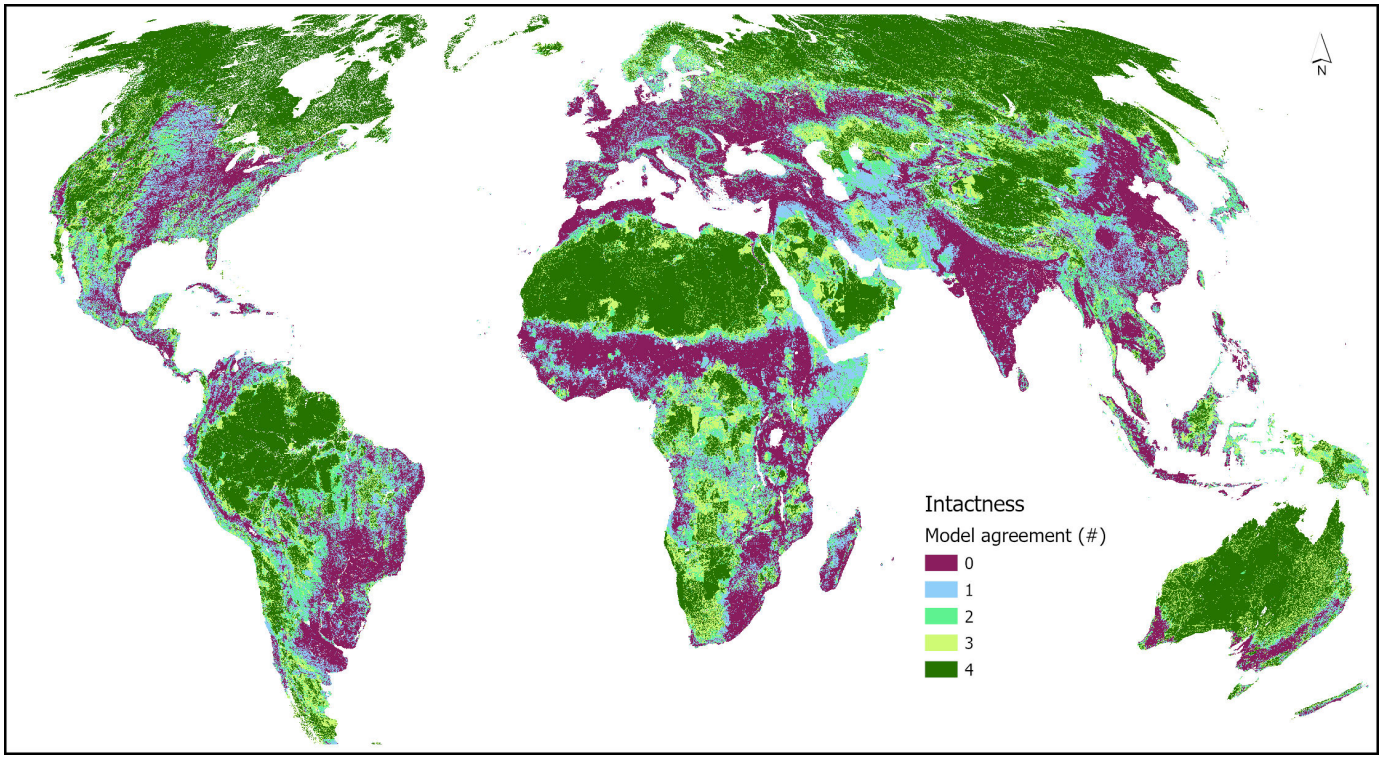
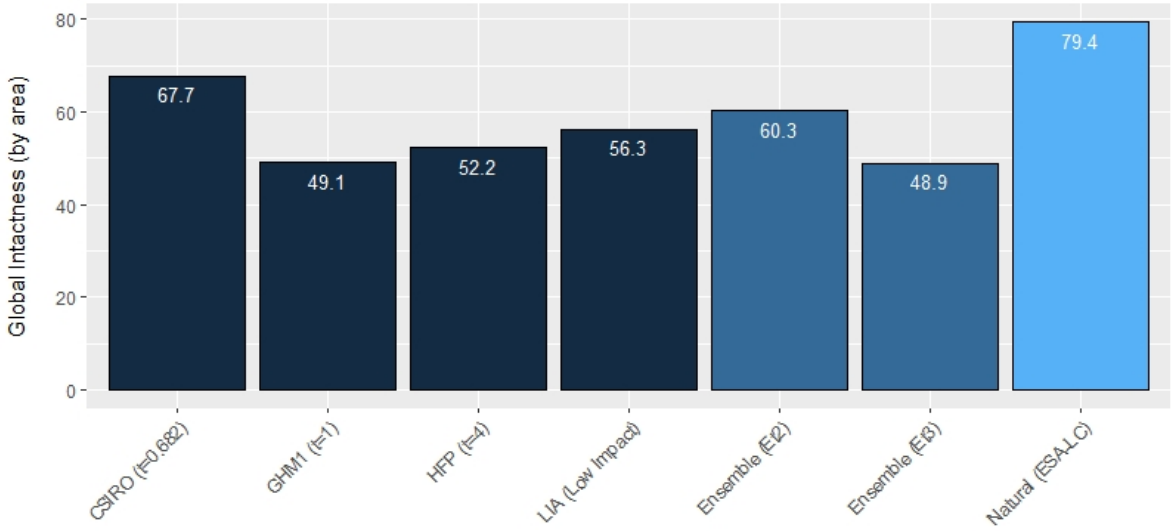
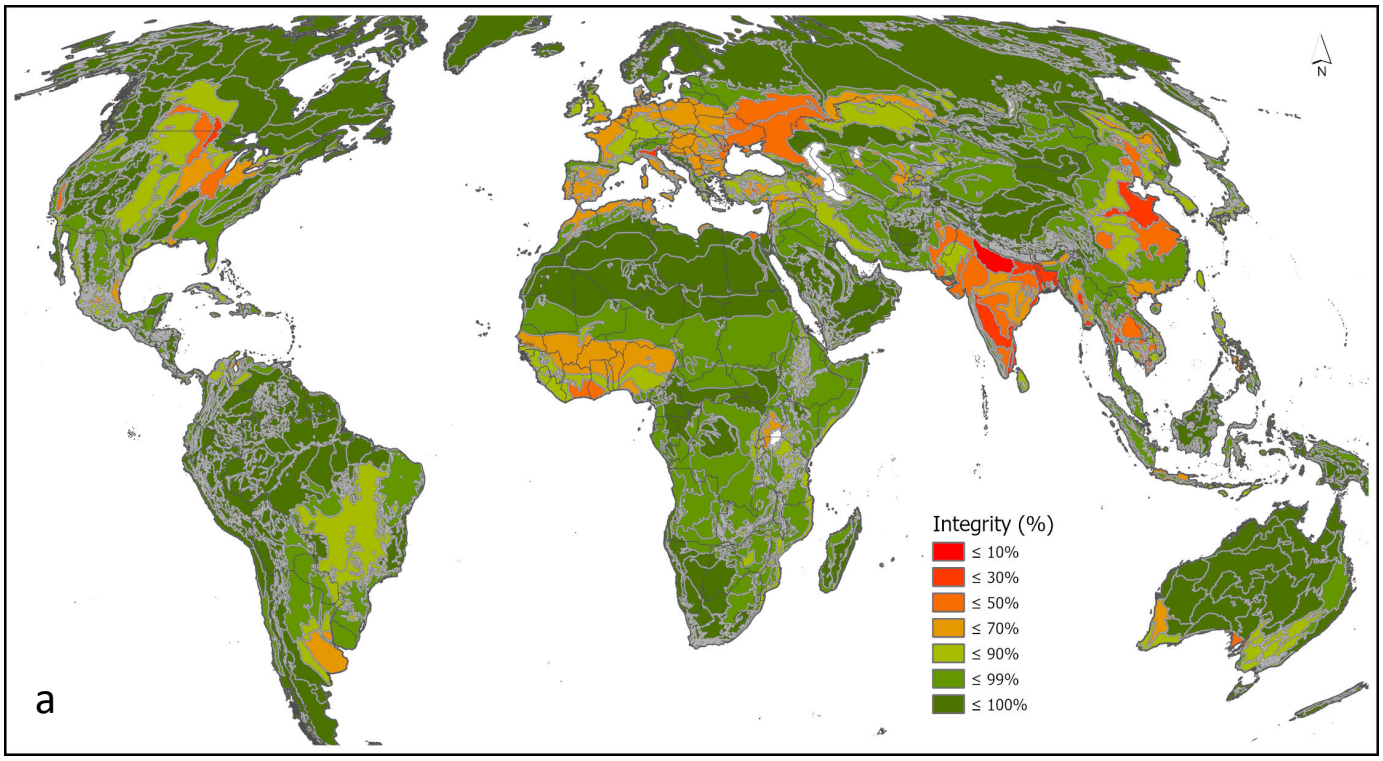
Supplemental Figure 1: Map of model agreement of the four intactness layers. A value of four indicates 100% agreement of models of intactness. A value of zero indicate 100% agreement the area is not-intact.

