

HANDBOOK FOR MEFT OFFICERS AND FIRST RESPONDERS

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1.1 INTRODUCTION



Ministry of Environment,
Forestry, and Tourism

Information and guidelines on pangolin ensures best practice for health and welfare of confiscated animals as well as correct procedure for seizure of carcasses and pangolin scales/parts. This package includes; a reference guide to pangolin, flowcharts for best practice, a summary of the “First Responders Manual for *Smutsia temminckii*”, guidelines for transport and release, contact details of veterinary practices equipped to work with pangolin in each region and a contact list of MEFT offices in regions where pangolin could occur. This information was developed by the Namibia Pangolin Working Group (NPWG) and is endorsed by the Ministry of Environment Forestry and Tourism (MEFT).

The successful release of a pangolin includes:

1. The seizure: stabilization, handling, and transport

- The following 2 flowcharts give the correct procedure:
 - Pangolin Confiscation Flowchart and Live Pangolin Flowchart
 - Read the “First Responders Manual for *Smutsia temminckii*”
- Read the Transport guidelines
- Complete 2 forms:
 - Initial Report Form and
 - Captive Wildlife Assessment Biometrics (when possible)

2. The treatment and care

- Check the Veterinary register for permitted veterinary practices in each region
- Read the “First Responders Manual for *Smutsia temminckii*”

3. The release

- Read the Release guidelines
- Check the Release site list

This handbook will help first responders, MEFT officers and law enforcement personnel.

This handbook is meant to be a dynamic package which can be updated as more information is available and further guidelines are developed. Further guidelines, the national conservation management plan, action log frame and other materials will from time to time be included.

1.2 BACKGROUND ON THE NPWG



Ministry of Environment,
Forestry, and Tourism

NAMIBIAN PANGOLIN WORKING GROUP (NPWG)

The Namibian Pangolin Working Group is chaired by the Ministry of Environment, Forestry and Tourism (MEFT), the Group includes the Namibian Chamber of Environment (NCE), the Namibia University of Science and Technology's Biodiversity Research Centre (NUST-BRC), Rooikat Trust, and the Namibia Animal Rehabilitation Research and Education Centre (NARREC). In early 2020, MEFT identified the need for a national pangolin working group as part of Namibia's five year national security strategy to address wildlife crime. This led to the establishment of the NPWG in April 2020 aimed at coordinating and driving pangolin conservation and research in Namibia; focusing on reducing the impacts of illegal wildlife trade on this species and understanding its broader conservation needs.

Our programme of work includes developing a concise National Conservation Management Plan for Pangolin, guidelines and protocols, guiding priority research, raising awareness, education, international collaboration, and support for confiscated pangolin.

Since inception in 2020, the NPWG has made great progress in protecting pangolin within Namibia, all this despite never being able to physically meet due to COVID-19. Establishing a working collaboration between all stakeholders including government, police, intelligence, academia, and private non-profit organizations, has led to many firsts for pangolin conservation in Namibia. Working together helps to ensure a sustainable future for *Smutsia temminckii* within the Namibia and beyond.



