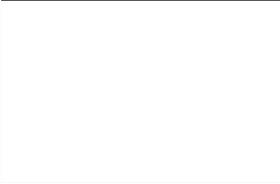


Appendix A. African Pygmy chameleons

Rhampholeon	Genus, species	Status and Trend	Native Counties and Range Description/habitat (Tilbury, 2010; www.iucnredlist.org)	Morphology (Tilbury, 2010; Hildenhagen, 2007; Mariaux and Tilbury, 2006)	Population Information (Tilbury, 2010; www.iucnredlist.org)	Use and Trade (www.iucnredlist.org; US Fish and Wildlife Service, LEMIS Database, 2015)	Threats (Tilbury, 2010, www.iucnredlist.org)
	<i>Rhampholeon (Bicuspis) gorongosa</i> Mount Gorongosa Pygmy Chameleon	IUCN: Least Concern (2014); Trend: Stable	Mozambique (Endemic to Gorongosa Mountain) Montane forest on Gorongosa Mountain 1,000-1800 m above sea level.	Total length max. 105 mm (females: body 71 mm, tail 31 mm; males: body only 30 mm, tail 16 mm); Rostral process present, may be vestigial in females, top of head flat with no supra-optic peaks; inter-orbital ridge well defined; dorsal keel with low clumps of tubercles. A row of enlarged tubercles extends along the lower jaw and lower flank; no axillary or inguinal pits; claws bicuspid; soles smooth; males with relatively long rostral process; accessory plantar spines prominent.	No abundance information for this species. Population does not appear to be declining at present, as much of the natural forest is preserved	No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is not known to be present in the captive market.	The montane forest is reasonably well preserved, under minimal disturbance and not under any immediate threats.
	<i>Rhampholeon (Bicuspis) marshalli</i> Marshall's African Leaf Chameleon; Marshall's Pygmy Chameleon; Marshall's Stump-tail Chameleon	IUCN: Vulnerable (2014); Trend: Decreasing	Mozambique and Zimbabwe Restricted to sub-montane and montane forests 1,000-1800 m above sea level. Only in the forest fragments in the Eastern Highlands of Zimbabwe and Snuta Mountain in Mozambique (ca. 540 km ² of forest remain)	Largest pygmy chameleon: total length up to 118mm (females: body 73 mm, tail 45 mm; males: body 60 mm, tail 40 mm); short dermal rostral appendage; no supra-optic peaks; inter-orbital ridge indistinct; sub-mental row of tubercles extends along the lower jaw and side of abdomen; axillary pits usually present; no inguinal pits; soles and palms smooth; low blunt accessory plantar tubercles; claws strongly bicuspid.	No abundance information for this species; occurs in the remaining forest patches in the Chimanimani and Vumba Mountains in the Eastern Highlands of Zimbabwe and in adjacent Mozambique. This area is heavily transformed. Confined to montane forest therefore, habitat is under ongoing pressure, it is presumed both to occur as a severely fragmented population and to be undergoing declines.	No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species, is not known to be present in the captive market.	Substantial impacts on the individual forest patches from encroachment and transformation, resulting in heavy impacts across its entire range. Only part of its range falls within protected areas, namely Chimanimani and Nyanga National Parks, Bunga Forest Botanical Reserve in the Vumba Mountains, whereas other areas are under pressure from habitat transformation due to timber extraction and agriculture. It is unlikely that any movement between fragments is possible because this species is a forest specialist and does not tolerate transformed landscapes

	<p>Rhampholeon (Rhampholeon) spectrum</p> <p>Cameroon Stumptail Chameleon;</p> <p>Western Pygmy Chameleon;</p> <p>Spectral Pygmy Chameleon</p>	<p>IUCN: Least Concern (2014);</p> <p>Trend: Unknown</p>	<p>Cameroon, Equatorial Guinea and Bioko Island, Central African Republic, Congo Gabon, Nigeria, Democratic Republic of the Congo</p> <hr/> <p>In western and central Africa, distributed from Nigeria, south to Gabon. Also found on Bioko Island. Found from sea level up to an elevation of 1,900 m, preference for montane, receiving >1,600 mm of rain per year.</p>	<p>Total length up to 90 mm (females: body 57 mm, tail 33 mm; males: body 61 mm, tail 29 mm); soft rostral appendage, crenulated dorsal keel, prominent supra-optic peak present, distinct inter-orbital ridge, axillary pit present, no inguinal pits, palms and soles clad with sub-conical to smooth tubercles, accessory spines, claw markedly bis-cupid, prominent.</p>	<p>Very common in parts of southern Nigeria and in montane areas of Cameroon, however, it is thought to be rarer in the lowlands.</p>	<p>Species targeted for international pet trade. In SW Cameroon, second most frequently collected chameleon species; widely sold in Europe. Prices vary from 30-85 €.</p> <p>USA Trade data: 6,393 imports from 1999-2014.</p>	<p>Habitat loss and fragmentation of environment. Logging has been blamed for its disappearance from one location in Nigeria. It is suggested that the low abundance of this species in degraded areas indicates it is locally threatened by habitat destruction.</p>
	<p>Rhampholeon (Rhampholeon) spinosus</p> <p>Rosette-nosed Pygmy Chameleon;</p> <p>Usambara Spiny Pygmy Chameleon</p> <p>Formerly covered by the genus <i>Bradypodion</i></p>	<p>IUCN: Endangered (2014);</p> <p>Trend: Decreasing</p>	<p>Tanzania (Endemic to East and West Usambara Mountains)</p> <hr/> <p>In Usambara Mountains above 700 m. Extent of occurrence little over half this, at 1,797 km². Within this range, the combined area of forest fragments where the species is known to occur is 567 km².</p>	<p>Total length up to 87 mm; no parietal crest. Rostral process prominent, laterally compressed to ovo-globular soft and spinous. Spinous tubercles scattered on flanks, tail, legs and gular regions; gular spines in two diverging rows. Simple claws and plantar surfaces smooth. Scalation finely heterogeneous with interstitial web; no inguinal pits.</p>	<p>No information on abundance exists for this species, although it is considered to be "rare". The forest fragments in which this species occurs are highly fragmented and under ongoing threats, likely having a negative impact on population size. This species does not tolerate habitat modification, therefore the population is considered to be severely fragmented.</p>	<p>Annual CITES export quotas 2000- 2011 ranged from 8-50 (25 average) captive born individuals per year from TZ (CITES 2013a). In 2012- 2013 no annual quota was issued (CITES 2013a). Most of the 149 live exports occurred between 1993- 2011, with all but 11 individuals having been exported between 2001 and 2011 (UNEP-WCMC 2013). No other legal trade is reported, this species is known to be among shipments of "assorted pygmy chameleons" without documents, suggesting illegal trade and/or harvest may be occurring at significant levels.</p> <p>Trade status ambiguous due to taxonomic status with CITES, allowing a loop-hole for non-regulated export; illegally imported in multiple "assorted pygmy chameleon" shipments without CITES, enabling illegal trade. Only specimens incorrectly exported under the outdated name <i>Bradypodion spinosum</i> would be subject to CITES regulation.</p> <p>USA Trade data: 79 imports from 2002-2011.</p>	<p>Distribution lies partially within protected areas (Amani, Monga, Kwamkoro, Mazumbai, Mkusa), substantial habitat loss (Spawls <i>et al.</i> 2002) still occurs from deforestation. By 1998 the Usambara Mountains had lost 71% of its original forest cover. Expanding cultivation, fire, livestock grazing, and illegal logging have all been cited as the causes of high rates of deforestation (The Critical Ecosystem Partnership Fund 2005). Increase in regional tea plantations contribute to habitat change. The region is becoming highly fragmented, with the remaining natural forest in the region split into 25 different fragments.</p> <p>Species is impacted by illegal trade and the ambiguity of its CITES status due to a lack of current nomenclature having been adopted.</p>

