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SUPPLEMENTARY INFORMATION

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The current and future global distribution and population at risk of dengue

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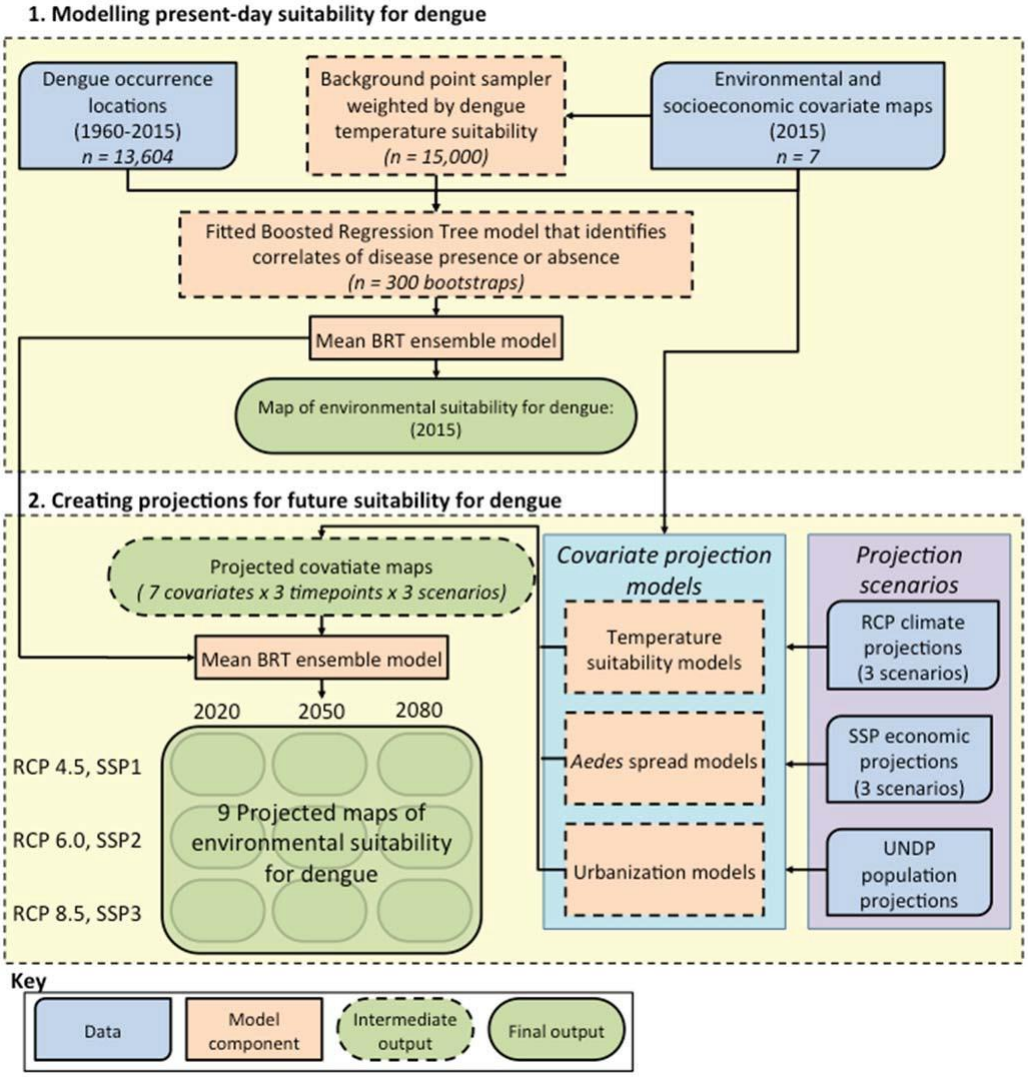
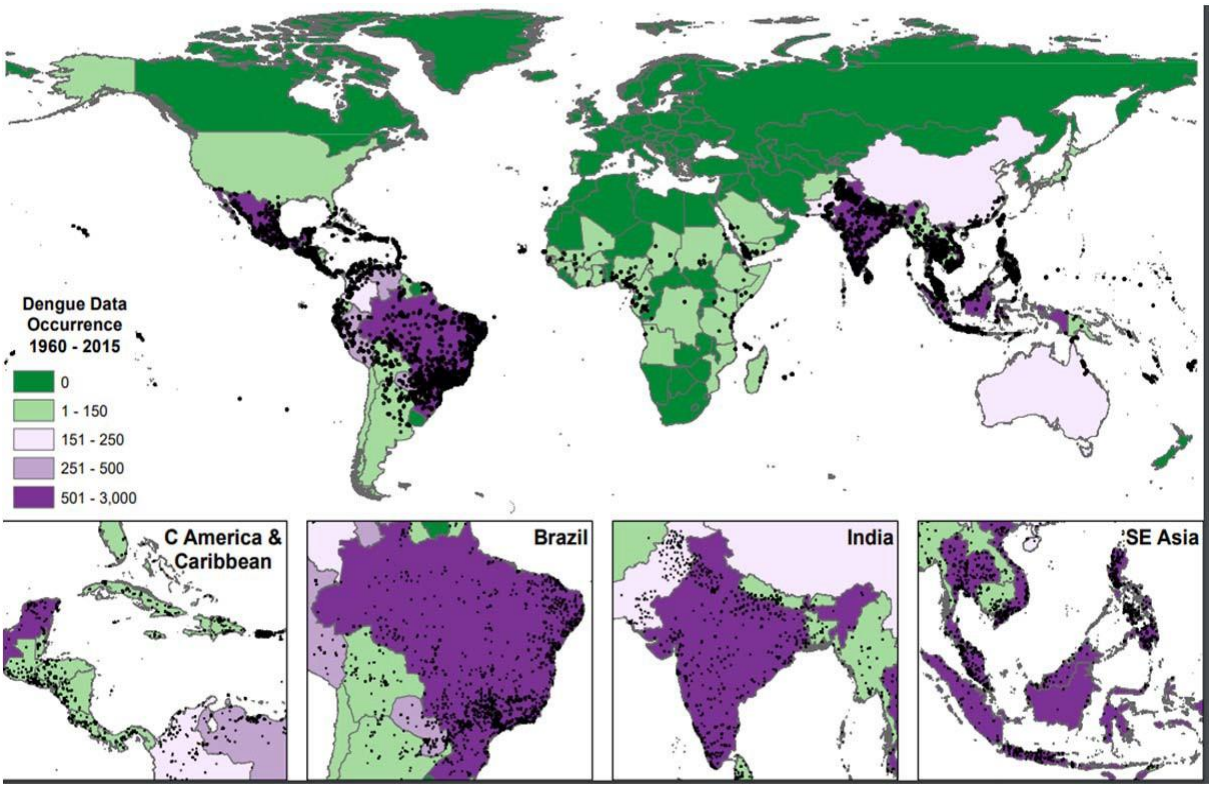