NAMIBIA
UNIVERSITY
OF SCIENCE AND
TECHNOLOGY



Biodiversity Research Centre



Namibian Chamber of Environment



Ministry of Environment,
Forestry, and Tourism



NARREC
Namibia Animal Rehabilitation Research & Education Centre

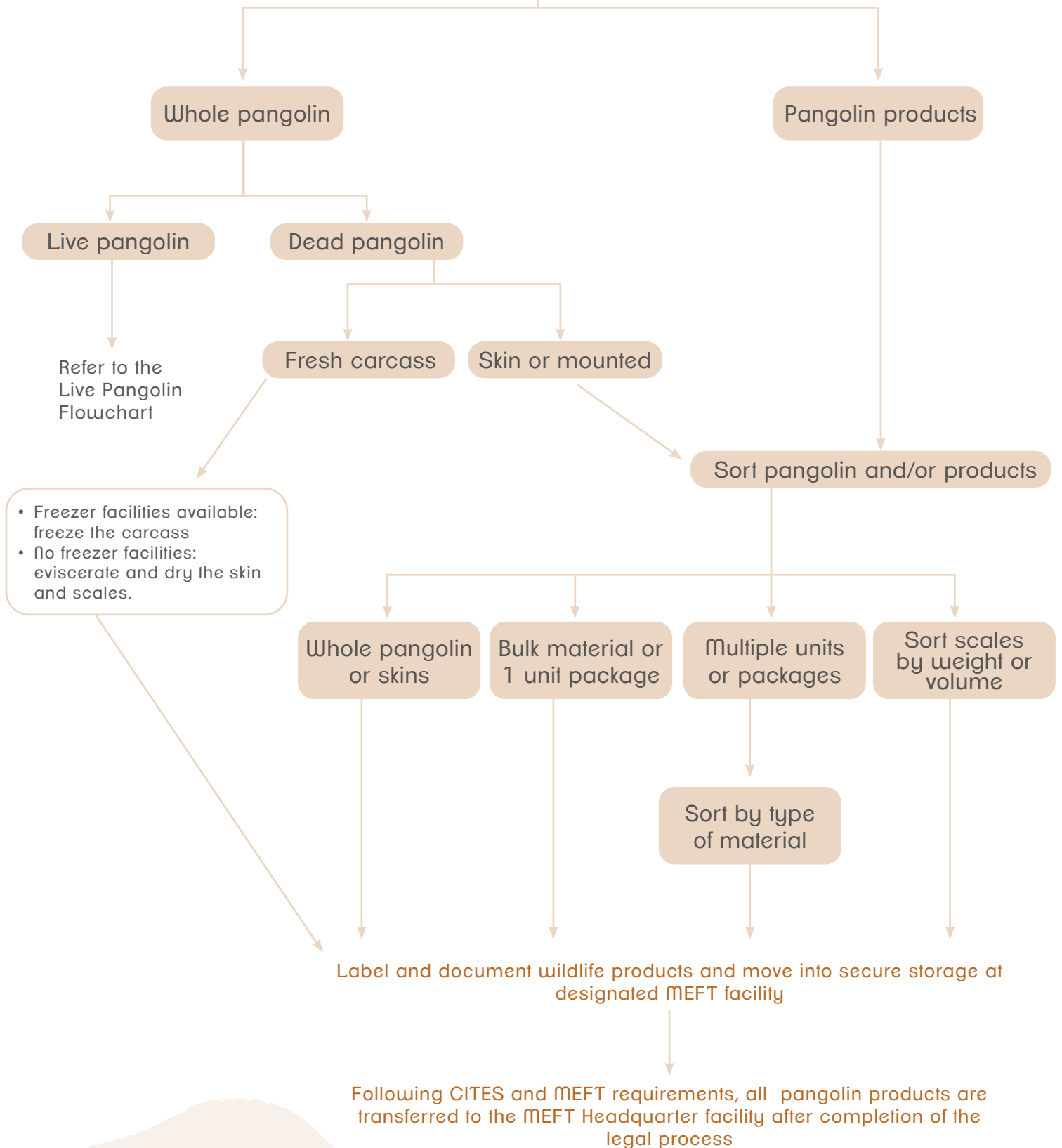
2.0 PANGOLIN CONFISCATION FLOWCHART

PANGOLIN CONFISCATION

Questions for interviewer and docket (from investigating officer):

- Where did the suspect get the product?
What is the original source of the product?
- When did the suspect acquire the product?
- Can the suspect provide any other details?

Transfer at each point in the flow chart to be accompanied by the chain of custody



3.0 LIVE CONFISCATED PANGOLIN FLOWCHART

LIVE PANGOLIN

First Responder/Investigator

Is the case for prosecution

INVESTIGATOR Fill in
Initial Report Form

Yes

No

Photographic evidence

- 1) Initial Health Check and stabilize - Refer to **First Responder Manual**
- 2) Arrange for a trained MEFT officer and transport carrier for the animal

Handover using **Transport Guidelines**

Can it be released immediately?
(If in doubt follow the No pathway)

No

Basic First Aid
First Responders Manual
(If in doubt phone nearest vet)

Yes

Refer to **Veterinary clinic register** and
arrange transport

Was it seized in a place
with natural habitat?