 	<p>Rhampholeon (Rhampholeon) temporalis</p> <p>East Usambara Pygmy Chameleon;</p> <p>East Usambara Pitted Pygmy Chameleon;</p> <p>Usambara stump-tail Chameleon</p>	<p>IUCN: Endangered (2014);</p> <p>Trend: Decreasing</p>	<p>Tanzania (East Usambara Mountains and Magrotto Hills)</p> <hr/> <p>Found only in the evergreen sug-montane rain forests 900-1,500 m above sea level of the East Usambara Mountains and on Magrotto Hill, Tanzania, in deep in forest and on forest edge, does not utilize transformed landscape. Occurs in eight forest fragments totalling < 300 km², only half of this is pristine primary forest.</p>	<p>Total length up to 80 mm, with tail more than 33% (females: body 46 mm, tail 18 mm; males: body 50 mm, tail 25 mm). Dermal rostral process short, may be indistinct. Supra-orbital peaks low to indistinct, dorsal keel weakly crenulated, distinct inter-orbital ridge of 16-18 tubercles, plantar surfaces usually smooth, occasionally sub-spinous, claws simple, accessory plantar spines prominent, scalation finely hetero/homogeneous.</p>	<p>No population information, although it is described as being locally abundant, it appears to be sporadic in distribution. Habitat is highly fragmented and impacted by human activities; presumed both to be declining and to occur as a severely fragmented population.</p>	<p>On sale all over Europe and in USA (wild-caught: 30-45 €)</p> <p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is traded with some regularity in the captive market and is often sold misidentified as either <i>Ri. brevicaudatus</i> or <i>Ri. kerstenii</i>.</p>	<p>Some of this species' remaining habitat is within the protected area of the Amani Forest Reserve and collaborative conservancies. Large parts of the primary forest have already been given over to subsistence agriculture, timber extraction, and commercial-scale teak, coffee and tea plantations, Species does not occur in transformed habitat.</p>
 	<p>Rhampholeon (Rhampholeon) viridis</p> <p>Rare (Green) Pygmy Chameleon</p> <p>Recently described in 2006</p>	<p>IUCN: Endangered (2014);</p> <p>Trend: Decreasing</p>	<p>Tanzania (Endemic to North- and South Pare Mountains)</p> <hr/> <p>Likely not in West Usambara Mountains. Occurrence in a remaining and available forest is ca. 152 km² (40 km² in the North Pares-three forest patches, the remainder in the South Pares), of which 145 km² is primary forest. Confined to Afro-montane evergreen rain forest 1,400-2,070 m above sea level. Found in deep forest and at forest edges, not in transformed habitats. Presumably occurred in sub-montane forest when this habitat existed in the North and South Pares; this forest type has been totally transformed.</p>	<p>Total length up to 89 mm (females: body 45 mm, tail 22 mm; males: body 44 mm, tail 29 mm). No supra-optic peaks, temporal crest prominent, no enlarged conical tubercle above the shoulder, rostral process small, occasionally indistinguishable, claws simple, hemipenis calyculate with dual apical horns, Inguinal and axillary pits present.</p>	<p>Locally common in some healthy forest fragments. No quantitative information on abundance overall, yet considered severely fragmented. Population declines are inferred in cases where forests have been lost through transformation. The South and North Pare ranges lost 100% of their submontane forest in the last 50 years, only montane forest remains. Of the historical extent of combined montane and sub-montane forest, 87% has been lost, suggesting the species' numbers could have been reduced by about the same levels since historical times.</p>	<p>On sale all over Europe (65-120 €).</p> <p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is imported into the pet trade in limited quantities, one to two times every few years. Not subject to trade regulations, so the degree of harvest is unknown.</p> <p>USA Trade data: 242 imports from 2013-2014.</p>	<p>The remaining fragmented forest is entirely surrounded by transformed landscapes (agricultural lands). The forest fragments are impacted directly by human disturbance and small scale resource extraction. In the South Pare range, the remaining forest is heavily logged, and the forest is extremely degraded. May be impacted by pet trade, but the species is not listed by CITES</p>
 	<p>Rhampholeon (Rhinodigitum) acuminatus</p> <p>Nguru Spiny Pygmy Chameleon</p> <p>Recently described in 2006 Formerly traded as <i>Rh. montanus</i></p>	<p>IUCN: Critically Endangered (2014);</p> <p>Trend: Unknown</p>	<p>Tanzania (Morogoro region, Endemic to Nguru Mountains)</p> <hr/> <p>In remaining fragmented montane forest; the most complete remaining forest patch where the species occurs is a 28 km² fragment within the newly-established Mkingu Nature Reserve, giving the Nguru forest the highest protection level in</p>	<p>Total length up to 82 mm (females: body 49 mm, tail 19 mm; males: body 57 mm, tail 25 mm), casque elevated posteriorly, prominent acuminate spines along the lateral edges of the casque, prominent vertically flattened soft oval granulated rostral process in both sexes, temporal crest prominent: fin-like, dorsal crest prominent, an enlarged conical tubercle above the shoulder, dermal</p>	<p>No information on population abundance exists but the population is likely to be small, due to extremely restricted-range. Inhabits forest within the Mkingu Nature Reserve yet the remaining patch may not be safe due to the pet trade.</p>	<p>Wild-caught specimens offered in DE (120 €/pair), USA (150-250 USD), BE (45-90€), UK (exotic-pets.co.uk); in some shipments to Germany this the dominant pygmy chameleon species</p> <p>Imports from Tanzania to the USA of this species are ongoing.</p> <p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is</p>	<p>Despite the forest being officially protected, the remaining forest floor is cleared for cultivation of shade crops in some areas. Although the size of the forest patch should not change in the future due to its protected status, the forest is still utilized and this may be detrimental to this chameleon as the species utilizes the forest floor as primary habitat.</p>

