

Annex 4 – Impacts on CITES Appendices and Checklist of Species / SpeciesPlus database resulting from adoption of proposed nomenclatural standard references for Fauna.
(Revision 1: deleted reference to Wilson & Reeder 1993 as possible nomenclatural standard reference for *Puma concolor costaricensis*.)

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
CHORDATA							
MAMMALIA							
ARTIODACTYLA							
BOVIDAE Antelopes, cattle, duikers, gazelles, goats, sheep, etc.							
<i>Ovis ammon</i> (Except the subspecies included in Appendix I)	II	<i>Ovis ammon</i> (Linnaeus 1758) with subspecies <i>collium</i> , <i>comosa</i> , <i>darwini</i> , <i>hodgsonii</i> , <i>karelini</i> , <i>nigrimontana</i> , <i>polii</i> , <i>severtzovi</i> [and <i>hodgsonii</i> and <i>nigrimontana</i>]	Species split: <i>Ovis ammon</i> (with subspecies <i>ammon</i> , <i>collium</i> , <i>comosa</i> , <i>darwini</i> , <i>hodgsonii</i> , <i>karelini</i> , <i>nigrimontana</i> , <i>polii</i> , <i>severtzovi</i>) split into nine species: <i>Ovis ammon ammon</i> (II) becomes a stand-alone species <i>Ovis ammon</i> (II); <i>Ovis ammon collium</i> (II) becomes <i>Ovis collium</i> (II), <i>Ovis ammon comosa</i> becomes <i>Ovis jubata</i> because Wilson & Reeder's use of <i>comosa</i> instead of the older name <i>jubata</i> , which Wilson & Reeder considered as preoccupied, has not held up and therefore the older name <i>jubata</i> should be used; <i>Ovis ammon darwini</i> (II) becomes <i>Ovis darwini</i> (II), <i>Ovis ammon hodgsonii</i> (I) see below; <i>Ovis ammon karelini</i> (II) becomes <i>Ovis karelini</i> (II); <i>Ovis ammon nigrimontana</i> (I) see below; <i>Ovis ammon polii</i> (II) becomes <i>Ovis polii</i> (II); <i>Ovis ammon severtzovi</i> (II) becomes <i>Ovis severtzovi</i> (II).	Valdez, R. & Weinberg, P.J. (2011) Species accounts 188-207 for <i>Ovis</i> spp., pp. 727-739 in Wilson, D.E., & Mittermeier, R.A. (eds.), Handbook of the Mammals of the World. Vol.2. Hoofed Mammals. Lynx Edicions, Barcelona. ISBN 978-84-96553-77-4.	Appendix II: <i>Ovis ammon</i> + <i>Ovis collium</i> + <i>Ovis jubata</i> + <i>Ovis darwini</i> + <i>Ovis karelini</i> + <i>Ovis polii</i> + <i>Ovis severtzovi</i>	<i>Ovis ammon</i> + <i>Ovis collium</i> + <i>Ovis jubata</i> + <i>Ovis darwini</i> + <i>Ovis karelini</i> + <i>Ovis polii</i> + <i>Ovis severtzovi</i> ----- [all names used previously in CITES as subspecies of <i>Ovis ammon</i> are included in the Checklist / Species+ as synonymized names]	The proposed change changes current subspecies to full species, changing the listing from 'a complex species with several subspecies in Appendix II, except two subspecies in Appendix I' to 'Seven species in Appendix II and two species in Appendix I'.

