1) **Supplementary Methods**

   i) **Species analyzed.** Which species were included and excluded from the analyses.

   ii) **Extinction risk and percentage of species threatened.** How we calculated mean extinction risk and the percentage of species threatened with extinction for each country analyzed.

   iii) **Threat Mechanisms and Sources.** How we defined threatening mechanisms and sources.

   iv) **Countries in Geographic Regions.** The countries included in each of the focal regions.

   v) **Land Clearing, Income and Extinction Risks.** Details of the extinction risk regressions.

   vi) **Business-As-Usual 2060 Cropland Demand.** Details of how we estimated cropland demand for each country in 2060 under the *BAU* scenario.

   vii) **Cropland Demand for Alternative Yield, Trade, and Diet Scenarios.** Details of how we estimated cropland demand for each country in 2060 under the alternative scenarios

2) **Supplementary Figures**

   i) **Supplementary Figure 1.** Food Demand, Yield Trends and Yield Gap Ratios.

   ii) **Supplementary Figure 2.** Visualization of yields scenarios for BAU and sustainable yields intensification scenarios.

   iii) **Supplementary Figure 3.** Schematic showing relationship how outputs from the extinction risk models were modified to produce meaningful mean threat level projections bounded by 5 (all species extinct).

   iv) **Supplementary Figure 4.** Reductions in regional extinction risk from proactive conservation efforts.

3) **Supplementary Tables**

   i) **Supplementary Table 1.** Model results for regression of mean extinction risk value of a country against economic and environmental changes

   ii) **Supplementary Table 2.** Model results for regression of percent of threatened species in country against economic and environmental changes.

   iii) **Supplementary Table 3.** Main threats and threatening mechanisms for terrestrial mammals and birds, and the number of species affected.

   iv) **Supplementary Table 4.** Data used to fit extinction risk regressions and percent of threatened species regressions (provided as separate Excel file).

Supplementary Methods

Species analyzed.

We restricted our analyses to terrestrial mammal and bird species and so excluded the following marine and freshwater taxonomic groups:

Excluded Mammalian Orders: Sirenia (manatees and dugongs).
Excluded Mammalian Families: Balaenopteridae (roquals); Balaenidae (right and bowhead whales); Delphinidae (dolphins); Eschrichtiidae (grey whale); Iniidae (Amazon River dolphin); Kogiidae (dwarf sperm whales); Lipotidae (baiji); Monodontidae (beluga and narwhal); Odobenidae (walrus); Otariidae (eared seals), Phocidae (true seals); Phocoenidae (porpoises); Physeteridae (sperm whales); Platanistidae (river dolphins); Pontoporiidae (La Plata River dolphin); Ziphiidae (beaked whales).

Excluded Avian Orders: Podicipediformes (grebes); Procellariiformes (albatrosses, petrels etc.); Sphenisciformes (penguins); Suliformes (gannets, comorants etc.).

Excluded Avian Families: Alcidae (auks); Gaviidae (divers); Laridae (gulls); Phaethontidae (tropic birds); Rhynchopidae (skimmers); Stercorariidae (skuas and jaegars); Sternidae (terns).

Extinction risk and percent threatened.

We assigned species to one of three body-size classes based on IUCN data[6], using related species to assign species when data were missing. We classified mammal body masses as large (≥10 kg), medium (10>mass≥2 kg) and small (<2 kg), and birds as large (≥2 kg), medium (2>mass≥0.5 kg) and small (<0.5 kg).

We use each species' global Red List Category, and did not distinguish between regional populations or subspecies. Species found in multiple regions are therefore assigned a single threat status e.g. leopard *Panthera pardus* is classified as Vulnerable in both Sub-Saharan Africa and SAIC, despite the fact that some Asian subspecies could be listed as critically endangered[97].

To calculate mean extinction risks of mammals and birds of each of three size classes for each country, we assigned a value to each IUCN Red List category following reference 126 and using the 'equal steps' approach, with equally weighted values of 0 (Least Concern, LC), 1 (Near Threatened, NT), 2 (Vulnerable, VU), 3 (Endangered, EN), 4 (Critically Endangered, CR), and 5 (Extinct, EX and Extinct in the Wild, EW). For each country in SAIC, tropical South America and Sub-Saharan Africa, we then took a mean value across all species of birds or mammals of a given size class in that country, excluding both Data Deficient (DD) and Not Evaluated species and so implicitly assuming that these species are threatened at the same rate as evaluated and 'data sufficient' species[46,127]. We also excluded species that went extinct before 1961. While these risk values will be affected by changes prior to 1961, much of the environmental change in the focal regions occurred in the latter half of the 20th and early 21st century.

