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PANGOLIN

SPECIES IDENTIFICATION GUIDE:
A RAPID ASSESSMENT TOOL FOR FIELD AND DESK

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Cover: Ground Pangolin (*Smutsia temminckii*). Photo: Lisa Hywood/Tikki Hywood Foundation

For hard copies, please contact: USAID Wildlife Asia, 208 Wireless Road, Unit 406 Lumpini, Pathumwan, Bangkok 10330 Thailand
Tel: +66 20155941-3, Email: Info@usaidwildlifeasia.org

About USAID Wildlife Asia

The USAID Wildlife Asia Activity works to address wildlife trafficking as a transnational crime. The project aims to reduce consumer demand for wildlife parts and products, strengthen law enforcement, enhance legal and political commitment, and support regional collaboration to reduce wildlife crime in Southeast Asia, particularly Cambodia; Laos; Thailand; Vietnam, and China. Species focus of USAID Wildlife Asia include elephant, rhinoceros, tiger, and pangolin. For more information, please visit www.usaidwildlifeasia.org

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HOW TO USE THIS GUIDE

This guide is designed to help you confidently identify the eight species of pangolin, and when possible, body parts and scales even when removed from the animal.

Range maps are designed to assist law enforcement in determining possible country of origin and transit routes for pangolin species observed in trade. They are not indicative of specific geographic ranges within each country listed. Note that multiple pangolin species are native to certain countries.

The contents are organized by key differentiating physical characteristics, often utilizing the same photograph, because pangolin photographs are relatively uncommon. Species summaries note the main differentiators.

Profiles, total lengths, scale patterns, feet, and ratio of tail to body can help you identify live or dead animals with scales intact. Total length and ratio of tail to body can help you identify dead animals with scales removed.

It is helpful to know that Asian pangolin species have bristles between the scales, while African pangolin species do not. Keep in mind that each pangolin is an individual and may not appear exactly as it does in this guide.

Regional contact information is provided to assist you with incidents involving live animals.

INTRODUCTION TO PANGOLINS

Pangolins are the only mammal covered in scales. The scales are comprised of keratin, the same material as our hair and nails. Pangolins feed exclusively on ants and termites. They pose no threat to humans. When pangolins are frightened, they roll up into a ball to protect themselves.

Pangolins, as well as scales, which have been removed from the animal, are frequently encountered in the illegal wildlife trade.

Pangolins are not widely known outside of Africa and Asia. There is a total of eight pangolin species: four in Africa and four in Asia. All eight pangolin species are listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the highest level of international protection. In addition, pangolins are protected by national legislation in range countries.

Pangolin species are recognized by more than one common and scientific name. For the purposes of this booklet, the eight species will be identified as follows:

Common Name

Scientific Name (s)

Chinese Pangolin

Manis pentadactyla

Indian Pangolin

Manis crassicaudata

Philippine Pangolin

Manis culionensis

Sunda Pangolin

Manis javanica

Black Bellied Tree Pangolin

Phataginus tetradactyla / *Manis tetradactyla*

Giant Ground Pangolin

Smutsia gigantea / *Manis gigantea*

Ground Pangolin

Smutsia temminckii / *Manis temminckii*

White Bellied Tree Pangolin

Phataginus tricuspis / *Manis tricuspis*



DIANA LIMJOCO / COURTESY OF LISA HYWOOD

RANGE MAPS: ASIAN PANGOLIN SPECIES

Chinese Pangolin *Manis pentadactyla*

Bangladesh; Bhutan; China; Hong Kong;
India; Lao People's Democratic Republic;
Myanmar; Nepal; Taiwan, Province of
China; Thailand; Viet Nam.



Indian Pangolin *Manis crassicaudata*

India; Nepal; Pakistan; Sri Lanka.
Possibly extinct: Bangladesh.



Philippine Pangolin *Manis culionensis*

Philippines (mainland Palawan;
Busuanga Island, Coron Island, Culion
Island, Dumaran Island, Balabac Island
introduced to Apulit Island).



