Paulo Brum

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Portuguese / English Interpreter

Accomplished environmental scientist with background in **aquatic ecology and clean energy,** as well as professional experience in public lectures and presentations**.** Liaise with key stakeholders, including government and regulatory entities, building goodwill and **delivering research-based input on major decisions.**

Explore and **develop solutions to critical issues, weighing environmental impact, cost, and social impact** and building consensus between stakeholders. Curious-minded and research-focused, with **experience conducting field and laboratory experiments and investigations** and gathering and analyzing data, as well as drafting reports on findings. **Proven applied technical experience,** project leadership abilities, and commitment to **individual and organizational excellence. Green card holder with National Interest Waiver (deemed to be valuable to the US economy).**

- Project Management
- Technical Troubleshooting
- Habitat Assessments
- Technical Research
- Wetland Identification & Delineation
- Data Analysis
- Statistical Modeling & Analysis
- Freshwater Environments
- Relationship Management
- Technical Report Writing
- Technical Report Writing & Analysis
- Renewable energy

Professional Experience

Furnas Centrais Eletricas S.A. – Rio de Janeiro, Brazil — May 2002-May2019

Regional power utility company and major subsidiary of Eletrobras, a major Brazilian electric utilities company, Latin America's largest power utility company, and fourth largest clean energy company globally. Company earned $560M+ in 2019 with 3,000+ employees.

Environmental Scientist

Directed all technical aspects of water quality and reservoir ecology monitoring in company's 12 hydropower reservoirs, including budgeting, hiring consultants, **overseeing field activities, analyzing periodic reports,** preparing reports for state and federal agencies, and **presenting to stakeholders.** Established sampling stations and methodology and identified variables to be monitored. **Managed up to $1.6M in project contracts** and developed preliminary budgets completed by budgeting team. **Supervised over 50 consultants,** validating field trips and training personnel.

Cultivated positive relationships with communities to build goodwill and minimize misunderstandings and lawsuits, delivering lectures in schools, engaging with community leaders, showcasing company's work, and articulating viewpoint. **Approved any technical lectures and materials related to water quality and ecology intended for internal use.** Built positive relationships across organization, **redeeming environmental functions image and earning respect** by producing solutions that reduced costs.

- **Contributed to major research projects,** including Brazil's **largest project focused on studying reservoir carbon emissions related to climate change;** collaborated with foremost Brazilian and international experts.
    - **Designed project and field activities** and engaged in discussions that led to development of projects' published papers.
- **Engaged in multiple large-scale capital projects, including $1B capital project to build reservoir in the Amazon,** maintaining high water quality and monitoring to ensure proper management of any changes, critical pieces of project required prior to receiving government go-ahead.
- **Engaged with environment agencies to prove compliance with regulations;** save money by showing that specific mandated actions would be inefficient, ineffective, and superfluous.
    - **Prevented significant delays and fines during new reservoir construction** by demonstrating that a second clearing of vegetation in land to be flooded was unnecessary, contributing initial estimates for consideration and **delivering formal report based on mathematical modeling, lab work, and scientific literature and using**

only worst case scenarios that demonstrated that second round of clearing vegetation would have negligible impact on water quality and environmental impact. As a result, construction proceeded as planned.

- **Formulated alternatives to environmental authorities' demands regarding reparation and mitigation of environmental damage** caused by flooding for new hydro reservoirs, including deflectors based on mathematical models of future water speed and quality to enhance water circulation.

- **Developed innovative environmental solutions for specific problems,** coordinating with engineers to identify cost effective methods to resolve issues.
  - **Recommended one-way small dam to eliminate risk of stagnant water** at new reservoir, identified by mathematical modeling. **Proved to company and environmental agencies that dam would fully resolve issues** without significant extra cost.

- **Managed data practices and analyses that provided technical defense to counter misleading claims, lawsuits, and legal actions alleging environmental damage,** utilizing extensive data monitoring to demonstrate company's innocence and **aiding to indemnify company against hundreds of thousands of dollars in financial impacts.**
  - **Defended company following accusations of water quality deterioration** causing illness during reservoir flooding. **Proved no significant change in water quality before, during, or after flooding.**

Education

Master of Science In Ecology
Universidade Federal do Rio de Janeiro – Rio de Janeiro, Brazil

Bachelor of Science in Biological Sciences
Universidade Santa Ursula – Rio de Janeiro, Brazil

Presentations

SIDAGIS-GALLI, C.V. ; ABE, D.S. ; TUNDISI, J.G. ; ADAMS, D.D. ; MATSUMURA-TUNDISI, T.; TUNDISI, J.E.M; **BRUM, P. R.**; CIMBLERIS, A.P.C. **Greenhouse gas concentrations and diffusive flux at the sediment - Water interface from two reservoirs in Brazil.** *SIL (Montreal, QB 2007)*

SIDAGIS-GALLI, C.V.; ABE, D.S.; TUNDISI, J.G.; MATSUMURA-TUNDISI, T.; GRINBERG, D. E.; MEDEIROS, G.R. ; TEIXEIRA SILVA, V. ; **BRUM, P. R.** ; CIMBLERIS, A.P.C., **Concentration and diffusive flow of CO2 and CH4 at the sediment- water interface, and its relationship with the physical and chemical aspects of the sediment of the Corumbá and Itumbiara hydropower reservoirs.** 2007. *CBL (Brazilian Congress of Limnology 2007)*

