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Supplementary Information for

Small room for compromise between oil palm cultivation and primate conservation in Africa

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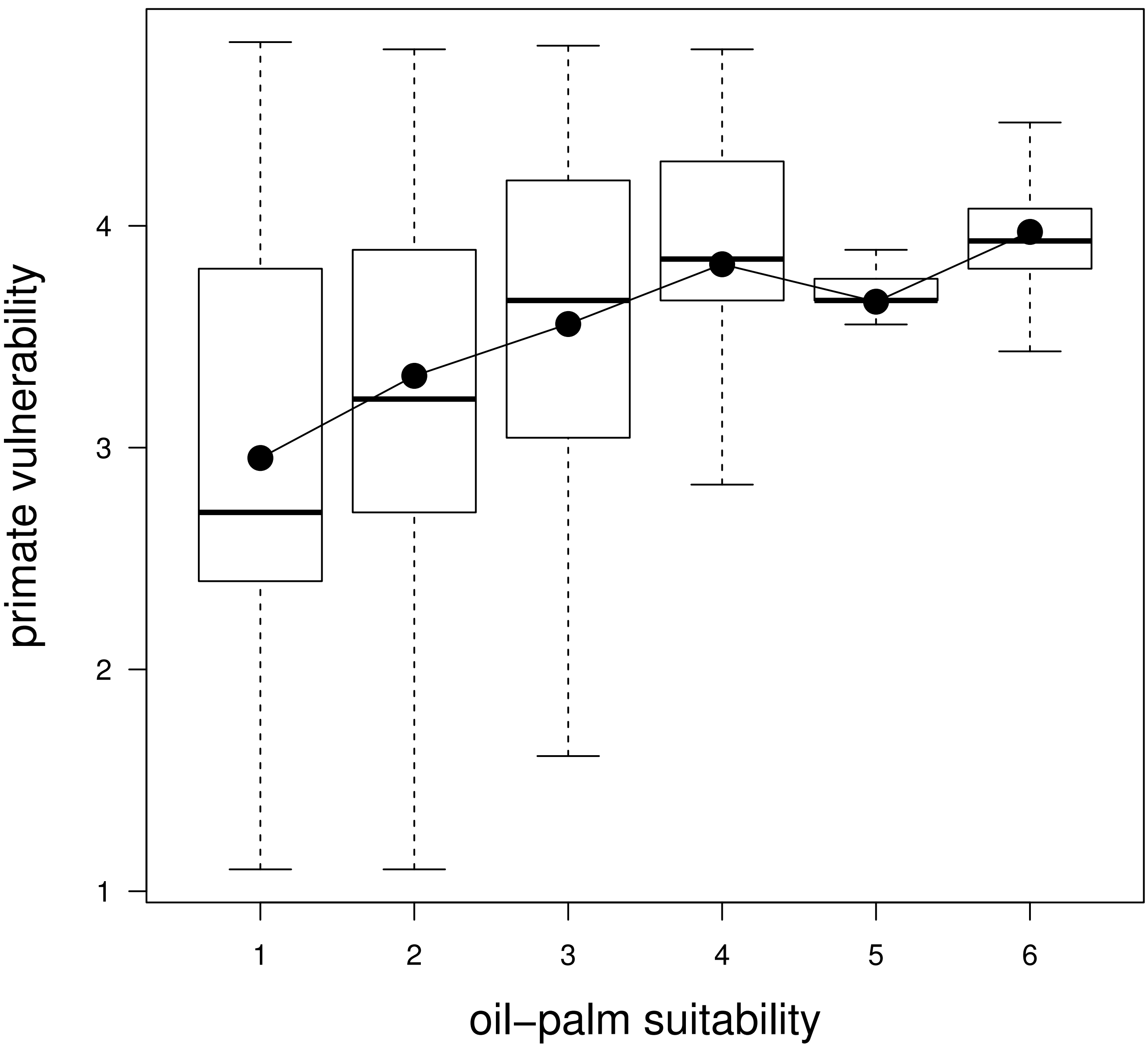

Fig. S1. Boxplots showing the relationship between oil palm suitability and primate vulnerability across the whole African continent. Both suitability and vulnerability where resampled on a 100 km^2 reference grid. Cumulative primate vulnerability was obtained by converting IUCN risk status of each primate species to a numeric value (see Methods for details), and by summing up the vulnerability values of all species present in each grid cell. Oil palm suitability was obtained from The International Institute for Applied Systems and The Food and Agriculture Organization of the United Nations Global Agro-Ecological Zones database (?). We used the model corresponding to a rain-fed, intermediate-level inputs/improved management scenario. Spearman's rank correlation coefficient computed on the whole dataset was 0.29, p-value < 2.2e-16.