Sunda Pangolin *Manis javanica*

Brunei Darussalam; Cambodia;
Indonesia; Lao People's Democratic
Republic; Malaysia; Myanmar; Singapore;
Thailand; Viet Nam. Some evidence
suggests this species occurs / occurred
in China.



RANGE MAPS: AFRICAN PANGOLIN SPECIES



Black Bellied Tree Pangolin *Phataginus tetradactyla*

Angola (Cabinda); Cameroon; Central African Republic; Congo, The Republic of the; Congo, The Democratic Republic of the; Côte d'Ivoire; Equatorial Guinea (mainland); Gabon; Ghana; Guinea; Liberia; Nigeria; Sierra Leone.



Giant Ground Pangolin *Smutsia gigantea*

Angola (Cabinda); Cameroon; Central African Republic; Congo, The Republic of the; Congo, The Democratic Republic of the; Côte d'Ivoire; Equatorial Guinea (mainland); Gabon; Ghana; Guinea; Guinea-Bissau; Liberia; Nigeria; Rwanda; Senegal; Sierra Leone; South Sudan; Tanzania, United Republic of; Uganda. Possibly extant: Benin; Burkina Faso; Kenya; Niger.



Ground Pangolin *Smutsia temminckii*

Botswana; Central African Republic; Chad; Ethiopia; Kenya; Malawi; Mozambique; Namibia; Rwanda; South Africa; South Sudan; Tanzania, United Republic of; Uganda; Zambia; Zimbabwe. Possibly extinct: Swaziland.



White Bellied Tree Pangolin *Phataginus tricuspis*

Angola (Cabinda); Benin; Cameroon; Central African Republic; Congo, The Republic of the; Congo, The Democratic Republic of the; Côte d'Ivoire; Equatorial Guinea (mainland); Gabon; Ghana; Guinea; Guinea-Bissau; Kenya; Liberia; Nigeria; Rwanda; Sierra Leone; South Sudan; Tanzania, United Republic of; Togo; Uganda; Zambia. Possibly extant: Chad; Burundi.

SPECIES SUMMARIES: ASIAN PANGOLINS



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Chinese Pangolin (*Manis pentadactyla*)

Shorter head length (neck to snout) than Sunda pangolin; front claws longer than back claws; shorter tail in proportion to body length compared to Philippine, Sunda, Black Bellied and White Bellied tree pangolins; partially prehensile tail.



ANSAR KHAN / LIFE LINE FOR NATURE SOCIETY

Indian Pangolin (*Manis crassicaudata*)

Largest scales of all Asian pangolin species; front claws longer than back claws; thickest tail of all Asian pangolin species; shorter tail in proportion to body length compared to Philippine, Sunda, Black Bellied and White Bellied tree pangolins; partially prehensile tail.



DEXTER ALVARADO / KATALA FOUNDATION

Philippine Pangolin (*Manis culionensis*)

Shorter head length (neck to snout) than Sunda pangolin; more scale rows than all other species; smaller scales than other three Asian species, Ground pangolin and Giant Ground pangolin; front and back claws similar in size and shape; fully prehensile tail.



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Sunda Pangolin (*Manis javanica*)

Longer head length (neck to snout) than Chinese and Philippine pangolin; fewer scale rows than Philippine pangolin, more scale rows than Indian pangolin; front and back claws similar in size and shape; fully prehensile tail.

SPECIES SUMMARIES: AFRICAN PANGOLINS



ROD CASSIDY / SANGHA LODGE

Black Bellied Tree Pangolin (*Phataginus tetradactyla*)

The only pangolin species with black skin; front and back claws similar in size and shape; longest tail of all pangolin species; tail can be twice as long as body; fully prehensile tail.



UGANDA WILDLIFE AUTHORITY / UGANDA CONSERVATION FOUNDATION / COURTESY OF RAY JANSEN

Giant Ground Pangolin (*Smutsia gigantea*)

Largest of all eight pangolin species; snout is noticeably long; claws on front feet, toenails on hind feet; partially prehensile tail.



