Bolsa de Pós-doutorado para trabalhar com dinâmica da vegetação na transição amazônica

Período de 24 meses, iniciando em 01 de março de 2015.

Valor da bolsa (mensal): R$ 4.100,00 (quatro mil e cem reais).

Post-doctoral research associate in Amazon transition vegetation dynamics

Fixed Term 24 months, from 1 March 2015.

You will work on a CNPq funded project: "**Amazon transitions: developing a network to monitor vegetation and global change responses on-the-ground at the southern margins of Amazonia**" to re-measure plots and assess their carbon balance, changes in dynamics, floristics, and their likely drivers. You will be based at UNEMAT (Universidade do Estado de Mato Grosso), *campus* de Nova Xavantina, where you will spend approximately 30% of your time leading fieldwork in Mato Grosso and neighbouring states. The research will be undertaken with other ecologists, led by the University of Leeds (UK) and UNEMAT, as part of the Amazon RAINFOR network (Rede Amazônica de Inventários Florestais).

You will have responsibility for co-ordinating fieldwork, its technical implementation, and for the quality of data uploaded. You will work in existing and new permanent sample plots in forest and cerrado habitats across Mato Grosso. Working with Prof. Oliver Phillips (Univ. of Leeds) and Profa. Beatriz S. Marimon (UNEMAT) you will lead recensuses of these plots, jointly supervise and assist PhD students, and conduct analyses of spatial and temporal patterns of forest dynamics.

The project goals are (1) is to support an emerging network led by Brazilian scientists that will be capable of monitoring vegetation and global change responses on-the-ground at the southern margins of Amazonia, and (2) to conduct some of the fieldwork and analysis needed to start to test for ecosystem changes.

You will have a PhD in Ecology or a related discipline, together with experience in Tropical Forest Ecology. You will have excellent communication skills, be a careful and conscientious worker, and have a record of successfully working with a research team. English language skills are desirable, as is a publication track record.

Informal enquiries may be made to Profa. Beatriz Marimon, tel + (66)3438-1224, email biamarimon@unemat.br, or Professor Oliver Phillips, email o.phillips@leeds.ac.uk.

Main duties responsibilities of the post-doctoral research associate

- **Coordinate logistics for field expeditions** in Brazil, with advice from Prof. Marimon and Prof. Phillips;
- **Lead small field-teams to successfully re-measure trees** in tropical forest and cerrado permanent plots;
- **Participate in and lead training events** of field-teams;
- **Ensure that high-quality tree growth data are collected and entered in the project database (www.forestplots.net),** including entering existing data where necessary;
- **Manage budgets** for fieldwork and soil collection and shipping;
- **Assist PhD students** in helping to prepare data for analysis, and advise them on analytical techniques;
- **Lead manuscripts including analyses of spatial and temporal patterns of biomass dynamics** for publication in international journals;
- **Interact, collaborate and contribute to joint discussions** with researchers from UNEMAT, Leeds, INPA, and colleagues across Brazil;
- **Produce regular project update reports**;
- **Identify other research opportunities and directions as they arise,** and assist in the development of follow-on research funding applications;
- **Undertake any other duties which may be suitable within the role as requested by the Brazilian and UK project PIs.**

Criteria

Essential

•	A PhD in Ecology or a related discipline, together with experience in tropical forest vegetation, ecology, or floristics;

•	Experience of working as part of a scientific team in the field, under challenging conditions;

•	Ability to demonstrate successful experience of collaborative team-work in academic research environments;

•	Ability to work to tight deadlines to a high standard;

•	Technical competence with computing (especially databasing and statistical analyses);

•	Excellent interpersonal and communication skills;

•	Diligence, with proven attention to details when working in the field and laboratory;

•	Motivated self-starter and independent worker;

•	Strong personal interest in the research programme;

•	A demonstrable commitment to research, including: a) Ability to identify research objectives; b) Independence/initiative in tackling research problems;

Desirable

•	Have a publication track record / have your PhD work already published or in press in peer-reviewed publications;

- Ability to communicate well in written and spoken English;
- Fieldwork experience in Amazonia;
- Prior first-hand field knowledge of Amazon forest and cerrado structure and function;
- Information management experience;
- Familiarity in dealing with large and complex datasets;
- Experience of leading people in a challenging environment.