To calculate the percentage of threatened species in a country we classed all VU, EN and CR species as 'threatened'. For Fig. 1 b and c, we excluded Not Evaluated species and accounted for the uncertainty caused by DD species by providing three estimates for the percent of threatened species, following references 46 and 127:

1. Lower bound: Assumes that no DD species are threatened. Estimate is therefore the number of threatened (CR, EN and VU) species divided by the total number of assessed species, including DD, EX and EW species.

2. Mid-point: Assumes that DD species are threatened at the same rate as other species. Estimate is therefore the number of threatened species divided by the number of non-DD species assessed, including EX and EW species.

3. Upper bound: Assumes that all DD species are threatened. Estimate is therefore the total number of threatened *and* DD species divided by the total number of assessed species including DD, EX and EW species.

The mid-point is a likely 'best guess' and importantly demonstrates that the true value should be somewhere between the upper and lower bounds.

IUCN Threat Mechanisms and Sources.

Data on threatened species, their extinction risks, and the countries in which they occur were gathered in 2014 and the threats they experience in 2016, all from the IUCN's website[6]. So that we could succinctly summarize threats, we combined some of the IUCN stress categories. For all of our analyses, we combined IUCN stresses 1.1 and 1.2 (ecosystem conversion and ecosystem degradation[128]) into the mechanism we call "habitat loss" and used stress 2.1 (species mortality) as the mechanism we call "direct mortality'. Approximately 90% of species stressed by ecosystem degradation are also stressed by ecosystem conversion, with most of the remaining species being passerines, rodents or bats. All but four species listed as stressed by ecosystem conversion are also listed as stressed by ecosystem degradation.

For clarity, we reclassified IUCN threat 5 (biological resource use[128]) into the threats we call "logging" (when the threatening mechanism was habitat loss) and "hunting" (when the mechanism was direct mortality). We combined threats 1 (residential and commercial development), 3 (energy production and mining) and 4 (transportation and service corridors) into the driver of change we call "development", which captures the remaining major sources of habitat conversion. We classified threat 8 (invasive and other problematic species, genes and diseases) as "invasive species" but note that 21% of the birds and 14% of the mammals that are endangered by this threat are threatened by problematic *native* species.

Ninety-three percent of threatened mammal species and 98% of threatened bird species are threatened by one or more of the five source-mechanism combinations shown in Fig. 1a. However, some species are also threatened by sources and mechanisms not shown[6]. Six species of threatened birds do not have any threats or stresses listed by the IUCN. These are Bornean Peacock-pheasant *Polyplectron schleiermacheri* (EN), Sinaloa Martin *Progne sinaloae* (VU), Abd Al Kuri Sparrow *Passer hemileucus* (VU), Anambra Waxbill *Estrilda poliopareia* (VU), Hooded Seedeater *Sporophila melanops* (CR).

Countries in Geographic Regions.

The following countries are included in the three major high-diversity geographic regions that we analyzed: SAIC (which is the region spanned by Southeast Asia – India – China), tropical South America, and Sub-Saharan Africa.

SAIC is composed of: Bangladesh, Brunei, Cambodia, China, Hong Kong, India, Indonesia, Laos, Macao, Malaysia, Myanmar, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Timor Leste, Vietnam.

Sub-Saharan Africa is composed of: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Republic of Congo, Côte d'Ivoire, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Tropical South America is composed of: Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, Venezuela.

Land Clearing, Income and Extinction Risks.

To investigate possible drivers of countries' mean extinction risk values, we performed separate ordinary least squares regressions of mean national extinction risk of mammals and birds against the proportion of a country's land that was cropland in 1961; the ratio of per capita GDP in 2010 to that in 1961; the ratio of cropland area in 2010 to that in 1961; the body mass class, and a full factorial of interactions among these last three variables. We excluded countries with missing data. The three-way interaction between body mass, GDP ratio and cropland ratio was significant in both mammal and bird models. We refer to these two regressions as the 'extinction risk regressions'. Effect sizes and significance levels are shown in Supplementary Table 1. We then repeated the analysis using the percent of species in a country that were threatened (that is, Vulnerable, Endangered or Critically Endangered) as the dependent variable. Results were very similar, and effect sizes and significance levels are shown in Supplementary Table 2.