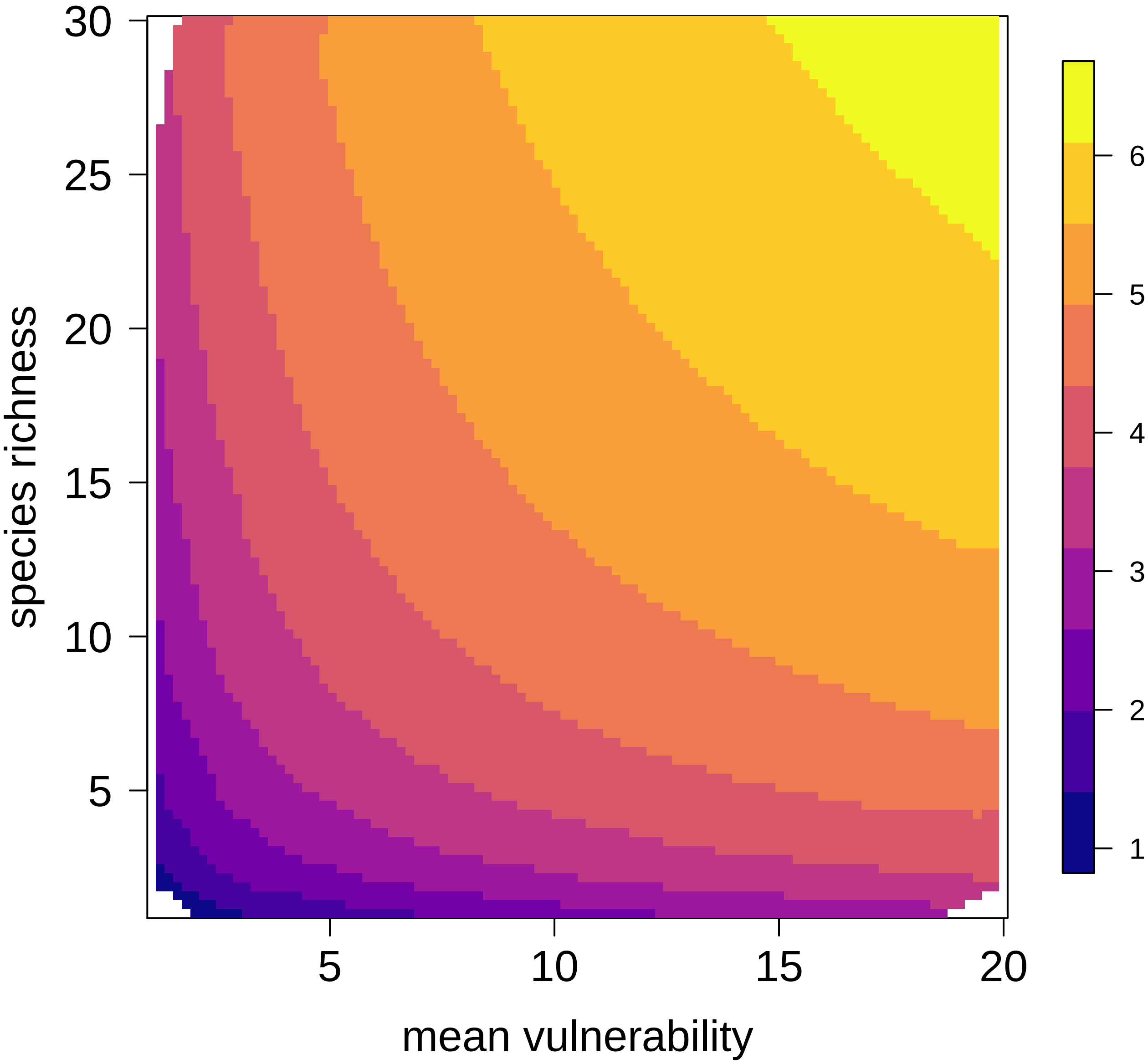

Fig. S2. Colorplot showing how the measure of cumulative primate vulnerability varies with mean primate vulnerability and species richness.

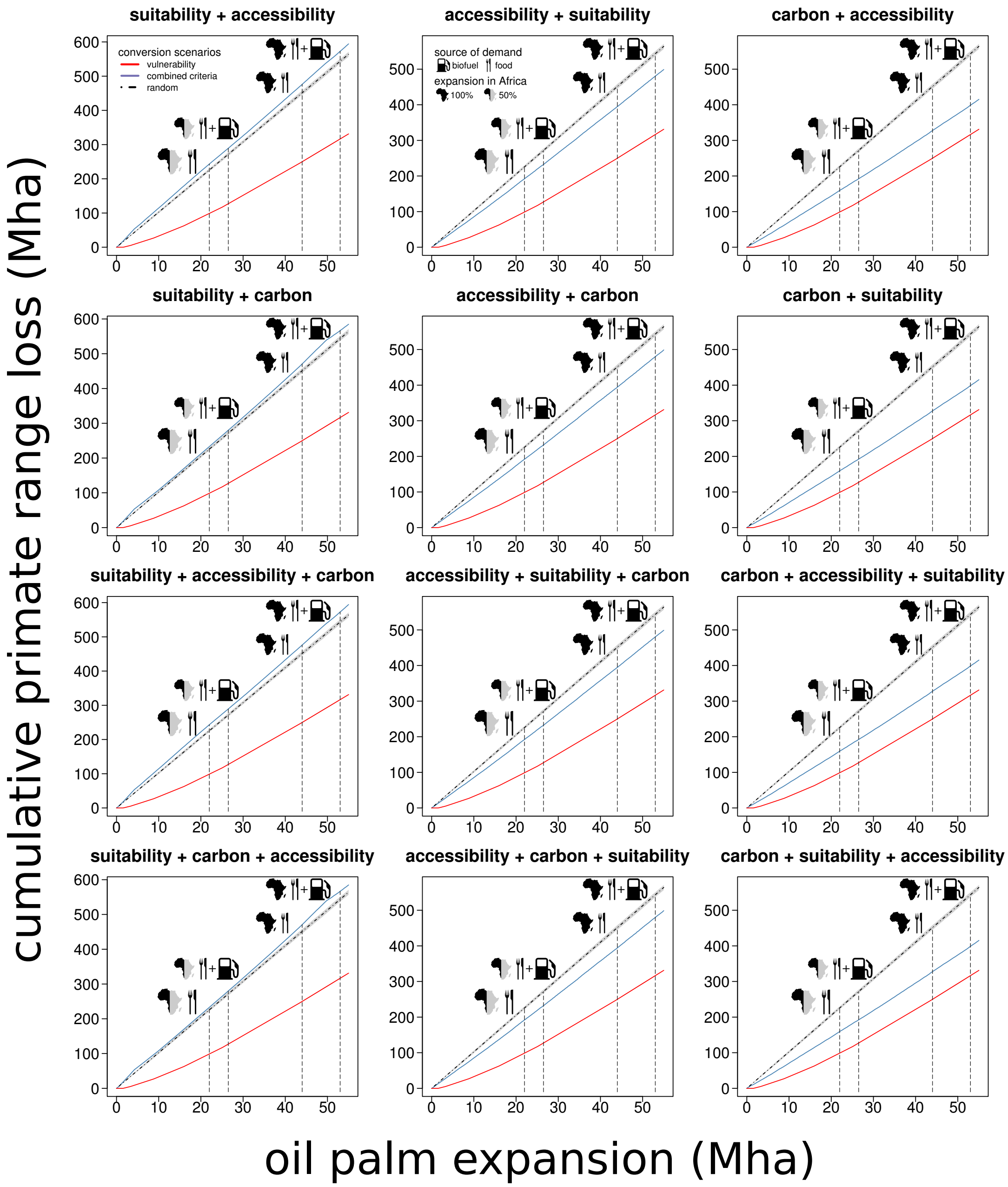

Fig. S3. Cumulative range loss for all African primate species in scenarios of random oil palm expansion (dotted black lines) compared to scenarios where conversion is driven by cumulative primate vulnerability (red lines), or by different combinations of criteria based on oil palm suitability and/or human accessibility and/or carbon stock (blue lines). The text above each plot indicates how such criteria where assembled to model the expansion trajectory. For example, "accessibility + vulnerability" identifies a scenario where 100 km^2 cells were converted to oil palm crop in decreasing order of their accessibility, and where cells having identical accessibility were converted in increasing order of cumulative primate vulnerability. Similarly, "carbon + accessibility + vulnerability" identifies a scenario where 100km^2 cells were converted to oil palm crop in decreasing order of their carbon stock availability, with cells having identical carbon stock being converted in decreasing order of human accessibility (i.e. in increasing order of travel time to the closest city), and cells having identical carbon stock and accessibility being converted in increasing order of cumulative primate vulnerability. Oil palm expansion was simulated 1000 times for each scenario, randomizing the removal of cells having identical rank for the selected criteria (for example cells having identical oil palm suitability and carbon stock availability in the scenario "suitability + carbon"). Lines represent the average value of the 1000 replicates, while shaded areas represent minimum and maximum values (for most scenarios, those are not visible, due to the very small variation in results between simulations). Vertical dotted lines indicate different estimates of the land required to cope with future oil palm demand (in 2050), either considering or not the demand for palm oil destined to biofuel production, and under the alternative, simplified assumptions that either 50% or 100% of the future expansion will happen in Africa.

