

Short Course: Vegetation Dynamics of the forest-savanna boundary (Provisional programme)

Brasilia November 2019

Elmar Veenendaal, (Wageningen university) and Heloisa Miranda and Augusto Franco (University of Brasilia).

Savannas and tropical forests are dominant biomes in the tropics occurring in all tropical regions. Transitions between the two biomes occur in spatially confined areas under similar climate. Fire soil fertility as well as water supply are considered major drivers of vegetation structure and woody species competition. In this short course we will explore the state of knowledge concerning the structure and functioning of Forest and Savanna with specific emphasis on their processes. We will do using lectures, Literature discussions, a manuscript review and the development of a research concept note.

Day 1 November 11th General introduction

8:30h – 9:00h Introduction Course. Aims, objectives, Output.

9.00h-10.00h Lecture. Savanna and forest physiognomies (Elmar Veenendaal)

Break

10.30h – 11.30h Lecture. The forest-savanna boundary of West Africa (elmar Veenendaal).

Lunch and preparation for the afternoon session afternoon

13:30 – 15-30 Afternoon Discussion of scientific papers*

- Hoffman and al (2012) (student group prepares and introduces paper)
- Ratnam et al (2012) (student group prepares and introduces paper)
- Cuni-Sanchez et al (2016) (student group prepares and introduces paper)

November 12th Fire effects on tropical vegetation

Lecture . 8:30h – 9.30 Fire effects on Tropical savannas (Elmar Veenendaal)

Lecture 10:00h – 11:00h Fire trials in tropical vegetation, what do they tell us? (Elmar Veenendaal)

Lecture 11:30h – 12:00h How to review a paper. (Elmar Veenendaal)

After that handing out the fire manuscript on Ghana for reading. With a specific task list.

Rest of the day students review (in small groups) the paper with assistance from Elmar Veenendaal

November 13th Reviewing and introduction of the Conceptual framework

9:00h – 11:00h Paper reviewing continues

11.00h Students report back on their findings considering the paper.

13:30h – 14:00h Lecture: Summarising the fire manuscript (Elmar Veenendaal)

14:00h – 14:30 h Lecture: The conceptual framework as the start of a proposal or essay or paper (Elmar Veenendaal)

New Assignment. Make a conceptual framework of your own research or research you would like to do in forests or savannas of Brazil (any scientific topic is ok here)

November 14th Traits day and the Project proposal note

8:30-9:30 Lecture Plant functional traits in savannas and forests of Central Brazil (Augusto Franco)

10:00 h 11:00. Lecture Seedling traits and functionality in African tropical tree seedlings (Elmar Veenendaal)

11:00 Continuation of preparing conceptual frameworks with help from Elmar Veenendaal

14:00h –h Presentation of Conceptual frameworks (students)

15:30h – 16:00h Introducing the Proposal concept note (Elmar Veenendaal)

November 15th Self study

Students work on their concept notes

Monday 18th The IBGE Fire Experiment and Concept notes finalisation

9:00-10:00 The IBGE Fire experiment (Heloisa Miranda and Elmar Veenendaal)

14:00h Lecture Elmar Veenendaal to the Biology Department.

17:00h HANDING IN OF CONCEPT NOTES by students

Tuesday 19th excursion to the IBGE fire experiment and other experimental plots at IBGE

Morning: Excursion

Afternoon: closure: snacks and refreshments will be served!

****Reading materials first day***

Cuni-Sanchez A, White LJ, Calders K, Jeffery KJ, Abernethy K, Burt A, Disney M, Gilpin M, Gomez-Dans JL and Lewis, SL (2016) African Savanna-Forest Boundary Dynamics: A 20-Year Study. PLoS ONE 11, e0156934

Hoffmann WA, Geiger EL, Gotsch SG, Rossatto DR, Silva LCR, Lau OL, Haridasan M and Franco AC (2012) Ecological thresholds at the savanna-forest boundary: how plant traits, resources and fire govern the distribution of tropical biomes. Ecology Letters 15, 759-768.

RATNAM, J., BOND, W. J., FENSHAM, R. J., HOFFMANN, W. A., ARCHIBALD, S., LEHMANN, C. E. R., ANDERSON, M. T., HIGGINS, S. I. & SANKARAN, M. 2011. When is a 'forest' a savanna, and why does it matter?. Global Ecology and Biogeography 20(5):653-660.