We then used each extinction risk regression model to provide qualitative projections of future extinction risks for mammals or birds. We used projected 2060 per capita GDP (as 2060:1961 ratios) and projected 2060 harvested land areas (as 2060:1961 ratios) under the BAU forecasts (see below) to obtain estimated mean extinction risk for each country with available data. We average the resultant country-level predictions across all the countries of each region. We present only mean regional results since many threatened species occur across much or all of a region and thus are impacted by the full suite of countries. Analyses that are much more detailed than ours will be needed to determine the potential future statuses of particular species in particular nations of a region.

Because of the logical impossibility of threat values greater than 5, the difficulty in forecasting extinctions, and the likelihood of conservation actions reducing extinction risk in severely threatened species[44,46,81], we used a Michaelis-Menten function (Supplementary Fig. 3) to modify model forecasts of extinction risks that were greater than 3 (equivalent to all species in a country being endangered), such that values above 3 would asymptotically approach a value of 5. Similarly, we set a lower limit of 0 since extinction risks cannot fall below this – equivalent to all species in a country being categorised as least concern, LC. Results in Fig. 5 are the actual forecasted values if these values fall between 0 and 3. Forecasted risk values above 3 or below 0 have been modified as described above.

A central assumption of our empirical forecasts is that past yield trends, spatial patterning of land clearing, etc. would continue on their 1961 to 2010 trajectories. We stress that actual future extinction risks will depend on how and where threats develop: particularly on where, when and how much land is cleared and on the spatial patterning of land clearing and its degree of fragmentation, and also on the extent of bushmeat hunting, harvesting of species for valued body parts, the pet trade, etc. These in turn will depend on the cultural, socioeconomic and political contexts of each country and how they may change in the future. Rather than making specific forecasts about which species will become threatened, therefore, our analysis is designed to highlight the potential effect of future changes on overall extinction risk in each of the three regions with the highest mammal and bird diversity.

Business-As-Usual 2060 Cropland Demand.

The Business-As-Usual (BAU) 2060 cropland demand forecast was calculated as a country's 2060 projected demand for calories or protein from agricultural crops divided by the crop-weighted caloric or protein yield of that country[129]. Many prior steps and analyses are needed before this estimate of land demand can be calculated. These steps are discussed below.

Economic groups: First, we aggregated countries into nine economic groups consisting of ~15 nations each based on their 2010 per capita GDP Purchasing Power Parity (per capita GDP)[42,43,61]. China and India were not aggregated into economic groups because of their large population size and India's unique meat demand trends, and were treated as two additional groups. Further, former Soviet nations were put into their own economic group because of missing data for a period following the breakup of the USSR.

UN Human Population Growth Estimates, GDP and per capita GDP: We use UN annual data for 1961–2010 as the past population sizes of each country, UN FAO data on GDP of each country for this period, and calculate from these data per capita GDP for each nation and year. We use the UN's medium fertility population forecasts[60] as the expected population size of each nation in 2060. A variety of sources provide estimates of future GDP[42,43,59,130]. To ensure that our estimates for 2060 are internally consistent with each other, we used reported past per capita GDP for each country and published projections of its future economic growth rates, or those of countries in its region[42,43,59,130], to forecast per capita GDP to 2060 using an empirically-fit Kuznet's-like function between per capita GDP and the annual growth rate of per capita GDP[61]. For Sub-Saharan Africa, for instance, our method gives 2060 national projections that are similar to, but often slightly less than those from the African Development Bank[130] and the OECD[59] for those countries for which 2060 forecasts had been made.

Food and Crop Demand: We forecast per capita food demand as in Tilman and Clark (2014)[62] via observed relationships between historical per capita GDP and food demand (total demand, meat demand, and milk + egg demand) that were fit to a Gompertz 4p function (Supplementary Fig. 1a). Because India has a uniquely low per capita meat demand trend, we instead forecast India's per capita meat demand using a square root fit between India's per capita meat demand and India's per capita GDP as in Tilman and Clark (2014)[62]. We estimated future per capita food demand for total calories, meat, and milk + eggs for each nation assuming that each nation starts at their historic 2010 food demand and then converges to the global income-dependent food demand trend as countries become more affluent.

To calculate projected animal feed demand, we assumed that feed conversion ratios (feed inputs per unit of livestock produced) and pastureland productivity remain constant at 2010 levels for the duration of our projection. We estimated feed conversion ratios using historical 2010 food demand and a literature search of feed conversion ratios by livestock product as in Tilman and Clark (2014)[62]. In addition, we estimated 2010 pastureland productivity to be the difference between estimated feed requirements given historical dietary patterns and reported feed use from the FAO's Food Balance Sheets, and assume that pastureland productivity remains constant in the future. We then calculated projected feed demand for each country using the following equation:

$$FeedDemand_t = \sum_m (Demand_{m,t} * FCR_m) - PastureProductivity_{2010}$$

where $FeedDemand_t$ is projected total feed demand in a country for year t, $Demand_{m,t}$ is projected total demand for livestock product m at time t, FCR_m is the feed conversion ratio for livestock product m, and $PastureProductivity_{2010}$ is historical pasture productivity in 2010.

