



GLOBAL PANGOLIN CONSERVATION STATUS

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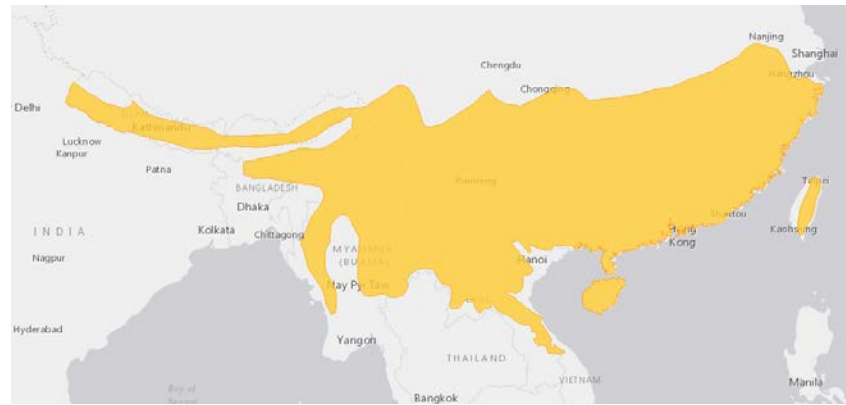
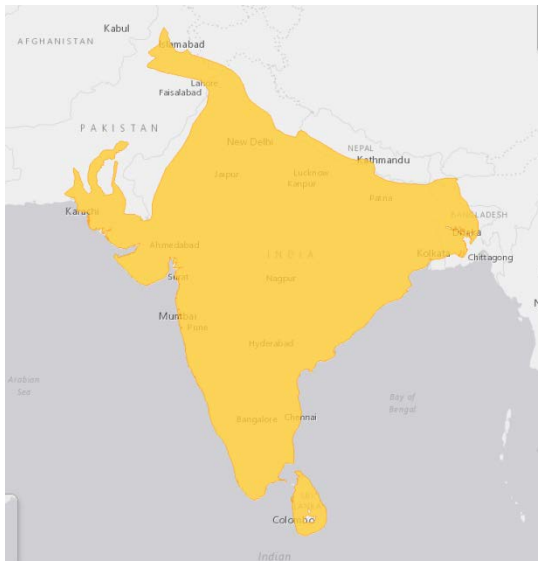


IUCN SSC PANGOLIN
SPECIALIST GROUP

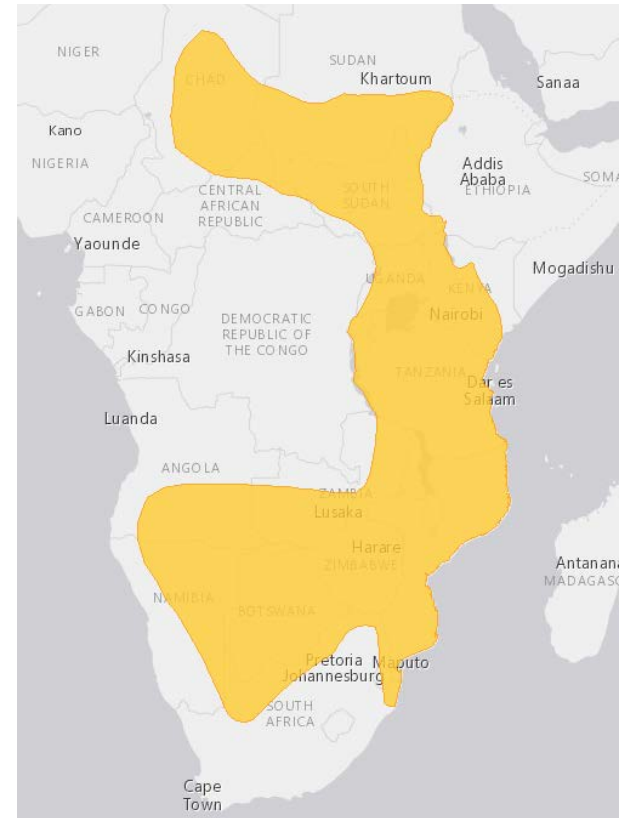
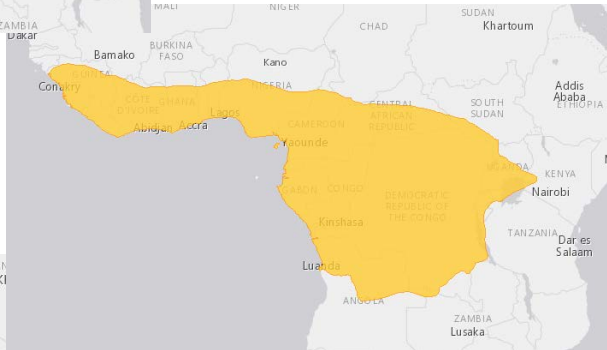
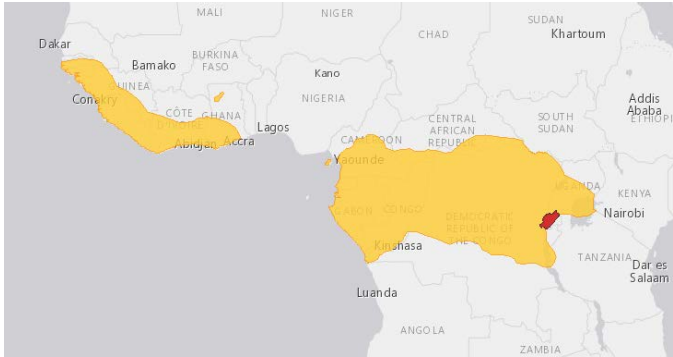
OUTLINE