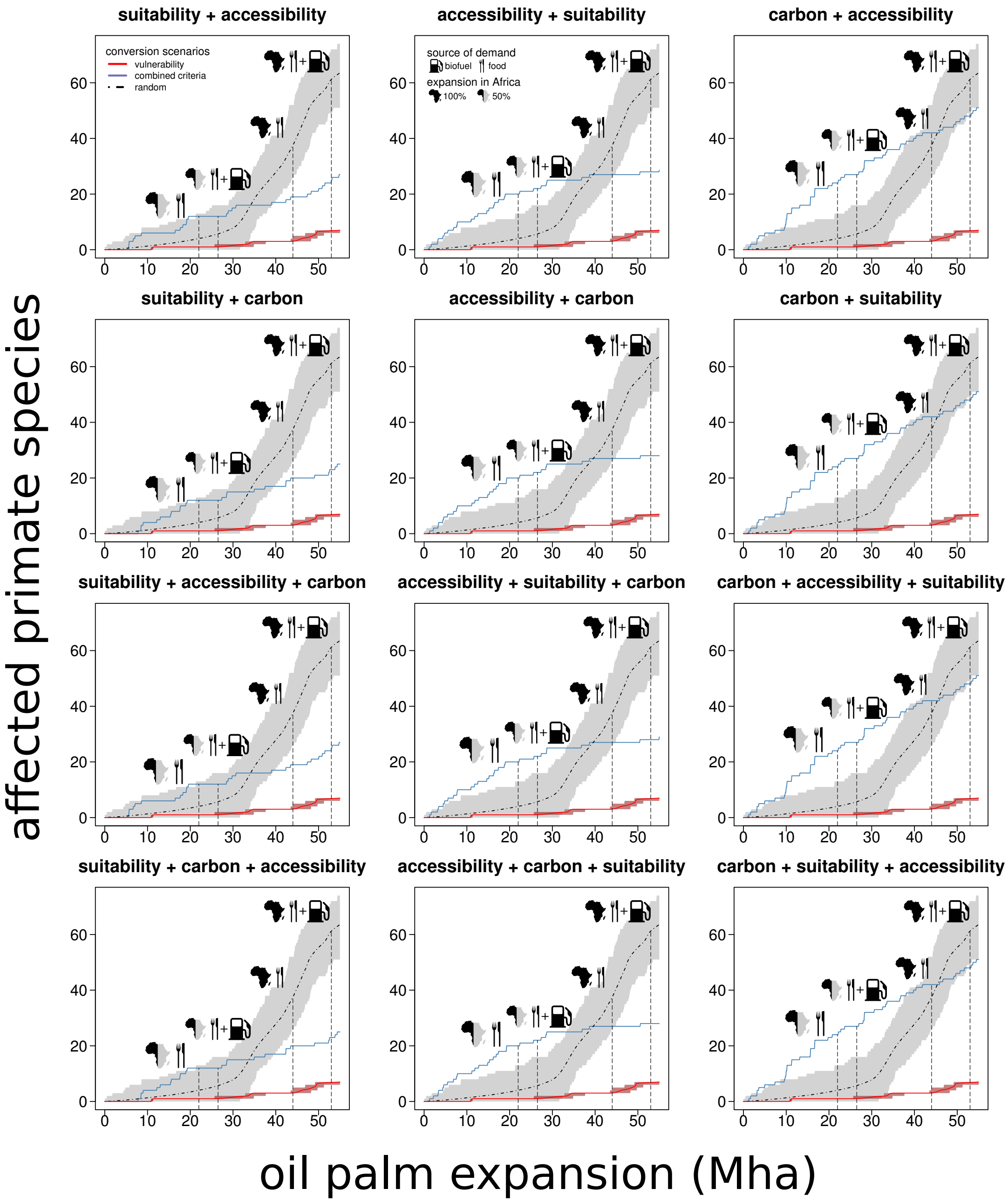

Fig. S4. Cumulative number of African primate species expected to loose more than 10% of their current range in scenarios of random oil palm expansion (dotted black lines) compared to scenarios where conversion is driven by cumulative primate vulnerability (red lines), or by different combinations of criteria based on oil palm suitability and/or human accessibility and/or carbon stock (blue lines). The text above each plot indicates how such criteria where assembled to model the expansion trajectory. For example, "accessibility + vulnerability" identifies a scenario where 100 km^2 cells were converted to oil palm crop in decreasing order of their accessibility, and where cells having identical accessibility were converted in increasing order of cumulative primate vulnerability. Similarly, "carbon + accessibility + vulnerability" identifies a scenario where 100 km^2 cells were converted to oil palm plantation in decreasing order of their carbon stock availability, with cells having identical carbon stock being converted in decreasing order of human accessibility (i.e. in increasing order of travel time to the closest city), and cells having identical carbon stock and accessibility being converted in increasing order of cumulative primate vulnerability. Oil palm expansion was simulated 1000 times for each scenario, randomizing the removal of cells having identical rank for the selected criteria (for example cells having identical oil palm suitability and carbon stock availability in the scenario "suitability + carbon"). Lines represent the average value of the 1000 replicates, while shaded areas represent minimum and maximum values (for most scenarios, those are not visible, due to the very small variation in results between simulations). Vertical dotted lines indicate different estimates of the land required to cope with future oil palm demand (in 2050), either considering or not the demand for palm oil destined to biofuel production, and under the alternative, simplified assumptions that either 50% or 100% of the future expansion will happen in Africa.

