


Academic Staff Profile

Personal Profile

Personal Details

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| <p>Name: Dr. Paul Thomas Obade Title/Qualification: PhD Department: Environmental Science and Education Designation/Position: Lecturer Email: obade.paul@ku.ac.ke Contact Address: Department of Environmental Science and Education 844 Building P. O. Box 43844-00100 Nairobi Area of Specialization: -GIS/Remote Sensing -Environmental and Climate Change Modelling Research Interests: -land use and land cover changes -Ecosystem dynamics and modelling -GIS/Remote Sensing applications Google Scholar:http://ku.ac.ke/ptobade ORCID ID: https://orcid.org/0000-0002-2233-1834</p> |  |
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Academic & Professional Qualifications

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| Vrije Universiteit Brussel Brussels, Belgium | PhD (2006) – grade of great distinction Title of thesis: Modelling spatio-temporal dynamics of a Kenyan mangrove forest |
| EU/FAO/Lake Victoria Fisheries Research Project, Jinja, Uganda | Regional training course on Geographical Information Systems in Fisheries Management and Planning (2002) |
| Vrije Universiteit Brussel Brussels, Belgium | MSc (Ecological Marine Management) (2000) – grade of great distinction Title of thesis: Anthropogenically induced changes in a Kenyan mangrove ecosystem explained by application of remote sensing and Geographical Information Systems (GIS) |
| Vrije Universiteit Brussel, Brussels, Belgium | International training course – Knowledge Organisation for Water Sciences: Hydrology, Oceanography and Water Resources Management (1997 – 1998) |
| Kenya Wildlife Services Training | The Integrated Environmental Management course (1997) |

Institute, Kenya

University of Nairobi, Kenya

BSc, honours degree (Physics) (1992)

Employment History

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| Current employer (Kenyatta University) | Lecturer; Geographic Information Systems (GIS), Remote Sensing, Landuse and landcover Dynamics and their Modelling, Quality assurance processes, Environmental Monitoring and Assessment, Water Resources Management, Wetland Resources Inventory, Natural Disaster Management, Climate change modelling, Environmental Physics, Research Methodology and Ecosystem Modelling, postgraduate students supervision and examination. |
| Previous employer | Kenya Marine and Fisheries Research Institute, (KMFRI). Worked as a research scientist for over 17 years, participating, developing and implementing research projects in lead roles and also held senior positions within the organization. Additionally, wide experience in regional and international collaborative projects. Centre Director, Naivasha Centre [1998-2004] |
| Position (KMFRI) [2004-2008] | Programme Coordinator – Information and Database Management (IDM) performing the following tasks; Coordinator of research projects and human resource in IDM Budget preparations and staff appraisals Leader of Information and Database Management Research Programme for Inland Waters Regional (East African Community) Focal point – GIS-based Biodiversity atlas for Lake Victoria basin and its catchment, in Lake Victoria Environment Programme (LVEMP) project, funded by the World Bank. Project was focused on research linkages, resource monitoring and management. Regional (EAC) Chairman of the Information, Communication and Outreach Working Group, Lake Victoria Fisheries Research Organization (LVFO) in conjunction with the IFMP European Union project. In charge of information preparation and packaging of research outputs for dissemination to various stakeholders. Coordinator of multidisciplinary research with other core research programmes at KMFRI Oversee preparation of Standard Operating Procedures (SOPS) for various research sampling programmes. |

Achievements

- Kenya Wetlands Atlas, GIS-based Wetlands Atlas and compilation of historical satellite images. Publication supported by UNEP and DANIDA
- Regional (EAC) Chairman of the Information, Communication and Outreach Working Group, Lake Victoria Fisheries Research Organization (LVFO) in conjunction with the IFMP European Union project.
- Vice-chairman (1997-1998), Lake Naivasha Management Technical Committee (Biodiversity),

Kenya.

-Coordinator of Rift Valley chapter of the International Documentary Film Production on Impact of Global Warming (European Union-funded, 1999): Documentary title: Sale temps sur la planete (When storms and clouds are gathering). Produced by RBTF (Belgium), A2 (France) and RTP (Portugal).