1. PANGOLIN DISTRIBUTION
2. PANGOLIN BIOLOGY
3. POPULATION BIOLOGY
4. VULNERABILITY FACTORS
5. PANGOLINS – HABITATS, IUCN RED LIST STATUS, THREATS, POPULATION MONITORING/NDFs
 - ASIA
 - AFRICA

PANGOLIN DISTRIBUTION - ASIA



PANGOLIN DISTRIBUTION - AFRICA



PANGOLIN BIOLOGY

- Insectivorous (myrmecophagous)
- Solitary (except mating/rearing young)
- Distribution linked to presence of prey species
- Regulate social insect populations
- Nocturnal – foraging for prey
- Diurnally – rest in tree hollows/burrows
- Predators - larger cats, chimpanzees, pythons, jackals, large owls(?)



POPULATION BIOLOGY

- Virtually no population estimates – regional or global
- Lifespan in the wild – largely unknown
- Generation length, 7-9 years est.
- Seasonal/aseasonal breeding (Mahmood *et al.* 2015)
- Population recruitment rate unknown
- Typically one young (Kingdon *et al.* 2013, Mahmood *et al.* 2015)
- Weaning age, c.4 months (Lim & Ng 2008)



VULNERABILITY FACTORS

- Defence mechanism ...just roll up.
- Seemingly easy to hunt/poach (but not to census!)
- Comparatively low reproductive rate...
- Terrestrial species easier to catch
- Low densities
- Adaptable, but at lower densities(?)



CHINESE PANGOLIN, *MANIS PENTADACTYLA*

- Chinese Pangolin
- Himalayan foothills, north and north-east India, Annamites in Lao PDR, northern Vietnam, southern China, Hainan, Taiwan (P.R. China), Hong Kong SAR
- Primary/secondary tropical forests
- Bamboo, limestone, coniferous, grasslands, agricultural fields
- Terrestrial
- Digs own burrows for eating/sleeping





CHINESE PANGOLIN, *MANIS PENTADACTYLA*

- Critically Endangered A2d+3d+4d
- Population status: declining $\leq 90\%$ over 21 yrs (gen lgth est. 7 yrs)
- Hunting/poaching for illegal, international trade
- Demand for meat and scales
- Possibly 60,000+ in trade in last decade (Challender *et al.* 2015)
- Commercially extinct in China(?)
- Sub-species reduced to remanant population on Hainan island
- Populations severely reduced in northern Vietnam, Lao PDR
- Status unknown in most other range states