Designated veterinarian
or rehabilitator

Fill in **Biometrics Form**

Yes

No

Rehabilitation until fit

When feasible

Meft / designated
researcher

Meft / designated
researcher

Release
following
**Release
Guidelines**

Fill in **Biometrics Form**

Release following
Release Guidelines
(Tag when possible)

Forward Initial Report Form details
to regional MEFT office for Pangolin
seizure, translocation, and release log

3.1 INITIAL REPORT FORM

Confiscated wildlife assessment for first responders

Please submit copy to the vet, rehab, or researcher

FOUND BY									
DATE	DD MM YYYY					TIME			
LOCATION ANIMAL WAS RECOVERED	Nearest town or settlement:								
SPECIES									
NO. OF ANIMALS	1	2	3	4	5	6	7	8	9
RELEVANT HISTORY GIVEN BY THE SUSPECT:									
DATE COLLECTED FROM SUSPECT									
METHOD OF CAPTURE	Violent					Non-Violent			
DETAILS OF RECOVERY (sack, cage, box, drum, etc)									
NO. OF DAYS HELD BY SUSPECT	1	2	3	4	5	6	7		
INJURIES	Broken/ Removed Scales		Wire Damage		Trap Damage		Dehydration		
	Spear Damage		Shock		Clubbed	Other:			
FOOD OR WATER GIVEN	Food					Water			
RECOVERED ANIMAL FOUND IN	Box	Vehicle	Sack	Wire Bound	Street	Yard	Other		
COMPLETED BY					SIGNATURE				
DATE COMPLETED					DATE SUBMITTED				

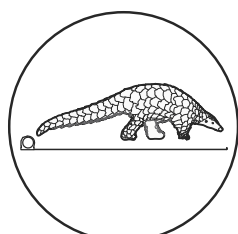
Handle wildlife with care wildlife must always be transported with the correct permits.
Act fast - do not keep recovered wildlife for unnecessarily long : contact wildlife hotline

WILDLIFE HOTLINE NUMBER: 55 555

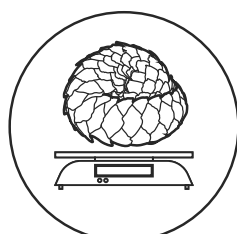
3.2 BIOMETRICS FORM

Confiscated wildlife assessment for veterinarians & Rehabilitators

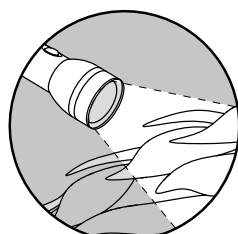
DATE TIME AND OF ARRIVAL		DATE AND TIME OF TRANSFER / RELEASE		
MEASUREMENTS (refer to guide)		SEX (circle) :	Male	Female
BODY TEMPERATURE (C)		BODY MASS (Kg)		
BODY LENGTH (cm)		TAIL LENGTH (cm)		
BODY SCORE (see attached guide)	1. Thin and boney; emaciated. Large gaps between scales, shape of head obviously visible.	2. Moderate gaps between scales, shape of head begging to show. Flattened tailhead, pelvic and hip bones.	3. Moderate body fat, fat around tailhead, minimal gaps between scales. Flattened pelvic and hip bones.	4. Rounded body, head, and shoulders; overweight. Little to no gaps between scales. Good body fat reserves.
PARASITES	Yes (Provide Samples) : Ticks / Mites / Other?		No	
GENETIC SAMPLE (circle) refer to first responders manual for sampling	Scale shaving / Scale clipping / Dead skin / Other			
CONDITION	Hot	Cold	Injured	Healthy
STRENGTH	Loosly Curled	Tightly Curled	Uncurled	Collapsed
WALKING	Yes		No	
TREATMENTS (If applicable)				
MICROCHIP ID				
VHF FREQUENCY				
GPS/SAT TAG ID				
OTHER DETAILS				



