



GUSTAVO MOREJON J.

Biologist / Biodiversity DB specialist

Profile

I'm a biologist with more than 30 years of experience on Biodiversity Data Management and Natural Resources Management. I'm interested in natural history collection digitization and I use professional photography and databases to support my developments.

Studies

- BSc Biology: with mention in Environmental Biology and Management (Validation 2016), Universidad del Azuay. 1988 - 1993
- Diploma : Management of Non-Governmental, Non for profit Organizations, INCAE, Costa Rica. 1993
- Biology, Universidad Católica del Ecuador. 1985 - 1988.
- Webmaster, IWA, 2001

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Legal Status: married (no children).

Work Experience (Recent)

World Wildlife Fund / Consultant

2020 / 2022

I built an information system for the RAMSAR area of Cuyabeno, Yasuní and Lagartococha for the World Wildlife Fund and the Ministry of the Environment (INABio). It's currently installed in the National Institute of Biodiversity of Ecuador.

Instituto Nacional de Biodiversidad / Researcher

March 30 2020 / to date.

I'm currently working as Associate Researcher in the National Institute of Biodiversity of Ecuador (INABio), where I'm building biodiversity information systems and running biodiversity conservation research programs.

Birdlife International / Consultant

March 2018 / March 2019

My role in Birdlife International was to build the basis for the Key Biodiversity Areas System (KBA). I structured all the data base system and built what is now the basic information structure for the KBA system.

Charles Darwin Foundation / Scientific - Tech Coordinator

January 2016 / March 2018

In this position I coordinated a group of programmers, system engineers and scientists to build the whole biodiversity database for the Galapagos Islands and the new Data Center for the Research Station. As part of the directory of the Foundation, I took part of the group that took the decisions regarding founding strategies, scientific programs, etc.

BioBanco Project / Database programmer - Science coordinator

January 2014 / January 2016

I started the BioBanco project in 1994 and it was the very first biodiversity database online in the World. The project was presented in 1994 in Brasil in the BIN21 Network symposium. In 2014 I coordinated the new system development.

KUUSA Soluciones Ambientales / Biotic Monitoring Coordinator

December 2013 / March 2014

I coordinated the analysis of pollution levels in the basins of the rivers Balao, Tenguel, Siete and others affected by informal mining in Ponce Enriquez, for the Environmental and Social Remediation Program (ESRP) and KUUSA.

National Assembly of Ecuador / Consultant, Biodiversity Comision

December 2013 / March 2014

I worked as special consultant for the Yasuní ITT project and the oil exploitation conflicts in the Ecuadorian Amazon. I acted as a link between scientists, NGOs and the Ecuadorian Government.



Work Experience (Past)

Grupo Faro / Primary Researcher

May 2013 / August 2013

I implemented a soil biodiversity system for the local communities of the Sumaco Napo Galeras National Park in the Ecuadorian Amazon financed by Grupo Faro.



Instituto Nacional de Propiedad Intelectual / DB Dev.

June - September 2012

My role in this position was to build an intellectual property database linked to the registry of intellectual property rights for Ecuador. The database had to be built in just one month and then be filled with the data available in at IEPI.



Heritage Coordinator Ministry / Consultant

November 2011 / June 2012

I built an information system for the management of the information related to the traditional uses related to the native wildlife; linked to the cultural property system of the national institute of cultural heritage.



Ministry of Environment / Regional Director

2010 / 2011

I represented the Ministry of the Environment as Regional Director in the provinces of Azuay, Cañar and Morona Santiago in Ecuador. I was responsible for all the environmental management of this provinces and reported directly to the Ministry of Environment and the President of Ecuador.



The World Land Trust and Jocotoco Foundation / PM

2007 / 2009

This project consisted in a video monitoring system dedicated to broadcast video 24/7 via Internet to the United Kingdom for both research and environmental education. I implemented the whole solution and maintained the system.



Rio Mazan Foundation / Director - President

2004 / 2012

From 2007 to 2012, I worked first as Executive Director (2004 - 2010) and later as President of the Foundation (2010 - 2012). The Foundation managed several environmental education, research and sustainable development projects.