Crop Yields: Here we focus on the yields measured as kilocalories or tonnes of protein per hectare for each economic group. To determine yields for each economic group, the sum of the total kilocalorie or protein production for all crops of an economic group in a given year is divided by the total area harvested in that economic group in that year. Using such data, we estimated annual yield increases using fitted linear relationships between yields and year for each economic group as in Tilman and Clark (2014)[62] (Supplementary Fig. 1b). We then forecast crop yields to 2060 for each nation by starting at each nation's 2010 observed kilocalories or protein yield and using the annual yield increment (slope of fitted line) of their economic group from the aforementioned model (Supplementary Fig. 2a). To prevent a nation from being forecast as achieving a yield that might be unattainable, we limited yields to maximums for each country that were the mean of country-specific maximum potential yield estimates from Mueller et al (2012)[103] and the Yield Gap Atlas (2016)[104] (Supplementary Fig. 2b).

Agricultural Trade: We integrated trade into our BAU model by assuming that future trade patterns remain similar to current patterns. Thus our calculations assume that nations which were net-importers of crops in 2010 will continue to meet the same proportion of their total crop demand from imports as they currently do. Future global exports from nations that are currently net-exporters were kept at the current (2010) relative export ratios among all exporting nations.

Cropland Demand: We used the United Nation's 2060 population forecasts for each nation and our forecasts of country-specific per capita food demand and crop yields to estimate future land demand in 2060 for 153 nations[61]. We reported future land demand as a ratio, called the land demand ratio, of projected 2060 cropland demand to 2010 cropland area. A ratio of 1 indicates that a country's 2060 land demand is identical to its 2010 land demand; a ratio greater than 1 indicates an increase in land demand; a ratio less than 1 indicates a decrease in land demand.

Future Cropland Limited to UN FAO Arable Estimates: We set the maximum potential area of cropland in each nation as the greater of either the United Nation's estimates of potential arable land[131] or the area that is currently being cropped. Depending on the yields they might attain in the future, countries may not be able to meet their future crop demand because of a limited area of potentially arable land. The excess crop demand that cannot be met in these countries is assumed to be met via trade with other countries based on the proportions of global production that each country meets.

Cropland Demand for Alternative Yield, Trade, and Diet Scenarios.

Closed Yield Gap via Sustainable Yield Intensification: Many nations currently have yields that are half or less than the potential yields they could achieve via sustainable yield intensification. As an estimate of the maximum potential yield for each nation for the sustainable yield intensification scenario, we use the average of the maximum yield potential estimated by Mueller et al (2012)[103] and by the Global Yield Gap Atlas (2016)[104]. We then estimate future land demand assuming that each nation will, by 2060, decrease the difference between their projected 2060 yield and their maximum potential yield by 80% (Supplementary Fig. 2c).

Leveraging International Trade: For this scenario, we had an additional 20% of total crop demand of each nation not in economic groups A or B be met by exports from nations in groups A and B, but with trade being explicitly from high-yielding to low-yielding nations. We then calculate the impact of this "Leveraged Trade" on land demand for both the exporting and importing nations.