-Regional Chairman of the Information, Communication and Outreach Working Group, Lake Victoria Fisheries Research Organization (LVFO) in conjunction with the IFMP EU project (2005-2007).

-Focal Point – Preparation of Regional Biodiversity Atlas on Lake Victoria Basin and its catchment area; GIS maps on thematic biodiversity topics in the framework of Lake Victoria Environmental Management Programme for Kenya, Uganda and Tanzania (including organization of stakeholder workshops). – GIS-based Biodiversity atlas for Lake Victoria basin and its catchment, in Lake Victoria Environment Programme (LVEMP) project, funded by the World Bank. Project was focused on research linkages, resource monitoring and management.

-Facilitator – Consultant lecturer on GIS and Wetland Resource Mapping. International Course on African Wetland Management at KWSTI 20 September 2006-2013.

Publications

Referred Journals

Paul Obade, V. D., Gaya, C., & Obade, P. T. (2022). Challenges and Opportunities of Digital Technology in Soil Quality and Land Management Research. In Environment and Climate-smart Food Production (pp. 285-317). Springer, Cham.

Mareri B, Kitur E, Obade P. (2021). Assessment of Bioaccumulation of Zn, Pb and Cd in *E.crassipes*, *V.cuspidata* and *C.Papyrus* from River Kisat, Kisumu County, Kenya. African Journal of Pure and Applied Sciences. AJPAS -020

Oduor S, Brown J, Macharia GM, Boisseau N, Murray S, Obade P. (2020). Differing physiological and behavioural responses to anthropogenic factors between resident and non-resident African elephants at Mpala Ranch, Laikipia County, Kenya. PeerJ 8:e10010 DOI 10.7717/peerj.10010

Chelangat J., Mburu, B. and Obade, P. (2020). Effects Of Logging On The Diversity Of Tree Species In Kerisoi Natural Forest, Nakuru County, Kenya. International Journal of Innovative Research and Advanced Studies (IJIRAS) Volume 7 Issue 2. ISSN: 2394-4404

Odhiambo N O., Obade, P. and Gathuru, G. (2019): Anthropogenic Impacts on Land Use and Land Cover Change in Ombeyi wetland, Kisumu County, Kenya. International Journal of Regional Development. ISSN 2373-9851

Ochieng, J., Kitur, C. and Obade, P. (2016): Assessment of decay coefficients of allochthonous litter for sustainable riparian forage agriculture and environmental monitoring: A study in River Nyangores, Kenya. Open Atmospheric Science Journal. Bentham Science Publishers.

Obade, P., N. Koedam, K. Soetaert, G. Neukermans, J. Bogaert, E. Nyssen, F. Vannedervele, U. Berger and F. Dahdouh-Guebas (2009). Impact of anthropogenic disturbance on a mangrove forest assessed by a 1D cellular automaton model using Lotka–Volterra-type competition. International Journal of Design and Nature and Ecodynamics. Vol. 3, No. 4 1–25, Southampton, UK

Obade, P. T. (2006): Modelling spatio-temporal dynamics of a Kenyan mangrove forest. PhD thesis, Vrije Universiteit Brussel, Belgium.

Obade, P. T.; Dahdouh-Guebas, F.; Koedam, N.; De Wulf, R., and Tack. J. (2004): GIS-based integration of interdisciplinary ecological data in the detection of land-cover changes of creek mangroves of Gazi Bay, Kenya. In: Western Indian Ocean Journal of Marine Science Vol 3, No. 1, pp 11-26.

Harper, D. M.; Smart, A. C.; Coley, S.; Schmitz, S.; North, R.; Adams, C.; Obade, P. T. and Mbogo, K. (2002): Distribution and abundance of the Louisiana red swamp crayfish *Procambarus clarkii* Girard at Lake Naivasha, Kenya between 1987 and 1999. *Hydrobiologia* 488: 143-151. Kluwer Academic Publishers, Netherlands.

Books and Books Chapters

Paul Obade, V. D., Gaya, C., & Obade, P. T. (2022). Challenges and Opportunities of Digital Technology in Soil Quality and Land Management Research. In *Environment and Climate-smart Food Production* (pp. 285-317). Springer, Cham.

