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Editorial:

Changes to the conservation status and the distribution of the world's small carnivores

The IUCN Red List of Threatened Species is the most reliable and authoritative source of information regarding the conservation status of biodiversity globally (Schipper *et al.* 2008a, Schipper *et al.* 2008b). This list gets periodical updates, including new assessments for new species or those that were not previously assessed, and accounting for changes to the conservation status of all previously-assessed species, including both genuine and nongenuine changes (i.e., real change on conservation status; Hoffmann *et al.* 2010). These assessments are, in most cases, coordinated by the IUCN SSC Specialist Groups, in the hands of the appointed Red List Authorities, which helps maintain Red Lists updated for each group. For mammals, such systematic assessments started in 1996 (IUCN 1996) and the most updated global assessment was finalized in 2008 (Schipper *et al.* 2008a). In 2015 a new assessment for all small carnivores was released following the accumulation of a significant increase in knowledge (Ramírez-Chaves *et al.* 2016, González-Maya & Ramírez-Chaves 2017). The latest assessment included updates to species assessments and even some changes to previous conservation status assessments. Here I present the current global conservation status and distribution of all small carnivores.

In 2008, 165 small carnivore species were assessed, including one species assessed as Critically Endangered (CR), ten Endangered (EN) and 22 Vulnerable (VU; Schipper *et al.* 2008a, Schipper *et al.* 2008b; Appendix 1). In 2015, a total of 172 species were assessed, with considerable changes on these numbers (Figure 1, Appendix 1). Many changes occurred given significant changes on taxonomic status of many species, but also due to the increase on global small carnivore research and knowledge in general.

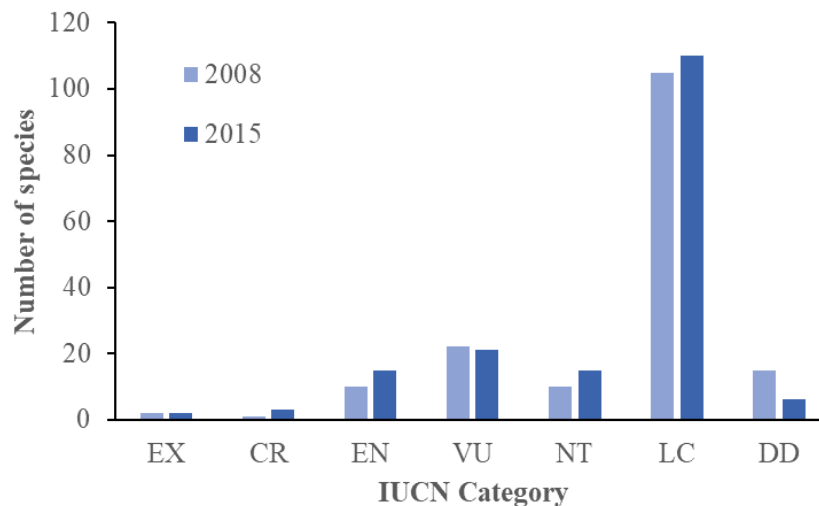


Figure 1. Number of species on each IUCN Red List of Threatened Species category in 2008 and 2015.

For instance, the most significant change occurred on the Data Deficient category, changing from 15 species in 2008 to 6 species in 2015; other changes included the Endangered category from 10 species in 2008 to 15 species in 2015 and from one Critically Endangered species in 2008 to three species in 2015 (Figure 1; Appendix 1). The increase on the number of species assessed is mostly related to newly described species or taxonomic changes (13 spp., e.g., *Bassaricyon* spp. or *Nasuella* spp.; Helgen *et al.* 2009, 2013), however, there are also a number of genuine changes to the threat level of certain species (e.g., *Ailurus fulgens*, *Euplere goudotii*). Remarkably, 19 species were up listed to a higher category level (e.g., *Ailurus fulgens* [VU to EN], *Fossa fossana* [NT to VU], *Mustela lutreola* [EN to CR]) and only six species were down listed to a lower category (e.g., *Herpestes fuscus* [VU to LC], *Gulo gulo* and *Viverra zibetha* [NT to LC]); nine species were also recategorized from Data Deficient to a different category (i.e., NT or LC), showing an increase on species knowledge (i.e., *Crossarchus ansorgei* [DD to LC], *Herpestes semitorquatus* [DD to NT], *Lyncodon patagonicus* [DD to LC]). Interestingly, only one species (*Genetta abyssinica*) moved from LC to DD.