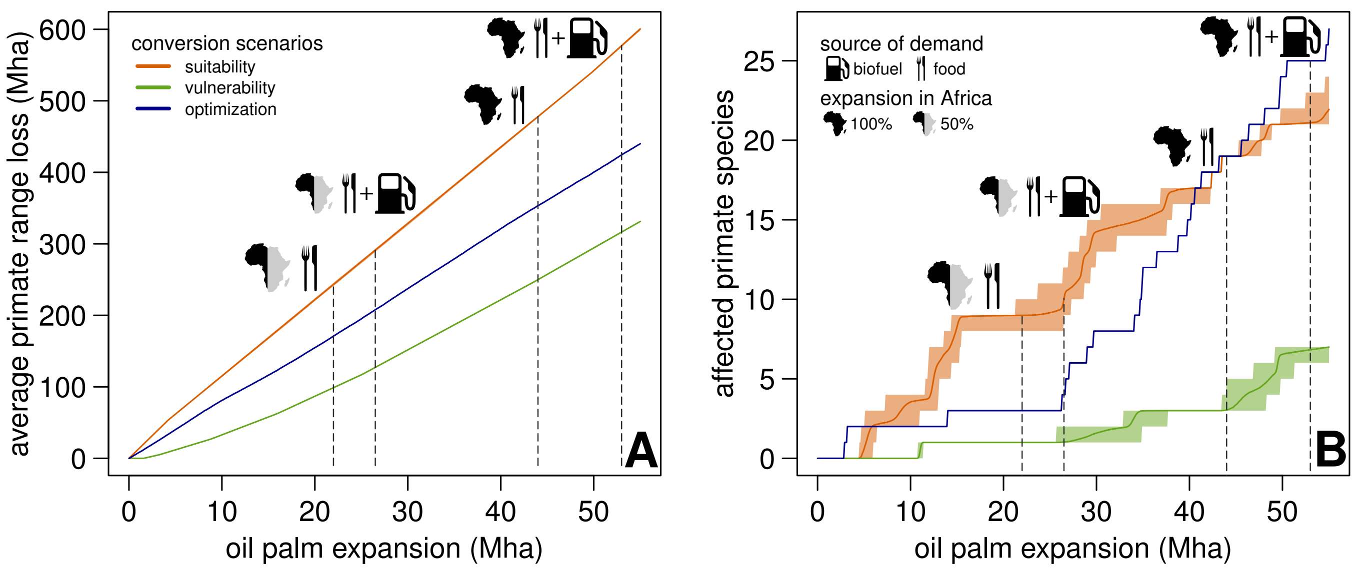

Fig. S5. (A) Cumulative range loss (in Mha) for all primate species, and (B) cumulative number of primate species expected to lose more than 10% of their range, under different scenarios of oil palm expansion where land is converted: (i) in decreasing order of oil palm suitability (as in Fig. 1A), with the aim of maximizing yields (orange lines); (ii) in decreasing order of cumulative primate vulnerability (as in Fig. 1B), with the aim of maximizing primate conservation (gold lines); and according to an optimization score attributed to each 100 km^2 cell aimed at embracing both income and conservation targets (blue lines, see Methods for details). Solid lines represent the average values obtained in 1000 simulations, while the shaded areas represent the minimum and maximum values (in most cases, those are hardly visible since all simulations yielded very similar results). Vertical dotted lines indicate different estimates of the land required to cope with future oil palm demand (in 2050), either considering or not the demand for palm oil destined to biofuel production, and under the alternative, simplified assumptions that either 50% or 100% of the future expansion will happen in Africa.

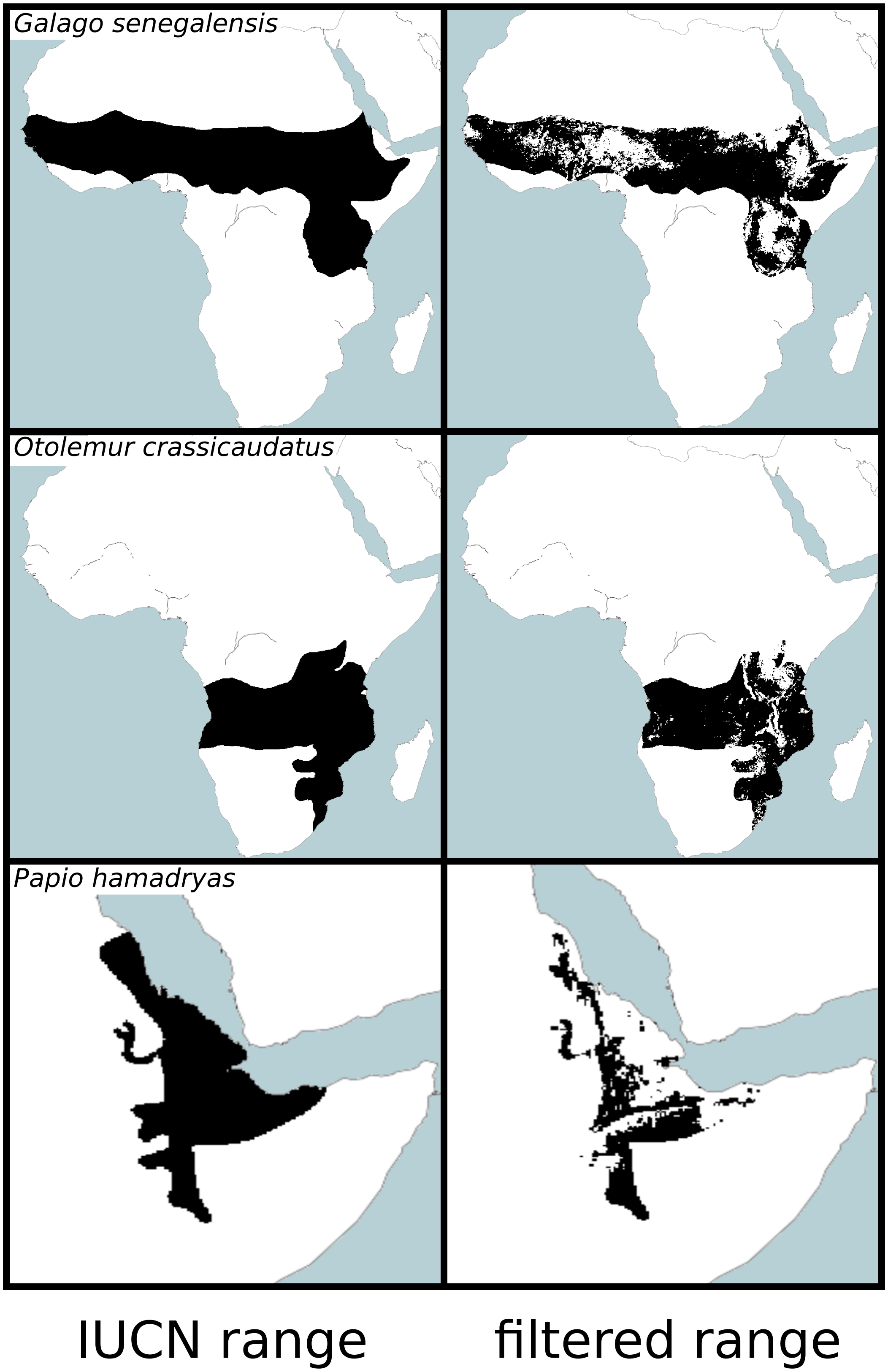

Fig. S6. Examples of comparison between the geographic ranges of primate species provided by IUCN, and the corresponding ones filtered by the exclusion of non-natural land-cover categories (see Methods in the main text).

