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Name: Jayaraj Vijaya Kumaran
Affiliation: Faculty of Earth Science
Universiti Malaysia Kelantan
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E-mail: jayaraj@umk.edu.my
Fields of Research: Biodiversity, Molecular Ecology,
Evolution, Morphometrics, Mammalogy
Google H-Index: 10 (251 citations)
Scopus H-Index: 5 (71 citations)
WoS H-Index: 5 (54 citations)



Other Affiliations

Member, **IUCN Species Survival Commission (SSC) Small Mammals Group.**
Associate, **Academy of Sciences Malaysia**, the ‘Think Tank’ of the nation for matters related to science, engineering, technology and innovation.
President, **Society of Conservation Biology (SCB)**, Malaysian Chapter.
Scientific Advisor, **Malayan Rainforest Station.**
Senior Scientist for Peninsular Malaysia at the **Society for the Preservation of Endangered Carnivores and their International Ecological Study (SPECIES)**, a USA based NGO working on global conservation of carnivores.

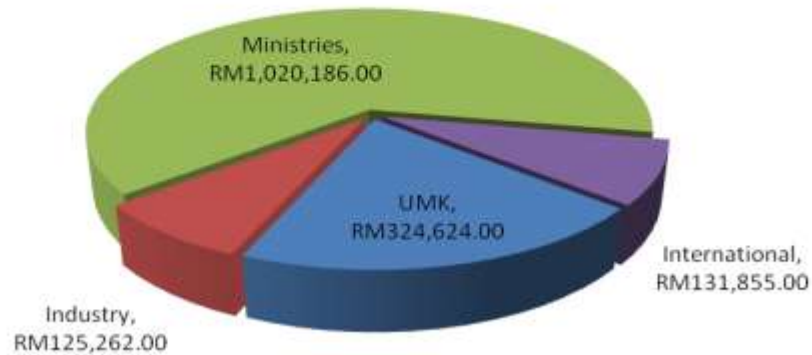
Education

No.	Level	Field of study	Institution	Year
1	PhD	Mammalogy PhD thesis: The conservation genetics of <i>Tupaia</i>	Universiti Sains Malaysia	2016
2	MSc	Quaititative Statistics and Molecular Genetics MSc thesis: The phylogenetic relationships of Megachiroptera in Malaysia inferred from morphological and DNA analyses.	Universiti Malaysia Sarawak	2009
3	BSc (hons)	Animal Resource Science and Management BSc thesis: DNA Extraction and PCR Amplification of Cytochrome P450 of Diamonback Moth (<i>Plutella xylostella</i>)	Universiti Malaysia Sarawak	2004

Expertise consultation

Reviewer for Online Consultation: **Draft Standard for an IUCN Green Status of Species.**
Jayaraj, V.K., Tingga, R.C.T. & M. Struebig 2016. *Aethalops alecto*. The IUCN Red List of Threatened Species 2016: e.T565A22028716. <http://www.iucnredlist.org/details/565/0>
R.C.T. Tingga, **Jayaraj, V.K.** & Struebig, M. 2016. *Aethalops aequalis*. The IUCN Red List of Threatened Species 2016: e.T136541A21977630. <http://www.iucnredlist.org/details/136541/0>
Appointed as Reviewer for Management measures for Invasive Alien Species (IAS) in England and Wales **by the Department for Environment, Food and Rural Affairs, UK.**
Appointed by PERHILITAN as the **conservation status reviewer** of Redlist Mammals in Peninsular Malaysia v2.0.

Category of Grants Secured (RM)



30 projects totaling up to MYR **1,601,927.00** in research funds.