Present situation (after CITES CoP17)		Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations	
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
<i>Ovis ammon hodgsonii</i>	I	<i>Ovis ammon hodgsonii</i>	Subspecies elevation to species rank, becomes <i>Ovis hodgsonii</i> (I)	Valdez, R. & Weinberg, P.J. (2011)	App. I: <i>Ovis hodgsonii</i>	<i>Ovis hodgsonii</i>	
<i>Ovis ammon nigrimontana</i>	I	<i>Ovis ammon nigrimontana</i>	Subspecies elevation to species rank, becomes <i>Ovis nigrimontana</i> (I)	Valdez, R. & Weinberg, P.J. (2011)	App. I: <i>Ovis nigrimontana</i>	<i>Ovis nigrimontana</i>	
<i>Ovis aries</i> (Except the subspecies included in Appendix I, the subspecies <i>O. a. isphahanica</i> , <i>O. a. laristanica</i> , <i>O. a. musimon</i> and <i>O. a. orientalis</i> which are not included in the Appendices, and the domesticated form <i>Ovis aries aries</i> which is not subject to the provisions of the Convention)	II	<i>Ovis aries</i> Linnaeus 1758 with subspecies <i>arkal</i> , <i>cycloceros</i> , <i>isphahanica</i> , <i>laristanica</i> , <i>musimon</i> , <i>ophion</i> , <i>orientalis</i> , <i>vignei</i>	Species split: <i>Ovis aries</i> (with subspecies <i>aries</i> , <i>arkal</i> , <i>cycloceros</i> , <i>isphahanica</i> , <i>laristanica</i> , <i>musimon</i> , <i>ophion</i> , <i>orientalis</i> , <i>vignei</i>) split into nine full species by elevating subspecies to full species status: <i>Ovis aries aries</i> (not listed) becomes <i>Ovis aries</i> the domestic sheep (not listed) and loses its subspecies based on wild populations; <i>Ovis aries arkal</i> (II) becomes <i>Ovis cycloceros arkal</i> (II); <i>Ovis aries cycloceros</i> (II) is split to becomes <i>Ovis cycloceros cycloceros</i> (II) + <i>Ovis arabica</i> (II) + <i>Ovis bochariensis</i> (II) + <i>Ovis punjabiensis</i> (II); <i>Ovis aries isphahanica</i> (not listed) becomes <i>Ovis isphahanica</i> (not listed); <i>Ovis aries laristanica</i> (not listed) becomes <i>Ovis laristanica</i> (not listed); <i>Ovis aries musimon</i> (not listed) is treated as part of the feral Mouflon populations associated with <i>Ovis gmelini</i> (not listed except population of Cyprus); <i>Ovis aries ophion</i> (App.I): see below; <i>Ovis aries orientalis</i> (not listed): <i>orientalis</i> is an invalid name based on a hybrid population in north-	Valdez, R. & Weinberg, P.J. (2011)	App.II: <i>Ovis cycloceros</i> + <i>Ovis arabica</i> + <i>Ovis bochariensis</i> + <i>Ovis punjabiensis</i> ----- [all reference to <i>Ovis aries</i> , including subspecies <i>isphahanica</i> , <i>laristanica</i> , <i>musimon</i> , and <i>orientalis</i> , is removed from the Appendices]	<i>Ovis cycloceros</i> + <i>Ovis arabica</i> + <i>Ovis bochariensis</i> + <i>Ovis punjabiensis</i> ----- [all names used previously in CITES, including as subspecies of <i>Ovis aries</i> or <i>Ovis orientalis</i> , are included in the Checklist / Species+ as synonymized names]	This proposed change to the nomenclature of the domestic sheep and its close (Mouflon and Urial) relatives will change the listing in the Appendices from "all sheep, mouflon and urial are in Appendix II, except two subspecies in Appendix I, and except 4 subspecies that are not listed, and except all domestic sheep" to "Four species of wild sheep (from Afghanistan, India, Iran, Kazakhstan, Oman, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan) are listed in Appendix II, and one species plus a country population of another species, are listed in Appendix I."

