50m between the boat and the jaguar

3

Never interfere with the swimming direction of the jaguar!





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► Considerations in the case of **MULTIPLE** jaguars present at a sighting

If you see more than one animal, remember that this could be the result of:

1

- **A MOTHER WITH HER CUBS:** under no circumstance should you approach young animals, even if you do not see an adult, and may believe that the animal has been abandoned. Adult female jaguars are known to leave their young for short periods of time to conduct other behaviours (e.g. hunting, feeding). The mother will return to her cubs after a short period of time, or be observing from another location
- **ADULTS:** in the case of multiple adults present together, this could be the result of several behaviours such as breeding activity (males around estrous females) or territorial disputes between males. In these cases, individuals may be more prone to aggressive behaviour, which may result in an attack if approached

In these examples jaguars may be under a heightened state of stress, therefore you should exercise extreme caution, and try to vacate the area as soon as possible using the described protocol

► If you are **APPROACHED** by a jaguar

1 Always remain calm; do not make loud noises or sudden movements

Raise your arms slowly to increase your size. This is done in order to convince the animal that you are not a prey, and that you could be dangerous to the animal

2

- If infants accompany you, lift them up slowly without bending over; try to raise them as high as possible. They should also raise their arms to further increase the appearance of size to the animal. Children may be seen as prey for the jaguar, due to their size
- If you are accompanied by other adults, use one hand to hold on to another member (while keeping the other arm raised) in order to form a tight group so no individual becomes separated

3

Move away slowly from the animal towards the high tide line, and as far away from the vegetation line as possible

- While moving away never turn your back on the animal

4

Do not make loud noises (e.g. shout) and under no circumstances run from the animal. To do this you would be behaving in a similar manner to a wild animal (e.g. prey species) in the presence of a jaguar, and could increase the likelihood of an attack

5

Never try to scare the animal off by throwing items at it (e.g. stones, branches), this may cause it to attack to defend itself

If the jaguar continues approaching you in a non-aggressive way, you can:

6

- Slowly throw leaves or sticks on the ground, which could make the jaguar stop and sniff them, and thus will increase the distance between you and the jaguar

If the animal continues approaching you in a threatening manner (e.g. ears flat, hair standing up, growling and in a crouched position) you should:

7

- Move your arms around in a threatening manner
- Make loud noises (e.g. shout)
- Use any item on your person (e.g. bag, rucksack) as a shield or improvised weapon to defend yourself

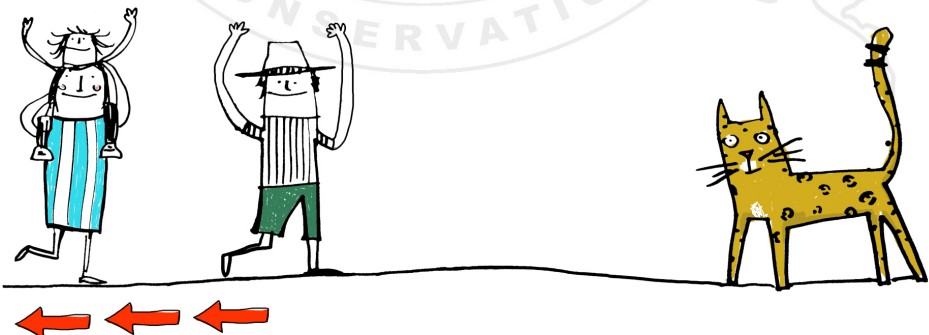
If the encounter happens during darkness or in area of low light, ask all members of the party to switch on any lights (white light is preferable but use any available) they may have

8

- Research has shown that white light can have a deterrence effect on many species of big cats
- This will also help to facilitate the evacuation of the area

9

If you are attacked, FIGHT BACK!



- Yanomamö indigenous of the Amazon use this strategy of pulling leaves in order to distract the jaguar and get away from him

Review of the Priest Cocco, missionary who has lived a lifetime with the Yanomamö

(Rafael Hoogesteijn, personal communication)





© Ian Thomson / Central Jaguar Conservation

- Jaguars can follow people for short distances to get them out of their territory or protect a fresh kill, which is a defense mechanisms and not a sign of aggression

Reviews from South American travelers and explores

(Rafael Hoogesteijn, personal communication)

► If you observe a jaguar ENTERING the forest

Never approach the area where the jaguar was, you may believe it has left the immediate vicinity, however:

1

- It may be hiding in the vegetation, and still be in close proximity
- It could be feeding from a kill (e.g. sea turtle) that has been dragged into the vegetation
- A female returning to cubs that are resting in the vegetation

► All these examples may increase the likelihood of an attack!