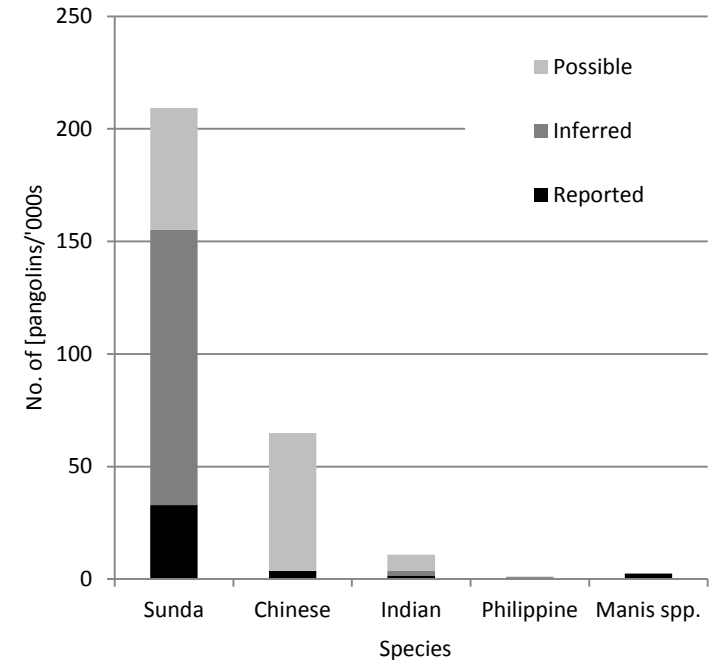
SUNDA PANGOLIN, *MANIS JAVANICA*

- Sunda/Malayan Pangolin
- Mainland and island Southeast Asia
- Arboreal/terrestrial – rests in tree hollows
- Primary/secondary forest, lowland dipterocarp forest, cultivated areas incl. gardens, oil palm and rubber plantations.
- Occurs at lower densities in artificial habitats(?)
- Single young, gestation ≥ 130 days



SUNDA PANGOLIN, *MANIS JAVANICA*

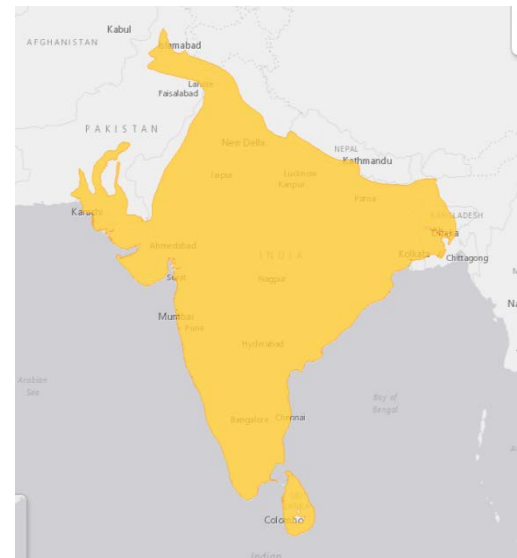
- Critically Endangered A2d+3d+4d
- Population status: declining, $\geq 80\%$ over 21 yrs (gen lgth est. 7 yrs)
- Hunting/poaching for illegal trade
- Pangolin most commonly found in trade
- Demand for meat and scales in East Asia
- Dam projects, land conversion, infrastructure
- Populations extirpated/severely reduced in some areas
- Lao PDR, Vietnam, China(?)



Source: Challender *et al.* 2015

INDIAN PANGOLIN, *MANIS CRASSICAUDATA*

- Indian/Thick tailed Pangolin
- South Asia from Pakistan, Indian sub-continent, Nepal, Bangladesh, Sri Lanka
- Historical records from SW China
- Little known about natural history
- Understood to occur tropical forests, open land, grasslands and degraded habitat
- Solitary, nocturnal, burrow-dwelling
- Occasionally two offspring (Mahmood *et al.* 2015)
- Gestation c.165 days est.



INDIAN PANGOLIN, *MANIS CRASSICAUDA*

- Endangered A3d+4d
- Population status: declining, $\geq 50\%$ in next 21 yrs (gen lgth est 7 yrs)
- Subject to illegal hunting/poaching for (illegal) international trade
- Transfer of trade attention to this species from Chinese/Sunda sp.
- Loss and deterioration of habitat, increase in the agrarian economy, improved irrigation and the use of pesticides - India
- No population estimates
- Occurs at low densities (Mahmood *et al.* 2014)
- Possibly extinct in Bangladesh



PHILIPPINE PANGOLIN, *MANIS CULIONENSIS*

- Philippine Pangolin
- Described as distinct in 1998, 2005
- Endemic to the Philippines
- Palawan + adjacent islands (e.g., Culion)
- Introduced to Apulit island
- Primary/secondary lowland forest, lowland grassland/forest mosaics.
- Affinity to fig trees(?)

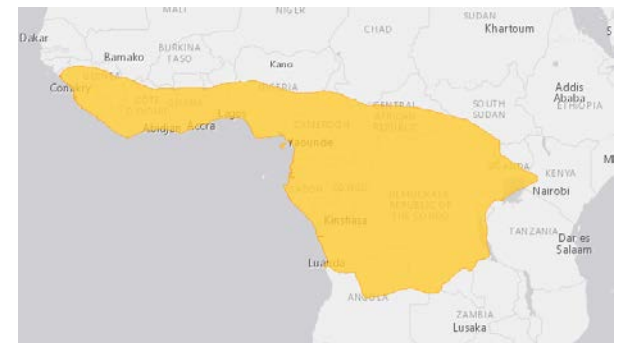


PHILIPPINE PANGOLIN, *MANIS CULIONENSIS*

- Endangered A3d+4d
- Population status: declining, $\geq 50\%$ in 21 years (gen lgth est. 7 yrs)
- Local hunting for meat and scales
- Seemingly increasing illegal, international trade to East Asia
- No population estimates
- More common in north and central Palawan than the South