			Tanzania. Only occurs in Afro-montane rain forest on the lower valley slopes between 1,500-1,600 m; yet most of this submontane belt is already cleared and destroyed.	pits absent from the groins and axillae, claws bicuspid.		listed in CITES, annual CITES export quotas and CITES trade data for this species are lacking. Because this species is not CITES listed, the wild harvest is unregulated by international conventions. Imports for pet trade are limited quantities, however, the true extent of this collection is uncertain and could be detrimental because the population is probably small. USA Trade data: 169 imports from 2010-2014.	Conversion of forest floor will impact the quality and quantity of its microhabitat. This species is suffering declines in the quality of its habitat, and potentially also in its area of occupancy and harvest from the wild for pet trade. Due to importing and habitat loss, it is likely to have a small population, the removals from the wild could be detrimental.
	<i>Rhampholeon (Rhiodigitum) beraduccii</i> Mahenge Pygmy Chameleon; Beraducci's Pygmy Chameleon Recently described in 2006	IUCN: Vulnerable (2014); Trend: Unknown	Tanzania (Endemic to Mahenge Mountain) Reserve. Found around 1,000 m in elevation in small, isolated forest fragments, within Sali Forest. Known from a single forest patch of 17 km ² in extent; the mountain is completely surrounded by agriculture, and thought to be genuinely confined to this small area (satellite imagery suggests as little as 14 km ² of suitable forest habitat remains). There are 5 small patches (covering a combined area of ca. 40 km ²) of forest on Mahenge where the species occurs. It is possible that this species is reliant on more humid microhabitats, as forest in Sali is more moist than the other three patches.	Smallest pygmy: max 36 mm (females: body 28 mm, tail 8 mm; males: body 23 mm, tail 6 mm), casque flat, cranial crests all weakly developed, rostral process prominent, deep axillary and inguinal dermal pits, claws bicuspid, plantar surfaces smooth.	No information on population abundance. Occurs in a small, isolated forest fragments. The steep terrain makes utilization of remaining forest difficult, but there are footpaths throughout the forest and disturbance was more substantial in the past with some timber and pole extraction in the past, and ongoing. At present, the forest does not seem to be undergoing a reduction in size, original forest size is unknown. The Eastern Arc forests have been reduced in size by 12% in the last 40 years.	No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is not known to be present in the captive market.	At present, it is doubtful that the remaining forest patch is substantially threatened, but the threat of land transformation exists in the surrounding areas and could affect this forest in the future. The forest in which it occurs is currently not protected as a National Park.
	<i>Rhampholeon (Rhiodigitum) boulengeri</i> Boulenger's Pygmy Chameleon	IUCN: Least Concern (2014); Trend: Decreasing	Burundi, DRC, Kenya, Rwanda, Tanzania, Uganda Found in deep Afro-temperate forest, may also occur in lowland forest. In Burundi, DRC (North and South Kivu districts, Ituri Forest in Orientale District, Idjwi Island in Lake Kivu, and in montane forests on the western rim of Lake	Total length up to 80 mm (both females and males: body 60 mm, tail 17 mm), Short rostral dermal appendage, crenulated dorsal keel, distinct inter-orbital ridge, axillary pits present, no inguinal pits, smooth to sub-spinous palms and soles, low accessory plantar spines, tail 17-25% of total length.	May be subject to population declines as primary habitat is lost, but currently no abundance estimates exist. Fairly widespread, but with numerous disjunctions in its distribution, resulting in multiple isolated subpopulations.	Known to sell for 40 € and 10 USD. No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is not known to be present in the captive market.	The main threats are due to habitat conversion as a result of agriculture, artisanal mining, and pit-sawing for timber, on a small scale.