As was previously found for all mammals (Schipper *et al.* 2008a) and for small carnivores (Schipper *et al.* 2008b), updates to the distribution of small carnivores still shows a significant concentration towards the tropical areas (Figure 2A); small carnivores are largely concentrated towards the Afrotropical and Indomalaya realms as was previously found for the group (Schipper *et al.* 2008b; Figure 2A). In terms of threat categories, Critically Endangered species are located in Europe (*Mustela lutreola*), India (*Viverra civettina*) and Mexico (*Procyon pygmaeus*; Figure 2B). Endangered species are largely concentrated towards Asia with a high number of species in the southern cone of South America (Figure 2C) while Vulnerable species are mostly concentrated in Asia and Madagascar (Figure 2D).

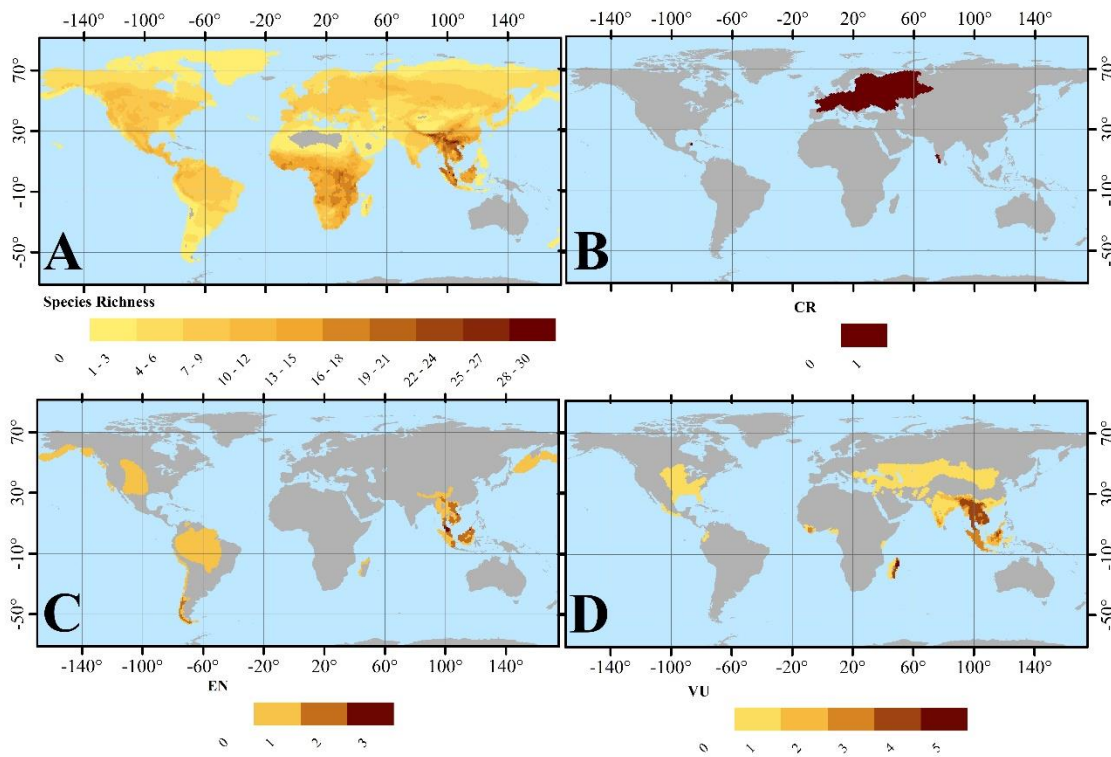


Figure 2. Distribution of small carnivore (A) species richness and those categorized as (B) Critically Endangered - CR, (C) Endangered – EN and (D) Vulnerable - VU.

