



Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.



Bergantung Pada Akar Yang Kuat

SDG 15, which focuses on the protection, restoration, and sustainable use of terrestrial ecosystems, is reflected in the classical Malay peribahasa “*Bergantung pada akar yang kuat*” (dependent on strong roots). This saying reminds us that strength, stability, and growth depend on healthy foundations—just as sustainable development relies on the vitality of forests, soils, and biodiversity. At UM, this wisdom is translated into practice through educational programmes that highlight sustainable land use, community outreach on agriculture and tourism, and biodiversity-focused learning opportunities for wider society.

Efforts also extend to conserving existing ecosystems, supporting threatened species, and fostering awareness through campus and community events. By working with local partners to care for shared land ecosystems, while also strengthening ecological education beyond its own grounds, UM contributes to nurturing the deep “roots” that sustain life on land for generations to come.

Events Promoting Sustainable Use of Land

In 2024, Universiti Malaya (UM) supported and organised a range of events promoting conservation and the sustainable use of land. These included volunteer support for native tree planting with the Free Tree Society, the UM–Fulbright Specialist Programme on banana conservation, and the Bestari Young Adventure (BEYAD) ‘pliking’ initiative at forest trails.

UM academics also contributed to World Soil Day with a public talk on soil health, while students engaged in biodiversity monitoring at Kinta Nature Park and educational outreach with refugee children at Taman Tugu. Together, these events combined research, community action, and environmental education to encourage sustainable land stewardship across forests, post-mining areas, and urban green spaces.

UM Volunteers Support Native Tree Planting

On 6 May 2024, UM students joined as volunteers in the Free Tree Society Kuala Lumpur’s Nature Education Programme, which was conducted at Taman Tugu and sponsored by CIMB Islamic Bank. The programme emphasised the sustainable use of land by encouraging tree planting as a method to restore forest ecosystems and promote biodiversity. During the session, participants planted Jering (*Archidendron jiringa*), a native forest tree species that can grow up to 25 meters tall. Known for its unique fruit pods and ecological significance, the Jering tree plays an important role in maintaining Malaysia’s forest biodiversity.

From UM’s perspective, supporting this initiative reflects the university’s commitment to community engagement and environmental stewardship. By encouraging its students to participate, UM contributes to knowledge-sharing and hands-on learning experiences that build awareness of Malaysia’s native species and the importance of sustainable land management.

Below: UM students and other volunteers planting Jering, a native forest tree, in polybags. Photo credit: Free Tree Society



Conservation of Banana Species in Peninsular Malaysia

From 10–24 August 2024, Universiti Malaysia hosted the UM–Fulbright Specialist Programme with US Fulbright Specialist Mr Gabriel Lewis Sachter-Smith, focusing on the conservation of wild and cultivated banana species in Peninsular Malaysia. The programme comprised the Musa Mini Symposium—featuring international and national experts from Malaysian Agricultural Research and Development Institute (MARDI), National Research and Innovation Agency Indonesia (BRIN-Indonesia), Universiti Putra Malaysia, Brawijaya University and Universiti Malaysia—alongside targeted workshops on learning-module development, the pilot launch of the MusaHunter citizen-science mobile app, and hands-on training in herbarium preparation and molecular identification techniques.

These events provided a platform for knowledge exchange on wild banana diversity, cultivation challenges and breeding strategies, and promoted practical conservation skills among academic staff, students and community participants. Beyond raising awareness, the programme delivered concrete capacity-building outcomes that support sustainable land stewardship and long-term biodiversity monitoring. Field visits to MARDI Jelebu and MARDI Cameron Highlands gave participants direct exposure to germplasm conservation practices and field collection protocols, while the citizen-science tools and draft learning modules create sustainable outreach pathways for schools, community groups and volunteers to contribute observations and specimen data.



Above: Mr. Gabriel Lewis Sachter-Smith and others in front of a wild banana plant (left), and a scene from the Musa Mini Symposium (right)

Below: Group photo during the Musa Mini Symposium on August, 2024



Pliking With Bestari Young Adventure (BEYAD) Programme

On 10 March 2024, Universiti Malaya (UM), through its Fourth Residential College or known as Kolej Kediaman Keempat, organised the Bestari Young Adventure (BEYAD) programme — a student-led initiative combining outdoor exploration with environmental stewardship. The event, themed “Pliking Their Way to Sustainability”, engaged 104 participants including UM students and volunteers from YouthCare Malaysia. Activities were carried out at Bukit Broga, Bukit Batu Putih, and Sungai Lepoh, three ecologically rich wildland and forest areas in Malaysia.

The programme introduced “pliking” — a creative blend of picking up litter while hiking — as a practical effort to protect forests and wild landscapes from pollution. This activity directly promoted the conservation and sustainable utilisation of the land by removing nearly 100 kilograms of waste such as plastic packaging, cigarette butts, and containers that could otherwise harm ecosystems or contribute to disease spread (e.g., mosquito breeding). Beyond clean-up efforts, students specialising in ecology and biodiversity shared knowledge of plant and insect life encountered along the trails, turning the event into an educational experience about forests and wild ecosystems.

By transforming recreational hikes into impactful conservation action, BEYAD 2024 raised awareness about the importance of maintaining clean, healthy natural environments. The success of this programme illustrates how events can engage communities to conserve and sustainably use land, while cultivating long-term environmental responsibility among youth.