MEMR (2012): Kenya Wetlands Atlas, GIS-based Wetlands Atlas and compilation of historical satellite images. Publication supported by UNEP and DANIDA

Gichuki, J.; Abila, R.; Lung'aiya, H.; Njoka, S.; Ofulla, A.; Obade, P.; Omondi, R.; Boera, P. and Mwendu, K. (2011): Studies on Rapid Assessment of the Ecological Succession and the Dynamic Status of the Water Hyacinth in the Nyanza Gulf of Lake Victoria. ACTS press, African Centre for Technology Studies, Lake Victoria Basin Commission. ISBN 9966-41-153-4

LVEMP (2005): Regional Biodiversity Atlas on Lake Victoria Basin and its catchment area. (compilers: Obade, P. T., Kayanda, R., Sekiranda, S. and SSebugwawo, V.). GIS maps on thematic biodiversity topics in the framework of Lake Victoria Environmental Management Programme for Kenya, Uganda and Tanzania.

Conference/Workshops/Seminar Papers

Conference Papers

Anthropogenically induced changes in a Kenyan mangrove ecosystem assessed by application of remote sensing and GIS: A case study in Gazi. International symposium on comparing Great Lakes of the World (GLOW III; climate, food webs, biodiversity and integrated management), February 2001 in Arusha, Tanzania

The fishery of Lake Naivasha, Kenya, its potential, threats and implication of the current management strategies. International symposium on comparing Great Lakes of the World (GLOW III; climate, food webs, biodiversity and integrated management), February 2001 in Arusha, Tanzania

Evaluation, restoration and management practises in the conservation of tropical, Mediterranean and temperate forest ecosystems. Botany in Belgium and Belgium's botanical diversity BBB2001 symposium, Bouchout-Meise, Belgium, 2003.

Restoration of mangroves. NECOV (Nederlands-Vlaamse vereniging voor ecologie) Symposium on Exploitation and Restoration of Tropical Aquatic Ecosystems, 7 October, Brussels, Belgium 2004.

Management for Lake Victoria Environment and Resources for Posterity; Synthesis and lessons learnt (17th to 19th October, 2005, Tom Mboya Labour College, Kisumu, Kenya)

Impact of disturbance on Gazi Bay mangrove forest assessed by a cellular automaton model and Lotka Volterra type competition. Proceedings; Int'l Symposium on Aquatic Vascular Plants: 25 Years After. 2nd – 6th February, 2006 Brussels, Belgium.

The equilibrium dynamics of mangroves of Gazi Bay (Kenya)- modelling based on mangrove species competition. Mangrove Macrobenthos Meeting 2 (MMM2), 25-30 June 2006, Gold Coast, Australia

Workshops Papers

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Seminar Papers

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Student Co-authored Publications

Mareri B, Kitur E, Obade P. (2021). Assessment of Bioaccumulation of Zn, Pb and Cd in *E.crassipes*, *V.cuspidata* and *C.Papyrus* from River Kisat, Kisumu County, Kenya. African Journal of Pure and Applied Sciences. AJPAS -020

Oduor S, Brown J, Macharia GM, Boisseau N, Murray S, Obade P. (2020). Differing physiological and behavioural responses to anthropogenic factors between resident and non-resident African elephants at Mpala Ranch, Laikipia County, Kenya. PeerJ 8:e10010 DOI 10.7717/peerj.10010

Chelangat J., Mburu, B. and Obade, P. (2020). Effects Of Logging On The Diversity Of Tree Species In Kerisoi Natural Forest, Nakuru County, Kenya. International Journal of Innovative Research and Advanced Studies (IJIRAS) Volume 7 Issue 2. ISSN: 2394-4404

Odhiambo N O., Obade, P. and Gathuru, G. (2019): Anthropogenic Impacts on Land Use and Land Cover Change in Ombeyi wetland, Kisumu County, Kenya. International Journal of Regional Development. ISSN 2373-9851

Ochieng, J., Kitur, C. and Obade, P. (2016): Assessment of decay coefficients of allochthonous litter for sustainable riparian forage agriculture and environmental monitoring: A study in River Nyangores, Kenya. Open Atmospheric Science Journal. Bentham Science Publishers.