Fundación Selva / Biodiversity Project Manager

1998 / 2002

Fundación Selva is an NGO based in Quito, Ecuador and they have a Natural Reserve in the Amazon rainforest in front of the Cofan Reserve. I was responsible for the biodiversity research and conservation projects in the reserve.





Work Experience (Past)

- Green Umbrella Productions and BBC / Scientific Advisor**
1996 - 1997

In 1996 - 97 I worked as scientific advisor for Nick Upton's documental "Beetlemania". My role in the documentary was to provide all the scientific background for the documentary film.
- Fundación Ecológica Mazán / Environmental Educator**
1994 - 1996

I started working at Fundación Mazán as an environmental educator. In that time, I wrote a book with the collaboration of our team of educators, as a guide for environmental educators with methodologies and scientific data.
- Azuay University / Invertebrates Collection Curator**
1989 / 1993

I started what today is the invertebrate collection at the Azuay University. I was responsible from the design of everything, from the entomological boxes to the very first computer catalog of the collections.
- Azuay University / Assistant Professor in Invertebrate Zoology**
1986 - 1990

I was in charge of the practical part of the classes in invertebrate zoology, teaching laboratory techniques, taxonomy, curatorial works and physiology. Part of my job was also to take care of all the laboratory equipment and the acquisition of new equipment.
- Maquipucuna Foundation / Field Scientist and Founder Member**
1984 - to date

I founded with two colleagues the Maquipucuna Foundation in 1984, in order to protect and conserve the Maquipucuna Rainforest; an 8000 hectares rainforest reserve north west of Quito. I still work from time to time in the reserve and I permanently give my scientific advise to the foundation, as a founder member. Currently I'm compiling the biodiversity database for the Reserve and I presume that its biodiversity is much greater than that of Yasuní (That once was named as the most biodiverse place on Earth).





Seminars

- International Seminar and Workshop on zoos and animals in captivity, Ecuadorian Museum of Natural Sciences (Quito, Ecuador).
June 1986
- First national science conference, Ecuadorian Museum of Natural Sciences (Quito, Ecuador).
August 1986
- X to XVII National Congress of Biological Sciences, (Various Cities in Ecuador).
1985 - 1996
- Second National Congress of Entomology, Taxonomy of Micrathena (Aranea: Gastheracantinae), Ecuadorian Museum of Natural Sciences (Quito, Ecuador).
1987
- Seminar on “New perspectives in forest management”, National Park, Fish and Wildlife Service, South East Forest, Ouachita, Little Rock (Arkansas – USA).
September 1991
- Training in environmental entomology and environmental monitoring based on invertebrates, University of Arkansas at Fayetteville – <http://www.uark.edu/> (Arkansas, USA).
September 1991 - November 1991
- First Congress of investigation for the conservation of biodiversity, Ecociencia - Wildlife Conservation International (Quito, Ecuador).
1991
- Small Industries Chamber, Wood industry, conference on the sustainable use of timber areas (Lecturer) (Cuenca, Ecuador).
1992
- XVI Seminar on Biological Sciences, Conference about the conservation status of the protected forest at the Mazán River (Lecturer), Cuenca, Ecuador.
1993
- Course on Aquatic ecology and limnology, Organized by the University of Quebec in Montreal and the University of Azuay, Cajas National Park (Azuay, Ecuador).
1993
- Plant Ecology Course, organized by the University of Quebec in Montreal and the University of Azuay, Cajas National Park, Forest Miguir and Sangay National Park (Azuay, Morona Santiago, Ecuador).
1993
- First National Congress of Botany, Funbotánica – Catholic University of Quito (Quito, Ecuador).
February 1993