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
			central Iran and cannot be used; <i>Ovis aries vignei</i> (App.I): see below.				
<i>Ovis aries ophion</i>	I		<i>O. a. ophion</i> : the name <i>ophion</i> is based on the Mouflon population of Cyprus, which is treated as a synonym of <i>Ovis gmelini</i> .	Valdez, R. & Weinberg, P.J. (2011)	App. I: <i>Ovis gmelini</i> (population of Cyprus)	<i>Ovis gmelini</i> (population of Cyprus)	
<i>Ovis aries vignei</i>	I		Subspecies elevation to species rank, becomes <i>Ovis vignei</i> (I)	Valdez, R. & Weinberg, P.J. (2011)	App. I: <i>Ovis vignei</i>	<i>Ovis vignei</i>	
CARNIVORA							
FELIDAE							
Felidae spp.	II	<i>Felis manul</i> Pallas 1776	Genus transfer, to <i>Otocolobus</i>	Kitchener A. C., Breitenmoser-Würsten CH., Eizirik E., Gentry A., Werdelin L., Wilting A., Yamaguchi N., Abramov A. V., Christiansen P., Driscoll C., Duckworth J. W., Johnson W., Luo S.-J., Meijaard E., O'Donoghue P., Sanderson J., Seymour K., Bruford M., Groves C., Hoffmann M., Nowell K., Timmons Z. and Tobe S. (2017). A revised taxonomy of the Felidae. The final report of the Cat Classification Task Force of the IUCN/SSC Cat Specialist Group.	no change	<i>Otocolobus manul</i> (Pallas, 1776)	Recommended by AC29 Nomenclature WG

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
				Cat News Special Issue 11, 80 pp			
Felidae spp.	II	<i>Felis silvestris</i> Schreber 1777	Species split/subspecies elevation to species rank: <i>lybica</i> as full species	Kitchener et al., 2017, Cat News Special Issue 11	no change	<i>Felis silvestris</i> (Europe, Turkey and Caucasus region) + <i>Felis lybica</i> (Africa, Middle East, & Central, West and South Asia)	Recommended by AC29 Nomenclature WG
Felidae spp.	II	<i>Leopardus braccatus</i> (Cope 1889)	Relegation to subspecies of <i>L. colocola</i>	Kitchener et al., 2017, Cat News Special Issue 11	no change	<i>Leopardus colocola braccatus</i> (Cope 1889)	Recommended by AC29 Nomenclature WG
Felidae spp.	II	<i>Leopardus colocolo</i> (Molina 1782)	Spelling correction	Kitchener et al., 2017, Cat News Special Issue 11	no change	<i>Leopardus colocola</i> (Molina 1782)	Recommended by AC29 Nomenclature WG
Felidae spp.	II	<i>Leopardus pajeros</i> (Desmarest 1816)	Relegation to subspecies of <i>L. colocola</i>	Kitchener et al., 2017, Cat News Special Issue 11	no change	<i>Leopardus colocola pajeros</i> (Desmarest 1816)	Recommended by AC29 Nomenclature WG
Felidae spp.	II	<i>Prionailurus bengalensis</i> (Kerr 1792)	Species split: former subspecies <i>Prionailurus bengalensis javanensis</i> recognized as a full species, with <i>sumatranus</i> now a subspecies; former subspecies <i>P. bengalensis borneoensis</i> , <i>P. b. heanyi</i> and <i>P. b. rabori</i> synonymized into <i>P. javanensis sumatranus</i> .	Kitchener et al., 2017, Cat News Special Issue 11	no change	<i>Prionailurus bengalensis</i> (Kerr 1792) + <i>Prionailurus javanensis</i> (Desmarest 1816)	Recommended by AC29 Nomenclature WG
Felidae spp.	II	<i>Prionailurus iriomotensis</i> (Imaizumi 1967)	Synonymization: <i>iriomotensis</i> considered synonym of <i>Prionailurus bengalensis euptilurus</i> (Elliot 1871)	Kitchener et al., 2017, Cat News Special Issue 11	no change	<i>Prionailurus iriomotensis</i> (Imaizumi 1967) to be listed as a synonym of <i>P. bengalensis euptilurus</i> (Elliot 1871)	Recommended by AC29 Nomenclature WG