Other Publications

Obade, P. T. (2003). Detection of land-cover tendencies, monitoring and modelling along Kenya Coast (with emphasis on mangrove forests) and papyrus of Lake Naivasha, Kenya

Obade, P. T. (2001): Integration of scientific data into GIS environment for Pambala and Galle, Sri Lanka (consultancy technical report for EC-INCO project on mangrove ecology of India and Sri Lanka)

Obade, P. T. (2000): Anthropogenically induced changes in a Kenyan mangrove ecosystem explained by application of Remote Sensing and Geographic Information Systems (GIS). MSc thesis, Vrije Universiteit Brussel, Belgium.

Obade, P. T. (1997): Conservation and management of Lake Naivasha water resources (technical report)

Obade, P. T. (1994): Population dynamics of Louisiana red swamp crayfish (*Procambarus clarkii*) of Lake Naivasha (technical report)

Obade, P. T. (2004). Spatio-temporal changes in papyrus and mangrove vegetation: Quantification of change and possible relation with ecological stability using remote sensing, GIS and computer simulation models (unpublished report)

Research

Buffering processes and capacity of wetlands in the Kenyan portion of the Lake Victoria basin, including production of wetland maps (2005)

Production of GIS-based Regional Biodiversity atlas for Lake Victoria basin and its catchment, Lake Victoria Environment Programme (LVEMP 1), funded by World Bank/GEF 2004 – 2007

Studies on a rapid assessment of the ecological succession and the dynamics of water hyacinth *Eichhornia crassipes* in the Nyanza Gulf of Lake Victoria- 2008

Integrating BOMOSA cage fish farming system in reservoirs, ponds and temporary water bodies in Eastern Africa – EU 6th Framework Program Sub-priority-INCODEV; contract No. 032103–2006 – 2010

The identification and mapping of ECOLOGICALLY SENSITIVE AREAS (ESAs) in Lake Victoria - 2009-2011

Funded Projects

Production of GIS-based Regional Biodiversity atlas for Lake Victoria basin and its catchment, Lake Victoria Environment Programme (LVEMP 1), funded by World Bank/GEF 2004 – 2007

Studies on a rapid assessment of the ecological succession and the dynamics of water hyacinth *Eichhornia crassipes* in the Nyanza Gulf of Lake Victoria- 2008

Integrating BOMOSA cage fish farming system in reservoirs, ponds and temporary water bodies in Eastern Africa – EU 6th Framework Program Sub-priority-INCODEV; contract No. 032103–2006 – 2010

The identification and mapping of ECOLOGICALLY SENSITIVE AREAS (ESAs) in Lake Victoria - 2009-2011

Conferenced/Workshops/Seminars Attended

Conferences Attended

Anthropogenically induced changes in a Kenyan mangrove ecosystem assessed by application of remote sensing and GIS: A case study in Gazi. International symposium on comparing Great Lakes of the World (GLOW III; climate, food webs, biodiversity and integrated management), February 2001 in Arusha, Tanzania

The fishery of Lake Naivasha, Kenya, its potential, threats and implication of the current management strategies. International symposium on comparing Great Lakes of the World (GLOW III; climate, food webs, biodiversity and integrated management), February 2001 in Arusha, Tanzania

Evaluation, restoration and management practises in the conservation of tropical, Mediterranean and temperate forest ecosystems. Botany in Belgium and Belgium's botanical diversity BBB2001 symposium, Bouchout-Meise, Belgium, 2003.

Restoration of mangroves. NECOV (Nederlands-Vlaamse vereniging voor ecologie) Symposium on Exploitation and Restoration of Tropical Aquatic Ecosystems, 7 October, Brussels, Belgium 2004.

Management for Lake Victoria Environment and Resources for Posterity; Synthesis and lessons learnt (17th to 19th October, 2005, Tom Mboya Labour College, Kisumu, Kenya)

Impact of disturbance on Gazi Bay mangrove forest assessed by a cellular automaton model and Lotka Volterra type competition. Proceedings; Int'l Symposium on Aquatic Vascular Plants: 25 Years After. 2nd – 6th February, 2006 Brussels, Belgium.