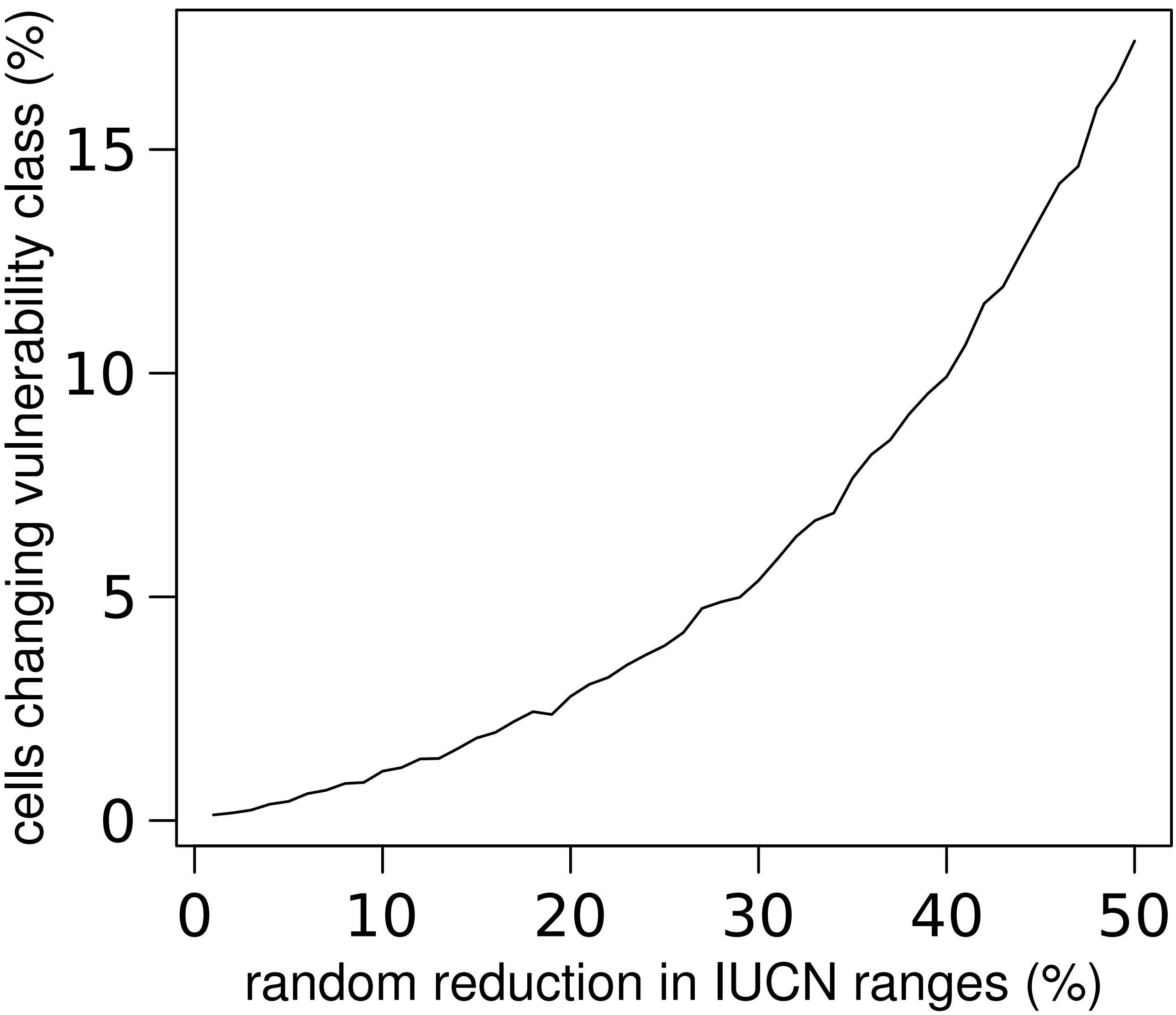

Fig. S7. Sensitivity of the cumulative primate vulnerability index (see Methods in main text) to potential range overestimation in IUCN data. We computed the fraction of 100 km^2 grid cells in the area of interest for our study (having at least minimum suitability to growing oil palm) that changed vulnerability class (from high to medium or low, or from medium to low) following the progressive random removal of increasing fractions of 100 km^2 grid cells from the original IUCN ranges (change was evaluated in respect to the vulnerability index computed using the original IUCN ranges).

Table S1. Expected range loss under the different scenarios of oil palm expansion for all African primate species, under the assumption that 50% of future global expansion will happen in Africa, taking into account the demand for palm oil for both alimentary and biofuel use. Range loss was computed for each species by excluding protected areas (i.e. assuming that those will be spared from oil palm expansion). Primate ranges have been reduced by the exclusion of non-natural land cover categories.

		average primate range loss (%) per scenario				
species	IUCN status	vulnerability	suitability	accessibility	carbon	random
Allenopithecus nigroviridis	LC	0	21.7	0.6	0.3	8.2
Allocebus trichotis	VU	0	0	0	0	0.6
Allochrocebus lhoesti	VU	0	18.9	0.8	0	5
Allochrocebus preussi	EN	0	0	1.2	0.6	2.4
Allochrocebus solatus	VU	0	0	0	0	8.3
Arctocebus aureus	LC	0	2.4	1	0.8	5.9
Arctocebus calabarensis	LC	2.8	0.1	32.2	4.7	5.7
Avahi betsileo	EN	0	0	0	0	0
Avahi cleesei	EN	0	0	0	0	0
Avahi laniger	VU	0.2	0	0.2	0	0.4
Avahi meridionalis	EN	0	0	0	0	0
Avahi mooreorum	EN	0	0	0	0	0
Avahi occidentalis	EN	0	0	0	8	1.7
Avahi peyrierasi	VU	0	0	0	0	0
Avahi ramanantsoavanai	VU	0	0	0	0	0
Avahi unicolor	EN	0	0	0	0	2.6
Cercocebus agilis	LC	0.2	4.2	1.1	2.3	5.6
Cercocebus atys	NT	0	0.7	8.7	2.2	5.5
Cercocebus chrysogaster	DD	0	24.4	0.4	2.4	8.4
Cercocebus galeritus	EN	0	0	0	25	2.6
Cercocebus lunulatus	EN	0	7.4	22.7	3	7.1
Cercocebus sanjei	EN	0	0	0	0	2.5
Cercocebus torquatus	VU	0	0.1	29.2	5	7
Cercopithecus ascanius	LC	2.2	9.3	1.1	3.2	5.1
Cercopithecus campbelli	LC	0	0.2	8.8	2.5	5.8
Cercopithecus cephus	LC	1.6	2.1	1.2	2.1	5.7
Cercopithecus denti	LC	0	15.5	0.8	0.3	5
Cercopithecus diana	VU	0	1	12.6	1.8	7.9
Cercopithecus dryas	CR	0	48.7	0	0	10.5
Cercopithecus erythrogaster	VU	0	0	44.2	12	7.9
Cercopithecus erythrotis	VU	0	0.2	14.5	0.7	5.7
Cercopithecus hamlyni	VU	0	25.6	1.2	0	6.5
Cercopithecus lowei	LC	0.4	4.6	20.2	7.3	6.4
Cercopithecus mitis	LC	3.2	4.3	1	1.9	2
Cercopithecus mona	LC	2.3	0	23.2	7.2	4
Cercopithecus neglectus	LC	0.9	10	1.3	2.7	6.3
Cercopithecus nictitans	LC	1.8	1.7	7.8	2.9	6.1
Cercopithecus petaurista	LC	0	3.1	16.9	5.6	6.8
Cercopithecus roloway	EN	0	9.9	27.1	2	7.6
Cercopithecus sclateri	VU	0	0	84.8	6.9	9
Cheirogaleus crossleyi	DD	0	0	0	0	2.7
Cheirogaleus major	DD	0	0	0	0	0
Cheirogaleus medius	LC	0.1	0	0	9.9	1.8
Chlorocebus aethiops	LC	0	0	0	0	0
Chlorocebus cynosuros	LC	1.9	1.2	0.6	2.1	1.7
Chlorocebus djamdjamensis	VU	0	0	0	0	0
Chlorocebus pygerythrus	LC	3.5	0	0.7	1.4	0.5
Chlorocebus sabaeus	LC	0.7	0.2	3.7	2.8	1.5
Chlorocebus tantalus	LC	0.9	0.7	1.9	1.8	1.6
Colobus angolensis	LC	3	9	1.2	3.4	4.4
Colobus guereza	LC	0.7	2	0.6	1.4	2.9
Colobus polykomos	VU	0	0.6	9.5	2.3	5.5