	Research Project	Source	Total Funds (RM)	Begin Year	End Year
1	Rediscovery, habitat requirements and local conservation status reassessment of Selangor Pygmy Flying Squirrel in Selangor, Malaysia	Mohamed bin Zayed Species Conservation Fund	52,325.00	2019	2021
2	Transferring knowledge on safer fish and water resources consumption to Batek tribe in Merapoh, Pahang.	SGJP Impak	24,500.00	2019	2020
3	Mapped ICGPA-Industry 4.0 framework in employability skills and work readiness for future engineering graduates	FRGS	79,700.00	2019	2021
4	A diet and flowering phenology correlation study for conservation of Cave nectar Bat (<i>Eonycteris spelaea</i>), the main pollinator of durians	FRGS	86,300.00	2019	2022
5	Interrelationship of flowering seasons and pollinators for the adaptation of Zingiberaceae on limestone hills	FRGS	116,250.00	2019	2022
6	Development of Nature tourism Product towards Sustainable Conservation of Biodiversity in Pulau Tinggi, Mersing, Johor	UTHM Industrial Grant	100,262.00	2019	2020
7	Determining the Diversity, Distribution and Habitat of Flying Squirrels in Royal Belum State Park, Malaysia through Community Based Observation Activities	Rufford Conservation grant	26,530.00	2019	2020
8	High impact entrepreneurship grant: Certified Social Entrepreneurial Innovator Training Program	MoE	100,000.00	2019	2020
9	Gut metagenomic and metatranscriptomic analysis from Giant Panda in Zoo Negara, Malaysia.	SGJP Padanan UMK	86,400.00	2019	2021
10	Developing a Molecular Tool to Determine Parentage in Haruan (<i>channa striata</i>).	SGJP Padanan UMK	100,000.00	2019	2021
11	Diversity and abundance of flying squirrels in Lojing, Kelantan, Malaysia	Young Environmental Research Grant	10,000.00	2018	2019

12	Behavior and Metagenomics of Giant Panda for health assessment (Extension4)	KATS	50,000.00	2018	2018
13	Gender Identification of Arowana using qPCR	MOSTI-PPRN	32,000.00	2018	2018
14	Establishment of selected tissue cultured Araceae and Zingerberaceae stock plant for community-based plant propagation training and skill development.	SGJP-Inspek	18,000.00	2017	2018
15	Biodiversity assessment and ecotourism potential study for Universiti Malaysia Kelantan's Gelam forest conservation	SGJP-keserakanan USM	31,224.00	2017	2017
16	Behavior and Metagenomics of Giant Panda for health assessment (Extension3)	MOSTI	40,000.00	2017	2017
17	Behavior and Metagenomics of Giant Panda for health assessment (Extension2)	MOSTI	50,000.00	2016	2016
18	Describing new species of tree shrews in Peninsular Malaysia	SGPL-MyRA	14,500.00	2016	2017
19	Behavior and Metagenomics of Giant Panda for health assessment (Extension)	MOSTI	50,000.00	2015	2015
20	Metagenomic Analysis of Kelantan River Post-Flood For Pathogenic and Nonpathogenic Microbial Identification	FRGS	39,000.00	2015	2015
21	Behaviour and Metagenomics of Giant Panda for health assessment	MNRE	150,000.00	2015	2015
22	The Abundance and Conservation Status of Treeshrews (Scandentia) in Peninsular Malaysia	NAGAO Natural Environment Fund	15,000.00	2013	2015
23	Chiropteran diversity and abundance in four caves sites in Kelantan	SEABCRU small grant	3,000.00	2013	2013
24	Study on the Phylogeography and Taxonomic Status of Nectar Bats (Genus: <i>Macroglossus</i> spp.) in Malaysia	MoHE-FRGS	40,000.00	2013	2015
25	Roost selection by cave-dwelling bats in major caves of Malaysia	MoHE-RAGS	59,600.00	2013	2015
26	Testing allopatry and ecological speciation hypothesis in the family Hipposideridae through genetics, morphology and echolocation datasets	MoHE-RAGS	77,336.00	2013	2015
27	A Population study of Common Treeshrews (Scandentia: <i>Tupaia glis</i>) using Next Generation Sequencing data and Microsatellite Markers.	MoHE-RACE	50,000.00	2012	2015
28	Phylogeography of Common Treeshrews <i>Tupaia glis</i> (Scandentia: Tupaiidae) in Peninsular Malaysia	Malaysia Toray Science Foundation	25,000.00	2012	2014
29	The phylogenetic relationship and novel species discovery in Scandentia found in Peninsular Malaysia	ProfoundKestrel Laboratories	25,000.00	2013	2016
30	Distribution and diversity of birds and small mammals in Kelantan	SGJP	50,000.00	2011	2011