The equilibrium dynamics of mangroves of Gazi Bay (Kenya)- modelling based on mangrove species competition. Mangrove Macrobenthos Meeting 2 (MMM2), 25-30 June 2006, Gold Coast, Australia

Capacity building for integrated water resources and sanitation management on 28th May 2009 at Kenyatta University, Nairobi.

Wetland Mapping Methodology Definition Retreat: Paper entitled; “Methods for Wetland Mapping; GIS applications”, sub-committee to oversee the production of an inventory and mapping of wetlands and hotspots in Kenya, 9-13 November 2010, Waterbuck Hotel, Nakuru, Kenya.

Natural Disaster Management in Arid and Semi-Arid Lands, June 20-24, 2012. Imperial Hotel, Kisumu, Kenya.

Convened and coordinated ESRI Eastern Africa Education User Conference, October 2013, Kenyatta University, Nairobi

Workshops Attended

EEC/KMFRI International workshop on “Lake Victoria Fisheries Research”, September, 1991, Imperial Hotel, Kisumu, Kenya.

Artificial reef and sustainable lobster fishery management in Western Indian Ocean, Brussels, Belgium (May, 2000),

Wetland Mapping, finalization workshop in the production of a Kenya Wetland Map, 2-6 August, 2011, Lake Naivasha Tourist Resort, Naivasha, Kenya

Workshop for a Kenya National Carbon Accounting System (KENCAS), 29 June 2012, Hilton Hotel, Nairobi

Convened and coordinated workshop on Status of the GIS Biodiversity Atlas for Lake Victoria. National Workshop on the Regional Synthesis Report on the Fisheries Research and Management (7th – 9th September 2005, Tom Mboya Labour College, Kisumu, Kenya)

Convened and coordinated workshop on Status of the GIS Biodiversity Atlas Database for Lake Victoria. National Workshop on the Regional Synthesis Report on the Fisheries Research and Management (18th – 19th September 2005, Imperial Hotel, Kisumu, Kenya)

Convened and coordinated workshop on Aquatic Biodiversity Atlas of Lake Victoria basin and its catchment (22nd – 28th August 2005, Mwanza, Tanzania)

Convened and coordinated workshop on Aquatic Biodiversity Atlas of Lake Victoria basin and its catchment (10th – 14th October, 2005 in Seeta-Mukono, Uganda)

Seminars Attended

International GIS Day Seminars 2015-2019 hosted at Kenyatta University, Kenya

Supervision of Postgraduate Students

Masters

Everlyne Binyanya Obwocha N50/20581/2010 Assessing the effects of climate change on food security: case study in West Pokot County

Christine Adongo N50/10117/2008 Impacts of natural products utilization on the indigenous biodiversity of Kaya Mudzimuvya, A world heritage site in Kilifi District, Kenya

Raphael Wanjala Wanyonyi N50/15427/08 Impact of human population on land degradation in Lugari District, Western Province, Kenya

Mary Wanjiru Warui N50/10690/2007 Current status, utilization and succession of mangrove ecosystem along Mida Creek, Coast Province, Kenya

Lucy Kanana Munyugi N50/10000/2008 The assessment of electronic-waste management strategies in Nairobi, Kenya

Gesicho Andrew The Interaction of Elephants with Habitat and Humans in the Shimba Hills National Reserve and its Environments

Pauline Tolo Ogola N50/24881/2011 Human population growth and its impacts on land resources in Migori District, Migori County

Lavender Alwaka Ondere N50/CTY/PT/24879/2011 Spatio-temporal changes of landcover types in response to anthropogenic and ecological dynamics in Yala swamp wetlands– Kenya

Kipkemoi C. Isaac N50/23417/2013 Detecting forest degradation and modeling a future scenario using GIS and remote sensing, in Elgeiyo/Marakwet County, a case study of Embobut forest

Nicodemus Osoro N50/38336/2016 Anthropogenic Impacts on Land Use and Land Cover in Ombeyi Wetland, Kisumu County, Kenya

Brenda Mareri N50/CTY/PT/28754/2014 Bioaccumulation of heavy metals in macrophytes along river Kijat, Kisumu County, Kenya

Brenda Binge N50/CTY/PT/39731/2016 Impact evaluation of hydroponics technology in Kiambu County, Kenya