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
Felidae spp.	II	<i>Profelis aurata</i> (Temminck, 1827)	Genus transfer, to <i>Caracal</i>	Kitchener et al., 2017, Cat News Special Issue 11; Bahaa-el-Din, 2015	no change	<i>Caracal aurata</i> (Temminck, 1827)	Recommended by AC29 Nomenclature WG
<i>Leopardus jacobitus</i>	I	<i>Leopardus jacobitus</i> (Cornalia 1865)	Spelling correction	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Leopardus jacobita</i>	<i>Leopardus jacobita</i> (Cornalia 1865)	Recommended by AC29 Nomenclature WG
<i>Leopardus tigrinus</i>	I	<i>Leopardus tigrinus</i> (Schreber 1775)	Species split/subspecies elevation to species rank: <i>guttulus</i> as full species	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Leopardus tigrinus</i> + <i>Leopardus guttulus</i>	<i>Leopardus tigrinus</i> (Schreber 1775) + <i>Leopardus guttulus</i> (Hensel 1872)	Recommended by AC29 Nomenclature WG
<i>Neofelis nebulosa</i>	I	<i>Neofelis nebulosa</i> (Griffith 1821)	Species split/subspecies elevation to species rank: <i>diardi</i> as full species	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Neofelis diardi</i> + <i>Neofelis nebulosa</i>	<i>Neofelis diardi</i> (Cuvier 1823) + <i>Neofelis nebulosa</i> (Griffith 1821)	Recommended by AC29 Nomenclature WG
<i>Panthera leo persica</i>	I	<i>Panthera leo persica</i> (Meyer, 1826)	Subspecies <i>persica</i> synonymized into typical subspecies <i>Panthera leo leo</i>	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Panthera leo</i> (only the populations of India; all other populations are included in Appendix II)	<i>Panthera leo</i> (populations of India)	Recommended by AC29 Nomenclature WG
<i>Puma concolor costaricensis</i>	I	<i>Puma concolor costaricensis</i> (Merriam 1901)	Synonymization: subspecies <i>costaricensis</i> considered part of <i>Puma concolor cougar</i>	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Puma concolor</i> (only the populations of Costa Rica and Panama; all other populations are included in Appendix II)	<i>Puma concolor</i> (populations of Costa Rica and Panama)	Recommended by AC29 Nomenclature WG.
<i>Puma yagouarundi</i> [annotated]	I	<i>Puma yagouarundi</i> (Geoffroy St. Hilaire 1803)	Genus transfer, to <i>Herpailurus</i>	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Herpailurus yagouarundi</i> [annotation remains unchanged]	<i>Herpailurus yagouarundi</i> (Geoffroy St. Hilaire 1803)	Recommended by AC29 Nomenclature WG
<i>Uncia uncia</i>	I	<i>Uncia uncia</i> (Schreber 1775)	Genus transfer, to <i>Panthera</i>	Kitchener et al., 2017, Cat News Special Issue 11	App.I: <i>Panthera uncia</i>	<i>Panthera uncia</i> (Schreber 1775)	Recommended by AC29 Nomenclature WG
ACTINOPTERI							

