# HOW TO PROTECT YOUR FARM AGAINST ANIMALS WHILE LETTING THEM LIVE









# INTRODUCTION

The brochure that comes to your hands is the result of the work of The Kukang Rescue Program's anti-conflict team. The Kukang Rescue Program operates in the North Sumatra province and focuses on protection of slow lorises and the fight against illegal wildlife trade. The program runs the rescue and rehabilitation centre in the Bandar Baru village for slow lorises confiscated from black market and tries to return these animals back into the wild. Another goal of the rescue program is to educate the general public about nature conservation. As a part of the awareness campaign, the anti-conflict team seeks to prevent conflicts between farmers and wildlife such as slow lorises, macaques, various bird species, etc. The team's workplace includes several areas where farmers live and have their fields on the borders of protected areas. The farms of these farmers are often visited by wild animals that can destroy their crops.

This brochure was created to help farmers protect their farms from wildlife so that the farmers do not need to kill the wild animals. The brochure presents the animals most commonly found on farms and contains instructions on how to prevent them from entering a farm and destroying crops. It also presents animals that are protected by the Indonesian law and therefore it is illegal to catch or kill them. This information can help farmers protect their crops and at the same time educate them in the field of animal protection so as to avoid potential problems arising from breaches of the animal protection law. To enhance attractiveness, the brochure is complemented by many photos of the anti-conflict team with farmers and drawings by artists Marion Schön and Judith MacKay.

INTRODUCTION OF LOCALITIES

### **KUTA MALE**

Kuta Male is a village located in the middle of the Kuta Buluh Simole district, Karo Regency, and adjacent to Karo Highlands. Kuta Male is inhabited by friendly people most of which share the Karo culture. Most of the population of Kuta Male is Christian and the main livelihood of the people is farming. A speciality of this village is the annual June Celebration of the Year or traditional baskets called "raga dayang". The Kuta Male village is adjacent to the Leuser ecosystem, which is one of the largest tropical rainforests in Southeast Asia and also the last place on the planet Earth where the Sumatran elephant, Sumatran rhinoceros, Sumatran tiger and Sumatran orangutan live together. Near the village live many protected and endangered animals, such as Sumatran orangutans, slow lorises, gibbons, marbled cats or hornbills.



### **RAJA BERNEH**

Raja Berneh is located in the Sei Bingai subregion, Karo Regency. The Raja Berneh region is inhabited predominantly by Karo people who are mainly farmers, and the prevailing religion is Islam. There are many hot springs in this area. These hot springs are powered by the adjacent active Sibayak volcano. The hot springs are visited by tourists mostly from the city of Medan (the capital city of the North Sumatra province) and surrounding areas who end their trips to Sibayak there or who want to enjoy their rest in a warm sulfur bath. The area is surrounded by forests where many wild but also endangered animal species still live.



# CAGAR ALAM SIBOLANGIT

Cagar Alam Sibolangit is located in the Sibolangit area, Deli Serdang Regency. Karo people are predominant in this region and the main religions are Christianity and Islam. Local people are mostly farmers but Cagar Alam is a tourist area managed by the local governmental agency BBKSDA North Sumatra (The Natural Resources Conservation Agency). This area is often visited by tourists and students from the city of Medan which is about an hour's drive away. Cagar Alam is a forest area where many wild, protected but also critically endangered animals live.



## TONGKOH

The village of Tongkoh is located near the Berastagi town and district in the Karo Regency. The Togkoh village is inhabited predominantly by Karo people and the prevailing religion is Christianity. Most villagers are farmers and the whole area is known for its production of fruits and vegetables. There is a well-known Buddhist monastery in the Tongkoh village, called Lumbini Natural Park and built in 2010. The monastery is a replica of the Shwedagon Pagoda from Myanmar and is 46.8 m tall, 68 m long and 68 m wide. Near the village is also a mountain called Gunung Barus and another protected forest area where many amazing but also endangered species of wild animals still live.