Measure pangolin from nose tip to end of tail



Place curled pangolin on scale to measure weight



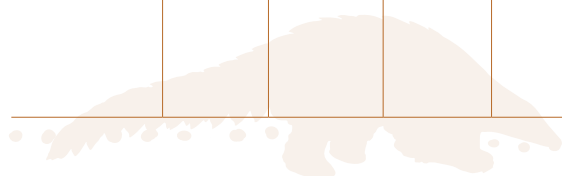
Use a torch to check underneath scales



3.3 PANGOLIN SEIZURE, TRANSLOCATION, AND RELEASE LOG

****Please e-mail this form quarterly to head@met-iiu.com**

Case Number (if applicable)	Regional Office	Location of seizure	Origin of pangolin	Officer	Contact details	Date of seizure	Time of seizure	Details of seizure or reason for movement of pangolin (origin from wild if possible, days held in captivity without food, means of acquisition, etc)	Veterinary Clinic / Rehabilitation Centre	Individual details (gender, weight, features, etc)	Vet Status: Rehab (RH) Release (RE) Euthanasia (EU)	Release site, be as detailed as possible	Release date	Release time	Release notes (left carrier on its own, walked on 2 legs, dragged tail, etc)	GPS Tag ID (if applicable)



5.1 TRANSPORT GUIDELINES

Smutsia temminckii, Temminck's Ground Pangolin

1. Prepare for transport

- Remove a confiscated pangolin from the sack or box and allow it to uncurl
- Offer a rehydrate solution (even plain water) before transporting
- Have the correct MEFT transport permit
- Call ahead to the destination; the veterinarian, rehabilitation center or release site
- Leave as soon as possible for treatment, the veterinarian, rehabilitation center, or release site
- Leave in time to get to a release site by mid to late afternoon

2. Type of vehicle

- A sedan or double cab can take a pangolin box on the back seat
- Inside a vehicle either heating (vehicle-heater) or cooling (vehicle-air-con) can be used
- Keep any volume such as radio music or conversation as quiet as possible
- Secure the box in the back of a bakkie (pick-up) so that it cannot slide
- The back of an open bakkie (pick-up) is not recommended

3. The Transport Box/container

- An acceptable box size for an adult pangolin is 100cmL x 40cmW x 40cmH
- Cover any side of the box that has open grid (jail-bars) or wire
- Wire can cause injuries
- Air -holes must not be small large enough for the pangolin to push its snout through
- The box should not have noisy rattling parts
- Space inside the box should be enough for a heat source to be added (hot water bottle)
- Space inside the box should be enough for the pangolin to be able to move off the heat source
- Space inside the box should be enough for the animal to stretch out completely
- Place a non-slip mat (car-mat) on the base of the transport box
- Provide a towel and a rolled blanket, the pangolin will use them
- Secure the box with extra closing straps

4. Best Practice

- Do not transport more than one pangolin per box
- Do not separate a youngster from the adult that it is holding onto
- Do not put the animal in the boot of a vehicle, there are often fuel fumes and insulation is poor
- Do not leave the pangolin unattended in a vehicle for an extended period of time
- Do not leave the box unsecured in the back of a bakkie where it can slide about
- Do not park a vehicle in the sun when there is an animal inside
- Do not release mid-day

5. Clean the box and equipment

- Pangolin can carry both internal and external parasites
- After transport wash the box with soap, rinse and preferably sun-dry for some hours
- Use F10, a disinfectant available at agriculture and veterinary outlets
- Wash and rinse the mats, towels and the blankets and sun-dry

REFERENCE:

First Responders Manual Page 6

IUCN guideline for wild animal transport covered - IATA Live Animal Regulation (LAR).

