

# Dr. YUSDIEL TORRES-CAMBAS

## PERSONAL DATA

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## SUMMARY

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I am a postdoctoral researcher at the Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin (IGB), working on species distribution modelling and spatial conservation planning. I obtained a PhD in Biology by Universidad de La Habana, Cuba. I was a postdoctoral fellow of the Alexander von Humboldt Foundation at the IGB and Technical University Braunschweig, Germany. I also worked as a lecturer at Universidad de Oriente in Cuba. In my research, I combine different approaches and tools that include field and laboratory work, phylogenetic analysis, geocomputation and ecological modelling.

## WORK EXPERIENCE

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|---------------|---|
| since 03/2023 | Postdoctoral researcher at Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin (IGB).  |
| 2021–2023     | Alexander von Humboldt Post-Doc at Leibniz Institute of Freshwater Ecology and Inland Fisheries, Berlin (IGB) / Institute of Geoecology, Technische Universität Braunschweig. |
| 2013–2020     | <i>Profesor Asistente</i> (permanent position) at University of Oriente, Santiago de Cuba.  |
| 2008–2013     | <i>Profesor Instructor</i> (permanent position) at University of Oriente, Santiago de Cuba.   |
| 2006–2008     | <i>Profesor Universitario en Adiestramiento</i> at University of Oriente, Santiago de Cuba.   |

## TEACHING EXPERIENCE

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At the Department of Biology, University of Oriente I taught courses of Invertebrate Zoology, Animal Morphology, Biostatistics and Ecology and supervised 3 BA theses.

## SCIENTIFIC EDUCATION

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|                 |   |
|-----------------|---|
| 09/2017         | DOCTORATE DEGREE, Doctor in Biology ( <i>Doctor en Ciencias Biológicas</i> ), University of Havana.                         |
| 2012–2017       | PhD student at University of Oriente, Santiago de Cuba / University of Havana.  |
| 2011            | MASTER DEGREE, Master in Zoology and Animal Ecology. ( <i>Master en Zoología y Ecología Animal</i> ), University of Havana. |
| 2009–2010       | MSc. studies at University of Oriente, Santiago de Cuba, and University of Havana.  |
| 2006            | BACHELOR DEGREE, Bachelor in Biology ( <i>Licenciado en Ciencias Biológicas</i> ). University of Oriente.                   |
| 09/2001–06/2006 | Studies of Bachelor in Biology at University of Oriente, Santiago de Cuba.  |

## SCHOLARSHIPS AND AWARDS

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|      |   |
|------|---|
| 2020 | Georg Forster Research Fellowship, Alexander von Humboldt Foundation.                                     |
| 2017 | Award to the young scientist / professor of the year by University of Oriente, Cuba.                      |
| 2013 | Worldwide Dragonfly Association Conservation and Research Grant.  |
| 2005 | German Academic Exchange Service (DAAD) scholarship. Gierstädt, Thüringen, Germany.                       |
| 2006 | <i>Título de Oro</i> , University of Oriente, Santiago de Cuba.   |
| 2006 | Outstanding research student of the Faculty of Natural Sciences, University of Oriente, Santiago de Cuba. |

## PROFESSIONAL MEMBERSHIPS

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|           |   |
|-----------|---|
| 2024      | <a href="#">IUCN SSC Atlantic Island Invertebrates Specialist Group</a> |
| 2023-2024 | Freshwater Biological Association                                       |

## VISITS TO INTERNATIONAL R&D CENTERS

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|-----------|--|
| 2021-2023 | Leibniz Institute of Freshwater Ecology and Inland Fisheries (24 months).<br>Hosts: Dr. Sami Domisch.<br>Subject: Postdoc.   |
| 2021-2023 | Institute of Geocology, Technische Universität Braunschweig (24 months).<br>Hosts: Dr. Boris Schröder.<br>Subject: Postdoc.  |
| 2022      | Basque Center for Climate Change (BC3) (1 month).<br>Hosts: Dr. Stefano Balbi.<br>Subject: Guest researcher, ecosystem services modelling.   |
| 2018      | University of Vigo (1 month)<br>Hosts: Dr. Adolfo Cordero Rivera<br>Subject: Molecular phylogeny of odonates   |
| 2013      | Institute of Integrative Biology, University of Liverpool (1 month).<br>Hosts: Dr. Philip C. Watts and Dr. M. Olalla Lorenzo Carballa.<br>Subject: Extraction, PCR amplification and DNA sequencing. |
| 2012      | Natural History Museum of Jamaica (1 week).<br>Host: Dr. Dionne Newell.<br>Subject: Field survey and revision of museum collections.   |
| 2012      | National Museum of Natural History of Dominican Republic (1 week).<br>Host: Dr. Carlos Surriel.<br>Subject: Field survey and revision of museum collections.   |
| 2010      | University of Vigo (1 month).<br>Hosts: Dr. Adolfo Cordero Rivera and Dr. M. Olalla Lorenzo-Carballa.<br>Subject: Training in dissection of insects, DNA extraction and PCR techniques..             |
| 2005      | Ingenierbüro Tino Sauer, Gierstädt, Germany (6 weeks).<br>Host: Engineer Tino Sauer.<br>Subject: German Academic Exchange Service (DAAD).  |