# INTRODUCTION OF PROTECTED ANIMALS

# GREATER SLOW LORIS/ SUNDA SLOW LORIS

Nycticebus coucang (Boddaert, 1785) Kukang Sunda, Pukang, Tenggiling (ID)

**Range:** This species lives in Indonesia (Sumatra), Peninsular Malaysia, Singapore and Thailand, but there are several other species of slow lorises which live in Indonesia (Java, Borneo), Bangladesh, Cambodia, China, India, Laos, Myanmar, Vietnam or Philippines.

**Habitat:** Various areas ranging from primary tropical rainforests, mixed or coniferous tropical forests, marshes and savannah, to damaged, eroded or mined forests.

**Biology: Slow lorises are the only venomous primates in the world**. On the inner side of their elbow, there is an important gland that produces a toxin. The toxin is being activated when mixed with saliva. Lorises use it to protect themselves or their babies.



There are records of severe illness or even a death following their toxic bites. Slow lorises are active from sunset to sunrise. They spend most of their time solitarily looking for food and cleaning their fur which is called "grooming". Slow lorises form a social structure called noyau which means that smaller territories of females or submissive males are covered by a bigger territory of a dominant male. They regularly sleep in different locations but they sleep in a typical position, having their head hidden between their thighs, curled into a ball.

Diet: Gum, plant nectar, insects, small vertebrates, leaves or bark, fruits.

Size: 25 – 38 cm



## Average weight: 600 – 700 g

Threat: ENDANGERED. Java slow loris CRITICALLY ENDANGERED. The biggest threats are black animal markets where they are sold as "house pets". Other threats are loss and damage of their habitat due to creation of oil palm plantations, illegal wood mines etc. Lorises are also often shot as a crop pest.

#### WHY SLOW LORISES ARE IMPORTANT:

They feed on insects so they protect farms from being destroyed by insects. Slow lorises are also important pollinators and seed dispersal agents.

# SUMATRAN ORANGUTAN

Pongo abelii (Lesson, 1827) Orangutan Sumatera (ID)

**Range:** Endemic to the island of Sumatra (i.e. they live only in the Sumatra island).

**Habitat:** Lowland tropical rainforest, montane forest and peat swamps.

**Biology:** They are diurnal and almost exclusively arboreal. Orangutans have a social structure called novau which means that smaller territories of females who are typically accompanied by their offspring are covered by a bigger territory of a dominant male. The interval between births is the



longest among mammals and may be as long as eight years.

**Diet:** Primarily fruits, but also young and mature leaves, seeds, shoots, pith, flowers, insects (termites and ants), bark and, occasionally, meat of slow lorises.

Size: 78 – 97 cm

Average weight: 40 – 90 kg

**Threat: CRITICALLY ENDANGERED**. The main threat is habitat loss and fragmentation due to creation of oil palm plantations, illegal wood mines etc. They are also regularly killed in human-wildlife conflict situations. Another threat is the illegal pet trade.

# SIAMANG

Hylobates syndactylus (Raffles, 1821) Siamang, Imbo (ID)

**Range:** Sumatra, Peninsular Malaysia and a small area of southern Peninsular Thailand.

**Habitat:** Primary and secondary tropical rainforest. They range from the lowlands up to 1,500 m in elevation.

**Biology:** A monogamous primate, with breeding pairs remaining together for life. Each pair lives in a family group with up to three offspring. Together, this group lives in a small, stable home range of 15 to 35 hectares.

**Diet:** Primarily fruits and leaves, although it may also consume insects and flowers.

Size: 70 - 90 cm

### Average weight: 10.5 kg

**Threat: ENDANGERED**. The species has declined primarily due to hunting for pet trade and continued rates of habitat loss (mainly as a result of expanding agriculture and road building).





# NORTH SUMATRAN LEAF MONKEY

Presbytis thomasi (Colett, 1893) Monyet Kedih (ID)

Range: North Sumatra



Trachypithecus cristatus (Raffles, 1821) Lutung Kelabu (ID)

**Range:** Sumatra, Kalimantan, Malaysia and Brunei

**Habitat:** Primary and secondary tropical rainforest. They range from the lowlands up to 1,500 m in elevation.

**Biology:** Typically found in groups of one male with lots of females, although all-male groups also occur.

**Diet:** Mainly young leaves, but may also take fruits, flowers, toadstools and stalks of coconuts, sometimes they even eat ground snails.