Table S1 Continued:

species	IUCN status	average primate range loss (%) per scenario vulnerability	suitability	accessibility	carbon	random
Colobus satanas	VU	0	1.2	1.9	0.2	5.3
Colobus vellerosus	VU	0	3.2	17.9	9.3	5.1
Daubentonia madagascariensis	EN	0	0	0.2	4.6	1.4
Erythrocebus patas	LC	0.6	0.3	1.2	1.4	0.8
Eulemur albifrons	EN	0	0	1.1	0	0.8
Eulemur cinereiceps	CR	0	0	0	0	0
Eulemur collaris	EN	0	0	0	0	0
Eulemur coronatus	EN	0	0	0	24.4	5.2
Eulemur flavifrons	CR	0	0	0	18.2	5.7
Eulemur fulvus	NT	0	0	0	3.8	1.1
Eulemur macaco	VU	0	0	0	3.8	5.9
Eulemur mongoz	CR	0	0.9	1.8	5.5	1.4
Eulemur rubriventer	VU	0	0	0	0.4	0.3
Eulemur rufifrons	NT	0	0	0	0.3	0.2
Eulemur rufus	VU	0	0	0	19.4	3.5
Eulemur sanfordi	EN	0	0	0	10.5	2.9
Euoticus elegantulus	LC	1	2.1	1.2	2.4	6
Euoticus pallidus	LC	0.3	0.2	34.9	2.2	6.5
Galago gallarum	LC	0.3	0	0	0.1	0
Galago matschiei	LC	0	0	0.3	0.5	0.2
Galago moholi	LC	0.4	0	0	0.2	0.1
Galago senegalensis	LC	0.7	0	0.9	1.3	0.5
Galagoides cocos	LC	6.1	0	22.1	16.2	3.5
Galagoides demidovii	LC	2.5	6.3	5.2	4	5.6
Galagoides granti	LC	17.6	0	2.4	5.6	2.1
Galagoides orinus	NT	0	0	0.7	0	0.3
Galagoides rondoensis	CR	0	0	0	0	0
Galagoides thomasi	LC	2.1	6.1	4.1	3.2	5.1
Galagoides zanzibaricus	LC	0.2	0	30.2	17	5.4
Gorilla beringei	CR	0	3.9	0.8	0	2.4
Gorilla gorilla	CR	0	2.2	1.2	0.7	5.8
Hapalemur alaotrensis	CR	0	0	0	0	0
Hapalemur aureus	CR	0	0	0	0	0
Hapalemur griseus	VU	1.1	0	0	9.6	1.6
Hapalemur meridionalis	VU	0	0	0	0	0
Hapalemur occidentalis	VU	0.3	0	0.5	0.8	1.5
Indri indri	CR	0	0	0	0	0
Lemur catta	EN	0	0	0	0	0
Lepilemur aeeclis	VU	0	0	0	10	1.9
Lepilemur ahmansonorum	EN	0	0	0	0	0
Lepilemur ankaranensis	EN	0	0	0	30.8	5.7
Lepilemur betsileo	EN	0	0	0	0	0
Lepilemur dorsalis	VU	0	0	0	3.4	3.6
Lepilemur edwardsi	EN	0	0	4.5	17.9	2.3
Lepilemur fleuretae	CR	0	0	0	0	0
Lepilemur grewcockorum	EN	0	0	0	33.3	4.9
Lepilemur hollandorum	EN	0	0	0	0	0
Lepilemur hubbardorum	EN	0	0	0	0	0
Lepilemur leucopus	EN	0	0	0	0	0
Lepilemur microdon	EN	0	0	0	0	0
Lepilemur milanoii	EN	0	0	0	24	6.6
Lepilemur mittermeieri	EN	0	0	0	0	9.9
Lepilemur mustelinus	NT	0	0	0	0	0
Lepilemur otto	EN	0	0	0	19	4.2
Lepilemur petteri	VU	0	0	0	0	0
Lepilemur randrianasoloi	EN	0	0	0	0	0

Table S1 Continued:

species	IUCN status	average primate range loss (%) per scenario vulnerability	suitability	accessibility	carbon	random
Lepilemur ruficaudatus	VU	0	0	0	5.7	0.9
Lepilemur sahamalazensis	CR	0	0	0	12.5	1
Lepilemur scottorum	EN	0	0	0	0	0
Lepilemur seali	VU	0	0	1.4	0	0.3
Lepilemur septentrionalis	CR	0	0	0	100	10.1
Lepilemur wrightae	EN	0	0	0	0	0
Lophocebus albigena	LC	0.1	6.3	1.1	1.3	6
Lophocebus aterrimus	NT	0	20.6	1	2.1	7.8
Macaca sylvanus	EN	0	0	0	0	0
Mandrillus leucophaeus	EN	0	0.2	6.7	0.7	5.4
Mandrillus sphinx	VU	0	1.2	1.7	0.2	5.7
Microcebus arnholdi	EN	0	0	0	0	0
Microcebus berthae	EN	0	0	0	0	1.5
Microcebus bongolavensis	EN	0	0	0	20	1.9
Microcebus danfossi	EN	0	0	0	22.2	3.2
Microcebus griseorufus	LC	0	0	0	0	0
Microcebus jollyae	EN	0	0	0	0	0
Microcebus lehilahytsara	VU	0	0	0	0	0
Microcebus macarthurii	EN	0	0	0	0	0
Microcebus margotmarshae	EN	0	0	0	0	0
Microcebus mittermeieri	EN	0	0	0	0	0
Microcebus murinus	LC	0.2	0	0	9.5	1.7
Microcebus myoxinus	VU	0	0	0	21.6	4
Microcebus ravelobensis	EN	0	0	0	8.3	1.2
Microcebus rufus	VU	0	0	0	0	0
Microcebus sambiranensis	EN	0	0	0	0	0
Microcebus simmonsi	EN	0	0	0	0	1.4
Microcebus tavaratra	VU	0	0	0	22.9	6
Miopithecus ogouensis	LC	1.8	1.3	1.5	1.4	5.5
Miopithecus talapoin	LC	0.5	1	1.6	4.1	3.2
Mirza coquereli	EN	0	0	0	6.9	1.5
Mirza zaza	EN	0	0	0	10.3	7.2
Otolemur crassicaudatus	LC	2.9	0	0.6	1.5	0.6
Otolemur garnettii	LC	5.7	0	2.1	5	1.6
Pan paniscus	EN	0	27	0.3	0.4	8.1
Pan troglodytes	EN	0	3.9	2.9	1.7	4.8
Papio anubis	LC	0.5	1.3	1.2	1.4	1.3
Papio cynocephalus	LC	6.8	0	1.5	2.9	1
Papio hamadryas	LC	0	0	0	0	0
Papio kindae	LC	0.4	0.1	0.6	1.9	1.4
Papio papio	NT	0	0	0.8	0.8	0.3
Papio ursinus	LC	0.9	0	0.1	0.2	0.1
Perodicticus edwardsi	LC	2.5	6.7	3.2	3.7	5.7
Perodicticus ibeanus	LC	0	9.6	1.2	2.2	5.9
Perodicticus potto	LC	3.5	5.6	21.8	7.5	7.5
Phaner electromontis	EN	0	0	0	10.7	4.4
Phaner furcifer	VU	0	0	0	0	0.9
Phaner pallescens	EN	0	0	0.4	8.4	1.8
Phaner parienti	EN	0	0	0	0	9.5
Piliocolobus badius	EN	0	1.5	15.3	2.8	7.4
Piliocolobus bouvieri	CR	0	0.3	0	6.7	5.3
Piliocolobus epieni	CR	0	0	14.8	0	8.6
Piliocolobus gordonorum	EN	0	0	0	0	0.4
Piliocolobus kirkii	EN	0	0	63.6	18.2	8.8
Piliocolobus oustaleti	LC	0	3.4	0.8	1.5	6.4
Piliocolobus preussi	CR	0	1.3	0	0	2.5