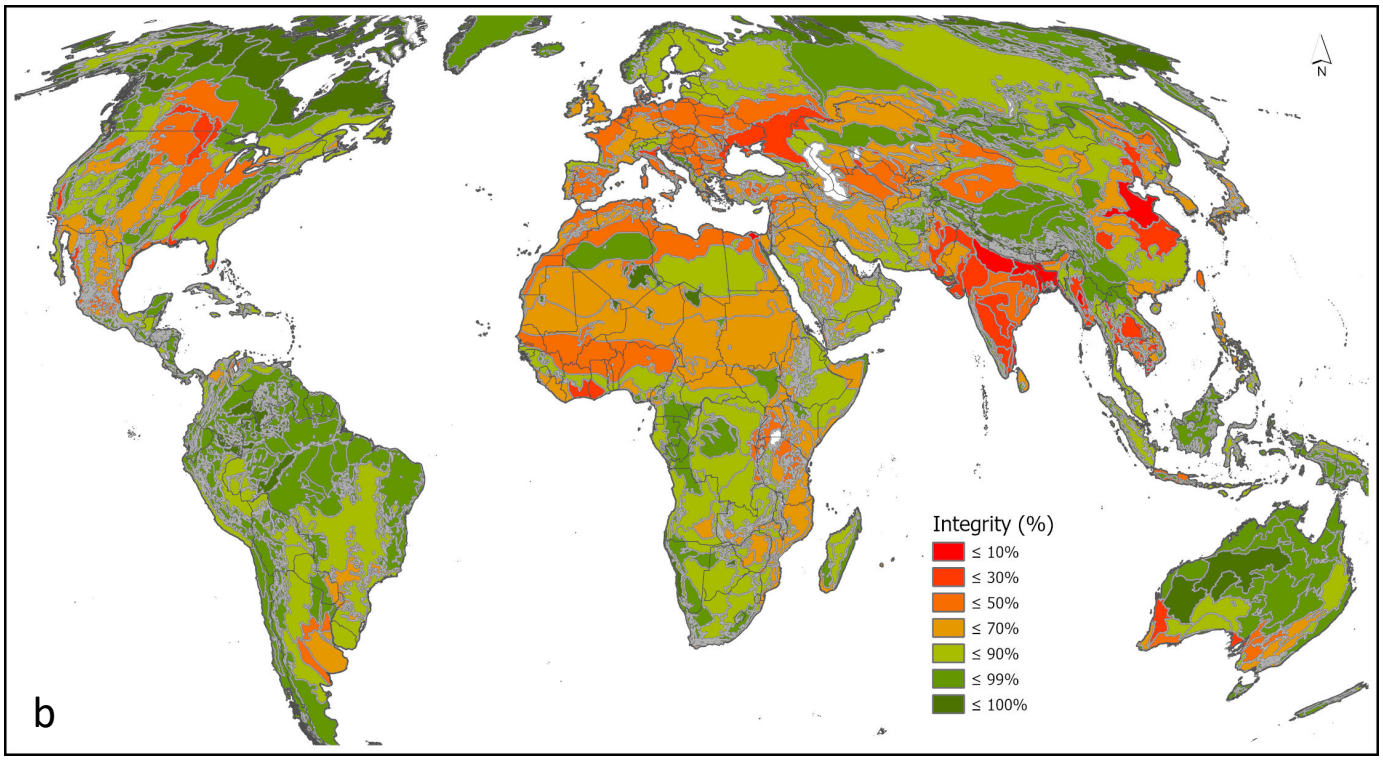


Supplemental Figure 2: Chart of global intactness with threshold applied for each intactness layer, the two ensemble models and the ESALLC map classed as 'natural' in this paper.



Supplemental Figure 3: Maps of ecosystem integrity with two different spatial definitions. (a) Percent of lands with integrity values above 10% for the entire ecoregion; (b) Percent of only human dominated lands with integrity values above 10%.





Supplemental Table 1: Four layers of human modification or habitat condition of land including justification for selecting thresholds of intactness.

