

CURRICULUM VITAE

KOWIYOU YESSOUFOU, PhD

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Research interests

My global interest is conservation biology. My primary objective is uncovering the historical drivers of biodiversity, understanding species responses to environmental changes, and finding solutions for conservation of ecosystems and their services. Specifically I am interested in key ecological questions related to extinction risk in biological systems, species invasion, biogeography, ecosystems restoration, and climate change. I have specific interest in phylogenetic ecology, and work in various biological systems including forests, savannas, and mangroves. I am working on plants and animals, combining both traditional and modern statistical tools with strong skills in R statistical program.

Appointments

- **Postdoctoral Research Fellows**, May 2012-March 2014, **University of Johannesburg, South Africa**, Dpt. Botany and Plant Biotechnology.
- **Research Assistant and PhD student**, August 2008-May 2012, **University of Johannesburg, South Africa**, Dpt. Botany and Plant Biotechnology.
- **Minister Assistant**, 2007, **Ministry of Environment and Nature Protection**, Benin.
- **Lecturer Ecology**, 2007-2008, **University of Sciences and Technology**, Benin.
- **Research Assistant**, 2007, **Centre for Research and Training in forestry, (CERF)-Benin**
- **Project Assistant**, 2008, Firewood Project, **National Centre for Forest Development**, Benin
- **Research Assistant**, 2003-2005, **Laboratory of Applied Ecology**, **University of Abomey-Calavi, Benin**, Dpt. Environmental Sciences.
- **Lecturer Biological sciences**, 2001-2003, **Pobe High school**, Benin.

Education

- **Visiting Postdoc at Davies' lab**, August 2012, **McGill University, Dpt. Biology, Montreal, Canada**.
- **Ph.D. (Botany)** Phylogenetic ecology, May 2012, **University of Johannesburg, South Africa**. "Phylogenetic analysis of plant community assemblages in the Kruger National Park, South Africa". Supervisors: Prof. Michelle van der Bank (University of Johannesburg, South Africa) and Prof. Vincent Savolainen (Imperial College London, UK).
- **MSc.** Forest Ecology, October 2005, **University of Abomey-Calavi, Benin**.
- **Honors** Natural Sciences, June 2001, **University of Abomey-Calavi, Benin**.
- **B.Sc.** Natural Sciences June 2000, **University of Abomey-Calavi, Benin**

Publications in Peer-reviewed journals

- Published, Accepted and In Press

- Barnabas H Daru, **Kowiyou Yessoufou**, Ledile T Mankga, Jonathan T Davies (2013). A global trend towards the loss of evolutionarily unique species in mangrove ecosystems. ***PloS ONE* (IN PRESS)**. DOI: 10.1371/journal.pone.0066686.
- T. Jonathan Davies and **Kowiyou Yessoufou**. Revisiting the impacts of non-random extinction on the tree-of-life (2013). ***Biology Letters* (IN PRESS)**. DOI: 10.1098/rsbl.2013.0343
- **Kowiyou Yessoufou**, Jonathan T Davies, Olivier Maurin, Maria Kuzmina, Hanno Schaefer, Michelle Van der Bank, and Vincent Savolainen (2013). Large herbivores favour species diversity but have mixed impacts on phylogenetic community structure in an African savanna ecosystem. ***Journal of Ecology* 101**: 614-625. DOI: 10.1111/1365-2745.12059.
- **Kowiyou Yessoufou**, Barnabas H. Daru, and T. Jonathan Davies (2012). Phylogenetic Patterns of Extinction Risk in the Eastern Arc Ecosystems, an African Biodiversity Hotspot. ***PloS ONE* 7(10)**: e47082. DOI: 10.1371/journal.pone.0047082.