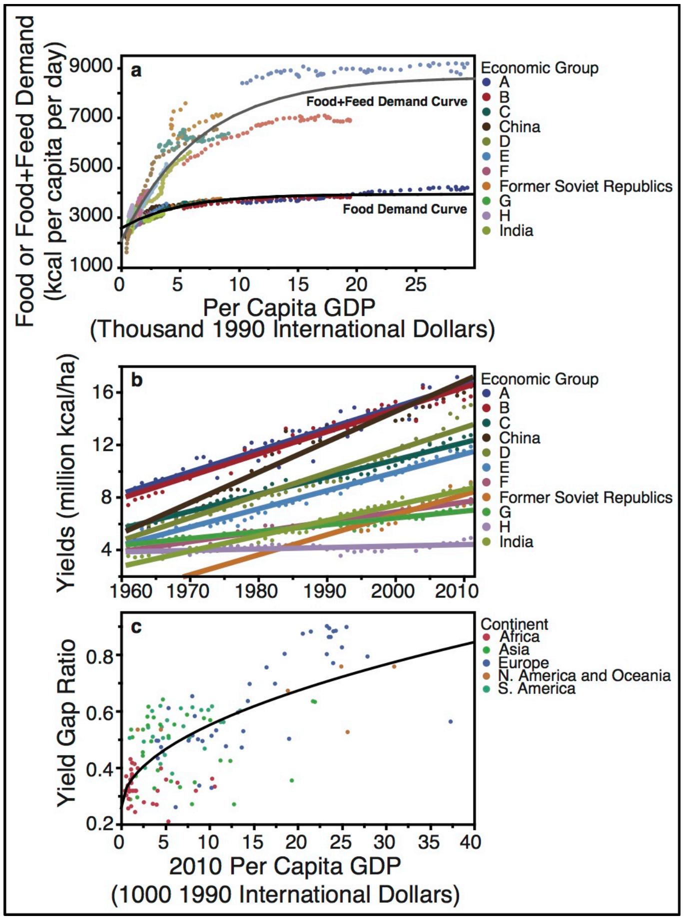
Dietary Changes: To explore the effect of dietary shifts on the land demand ratio we created a scenario whereby the national forecast of 2060 meat consumption, as used in the BAU scenario, is reduced by half for the Dietary Change scenario. Total consumption under this scenario is kept identical to the BAU scenario, but with half of the meat consumption being replaced by consumption of milk and eggs (with the ratio of milk:eggs based on historic consumption patterns for each country).

Combined Scenario: We also explored the effects of combining all three approaches, creating a scenario where yield gaps were closed by 80%, an extra 20% of total crop demand in countries outside economic groups A and B was met by imports from high-yielding countries, and half of BAU estimated 2060 meat demand was replaced by a combination of milk and eggs.

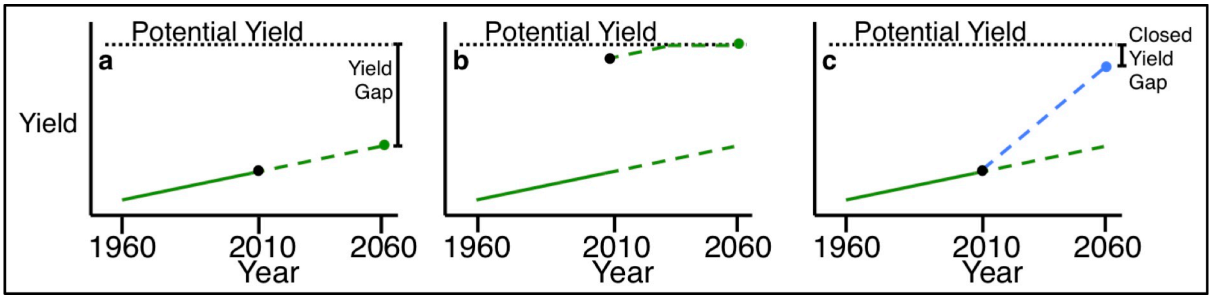
Supplementary References

126. Butchart, S. H. M., et al. Measuring Global Trends in the Status of Biodiversity: Red List Indices for Birds. *PLoS Biology*, **2**, e383. (2004)
127. Butchart, S. H. M. & Bird, J. P. Data Deficient birds on the IUCN Red List: What don't we know and why does it matter? *Biol. Conserv.* **143,** 239–247 (2010).
128. Salafsky, N. *et al.* A standard lexicon for biodiversity conservation: unified classifications of threats and actions. *Conserv. Biol.* **22,** 897–911 (2008).
129. Food and Agriculture Organization of the United States. FAOStat. (2016).
130. African Development Bank Group. Africa in 50 Years ' Time. The Road Towards Inclusive Growth. 72 (2011).
131. FAO. Land resource potential and constraints at regional and country levels. *World Soil Resour. Reports* **90,** 1–114 (2000).