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Ground Pangolin (*Smutsia temminckii*)

Second largest of all pangolin species; claws on front feet, toenails on hind feet; partially prehensile tail.



ROD CASSIDY / SANGHA LODGE

White Bellied Tree Pangolin (*Phataginus tricuspis*)

Distinct three-pointed scales; front and back claws similar in size and shape; longer tail than all other pangolin species, except Black Bellied; fully prehensile tail.

HEADS AND PROFILES: ASIAN PANGOLIN SPECIES



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Chinese Pangolin

Well-developed external ear; scales gradually increase in size behind ears; skin is much lighter color than scales; shorter head length (neck to snout) than Sunda pangolin.



FRANCOIS SAVIGNY / NATUREPL / NATURE IN STOCK

Indian Pangolin

Well-developed external ear; numerous small scales on snout abruptly increase in size behind ears; skin is slightly lighter color than scales.



ROGER DOLOROSA / KATALA FOUNDATION

Philippine Pangolin

Well-developed external ear; scales remain fairly uniform in size behind ears; skin is lighter color than scales; shorter head length (neck to snout) than Sunda pangolin.



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Sunda Pangolin

Well-developed external ear; scales gradually increase in size behind ears; scales behind ears slightly keeled; skin is lighter color than scales; longer head (neck to snout) than Chinese and Philippine pangolins.

HEADS AND PROFILES: AFRICAN PANGOLIN SPECIES

Black Bellied Tree Pangolin

Prominent ridge below ear opening; scales gradually increase in size behind ears; skin is much darker color than scales.



ROD CASSIDY / SANGHA LODGE

Giant Ground Pangolin

Fairly prominent ears; scales gradually increase in size behind the ears; larger number of smaller scales on snout compared to Ground pangolin; noticeably long snout; skin is similar color to scales.



UGANDA WILDLIFE AUTHORITY / COURTESY OF RAY JANSEN

Ground Pangolin

Prominent ridge below ear opening; scales begin gradually increasing in size on snout and behind ears; skin is similar color to scales.



COURTESY OF LISA HYWOOD / TIKKI HYWOOD FOUNDATION

White Bellied Tree Pangolin

Prominent ridge below ear opening; scales gradually increase in size behind ears; large eyes; scales distinctly keeled and pointed; skin is lighter color than scales.



MAXWELL BOAKYE / COURTESY OF RAY JANSEN

SCALE DISTRIBUTION: ASIAN PANGOLIN SPECIES



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Chinese Pangolin

Bristles between scales; median row of 32-33 scales on head and body; cross row of 15-18 scales on body; head and body length is 45 - 60 cm.



MANDAL RANJIT / FLPA / NATURE IN STOCK

Indian Pangolin

Bristles between scales; median row of 27 scales on head and body; cross row of 11 - 13 scales on body; head and body length is 60 - 65 cm; largest scales of Asian species.



SABINE SCHOPPE / KATALA FOUNDATION

Philippine Pangolin

Bristles between scales; median row of 28 - 32 scales on head and body; cross row of 19 - 21 scales; head and body length is 47 - 63 cm; most scale rows of Asian species.



SUZI ESZTERHAS / MINDEN PICTURES / NATURE IN STOCK

Sunda Pangolin

Bristles between scales; median row of 28 - 32 scales on head and body; cross row of 15 - 19 scales on body; head and body length is 40 - 65 cm; scales on flanks may have slight median keel.

SCALE DISTRIBUTION: AFRICAN PANGOLIN SPECIES

Black Bellied Tree Pangolin

No bristles between scales; median row of 21 - 25 scales on head and body; cross row of 13 scales on body; head and body length is 30 - 35 cm.



ROD CASSIDY / SANGHA LODGE

Giant Ground Pangolin

No bristles between scales; median row of 25 scales on head and body; cross row of 17 scales on body; scales on flanks may have slight median keel; head and body length is 75 - 80 cm; largest scales of all species.



