Vector Hazard Report: Malaria in Haiti

Part 1: Climate, Demographics and Disease Risk Maps

Information gathered from products of The Walter Reed Biosystematics Unit (WRBU)

VectorMap
Systematic Catalogue of the Culicidae

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Climate Zones: Haiti

Average monthly temperature and precipitation is presented below according to the Köppen-Geiger Climate classification.
Climate of Haiti: Month of Maximum Precipitation

Month of maximum precipitation compiled from the 50 year average of the WorldClim dataset.
Climate of Haiti: Month of Maximum Temperature

Month of maximum temperature compiled from the 50 year average of the WorldClim dataset.

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Consistent Above and Below Average Precipitation
Areas with consistent above average monthly rainfall over the past 3 months may indicate increased mosquito breeding sites which may lead to increased mosquito-borne disease transmission. Areas with consistent below average rainfall may also indicate increased water storage or ponding which can provide additional habitat for mosquito species that lay eggs in human containers, protected micro environments, or long lasting pools. Updated monthly. -NASA Earth Observations.

Drought Breaking Rain
Areas receiving above average rainfall for the past month and below average rainfall for the previous 12 months. Drought breaking rain may indicate recent suitable conditions for vectors and diseases in a stressed environment or human population. Updated monthly. -WorldClim, Giovanni online data system NASA GES DISC, Tropical Rainfall Measuring Mission (TRMM).

Temperature anomaly
This map shows where earth’s temperatures were warmer or cooler in the daytime for the past month than the average temperatures for the same month from 2001-2010. Updated monthly. -NASA Earth Observations

Land Surface Temperature
This map shows the temperature of the earth’s lands during the daytime. Updated monthly. -NASA Earth Observations

Forest Cover Estimates in Haiti


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Soil Drainage (Harmonized World Soil Database 1.1; 0.02 Deg resolution)
Human Density
LandScan 2011

People/1 sq Km. This product was made utilizing the LandScan (2011)™ High Resolution global Population Data Set copyrighted by UT-Battelle, LLC, operator of Oak Ridge National Laboratory

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Host Densities, Food and Agriculture Organization of the United Nations, 2005

Cows per sq. km

Sheep per sq. km

Poultry per sq. km

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Host Densities, Food and Agriculture Organization of the United Nations, 2005

Pigs per sq. km

Goats per sq. km

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Malaria Risk Maps
Malaria Risk Maps

The number of infectious days (by month) in which the annual temperature regime could support malaria infection.

Gething et al. 2011
Malaria Risk Maps

The normalized $Z(T)$ index of temperature suitability that incorporates the duration and degree of suitability across an average year

Gething et al. 2011

Plasmodium falciparum
Malaria Risk Maps

Stratified estimate proportion of 2-10 year olds in the general population that are infected with *P. falciparum* at any one time averaged over the 12 months of 2010.

-Malaria Atlas Project
Malaria (*Plasmodium falciparum*)

Entomological Inoculation Rate, 2010. Number of expected bites from infected mosquitoes per person, per year.

- Gething et al. 2011

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References

Maxent model of *Cx. nigripalpis* Dornak, L. 2011
Maxent model of *Ae. scapularis* Dornak, L. 2011
Maxent model of *Ae. aegypti* Nyari, A. 2011
Maxent model of *An. vestitipennis* Nyari, A. 2011
Maxent model of *An. crucians* Nyari, A. 2011
Maxent model of *An. albimanus* Nyari, A. 2011

- People/1 Sq Km. This Product Was Made Utilizing The Landscan (2011)™ High Resolution Global Population Data Set Copyrighted By UT-Battelle, LLC, Operator Of Oak Ridge National Laboratory Under Contract No. DE-AC05-00OR22725 With The United States Department Of Energy. The United States Government Has Certain Rights In This Data Set. Neither Ut-Battelle, Llc Nor The United States Department Of Energy, Nor Any Of Their Employees, Makes Any Warranty, Express Or Implied, Or Assumes Any Legal Liability Or Responsibility For The Accuracy, Completeness, Or Usefulness Of The Data Set. Available At Http://Www.Ornl.Gov/Sci/Landscan/
- Estimated Proportion of the General Population that are Infected with *P. vivax* at any one time, averaged over the 12 months of 2010. Malaria Atlas Project

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The Walter Reed Biosystematics Unit is part of the Walter Reed Army Institute of Research and is based at the Smithsonian Institution Museum Support Center. To access taxonomic keys, the Systematic Catalog of Culicidae or to learn more about WRBU visit www.wrbu.org.

VectorMap is only as good as the data you provide. If you have collection records, models or pathogen testing results please contact the VectorMap team to learn how to contribute data at mosquitomap@si.edu.

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