## PROJECTS

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| since 2023 | <b>NFDI4Earth Pilot project (DFG): Connecting rivers and lakes FAIRly.</b><br>Founded by: NFDI4Earth<br>PI: Sami Domisch  |
| 2022       | <b>NFDI4Biodiversity Flexfunds: The hydrographr R-package.</b><br>Founded by: NFDI4Biodiversity<br>PI: Sami Domisch   |
| since 2023 | <b>Danube4all.</b> ( <a href="#">see here</a> )<br>Founded by: European Union's Horizon Europe research and innovation programme  |
| 2021–2023  | <b>Protecting the future of freshwater biodiversity and ecosystem services across Cuba.</b> ( <a href="#">see here</a> )<br>Founded by: Alexander von Humboldt Foundation<br>PI: Yusdiel Torres-Cambas  |
| 2014–2017  | <b>Bosques y libélulas: etodiversidad y extinción local (ODOFOREST).<br/>Forests and dragonflies: ethodiversity and local extinction</b><br>Founded by: Spanish Ministry of Economy and Competitivity<br>PI: Adolfo Cordero Rivera                                |
| 2012–2013  | <b>Relaciones filogenéticas y evolución de los genitales en las libélulas del género <i>Hypolestes</i>. Phylogeny and genital evolution in the damselfly genus <i>Hypolestes</i></b><br>Founded by: University of Oriente, Cuba<br>PI: Yusdiel Torres-Cambas      |
| 2011–2012  | <b>Reproductive biology and potential for parthenogenetic reproduction in sexual populations of <i>Ischnura hastata</i> (Odonata, Coenagrionidae)</b><br>Founded by: Spanish Ministry of Economy and Competitivity (CGL2010-11959-E)<br>PI: Adolfo Cordero Rivera |
| 2009–2012  | <b>Sexual Selection and the evolution of mating strategies in Odonates (ODOEVO).</b><br>Founded by: Spanish Ministry of Science and Innovation (CGL2008-02799)<br>PI: Adolfo Cordero Rivera   |

## PUBLICATIONS

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Schürz, M., Grigoropoulou, A., García Márquez, J., **Torres-Cambas, Y.**, Tomiczek, T., Floury, M., Bremerich, V., Schürz, C., Amatulli, G., Grossart, H.-P., Domisch, S. (2023). hydrographr: An R package for scalable hydrographic data processing. *Methods in Ecology and Evolution*, 00, 1–11. <https://doi.org/10.1111/2041-210X.14226>

**Torres-Cambas, Y.**, Megna, Y. S., Salazar-Salina, J. C., Diez, Y. L., Catalá, A., Trapero-Quintana, A. D., Schröder, B., Domisch, S. (2023). A database of freshwater macroinvertebrate occurrence records across Cuba. *Scientific Data* 2023 10:1, 10(1), 1–9. <https://doi.org/10.1038/s41597-023-02088-0>

Salazar-Salina, J.C., **Y. Torres-Cambas**. 2021. A New record of the Cuban endemic mayfly *Poecilophlebia Pacoi* (Kluge, 1994) (Ephemeroptera, Leptophlebiidae) from Gran Piedra Massif, Eastern Cuba. *Check List* 17 (4): 1103–6.

Cutiño-Jiménez, A. M., C. F. Martins Menck, **Y. Torres-Cambas**, J. C. Díaz-Pérez. 2020. Protein signatures to identify the different genera within the Xanthomonadaceae family. *Brazilian Journal of Microbiology* *Brazilian Journal of Microbiology*.