Human Footprint map [HP4][1] Year represented: ~2009; Resolution: 1x1 km https://datadryad.org/stash/dataset/doi:10.5061/dryad.052q5
Description: This map represents cumulative human pressure on the environment. The HF map is an index scaled from 0 to 50 based on the summation of eight global data layers: 1) human population density, 2) built-up areas, 3) cropland, 4) pastureland, 5) night-time lights, 6) roads, 7) railroads and 8) navigable rivers. HF = 0 represents unmodified land and 50 represents completely modified land (e.g., urban).
Threshold: We use HF <= 4.0 based on a review of previous studies. Mokany et al.[67] used HF < 3 based on 'extensive experience of the [CSIRO] co-authors'. Maron et al.[31] also used HF < 3. Jacobson et al.[2] used HF < 4 as part of a cross-data comparison, but because the percent land matched other datasets, but not for biological reasons. Jones et al.[66] also used HF > 4 as a threshold criterion for intense human activity. Watson et al.[71] also used HF > 4 as this value equates to a human pressure score equal to pasture lands, representing a reasonable approximation of when anthropogenic land conversion has occurred to an extent that land is human dominated and can no longer be considered "natural." Di Marco et al.[72] used HF > 4 where species are far more likely to be threatened by habitat loss. Locke et. al.[69] used HF < 4 and Goldewijk[73] <0.5.
Low Impact Areas [LIA] (Jacobson et al. 2019) Year represented: ~2015; Resolution: 1x1 km https://datadryad.org/stash/dataset/doi:10.5061/dryad.z612jm67g
Description: Categorical data set showing current human impact on the terrestrial environment derived from seven global stressor datasets: human population, livestock density, forest change, land cover and nighttime lights. LIA assumes interactions between pressures are additive. LIA includes some national reserves and protected areas with IUCN I-IV status.
Threshold: Human impacts are classified as very low, low or other. LIAs are "areas where natural processes predominate, but are not necessarily places with intact natural vegetation, ecosystem processes, or faunal assemblages". The difference between the very low LIA and low LIA is that low LIA did not consider distance to roads as a variable and scaled human and livestock densities using the global aridity index. Jacobson et al. (2019) explain that data on roads is very inconsistent between countries and list several serious problems with using the road dataset in determining LIAs. For this reason, we selected the "low" not the "very low" LIA category.
Global Human Modification Index[3] Year represented: ~2016; Resolution: 1x1 km https://figshare.com/articles/Global_Human_Modification/7283087
Description: This map represents the percentage of land modified by humans derived from global data on five stressors (13 stressor datasets): human settlements (population density, built-up areas), agriculture (cropland, livestock), transportation (roads, tracks, railroads), mining and energy production (mining, oil wells, wind turbines), electrical infrastructure (powerlines, nighttime lights). Stressor data had a median date of 2016. The degree of human modification was calculated as the per-pixel product of spatial stressors (spatial extent and expected intensity of impact) with stressors scaled from 0 to 1 and aggregated by taking the fuzzy algebraic sum (assumes the contribution of a given factor decreases as values from other stressors co-occur).
Threshold: We used a threshold of GHM <=0.1. This represents areas classified by Kennedy et al. 2019 as having a low human modification.
CSIRO Habitat Condition[4] Year represented: ~2015; Resolution: 1x1 km
Description: The CSIRO Habitat Condition layer is a measure of intactness. It was derived by combining statistical downscaling of the Land Use Harmonization land-use classes (using finer resolution remote-sensing, abiotic environmental and population covariates) with condition coefficients from PREDICTS and various other sources (Simon Ferrier, pers. comm. 14 Jan 2020). It is conceptually similar to the Biodiversity Intactness Index (BII) developed by the PREDICTS[5]. We chose to use the CSIRO Habitat Condition layer over the BII because of current shortcomings of the BII[6,7].
Threshold: We selected a threshold of 0.682 following CSIRO recommendations (Simon Ferrier, pers. comms. March 2020). A threshold of 0.9 on the BII was proposed to avoid surpassing planetary boundaries of biodiversity loss[14]. This threshold corresponds to the coefficient the PREDICTS team assigns to the Mature Secondary Vegetation land-use class. For the CSIRO Habitat Condition layer, the coefficient for Mature Secondary Vegetation is 0.682.

Supplemental Table 2: Summary of consistency between each intactness layer and the ESALLC map. Errors are broken down by land cover class to illustrate where human-dominated lands were classed as intact. Inconsistency was the lowest for the Et3 model and mixed land used and rainfed croplands produced the highest inconsistencies.