Current assessment of small carnivores shows two clear patterns: first, knowledge and research has been increasing considerably in recent years, which reflects in our ability to properly assess many species; second, some species have genuinely been uplisted given the advance on many of the threats and the potential decrease in overall populations. Despite previous patterns are still very similar after recent assessments, it is noteworthy the increase in the number of new species in a relative short period of time, and most importantly, the overall worsening on the conservation status of a large proportion of species within the group.

Previous assessments have provided clues on the most critical areas for prioritizing conservation actions for small carnivores. However, it is evident from the most recent assessment that threats to the conservation of small carnivores change over time along with our understanding of their needs. We therefore emphasize the importance of regularly updating species accounts to properly define where protective actions should be focused. This editorial does not aim for an exhaustive account on the changes, but only as an informative approach to help direct priorities as part of the IUCN SSC Small Carnivore Specialist Group actions and in general for small carnivore conservation across the globe.

References

- González-Maya JF & Ramírez-Chaves HE. 2017. Global Small Carnivore Conservation: geographical distribution of small carnivore research. *Small Carnivore Conservation* 55: 1–3.
- Helgen KM, Kays R, Helgen L, Tsuchiya M, Pinto CM, Koepfli KP, Eizirik E & Maldonado JE. 2009. Taxonomic boundaries and geographic distributions revealed by an integrative systematic overview of the mountain coatis, *Nasuella* (Carnivora: Procyonidae). *Small Carnivore Conservation* 41: 65–74.
- Helgen KM, Pinto M, Kays R, Helgen L, Tsuchiya M, Quinn A, Wilson D & Maldonado J. 2013. Taxonomic revision of the olingos (*Bassaricyon*), with description of a new species, the Olinguito. *ZooKeys* 324: 1–83.
- Hoffmann M, *et al.* 2010. The impact of conservation on the status of the world's vertebrates. *Science* 330: 1503–1509.
- IUCN. 1996. *1996 IUCN Red List of threatened animals*. IUCN, Gland, Switzerland.
- Ramírez-Chaves HE, González-Maya JF & Schipper J. 2016. Small Carnivore Conservation and its contribution to the knowledge of rare small carnivores. *Small Carnivore Conservation* 54: 1–3.
- Schipper J, *et al.* 2008a. The status of the world's land and marine mammals: diversity, threat, and knowledge. *Science* 322: 225–230.
- Schipper J, Hoffmann M, Duckworth JW & Conroy J. 2008b. The 2008 IUCN red listings of the world's small carnivores. *Small Carnivore Conservation* 39: 29–34.

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Appendix 1. IUCN Red List for small carnivores comparing the 2008 assessment (Schipper et al. 2008) and current status (EX: Extinct, CR: Critically Endangered, EN: Endangered, VU: Vulnerable, DD: Data Deficient, NT: Near Threatened, LC: Least Concern).