			Tanganyika), Kenya (Kakamega forest, north Nandi escarpment forest, Cherangeni Hills), Rwanda, Tanzania (Minziro forest) and Uganda (Rwenzori Massif, Kibale forest, Bwindi Impenetrable National Park).				
	<p>Rhampholeon (Rhinodigitum) chapmanorum</p> <p>Chapman's Pygmy Chameleon</p>	<p>IUCN: Critically Endangered (2014);</p> <p>Trend: Decreasing</p>	<p>Malawi (Malawi Hills, Natundu Hills)</p> <p>Only found at Malawi Hill near Nsanje. Described from a tiny remnant of lowland seasonal rainforest on the upper south east facing slope within the Matandwe Forest Reserve. The indigenous forest of the Malawi Hill has essentially been destroyed due to human encroachment. Satellite imagery shows two degraded and fragmented forest patches (0.37 km² and 0.22 km²) separated by highly transformed habitat. (Two patches 3 km north, likely forested until recently, have an open canopy and probably lack any forest floor (total 0.4 km²); these patches are not considered viable for the population and are not included in an estimate of its distribution.</p>	<p>Total length up to 63 mm (females: body 51 mm, tail 12 mm; males: body 46 mm, tail 16 mm). A short but prominent dermal rostral appendage is present. Dorsal keel crenulated, homogenous granular scalation, distinct inter-orbital ridge, deep axillary and inguinal dermal pits present, palms and soles smooth, accessory plantar tubercles present, claws strongly bicuspid,</p>	<p>No quantitative information on abundance exists; an <i>ad hoc</i> survey in 1998 produced some observations of this species. The tiny size of the forest patches, is heavily degraded, and intense pressure from human population in the area suggests that the population is extremely small, and possibly extinct at its only known natural locality. It is unknown which, if any, remaining patches are currently inhabited by this species. Two additional patches are so heavily transformed (open canopy) it is presumed to not have any viable populations of chameleons. The forests are separated by unsuitable habitat, resulting in a severely fragmented population.</p>	<p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is not known to be present in the captive market.</p>	<p>Only known from a single location, in the remnant of rainforest on Malawi Hill, within the Matandwe Forest Reserve, part of the Natundu Hills range. Given the population fragmentation, wholesale conversion of the area for agriculture (maize, yams and other crops), as well as timber extraction for timber planks and conversion to charcoal, it is possible all the fragments are too small to support populations.</p>
	<p>Rhampholeon (Rhinodigitum) moyeri</p> <p>Udzungwa Pygmy Chameleon</p>	<p>IUCN: Least Concern (2014);</p> <p>Trend: Stable</p>	<p>Tanzania (Endemic eastern scarp of the Udzungwa Mountains)</p> <p>This species inhabits montane forest 1,000-2,000 m in elevation. It has not been found in degraded or transformed habitats with high rainfall.</p>	<p>Total length up to 65 mm (females: body 51 mm, tail 12 mm; males: body 43 mm, tail 14 mm). Soft, dermal rostral process present, supra-optic peaks present, average of 15-19 scales between the bases of the peaks, sexes isomorphic, claws strongly bicuspid, plantar surfaces smooth, low plantar accessory tubercles, axillary pits present, inguinal pits absent.</p>	<p>There is no information on the abundance of this species, but given that it occurs in multiple forest patches that are reasonably well protected, it is unlikely to be undergoing significant population decline.</p> <p>Presently only known from two localities in the Udzungwa, but recent molecular phylogeny confirms that records from the Rubeho</p>	<p>Occasionally available in European pet shops.</p> <p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is imported into the pet trade in limited quantities every few years, however the true extent of this collection is uncertain.</p>	<p>Although there is a general decline in quality of habitat due to small scale subsistence agriculture and timber extraction, this species is probably not threatened with population declines because the majority of the forest area where this species occurs is reasonably well protected.</p>