**Size:** Head-body length: 41 – 61 cm, tail length: 50 – 85 cm

Judith Markong

#### Weight: 4 - 8 kg

Threat: Presbytis thomasi VULNERABLE, Trachypithecus cristatus NEAR THREATENED. The species have declined due to habitat loss, culling by farmers because of feeding on local crops, hunting for pet trade and for use in traditional medicine.



#### WHY ALL PRIMATES ARE IMPORTANT: They are important seed dispersers and they play important role in forest regeneration.

# SUNDA PANGOLIN/ MALAYAN PANGOLIN

Manis Javanica (Desmarest, 1822) Trenggiling Biasa (ID)

**Range:** This species is found across the mainland and islands of Southeast Asia, from Myanmar, Thailand, Cambodia and Vietnam to Indonesia, Singapore and Malaysia.

**Habitat:** A variety of habitats, including primary and secondary forest, lowland forest and cultivated areas such as gardens, oil palm and rubber plantations, and is often found near human settlements. This species usually occurs at elevations of up to 1,700 m.

**Biology:** Primarily nocturnal, solitary. When under attack, this species rolls into a tight ball to protect the vulnerable underside of its body and may lash out with its sharply edged tail.

**Diet:** Specialist on ants and termites.

Size: Head-body length: 40 - 65 cm, tail length: 35 - 57 cm

Average Weight: 4.5 - 14 kg

#### Threat: CRITICALLY ENDANGERED.

The primary threat is hunting and poaching for international trade. Their scales are being used for traditional medicine, although they are made of keratin – same like human nails and hair. The secondary threat is habitat loss.



#### WHY PANGOLINS ARE IMPORTANT:

They provide pest control (eat insects) and improve soil quality. Pangolins mix and aerate the soil. This improves the nutrient quality of the soil and aids the decomposition cycle, providing a healthy substrate for lush vegetation to grow from.

## ORIENTAL PIED HORNBILL

Anthracoceros albirostris (Shaw and Nodder, 1807) Kangkareng Perut-putih (ID)

Range: Indian subcontinent and Southeast Asia

**Habitat:** Subtropical or tropical moist lowland forests, forest edges, secondary forests, plantations.

**Biology:** Territorial in pairs, monogamous. Hornbills are secondary cavity nesters which means that they typically do not excavate their own nesting sites but use those created by other birds or by broken branches. Because hornbills rely on pre-excavated cavities, selection of suitable nestsites within their environment has major impact on breeding success. Nests found in human-disturbed areas are often unsuccessful or abandoned; in general, hornbills prefer undisturbed forest areas.

**Diet:** Wild fruits (especially figs) and other fruits, large insects, small birds, small reptiles, amphibians such as frogs, and fish.

**Size:** 55 - 60 cm



# **Average weight:** 567 – 907 g

#### Threat: LEAST CONCERN. Mainly

caused by legal and illegal logging

which decreases the availability of suitable nesting and feeding trees. They are subject to some hunting pressure (casques are sold as souvenirs) and are popular as pets in some areas.

#### WHY ALL FRUIT-EATING BIRDS ARE IMPORTANT:

They are important large seed dispersers, promoting seedling recruitment by translocating seeds of the fruits they feed on.

# **IMPORTANT INFORMATION:**

In case of violation of the Indonesian Law No. 5 about the conservation of the living natural resources and it's ecosystem from 1990, mostly known as the Law of Nature Conservation No. 5, which protects endangered species of animals such as orangutans, slow lorises, pangolins, hornbills and others, there is a risk of 5 years' imprisonment or a fine of 7,500 USD.

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# INTRODUCTION OF OTHER ANIMALS AND HOW TO PROTECT YOUR FARM AGAINST THEM

# WILD BOAR

Sus scrofa vittatus (Boie, 1828) Babi Hutan (ID)

Range: Indonesia, Papua New Guinea, Malaysia

Habitat: Tropical rainforest, but wild boars often venture onto agricultural land to forage.