WHITE-BELLIED PANGOLIN *PHATAGINUS TRICUSPIS*

- Tree pangolin; three-cusped pangolin
- Much of West and Central Africa
- Most common African forest pangolin
- Relatively high densities in suitable habitat
- Arboreal and terrestrial; nocturnal
- Moist tropical lowland and secondary growth forest
- Dense woodlands, esp along water courses
- Can adapt to some degree of habitat modification
- Single young; gestation period ~150 days



WHITE-BELLIED PANGOLIN

PHATAGINUS TRICUSPIS

- Vulnerable A4d
- Population status declining; >40% over 21 yr period (7 yrs past, 14 yrs future)
- Generation length estimated 7 yrs (uncertain)
- Hunting for bushmeat and traditional medicine
- Increasing demand from international markets
- No population estimates
- Some evidence of declines in Ghana, Guinea, Rwanda and Nigeria

BLACK-BELLIED PANGOLIN

PHATAGINUS TETRADACTYLA

- Long-tailed pangolin
- West and Central Africa; apparent gap between Ghana and Nigeria
- Least frequently recorded African pangolin
- Most arboreal African pangolin species
- Riverine and swamp forests dominated by palms
- Never far from permanent water and water courses
- Found in altered habitats (bush, farmlands)
- Single young; gestation approx. 140 days



BLACK-BELLIED PANGOLIN

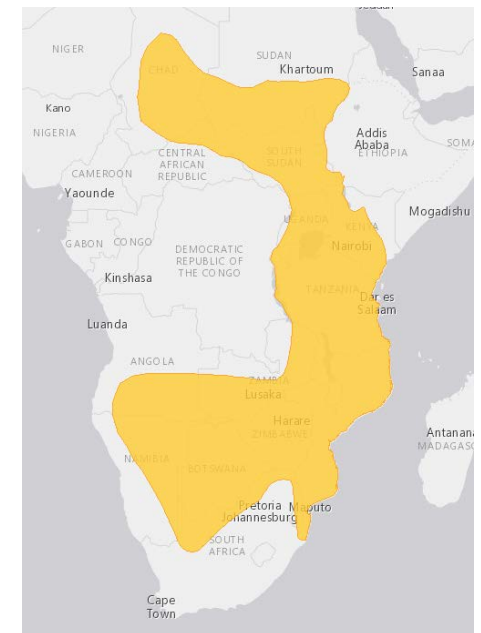
PHATAGINUS TETRACTYLA

- Vulnerable A4d (precautionary approach taken)
- Population status declining; >30-40% over 21 yr period (7 yrs past, 14 yrs future);
- Generation length estimated 7 yrs (uncertain)
- Reported with increasing frequency from bushmeat markets in Nigeria
- Increasing evidence of intercontinental trade
- No population estimates
- Low population densities (habitat specialist; low encounter rate)
- Habitat destruction – opening up habitat to hunters

TEMMINCK'S GROUND PANGOLIN

SMUTSIA TEMMINCKII

- Cape pangolin
- Most widespread African pangolin species
- Terrestrial
- Savanna woodland with moderate-dense scrub
- Floodplain grassland, rocky slopes and sandveld
- Does not inhabit forest or desert
- Well-managed livestock farms; absent from croplands
- Largely water independent
- Single young; gestation approx. 105-140 days
- Relatively long-lived, 20 yrs or more in wild



TEMMINCK'S GROUND PANGOLIN

SMUTSIA TEMMINCKII

- Vulnerable A4d (precautionary approach)
- Population status declining; >30-40% over 27 yr period (9 yrs past, 18 yrs future)
- Generation length estimated 9 yrs (uncertain)
- Traditional medicine, bushmeat, magic
- Evidence of increased intercontinental trade
- No population estimates
- Population density estimates from S. Africa, Zimbabwe
- Habitat loss
- Electrocution and road kill in South Africa

GIANT GROUND PANGOLIN *SMUTSIA GIGANTEA*

- West and Central Africa
- Nocturnal and solitary
- Terrestrial
- Lowland tropical moist and swamp forest
- Forest-savanna-cultivation mosaic habitats
- Uplands of Itombwe, where soils suitable for digging
- Single young, probably annually



GIANT GROUND PANGOLIN

SMUTSIA GIGANTEA

- Vulnerable A4d
- Population status declining; >40% over 27 yr period (9 yrs past, 18 yrs future)
- Generation length estimated 9 yrs (uncertain)
- Bushmeat, traditional medicine, magic
- Hunting for local use historically the main threat
- Little evidence of international trade within Africa
- Intercontinental trade documented in 2012
- No reliable estimates of population abundance/densities
- Highly vulnerable to overexploitation

THANK YOU

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