

Neglected tropical diseases vectors occurrence data identified during medical consultations in hospitals in southern and central Benin

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Abstract

Neglected tropical diseases are a group of preventable and curable diseases that affect 1.5 billion people, 40% of whom live in Africa. These diseases affect the poorest and most vulnerable populations living in remote areas of Africa. They disfigure and disable, prevent children from attending school and parents from working limiting their potential and leaving people trapped in poverty.

The occurrences described in this publication cover Benin from January 2, 2015 to December 30, 2020. Patient registration records were used to extract occurrence data. A total of 7306 occurrences of neglected tropical disease vectors belonging to 7 species, 7 families and 5 orders were recorded. All occurrences have geographical coordinates. The large volume of data collected, the wide geographic coverage, and the long-term nature of the observations determined the value of their inclusion in the GBIF site and the need to publish them.

Keywords: Dataset, disease-vector occurrences, neglected tropical disease, data paper, Benin

Data description

Context

Arthropods are by far the most numerous phylum in animal kingdom and are the cause of the most deadly infectious or parasitic diseases in the world (WHO, 1998). Arthropods belong to different orders but are for the most part hematophagous, characterized by the taking of blood meals through the bite of homeothermic animals including humans. Among these arthropods, mosquitoes are the most challenging, both because of their abundance (Rodhain, 2015), and because of the diseases they carry. Vector-borne diseases transmitted by mosquitoes have recently been on the rise (Morens, 2004) and now represent 28% of emerging diseases, which constitute a heavy burden on public health and the global economy (Sang, 2010). The incidence of these diseases has increased almost fourfold over the past 50 years and their occurrence has increased significantly since the 1980s (Rodhain, 2015). Some of these diseases primarily affect the poorest populations, who live in remote rural areas of tropical Africa. These diseases are thus sustained by poverty and affect almost exclusively poor populations in developing countries. The people who suffer from them, because they do not have significant political power, are not a public health priority. As a result, many of these diseases are neglected because there are few or no control interventions available for case management, leading the WHO to label them as Neglected Tropical Diseases (NTDs). The WHO has established a list of 17 priority neglected tropical diseases.

In recent years, these diseases have received much attention on the international political scene, thanks to the numerous advocacy efforts and, above all, the recognized links between the control and elimination of these diseases and the achievement of the Millennium Development Goals (MDGs), and the prospects for controlling these diseases are quite promising.

The approach to control of these diseases currently advocated by WHO and various stakeholders is an integrated, population-based approach to the control of several NTDs, as opposed to the traditional vertical, disease-based approach. It is therefore important to elaborate the spatial distribution of the vectors of these diseases

Description of the study area

The occurrence file is about the distribution of neglected tropical disease vectors in Benin. From the diseases, the vectors were identified with the help of specialists

Description of the methodology

The dataset is based on the registration of consultations at Abomey-Calavi zone hospital. Information from the consultation is collected such as the disease from which the patient suffers, the date of consultation and the place of origin. From the disease, the incriminated vectors are searched in collaboration with the chief doctors and by referring to the google search engine. Based on the scientific names obtained from the Global Biodiversity Information (GBIF) website (www.gbif.org/tools/name-parser) and the resolver global names tool (resolver.globalnames.org), taxonomic information such as (Kingdom, Phylum, Class, Order, Family, Genus, SpecificEpithet) were generated. Based on the place of origin of the patients, the geographical coordinates (longitude, latitude) were obtained using tools such as geolocate (<http://www.geo-locate.org/web/>) and earthexplorer (<https://earthexplorer.usgs.gov/>). Then the data were entered in an Excel spreadsheet considering the name of the fields according to the Darwin Core format. Then these data were processed, cleaned up and published on the GBIF website (<https://doi.org/10.15468/gnz5k8>) (Figures 1 and 2).

Data Validation and quality control

the pathogens of each disease and the vectors involved are determined by a specialist in the field.