**Biology:** Gregarious, forming herds of varying size depending on locality and season, but usually of 6-20 individuals. The basic social unit is a nucleus of one or more females and their last litters. Animals peripheral to this comprise subadults from previous litters and adult males during the mating season. However, the latter tend to stay in relatively close contact with 1 or 2 female groups at other times of the year, and subadult males or mixed sex groups of subadults may also form longer-term associations.

Diet: Omnivores, eating mainly fruits, seeds, roost and tubers.

Size: Head-body length: 153 – 240 cm

### Weight: 66 - 100 kg

#### HOW TO PROTECT A FARM AGAINST WILD BOARS:

- Collect the dung from local pigs and use it to make a solution which should be sprayed on soil in the width of cca 30 cm around the crop. This will confuse wild boars by a false assumption of other pigs entering the territory so they will not enter it in order to avoid a territorial conflict. For sustained effectivity, it is desirable to apply 2-3 sprays, with 7 days interval between each spray. This method can effectively decrease the presence of wild boars by up to 50%.
- Spread human hair collected from local barber shops. The human hair near crops gets sucked through a wild boar's nostrils causing severe respiratory irritation. Due to this, the wild boar makes distress calls warding off other wild boars entering the cropped area.
- Arrange used clothes of different colors around the crop, thanks to which wild boars will assume human presence in the area and will not enter such areas.
- Use coconut fruit bunches together with dried coconut leaves - several coconut fruit bunches are tied together, with the fingers pointing outward and they are placed around the crops. The fingers will hurt the nose or eyes of wild pigs if they attempt to dig the roots of the plant.
- Use local dogs to scare wild boars away.
- Make load noises (for example by a bamboo cannon) to scare wild boars away.



# **COMMON PALM CIVET**

Paradoxurus hermaphroditus (Pallas, 1777) Musang Luwak (ID)

Range: South and Southeast Asia

**Habitat:** Primary and secondary forest, monoculture plantations, village and urban environments.

**Biology:** Solitary, nocturnal animal.

Diet: Insects, molluscs, small animals, fruits, coffee berries.

Size: Head-body length: 53 cm, tail length: 43 cm

## Average weight: 3.2 kg

**Threat:** The species has declined due to hunting for meat, shooting it as a pest, keeping it in captivity for the production of civet coffee, pet trade.

#### HOW TO PROTECT A FARM AGAINST CIVETS:

- Use some of plants, which are well known for their cat repellent properties, including citronella, lemongrass, eucalyptus. You can also try to put durian, citrus or orange peels around the protected area.
- Automated sprinklers could be also useful as civets don't like water.
- Use lion or tiger excrements which also repell civets.





**Range:** Indonesia, Malaysia, Brunei and southern Thailand Range: across Asia

**Habitat:** Lowland primary and secondary forests, but also coastal, swamp and montane forests.

**Biology:** This social primate lives in a group, although the group splits into smaller units to forage. In the group, males and females live together. Females remain in their natal group, while males disperse shortly before they reach sexual maturity.

Diet: Fruits, leaves, buds, shoots, insects and small animals.

Size: Head-body length: 45 – 78 cm

Weight: 6 – 14.5 kg

**Threat:** Macaca nemestrina VULNERABLE. Both species have declined due to forest destruction, shooting them as a pests on agricultural crops and pet trade.

## HOW TO PROTECT A FARM AGAINST MONKEYS:

- In general, orangutans and siamangs are afraid of water, so use of automatic water sprinklers could prove helpful, they also don't like bright light or flash.
- Pick the fruit from your trees as soon as possible.
- Place corrugated zinc sheets around individual fruit trees that lack canopy connectivity.
- Use slingshots (Attention! Don't use any sharp object to avoid hurting animals!).
- Use scarecrows (human looks).
- Use a strong jet of water directed towards the monkey it can encourage the monkey towards the exit.
- Make noise by shouting, whistling, using rattles, portable siren, bamboo cannon...

**Tip:** How to make a "rattlesnake can": fill 1/4 of can with pebbles and close it with a tape. This creates an effective noisemaker. Shake it as you yell, and then, if possible, throw it near the animals.



