

Dataset for mosquitoes (Diptera, Culicidae) from State Route 905-Mile Marker 2, Key Largo, Monroe County, Florida, USA

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Abstract

Background

The Florida Keys Mosquito Control District has used dry ice-baited light traps to monitor mosquito populations on Key Largo since 2003. This paper describes the methodology of trapping, the habitat and the dataset of adult mosquito populations from 18 years of weekly monitoring from a single site on Key Largo, Monroe County, FL, USA.

New information

This data paper provides previously unpublished data from a single trapping location in Key Largo, Florida. Two new species have been added to previously-published data from this trapping site.

Keywords

Florida Keys, mosquito abundance, mosquito trapping, Culicidae

Introduction

The Florida Keys Mosquito Control District has conducted adult mosquito surveillance along State Route 905, Key Largo, Florida for 18 years. Mosquito abundance and species composition have been recorded ever since the initial surveillance site was selected to

track population variances during seasons and over years in a natural site protected by federal regulations and not affected by mosquito control activities. This paper reports data pertaining to 32 identified mosquito species collected at one trapping location used for routine mosquito surveillance in the Florida Keys.

General description

Purpose: The purpose of mosquito surveillance at this location was long-term species and population monitoring at a site not affected by the control methods used by the Florida Keys Mosquito Control District.

Additional information: Thirty-two mosquito species were documented during the sampling period, spanning seven separate genera (*Aedes*, *Anopheles*, *Culex*, *Culiseta*, *Deinocerites*, *Psorophora* and *Uranotaenia*). Separate columns exist for specimens identified only to Family Culicidae (unidentified mosquito), specimens identified only to genus (i.e. *Aedes* spp.) and specimens identified to subgenus (i.e. *Culex (melanoconion)*) (Suppl. material 1). The dominant species collected at this site was *Aedes taeniorhynchus* comprising 95.49% of the collection and *Anopheles atropos* made up 1.22% of the collection over the trapping period. Thirty other species comprised less than 1% each of the total collection. Hribar et al. (2011) compiled a list of the mosquito species found on each island of the Florida Keys, incorporating the mosquito fauna of Key Largo from various trapping locations, including the State Route 905 Mile Marker 2 trapping site. *Psorophora howardii* and *Aedes pertinax* are absent from the 2011 published list that these records now contain. *Psorophora howardii*, previously reported on Stock Island approximately 100 miles (ca. 160 km) SSW, first identified at this location during the summer of 2018 over a 9 week period. This species has only been recorded during the wet summer and autumn months, but only sporadically and in low numbers. *Aedes pertinax* was found at this location in autumn of 2021, the second time it has been found in the Florida Keys in more than two decades (Boehmler and Hribar 2022). Perhaps the most interesting species observation in these data is *Aedes aegypti* in this collection site, with collections occurring sporadically. This site contains neither preferential hosts nor the preferred larval habitat typically associated with *Ae. aegypti*.

Sampling methods

Sampling description: Collections were made by utilising dry ice-baited light traps, powered by a 6-volt battery (American Biophysics Company, Clarke, John W. Hock). A single ABC trap was set on a weekly basis, excluding weeks when situations prevented collections, including storms, dry ice shortages and personnel scheduling conflicts. Traps were loaded with 1 kilogram of dry ice, set in the afternoon and retrieved the following morning (approximately 20 hours) and positioned in the same area (within 6.5 metres) during the 18-year collection period, varying only due to altered environmental conditions such as downed trees. Mosquito collections were returned to the laboratory, killed by freezing, identified to species and sex when possible and totalled for each species present.

The predominant identification guides used during the sampling period were Darsie and Morris 1998, Darsie and Morris 2000 and Darsie and Ward 2005.

Geographic coverage

Description: The dry ice-baited light trap was deployed on the island of Key Largo, Monroe County, Florida, USA. The trap is located on the Crocodile Lake National Wildlife Refuge (25.193508 N, -80.354768 W). Trapping permits were provided by the United States Fish and Wildlife Service. The trap environment is located adjacent to a woodland pool in a tropical hardwood hammock, set amongst Buttonwood (*Conocarpus erecta* L.) (Hribar 2002). The woodland pool immediately adjacent to the trapping site is typically inundated during the wet summer months when filled with rain and dries during the drier winter months of the Florida Keys. Tidal flooding has not been observed at this location during normal weather and tidal events.

Temporal coverage

Data range: 2003-12-03 - 2021-12-15.

Notes: Mosquito surveillance data collection started at State Route 905 Mile Marker 2 in December 2003 and continued through December 2021. Collections were made weekly unless storms, material shortages or scheduling conflicts interfered with trapping.

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Data resources

Data package title: State Route 905 MM2 2003-2021

Number of data sets: 1

Data set name: State Route 905 MM2 2003-2021

Description: Data file containing the trap data from the State Route 905 Mile Marker 2 site in Key Largo, Florida. Occurrences are separated by species and then again by males and females (Suppl. material 1).

Column label	Column description
Trap Name	Site identifier
Island	Island location of trap
Latitude	Latitude

Longitude	Longitude
Trap Type	Trap used
Year	Year
Week	Week of the Year
Date Retrieved	Trap Retrieval Date
DOY	Day of the Year
All Species	Species Name/Sex

Acknowledgements

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References

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Supplementary material

Suppl. material 1: Route 905 MM2 2003-2021

Authors: Boehmler M.B., Hribar L.J., Murray H.L., Rogers A.N., DeMay D.J.

Data type: Occurrences

Brief description: Mosquito collection data from one trap site location in Key Largo, Florida spanning from 2003-2021.

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