► IMPORTANT considerations

Never use baits (e.g. human food) to attract jaguars:

1

- The use of food for human consumption as a bait to lure animals will increase the association between feeding and human activity, thereby increasing the likelihood of an attack

Do not bring personal pets (e.g. dogs, cats) into the park, these animals will be seen as a potential prey species for jaguars, and other wild felids

2

- If your animal is attacked in your presence, under no circumstance should you try to intervene or save the animal. This could result in personal injury or fatality

The maximum time you should stay observing the animal is 5 minutes, if you stay longer than allotted time you may:

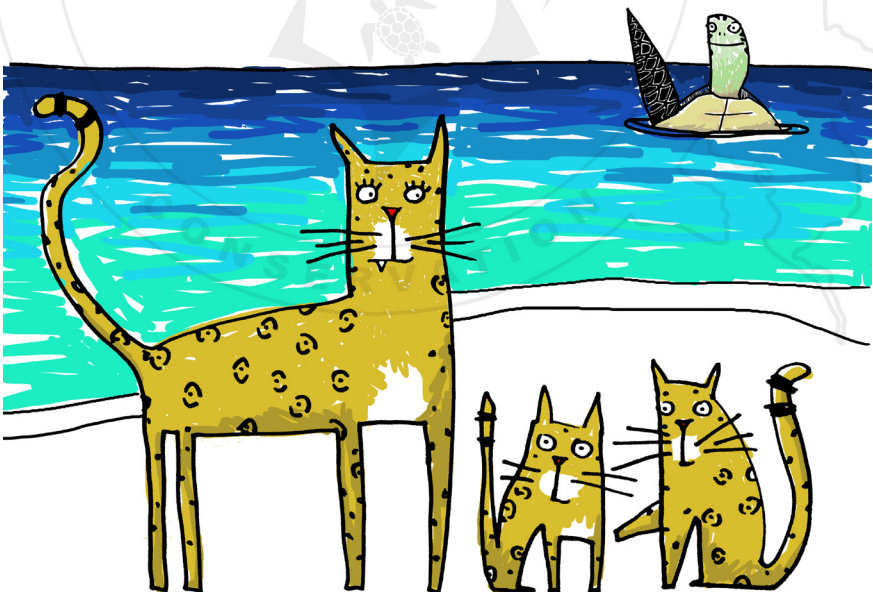
3

- Interfere with the natural behaviours of the animal (e.g. feeding)
- Scare the animal
- Increase the risk of attack
- Increase the animals' tolerance to human presence, therefore decreasing the animals natural fear of humans (thus increasing the likelihood of an attack)

4

If you intend to take photographs of the animal, ensure that you stay at least the minimum distance of 100m at all times. Never use a camera flash as this may disturb the animal and trigger an attack

- Never under any circumstances approach the animal in order to get a better picture



Protocol of conduct while cycling and running

► What to do if you encounter a jaguar while **CYCLING OR RUNNING?**

Always follow the BASIC STEPS, and the following recommendations:

Stop:

1

- Dismount from the bicycle immediately or stop running
- Never try to cycle or run away from the animal as this conduct may trigger the hunting instinct in the jaguar, and thus increase the likelihood of an attack

2

Hold the bicycle between you and the jaguar and raise one arm slowly (the other arm holds the bicycle) (if you are a runner then raise both arms). This is done to convince the jaguar that you are not a prey, and that you could be dangerous

- If you are accompanied by other cyclists or runners, make sure to form a tight group so no individual becomes separated

3

Move away from the jaguar slowly following the BASIC STEPS

If you lose sight of the jaguar, or if it enters the vegetation, do not assume that the animal has left the area. You must continue backing up to a save place

4

- Preferably return to your starting point
- If there is no other option but to cross, try to find an alternative route, and if not, slowly cross the site after confirming that the jaguar is not near the point where it was originally observed

When performing these activities, it is recommended that you:

- Go with a friend. Never go by yourself!
- Do not run or bike at dawn or dusk
- Use reflective clothing (special for low light hours)
- The bicycle may have some sound device (e.g. bicycle bell)



Protocol of conduct while in urban areas

► What to do if you encounter a wild cat in an URBAN AREA?