					Mountains, Ukaguru, and Nguru Mountains are also attributable to this species		
	<p><i>Rhampholeon (Rhinodigitum) nchisiensis</i></p> <p>Nchisi Pygmy Chameleon;</p> <p>Blue-eyed Pygmy Chameleon;</p> <p>Pitless Pygmy Chameleon;</p> <p>South African Stumptail Chameleon</p>	<p>IUCN: Least Concern (2014);</p> <p>Trend: Stable</p>	<p>Malawi, Tanzania, Zambia</p> <hr/> <p>In naturally fragmented montane forest patches up to 2,400 above sea level. Inhabits southern highlands of Tanzania and the north of Malawi and Zambia. Forest patches are small (a few km²), others are moderately sized (ca. 100 km²); patches are not widely separated. The entire range covers 12,600 km², the total area of forest is estimated at ca. 10% of this figure. It is not known to inhabit the naturally occurring grassland/savannah that separates forest patches. It does not tolerate transformed or degraded habitats.</p>	<p>Total length up to 85 mm (females: body 67 mm, tail 16 mm; males: body 43 mm, tail 13 mm). Rostral appendage present, crenulated vertebral keel, low supra-orbital peaks, distinct inter-orbital ridge, No axillary or inguinal pits, plantar surfaces smooth to sub-spinous, claws markedly bicuspid, accessory palmar/plantar spines present, but reduced, background scalation of homogenous granules.</p>	<p>No quantitative information on abundance, although it can be locally abundant in some forest patches. Likely not subject to notable population declines although it may experience local declines in areas where the forests are heavily impacted. Although it occurs in small forest patches, the sheer number of these patches across the grassland matrix, as well as the short distances between patches, suggests it should not be considered severely fragmented. Highly likely that many patches are connected by gene flow.</p>	<p>On sale in several European countries for approximately 60 € and sold in the USA for 20 USD.</p> <p>Although a new species in pet trade, it is regularly available.</p> <p>As no <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) are listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is imported into the pet trade in limited quantities every few years, however the true extent of this collection is uncertain.</p>	<p>Some of the forest patches that this species occupies are within the transformed landscape, and under pressure from encroachment of human activities for subsistence living. If threats intensify in the future, the smaller forest patches could be lost relatively rapidly. Other patches are within protected areas, where encroachment is assumed to be minimal and patches are not expected to be lost.</p>
	<p><i>Rhampholeon (Rhinodigitum) platyceps</i></p> <p>Mulanje Pygmy Chameleon;</p> <p>Malawi Stumptail Chameleon</p>	<p>IUCN: Endangered (2014);</p> <p>Trend: Decreasing</p>	<p>Malawi, (Endemic to Mount Mulanje and the adjacent Mchese Mountain</p> <hr/> <p>Found only cool sub-montane seasonal rain forest; in lower fringe to the riparian scrub to altitudes 1,000-1,800 m altitude. In fragments of southern and eastern-facing slopes where forest occurs in remnant fragmented patches, totaling ca. 61 km². The original evergreen forest habitat has been substantially reduced in size and the remaining forest heavily impacted leaving the transformed habitat that remains unsuitable. Although the evergreen forest once extended down to 650 m elevation, the area up to 900 m elevation is totally transformed by commercial and subsistence agriculture.</p>	<p>Total length up to 100 mm (females: body 66 mm, tail 22 mm; males: body 70 mm, tail 29 mm). Short, soft, flexible rostral process, crenulated dorsal keel, inter-orbital ridge present, axillary and inguinal pits present, plantar surfaces smooth, claws with prominent secondary cusp, low accessory plantar tubercles present, scalation heterogeneous.</p>	<p>No information on abundance. A restricted-range species with limited suitable habitat remaining, therefore, the overall population size is unlikely to be large. Likley undergone population declines due to the transformation of the habitat on Mt. Mulanje. The forest has been heavily impacted by resource utilisation (logging), invasive species, and conversion of landscape for subsistence and commercial agriculture. Rough estimates range from half to a third of original forest having been lost, particularly at low altitudes, suggesting the past population decline was of a similar magnitude. Population decline at present should be somewhat mitigated</p>	<p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is not known to be present in the captive market.</p>	<p>Threats results from the pressure on natural resources, in this heavily-populated region has resulted in encroachment on the indigenous forest on Mt. Mulanje and Mt. Mchese. Burning practices, fuelwood collection, illegal logging, unsustainable hunting, the potential threat of bauxite extraction, and conversion of the landscape for subsistence and commercial agriculture are all threats. Other impacts include invasive pines, which were originally planted for utilization, have now taken over parts of the plateau The forest has been formally protected as a Forest Reserve since 1927, limiting large-scale land clearance for agriculture, but encroachment, resource utilization and small scale</p>

					as most of this habitat loss was prior to the 1990s. Altered habitats are not tolerated.		commercial timber extraction is ongoing. The Reserve boundaries were modified several times up until 1971 to accommodate this encroachment. The forest on Mulanje is also threatened by illegal extraction of the endemic Mulanje Cedar (<i>Widdringtonia whytei</i>) and the use of fire to clear and kill the Mulanje Cedar trees. In 1988, forest extent totalled 61 km ² and 10 km ² on Mchese, ca. a third to half reduction in total forest size in the 1970s.
	<p><i>Rhampholeon (Rhino digitum) uluguruensis</i></p> <p>Uluguru Pygmy Chameleon</p>	<p>IUCN: Least Concern (2014);</p> <p>Trend: Stable</p>	<p>Tanzania-Endemic to the Uluguru range</p> <hr/> <p>Confined to the Uluguru Mountains (and the small Mkungwe outcrop just 18 km east of this range) in Tanzania. In sub-montane to montane closed canopy evergreen forest 1,500-2,00 m above sea level. Molecular study of records from elsewhere in the Eastern Arc found that <i>Rh. uluguruensis</i> is genuinely endemic to the Uluguru range within this area, the forest patches where the species is known to occur cover an area of 278 km².</p>	<p>Gender isomorphism, max. length 50 mm, tail 21-24.5% of total length. 11-13 inter-orbital tubercles, soft tuberculated dermal rostral process, axillary pits present, inguinal pits absent, strongly bicuspid claws, plantar surfaces smooth cobbled appearance, low accessory plantar spines, hemipenes with papillae on each apical horn.</p>	<p>No information on the abundance of this species. The population is assumed to be stable as the forests where it occurs are not heavily impacted. Records indicate extent of occurrence of little over 1,000 km².</p>	<p>On sale in several European countries for 45 € and in the USA for 249 USD.</p> <p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. Dwarf chameleons are imported into the pet trade under the name <i>Rhampholeon uluguruensis</i> in limited quantities every few years, however, the true extent of this collection is uncertain, and it is also not known whether the source populations for these exports are true <i>Rh. uluguruensis</i>, or <i>Rh. moyeri</i> or one of the still-undescribed species within this complex.</p> <p>USA Trade data: 398 imports from 2012-2014.</p>	<p>There are no direct threats to this species, but the quality of the habitat is slowly declining locally due to small-scale resource extraction.</p>
	<p><i>Rhampholeon (Rhino digitum) bruessoworum</i></p> <p>Mount Inago Pygmy Chameleon</p> <p>Recently described in</p>	<p>IUCN: Critically Endangered (2014);</p> <p>Trend: Decreasing</p>	<p>Mozambique- Mt. Inago</p> <hr/> <p>Found in three very small, remnant, heavily fragmented, patch of mid-altitude Afro-temperate forest on Mt. Inago, Mozambique; patches of total just over 5 km² (ca. 2.2 km², 2.4 km², 0.73 km²)</p>	<p>This is a very small bodied (40-50 mm) forest dependent species; distinguished by its small size. Unpigmented parietal peritoneum, claws that are strongly bicuspid, smooth plantar surfaces, and a rostral process. Distinguished by having deep inguinal and axillary pits</p>	<p>No quantitative data on population trends, but past, ongoing and future population declines are inferred based on the loss of primary forest on the mountain to a few small, highly fragmented patches. It is only known from a single collecting</p>	<p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species, however, is not known to be present in the captive market.</p>	<p>It is a forest specialist and is not expected to tolerate either altered habitats or non-forest habitats. The mid-altitude forest on Mt. Inago is severely impacted by human activities, resulting in degradation and fragmentation due to small-holder agricultural</p>