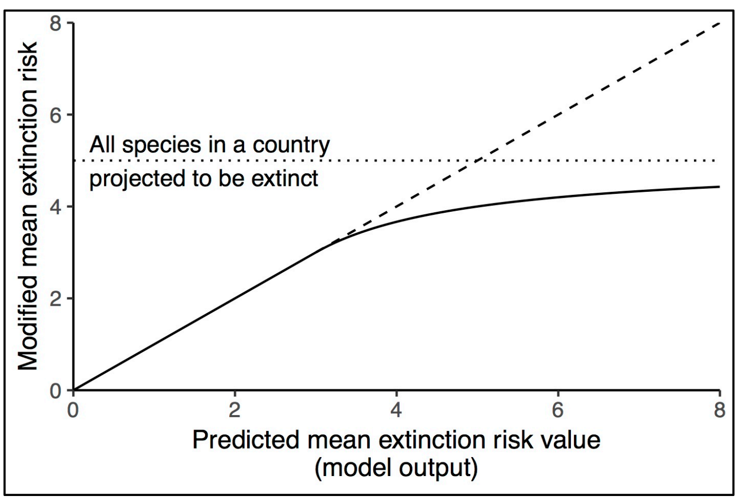
Supplementary Figures



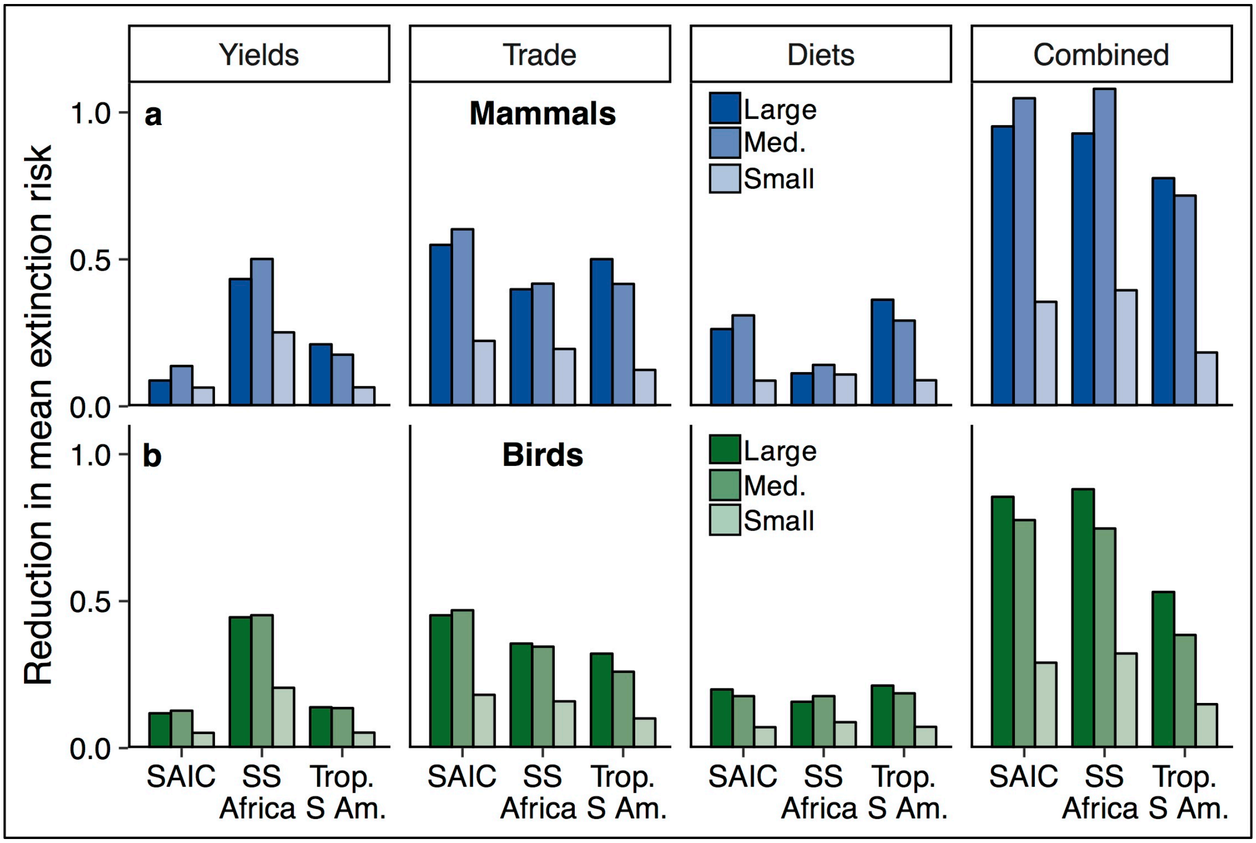
Supplementary Figure 1 | Food Demand, Yield Trends and Yield Gap Ratios. a Income-dependence of per capita demand for food (lower curve, dark dots) and for both food and livestock feed (upper curve, light dots). Economic groups are sets of ~15 nations with similar per capita GDP PPP in 2010. Group A contains the wealthiest countries; Group H the least wealthy. Note that in wealthy nations, ~9000 kcal/day must be grown for each person to obtain ~3000 kcal/day for consumption. **b** Yield trends for groups of economically similar countries in 2010. **c** Relationship between the yield gap ratio and per capita GDP of each country. The yield gap ratio is 2010 yield divided by mean maximum potential yield as estimated by references 40 and 41.