UGANDA WILDLIFE AUTHORITY /
UGANDA CONSERVATION FOUNDATION /
COURTESY OF RAY JANSEN

Ground Pangolin

No bristles between scales; median row of 22 - 26 scales on head and body; cross row of 11 - 13 scales on body; scales on lower parts of fore and hind legs; head and body length is 34 - 61 cm, however, individuals of 80 cm have been reported; scales on flanks may have slight median keel.



COURTESY OF LISA HYWOOD /
TIKKI HYWOOD FOUNDATION

White Bellied Tree Pangolin

No bristles between scales; median row of 22-30 scales on head and body; cross row of 21-25 scales on body; head and body length is 30 - 52 cm; scales on flanks and limbs have median keel; distinct three-pointed scales.



ROD CASSIDY / SANGHA LODGE

FEET: ASIAN PANGOLIN SPECIES



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Chinese Pangolin

Claws on front feet much larger than on hind feet; interior of front and hind legs unscaled, scales on lower parts of fore and hind legs; scales extend to toes.



ANSAR KHAN / LIFE LINE FOR NATURE SOCIETY

Indian Pangolin

Claws on front feet much larger than on hind feet; interior of front and hind legs unscaled, scales on lower parts of fore and hind legs; scales extend to toes.



SABINE SCHOPPE / KATALA FOUNDATION

Philippine Pangolin

Claws on front feet somewhat larger than hind feet; interior of front and hind legs unscaled, scales on lower parts of fore and hind legs; scales extend to toes; scales of hind legs may have slight median keel.



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Sunda Pangolin

Claws on front feet somewhat larger than hind feet; interior of front and hind legs unscaled, scales on lower parts of fore and hind legs; scales extend to toes; scales of hind legs may have slight median keel.

FEET: AFRICAN PANGOLIN SPECIES

Black Bellied Tree Pangolin

Claws on front feet somewhat larger than hind feet; interior of front and hind legs unscaled; scales extend to toes; scales of hind legs may have slight median keel, lower parts of front legs hairy and unscaled.



ROD CASSIDY / SANGHA LODGE

Giant Ground Pangolin

Claws on front feet are much larger than toenails on hind feet; interior of front and hind legs unscaled, scales on lower parts of fore and hind legs; scales extend to toes; hind feet are large compared to front feet, with toenails rather than claws.



UGANDA CONSERVATION FOUNDATION /
COURTESY OF LISA HYWOOD

Ground Pangolin

Claws on front feet are much larger than toenails on hind feet; interior of front and hind legs unscaled, scales on lower parts of fore and hind legs; scales extend to toes; hind feet are large compared to front feet, with toenails rather than claws.



RAY JANSEN / AFRICAN PANGOLIN WORKING GROUP

White Bellied Tree Pangolin

Claws on front feet somewhat larger than hind feet; interior of front and hind legs unscaled; scales extend to toes; scales of hind legs may have slight median keel, lower parts of front legs hairy and unscaled.



ROD CASSIDY / SANGHA LODGE



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Chinese Pangolin

Tail length is 25 - 40 cm; 16 - 19 scales along edge of tail; partially prehensile tail; thicker and shorter tail than Sunda and Philippine pangolin.



ANSAR KHAN / LIFE LINE FOR NATURE SOCIETY

Indian Pangolin

Tail length is 40 - 45 cm; 14 - 15 scales along edge of tail; partially prehensile tail; thickest tail of all Asian pangolin species.



DEXTER ALVARADO / KATALA FOUNDATION

Philippine Pangolin

Tail length is 35 - 52 cm; 28 - 32 scales along edge of tail; fully prehensile tail; longest tail in proportion to its body of Asian species; most slender tail of Asian pangolin species.



MICHAEL PITTS / NATUREPL / NATURE IN STOCK

Sunda Pangolin

Tail length is 35 - 57 cm; 21 - 29 scales along edge of tail; fully prehensile tail; more slender tail than Chinese and Indian pangolins.

