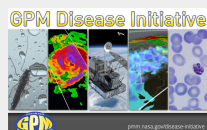


Using NASA Data to Prevent and Respond to Vector-borne and Water-related Disease

Created by You Last updated 5/14/2018

This is a list of resources which would be useful when using NASA EOS data to better understand and prevent vector-borne and water-related disease. It was prepared for the GPM Disease Initiative efforts.



GPM Disease Initiative | Precipitation Measurement Missions

Notes: This is the leading page for the GPM "Disease Initiative". You can find more resources under the "resources" tab.

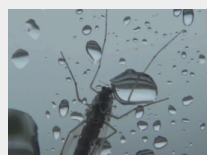
External Resource URL: <https://pmm.nasa.gov/disease-initiative>



Mapping and Forecasting Mosquito-Borne Disease Risk

Notes: This is an ARSET training which was given by Dr. Mike Wimberly. This presentation has a lot of wonderful in-depth information about the use of NASA EOS data sets to aid in the prediction and response to such diseases as Zika, West Nile fever, malaria, and other mosquito disease.

External Resource URL: https://pmm.nasa.gov/sites/default/files/document_files/Mapping_and_Forecasting_Mosquito-borne_disease_risk.pdf



Using GPM and Other NASA EOS Data to Understand Vector-borne Disease | Precipitation Education

Notes: In this webquest you will learn how vectors- like mosquitoes and ticks- can indeed cause sickness and in some cases even death. You will explore some resources to learn more about these diseases and how you can help with efforts to reduce them. This website, presented by NASA's Global Precipitation Measurement (GPM) mission, provides students and educators with resources to learn about Earth's water cycle, weather and climate, and the technology and societal applications of studying them.

External Resource URL: <https://pmm.nasa.gov/education/interactive/using-gpm-and-other-nasa-eos-data-understand-vector-borne-disease>



Mosquitoes - GLOBE.gov

Notes: Here are many resources you can use to help you use the GLOBE Observer Mosquito Habitat Mapper app!

External Resource URL: <https://observer.globe.gov/observer-community/mosquitoes->



These external resources were not reviewed for the NASA Wavelength collection.

Using NASA Data to Prevent and Respond to Vector-borne and Water-related Disease

[resources](#)



GLOBE

Hydrosphere - GLOBE.gov

Notes: You will find the GLOBE mosquito larva protocol here.

External Resorce URL: https://www.globe.gov/do-globe/globe-teachers-guide/hydrosphere?p_p_id=globegovteacherguideportlet_WAR_globegovcmsportlet_INSTAN



Infectious Disease and Climate Change: Is Climate Change Responsible for the Spread of West Nile Virus?

Notes:

More info: <http://nasawavelength.org/resource/nw-000-000-003-388>

Resource URL: http://esseacourses.strategies.org/module.php?module_id=150



Mosquito-borne diseases

Notes: Here is a list with many resources related to the diseases which are transmitted by mosquitoes.

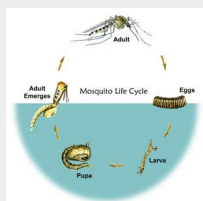
External Resorce URL: <https://observer.globe.gov/documents/19589576/20846667/Mosquito-Borne-Diseases.pdf/7f9ed1b7-0478-4662-a4d9-7c17101738f5>



Travel Health Notices | Travelers' Health | CDC

Notes: Travel Health Notices

External Resorce URL: <https://wwwnc.cdc.gov/travel/notices/>



Mosquito Life Cycle | Mosquito Control | US EPA

Notes: Learn all about the life cycle of mosquitoes and how to prevent them from breeding in your neck of the woods!

External Resorce URL: <https://www.epa.gov/mosquitocontrol/mosquito-life-cycle>



Mosquitoes- Prevention and Control | NASA Wavelength Digital Library

Notes: Here are some resources to help you prevent and control insect pests.



These external resources were not reviewed for the NASA Wavelength collection.

Using NASA Data to Prevent and Respond to Vector-borne and Water-related Disease

External Resource URL: <http://nasawavelength.org/list/1783>



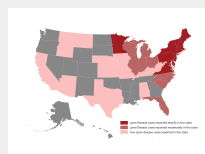
USAID
FROM THE AMERICAN PEOPLE



Zanzibar's Malaria Hunter - USAID Stories

Notes: Armed with two wheels, a tablet and lots of data, one woman takes on a deadly disease, malaria. USAID empowers communities to protect themselves and save lives.