Supplementary Figure 2 | Visualization of yields scenarios for BAU and sustainable yields intensification scenarios. For all panels, green line shows an economic group's yield trajectory (solid = historical, dashed = projected); black dot shows a country's historical 2010 yields; dashed black line shows the country's maximum potential yield; colored dots indicate forecast yields. **a** Yields in 2010 match the economic group average and, under the BAU scenario, increase at the historical rate of the economic group. **b** Yields in 2010 are higher than the economic group average and the historical yield trajectory would cause the country's yield to surpass its maximum potential yields. The 2060 forecast yields are therefore capped at the country's maximum potential yield. **c** Yields in 2010 match the economic group average, but, under the sustainable yields intensification scenario, the forecast yield gap in 2060 (black brackets) is decreased by eighty percent.



Supplementary Figure 3 | Schematic showing relationship how outputs from the extinction risk models were modified to produce meaningful mean threat level projections bounded by 5 (all species extinct). The solid line shows the projected values we used; the dashed line shows the one-to-one relationship between model output and projected mean threat level; the dotted line shows a projected mean threat level of 5, equivalent to all the species in a country being extinct, or extinct in the wild. For predicted mean extinction risks greater than 3, a Michaelis-Menton function was used to impose a threat level of 5 as the upper asymptote. This was only applied to predicted risk values greater than 3, and specifically only to the amount by which it was greater than 3.



Supplementary Figure 4 | Reductions in regional extinction risk from proactive conservation efforts. Projected reductions in mean extinction risk values when compared to the BAU scenario for **a** mammal and **b** bird species in the three focal regions under different proactive conservation scenarios. In the "Yields" scenario, yield gaps are reduced by 80% (see Supplementary Fig. 2); in "Trade" an extra 20% of a country's food demand is met through imports from high yielding countries; in "Diets" half of the calories from meat are replaced with milk and eggs; in "Combined" all three measures are used**.** Scenarios are described in detail above. Note that the reduction in risk is absolute, with a value of 1 corresponding to a shift in mean extinction risk equal to an entire Red List category, such as from Vulnerable to Near Threatened, or Critically Endangered to Endangered. Benefits from the three scenarios are roughly additive and are likely to be underestimates of the true benefits of proactive conservation as they do not account for wise land-use planning that could reduce habitat fragmentation from agricultural expansion and conserve larger blocks of habitat (see main text for details).

Supplementary Tables

Supplementary Table 1 | Model results for regression of mean extinction risk value of a country against economic and environmental changes. **a** Results for mammals: $F_{12,110} = 20.6$, $p < 0.0001$, $r^2_{adj} = 0.69$ **b** Results for birds $F_{12,110} = 48.5$, $p < 0.0001$, $r^2_{adj} = 0.84$.

a Variable	**Estimate ± s.e.**	**t ratio**	**Prob (> |t|)**
Intercept	-0.046 ± 0.13	-0.36	0.72
Proportion of country in harvested land (1961)	1.01 ± 0.26	3.84	0.0002
per capita GDP: Ratio of per capita GDP (2010:1961)	0.12 ± 0.016	7.36	< 0.0001
HR: Ratio of area of harvested land (2010:1961)	0.13 ± 0.040	3.16	0.0020
MM: Mass class (medium)	-0.025 ± 0.050	-0.5	0.62
ML: Mass class (large)	0.56 ± 0.01	11.26	< 0.0001
(*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.084 ± 0.012	6.75	< 0.0001
MM by (*per capita GDP* – 3.19) interaction	0.026 ± 0.022	1.15	0.25
ML by (*per capita GDP* – 3.19) interaction	0.073 ± 0.022	3.25	0.0015
MM by (*HR* – 2.29) interaction	0.022 ± 0.055	0.4	0.69
ML by (*HR* – 2.29) interaction	0.078 ± 0.055	1.43	0.16
MM by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.015 ± 0.017	0.89	0.38
ML by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.053 ± 0.017	3.08	0.0026