Namibia's Ministry of Environment, Forestry and Tourism (MEFT) Animal Transport regulations



6.1 FACT SHEET

TEMMINCK'S GROUND PANGOLIN

Common names: Cape pangolin, Scaly anteater (English); Ongaka (OshiWambo); Ongaka (OtjiHerero); ñake (SiLozi); Nkaka (Rumanyo); //Khommi, //Khoms (Khoekhoegowab); Ietermagôg, Ystermagôg (Afrikaans); Schuppentier (German)

Scientific Name	Smutsia temminckii
IUCN status	VU – Vulnerable A vulnerable species is a species which has been categorized by the International Union for Conservation of Nature as likely to become endangered unless the circumstances that are threatening its survival and reproduction improve
CITES	Appendix I: All international trade, export, and import in pangolin is prohibited
Namibian Status	Specially protected
Threats	<ul style="list-style-type: none"> • Most trafficked mammal worldwide with heavy pressure stemming from East Asian markets • Scales and parts are considered to have medicinal or spiritual purposes • There are a number of natural and man-made threats which include: electrified fencing, climate change, drought, veld fires, road accidents, shifting land use, habitat fragmentation, bush clearing, use of herbicides and pesticides, and drowning in open canals
Adult body weight	8 – 18 kg
Total body length	70 – 125 cm including the tail length of 30 – 50 cm
Diet	Myrmecophagous. Pangolin are highly selective feeders that eat specific species of ants and termites. They mostly live independent of drinking water but will drink from free-standing water when it is available
Territory size	Individuals can have up to 10 – 69 dens in a territory of 2 – 36 km ²
Dispersal age	Weaned at 4 – 5 months and disperses from natal range about 12 months
Clanship	Mostly solitary, although males and females will sometimes move together and share a den
Gestation period	105 – 140 days
Litter size	1 pup per year, with twins rarely born
Life span	About 12 – 15 years. There is very little data on the longevity of any pangolin species in the wild

Fascinating Facts

- The name pangolin comes from the Malay word pengguling, meaning “one who rolls up”
- A pangolin’s scales make up approximately 20% of its body weight
- Temminck’s ground pangolin are mostly bipedal, they walk on their hind legs and use the tail for balance
- Pangolin do not have teeth but rather a long-sticky tongue which is as long as their body
- The pangolin stomach is designed to grind up ants and termites using ingested sand and stones and the keratinous spines found on the stomach lining, which is similar to a bird’s gizzard.
- World Pangolin Day is celebrated every year on the 3rd Saturday of February

6.2 INFORMATION ON PANGOLIN

What is a pangolin?

Pangolins are scaly mammals that eat ants and termites with a long sticky tongue. They are mostly nocturnal and spend the day resting to save energy. Four species occur in Africa and four species occur in Asia, some live in the rainforest canopy whilst others live on the ground. The scales are made out of keratin and they overlap to provide protection against predators when the pangolin rolls into a defensive ball.

Why are they valuable for the ecosystem?

A single pangolin can eat over 70 million ants and termites per year. This provides a natural control of potential pest species that can negatively impact grasslands and crops as well as destroy fenceposts and other infrastructure. Pangolin often dig to open ant and termite nests, this turns and aerates the soil, thereby improving seed germination. With pangolins on the land, game, livestock, and crop farmers benefit from a better balanced ecology.

Why are they the most trafficked mammal in the world?

Whole pangolin, scales and parts are used in traditional medicine and rituals for various beliefs. Pangolins are also consumed in Asia where their meat is believed to be a delicacy. Asian pangolin populations have been severely depleted, some to local extinction. Trafficked African pangolin species are increasingly intercepted from the illegal wildlife trade due to continued demand for pangolin products in Asia. This increasing pressure from the East Asian markets is in addition to any local demand for African pangolin species. The effect of the increasing illegal international trade on our (Namibian) pangolin population is currently unknown. In 2019 alone, there were 49 live seized pangolins in Namibia. Over the past three years, pangolin related cases have surpassed rhino and elephant combined.

What can you do to save pangolins?

SPREAD AWARENESS! Share with others what you have learnt about pangolins and why it is important to protect them. If you see a pangolin, appreciate its presence. Never tell others about a location where a pangolin has been seen.