Subject taught	Year
Field and Laboratory Techniques	2019, 2020
Plant and Animal Systematics	2018, 2019, 2020
Conservation Genetics	2019
Population Biology	2019
Ecology	2018
Research Methodology and Scientific Writing	2017, 2018, 2019
Industrial Ecology	2016
Biochemistry	2016
Genetics	2015, 2016
Wildlife Management	2010, 2015
Park and Protected Area Management	2010, 2015
Biodiversity	2010
Ecosystem Health	2010
Microbiology	2007, 2008
Biology	2007, 2008

Invited Speakers

Malayan Nature Society (2019). Invitation for public talk on canopy mammals.

Malayan Rainforest Station (2019). Portsmouth University Field Trip talk on mammals.

Faculty of Earth Science, Universiti Malaysia Kelantan (2018 & 2019). Menulis artikel popular.

Fuze Ecoteer Sdn Bhd (2017). Invitation for Collaborative a School Education Program on Banding Island.

Kenyir Research Institute (2017). Writing high impact papers and books: from a writer's perspective.

Malaysian heritage and History Club (2017). Talk on 'Wild Wildlife with Kanchil and Friends'.

Faculty of Earth Science, Universiti Malaysia Kelantan (2016). How to design a winning scientific poster.

Administrative and committee role

Head of Sustainable Environment & Conservation Cluster, Universiti Malaysia Kelantan.

Head of Animal Care and Usage Ethics Committee for Universiti Malaysia Kelantan.

Member of Animal Care and Usage Ethics committee for Faculty of Earth Science, Universiti Malaysia Kelantan.

Head of Faculty of Earth Science Highland Research Centre (HRC-FSB) (2016 to 2017).

Permanent Member of Faculty of Earth Science, Highland Research Centre (HRC-FSB).

Member of Research and Innovation Committee of Faculty of Earth Science (2015-2019).

Coordinator for Research, Publication and Innovation for Natural Resource Science Program, Faculty of Earth Science (2015, 2016).

Member of Environment, Safety and Health Committee for Faculty of Earth Science, Universiti Malaysia Kelantan.

Member of Information Technology Unit for Faculty of Earth Science, Universiti Malaysia Kelantan.

Journal and Magazine Editorial Board

Associate Editor for Journal of Sustainability Science and Management (JSSM).

Associate Editor for MajalahSains.

Editorial board member for Journal of Biodiversity Management & Forestry (2015-2019).

Thesis Examination

Nor Aishah Binti A Rahim (Universiti Malaysia Terengganu). Species diversity and vertical stratification of non Volant mammals in Terengganu's tropical rainforest.

Azuan Roslan (Universiti Malaysia Terengganu). Species Richness of Bats and Vertical Stratification in Relation to Wing Morphology in East Coast of Peninsular Malaysia.

Awards

Anugerah Perkhidmatan Cemerlang 2016 Universiti Malaysia Kelantan.

Anugerah Gemilang Universiti Malaysia Kelantan 2015 for Research and Innovation.

Best of the best research and innovation competition Universiti Malaysia Kelantan 2020.

2 Gold in research and innovation competition Universiti Malaysia Kelantan 2020.

4 silver medals in research and innovation competition Universiti Malaysia Kelantan.

8 bronze medals in research and innovation competition Universiti Malaysia Kelantan.

1 MTE 2020 Silver medal.

1 PECIPTA 2019 bronze medal.

Reviewer appointment

Member of **IUCN Bat specialist group species** conservation status reviewer.

Reviewed book chapter on bats in "Life from Headwaters to the Coast. Gunung Santubong", NRGs Grant outcome.

Reviewed book chapter on Distributional records of terrestrial small mammals at various habitats in Kuching division, Sarawak in "Publishing Borneo Wealth in Biodiversity".

Reviewer for workshops and symposia proposals for International Congress for Conservation Biology 2019.

Reviewed numerous Scopus and international journal manuscripts annually from Mammal research, Pakistan Journal of Zoology, SEAMEO BIOTROP, Journal of Science and Technology, Checklist the Journal of Biodiversity Data, International Research Journal of Agricultural and Food Sciences, Songklanakarin Journal of Science and Technology, Malaysia Applied Biology Journal, Journal for Tropical Biology and Conservation, Journal of Sustainability Science and Management (JSSM), Journal of Tropical Resources and Sustainable Science etc.