Supplementary Figure 1: Schematic of modelling procedure for mapping present and future environmental suitability for dengue.

A



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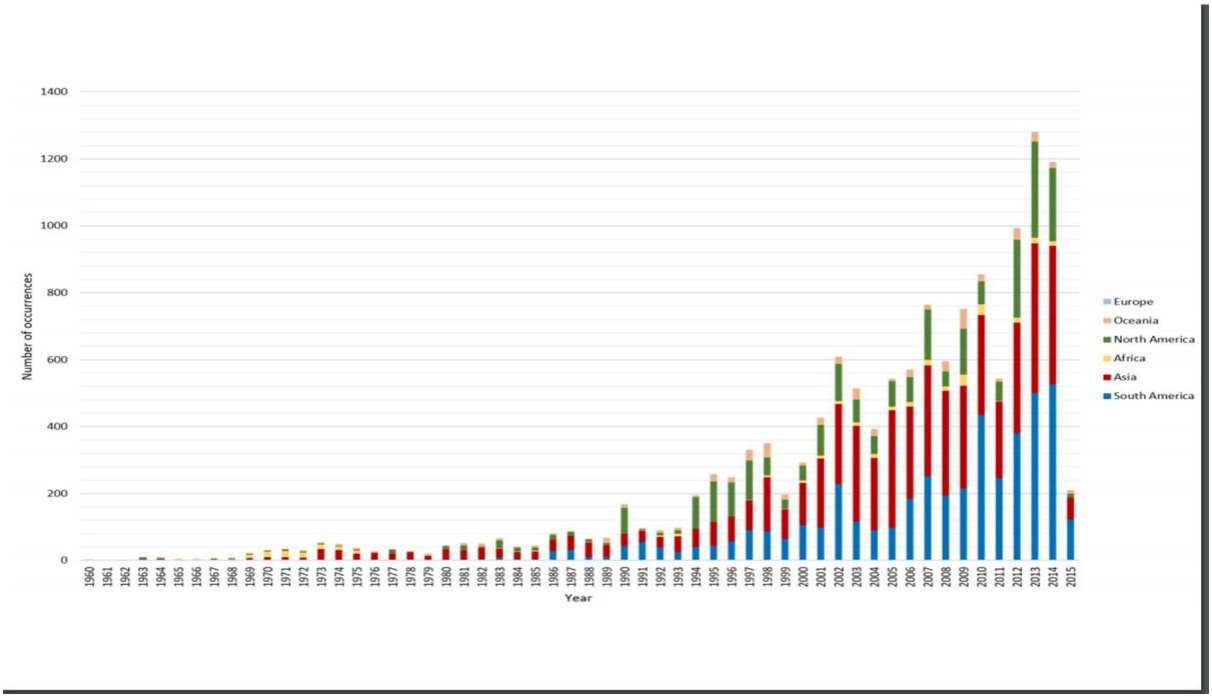
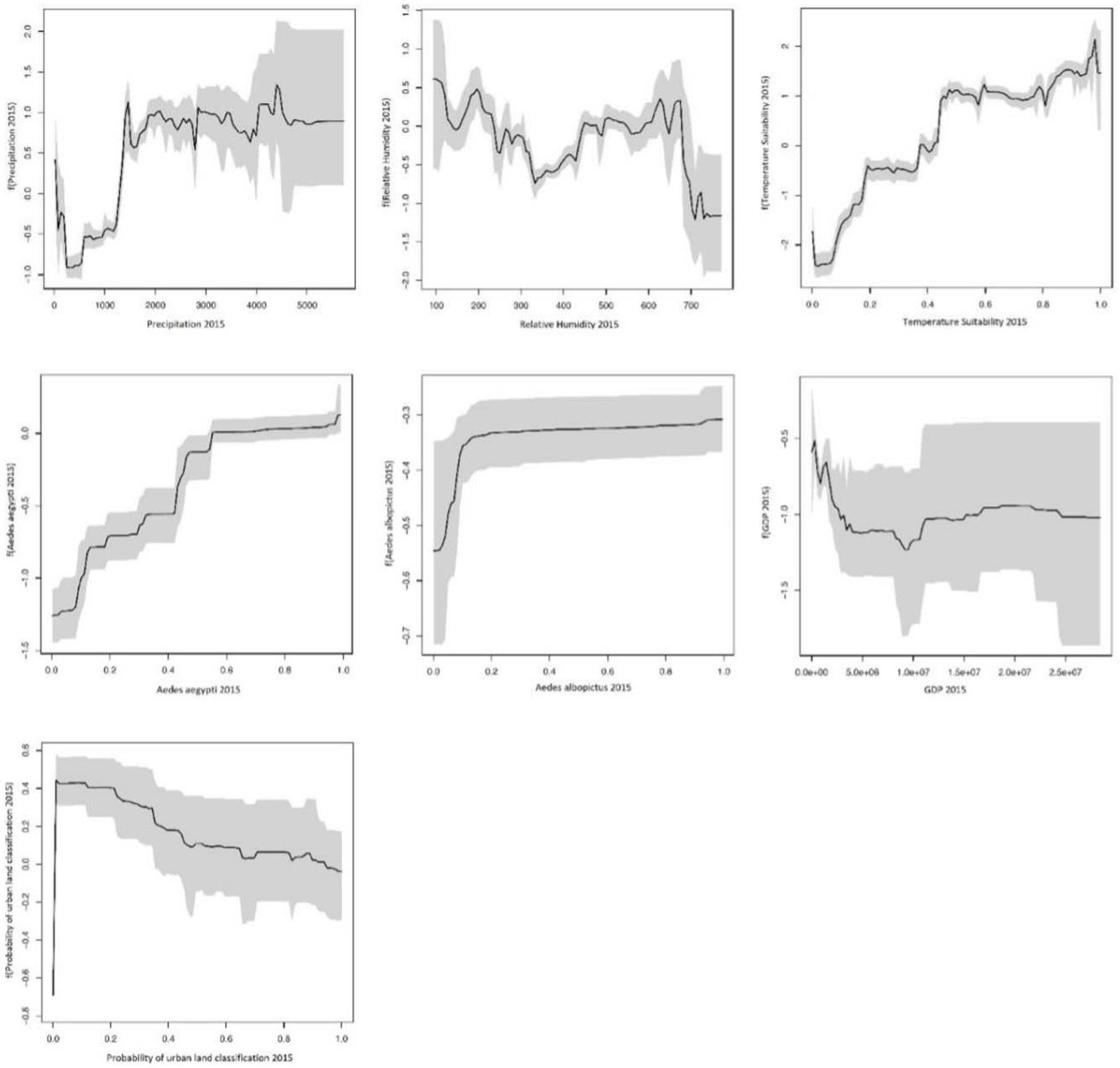
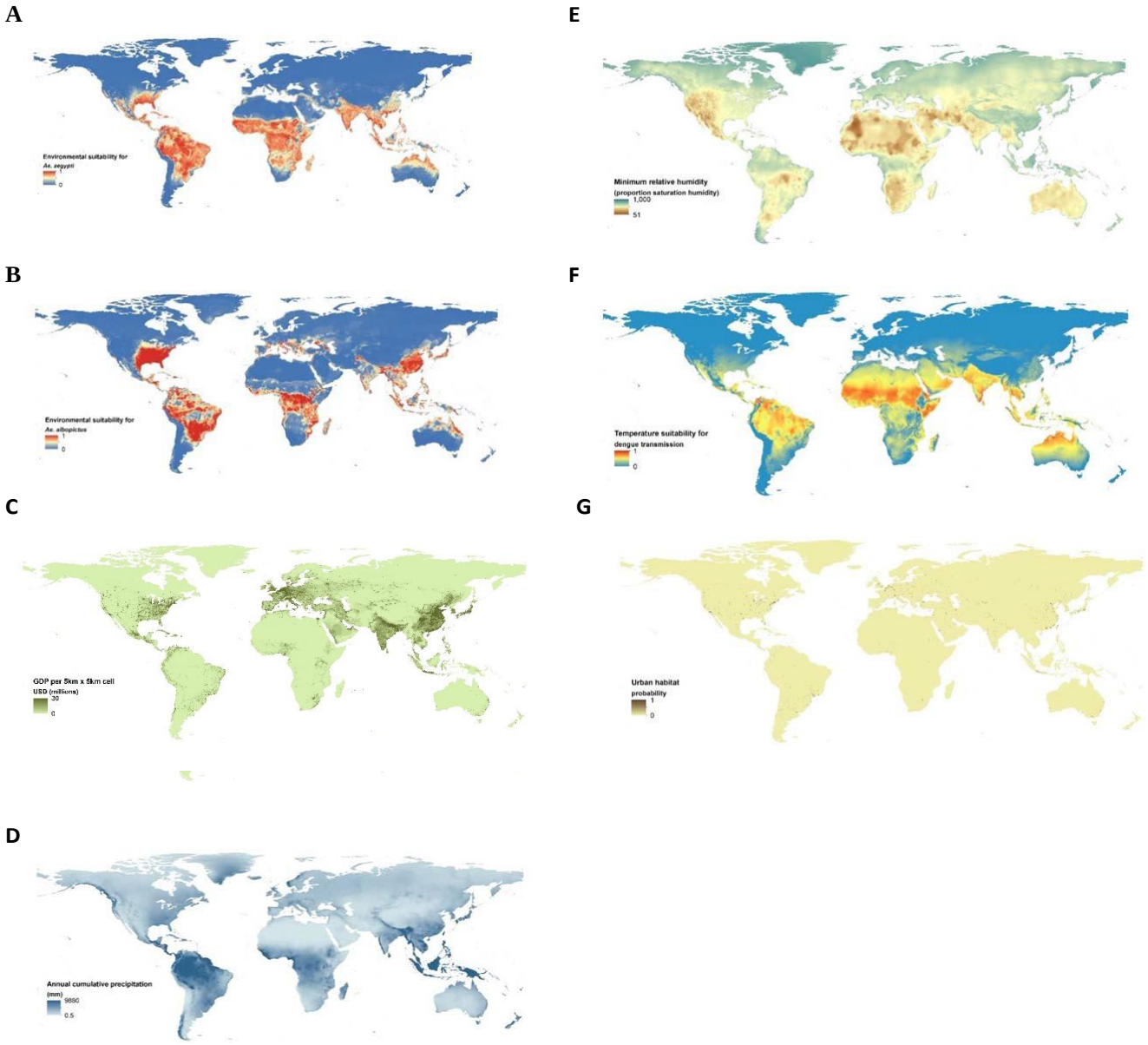