	2014		<p>with an estimated extent of forest on Mt. Inago as ca. 15 km², which included extremely degraded forest with completely open canopy. Not in adjacent transformed areas on the mountain, nor in the low-lying savannah habitat that surrounds Mt. Inago. There are other small patches of forest at similar elevation that have not been surveyed, but are considered suitable habitat, and included in this species' distribution.. Only forest patches that appear to have intact canopy are included in the range estimate.</p>	<p>relatively large rostral process in males, and weakly developed crenulations along the dorsal crest. Both sexes have a relatively longer tail.</p>	<p>locality on the mountain, but there are other small patches of forest at similar elevation that have not been surveyed. Assuming that there are individuals in the adjacent patches, the population is inferred to be fragmented; connectivity of subpopulations between the patches is not expected due to the fragmentation of the habitat.</p>		<p>activities and deforestation which began decades ago, and is ongoing. Most of the remaining forest is along water courses or below steep granite domes, and is broken into fragments between 1-10 ha. The entire areas of upland plateau are denuded of forest that once covered the area; this species is now excluded from those areas. Ongoing threats to the remaining forest on Mt. Inago, and this species are agricultural expansion, clearing of land for agriculture through frequent fires, and logging.</p>
	<p><i>Rhampholeon (Rhiodigitum) nebulauctor</i></p> <p>Mount Chipirone Pygmy Chameleon</p> <p>Recently described in 2014</p>	<p>IUCN: Vulnerable (2014);</p> <p>Trend: Unknown</p>	<p>Mozambique-Endemic to Mount Chipirone, Zambézia Province</p> <hr/> <p>Found in a small patch of moist Afro-temperate forest which dominates the southeast slopes, and extends slightly down the drier northern slopes, from a single site at ca. 1,000 m above sea level. Suitable forest for the species occurs between about 900-1,900 m. Additional sites on Mt. Chipirone have not been surveyed to date, but it is assumed the chameleon is found throughout the suitable forest area. As a forest specialist, it is presumed to be intolerant of the transformed landscape and fragmented forest habitats. It utilizes low bushes and the forest floor.</p>	<p>Unpigmented parietal peritoneum, claws that are strongly bicuspid, smooth plantar surfaces, a rostral process, and short tail (<27% of total length in adult males). Distinguished from most other species by having deep inguinal and axillary pits, its smaller size (SVL <53 mm), relatively larger rostral process, and weakly developed dorsal crest crenulation. It is geographically closest to Rh. chapmanorum, but differs by its smaller size, the presence of a relatively large rostral process in males, and accessory planter spines very poorly developed in both sexes. It is morphologically closest to the Mt Namuli chameleon, but has a slightly narrower head and appears to lack the cranial flexure of the head present in male chameleons from Mt Namuli.</p>	<p>No population information on abundance or trends The forest is being converted to small-scale agriculture along the edges of the southern slopes and because this species is not expected to tolerate altered environments, the population is most probably affected negatively. Due to the growing human population across the region, these impacts are not expected to be reduced, and most probably will intensify.</p>	<p>No <i>Rhampholeon</i> species (with the exception of <i>R. spinosus</i>) are listed on CITES. Therefore there are no annual CITES export quotas or trade data for this species. It is not known to be present in the captive market.</p>	<p>The majority of the forest on Mt. Chipirone is intact, although impacts on the edges due to conversion of forest to agriculture through clearing and burning exist Most of the forest is not under direct impact from anthropogenic effects at present although with the growing human population, future impacts are likely. At present, patch burning occurs inside the forest, which appears to be the beginning of clearance for agriculture. The forest is not formerly protected, but impacts from human activities are probably minimized because the local population believes that spirits inhabit the forest and they tend to avoid the forest if possible</p>



**Rhampholeon
(*Rhinodigitum*)
maspictus**

Mount Mabou
Pygmy
Chameleon

Recently
described in
2014

IUCN:
Near
Threatened
(2014);

Trend:
Stable

Mozambique- Mount Mabou

Restricted to an intact 79 km² patch of Afro-temperate forest on the slopes of Mt. Mabou, Mozambique. A forest specialist, that does not occur in the low lying savannah habitat that surrounds the mountain.

Possessing a short hemipenis that is almost bag-like, acalculcate and adorned with a pair of simple, curved apical "horns" with a variable number of thorn-like papillae arranged on the outer aspect of the horn; claws that are strongly bicuspid, smooth plantar surfaces, a rostral process, and short tail (<25% of total length in adult males Distinguished by having deep inguinal and by the bright green male breeding coloration, including blue flanks and side of head, and yellow throat, snout and eye ring. Large size (>60 mm SVL) in both sexes, lack of male dwarfism, well-developed dorsal crenulations, and reduced rostral and supraocular processes.