Always follow the BASIC STEPS, and the following recommendations:

1

Report immediately on the presence of the wild cat to a relevant authority in the area (e.g. nearest SINAC office, Fire Department, Police department):

- It is important that the authorities are informed and can follow up on the situation, as well as give it a multi-institutional approach if the situation requires it

2

Do not try to photograph it, follow it, corner it, scare it with sounds, sudden movements or throw objects at it

- These actions may compromise your safety and that of the wild cat (e.g. stress it when feeling cornered or attacked)
- Remember that wild cats can use urban areas as transit zones

3

Always stay inside your home or vehicle until you are sure that the animal has left the area

- In these cases, also keep your pets inside the house and not in the yard

Always communicate with neighbors in your community in order to keep updated on the current situation (e.g. via telephone)

4

- Avoid the dissemination of alarmist messages that may cause inappropriate behavior by people (e.g. chasing the wild cat), which can compromise public safety and that of the animal

5

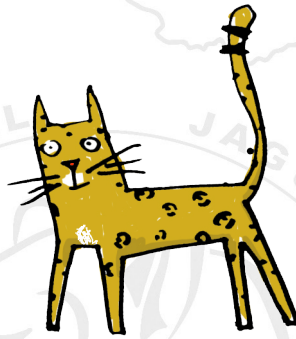
It is important to secure and correctly store garbage within your community in order to avoid attracting wild animals (e.g. raccoons) which wild cats may view as potential prey while traveling through the area

6

If sightings within your community are frequent, please request a workshop on this protocol. For more information you can contact the authors of this protocol

REMEMBER that, although sightings of wild cats in urban areas are rare, they can occur when felines use urban areas as temporary transit sites as they travel between areas of natural habitat





— FINALLY —

If you are fortunate enough to see a wild felid, please enjoy the moment in a safe and responsible manner!

Bibliography

- Bhattarai, B. P. & P. Kindlmann. 2013. Effect of human disturbance on the prey of tiger in the Chitwan National Park: implications for park management. *Journal of Environmental Management* 131: 343-350.
- Campos, M.F., D. Garrone & V. Haddad. 2011. Attack by jaguars (*Panthera onca*) on humans in Central Brazil: report of three cases, with observation of a death. *Wilderness and Environmental Medicine* 22:130-135.
- Foster, R. J., B. Harmsen & C. P. Doncaster. 2010. Habitat use by sympatric jaguars and pumas across a gradient of human disturbance in Belize. *Biotropica* 42: 724-731.
- Hoogesteijn R., A. Hoogesteijn, F. Tortato, E. Payán, W. Jedrzejewski, S. Marchini, C. A. Valderrama-Vásquez & E. O. Boede. 2016. Consideraciones sobre la peligrosidad del jaguar para los humanos: ¿quién es letal para quién? Pp. 445-466. En: Castaño-Urbe, C., C. A. Lasso, R. Hoogesteijn, A. Diaz-Pulido & E. Payán (Editores). II. Conflictos entre felinos y humanos en América Latina. Serie Editorial Fauna Silvestre Neotropical. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH), Bogotá, D. C., Colombia.
- Iserson, K. V. & M. F. Adama. 2015. Jaguar attack on a child: case report and literature review. *Western Journal of Emergency Medicine* 16: 303-309.
- Leblond, M., C. Dussault & J. P. Ouellet. 2013. Impacts of Human Disturbance on Large Prey Species: Do Behavioral Reactions Translate to Fitness Consequences? *Plos One* 8: e73695. doi:10.1371/journal.pone.0073695
- Moreira, J., R. Balas, R. García & G. Ponce. 2011. Guía para minimizar los impactos del turismo sobre jaguares en el Parque Nacional Mirador, Río Azul. Wildlife Conservation Society, Guatemala.



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