7.0 RESOURCES ON PANGOLIN

Subject	Citation	Link
PANGOLIN BACKGROUND		
Scaling up Pangolin Conservation	Challender, D.W.S., Waterman, C., and Baillie, J.E.M. (2014). Scaling up pangolin conservation. IUCN SSC Pangolin Specialist Group Conservation Action Plan. Zoological Society of London, London, UK.	https://www.iucn.org/downloads/scaling_up_pangolin_conservation_280714_v4_1.pdf
Evolution and morphology	Gaudin, T. J., Gaubert, P., Billet, G., Hautier, L., Ferreira-Cardoso, S., & Wible, J. R. (2020). Evolution and morphology. In Challender, D.W.S., Nash, H.C., and Waterman, C., Pangolins: Science, Society, and Conservation pp. 5–23. Academic Press. doi:10.1016/b978-0-12-815507-3.00001-0	https://sci-hub.do/10.1016/B978-0-12-815507-3.00001-0
Phylogeny and systematics	Gaubert, P., Wible, J. R., Heighton, S. P., & Gaudin, T. J. (2020). Phylogeny and systematics. In Challender, D.W.S., Nash, H.C., and Waterman, C., Pangolins: Science, Society, and Conservation pp. 25–39. Academic Press. doi:10.1016/b978-0-12-815507-3.00002-2	https://sci-hub.do/10.1016/B978-0-12-815507-3.00002-2
The role of pangolin in the ecosystem	Chao, J.-T., Li, H.-F., & Lin, C.-C. (2020). The role of pangolins in ecosystems. In Challender, D.W.S., Nash, H.C., and Waterman, C., Pangolins: Science, Society, and Conservation pp. 43–48. Academic Press. doi:10.1016/b978-0-12-815507-3.00003-4	https://sci-hub.se/10.1016/B978-0-12-815507-3.00003-4
TRAFFICKING AND TRADE		
African pangolins under increased pressure from poaching and intercontinental trade	Challender, Hywood (2012)	https://www.researchgate.net/publication/261790784_African_pangolins_under_increased_pressure_from_poaching_and_intercontinental_trade
Tipping the Scales - Exposing the growing trade of African Pangolins into China's Traditional Medicine Industry	Hornor F, Thorne D, Shaver A	http://the-eis.com/elibrary/search/23082
Assessing Africa - Wide Pangolin Exploitation by Scaling Local Data	Ingram, D. J., Coad, L., Abernethy, K. A., Maisels, F., Stokes, E. J., Bobo, K. S., ... Scharlemann, J. P. W. (2017). Assessing Africa-Wide Pangolin Exploitation by Scaling Local Data. Conservation Letters, 11(2), e12389. doi:10.1111/conl.12389	https://sci-hub.se/10.1111/conl.12389
Taking a stand against illegal wildlife trade: the Zimbabwean approach to pangolin conservation	Shepherd, C. R., Connelly, E., Hywood, L., & Cassey, P. (2016). Taking a stand against illegal wildlife trade: the Zimbabwean approach to pangolin conservation. Oryx, 51(02), 280–285. doi:10.1017/s0030605316000119	https://sci-hub.se/10.1017/s0030605316000119
Tipping the Scales - Exposing the growing trade of African Pangolins into China's Traditional Medicine Industry	Hornor F, Thorne D, Shaver A	http://the-eis.com/elibrary/search/23082
TRAFFICKING IN NAMIBIA		
Combatting Wildlife Crime in Namibia - Annual Report 2020	Ministry of Home Affairs, Immigration, Safety and Security, Ministry of Environment, Forestry and Tourism (MEFT)	http://the-eis.com/elibrary/search/24001
Combatting Wildlife Crime in Namibia Annual Report 2019	Ministry of Home Affairs, Immigration, Safety and Security, Ministry of Environment, Forestry and Tourism (MEFT)	http://the-eis.com/elibrary/search/21176
TEMMINCK'S PANGOLIN ECOLOGY AND BEHAVIOUR		
Temminck's pangolin <i>Smutsia temminckii</i> (Smuts, 1832)	Pietersen, D. W., Jansen, R., Swart, J., Panaino, W., Kotze, A., Rankin, P., & Nebe, B. (2020). Temminck's pangolin (<i>Smutsia temminckii</i>). In Challender, D.W.S., Nash, H.C., and Waterman, C., Pangolins: Science, Society, and Conservation pp. 175–193. Academic Press. doi:10.1016/b978-0-12-815507-3.00011-3	https://sci-hub.se/10.1016/B978-0-12-815507-3.00011-3