Seminars

- Seminar: Development and processes of environmental protection, Escuela Politécnica del Litoral, University of Azuay (<http://www.uazuay.edu.ec/>), University of Quebec in Montreal (Guayaquil, Ecuador).
June 1986
- Seminar “Mechanisms to link biodiversity information and online tools,” sponsored by UNDP and MMM (Ministry of Environment and the Legal Amazon), Campinas, Brazil. Official presentation of the BioBanco Project, the first online biodiversity database of the World.
February 1994
- Course of Environmental impact assessment and Analysis, University of Azuay (<http://www.uazuay.edu.ec/>) - The University of Quebec in Montreal (Cuenca – Ecuador).
1994
- Several workshops on geographic information systems, including the use of Microstation, ArcGIS and Geographic data tools.
1993 - 1998
- Seminar on bio informatics and information technology applied to environmental sciences, Shanghai University, Shanghai – China.
April 2001
- Application of RFID technology in environmental sciences, Guanzhou – China.
April 2006
- Formulation of Projects for implementing traceability systems in beef, dairy, fruit and vegetables (Quito – Ecuador)
September 27 - 29, 2006
- World Congress of RFID technology, RFID University – RFID Journal Live, Orlando – FL, United States.
April 30 - May 2, 2007
- Photography and Culture Seminar, University of Azuay – The Conceptas Museum, Cuenca - Ecuador.
June 23 - 25, 2008
- Formulation of projects under SENP-LADES format, PROFORESTAL – SENP-LADES, Cuenca – Ecuador.
February 2009
- Seminar on Ecuador’s environmental policies to address climate change, Adaptation to Climate Change Program, Ministry of Environment - UNCD, Quito
October 2010
- Intensive Workshop: Ecuadorian Environmental Legislation; Ministry of the Environment, Tena, Ecuador.
November 15 - 25, 2010



Seminars

- Workshop on REDD + mechanisms to increase the resilience of populations to adapt to climate change, United Nations - Quito, Ecuador.
January 2011
- Environmental management of mining operations seminar, Kinross Aurelian, Brasilia – Brazil.
April 2011
- Intensive course on Wildlife Photography, Zoological Foundation of Ecuador, Guayllabamba Zoo
June 2013
- Online Database Management Introductory Course, Stanford University.
February - March 2013
- Workshop and Seminar: Electronic management of foreign commerce with Ecuapass and update course on foreign commerce, Cuenca Chamber of Commerce.
July 28 - August 1, 2014
- Forum of Sustainable Mining, Public policies, community inclusion and environmental practices; Canada Embassy, Ministry of Strategic Sectors, Azuay University; Cuenca – Ecuador. Participation with a conference about “Soil biodiversity monitoring systems”.
February 10 -12, 2015
- Seminar and Workshop, Galápagos Verde 2050, Charles Darwin Research Station. Conference: “Soil biodiversity monitoring at Plaza Sur Island, Galapagos - Ecuador”.
October 2017
- Seminar and Workshop, Symbiota: Biodiversity Collections Database System, Organized by the University of Arizona and the Ecuadorian Institute of Biodiversity.
November 2017
- Seminar: Research Priorities for the next 25 years in the Galapagos Islands, Galapagos National Park, Charles Darwin Foundation.
March 2018
- Lecturer on board at the National Geographic – Lindblad Expeditions cruises in the Galápagos Islands.
March - May 2018
- Water Management in Galápagos (Santa Cruz). San Francisco de Quito University, Galapagos – Ecuador.
May 2018
- Introductory Course to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), United Nations, June 18, 2020.
June 2020



Seminars

- First Workshop of Entomology Societies of Latin America. INABio – Federación Latino Americana de Entomología. August 2020
- Virtual forum on Water, Energy and Climate; Azuay University (15, 16, 22 and 23 of July). July 2020
- Curso práctico de Sistemas de Información Geográfica (SIG) aplicado a la ciencia e ingeniería usando el paquete de software QGIS. September 4 - October 24, 2021
- Practical Research (Fundraising and Project Management), Universität zu Köln, Germany. February 2022
- COLLECTING AND HARMONIZING: Biodiversity primary data collection and management; German Centre for Integrative Biodiversity Research (iDiv) and University of Córdoba. 14 - 25 February 2022.
- MOBILIZING: Processing and analysis of biodiversity information; German Centre for Integrative Biodiversity Research (iDiv) and University of Córdoba. 14 - 24 March, 2022
- DECISION: Use of information to support decision making; German Centre for Integrative Biodiversity Research (iDiv) and University of Córdoba. 18 - 28 March, 2022