Reviewer for PERHILITAN Biodiversity Seminar 2016. Awana Genting, Pahang.

Major ISI Indexed Journal Publication

Teeling, E., Vernes, S., Davalos, L. M., Ray, D. A., Gilbert, M. T. P., Myers, E., & **Bat1K Consortium**. (2018). Bat Biology, Genomes, and the Bat1K Project: To Generate Chromosome-Level Genomes for all Living Bat Species. *Annual Review of Animal Biosciences*, 6, 23-46.

Lim, L., Csorba, G., Wong, C. M., Zubaid, A., Rahman, S. P. H., **Jayaraj, V. K.**, Khan, F.A.A., Huang, J.C.C., Najimudin, N. and Görföl, T. (2016). The systematic position

of *Hypsugo macrotis* (Chiroptera: Vespertilionidae) and a new record from Peninsular Malaysia. *Zootaxa*, 4170(1), 169-177.

Yusoff, A. M., **Jayaraj, V. K.**, Tahir, N. F. D. M., & Mokhtar, S. I. (2015). Preliminary Study of Skull Polymorphisms of *Tupaia glis* in Peninsular Malaysia by using MorphoJ. *Jurnal Teknologi*, 72(4).

Daniel, D. S., Ng, Y. K., Chua, E. L., Arumugam, Y., Wong, W. L., & **Jayaraj V.K.**, (2013). Isolation and identification of gastrointestinal microbiota from the short-nosed fruit bat *Cynopterus brachyotis*. *Microbiological research*, 168(8), 485-496.

Jayaraj, V. K., Laman, C. J., & Abdullah, M. T. (2012). A predictive model to differentiate the fruit bats *Cynopterus brachyotis* and *C. cf. brachyotis* Forest (Chiroptera: Pteropodidae) from Malaysia using multivariate analysis. *Zoological Studies*, 51(2), 259-271.

Yap F.C., Yap J.Y., Kiung T.L., Lee J.N.Z., Warau N.K. and **Jayaraj V.K.** (2010). Phylogenetic analysis among different breeds of domestic chickens in selected area of Peninsular Malaysia inferred from partial Cytochrome *b* gene information and RAPD markers. *Animal Biotechnology*. 21(4):226-240.

SCOPUS and Google Indexed Journal Publications

Miard, P., Arifuddin, M. N., Mukri, I., Sapno, S. S., Yazid, H., Ruppert, N., & **Jayaraj, V.K.** (2020). Sighting of *Petaurista petaurista* (Pallas, 1766)(Mammalia: Rodentia: Sciuridae) on limestone hills in Merapoh, Malaysia. *Journal of Threatened Taxa*, 12(3), 15355-15358.

Jayaraj, V.K., Roslan, A., Mohd, F. S., Taib, M. M. F., Yusof, M. A., Ali, R., & Abdullah, M. (2019). Rodent Diversity In Pulau Pangkor Underestimated Due To Complex Taxonomic Descriptions. *The Malaysian Forester*, 82(1), 305-310.

Jayaraj V.K., Nadzirah, R. & Chandraraj, V. (2019). Evidence of Elephant Road Usage at Gunung Basor, Jeli, Kelantan. *Journal of Sustainability Science and Management*. 14 (1), 137-149.

Abas, A., Rak, A. E., Omar, S. A. S., & **Jayaraj V.K.** (2018). Correlation between benthic macroinvertebrate distribution and substrate composition in selected recreational rivers in Kelantan, Malaysia. *Journal of Sustainability Science and Management*, 13(1), 39-48.

Har, F. P., & **Jayaraj, V. K.** (2017). Bird Transect Survey at Kampung Baung Bayam: A Potential Ecotourism Attraction at Homestays in Kelantan, Malaysia. *J. Trop. Resour. Sustain. Sci*, 5, 113-116.