Temminck's pangolin <i>Smutsia temminckii</i>	Pietersen, D., Jansen, R. & Connelly, E. 2019. <i>Smutsia temminckii</i> . The IUCN Red List of Threatened Species 2019: e.T12765A123585768. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T12765A123585768.en .	https://www.iucnredlist.org/species/12765/123585768
Behavioural ecology and conservation biology of ground pangolins <i>Smutsia temminckii</i> in the Kalahari Desert	Darren Pietersen, MSc Thesis. University of Pretoria. (2013)	https://repository.up.ac.za/handle/2263/36779
Notes and Records	Heath, M., & Coulson, I. (1998). Notes and Records. <i>African Journal of Ecology</i> , 36(3), 267–270. doi:10.1046/j.1365-2028.1998.00129.x	https://sci-hub.se/10.1046/j.1365-2028.1998.00129.x
The pangolin (<i>Manis temminckii</i> Smuts, 1835) in Zimbabwe	COULSON, I. (1989). The pangolin (<i>Manis temminckii</i> Smuts, 1835) in Zimbabwe. <i>African Journal of Ecology</i> , 27(2), 149–155. doi:10.1111/j.1365-2028.1989.tb00938.x	https://sci-hub.se/10.1111/j.1365-2028.1989.tb00938.x
HOME RANGE		
Home Range, Habitat Selection and Activity Patterns of an Arid-Zone Population of Temminck's Ground Pangolins, <i>Smutsia temminckii</i>	Pietersen, D. W., McKechnie, A. E., & Jansen, R. (2014). Home Range, Habitat Selection and Activity Patterns of an Arid-Zone Population of Temminck's Ground Pangolins, <i>Smutsia temminckii</i> . <i>African Zoology</i> , 49(2), 265–276. doi:10.3377/004.049.0215	https://sci-hub.se/10.3377/004.049.0215
Home range size and distribution in a wild population of Cape pangolins, <i>Manis temminckii</i> , in north-west Zimbabwe	HEATH, M., & COULSON, I. (1997). Home range size and distribution in a wild population of Cape pangolins, <i>Manis temminckii</i> , in north-west Zimbabwe. <i>African Journal of Ecology</i> , 35(2), 94–109.	https://sci-hub.se/10.1111/j.1365-2028.1997.080-89080.x
DIET		
Diet and prey selectivity of the specialist myrmecophage, Temminck's ground pangolin	Pietersen, D. W., Symes, C. T., Woodborne, S., McKechnie, A. E., & Jansen, R. (2015). Diet and prey selectivity of the specialist myrmecophage, Temminck's ground pangolin. <i>Journal of Zoology</i> , 298(3), 198–208. doi:10.1111/jzo.12302	https://sci-hub.se/10.1111/jzo.12302
Foraging behaviour and ecology of the Cape pangolin (<i>Manis temminckii</i>) in north-western Zimbabwe	RICHER, R., COULSON, I., & HEATH, M. (1997). Foraging behaviour and ecology of the Cape pangolin (<i>Manis temminckii</i>) in north-western Zimbabwe. <i>African Journal of Ecology</i> , 35(4), 361–369.	https://sci-hub.se/10.1111/j.1365-2028.1997.101-89101.x
Ecological factors affecting the feeding behaviour of pangolins (<i>Manis temminckii</i>)	Swart, J. M., Richardson, P. R. K., & Ferguson, J. W. H. (1999). Ecological factors affecting the feeding behaviour of pangolins (<i>Manis temminckii</i>). <i>Journal of Zoology</i> , 247(3), 281–292. doi:10.1111/j.1469-7998.1999.tb00992.x	https://sci-hub.se/10.1111/j.1469-7998.1999.tb00992.x
VETERINARY INFORMATION		
Veterinary health of pangolins	Wicker, L. V., Lourens, K., & Hai, L. K. (2020). Veterinary health of pangolins. <i>Pangolins</i> , 461–493. doi:10.1016/b978-0-12-815507-3.00029-0	https://sci-hub.se/10.1016/b978-0-12-815507-3.00029-0
The rescue, rehabilitation and release of pangolins.	Wright, N., & Jimerson, J. (2020). The rescue, rehabilitation and release of pangolins. <i>Pangolins</i> , 495–504. doi:10.1016/b978-0-12-815507-3.00030-7	https://sci-hub.se/10.1016/b978-0-12-815507-3.00030-7
TRANSLOCATION/RELEASE		
Preliminary studies on relocation of Cape Pangolins <i>Manis temminckii</i>	Heath, Martha E. and Ian M. Coulson. 2018. "Preliminary Studies on Relocation of Cape Pangolins <i>Manis...</i> " <i>South African Journal of Wildlife Research</i> 10:1–10.	https://journals.co.za/doi/10.10520/EJC117030
Survival and distribution of Temminck's pangolin (<i>Smutsia temminckii</i>) retrieved from the illegal wildlife trade in South Africa	Meyer, F. (2020). MSc Thesis. Survival and distribution of Temminck's pangolin (<i>Smutsia temminckii</i>) retrieved from the illegal wildlife trade in South Africa University of Venda.	https://africanpangolin.org/wp-content/uploads/2020/12/FC-Meyer-MSc-Final-22-8-2020.pdf
RESOURCES		
First Responders Manual: African Ground Pangolin <i>Smutsia temminckii</i>	Namibia Animal Rehabilitation Research and Education Centre (NARREC), HumaneLABS	http://the-eis.com/elibrary/search/19039
Pangolin reward Poster		To be uploaded to EIS still, PDF in Google drive folder