- Bezeng Simeon Bezeng, Vincent Savolainen, **Kowiyou Yessoufou**, Olivier Maurin, Alex Papadopoulos, and Michelle Van der Bank. A phylogenetic approach towards understanding what drives plant invasiveness on Robben Island, South Africa (2013). ***Botanical Journal of the Linnean Society London*** 172: 142-152 (DOI: 10.1111/boj.12030).
- Franzini PZN, Dippenaar-Schoeman AS, **Yessoufou K**, Van der Bank FH (2013). Mitochondrial, genomic DNA and morphological data indicate that more than one species of *Cyrtophora* (Araneae: Araneidae) occur in South Africa. ***International Journal of Modern Biological Research*** 1: 21-34.
- Herman F. Van der Bank, Richard Greenfield, Barnabas H. Daru and **Kowiyou Yessoufou** (2012). DNA barcoding reveals micro-evolutionary changes and river system-level phylogeographic resolution of seven African silver catfish, *schilbe intermedius* (siluriformes, schilbeidae) populations. ***Acta Ichthyologica Et Piscatoria*** 42: 307-320.
- **Kowiyou Yessoufou**, Michelle van der Bank, Jacinta Abalaka and Barnabas H. Daru (2012). Fig-frugivore interactions follow a constrained Brownian motion model of evolution in an Important Bird Area, West Africa. ***Israel Journal of Ecology and Evolution***, 58: 39-51.
- Bezeng BS, Maurin O, **Yessoufou K**, Van der Bank M. (2012). What drives invasion success on Robben Island, South Africa? ***South African Journal of Botany*** 79: 178.
- **Yessoufou K**, Maurin O, Davies TJ, Kuzmina M, Schafer H, Van der Bank M, Savolainen V. (2012). The role of megaherbivores in shaping the structure of subtropical plant communities. ***South African Journal of Botany*** 79: 223.
- **Kowiyou Yessoufou**, Philip Rousseau, Barnabas H. Daru and Michelle van der Bank (2013). Discriminatory power of DNA barcodes in the African cycad genus *Encephalartos* (Zamiaceae). ***South African Journal of Botany*** (**Accepted**).

- Publications needing revisions

- **Kowiyou Yessoufou**, Ledile T. Mangka, Barnabas H. Daru and Jephris Gere. Mixed predictive power of phylogeny in ethnomedicine: An insight from South African commonly used medicinal plants. ***Molecular Ecology Resources***

- In review

- **Kowiyou Yessoufou** and Jephris Gere. Evolutionarily isolated alien mammals have greater invasion success in South Africa. ***BMC Ecology***
- Herman F. Van der Bank, Dai Herbert, Richard Greenfield, and **Kowiyou Yessoufou**. Revisiting species delimitation within the genus *Oxystele* using DNA barcoding approach. ***Zookeys***
- Jephris Gere, **Kowiyou Yessoufou**, Olivier Maurin, Ledile T Mankga, Barnabas H Daru, Michelle Van der Bank. Incorporating *trnH-psbA* to core DNA barcodes improves discrimination of species within southern African Combretaceae. ***Zookeys***
- Ledile T Mankga, **Kowiyou Yessoufou**, Annah M Moteetee, Michelle Van der Bank. Efficacy of the core DNA barcodes in identifying poorly conserved and processed plant materials commonly used in South African traditional medicine. ***Zookeys***
- Theresa M Sethusa, Ian M Millar, **Kowiyou Yessoufou**, Andreana Jacobs, Michelle Van der Bank, Herman F Van der Bank. DNA barcode efficacy for identification of economic important scale insects (Hemiptera: Coccoidea) in South Africa. ***Bulletin of Entomological Research***.

- Publications ready for submission

- Maurin O, T. Jonathan Davies, **Yessoufou K**, Bezeng S. Bezeng, Bingham M, Burrows J, Burrows S, Daru BH, Muasya AM, Van der Bank M, and Williams Bond. Savanna, fire and the origins of “underground forests” of Africa (**To be submitted to *New Phytologist***).
- T. Jonathan Davies, Olivier Maurin, **Kowiyou Yessoufou**, Barnabas H Daru, Bezeng S Bezeng, Ledile T Mankga, Hanno Schaefer, Michelle Van der Bank. Human population density in southern Africa has been shaped by the evolutionary history of the regional flora (**To be submitted to *Science***).
- **Kowiyou Yessoufou**, T. Jonathan Davies, Olivier Maurin, Michelle Van der Bank. Ignorance and the loss of evolutionary history in the flora of Southern Africa (**To be submitted to *Proceedings of the Royal Society London B***).

- Publications in preparation

- **Kowiyou Yessoufou.** Mammal data deficient species are evolutionarily more unique than assessed species.
- **Kowiyou Yessoufou,** Olivier Maurin, and Michelle Van der Bank. Phenological survival strategy of woody plant species in a tropical African savanna

Publications NOT Peer-reviewed

- **Kowiyou Yessoufou,** Vincent Savolainen, Olivier Maurin, Michelle Van der Bank (2011). Plant survival strategies in a tropical African savanna, South Africa. *In:* Martin, H., Kendall, L. Crous (Eds) Proceedings of the congresses of the Southern African Society for Systematic Biology - Biodiversity matters. Grahamstown; p 110. ISSN: 2219-410X.
- Olivier Maurin, Sylvie Duthoit, Felix Forest, Izak P.J. Smit, **Kowiyou Yessoufou,** Vincent Savolainen, and Van der Bank, M. (2009). Explaining tree and shrub regional diversity patterns in the Kruger National Park, South Africa. *Abstract volume of the Third International Barcode of Life Conference,* Mexico City, Mexico.
- **Kowiyou Yessoufou** and Catherine Butterfield (2002). A Comparative study of the densities of living and dead trees in heavily logged and unlogged areas of Kibale National Park, Uganda. 18p. *Tropical Biology Association reviews.* Abstract available on <http://www.tropicalbiology.org/home.html>.