Family	Species	2008 Assessment	Current Assessment	Year assessed	Criteria
AILURIDAE	<i>Ailurus fulgens</i>	VU	EN	2015	A2cde+3cde+4cde
	<i>Cryptoprocta ferox</i>	VU	VU	2016	A2cde+3cde+4cde
	<i>Cryptoprocta spelea</i>	EX	EX	2008	
EUPLERIDAE	<i>Eupleres goudotii</i>	NT	VU	2016	A2cde+3cde+4cde
	<i>Eupleres major</i>	-	EN	2016	A2cde+3cde+4cde
	<i>Fossa fossana</i>	NT	VU	2008	A3cde+4cde
	<i>Galidia elegans</i>	LC	LC	2008	
	<i>Galidictis fasciata</i>	NT	VU	2016	A3cde+4cde
	<i>Galidictis grandidieri</i>	EN	EN	2008	B1ab(i,ii,iii,v)
	<i>Mungotictis decemlineata</i>	VU	EN	2008	A3cde+4cde
	<i>Salanoia concolor</i>	VU	VU	2016	A3cde+4cde
HERPESTIDAE	<i>Atilax paludinosus</i>	LC	LC	2008	
	<i>Bdeogale crassicauda</i>	LC	LC	2016	
	<i>Bdeogale jacksoni</i>	NT	NT	2008	
	<i>Bdeogale nigripes</i>	LC	LC	2008	
	<i>Bdeogale omnivora</i>	VU	VU	2016	C1
	<i>Crossarchus alexandri</i>	LC	LC	2008	
	<i>Crossarchus ansorgei</i>	DD	LC	2015	
	<i>Crossarchus obscurus</i>	LC	LC	2008	
	<i>Crossarchus platycephalus</i>	LC	LC	2016	
	<i>Cynictis penicillata</i>	LC	LC	2008	
	<i>Dologale dybowskii</i>	DD	DD	2011	
	<i>Helogale hirtula</i>	LC	LC	2015	
	<i>Helogale parvula</i>	LC	LC	2008	
	<i>Herpestes auropunctatus</i>	-	LC	2016	
	<i>Herpestes brachyurus</i>	LC	NT	2016	
	<i>Herpestes edwardsii</i>	LC	LC	2016	
	<i>Herpestes flavescens</i>	LC	LC	2008	
	<i>Herpestes fuscus</i>	VU	LC	2015	
	<i>Herpestes ichneumon</i>	LC	LC	2016	
	<i>Herpestes javanicus</i>	LC	LC	2016	
	<i>Herpestes naso</i>	LC	LC	2008	
	<i>Herpestes ochraceus</i>	LC	LC	2008	
	<i>Herpestes pulverulentus</i>	LC	LC	2008	
	<i>Herpestes sanguineus</i>	LC	LC	2016	
	<i>Herpestes semitorquatus</i>	DD	NT	2015	
	<i>Herpestes smithii</i>	LC	LC	2016	
	<i>Herpestes urva</i>	LC	LC	2015	
	<i>Herpestes vitticollis</i>	LC	LC	2016	
	<i>Ichneumia albicauda</i>	LC	LC	2008	
	<i>Liberictis kuhni</i>	VU	VU	2016	C1
<i>Mungos gambianus</i>	LC	LC	2016		
<i>Mungos mungo</i>	LC	LC	2016		
<i>Paracynictis selousi</i>	LC	LC	2016		
<i>Rhynchogale melleri</i>	LC	LC	2015		
<i>Suricata suricatta</i>	LC	LC	2008		
MEPHITIDAE	<i>Conepatus chinga</i>	LC	LC	2016	
	<i>Conepatus humboldtii</i>	LC	LC	2016	
	<i>Conepatus leuconotus</i>	LC	LC	2016	
	<i>Conepatus semistriatus</i>	LC	LC	2016	
	<i>Mephitis macroura</i>	LC	LC	2008	
	<i>Mephitis mephitis</i>	LC	LC	2016	
	<i>Mydaus javanensis</i>	LC	LC	2015	
	<i>Mydaus marchei</i>	LC	LC	2008	
	<i>Spilogale angustifrons</i>	LC	LC	2016	
	<i>Spilogale gracilis</i>	LC	LC	2016	
	<i>Spilogale putorius</i>	LC	VU	2016	A2abc+3bc+4abc
	<i>Spilogale pygmaea</i>	VU	VU	2016	A2ce
MUSTELIDAE	<i>Aonyx capensis</i>	LC	NT	2015	
	<i>Aonyx cinereus</i>	VU	VU	2008	A2acde
	<i>Aonyx congicus</i>	LC	NT	2015	
	<i>Arctonyx albobularis</i>	-	LC	2016	
	<i>Arctonyx collaris</i>	NT	VU	2016	A2cd+3cd+4cd
	<i>Arctonyx hoevenii</i>	-	LC	2016	
	<i>Eira barbara</i>	LC	LC	2016	
	<i>Enhydra lutris</i>	EN	EN	2008	A2abe
	<i>Galictis cuja</i>	LC	LC	2015	
	<i>Galictis vittata</i>	LC	LC	2016	
	<i>Gulo gulo</i>	NT	LC	2016	
	<i>Lutra maculicollis</i>	LC	NT	2015	
	<i>Ictonyx libycus</i>	LC	LC	2015	
	<i>Ictonyx striatus</i>	LC	LC	2008	
	<i>Lontra canadensis</i>	LC	LC	2015	
	<i>Lontra felina</i>	EN	EN	2015	A3cde
	<i>Lontra longicaudis</i>	DD	NT	2015	
	<i>Lontra provocax</i>	EN	EN	2015	A3cde
	<i>Lutra lutra</i>	NT	NT	2015	
	<i>Lutra sumatrana</i>	EN	EN	2015	A2cde
	<i>Lutrogale perspicillata</i>	VU	VU	2015	A2cde
	<i>Lyncodon patagonicus</i>	DD	LC	2016	
<i>Martes americana</i>	LC	LC	2016		
<i>Martes flavigula</i>	LC	LC	2016		
<i>Martes foina</i>	LC	LC	2016		
<i>Martes gwatkinsii</i>	VU	VU	2015	D1	
<i>Martes martes</i>	LC	LC	2016		
<i>Martes melampus</i>	LC	LC	2008		