b Variable	**Estimate ± s.e.**	**t ratio**	**Prob (> |t|)**
Intercept	0.15 ± 0.063	2.35	0.021
Proportion of country in harvested land (1961)	0.47 ± 0.13	3.56	0.0006
per capita GDP: Ratio of per capita GDP (2010:1961)	0.048 ± 0.080	6.10	< 0.0001
HR: Ratio of area of harvested land (2010:1961)	0.047 ± 0.020	2.35	0.021
MM: Mass class (medium)	–0.20 ± 0.025	–7.88	< 0.0001
ML: Mass class (large)	0.54 ± 0.025	21.54	< 0.0001
(*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.033 ± 0.0062	5.33	< 0.0001
MM by (*per capita GDP* – 3.19) interaction	0.00013 ± 0.011	–0.01	0.99
ML by (*per capita GDP* – 3.19) interaction	0.026 ± 0.011	2.91	0.0044
MM by (*HR* – 2.29) interaction	-0.00015 ± 0.028	–0.01	1.0
ML by (*HR* – 2.29) interaction	0.026 ± 0.028	0.95	0.34
MM by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	-0.00088 ± 0.0087	–0.10	0.92
ML by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.022 ± 0.0087	2.53	0.013

Supplementary Table 2 | Model results for regression of percent of threatened species in country against economic and environmental changes. a Results for mammals: $F_{12,110} = 17.8$, $p < 0.0001$, $r^2_{adj} = 0.66$ **b** Results for birds $F_{12,110} = 39.3$, $p < 0.0001$, $r^2_{adj} = 0.81$.

a Variable	**Estimate ± s.e.**	**t ratio**	**Prob (> |t|)**
Intercept	-1.7 ± 4.6	-0.38	0.71
Proportion of country in harvested land (1961)	34 ± 10	3.53	0.0006
per capita GDP: Ratio of per capita GDP (2010:1961)	4.0 ± 0. 57	6.99	< 0.0001
HR: Ratio of area of harvested land (2010:1961)	4.0 ± 1.4	2.75	0.0070
MM: Mass class (medium)	-0.71 ± 1.8	10.29	0.69
ML: Mass class (large)	19 ± 1.8	-0.40	< 0.0001
(*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	2.9 ± 0.45	6.52	< 0.0001
MM by (*per capita GDP* – 3.19) interaction	0.81 ± 0. 81	1.00	0.32
ML by (*per capita GDP* – 3.19) interaction	2.5 ± 0.81	3.15	0.0021
MM by (*HR* – 2.29) interaction	0.52 ± 2.0	0.26	0.80
ML by (*HR* – 2.29) interaction	2.7 ± 2.0	1.37	0.17
MM by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.51 ± 0.63	0.81	0.42
ML by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	1.9 ± 0.63	2.98	0.0035

b Variable	**Estimate ± s.e.**	**t ratio**	**Prob (> |t|)**
Intercept	6.6 ± 2.1	3.09	0.0026
Proportion of country in harvested land (1961)	12 ± 44	2.70	0.0079
per capita GDP: Ratio of per capita GDP (2010:1961)	1.0 ± 0.27	3.91	0.0002
HR: Ratio of area of harvested land (2010:1961)	0.80 ± 0. 67	1.19	0.24
MM: Mass class (medium)	-6.4 ± 0.84	-7.55	< 0.0001
ML: Mass class (large)	16 ± 0. 84	19.55	< 0.0001
(*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0. 63 ± 0.21	3.03	0.0031
MM by (*per capita GDP* – 3.19) interaction	0.12 ± 0. 38	0.32	0.75
ML by (*per capita GDP* – 3.19) interaction	0.69 ± 0.38	1.84	0.069
MM by (*HR* – 2.29) interaction	0.48 ± 0.93	0.52	0.60
ML by (*HR* – 2.29) interaction	0.14 ± 0.93	0.15	0.88
MM by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.069 ± 0.29	0.23	0.81
ML by (*per capita GDP* – 3.19) by (*HR* – 2.29) interaction	0.38 ± 0.29	1.31	0.19

Supplementary Table 3 | Main global threats and threatening mechanisms for all terrestrial mammals and birds, and the number of species affected.

Class	No. threatened species	Mechanism	Threat	No. species threatened (% of all)
Mammals	1179	Habitat loss	Agriculture	866 (73.5)
			Biological resource use	671 (56.9)
			Development	474 (40.2)
		Direct mortality	Biological resource use	560 (47.5)
			Invasive species	153 (13)
Birds	1261	Habitat loss	Agriculture	1048 (83.1)
			Biological resource use	751 (59.6)
			Development	544 (43.1)
		Direct mortality	Biological resource use	482 (38.2)
			Invasive species	270 (21.4)

Supplementary Table 4 | Data used to fit extinction risk regressions and percent of threatened species regressions. Provided as separate Excel file.