Pre - Professional experience

- Scholarship. Herbarium QCA, Catholic University of Ecuador, Department of Biological Sciences, 1987.
- Insect Biodiversity Researcher, University of Azuay, Laboratory of invertebrate zoology, 1990-1992.
- Scholarship for developing a basic tool for measuring the parameters of the biodiversity of soil macroinvertebrate (soil mesofauna), for monitoring of mining activities in Ecuador, Faro Group, July-October 2012.
- Research Grant awarded by The United States Information Agency (USIA), The Fulbright Commission and The University of Arkansas for the investigation and development of methods of environmental monitoring using soil invertebrates, April to December 1991 (This research continues to develop and have made significant progress in the development of accurate environmental monitoring technologies with edaphic mesofauna).



Work as a research assistant

- Sexual selection of spiders of the genus *Anelossimus*, Ecuadorian Museum of Natural Sciences - Museum of Comparative Zoology, Harvard. 1986 – 1987.
- Management plan for the buffer zone of the Podocarpus National Park, Foundation Maquipucuna, 1987.
- Ranges of dispersion of *Buteo magnirostris* and *Buteo polyosoma* in the Antizana Reserve, Catholic University of Ecuador. 1988.
- Management of fragile lands in southern Ecuador, Fundación Ciencia - Institute of Agricultural Strategies. 1989.
- Management of environmental monitoring systems, University of Arkansas, US National Parks Service, 1991.
- Analysis of biodiversity in agricultural and shrimp production areas, TaxaSphere, 1998-2007.

Memberships

- Founding partner, Maquipucuna Foundation.
- Founding partner, Mazán Ecological Foundation.
- Founding partner, Ecuadorian Society of Entomology.
- Partner, Coleopterists Society of America.
- Partner, Arachnological Society of America.
- Webmaster, International Webmasters Association.
- Ecuadorian partner, Global Soil Biodiversity Initiative.
- Member, Earth Journalism Network.

Technology and Informatics

- Experience with Macintosh, Windows, Android and Linux operating systems.
- HTML programmer since 1992. Current Internet languages: Perl, CGI, Javascript, Java, advanced use of PHP, HTML5, XML, Ajax based systems, Bootstrap, JQuery, CSS, SQL. Experience with database management under MySQL – MariaDB, PostgreSQL and NO-SQL databases. Experience with Apache based servers under Linux and Windows environments.
- Advanced use of Internet and network tools such as FTP, SSH, Network Analysis software and network security systems.



Technology and Informatics

- Advanced use of mapping techniques using Leaflets, Mapbox, Google maps, OpenStreet Maps, Google Earth Engine, USGS Earth Explorer, SNAP, etc., interacting with databases. Use of advanced techniques on internet based mapping applications.
- Advanced level of Adobe PhotoShop, Premiere, Illustrator and the package of Adobe Creative Suite, JetBrains' PHP Storm, Eclipse, dbForge Studio, Objet2VR, Zerene Stacker, high-resolution photography processing techniques for internet use (Zoomify and MapTiler).
- Natural history digitization techniques, including plant scanning, arthropod photography, data capture, pre and post processing of images, database programming for image management and metadata, etc. Experience building natural history collection digitization protocols.
- Experience configuring and managing online video systems, for streaming video using Axxis equipment.
- Experience in handling control systems and traceability with RFID / NFC equipment (13.56 KHz, 125 KHz, GEN II and equipment for animal traceability), implementation of RFID and NFC microchip based labeling systems for Herbarium and Natural History Collections, including entomological and marine collections.
- Programming and advanced use of Content management systems (CMS) such as Joomla, Drupal, Wordpress, DornCMS and Symphony.
- Datacenter management: Experience with security systems under Sophos, Network traffic administration using Mikrotik, Different brands of blade systems and general data-center management routines.
- Use of QGIS and Remote Sensing Analysis to calculate NDVI Vegetation Indexes and Biodiversity / Ecology variables (Mainly use of Radar Images (Sentinel) and Satellite Images (Landsat Systems) based calculations and mapping).
- Biodiversity Data Compilation from external sources like the Global Biodiversity Information Facility, BOLD Systems, etc, to build Biodiversity Information Systems in the web using data analysis with PHP, R and JavaScript. Use of the biodiversity information standard Darwin Core and related protocols.