Helarctos malayanus (Raffles, 1821) Beruang Madu (ID)

#### Range: Southeast Asia

**Habitat:** Main habitat is the tropical rainforest, they occur from almost the sea level to over 2,100 m elevation, but appear to be most common in lower-elevation forests.

**Biology:** Usually solitary, except for females with their offspring. The sun bear is mainly diurnal, spending most of the day hours foraging, although in humandisturbed areas, it becomes rather nocturnal. It doesn't hibernate.

**Diet:** Omnivores, feeding primarily on termites, ants, beetle larvae, bee larvae and honey, and a large variety of fruit species, especially figs, when available. Occasionally, growth shoots of certain palms and some species of flowers are consumed.

Size: 120 - 150 cm

### Average weight: 35 - 80 kg

Threat: VULNERABLE. The large-scale deforestation that has occurred throughout Southeast Asia has dramatically reduced the habitat suitable for this species, but poaching of bears for the wildlife trade is a considerable threat in most countries. In Asian countries, they are being kept on farms for collection of gall for traditional Chinese medicine. They are also being killed in order to prevent damage of crops or due to fear of bears near villages, and cubs are being captured to become pets (the mother is killed in the process).

### HOW TO PROTECT A FARM AGAINST BEARS:

Apply deterrents in the landscape. For instance, loud noises such as portable siren, firecrackers (bamboo cannon,..), high pitched whistles, rattles and of course barking dogs can often be enough to frighten off bears. Good way how to prevent bears from spoiling crops is to always try to keep the land free of fallen fruits.



**Tip:** How to make a "rattlesnake can": fill 1/4 of can with pebbles and close it with a tape. This creates an effective noisemaker. Shake it as you yell, and then, if possible, throw it near the bear.

# BIRDS

Asian Blue Quail, Eastern Spotted Dove, Yellow Vented Bulbul, Asian Glossy Starling, Pin-tailed Parrotfinch

# ASIAN BLUE QUAIL

Synoicus chinensis (Linnaeus, 1766) Puyuh Batu (ID)

**Habitat:** Dense and swampy grassland, shrubland, swamp edges, farmland (e.g. paddy fields).

**Diet:** Mainly grass seeds, green blades and some small insects (especially termites), both adults and larvae.

**How they help:** They feed on insects so they protect farms from destruction by insects and they are also important seed dispersal agents.

# EASTERN SPOTTED DOVE

Streptopelia chinensis (Scopoli, 1786) Bokuru (ID)

Habitat: Woodland, scrub, farmland and settlements.

**Diet:** Seeds of grasses and herbs, as well as grains and small fallen fruits. Occasionally, they may also take insects and have been recorded feeding on winged termites.

**How they help:** They feed on insects so they protect farms from destruction by insects and they are also important seed dispersal agents.

# YELLOW VENTED BULBUL

Pycnonotus goiavier (Scopoli 1786) Merbah Cerukcuk (ID)

**Habitat:** In open habitat, not deep in a forest, the most common bird in cultivated areas.

**Diet:** Primarily fruits, also seeds and nectar, insects, young shoots.

**How they help:** They feed on insects so they protect farms from destruction by insects. They are also pollinators and important seed dispersal agents.







## BIRDS

Asian Blue Quail, Eastern Spotted Dove, Yellow Vented Bulbul, Asian Glossy Starling, Pin-tailed Parrotfinch

# ASIAN GLOSSY STARLING

Aplonis panayensis (Scopoli, 1786) Perling Kumbang (ID)

**Habitat:** Forest, forest edge and clearings, secondary growth, mangroves and coastal vegetation, also gardens.

**Diet:** Mainly fruits, also nectar, insects, spiders and snails.

**How they help:** They feed on insects so they protect farms from destruction by insects. They are also pollinators and important seed dispersal agents.



## **PIN-TAILED PARROTFINCH**

Erythrura prasina (Sparrman, 1788) Bondolhijau Binglis (ID)

**Habitat:** Forest edge and secondary growth, bamboo, lowland plains up to 1,500 m; they also visit rice fields.

**Diet:** Rice and seeds of grass, bamboo, fruits.

**How they help:** They are important seed dispersal agents.



## HOW TO PROTECT A FARM AGAINST BIRDS:

Use hanging CDs, scarecrows, disturbing moving elements.

