

03.12.1977
Colombian citizen
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Andrea Polanco

EDUCATION

- 04.2011 - 04.2015 **Systematics & Biodiversity Lab Justus Liebig University of Giessen/Universidad Nacional de Colombia, *doctor rerum naturalium***
Doctoral thesis: Dynamics of the continental slope demersal fish community in the Colombian Caribbean - deep sea research in the Caribbean. *Cum laude*
- 08.2003 - 03.2006 **Universidad Nacional de Colombia, MSc in Marine Biology.**
Master thesis: Taxonomía y biogeografía de los peces synodontidos (Aulopiformes: Synodontidae) del Nuevo Mundo.
- 02.1996 - 12. 2002 **Universidad Nacional de Colombia, BSc in Biology**
Bachelor thesis: Peces de la familia Synodontidae en el Caribe colombiano: inventario y patrones de distribución

PRACTICAL EXPERIENCE

- 09.2022 - **Institut of Microbiology, Biology Department, ETH Zurich**
Senior scientist in The Sunagawa Laboratory – Microbiome Research
- Project will focus on the investigation of the general ecological principles underlying the spatial organization of biodiversity of marine eukaryotes.
- 03.2007 - 12.2021 **Instituto de Investigaciones Marinas y Costeras –INVEMAR**
Researcher in the Marine Biodiversity and Ecosystems Program.
- Design, formulation, execution and/or participation in national and international scientific and technological research projects related to coastal and deep marine life.
 - Elaboration, support and/or participation in technical concepts in marine and coastal issues, as well as attention internal and external information requests associated to the fish assemblages.
 - Management, planning, direction and supervision the activities related to the study of environmental DNA (eDNA) and to the installation of the eDNA laboratory in the facilities of INVEMAR.
 - Support in the different activities developed to improve the inventory of the country's marine fish biodiversity.
 - Group leader - Leading the Taxonomy, Systematics and Ecology group of INVEMAR between 2016-2021.
- 08.2008 - 12.2021 **Marine History Museum of Colombia “MAKURIWA” of INVEMAR**
Fish Curator.
- Supervisor of curatorial process of the fish collection in Colombian Marine Natural History Museum
 - Curatorial experience - Examination of type and nontype material of fishes deposited at Instituto de Ciencias Naturales (ICN), Colombia (1999- 2000). Examination of type and nontype material of fishes deposited at Florida Museum, Universidad of Florida, UF (Gainesville, USA); California Academy of Sciences, CAS (San Francisco, USA); Scripps Institution of Oceanography, Universidad of California at San Diego, SIO (USA); Museum of Comparative Zoology, Harvard University, MCZ (Cambridge, Massachussets, USA);

Bernice P. Bishop Museum, Universidad de Hawaii, BPBM (Honolulu, USA); Fish Collection, University of Arizona, UA (Tucson, USA); Tulane University, TU (New Orleans, Louisiana, USA); National Museum of Natural History, USNM (Washington, USA); Peabody Museum of Natural History, YPM, Yale University (New Haven, Connecticut, USA); Muséum National d' Histoire Naturelle, MNHN (Paris, France), Instituto Español de Oceanografía (Santa Cruz de Tenerife, Islas Canarias, Spain) (2004/2012/2014).

- Support in the organization, curation and cataloging of specimens of the Museum of Marine Natural History of Colombia (MHNMC), and their systematization.
- Reinforce the procurement of fish tissues and specimens to the collection through capture and collection by diving and markets field trips.
- Attention and support for research visits and activities to disseminate information associated with the museum and the collection of marine organisms.

02.2020 – 08.2021 Universidad del Magdalena
Professor

- Teaching an extension course deep-sea fishes for the undergraduate program of the biology faculty, aimed at students in their last semesters.

2017/2018/2021 Ocean Teacher Global Academy, IODE – UNESCO
Professor

- Marine biogeographic data management (How to use OBIS)

11.2015 – 12.2015 Museo de Historia Natural Marina de Colombia

- IV National course on taxonomy and identification: marine fishes

LANGUAGES

Spanish Native
French Native
English Proficient

TECHNIQUES

Collection management, Advanced diving, Ecological sampling, Ecological monitoring, Design, conduct and interpret scientific research, Scientific writing.

COMPUTER SKILLS

User software: MS Office, Basic R programming, Database management OBIS, GBIF, Fishnet, IDIGBIO

OTHERS

National Fish red list evaluation: Colombian red list 2017
International Fish red list evaluation (IUCN workshop Jamaica, Trinidad and Veracruz – Mexico)
IUCN SSC Species Monitoring Specialist Group 2021-2024

SELECTED PUBLICATIONS

MUFF, M., JAQUIER, M., MARQUES, V., BALLESTA, L., DETER, J., BOCKEL, T., HOCDE, R., JUHEL, J.B., BOULANGER, E., GUELLATI, N., **FERNÁNDEZ, A.P.**, VALENTINI, A., DEJEAN, T., MANEL, S., ALBOUY, C., DURVILLE, P., MOUILLOT, D., HOLON, F., & PELLISSIER, L. (2022). Environmental DNA highlights fish biodiversity in mesophotic ecosystems. Environmental DNA.