Trapero-Quintana, A., **Y. Torres-Cambas**, A. Rivas-Torres, S. Ferreira and A. Cordero-Rivera. 2020. The Odonata of Zapata peninsula (Matanzas, Cuba), the largest wetland system of the Caribbean. *Odonatologica* 49(1/2): 15 – 28.

Lorenzo-Carballa, M. O., **Y. Torres-Cambas**, K. Heaton, G.D.D. Hurst, S. Charlat, T. N. Sherratt, H. Van Gossun, A. Cordero-Rivera, C. D. Beatty. 2019. Widespread *Wolbachia* infection in an insular radiation of damselflies (Odonata, Coenagrionidae). *Scientific Reports* 9:11933.

**Torres-Cambas, Y.**, Ferreira, S., Cordero-Rivera, A., Lorenzo-Carballa, M. O. 2019. Mechanisms of allopatric speciation in an Antillean damsel fly genus (Odonata, Zygoptera): Vicariance or long-distance dispersal?

Mol. Phylogenet. Evol. 137, 14–21.

Téllez Martínez, B, **Y. Torres-Cambas**, A. Trapero-Quintana, F. O. Roque. 2019. Effects of wood density on aquatic insect communities in a Cuban montane rainforest stream. *Neotropical Entomology*.

**Torres-Cambas Y.**, Ferreira S, Cordero-Rivera A, Lorenzo-Carballa M. O. (2017) Identification of evolutionary significant units in the Cuban endemic damselfly *Hypolestes trinitatis* (Odonata, Hypolestidae). *Conservation Genetics*. doi: 10.1007/s10592-017-0959

Lorenzo-Carballa M.O., Hassall C., Encalada A. C., Sanmartín-Villar I., **Torres Cambas Y.**, Cordero-Rivera, A. 2017. Parthenogenesis did not consistently evolve in insular populations of *Ischnura hastata* (Odonata, Coenagrionidae). *Ecological Entomology* 42 (1): 67-76.

**Torres-Cambas Y.**, Cabana-Otero M, Lorenzo-Carballa MO, Cordero-Rivera A. 2016. Conservation status and protection of three Antillean endemic damselflies. *Journal of Insect Conservation* 20:277-284.

Lorenzo-Carballa M. O., Torres-Cambas Y., Ferreira S., Trapero-Quintana A., Cordero-Rivera A. 2016. *Microneura* is a junior synonym of *Protoneura* (Odonata, Coenagrionidae). *International Journal of Odonatology*. 19 (1-2): 13-22. doi: 10.1080/13887890.2016.1138692

**Torres-Cambas Y.**, Lorenzo-Carballa M. O., Ferreira S., Cordero-Rivera A. 2015. *Hypolestes hatuey* sp. nov.: a new species of the enigmatic genus *Hypolestes* (Odonata, Hypolestidae) from Hispaniola. *Zootaxa* 4000: 207–226. doi: 10.11646/zootaxa.4000.2.2

**Torres-Cambas Y.**, Trapero-Quintana A.D., Lorenzo-Carballa M. O., Newell D., Suriel C., Cordero-Rivera A. 2015. An update on the distribution of threatened odonates species from the Greater Antilles. *International Journal of Odonatology* 18: 89–104.

Ferreira, S., Lorenzo-Carballa, M. O., **Torres-Cambas, Y.**, Cordero-Rivera, A., Thompson, D. J., Watts, P. C. (2014). New EPIC nuclear DNA sequence markers to improve the resolution of phylogeographic studies of coenagrionids and other odonates. *International Journal of Odonatology*, 17(2-3), 135-147.

**Torres-Cambas Y.**, Cordero-Rivera A. 2011. Limited spermathecal sperm removal ability in the damselfly *Hypolestes trinitatis* (Gundlach) (Odonata: Megapodagrionidae). *International Journal of Odonatology* 14 (4): 321-328.

**Torres-Cambas Y.**, Fonseca-Rodríguez R. 2011. Sex ratio, survival, and recapture rate in a Cuban population of the damselfly *ypolestes trinitatis*H (Odonata: Megapodagrionidae). *Acta ethologica* 14 (2): 69-76.

**Torres-Cambas Y.**, Fonseca-Rodríguez R. 2009. Reproductive behavior of *Hypolestes trinitatis* (Gundlach) (Zygoptera: Megapodagrionidae) in Cuba. *Odonatologica* 38 (3): 247-253.

Trapero-Quintana A. D., Cabrera A., **Torres-Cambas Y.**, Rodríguez L. 2009. Reproductive behavior of *Enallagma coecum* (Hagen) in Cuba (Zygoptera: Coenagrionidae). *Odonatologica* 38 (1): 7-13.