Family	Species	2008 Assessment	Current Assessment	Year assessed	Criteria
	<i>Martes pennanti</i>	LC	LC	2016	
	<i>Martes zibellina</i>	LC	LC	2016	
	<i>Meles anakuma</i>	LC	LC	2016	
	<i>Meles leucurus</i>	LC	LC	2016	
	<i>Meles meles</i>	LC	LC	2016	
	<i>Mellivora capensis</i>	LC	LC	2016	
	<i>Melogale cucphuongensis</i>	-	DD	2016	
	<i>Melogale everetti</i>	DD	EN	2015	B1ab(ii,iii,v)
	<i>Melogale moschata</i>	LC	LC	2016	
	<i>Melogale orientalis</i>	DD	LC	2016	
	<i>Melogale personata</i>	DD	LC	2016	
	<i>Mustela africana</i>	LC	LC	2016	
	<i>Mustela altaica</i>	NT	NT	2016	
	<i>Mustela erminea</i>	LC	LC	2016	
	<i>Mustela eversmanii</i>	LC	LC	2008	
	<i>Mustela felipei</i>	VU	VU	2016	C2a(i)
	<i>Mustela frenata</i>	LC	LC	2016	
	<i>Mustela itasi</i>	LC	NT	2016	
	<i>Mustela kathiah</i>	LC	LC	2016	
	<i>Mustela lutreola</i>	EN	CR	2016	A3ce
	<i>Mustela lutreolina</i>	DD	LC	2016	
	<i>Mustela nigripes</i>	EN	EN	2008	C1+2a(i); D
	<i>Mustela nivalis</i>	LC	LC	2016	
	<i>Mustela nudipes</i>	LC	LC	2008	
	<i>Mustela putorius</i>	LC	LC	2014	
	<i>Mustela russelliana</i>	-	DD	2016	
	<i>Mustela sibirica</i>	LC	LC	2016	
	<i>Mustela strigidorsa</i>	LC	LC	2016	
	<i>Mustela subpalmata</i>	LC	LC	2016	
	<i>Mustela tonkinensis</i>	-	DD	2016	
	<i>Neovison macrodon</i>	EX	EX	2008	
	<i>Neovison vison</i>	LC	LC	2016	
	<i>Poecilogale albinucha</i>	LC	LC	2008	
	<i>Pteronura brasiliensis</i>	EN	EN	2015	A3ce
	<i>Taxidea taxus</i>	LC	LC	2008	
	<i>Vormela peregusna</i>	VU	VU	2016	A2c
NANDINIDAE	<i>Nandinia binotata</i>	LC	LC	2008	
PRIONODONTIDAE	<i>Prionodon linsang</i>	LC	LC	2016	
	<i>Prionodon pardicolor</i>	LC	LC	2016	
	<i>Bassaricyon alleni</i>	LC	LC	2016	
	<i>Bassaricyon beddardi</i>	LC	-	2008	
	<i>Bassaricyon gabbii</i>	LC	LC	2016	
	<i>Bassaricyon lasius</i>	DD	-	2008	
	<i>Bassaricyon medius</i>	-	LC	2016	