Black Bellied Tree Pangolin

Tail length is 50 – 60 cm; 42 - 44 scales along edge of tail; fully prehensile tail; unscaled pad at tail tip; longest tail of all pangolin species.



ROD CASSIDY / SANGHA LODGE

Giant Ground Pangolin

Tail length is 50 - 65 cm; 15 - 19 scales along edge of tail; partially prehensile tail.



UGANDA CONSERVATION FOUNDATION /
COURTESY OF LISA HYWOOD

Ground Pangolin

Tail length is 31 - 50 cm; 11 - 13 scales along edge of tail; partially prehensile tail.



DARREN PIETERSEN / COURTESY OF RAY JANSEN /
AFRICAN PANGOLIN WORKING GROUP

White Belled Tree Pangolin

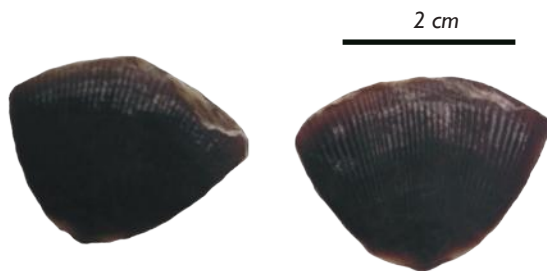
Tail length is 30 - 52 cm; 34 - 37 scales along edge of tail; fully prehensile tail; unscaled pad at tail tip; longest tail of all pangolin species in proportion to body, except Black Bellied Tree Pangolin.



ROD CASSIDY / SANGHA LODGE

SCALE SAMPLES

Black Bellied Tree Pangolin
Phataginus tetradactyla



RAY JANSEN / AFRICAN PANGOLIN WORKING GROUP

White Bellied Tree Pangolin
Phataginus tricuspis



RAY JANSEN / AFRICAN PANGOLIN WORKING GROUP

SCALE SAMPLES

Giant Ground Pangolin
Smutsia gigantea

2 cm



RAY JANSEN / AFRICAN PANGOLIN WORKING GROUP

SCALE SAMPLES

Ground Pangolin
Smutsia temminckii

2 cm



RAY JANSEN / AFRICAN PANGOLIN WORKING GROUP

SCALE SAMPLES

Sunda Pangolin

Manis javanica

Unit: mm
10 mm = 1 cm



JACK DAYNES / SHADETREE IMAGING

Philippine Pangolin

Manis culionensis

2 cm



SABINE SCHOPPE / KATALA FOUNDATION

SKINS

Sunda Pangolin
Manis javanica



JACK DAYNES / SHADETREE IMAGING

SKINS

White Bellied Tree Pangolin
Phataginus tricuspis



JACK DAYNES / SHADETREE IMAGING



ALEX HOFFORD / ALEX HOFFORD PHOTOGRAPHY



COURTESY OF E. JOHN / TRAFFIC

PANGOLIN PRODUCTS:ASIA



COURTESY OF E. JOHN / TRAFFIC



COURTESY OF E. JOHN / TRAFFIC



COURTESY OF OFIR DRORI / ERCN / EAGLE NETWORK



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COURTESY OF OFIR DRORI / ERCN / EAGLE NETWORK



COURTESY OF OFIR DRORI / ERCN / EAGLE NETWORK

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REGIONAL PANGOLIN RESCUE CONTACT INFORMATION

ASIA

Save Vietnam's Wildlife
Cuc Phuong National Park
Nho Quan District
Ninh Binh Province, Vietnam
+84 2293 848 053
+84 0978 331 441 HOTLINE
info@savevietnamswildlife.org

AFRICA

Tikki Hywood Foundation
Harare, Zimbabwe
+263 4 885 156
+263 772 256 490
tikkihywoodtrust@gmail.com

Dzanga Sangha Protected Area.
Bayanga, Sangha-Mbaéré, Central African Republic
+27 12 743 6557
rod@sanghalodge.com

African Pangolin Working Group
Pretoria, South Africa
+27 82 5551016
jansenr@tut.ac.za



RHISHJA COTA-LARSON / ANNAMITICUS