**Tip:** How to make a disturbing element (rotating PET bottle): Take a bigger PET bottle, cut out eight open windows in it (four in the upper part and four in the lower part, equally around the bottle) and put it throat down on a stick. The wind will flow into the open windows and the PET bottle will spin. To keep the stick in the middle of the bottle, you can use the bottle cap and glue it in the middle of where the stick will be placed.

**Tip:** How to make a disturbing element (fence from cans): Thread the cans on the string and hang them around the field.



# PROCESSING OF QUESTIONNAIRES IN GRAPHS

All 67 farmers, with whom we cooperated, completed questionnaires with 11 questions about wild animals and their encounters with those animals on their farms. At locations remote from main roads, such as the village of Kuta Male, vulnerable and protected animals occurred on farms more than in areas near main roads. From the questionnaires, two selected questions were processed in the graphs below.





# WILD ANIMALS ARE NOT SUITABLE PETS!

By capturing wild animals from nature and placing them in a cage or chain, you only cause the suffering of these animals. They are social animals and therefore need a group of individuals of their species for a normal life. They also live in a large territory in the wild, have complex nutritional requirements which can hardly be provided in human care etc.

These animals can also be dangerous to humans and cause a transfer of serious illnesses. Therefore, let them live in their natural environment, where they play an irreplaceable role in maintaining the balance in the natural ecosystem. Breaking this balance has a serious negative impact on humans, too.

Suitable domestic animals include domesticated species, such as dogs, cats or canaries.

# WILD ANIMALS BELONG IN THE FOREST AND NOT IN A CAGE. LET'S GIVE THEM A CHANCE TO GAIN THEIR FREEDOM, BEFORE IT'S TOO LATE.



# CONCLUSION

Our enthusiasm for working with farmers has been driven by two main reasons. The first reason is that we want to help the farmers protect their crops from being destroyed time to time by wild animals. The second reason is our great passion for the unique nature and animals of Indonesia that can be found nowhere else in the world. We would like to make farmers passionate about them too, although some wild animals are pests for them.

Unfortunately, people have been increasingly destroying the nature and today, this wonderful nature has been disappearing before our eyes. The nature that gives us oxygen, water, food, medicine and its beauty. We, people, are a part of the nature and we should protect it, not destroy it. Around us live amazing animals admired by many people from all over the world and we would like our grandchildren to have the opportunity to see those animals too. All of us are directly responsible for what we will preserve for the next generations. That is exactly the reason why we started The Kukang Rescue Program that is focused primarily on conservation of unique but endangered nocturnal animals – slow lorises, and that is also the reason why we call our team "anti-conflict team". Every organism plays an irreplaceable role in nature, therefore, we should maintain the environmental balance. If we, people, do nothing against the destruction of nature, the only thing left here for our grandchildren will be just a sad Indonesia without all the unique animals. That would be a catastrophe for all of us.

In total, we have worked with 67 farmers living and farming directly on the protected forest border. Farmers and their families who wanted to protect slow lorises were given a label "Pelindung Kukang" (Slow Loris Defender) and their children got a coloring book with pictures of slow lorises. We are very pleased that the farmers decided to join our program to become slow loris defenders. We thank all the farmers and we believe that the information in this brochure will be useful to them.

František Příbrský, MSc. Director of Yayasan Peduli Kelestarian Satwa Liar

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## REFERENCES

## **IUCN 2016-3. IUCN**

Red List of Threatened Species. [http://www.iucnredlist.org]. Data retrieved on 20.2.2017

## **BioLib Biological Library.**

1999-2017. [http://www.biolib.cz]. Data retrieved on 20.2.2017

#### Wildscreen Arkive.

ARKive [http://www.arkive.org]. Data retrieved on 20.2.2017

#### Wikipedia The Free Encyclopedia.

[http://www.en.wikipedia.org], [http://www.id.wikipedia.org]. Data retrieved on 20.2.2017



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