Rajasegar, S. A. V., Yusof, A. M., Appalasamy, S., Mokhtar, S. I., Ten D. C. Y., Deng, T., & **Jayaraj, V. K.** (2017). DNA Extraction and Library Preparation Optimization for Metagenomic Analysis of Giant Panda in Malaysia. *J. Trop. Resour. Sustain. Sci*, 5, 117-120.

Jayaraj, V. K. (2017). Upholding the Rights of Indigenous People Through Biodiversity Conservation and Taxonomic Studies: Lessons Learned From Orang Asli Issues in Kelantan. *J Biodivers Manage Forestry* 6(2).

Jayaraj, V. K., Khan, F. A. A., Azhar, I., Wee Chen, E., Ali, M. R. M., Ahmad, A., & Yusoff, A. M. (2016). Diversity and conservation status of small mammals in Kelantan, Malaysia. *Songklanakarini J. Sci. Technol.* 38 (2), 213-220.

- Jayaraj, V. K.**, Othman, A. S., Sah, S. A. M., & Mokhtar, S. I. (2015). Phylogenetic Analysis of Mitochondrial Genes of Malaysian *Tupaia* Reveals Composite Species in *Tupaia glis*. *J. Trop. Resour. Sustain. Sci*, 3, 197-203.
- Jayaraj, V. K.**, Daud, S. H. M., Azhar, M. I., Mohd, S. A., Sah, S. I. M., & Abdullah, M. T. (2013). Diversity and Conservation status of Mammals in Wang Kelian State Park, Perlis, Malaysia. *Check List*, 9(6), 1439-1448.
- Jayaraj, V. K.**, Daud, S. H. M., Azhar, M. I., (2013). A new record of Chaerephone johorensis at Mount Jerai, Kedah, Malaysia. *The Malayan Nature Journal*, 64(4).
- Jayaraj, V. K.**, Tahir, N. F. D. A., Udin, N. A., Baharin, N. F. K., Ismail, S. K., & Zakaria, S. N. A. (2012). Species diversity of small mammals at Gunung Stong State Park, Kelantan, Malaysia. *Journal of Threatened Taxa*, 4(6), 2617-2628.
- Jayaraj V.K.**, Ketol B., Marni W., Sait I., Faisal A.A.K., Fong, P.H. and Abdullah M.T. (2011). Comparative distribution and abundance of bats in selected localities in Sarawak. *Borneo Journal Resource Science and Technology* 1: 1-13.
- Yap F.C. and **Jayaraj V.K.** (2011). Phylogenetic relationships among different varieties of chickens in Peninsular Malaysia using RAPD analysis. *Pertanika Journal of Tropical Agricultural. Sciences* 34 (2): 263 - 270.
- Teh R.S.A. and **Jayaraj V.K.** (2010). Gender identification of domesticated chicken/ red jungle fowl (*Gallus gallus*) using PCR based method. *Pertanika Journal of Tropical Agricultural. Sciences* 33 (2): 329 – 336.
- Ryan J.J.R., Andy K.H.G., **Jayaraj V.K.**, Esa Y.B., Sallehin A.A. and Abdullah M.T. (2008). Malaysian Fruit Bats Phylogeny Inferred Using Ribosomal RNA 12 and 16 Genes. *Pertanika Journal of Tropical Agricultural Sciences* 31(1): 67 - 77.
- Faisal A.A.K., Sazali S.N. **Jayaraj V.K.**, Aban S., Zaini K.M., Ketol B., Ryan J.J.R., Julaihi A.M., Hall L.S. and Abdullah M.T. (2007). Survey of bats in the tropical lowland dipterocarp forest of Bako National Park, Sarawak, Malaysian Borneo. *Sarawak Museum Journal*, 63(84):267-300.
- Jayaraj V.K.**, Ketol B., Faisal A.A.K., Hall L.S. and Abdullah M.T. (2006). Bat survey of Mount Penrissen and notes on the rare *Kerivoula minuta*, *Kerivoula intermedia* and *Hipposideros coxi* in Sarawak, Borneo. *Journal of Biological Sciences*, 6 (4):711-716.
- Abdullah M.T. and **Jayaraj V.K.** (2006). Preliminary investigation on the relationship of the nominate *C. brachyotis* with the small-sized and large-sized *C. brachyotis* using clustering analysis. *Sarawak Museum Journal* 83: 223-236.
- Jayaraj V.K.**, Khan F.A.A. and Abdullah M.T. (2005). Bats of Mount Penrissen, Padawan, Sarawak. *Sarawak Musem Journal*. Vol. LX I(82): 263-274.