Guest lectures

- **13th November 2012.** I was invited as a guest speaker to the review meeting of the Royal Society London, at the University of Johannesburg, South Africa. My talk title was: "What matters: Ecosystem or ecosystem services? "
- **30th October 2012.** I was invited as a guest speaker to the 2012 Botany Postgraduate Symposium, Department of Botany and Plant Biotechnology, University of Johannesburg, South Africa. My talk title was: "Analysis of extinction Risk in eastern and southern African floras".

Talks presentation at national and international conferences

- **Third European Conference for the Barcode of Life.** Brussels, 17-20 September 2012, **Belgium**. My talks were on (1) "The role of megaherbivores in shaping the structure of plant community assemblages" and (2) "Living African fossil cycads are less diverse than currently thought".
- **10th Conference of Southern African Society of Systematics.** Arniston, Western Cape, 16-19 July 2012, **South Africa**. My talk: "Living African fossil cycads are less diverse than currently thought".
- **38th annual conference of the South African Association of Botanists.** University of Pretoria, 15-18 January 2012, **South Africa**.
- **4th International Wildlife Management Congress, Durban, 9-12 July 2012, South Africa.** My talk: "Are elephants really destroying everything in the Kruger National Park, South Africa? "
- **46th Annual Congress of the Grassland Society of Southern Africa- Advancing Rangeland Ecology and Pasture Management in Africa.** Grootfontein ADI, Middleburg, Eastern Cape, 11-15 July 2011, **South Africa**. My talk: "Community assembly process in the Kruger National Park".
- **5th Postgraduate botany conference,** University Johannesburg, 27 October 2009, **South Africa**. My talk: "Tree of Life" and its implications for conservation in Kruger National Park, South Africa.
- **ICRAF annual seminar.** Bamako, 12-14 December 2007, **Mali**. My talk: "Why fruit plants are abandoned on farms by Nago and Holli farmers in Pobè, south-east Benin?"
- **First national conference on Benin National Parks;** Cotonou, 16-17th June 2006, **Benin**. My talk: "National Parks in Tropical Africa: Forces, constraints and perspectives".

Posters presentation at national and international conferences

- **Advanced Science Institute workshop, Kenya Wildlife Services,** 5-15 January 2011, **Kenya**. Poster title: "Phylogeny and phylogenetic diversity of woody plant communities in the Kruger National Park".
- **Tree Barcoding of Life (TreeBoL) conference,** University of Johannesburg, 10-17 September 2009, **South Africa**. Poster title: Testing niche vs. neutral processes of community assemblages in a tropical African savanna, South Africa.

Involvement in others conference presentations

1. Maurin O, Davies TJ, **Yessoufou K**, Daru BH, Bezeng B.S, Ledile M, Van der Bank M. Human population density correlates with phylogenetic diversity and plant vulnerability in Southern Africa. Third European Conference For the Barcode Of Life (ECBOL3), Brussels, Belgium, 17-20 September 2012.
2. Maurin O, Davies TJ, **Yessoufou K**, Daru BH, Bezeng BS, Ledile M, Van Der Bank M. Phylogenetic diversity, functional diversity and the future of southern African Tree species. Southern African Society For Systematic Biology, Arniston, Western Cape, South Africa, 16-20 July 2012.
3. Sethusa T, Millar I, **Yessoufou K**, Jacobs A, Van Der Bank M, Van Der Bank H. DNA Barcoding scale insects (Hemiptera: Coccoidea) of economic importance in South Africa. 4th International Conference on Insect Science, The University Of Agricultural Science, Holiday Palms, Bangalore, India, 14-17 February 2013.
4. Maurin O, Davies TJ, **Yessoufou K**, Bezeng BS, Mankga LT, Daru BH, Muasya AM, Burrows J, Van der Bank M, Bond W. Investigating the origins of the “underground forests” of Africa. 39th Conference of the South African Association of Botanists, Drakensville, 20-24 Jan 2013.
5. Daru BH, **Yessoufou K**, Davies TJ, Maurin O, Mankga LT, Bezeng BS, Van Der Bank M. Phylogenetic Analysis of extinction risk in eastern and southern African floras. 39th Conference of the South African Association of Botanists, Drakensville, 20-24 Jan 2013.
6. Kabongo R, Maurin O, **Yessoufou K**, Van Der Bank M. The Development of an accurate DNA-based Identification tool for traded and protected tree species in Southern Africa. 39th Conference of the South African Association of Botanists, Drakensville, 20-24 Jan 2013.