ESACCI_LC Land Cover Class	CSIRO68	gHM1	HFP4	LIA_LI	Et2	Et3	Avg
10 - Cropland (rainfed)	18.9	16.2	14.2	24.0	16.0	15.0	17.4
11 - Cropland (rainfed, herb)	20.7	19.9	42.6	17.7	20.5	17.8	23.2
12 - Cropland (rainfed, tree/shrub)	0.4	0.1	0.2	0.5	0.2	0.1	0.2
20 - Cropland (irrigated)	4.1	2.9	1.4	3.8	2.6	2.2	2.8
30 - Cropland (>50%) / nat veg (<50%)	26.0	24.2	20.5	22.5	27.3	25.0	24.2
40 - Cropland (<50%) / nat veg (>50%)	29.4	36.3	21.0	30.7	33.1	39.4	31.6
190 - Urban areas	0.5	0.4	0.2	0.7	0.3	0.5	0.4
Consistency	97.4	99.3	98.2	98.7	98.8	99.6	98.7
Inconsistency	2.6	0.7	1.8	1.3	1.2	0.4	1.3

Supplemental Table 3: Summary of intactness (Et3) by biome. Intactness is reported by the number of ecoregions and by area. There are a total of 828 ecoregions; 30 ecoregions were excluded because all four base intactness maps did not have the same spatial extent (0.08% of the land surface). The intactness map covers 132.1 M km^2 of the terrestrial land surface (excluding Antarctica, Greenland Ice Shield, and other small non-mapped areas). The global terrestrial surface is 148.9 M km^2.

Biome_Name	Biome Count (#)	Biome Area (M ha)	Ecoregion Intact (#)	Intact Area (M ha)	Intact % (by area)	Intact % (by ecoregion)
Boreal Forests/Taiga	26	1540	26	1540	100.0%	100.0%
Tundra	32	850	32	850	100.0%	100.0%
Deserts & Xeric Shrublands	97	2628	54	2098	79.8%	55.7%
Temperate Conifer Forests	47	377	26	259	68.6%	55.3%
Montane Grasslands & Shrublands	46	487	17	257	52.9%	37.0%
Tropical & Subtropical Grasslands, Savannas & Shrublands	54	2131	14	271	12.7%	25.9%
Tropical & Subtropical Moist Broadleaf Forests	216	1950	49	802	41.1%	22.7%
Temperate Broadleaf & Mixed Forests	80	1258	13	145	11.5%	16.2%
Mediterranean Forests, Woodlands & Scrub	40	330	6	24	7.3%	15.0%
Flooded Grasslands & Savannas	25	115	3	8	6.9%	12.0%
Tropical & Subtropical Coniferous Forests	15	68	1	1	1.0%	6.7%
Temperate Grasslands, Savannas & Shrublands	46	1059	3	86	8.1%	6.5%
Mangroves	19	33	1	3	8.1%	5.3%
Tropical & Subtropical Dry Broadleaf Forests	55	386	1	3	0.8%	1.8%

Supplemental Table 4: Summary of intactness (Et3) by ecoregion. There are a total of 828 ecoregions; 30 ecoregions were excluded because all four base intactness maps did not have the same spatial extent (0.08% of the land surface). The intactness map covers 132.1 M km^2 of the terrestrial land surface (excluding Antarctica, Greenland Ice Shield, and other small non-mapped areas). The global terrestrial surface is 148.9 M km^2.

Description	Intactness Threshold	# of ER	% of ER	Area Intact (M km^2)	% by area
Intact	>=50%	246	29.7	65.5	49.6
Non-Intact	< 50%	552	69.2	66.6	50.4
Threatened	< 10%	371	44.8	36.1	27.3
Extinct	<1%	206	25.1	18.6	14.1

Supplemental Table 5: Summary of integrity by ecoregion. There were a total of 821 ecoregions; 7 ecoregions were excluded because spatial extent of the ESACI-LC dataset. The integrity map covers 132.2 M km^2 of the terrestrial land surface (excluding Antarctica, Greenland Ice Shield, and other small non-mapped areas). Human dominated lands (Integrity < 1) was 48 M km^2.

Integrity Boundary	Area (M km^2)	% by area	% by area (excl. intact)	% by area (only human-dom. lands)
10%	120.0	90.8	81.8	77.0
20%	117.2	88.7	77.5	67.2
30%	114.6	86.7	73.7	59.7