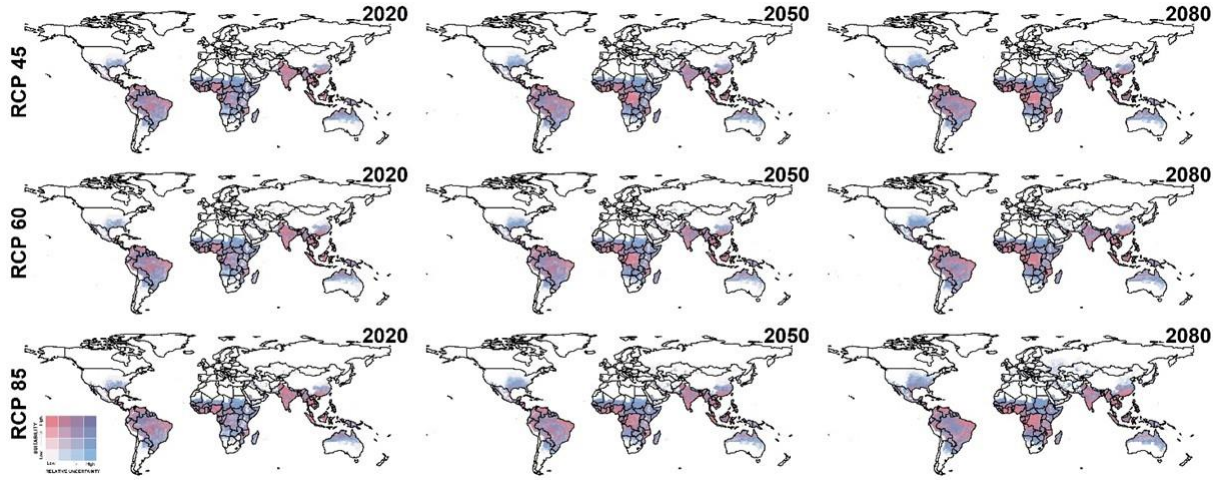
Supplementary Figure 2: (a) locations of the 13,604 occurrence locations used in the Boosted Regression Tree modelling procedure; (b) number of unique dengue occurrence locations per year according to world region.