Students supervision

- Past student

- Bezeng Simeon Bezeng, MSc Botany, African Centre for DNA Barcoding, University of Johannesburg (2010-2012). *Cum Laude*

- Current students (MSc):

- Samuel Bamigboye, MSc student, Dpt. Botany, University of Johannesburg. He is working on "Phylogenetic diversification of the genus *Encephalartos*, an endemic cycads genus to Africa".

- Lerato, MSc student, Dpt. Botany, University of Johannesburg. She is working on "DNA barcoding invasive aquatic plants of South Africa".
- Pathu, MSc student, Dpt. Geography & Environmental Sciences, University of Johannesburg. He is working on: "What drive extinction risk in southern African flora?"

- Collaborations in PhD student supervisions:

- Barnabas Daru (collaborator) PhD.
- Bezeng Simeon Bezeng, (collaborator), PhD
- Jephris Gere (collaborator), PhD

Teaching experiences

- **2011**, Visiting Lecturer at the National University of Rwanda (NUR) in Rwanda. During my stay at the NUR, I lectured the following courses:
 - "Introduction to Plant Tissue Culture and Organogenesi" to Honors students (4th year) in Biotechnology"
 - "Tropical Ecosystems and Landscape Change" to Master students in Conservation".
 - I am also teaching plant ecology to 1st year student in Botany, UJ. This is part of Prof. Michelle's course.
- **2005-2007**, Lecturer plant Ecology, University of Sciences and Technologies, Benin.
- **2001-2004**: Teaching position in natural sciences, both at Pobe and Vedoko High Schools, Benin.

Scientific journals for which I am acting as reviewer

- Molecular Ecology resources
- *Journal of Ornithology*
- *Acta Oecologica*
- *Acta Ichthyologica Et Piscatoria*
- *DNA Barcode*

Involvement in large projects at the African Centre for DNA Barcoding

1. DNA barcoding of all invasive plants & animals for biosecurity (large project funded by the Department of Environmental Affairs)
2. TreeBOL Africa (involving at least 12 African countries)

Involvement in the Department of Botany & Plant Biotechnology, University of Johannesburg

1. Coordinator of the monthly report back meetings of the postgraduate students
2. Coordinator of the 6 weekly journal club meeting of the postgraduate students
3. Supervisor of airport interns for the invasive project

Grant and Fellowships

- University of Johannesburg Post-doctorate Scholarship, 2012-2013.
- Joint Royal Society (UK) and National Research Foundation (South Africa) grant P15927: Regional patterns of biodiversity and conservation in South Africa: the flora of the Kruger National Park as a case study
- University of Johannesburg Merit Bursary, South Africa, 2009-2011.
- The Government of Canada through Genome Canada and the Ontario Genomics Institute (2008-OGI-ICI-03)
- Postgraduate scholarship, Tropical Biology Association, Cambridge University, UK, 2004 –2005.
- Research scholarship, Tropical Biology Association, Cambridge University, UK.

Short trainings/courses

- **2011**, Trainings in Conservation Biology, Kenyan Wildlife Service Institute, 5-15 January 2011, Kenya. **Organizers:** Mathematical Biosciences Institute at Ohio State University (USA) and Center for

Discrete Mathematics and Theoretical Computer Science at Rutgers University (USA).

- **2010**, High Performance Computing in Phylogenetics, University of Tennessee, 13-15 October 2010, Knoxville, USA. **Organizer:** National Institute for Mathematical and Biological Synthesis (NIMBioS), USA.
- **2010**, Computing Statistics: Generalized Linear Modeling, Imperial College London, United Kingdom. **Instructor:** Prof. MJ Crawley, Imperial College London, UK.
- **2002**, Certificate in Forest Ecology, Tropical Biology Association, Dpt. Zoology, Cambridge University, United Kingdom.

Referees

- **Prof. Michelle van der Bank**
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- **Prof. T. Jonathan Davies**
Department of Biology McGill University, Canada; **Tel:** 514-398-8885;
Fax: 514-398-5069; **Email:** j.davies@mcgill.ca
- **Prof. Vincent Savolainen**
Imperial College London and Royal Botanic Gardens Kew; Silwood Park Campus, Buckhurst Road SL5 7PY Ascot, Berks, UK; **Tel:** +44 (0)20 7594 2374; **Fax:** +44 (0)20 7594 2339;
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