Beatrice Chelangat N50/38008/2016 Effects of human activities on utilization and conservation of Kerisoi Forest station, Nakuru County, Kenya

Eunice Kingori N50/CTY/PT/37338/2016 Implication of landscape structure and dynamics on pollinators in avocado production systems in Muranga County

Eve Njau N50/CTY/PT/37879/2017 Assessing the impacts of landuse changes on ecosystem services benefits in Narok County

Sandy Oduor N50/38843/2016 Influence of human activities on the stress hormone levels of African elephants in Mpala ranch, Laikipia County, Kenya

Ph. D

John Kamau Wandaka N85/12015/07 Impacts of human settlements in Kitengela on the migratory wildlife of Nairobi National Park, Kenya

Ochieng Jacob N85/37219/2016 Normalized Difference Vegetation Index and Hyphomycete Activity for Selected Allochthonous Detritus in River Nyangores, Kenya.

Gathura James Gichuki N85/23420/2012 Assessment of climate change adaptation in water resource management over the Mwea Tabere rice growing scheme to avert impacts due to frequent extreme climatic events

Benedict Omondi N85/28933/2014 Spatial and temporal variations of hydrological processes and water resources in Sagana Sub-Catchment of the Upper Tana Catchment, Nyeri County, Kenya-

Professional/ Consultancy (Editor/ Peer review in journals, Networks/ Collaborations, External Examiner, Patents)

Reviewer for LVEMP's consultant's report (consultancy by SMEC INTERNATIONAL) on Buffering processes and capacity of wetlands in the Kenyan portion of the Lake Victoria basin, including production of wetland maps (2005)

Regional Focal point – Production of GIS-based Regional Biodiversity atlas for Lake Victoria basin and its catchment, Lake Victoria Environment Programme (LVEMP 1), funded by World Bank/GEF 2004 – 2007

GIS Scientist in the consultancy for studies on a rapid assessment of the ecological succession and the dynamics of water hyacinth *Eichhornia crassipes* in the Nyanza Gulf of Lake Victoria- 2008

GIS Database and remote sensing expert: Integrating BOMOSA cage fish farming system in reservoirs, ponds and temporary water bodies in Eastern Africa – EU 6th Framework Program Sub-priority-INCODEV; contract No. 032103–2006 – 2010

Competitively selected/nominated for a six (6) month International Training Programme on Transboundary Water Management for Lake Victoria Region in Kenya and Rwanda, November 10 – 21, 2008, and in Sweden February 16 – 20, 2009 The Programme was sponsored by the Swedish International Development Agency (Sida) and organised by Ramboll Natura AB and Stockholm International Water Institute (SIWI)

Consultancy in The identification and mapping of ECOLOGICALLY SENSITIVE AREAS (ESAs) in Lake Victoria - 2009-2011

External Reviewer, National Council of Science and Technology (NACOSTI)

External Reviewer, National Research Fund (NRF)

External Reviewer, (Kenya Medical Research Institute) KEMRI Internal Research Grants Awarding and Management Committee (2014)

External Reviewer, SANTHI SRI K V (PhD dissertation) Investigation on adoption of integrated pest management practices for red gram crop by the farmers of Prakasam District in Andhra Pradesh, India (2012)

Community Service and Other Engagements

Parents Association Representative Chairman Form 2, Maryhill School

Departmental Mentorship, advisor and student counsellor

Lakeview Estate Welfare Association, Naivasha

Affiliation of Professional Bodies

Member, Western Indian Ocean Marine Science Association (WIOMSA)

Member, Member of Fisheries Society of Africa (FISA)

Member, Mangrove Management Group (MMG)

National and International awards and Recognitions

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Administrative Positions Held

Recognized university administrative positions

Chairman of Departmental Postgraduate Committee in the School of Environmental Studies, Kenyatta University

Chairman of Departmental ISO Committee in the School of Environmental Studies, Kenyatta University

Other administrative positions Held

Vice-Chairman Kenyatta University Environmental Committee in preparation of Kenyatta University Environmental Policy Document

Vice-Chairman of Curriculum Review Board in the School of Environmental Studies, Kenyatta University

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