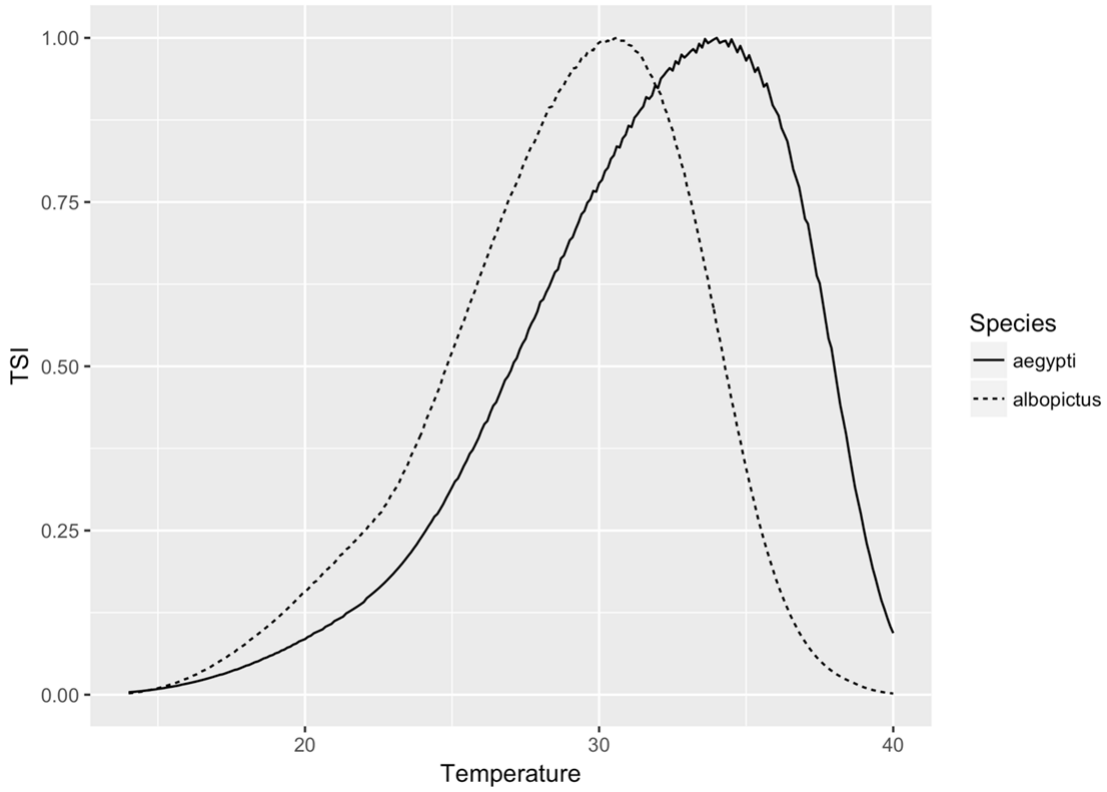
Supplementary Figure 3: Effect plots for covariates entered into the ensemble of Boosted Regression Tree models, including (a) environmental suitability for *Aedes aegypti* (ranging 0-1); (b) environmental suitability for *Ae. albopictus* (ranging 0-1); (c) Gross Domestic Product per 5km x 5km gridded cell (USD); (d) probability of urban habitat type (ranging 0-1); (e) minimum relative humidity (proportion saturation humidity ranging 0-1,000) (f) annual cumulative precipitation (mm); (g) temperature suitability for dengue transmission (ranging 0-1). Shaded areas indicate the 95% confidence interval around predictions for the ensemble of 100 models run.