	<i>Bassaricyon neblina</i>	-	NT	2016	
	<i>Bassaricyon pauli</i>	DD	-	2008	
	<i>Bassariscus astutus</i>	LC	LC	2008	
PROCYONIDAE	<i>Bassariscus sumichrasti</i>	LC	LC	2008	
	<i>Nasua narica</i>	LC	LC	2016	
	<i>Nasua nasua</i>	LC	LC	2008	
	<i>Nasuella meridensis</i>	-	EN	2016	B1ab(iii,v)
	<i>Nasuella olivacea</i>	DD	NT	2016	
	<i>Potos flavus</i>	LC	LC	2016	
	<i>Procyon cancrivorus</i>	LC	LC	2008	
	<i>Procyon lotor</i>	LC	LC	2008	
	<i>Procyon pygmaeus</i>	EN	CR	2008	C2a(ii)
	<i>Arctictis binturong</i>	VU	VU	2016	A2cd+3cd+4cd
	<i>Arctogalidia trivirgata</i>	LC	LC	2016	
	<i>Chrotogale owstoni</i>	VU	EN	2016	A2bcd+3bcd+4cd
	<i>Civettictis civetta</i>	LC	LC	2011	
	<i>Cynogale bennettii</i>	EN	EN	2015	C1
	<i>Diplogale hosei</i>	VU	VU	2015	C1
	<i>Genetta abyssinica</i>	LC	DD	2016	
	<i>Genetta angolensis</i>	LC	LC	2016	
	<i>Genetta bourloni</i>	NT	VU	2008	C1
	<i>Genetta cristata</i>	VU	VU	2008	C1
	<i>Genetta genetta</i>	LC	LC	2008	
	<i>Genetta johnstoni</i>	VU	NT	2016	
	<i>Genetta maculata</i>	LC	LC	2016	
	<i>Genetta pardina</i>	LC	LC	2016	
	<i>Genetta piscivora</i>	DD	NT	2008	
	<i>Genetta poensis</i>	DD	DD	2008	
VIVERRIDAE	<i>Genetta servalina</i>	LC	LC	2016	
	<i>Genetta thierryi</i>	LC	LC	2008	
	<i>Genetta tigrina</i>	LC	LC	2008	
	<i>Genetta victoriae</i>	LC	LC	2016	
	<i>Hemigalus derbyanus</i>	VU	NT	2015	
	<i>Macrogalidia musschenbroekii</i>	VU	VU	2008	A2cd+3cd+4cd; C1
	<i>Paguma larvata</i>	LC	LC	2016	
	<i>Paradoxurus hermaphroditus</i>	LC	LC	2016	
	<i>Paradoxurus jerdoni</i>	LC	LC	2016	
	<i>Paradoxurus zeylonensis</i>	VU	LC	2016	
	<i>Poiana leightoni</i>	DD	VU	2015	C1
	<i>Poiana richardsonii</i>	LC	LC	2008	
	<i>Viverra civettina</i>	CR	CR	2016	C2a(i)
	<i>Viverra megaspila</i>	VU	EN	2016	A2cd+3cd+4cd
	<i>Viverra tangalunga</i>	LC	LC	2016	
	<i>Viverra zibetha</i>	NT	LC	2016	
	<i>Viverricula indica</i>	LC	LC	2015	