Table S1 Continued:

species	IUCN status	average primate range loss (%) per scenario				
		vulnerability	suitability	accessibility	carbon	random
Piliocolobus rufomitratus	EN	0	0	0	25	2.6
Piliocolobus temminckii	EN	0	0	0	0.9	0.4
Piliocolobus tephrosceles	EN	0	0	0	0	0
Piliocolobus tholloni	NT	0	27.2	0.3	1	8.1
Piliocolobus waldronae	CR	0	9	19.1	1.4	7.4
Procolobus verus	NT	0	4	20.1	5	7.5
Prolemur simus	CR	0	0	0	0	0
Propithecus candidus	CR	0	0	0	0	0
Propithecus coquereli	EN	0	0.2	1.3	32.8	5.3
Propithecus coronatus	EN	0	0	0	6.4	0.9
Propithecus deckenii	EN	0	0	0	16.9	3.3
Propithecus diadema	CR	0	0	0	0	0
Propithecus edwardsi	EN	0	0	0	0	0
Propithecus tattersalli	CR	0	0	0	12.5	4.7
Propithecus verreauxi	EN	0	0	0	0.7	0.1
Rungwecebus kipunji	CR	0	0	0	0	0
Sciurocheirus alleni	LC	0.3	0.2	35.7	2.5	6.5
Sciurocheirus gabonensis	LC	0	2.3	1.1	0.5	5.7
Theropithecus gelada	LC	0	0	0	0	0
Varecia rubra	CR	0	0	1.9	0	1.7
Varecia variegata	CR	0	0	0	0	0

Table S2. Reduction of the original IUCN range for all African primate species when filtered by the exclusion of all non-natural land cover categories (see Methods in the main text for details). This filtering step resulted in the exclusion of a few small-ranged species for which the original range was reduced to 0, namely: *Cheirogaleus minusculus*,*Cheirogaleus sibreei*,*Lepilemur jamesorum*,*Lepilemur tymerlachsoni*,*Microcebus gerpi*,*Microcebus mamiratra*,*Microcebus marohita*,*Propithecus perrieri*.

species	IUCN range (km^2)	IUCN range adjusted (km^2)	reduction (%)
Allenopithecus nigroviridis	506600	501600	1.0
Allocebus trichotis	43100	42500	1.4
Allochrocebus lhoesti	215400	213900	0.7
Allochrocebus preussi	17000	16900	0.6
Allochrocebus solatus	12200	12200	0.0
Arctocebus aureus	667700	657600	1.5
Arctocebus calabarensis	148600	125200	15.7
Avahi betsileo	1000	1000	0.0
Avahi cleesei	2700	2700	0.0
Avahi laniger	50900	50700	0.4
Avahi meridionalis	1600	1500	6.3
Avahi mooreorum	2100	2100	0.0
Avahi occidentalis	3100	2500	19.4
Avahi peyrierasi	4400	4300	2.3
Avahi ramanantsoavanai	5900	5900	0.0
Avahi unicolor	800	800	0.0
Cercocebus agilis	1052600	1037000	1.5
Cercocebus atys	317000	300200	5.3
Cercocebus chrysogaster	230200	227100	1.3
Cercocebus galeritus	400	400	0.0
Cercocebus lunulatus	120900	118800	1.7
Cercocebus sanjei	400	400	0.0
Cercocebus torquatus	286500	266400	7.0
Cercopithecus ascanius	2618800	2501700	4.5
Cercopithecus campbelli	278900	262400	5.9
Cercopithecus cephus	778300	769200	1.2
Cercopithecus denti	409000	392000	4.2
Cercopithecus diana	210800	199800	5.2
Cercopithecus dryas	1400	1400	0.0
Cercopithecus erythrogaster	73600	66600	9.5
Cercopithecus erythrotis	55800	53900	3.4
Cercopithecus hamlyni	238300	234600	1.6
Cercopithecus lowei	337700	321100	4.9
Cercopithecus mitis	2306600	2034200	11.8
Cercopithecus mona	617400	462800	25.0
Cercopithecus neglectus	2288300	2213700	3.3
Cercopithecus nictitans	1338900	1287200	3.9
Cercopithecus petaurista	531800	497800	6.4
Cercopithecus roloway	136100	129800	4.6
Cercopithecus sclateri	35800	29000	19.0
Cheirogaleus crossleyi	1400	1400	0.0
Cheirogaleus major	37600	37300	0.8
Cheirogaleus medius	126400	108200	14.4
Chlorocebus aethiops	1144900	617400	46.1
Chlorocebus cynosuros	3082900	2980000	3.3
Chlorocebus djamdjamensis	8900	5400	39.3
Chlorocebus pygerythrus	4576400	3590900	21.5
Chlorocebus sabaeus	1516700	1275900	15.9
Chlorocebus tantalus	3988000	3030600	24.0
Colobus angolensis	2293700	2232300	2.7
Colobus guereza	3050000	2515200	17.5
Colobus polykomos	341000	325100	4.7
Colobus satanas	328400	322900	1.7