External Resource URL: <https://stories.usaid.gov/zanzibars-malaria-hunter/#page-2>



Climate Risk and Spread of Vector-Borne Diseases | Climate Nexus

Notes: Climate Risk and Spread of Vector-Borne Diseases

External Resource URL: <https://climatenexus.org/climate-issues/health/climate-change-and-vector-borne-diseases/>



Using NASA Satellite Data to Predict Malaria Outbreaks | NASA

Notes: Researchers are turning to data from NASA's fleet of Earth-observing satellites to develop a system that uses satellite and other data to help forecast and prevent Malaria outbreaks.

External Resource URL: <https://www.nasa.gov/feature/goddard/2017/using-nasa-satellite-data-to-predict-malaria-outbreaks/>



Global Mosquito Alert: NASA DEVELOP Project Partners Handoff Spring 2018 | Wilson Center

Notes: The objective of this project is to integrate NASA Earth observations with citizen science data from Western Europe to understand the location and timing of disease outbreaks and improve outbreak predictions.

External Resource URL: <https://www.wilsoncenter.org/event/global-mosquito-alert-nasa-develop-project-partners-handoff-spring-2018/>



Western Europe Health & Air Quality II - NASA DEVELOP Spring 2018 @ GSFC - YouTube

Notes: DEVELOP addresses environmental and public policy issues through interdisciplinary research projects that apply the lens of NASA Earth observations to commun...

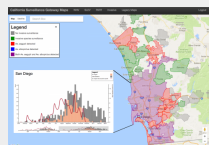
External Resource URL:



These external resources were not reviewed for the NASA Wavelength collection.

Using NASA Data to Prevent and Respond to Vector-borne and Water-related Disease

https://www.youtube.com/watch?v=cjPPI_Fc5gI&index=10&list=PLL8pCbx5gnDZYCXnFEj-2JnLHuHSLgOya&t=6s/



Taking the Bite Out of Mosquitoes | Science Mission Directorate

Notes: Spaceborne data is monitoring mosquitos in the name of public health. It's a simple tactic in mosquito combat—find out where the little bloodsuckers are headed and cut them off at the pass. An online system is using NASA data to do just that.

External Resorce URL: <https://science.nasa.gov/earth-science/applied-sciences/making-space-for-earth/taking-the-bite-out-of-mosquitoes/>



UCD entomologist teams with NASA on mosquito research

Notes: With the help of a grant from NASA, a researcher at UC Davis hopes to gain a better understanding of the threat posed to the United States by mosquito-borne viruses like Zika, Chikungunya and dengue.

External Resorce URL: <https://www.davisenterprise.com/local-news/ucd-entomologist-teams-with-nasa-on-mosquito-research/>



Mosquito Meets MODIS: South Dakota Fights West Nile Virus - YouTube

Notes: South Dakota is the U.S. hotspot for West Nile disease. Scientists and public health officials there developed a way to use environmental data from NASA sate...

External Resorce URL: <https://www.youtube.com/watch?v=ag-Zo0izSNg&feature=youtu.be>



As towns lose their newspapers, disease detectives are left to fly blind

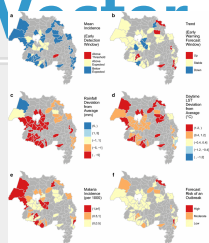
Notes: The decline of the newspaper industry is shutting off an important valve of information for researchers who rely on it to track the spread of outbreaks.

External Resorce URL: [https://www.statnews.com/2018/03/20/news-deserts-infectious-disease/?utm_source=STAT Newsletters&utm_campaign=cb0513c84f-Weekend](https://www.statnews.com/2018/03/20/news-deserts-infectious-disease/?utm_source=STAT%20Newsletters&utm_campaign=cb0513c84f-Weekend)



Using NASA Data to Prevent and Respond to

Vector-borne and Water-related Disease



Integrating malaria surveillance with climate data

Notes: Integrating malaria surveillance with climate data for outbreak detection and forecasting: the EPIDEMIA system

External Resource URL:

<https://malariajournal.biomedcentral.com/articles/10.1186/s12936-017-1735-x>



As Malaria Resists Treatment, Experts Warn of Global Crisis - The New York Times

Notes: A strain of malaria resistant to two drugs, including artemisinin, which was once seen as a miracle cure, is spreading, and experts fear that it could reach Africa.