Trapero-Quintana, A. D., **Y. Torres-Cambas**, A. Martínez Valle. 2018. Las libélulas de Cuba: una actualización taxonómica 10 años después. *Revista Cubana de Ciencias Biológicas* 6(2): 1-8.

**Torres-Cambas Y.**, Trapero-Quintana, A. D. 2008. Frecuencia de oviposición y emergencia de *Protoneura capillaris* (Rambur, 1842) (Protoneuridae: Odonata) en Dos Bocas, Santiago de Cuba. *Boletín de la Sociedad Entomológica Aragonesa* 43: 501-502.

Trapero-Quintana, A. D., **Torres-Cambas, Y.** 2008. Actualización sistemática de la odonatofauna cubana (Insecta: Odonata). *Cocuyo* 17:25-28.

Trapero-Quintana, A. D., **Torres-Cambas Y.**, González-Soriano, E. 2005. Estudio del comportamiento de oviposición de *Protoneura capillaris* (Rambur, 1842) (Odonata: Protoneuridae). *Folia Entomológica Mexicana* 2: (44) 225-231.

Trapero-Quintana, A. D., **Torres-Cambas, Y.**, Naranjo C., Bello O. 2004. Annotated list of the odonates in the Alexander Humboldt National Park, Guantanamo province, Cuba. *Argia* 16: 16-19.

## SELECTED CONFERENCE CONTRIBUTIONS

2023 13th Symposium for European Freshwater Sciences, Newcastle, UK: A database of freshwater macroinvertebrate occurrence records across Cuba. (Poster).

2023 **Network Meeting of the Alexander von Humboldt Foundation, Rostock, Germany:** Protecting the future of freshwater ecosystems across Cuba. (Poster).

2021 **Network Meeting of the Alexander von Humboldt Foundation, Rostock, Germany:** Protecting the future of freshwater ecosystems across Cuba. (Poster).

2015 **International Congress of Odonatology, 15-20 November, La Plata, Argentina:** New EPIC nuclear DNA sequence markers to improve the resolution of phylogeographic studies of coenagrionids and other odonates. (Poster).

2014 **Encuentro “Conservación de la Diversidad Biológica en Cuba, Havana, Cuba, November 2014.** ADN, morfología y ecología para delimitar especies en un género de libélulas amenazadas (*Hypolestes*: Hypolestidae). DNA, morphology and ecology to delimit species boundaries in a threatened damselfly genus (*Hypolestes*: Hypolestidae). (Talk).

2013 **International Congress of Odonatology, 17-21 June, Freising, Germany:** Sex-ratios, survivorship and phenology in a sexual population of *Ischnura hastata* from Cuba (Odonata, Coenagrionidae). (Talk).

DNA and morphology to disentangle species boundaries in Antillean damselflies of the genus *Hypolestes* (Megapodagrionidae). (Talk).

2012 **II Simposio de Ecología y Biología de la Conservación SOS Natura, Santiago de Cuba, April 2012.** Sperm removal in *Hypolestes trinitatis* (Odonata: Megapodagrionidae). (Talk).

2009 **I Simposio de Ecología y Biología de la Conservación SOS Natura, Santiago de Cuba, April 2009.** Reproductive behaviour and aedeagus morphology in *Hypolestes trinitatis* (Gundlach) (Megapodagrionidae). (Poster).

## OTHER SKILLS

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Geocomputation with open source software: R (packages [sf](#), [raster](#)), [GRASS GIS](#), [QGIS](#), [GDAL](#), [pktools](#).

Species distribution models in R. Modelling algorithms: [Generalized Linear Models for Spatial Stream Networks](#), [MAXENT](#), [Boosted Regression Trees](#), [Random Forest](#).

Spatial conservation prioritization in R with the package [prioritizr](#).

Ecosystem Service Modelling with the [ARIES](#) platform.

Interactive web applications with R(Shiny apps). See [here](#) an example of a Shiny app.

Development of R packages with applications in geocomputation of freshwater systems. For an example, see [here](#).

Scripting with R (proficient), PostgreSQL (experience), Bash (experience).

Mark-recapture analysis with the program [Mark](#).

Phylogenetic analysis with [MrBayes](#), [BEAST](#), [RAxML](#).

Experience in molecular biology lab: DNA extraction, amplification and sequencing (Sanger method).

Field work with freshwater macroinvertebrates.

Languages: Spanish, English.