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
SYNGNATHIFORMES							
Syngnathidae Pipefishes Seahorses							
<i>Hippocampus</i> spp.	II	not listed	<i>Hippocampus pusillus</i> Fricke 2004 recognized as valid species	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). A global revision of the Seahorses <i>Hippocampus</i> Rafinesque 1810 (Actinopterygii: Syngnathiformes): Taxonomy and biogeography with recommendations for further research. Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	Add <i>Hippocampus pusillus</i> Fricke 2004 as a valid species	Provisionally recommended by AC to add reference to Annex of Res Conf 12.11 and replace all 14 current <i>Hippocampus</i> references.
<i>Hippocampus</i> spp.	II	<i>Hippocampus alatus</i> Kuitert 2001	Synonymization of <i>H. alatus</i> under <i>H. spinosissimus</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. alatus</i> as synonym under <i>H. spinosissimus</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus borboniensis</i> Duméril 1870	Synonymization of <i>H. borboniensis</i> under <i>H. kuda</i> based on morphology and genetics	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. borboniensis</i> as synonym under <i>H. kuda</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus fuscus</i> Rüppell 1838	Synonymization of <i>H. fuscus</i> under <i>H. kuda</i> based on morphology and genetics	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. fuscus</i> as synonym under <i>H. kuda</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus grandiceps</i> Kuitert 2001	Synonymization of <i>H. grandiceps</i> under <i>H. angustus</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016).	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. grandiceps</i> as synonym under <i>H. angustus</i>	

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
				Zootaxa 4146(1): 1-66.			
<i>Hippocampus</i> spp.	II	<i>Hippocampus hendriki</i> Kuitert 2001	Synonymization of <i>H. hendriki</i> under <i>H. angustus</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. hendriki</i> as synonym under <i>H. angustus</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus montebelloensis</i> Kuitert 2001	Synonymization of <i>H. montebelloensis</i> under <i>H. zebra</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. montebelloensis</i> as synonym under <i>H. zebra</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus multispinus</i> Kuitert 2001	Synonymization of <i>H. multispinus</i> under <i>H. angustus</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. multispinus</i> as synonym under <i>H. angustus</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus procerus</i> Kuitert 2001	Synonymization of <i>H. procerus</i> under <i>H. whitei</i> based on morphology and genetics	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. procerus</i> as synonym under <i>H. whitei</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus queenslandicus</i> Horne 2001	Synonymization of <i>H. queenslandicus</i> under <i>H. spinosissimus</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. queenslandicus</i> as synonym under <i>H. spinosissimus</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus semispinosus</i> Kuitert 2001	Synonymization of <i>H. semispinosus</i> under <i>H. spinosissimus</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. semispinosus</i> as synonym under <i>H. spinosissimus</i>	
<i>Hippocampus</i> spp.	II	<i>Hippocampus severnsi</i>	Synonymization of <i>H. severnsi</i> under <i>H. pontohi</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). Zootaxa 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. severnsi</i> as synonym under <i>H. pontohi</i>	

Present situation (after CITES CoP17)			Proposed change in literature		Effect on CITES IF adopted		Notes & recommendations
Name in Appendices	Appendix	Checklist & Species+	Description of change	Reference	Name in Appendices	Checklist & Species+	
<i>Hippocampus</i> spp.	II	<i>Hippocampus waleananus</i> [<i>H. "waleanus"</i>]	Synonymization of <i>H. waleananus</i> under <i>H. satomiae</i> based on morphology	Lourie, S.A., Pollom, R.A. & Foster, S.J. (2016). <i>Zootaxa</i> 4146(1): 1-66.	None: part of <i>Hippocampus</i> spp. [II]	list <i>H. waleananus</i> as synonym under <i>H. satomiae</i>	
ARTHROPODA							
ARACHNIDA							
SCORPIONES							
Scorpionidae							
<i>Pandinus imperator</i>	II	<i>Pandinus imperator</i> (Koch 1841)	Description of new species <i>Pandinus camerounensis</i> split out from <i>P. imperator</i>	Lourenço, W. R. (2014): Further considerations on the identity and distribution of <i>Pandinus imperator</i> (C. L. Koch, 1841) and description of a new species from Cameroon (Scorpiones: Scorpionidae). - <i>Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg</i> , 17 (192): 139-151	App.II: Add <i>Pandinus camerounensis</i> .	Add <i>Pandinus camerounensis</i> Lourenço 2014 as a valid species	Lourenço 2014 publication already adopted as standard reference for <i>P. roeseli</i> , but recognition of <i>P. camerounensis</i> in the same paper was overlooked.