Table S2 Continued:

species	IUCN range (km^2)	IUCN range adjusted (km^2)	reduction (%)
Colobus vellerosus	477200	417200	12.6
Daubentonia madagascariensis	124500	118600	4.7
Erythrocebus patas	7127300	4982200	30.1
Eulemur albifrons	18400	17700	3.8
Eulemur cinereiceps	1300	1300	0.0
Eulemur collaris	8600	8500	1.2
Eulemur coronatus	6300	4100	34.9
Eulemur flavifrons	2800	2200	21.4
Eulemur fulvus	49300	44400	9.9
Eulemur macaco	8800	7800	11.4
Eulemur mongoz	8500	5500	35.3
Eulemur rubriventer	49400	49100	0.6
Eulemur rufifrons	33200	30000	9.6
Eulemur rufus	38800	34600	10.8
Eulemur sanfordi	3800	1900	50.0
Euoticus elegantulus	782500	769900	1.6
Euoticus pallidus	96300	89700	6.9
Galago gallarum	456700	429800	5.9
Galago matschiei	87500	58100	33.6
Galago moholi	4246700	3757600	11.5
Galago senegalensis	8388200	5937900	29.2
Galagoides cocos	7000	6800	2.9
Galagoides demidovii	4398500	4224400	4.0
Galagoides granti	520500	472900	9.1
Galagoides orinus	20000	13500	32.5
Galagoides rondoensis	100	100	0.0
Galagoides thomasi	4502000	4330200	3.8
Galagoides zanzibaricus	7200	5300	26.4
Gorilla beringei	49000	48100	1.8
Gorilla gorilla	695900	687200	1.3
Hapalemur alaotrensis	200	100	50.0
Hapalemur aureus	2800	2700	3.6
Hapalemur griseus	85600	80200	6.3
Hapalemur meridionalis	6200	6200	0.0
Hapalemur occidentalis	40300	38500	4.5
Indri indri	29700	29700	0.0
Lemur catta	100100	86300	13.8
Lepilemur aeeclis	6300	5000	20.6
Lepilemur ahmansonorum	600	600	0.0
Lepilemur ankaranensis	1500	1300	13.3
Lepilemur betsileo	2100	2100	0.0
Lepilemur dorsalis	9700	8900	8.2
Lepilemur edwardsi	9300	6700	28.0
Lepilemur fleuretae	700	700	0.0
Lepilemur grewcockorum	1900	1200	36.8
Lepilemur hollandorum	200	200	0.0
Lepilemur hubbardorum	2300	2300	0.0
Lepilemur leucopus	2100	2100	0.0
Lepilemur microdon	600	600	0.0
Lepilemur milanoii	2600	2500	3.8
Lepilemur mittermeieri	1100	1000	9.1
Lepilemur mustelinus	25600	25500	0.4
Lepilemur otto	3800	2100	44.7
Lepilemur petteri	19400	13200	32.0
Lepilemur randrianasoloi	1900	1900	0.0
Lepilemur ruficaudatus	15900	14100	11.3
Lepilemur sahamalazensis	1300	800	38.5

Table S2 Continued:

species	IUCN range (km^2)	IUCN range adjusted (km^2)	reduction (%)
Lepilemur scottorum	2100	2100	0.0
Lepilemur seali	7300	6900	5.5
Lepilemur septentrionalis	200	200	0.0
Lepilemur tymerlachsoni	100	0	100.0
Lepilemur wrightae	700	700	0.0
Lophocebus albigena	1461900	1408700	3.6
Lophocebus aterrimus	720800	716400	0.6
Macaca sylvanus	41300	21000	49.2
Mandrillus leucophaeus	44200	43300	2.0
Mandrillus sphinx	325500	320400	1.6
Microcebus arnholdi	100	100	0.0
Microcebus berthae	600	600	0.0
Microcebus bongolavensis	800	500	37.5
Microcebus danfossi	1600	900	43.8
Microcebus griseorufus	36500	26100	28.5
Microcebus jollyae	100	100	0.0
Microcebus lehilahytsara	3100	3100	0.0
Microcebus macarthurii	600	600	0.0
Microcebus mamiratra	100	0	100.0
Microcebus margotmarshae	900	900	0.0
Microcebus mittermeieri	300	300	0.0
Microcebus murinus	90400	80700	10.7
Microcebus myoxinus	31400	28700	8.6
Microcebus ravelobensis	3400	2400	29.4
Microcebus rufus	2800	2800	0.0
Microcebus sambiranensis	700	700	0.0
Microcebus tavaratra	4000	3500	12.5
Miopithecus ogouensis	487600	479400	1.7
Miopithecus talapoin	389900	384900	1.3
Mirza coquereli	49600	46200	6.9
Mirza zaza	10600	8700	17.9
Otolemur crassicaudatus	4895800	4121800	15.8
Otolemur garnettii	527100	433200	17.8
Pan paniscus	415300	412600	0.7
Pan troglodytes	2383500	2338900	1.9
Papio anubis	7825700	5729000	26.8
Papio cynocephalus	1941700	1465300	24.5
Papio hamadryas	457900	205400	55.1
Papio kindae	2347600	2265400	3.5
Papio papio	442200	369100	16.5
Papio ursinus	3348800	2632400	21.4
Perodicticus edwardsi	2336900	2287800	2.1
Perodicticus ibeanus	861700	767600	10.9
Perodicticus potto	715400	654000	8.6
Phaner electromontis	3500	2800	20.0
Phaner furcifer	20300	20100	1.0
Phaner pallescens	48400	45000	7.0
Phaner parienti	1900	1800	5.3
Piliocolobus badius	286300	273500	4.5
Piliocolobus bouvieri	16500	16500	0.0
Piliocolobus epieni	3500	3500	0.0
Piliocolobus gordonorum	6000	4900	18.3
Piliocolobus kirkii	1800	1100	38.9
Piliocolobus oustaleti	549000	543700	1.0
Piliocolobus preussi	3900	3800	2.6
Piliocolobus rufomitratus	400	400	0.0
Piliocolobus temminckii	67000	58300	13.0

Table S2 Continued:

species	IUCN range (km^2)	IUCN range adjusted (km^2)	reduction (%)
Piliocolobus tephrosceles	4000	3500	12.5
Piliocolobus tholloni	498500	494900	0.7
Piliocolobus waldronae	84900	80900	4.7
Procolobus verus	402500	378500	6.0
Prolemur simus	1900	1900	0.0
Propithecus candidus	1900	1900	0.0
Propithecus coquereli	30800	22900	25.6
Propithecus coronatus	45500	42500	6.6
Propithecus deckenii	25400	23100	9.1
Propithecus diadema	16300	16300	0.0
Propithecus edwardsi	3200	3100	3.1
Propithecus perrieri	0	0	0.0
Propithecus tattersalli	1600	1600	0.0
Propithecus verreauxi	68500	56100	18.1
Rungwecebus kipunji	100	100	0.0
Sciurocheirus alleni	95400	88700	7.0
Sciurocheirus gabonensis	679900	670200	1.4
Theropithecus gelada	104400	28400	72.8
Varecia rubra	5200	5200	0.0
Varecia variegata	9900	9900	0.0