Photography

- I am specialized in high resolution macrophotography, specially of natural history collections. I created the digitization system for the natural history collections of the Charles Darwin Research Station and I am currently designing two systems based on HR photography, one for online taxonomic identifications and another one for specimen presentation online (using zoomify, leaflets and DB interactions).

- I also do wildlife photography for several magazines, newspapers and research publications.

Scientific Illustration

I make hiper realistic scientific illustrations using several techniques, such as stippling and color pencils / acrylics. I have illustrated scientific papers, magazine covers and books since 1987.

Publications

Books:

- Morejón G., et. al, BIOLOGY, University of Azuay Editions - Italian Technical Cooperation, 1990.
- Morejón G., et. al., ECOLOGY AND ENVIRONMENT, FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL ECOLOGY APPLIED TO ECUADOR, Mazán Ecological Foundation –U.S. Fish and Wildlife Service, 1993.
- Gustavo Morejón, “El Pase del Niño Viajero, a Photographic History of a Cuenca Tradition (Spanish Edition)” Amazon Digital Services, 2012.

Scientific Papers:

- Comer PJ, Valdez J, Pereira HM, Acosta-Muñoz C, Campos F, Bonet García FJ, Claros X, Castro L, Dallmeier F, Domic Rivadeneira EY, Gill M, Josse C, Lafuente Cartagena I, Langstroth R, Larrea-Alcázar D, Masur A, Morejon Jaramillo G, Navarro L, Novoa S, Prieto-Albuja F, Rey Ortíz G, Teran MF, Zambrana-Torrelío C, Fernandez M. Conserving Ecosystem Diversity in the Tropical Andes. Remote Sensing. 2022; 14(12):2847. <https://doi.org/10.3390/rs14122847>



Personal Projects

- I run currently the SAVE.bio project, which is a personal initiative to survey, monitor and conserve urban forests using a citizen science methodology developed by myself. The project has its own web site at: www.save.bio.
- I built a tool for people and companies in need of information about the biodiversity of the city of Cuenca and its surroundings, based on the information collected from external research sources such as GBIF, The Catholic University of Quito Bioweb and the INABio biodiversity database. The system can be accessed at <https://cuenca.biobanco.org/d/>.
- I'm also working in a new personal project to build a "Virtual Insectarium". It's still under construction (<https://insectario.org>), but I'm trying new technologies to present virtual 3D specimens online (<https://insectario.org/tachinidae1/>) as well as high definition photographs using tiling technologies.

Personal References

- Claire Hobbs, Fundraising Coordinator, Charles Darwin Foundation, Galapagos, Ecuador. clairehobbs@yahoo.co.uk, UK Phone 07790 353137.
- Frank Bungartz, Symbiota Biodiversity Database System, Collections Manager of Lichens and Digital Data, Natural History Collections, Arizona State University, frank.bungartz@gmail.com. Telf. 00 1 480-465-0968.
- Diego Inclán, Executive Director, Ecuador National Institute of Biodiversity, diego.inclan@biodiversidad.gob.ec, Telf. +593 96 909 5456.
- Dr. Leticia Aviles, Evolutionary Biology Professor, The University of British Columbia (UBC), leti.avls@googlemail.com / laviles@zoology.ubc.ca, Telf. 604-822-3795.
- Dr. Rebeca Justicia, Executive Director Fundación Maquipucuna – Quito, info@maquipucuna.org. Telf. +593 98 272 1222.
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