If lacking any of these skills and experiences, proven ability and enthusiasm to learn fast and work collaboratively.

"Amazon transitions: developing a network to monitor vegetation and global change responses on-the-ground at the southern margins of Amazonia"

Project Background:

The Amazon plays a key role in our planet's biosphere, with more life, water, and carbon than any other forest on Earth, so changes here matter greatly for Brazilian biodiversity and ecology, as well as potentially the well-being of all life on the planet. Amazonia is very large and complex, and conducting even basic ecological research here is often very challenging. A key element in trying to successfully understand such a large and complex system is through **networked science**. This requires a long-term vision beyond the standard three-year grant cycle, in which researchers across locations and nationalities together apply standardised measurement techniques at large-scale and with sufficient replication. Furthermore, it is critical that such teams work on-the-ground in the field as well as the laboratory, combining different disciplines, and that training and education is well-integrated into the research work in order to build capacity and to assure long-term continuity of monitoring programmes.

The overall **Aims** of the project are **(1) to support an emerging network led by Brazilian scientists that will be capable of monitoring vegetation and global change responses on-the-ground at the southern margins of Amazonia, and (2) to conduct some of the fieldwork and analysis needed to start to test for ecosystem changes.**

The specific **Objectives** of this project are:

1. Help MT researchers to build a collaborative network fit for purpose for monitoring biomass dynamics, carbon, and biodiversity on-the-ground across Mato Grosso and beyond in Brazil.
2. Quantitative assessment of biodiversity, tree condition, carbon storage, liana infestation, tree growth and dynamics across the Mato Grosso plots.
3. Estimate recent carbon balance of forests in Mato Grosso (ca. 2010 – 2017).
4. Explore the effect of recent drought (e.g. 2010) on forest and cerrado biomass carbon balance, dynamics, and biodiversity.

Role of staff

The project will be led by Prof. Oliver Phillips (University of Leeds, UK) and Profa. Beatriz S. Marimon (UNEMAT). We will work with one post-doctoral researcher and at least two doctoral students. Further input in field campaigns, soil collection/analysis, and supervising the post-doc and students will be provided by Prof. Ben Hur Marimon-Junior (UNEMAT) and Dr. Carlos Quesada (INPA – Soil Laboratory)

- **For the success of the project it is important to have a responsible post-doctoral research associate (PDRA) based in Nova Xavantina**. This PDRA will have responsibility for co-ordinating fieldwork (when Prof. Marimon is not available), its technical implementation, and for the quality of data uploaded. The PDRA will be

closely trained by Profs Phillips and Marimon. In the final the PDRA will be expected to complete analysis towards the project goals. While exact definition of this will depend on the development of the PhD projects, we expect that the PDRA's analytical project will be centred on estimating the carbon balance of natural vegetation in Mato Grosso over the past decade.

Why UNEMAT-Nova Xavantina?

Profa. Beatriz S. Marimon and Prof. Ben Hur Marimon Junior have already established NX as a centre of vegetation monitoring for the Mato Grosso region. Uniquely, their work is now funded through key national monitoring programmes (PELD and PPBIO), and is also affiliated to international forest monitoring programmes which have been initiated by UK-based scientists since the year 2000 (1. RAINFOR, led by Professor Phillips; 2. GEM, led by Professor Malhi; and 3. TROBIT, led by Professor Lloyd). The Marimons' field-based protocols have been carefully designed and applied to make sure that the work they lead contributes to a range of regional, national, and global science, on the one hand, **and** to the vital task of training the next generation of Brazilian ecologists on the other. Nova Xavantina therefore forms the ideal base to pursue this project's objectives to support development of networked vegetation monitoring across the southern Amazon/Cerrado transition zone (Objective 1), and to address the specific scientific questions outlined (Objectives 2, 3, and 4).