Re-use potential

The data presented can be used to model the ecological niche of neglected tropical disease vectors or to produce distribution maps of these diseases

Data Availability Statement

<https://doi.org/10.15468/gnz5k8> (Figures 1 and 2)

Ethics approval and consent to participate

Approved

Consent for publication

Approved

Competing interests

No competing interests

The project that generated the dataset is available at:

<https://www.gbif.org/project/BID-AF2020-083-USE/data-use-to-inform-decisions-on-biodiversity-conservation-and-public-health-in-benin>

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Authors' contributions

Gbénou Tania S.: Data curation Methodology, Writing – original draft

Issa AA : Conceptualization

Ganglo Cossi Jean: Supervision, Writing – review & editing

The other authors contributed to the dataset publication

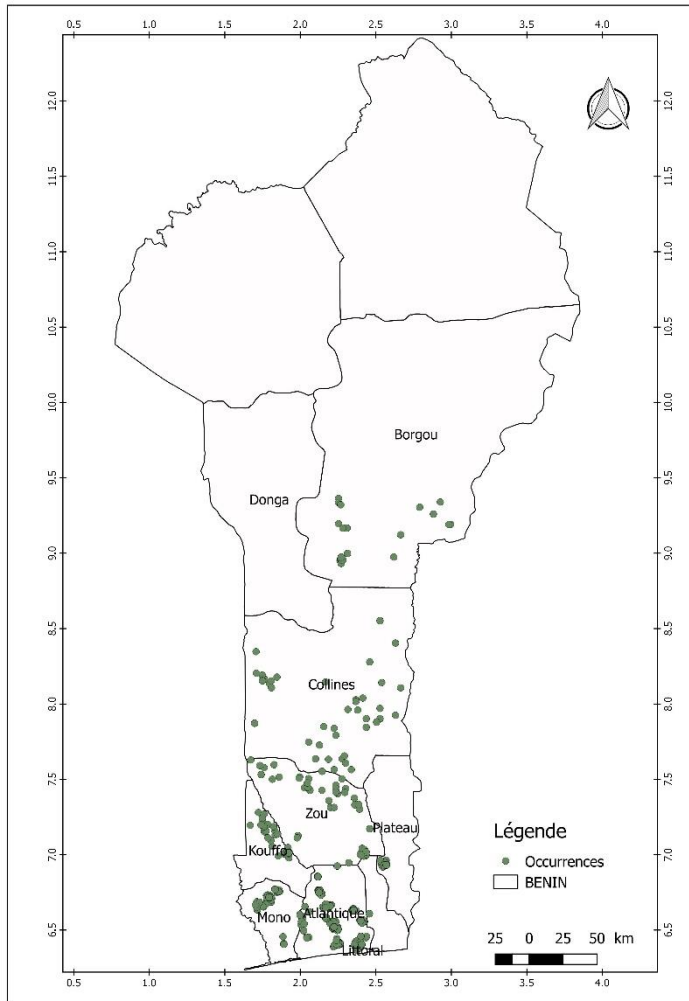


Figure 1: Vector occurrences of Neglected Tropical Diseases in Benin

Taxonomic coverage:

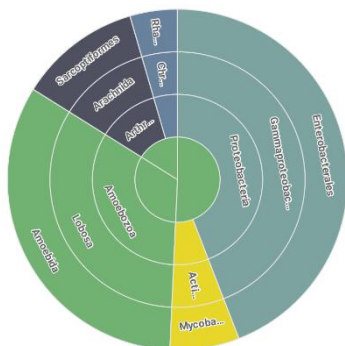


Figure 2: Taxonomic coverage of species

Source (GBIF, 2023)

Conclusion

This occurrence file gives the distribution of neglected tropical disease vectors in Benin. From the diseases, the vectors were identified with the help of specialists and database managers. Data related to Neglected Tropical Diseases come from the curative care registers of Benin hospitals

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