8.0 INTRODUCTION TO THE FIRST RESPONDERS MANUAL:

Pangolin shock & Quick Guide

Smutsia temminckii Temmincks Ground Pangolin

The captured and confiscated pangolin

A captured animal is frightened and in shock. **First Responders Manual the captured and confiscated pangolin**
Pages 2 and 3

1. Understand the pangolin in shock

Pangolin will use its last energy for a flight or fight response to escape
Pangolin have great boody strength to push open a possible escape exit
Pangolin use their powerful front digging claws to open up escape routes
Pangolin will push the nose or snout through openings looking for escape routes
Pangolin will climb wire and scratch at any opening showing light
Pangolin can damage the face and front feet on wire

Pangolin will tightly roll and hold onto objects when they feel threatened
Pangolin that cannot roll tightly are weak from injury and or lack of food
Pangolin can overheat (hyperthermia), they need to stretch the body fully in order to cool down
Pangolin in shock can be hypothermic (too cold) and may need an external heat source (hot water bottle)
Rescued pangolin will be hungry and have low blood-sugar
Rescued pangolin will be dehydrated
Rescued pangolin often have wounds under their scales

2. Personal and Pangolin Safety

First Responders Manual

Pages 4 and 5

Personal safety
Rehydration kit
Toolkit
Pangolin Safety Kit
First Aid Kit
Sampling Kit

3. Resources for pangolin handling and care

Minimize stress with best practice guidelines

First Responders Manual

Immediate assistance to a compromised pangolin	Pages 6 and 7
Health care checklist pages	Pages 8 and 9
Basic Geographical location and basic ecology	Pages 12 and 13
Threats and conservation status	Pages 14 and 15
Pangolin Biology Pages	Pages 16 and 17
Wildlife Trafficking	Pages 18 and 19