POLANCO F., A., WALDOCK, C., KEGGIN, T., MARQUES, V., ROZANSKI, R., VALENTINI, A., DEJEAN, T., MANEL, S., VERMEJ, M., ALBOUY, C. & PELLISSIER, L. Ecological indices from environmental DNA to contrast coastal reefs under different anthropogenic pressures. *Ecology and Evolution*. 12(8), e9212.

MATHON, L., MARQUES, V., MOUILLOT, D., ALBOUY, C., ANDRELLO, M., BALETAUD, F., BORRERO-PÉREZ, G. H., DEJEAN, T., EDGAR, G. J., GRONDIN, J., GUERIN, P. E., HOCDÉ R., JUHEL J.B., KADARUSMAN E. M., MARIANI, G., MCLEAN, M., **POLANCO F., A.**, POUYAUD, L., STUART-SMITH, R. D., SUGEHA H. Y., VALENTINI, A., VIGLIOLA, L., VIMONO, I. B., PELLISSIER, L., & MANEL, S. (2022). Cross-ocean patterns and processes in fish biodiversity on coral reefs through the lens of eDNA metabarcoding. *Proceedings of the Royal Society B*, 289(1973), 20220162.

POLANCO F., A., RICHARDS, E., FLUCK B., VALENTINI, A., ALTERMATT, F., BROSSE, S., WALSER, J.C., EME D., MARQUES, V., MANEL, S., ALBOUY, C., DEJEAN, T., PELLISSIER, L. (2021) Comparing the performance of 12S mitochondrial primers for fish environmental DNA across ecosystems. *Environmental DNA*, 3(6), 1113-1127.

STAUFFER, S., JUCKER, M., KEGGIN, T., MARQUES, V., ANDRELLO, M., BESSUDO, S., CHEUTIN, M. C., BORRERO-PÉREZ, G. H., DEJEAN, T., JUHEL J.B., LOISEAU, N., MAIRE E., MARTINEZGUERRA, M. M, MANEL, S., **POLANCO F., A.**, VALENTINI, A., MOUILLOT, D., VELEZ L., LETESSIER, T.B., ALBOUY C., PELLISSIER, L., WALDOCK, C. (2021). How many replicates to accurately estimate fish biodiversity using environmental DNA on coral reefs?. *Ecology and evolution*, 11(21), 14630-14643.

MARQUES, V., CASTAGNÉ, P., **POLANCO F., A.**, BORRERO-PÉREZ, G. H., HOCDÉ R., GUÉRIN, P.E., JUHEL J.B., VELEZ L., LOISEAU, N., LETESSIER, T.B., BESSUDO, S., VALENTINI, A., DEJEAN, T., MOUILLOT, D., PELLISSIER, L., VILLÉGER, S. (2021) Use of environmental DNA in assessment of fish functional and phylogenetic diversity. *Conservation Biology*, 35(6), 1944-1956.

POLANCO F, A., MARTINEZGUERRA, M. M, MARQUES, V., VILLA-NAVARRO F., BORRERO-PÉREZ, G. H., CHEUTIN, M. C., DEJEAN T., HOCDÉ R., JUHEL J.B., MAIRE E., MANEL S., SPESCHA M., VALENTINI A., MOUILLOT D., ALBOUY C., PELLISSIER L. (2021) Recovering aquatic and terrestrial biodiversity in a tropical estuary using environmental DNA. *Biotropica*, 53(6), 1606-1619.

POLANCO FERNÁNDEZ, A., MARQUES, V., FOPP, F., JUHEL, J. B., BORRERO-PÉREZ, G. H., CHEUTIN, M. C., ... & PELLISSIER, L. (2021). Comparing environmental DNA metabarcoding and underwater visual census to monitor tropical reef fishes. *Environmental DNA*, 3(1), 142-156.

JUHEL, J. B., MARQUES, V., **FERNÁNDEZ, A. P.**, BORRERO-PÉREZ, G. H., MARTINEZGUERRA, M. M., VALENTINI, A., ... & PELLISSIER, L. (2021). Detection of the elusive Dwarf sperm whale (*Kogia sima*) using environmental DNA at Malpelo island (Eastern Pacific, Colombia). *Ecology and Evolution*, 11(7), 2956.

POLANCO F, A., FOPP, F., ALBOUY, C., BRUN, P., BOSCHMAN, L., & PELLISSIER, L. (2020). Marine fish diversity in Tropical America associated with both past and present environmental conditions. *Journal of Biogeography*, 47(12), 2597-2610.

POLANCO, A., DUEÑAS, L. F., LEON, J., & PUENTES, V. (2019). New records and update on the geographic distribution of the Bonyeared Assfish, *Acanthonus armatus* Günther, 1878 (Ophidiidae, Neobythitinae), in the Caribbean region. *Check List*, 15, 767.

Full CV at

http://scienti.colciencias.gov.co:8081/cvlac/visualizador/generarCurriculoCv.do?cod_rh=0000522473

HOBBIES

Yoga, Hiking, Reading, Scuba diving, Surfing.

REFERENCES

Available upon request