External Resource URL: https://www.nytimes.com/2017/11/21/world/asia/malaria-drug-resistant-vietnam.html?emc=edit_sc_20171127&nl=science-times&nl_art=&



Tick and Mosquito Infections Spreading Rapidly, C.D.C. Finds - The New York Times

Notes: Rates of Lyme, Zika and exotic new diseases are soaring. Federal officials blame hotter weather, jet travel, forested suburbs and slow vaccine development.

External Resource URL: <https://www.nytimes.com/2018/05/01/health/ticks-mosquitoes-diseases.html>



WHO | Maps and spatial information technologies (Geographical Information Systems) in health and environment decision-making

Notes: The authoritative source for data sets used by UNEP and its partners in the Global Environment Outlook (GEO) report and other integrated environment assessments. Its online database holds more than 450 variables as national, subregional, regional and global statistics or as geospatial data sets (maps), covering themes like Freshwater, Population, Forests, Emissions, Climate, Disasters, Health and GDP. Display data as maps, graphs, data tables, or download the data in different formats.

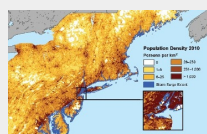
External Resource URL: <http://www.who.int/heli/tools/maps/en/index3.html>



Using NASA Data to Prevent and Respond to Vector-borne and Water-related Disease

Notes: Interactive interface for browsing full-resolution, global satellite imagery. Supports time-critical application areas such as wildfire management, air quality measurements, and weather forecasting. Data is generally available within three hours of observation.

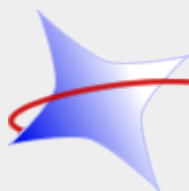
External Resource URL: <https://worldview.earthdata.nasa.gov/>



Socioeconomic Data and Applications Data Center (SEDAC) | Earthdata

Notes: SEDAC's missions are to synthesize Earth science and socioeconomic data and information in ways useful to a wide range of decision makers and other applied users, and to provide an "Information Gateway" between the socioeconomic and Earth science data and information domains.

External Resource URL: <https://earthdata.nasa.gov/about/daacs/daac-sedac>



Giovanni

Notes: The GIOVANNI system allows you to view, layer, and save NASA observing satellite data.

External Resource URL: <https://giovanni.gsfc.nasa.gov/giovanni/>



The Color of Disease | Earthdata

Notes: Four thousand people lost their lives during 1991, the first year of the Peruvian cholera epidemic. Before 1992 was spent, the disease had claimed another thousand victims and the villain, *Vibrio Cholerae* 01, was beginning to move inland and up the coasts of Latin America and the United States, taking lives in virtually every country

External Resource URL: <https://earthdata.nasa.gov/user-resources/sensing-our-planet/the-color-of-disease>



Flu & Ebola Map | Virus & Contagious Disease Surveillance

Notes: HealthMap brings together disparate data sources to achieve a unified and comprehensive view of the current global state of infectious diseases.

External Resource URL: <http://www.healthmap.org/en/>



Using NASA Data to Prevent and Respond to Vector-borne and Water-related Disease



Infectious diseases & public health

Notes: ECDC collects, analyses and disseminates surveillance data on 52 communicable diseases and related special health issues from all 28 European Union (EU) Member States and two of the three remaining European Economic Area (EEA) countries (Iceland and Norway).

External Resource URL: <https://ecdc.europa.eu/en/infectious-diseases-public-health>



Global Mosquito Alert | Wilson Center

Notes: The Need Zika Virus's first transmission event on US soil in 2016 magnified the need for a framework in disease-vector mosquito monitoring the United States, and the...

External Resource URL: <https://www.wilsoncenter.org/global-mosquito-alert>



Fight Zika with NASA GLOBE Observer's Mosquito Habitat Mapper - YouTube

Notes: Citizen scientists can play a role in eliminating Zika and other mosquito-transmitted diseases by downloading a free GLOBE Observer app from Google Play or t...

External Resource URL: https://www.youtube.com/watch?v=_VtzNFo24LY



Using NASA Earth Observations to Monitor and Respond to Vector-borne and Water-related Disease webinar

Notes: This hour-long webinar covers the reasons for using NASA Earth observations from satellites to help monitor and respond to vector-borne and water-related disease. Participants will learn how to access and layer free NASA Earth observation data to locate regions which may be most likely to experience an outbreak of disease.

External Resource URL:
<https://pmm.nasa.gov/sites/default/files/videos/20180508UsingNASADataForDiseaseTrackingWebinar.mp4>