Supplementary Figure 4: 5 x 5km covariate maps for layers entered into the ensemble of Boosted Regression Tree models for 2015. (a) environmental suitability for *Aedes aegypti*; (b) environmental suitability for *Ae. albopictus;* (c) Gross Domestic Product per cell in $USD millions; (d) annual cumulative precipitation in mm; (e) minimum relative humidity; (f) temperature suitability for dengue transmission; (g) urban habitat probability.



Supplementary Figure 5: Maps of uncertainty in suitability estimates, shaded according to suitability estimates and uncertainty. Areas in white have low uncertainty and low suitability, while areas in purple have high uncertainty and high suitability. Pink areas have low uncertainty and high suitability, while blue areas have low suitability and high uncertainty.



Supplementary Figure 6: Predicted Temperature Suitability Index (TSI) at different fixed temperatures as determined by the model from Brady et al. The optimal temperatures for dengue transmission are predicted to be 34.0˚C and 30.6˚C for *Ae. aegypti* and *Ae. albopictus* respectively which fall in the middle-to-upper range within previous temperature- based dengue transmission models.

Supplementary Table 1: Global Climate Models used for projection of climate variables.

	Model	**Institution**	**Resolution, Lat x Long**	**Reference (see supplementary references for full citation)**
1	BCC-CSM 1.1	Beijing Climate Center, China Meteorological Administration	2.8125 x 2.8125	Wu T (2012
2	BCC-CSM 1.1(m)	Beijing Climate Center, China Meteorological Administration	2.8125 x 2.8125	Wu T (2012
3	CSIRO-Mk3.6.0	Commonwealth Scientific and Industrial Research Organisation and the Queensland Climate Change Centre of Excellence	1.875 x 1.875	Collier MA et al. (2011)
4	FIO-ESM	The First Institute of Oceanography, SOA, China	2.812 x 2.812	Song Z, Qiao F, Song Y (2012)
5	GFDL-CM3	Geophysical Fluid Dynamics Laboratory	2.0 x 2.5	Donner LJ et al. (2011
6	GFDL-ESM2G	Geophysical Fluid Dynamics Laboratory	2.0 x 2.5	Dunne JP et al. (2012)
7	GFDL-ESM2M	Geophysical Fluid Dynamics Laboratory	2.0 x 2.5	Dunne JP et al. (2012)
8	GISS-E2-H	NASA Goddard Institute for Space Studies	2.0 x 2.5	Schmidt GA et al. (2006)
9	GISS-E2-R	NASA Goddard Institute for Space Studies	2.0 x 2.5	Schmidt GA et al. (2006)
10	HadGEM2-ES	Met Office Hadley Centre	1.2414 x 1.875	Collins WJ et al. (2011)
11	IPSL-CM5A-LR	Institut Pierre-Simon Laplace	1.875 x 3.75	Dufresne JL et al. (2013)
12	IPSL-CM5A-MR	Institut Pierre-Simon Laplace	1.2587 x 2.5	Dufresne JL et al. (2013)
13	MIROC-ESM	Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology	2.8125 x 2.8125	Watanabe S et al. (2011)
14	MIROC-ESM-CHEM	Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology	2.8125 x 2.8125	Watanabe S et al. (2011)
15	MIROC5	Japan Agency for Marine-Earth Science and Technology, Atmosphere and Ocean Research Institute (The University of Tokyo), and National Institute for Environmental Studies	1.4063 x 1.4063	Watanabe M et al. (2010)
16	MRI-CGCM3	Meteorological Research Institute	1.125 x 1.125	Yukimoto S (2012)
17	NorESM1-M	Norwegian Climate Centre	1.875 x 2.5	Kirkevag A, et al. (2008) Seland O, et al. (2008)

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