Book Chapters

- Zalipah, M. N., Roslan, A., Senawi, J., **Jayaraj, V. K.**, Azhar, M. I., Abdullah, M. T., & Lim, B. L. (2019). Checklist of Small Mammals of Hulu Terengganu, Terengganu. In *Greater Kenyir Landscapes* (pp. 191-200). Springer, Cham.
- Jayaraj, V. K.** (2018). The effect of climate change on the sex ratios of river terrapins in Malaysia: Conservation actions. In *Collection Of Cases For Active Learning*. Universiti Malaysia Kelantan Publisher. ISBN 978-967-0955-63-6.
- Japning Rovie-Ryan, **Jayaraj, V. K.**, Yuzine Esa, Imelda Vivian Paul, Siti Nurlydia Sazali & LS Hall 2009. Review on the molecular phylogeny of selected Malaysian Bats. Pp 28-33. In G. Ainsworth and S. Garnett (eds). RIMBA: Sustainable forest

livelihoods in Malaysia and Australia. Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia.

Popular writing

- Jayaraj, V.K. (2019). Pengasingan & Pengecaman Bakteria Dalam Perut Cecadu Pisang. <https://www.majalahsains.com/pengasingan-pengecaman-bakteria-dalam-perut-cecadu-pisang/>
- Jayaraj, V.K. (2018). Merungkai Kewujudan Jin Melalui Kaedah Saintifik. Mitos atau Fakta? <https://www.majalahsains.com/merungkai-kewujudan-jin-melalui-kaedah-saintifik-mitos-atau-fakta/>
- Jayaraj, V.K. (2018). 10 Soalan Untuk Saintis Malaysia: Dr. Jayaraj Vijaya Kumaran. <https://www.majalahsains.com/10-soalan-untuk-saintis-malaysia-dr-jayaraj-vijaya-kumaran/>
- Jayaraj, V.K. (2017). Penjantinaan Anak Ayam Menggunakan Kaedah Reaksi Rantai Polimerase (PCR) @MudahnyaBacaJurnal. <https://www.majalahsains.com/penjantinaan-anak-ayam-menggunakan-kaedah-reaksi-rantai-polimerase-pcr-mudahnyabacajurnal/>
- Jayaraj, V.K. (2017). Rekod Kawasan Baru bagi Kelasar Johor, (Chaerephon johorensis) di Gunung Jerai, Kedah. <http://www.majalahsains.com/rekod-kawasan-baru-bagi-kelasar-johor-chaerephon-johorensis-di-gunung-jerai-kedah-mudahnyabacajurnal/>
- Jayaraj, V.K. (2016). Kepelbagaian mamalia kecil di Kelantan. <http://www.majalahsains.com/kepelbagaian-mamalia-kecil-di-kelantan/>

Postgraduate student supervision

Name	Level	Type of supervision	Institution
Muhammad Hafiz Yazid bin Mohd Yazid	MSc	Main supervisor	UMK
Mohamad Nur Arifuddin Bin Mad Yusof	MSc	Main supervisor	UMK
Muhammad Aminuddin Baqi bin Hasrizal Fuad	MSc	Main supervisor	UMK
Nivaarani Arumugam	PhD	Co-supervisor	UMK
Vaishnavi Chandraraj	MSc	Co-supervisor	USM
Azrianaaini Md Yusoff	MSc	Co-supervisor	UMK
Siti Hajjar Muhamad Daud	MSc	Co-supervisor	UMK
Richard Teh Swee Aun	MSc	Co-supervisor	UPM
Nurul Farah Diyana Ahmad Tahir	MSc	Co-supervisor	UNIMAS

Referee(s)

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Assoc.Prof. Dr. Faisal Ali Anwarali Khan
Deputy Dean, of Student Affairs
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Faculty of Resource Science and Technology
Universiti Malaysia Sarawak
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Swedish University of Agricultural Sciences
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E-mail: jean.yong@slu.se