CIMBLERIS, A.P.C. ; **BRUM, P. R**. ; SOARES, C.B.P. ; ROLAND, F. ; ROSA, L.P. ; SANTOS, M.A. ; MATVIENKO, B. ; TUNDISI, J.G.; ABE, D.S. ; SIDAGIS-GALLI, C.V. ; STECH, J.L. ; NOVO, E., **Carbon Budget in Seven Brazilian Hydropower Reservoirs,** 2007. SIL (Montreal, QB 2007)

ABE, D.S. ; SIDAGIS-GALLI, C.V. ; ADAMS, D.D. ; TUNDISI, J.G. ; MATSUMURA•TUNDISI, T. ; TUNDISI, J.E.M. ; CIMBLERIS, A.P.C.; **BRUM, P. R Greenhouse gas concentrations and diffusive flux at the sediment water interface from 5 tropical reservoirs in Brazil: trophic status considerations.** 2006. *ASLO Summer Meeting (Victoria, BC 2006)*

Professional Leadership Involvement

Oecologia Brasiliensis Symposium on Ecology, 2008: **Round Table Participant**
"Emission of biogenic gas from reservoirs" – *Discussion of emerging research on magnitude and evolution of greenhouse gas emission from man-made reservoirs compared to alternative energy sources and as tool for planning new reservoirs.*

Brazilian Congress of Limnology, 2007: **Workshop Panel Member**
"Mudanças Climáticas, Energia e Limnologia" – *Round table discussion of effect of climate change on hydropower energy and freshwater ecology practices.*

Brazilian Congress of Limnology, 2005: **Workshop Secretary**
"Oficina de trabalho do COMAGE – Aplicabilidade da Resolução CONAMA 357/05 para o setor elétrico" – *Workshop featuring representatives from environmental branches of electrical utilities, environmental authorities, and academia to discuss then recently established governmental water quality standards and how to adapt practices to it.*

Brazilian Congress of Limnology, 2005: **Conference Secretary**
"A Transposição das Águas do Rio São Francisco" – *Conference focused on major infrastructure action of Federal Government at the time, including transfer of water from São Francisco River to another region of northeastern Brazil to foster irrigation and improve water availability.*

Brazilian Congress of Limnology, 2005: **Workshop Chairman**
"Água: Política, Gestão e Ciência" – *Workshop exploring interaction of laws and regulations, responsibility of stakeholders, and state of the art scientific developments.*

Additional Achievements

Website: www.thebridgeexperts.com Bridge Tutorial: www.thebridgeexperts.com/premium-subscriptions.html

Youtube video:
https://youtu.be/LKAWnD3nYzE

Create & managed Facebook Group "Support Local Westerville,"during the peak pandemic:
https://www.facebook.com/groups/348614876082759

Professional Associations

Brazillian Limnological Association, Member

Technology Skills

MS Office ▪ R (statistical programming language) ▪ Website Development Weebly platform ▪ Windows

Languages

Fluent in **English, Spanish,** & **Portuguese**

Other Achievements

Expert bridge player: Represented Brazil as member of open team in international competitions, including 2007 and 2016 World Championships in Poland; coached national women's and youth teams.

Recommendations & Testimonials

"In all the moments that we had the opportunity to work together I was struck by his ability to manage a group of people in an objective way. The activities of the projects we participated in, more specifically the technical meetings and discussions on data generated in the context of the projects allowed me to witness Mr. Paulo Brum's quality, professionalism and experience. . . . he has an unusual ability to work with numbers and manage people. Also, Mr. Paulo Brum is easy to deal with, being a respectful, polite, friendly person, Mr. Paulo Brum is an outstanding individual and professional, a leader in his field, having an extent technical experience, an excellent intellectual level and a high level of training in solutions to environmental problems."
-Dr. Nathan Barros, Federal University of Juiz de Fora, Worked with Paulo on 4-year Hydropower Reservoirs Research Project

"Mr. Paulo Brum is an excellent professional, dedicated and with great abilities. . . . Mr. Paulo Brum has participated on Lectures and Scientific Meetings about environmental themes, for the general public and in schools, as he is a key person in our field, whose knowledge and experience are most recognized. Indeed, he has an extended experience in research and environmental monitoring of lakes and reservoirs, ranging from small coastal lagoons to great hydroelectric reservoirs, with emphasis on the integrated analysis of these environments. He also has extraordinary field experience in data acquisition regarding water quality and ecology and in the conception and setting up of sampling grids for monitoring large-scale hydroelectric reservoirs. Mr. Paulo Brum has participated on multidisciplinary teams in order to evaluate environmental impacts and in the devising of mitigating proposals for those impacts, having had participated in professional meetings to present the results of scientific research, in Brazil and abroad. Mr. Paulo Brum has genuine skills and outstanding knowledge with evidence of extraordinary abilities in his field."
-Dr. Vinicius Farjalla, Federal University of Rio de Janeiro