No information on population abundance. Occurs in a single, isolated forest patch with a hard forest edge that is maintained by subsistence agriculture and frequent fires. The forest itself is relatively intact. Most of this species' distribution would not be impacted by these edge effects, so the population is likely stable.

No *Rhampholeon* species (with the exception of *R. spinosus*) are listed on CITES. Therefore there are no annual CITES export quotas or trade data for this species. It is not known to be present in the captive market.

Impacts on the primary forest at Mabou are minimal, the current threats are negligible. Most of the encroachment and habitat alteration has occurred outside the forest in the woodlands, where this species does not occur. Forest edges are hard bounded, due to the activities outside the forest, including subsistence agriculture and frequent fires. Potential future threat from commercial logging, as northern Mozambique experiences uncontrollable commercial logging of its woodlands and forest. At present, the forest is not logged commercially and it is anticipated that registration as a conservation area could assist to curb uncontrolled activities.



**Rhampholeon
(*Rhinodigitum*)
tilburyi**

Mount Namuli
Pygmy
Chameleon

Recently
described in
2014

IUCN:
Critically
Endangered
(2014);

Trend:
Decreasing

Mozambique-Endemic to the evergreen Afrotropical forest patches of Mount Namuli, Zambezia Province

Habitat includes largest surviving blocks of forest on Namuli include the Manho Forest (ca.1,000–1,100 ha) and the Ukalini Forest (ca.100 ha), the latter lodged against the base of the Namuli dome at the summit. A few other smaller forest patches along the southern slopes, ca.135 ha of dry forest at mid-altitude < 1,600 m forest and 1,165 ha of montane forest up to ca. 2,200 m. Found in both forest types, down to about 840 m elevation.

Short hemipenis, almost bag-like, acalculcate and adorned with a pair of simple apical "horns" with a variable number of thorn-like papillae arranged on the outer aspect of the horn; having an unpigmented parietal peritoneum, claws that are strongly bicuspid, smooth plantar surfaces, a rostral process, and short tail (<27% of total length in adult males). Distinguished by having deep inguinal and axillary pits and smaller size (<65mm total length), weak crenulations of dorsal crest and adult males retaining a prominent flexure (>32°) of the snout in front of the orbit and a narrower head (HW/HL% 49.4%).

No information on population abundance; occurs within a very small distribution, and impacts on the forest are tangible, in the form of habitat transformation for both agriculture, and commercial tea. Because much of the lower altitude forest has been converted, population declines are assumed to have occurred. Expanding and existing human population in the region, has/will likely further population declines. At present, population is considered severely fragmented, because its forest habitat is highly reduced and fragmented is expected to disrupt gene flow.

No *Rhampholeon* species (with the exception of *R. spinosus*) are listed on CITES. Therefore there are no annual CITES export quotas or trade data for this species. It is not known to be present in the captive market.

Mt. Namuli forests are under heavy threat due to anthropogenic activities. Irish potato cultivation as a cash crop rural communities is seriously impacting the extent and quality of forest habitat. The lower slopes of Namuli have been converted to tea plantation, and agriculture is expanding significantly due to the growing human population on the plateau, along with unsustainable grazing by domestic animals and uncontrolled removal of timber from the remaining forest patches. There is also substantial attrition on the forest edge due to fires set to burn the montane grasslands. There is strong pressure for expansion of the tea plantations and cattle grazing areas.

	<p><i>Rhampholeon hattinghi</i></p>	<p>IUCN: Not Listed</p>	<p>Democratic Republic of the Congo</p> <hr/> <p>Found in closed canopy Afrotemperate montane forest on low vegetation in the Albertine Rift of SE DRc at 1700 m. Perch heights varied from a few centimetres up to 50 cm from the ground.</p>	<p>Snout-vent 56mm, tail 11mm. Body habitus leaf like - typical of all other Rhampholeon (Rhinodigitum) species. Head short, casque flattened, top of head shallowly concave. The lateral crests are studded with several prominent tubercles. Parietal crest indistinct, indicated by a short row of 3 marginally enlarged tubercles. The supra-optic ridge gathers into a low cluster of tubercles anteriorly above each eye, but without forming a supra-optic horn. The two supra-orbital ridges are connected to each other by a series of 18 inter-orbital tubercles arranged in a shallow V across the top of the head.</p> <p>Although it superficially resembles <i>Rh. boulengeri</i>, it is genetically distinct</p>	<p>No abundance information for this species.</p>	<p>No Rhampholeon species (with the exception of <i>R. spinosus</i>) is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. Newly discovered therefore little known.</p>	<p>Habitat loss: there is currently no formal protection afforded to the montane forest on Nzawa DRC, and at the current rate of usage it is likely to be severely degraded or even vanish within the next decade or two.</p>
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Rieppeleon	Genus, species	Status and Trend	Native Counties and Range Description/habitat (Tilbury, 2010; www.iucnredlist.org)	Morphology (Tilbury, 2010; Hildenhausen, 2007; Mariaux and Tilbury, 2006)	Population Information (Tilbury, 2010; www.iucnredlist.org)	Use and Trade (www.iucnredlist.org; US Fish and Wildlife Service, LEMIS Database, 2015)	Threats (Tilbury, 2010; www.iucnredlist.org)
	<p><i>Rieppeleon brachyurus</i></p> <p>Zomba Pygmy Chameleon</p>	<p>IUCN: Least Concern (2014);</p> <p>Trend: Unknown</p>	<p>Malawi, eastern Tanzania, northern Mozambique</p> <hr/> <p>Wide distribution in Tanzania and northern Mozambique from Lake Nyasa to the east coast. In Malawi, it is has been recorded from the Shire Highlands, the lower slopes of Zomba plateau, as well as the Thyolo Hills, close to Mt. Mulanje. Inhabits the understorey vegetation (grasses and bushes) in miombo woodland and in some places extends into riparian forests (e.g. Shire Highlands, Malawi; and Rondo Mountain, Tanzania).</p>	<p>Total length up to 58 mm (females: body length 50 mm, tail of 8 mm; males: body 46 mm, tail 7 mm); no gular crest or appendage, supra-optic peak firm non-pliable, inter-orbital ridge usually incomplete may be very indistinct, axillary dermal pit present, no inguinal dermal pit, fine homogeneous granular scalation, lateral flank ridge present, dorsal keel weakly crenulated to almost smooth, plantar surfaces covered with acuminate tubercles, claws with a weak secondary cusp, no accessory plantar spines, males dwarfed compared to females.</p>	<p>There is no information on population abundance, however, widespread and probably common.</p>	<p>As no <i>Rieppeleon</i> species are listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is only known to be traded in the captive market extremely seldom and in very limited numbers.</p> <p>USA Trade data: 393 imports from 2013-2014.</p>	<p>This species is widespread and there are no known major threats. Transformation of the natural vegetation may threaten the species locally, but it is widespread in miombo woodland, the typical savannah vegetation of this part of eastern Africa, and no specific threats have been identified.</p>

	<p><i>Rieppeleon brevicaudatus</i></p> <p>Bearded Pygmy Chameleon; Short-Tailed Pygmy Chameleon</p> <p>Often sold as <i>Rhampholeon brevicaudata</i></p>	<p>IUCN: Least Concern (2014); Trend: Unknown</p>	<p>Tanzania, Kenya</p> <hr/> <p>In eastern Tanzania and southeastern Kenya (not present in West Usambara Mountains), found in sub-montane, coastal and lowland forest, between sea level and 1,200 m. Extent of occurrence ca.163,800 km², within this area, the available forest covers less than 10% of that area (ca.11,044 km²).</p>	<p>Total length up to 94 mm (females: body 75 mm, tail 17 mm; males: body 72 mm, tail 22 mm); a tuberculated mental lobe (tuft) is present under the chin, prominent bony supra-optic peak, inter-orbital ridge usually marked, axillary dermal pit present, inguinal dermal pit absent, fine homogenous granular scalation, dorsal keel weak to moderately crenulated, claws with a weak secondary cusp, sexual isomorphism.</p>	<p>No information on abundance. It appears to be widespread and common in the forests where it occurs, and is probably not undergoing any substantial population declines.</p>	<p>Since the 1990s in pet trade; second-most imported pygmy chameleon into USA, also often sold in Europe. Animals cost 25-69 € within Europe and 35 USD.</p> <p>As no <i>Rieppeleon</i> species are listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. This species is traded relatively widely in the pet trade, however, and frequently imported labelled as <i>R. kerstenii</i>.</p> <p>USA Trade data: 57,615 imports from 1999-2014.</p>	<p>This species is relatively widespread and much of its habitat is within protected areas; no substantial tangible threats at present.</p>
	<p><i>Rieppeleon kerstenii</i></p> <p>Pygmy Grass Chameleon; Bearded Pygmy Chameleon; Kenya Stumptail Chameleon; Kenya Pygmy Chameleon; Kersten's Dwarf Chameleon; Kenya Leaf Chameleon</p> <p>Often sold as <i>Rhampholeon kerstenii</i></p>	<p>IUCN: Least Concern (2014) Trend: Unknown</p>	<p>Tanzania, Somalia, Kenya, Ethiopia</p> <hr/> <p>Occurs in Somalia, southeastern Ethiopia, Kenya and northeastern Tanzania, from sea level to 1,500 m above sea level. Adapted to life outside of evergreen forests; in bushland and grassland, both moist and dry savannah (including semi-desert), and coastal and dense woodland and thickets.</p>	<p>Total length up to 100 mm (females: body 71 mm, tail 33 mm; males: body 67 mm, tail 30 mm); a thin lateral ridge is present along the flank, dorsal keel relatively smooth, prominent bony supra-optic peak in males, distinct inter-orbital ridge, no inguinal or axillary dermal pits, plantar surfaces covered in acuminate tubercles, no accessory plantar spines, claws variably bicuspid – weak to moderate, tail usually more than 30% of total length. <i>Ri. kerstenii robecchii</i> can be distinguished from the nominate form by a more developed supra-optic peak in males, which more appears like a horn, body is more slender, with longer limbs.</p>	<p>There is no information on the abundance of this species, but it is widespread and probably common.</p>	<p>The most frequently imported African pygmy chameleon in the USA. Prices vary from 29-60 € within Europe to 25 USD.</p> <p>As no <i>Rieppeleon</i> species is listed on CITES, annual CITES export quotas and CITES trade data for this species are lacking. While shipments of pygmy chameleons labeled as <i>R. kerstenii</i> are frequent, these shipments typically contain <i>R. brevicaudatus</i> and <i>R. temporalis</i>, not <i>R. kerstenii</i>. <i>Rieppeleon kerstenii</i> is known to be traded occasionally and in limited to moderate quantities.</p> <p>USA Trade data: 98,941 imports from 1999-2014.</p>	<p>Due to this species' wide range, it is not subject to major threats. It is not presently considered to be threatened by exploitation.</p>

References: Tilbury, C. (2010): Chameleons of Africa – An Atlas including the chameleons of Europe, the Middle East and Asia. Edition Chimaira, Frankfurt.
US Fish and Wildlife Service, LEMIS Database (2015): US import data for *Rhampholeon* and *Rieppeleon* species.
The IUCN Red List of Threatened Species. Version 2014.3. <www.iucnredlist.org>