Left and below: UM students from the Fourth Residential College hiking and picking up litter



World Soil Day Celebration

As part of its commitment to sustainability and environmental stewardship, Universiti Malaya contributed to the 'Soil & Sensibility' Public Talk held on 30 November 2024 at the FRIM Research Gallery, organised by the Forest Research Institute Malaysia (FRIM) in collaboration with the Malaysian Society of Soil Science (MSSS). Representing UM, Assoc. Prof. Dr. Rosazlin Abdullah, President of MSSS and a senior lecturer at the Institute of Biological Science, delivered an impactful session on sustainable soil management and soil health, alongside FRIM soil scientist Dr. Jeyanny Vijayanathan.

This educational event, held in conjunction with the FAO World Soil Day celebration, highlighted the importance of soil as a critical natural resource for ecosystem balance, food production, and biodiversity conservation. Participants not only gained theoretical insights but also took part in hands-on interactive sessions, such as testing soil pH and texture, which fostered greater understanding of soil conservation practices.

Right: Event poster for Soil and Sensibility, organised by FRIM

Below: Assoc. Prof. Dr. Rosazlin Abdullah from UM sharing insights on sustainable soil management and soil health. Photos credit: Forest Research Institute Malaysia (FRIM)

UM's involvement in this programme reflects its strong role in promoting the sustainable use of land through education, outreach, and partnerships. By working alongside FRIM and MSSS, UM actively supports community engagement in conserving vital ecosystems, reinforcing its position as a leader in advancing the United Nations Sustainable Development Goals at the local and national level.



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Geography Students Explore Post-Mining Ecosystems

On 19 October 2024, students from the Department of Geography, Universiti Malaya carried out an Environmental and Biodiversity Monitoring programme at Kinta Nature Park, Batu Gajah, Perak. This initiative was organised in collaboration with SEAD Industries and guided by Dr. Nik Noor Athirah, with participation from nine undergraduate geography students. The programme served as an educational and research-based event focused on the conservation and sustainable utilisation of land, specifically targeting the unique ecosystem of a former mining site.

The activity involved monitoring and collecting data on the environmental conditions and biodiversity of the park, which is home to rich wetland habitats and diverse flora and fauna. Through field-based learning, students gained valuable skills in ecological monitoring, data collection, and analysis, while also contributing to the broader understanding of how post-mining landscapes can be rehabilitated and conserved for long-term sustainability. Such hands-on involvement highlights the role of universities in supporting ecosystems beyond their direct control, by engaging in research and community-linked projects in external ecological sites.

By focusing on a post-mining landscape, this programme raised awareness on the challenges and opportunities of restoring degraded land, aligning with the sustainable use of wild land and wetland ecosystems. It also encouraged students to recognise the importance of protecting biodiversity and maintaining ecological balance in non-forested, human-impacted environments.



Right: UM students from the Department of Geography conducting environmental and biodiversity monitoring at Kinta Nature Park

Taman Tugu Nursery Education Programme

On 15 May 2024, the Department of Geography, Universiti Malaya, organised the programme “Green Warriors with Rays of Hope” at the Taman Tugu Nursery Trail, Kuala Lumpur, in collaboration with Free Tree Society (FTS), Taman Tugu, and the Alliance of Chin Refugees (ACR) Learning Centre. The event engaged 25 Myanmar refugee children in outdoor environmental education activities designed to build awareness of the importance of conserving and sustainably utilising land ecosystems, particularly in forested and green areas like Taman Tugu.

The programme emphasised supporting ecosystems beyond the university’s direct control by focusing on the ecological and community value of urban forest reserves. Through hands-on learning and guided activities, participants developed a stronger understanding of the need to protect forests, biodiversity, and natural resources. This approach not only promoted environmental consciousness among refugee children but also highlighted the role of community collaboration with local NGOs and key stakeholders in ensuring the sustainable use of shared land ecosystems.

The initiative also aimed to develop students’ sensitivity to environmental issues and foster creative, student-led conservation programmes that connect diverse groups in society. By cultivating meaningful relationships between university students, refugee children, and local communities, the programme contributed to building a more inclusive and sustainable future, while serving as a strong example of an event promoting conservation and sustainable utilisation of land ecosystems.

Right: UM students and children from the Alliance of Chin Refugees (ACR) Learning Centre participating in hands-on learning and guided activities at the Taman Tugu Nursery Trail



Maintaining and Extending Biodiversity in Ecosystems under Threat

In 2024, Universiti Malaya (UM) contributed to maintaining and extending biodiversity through research, fieldwork, student initiatives, and community collaborations. These efforts included ecological connectivity projects such as the Rantaian Urban Green Spaces (RUGS) initiative, student-led clean-up and awareness programmes, and biodiversity-focused exhibitions.

UM researchers also documented new species, studied fragile ecosystems like limestone hills and mangroves, and collaborated with indigenous communities to preserve traditional ecological knowledge. By combining scientific research, conservation practice, and public engagement, UM played an active role in protecting ecosystems under threat and supporting long-term biodiversity resilience.

Support for Rantaian Urban Green Spaces (RUGS) Project

In 2024, the Rantaian Urban Green Spaces (RUGS) project, launched by the Malaysian Nature Society (MNS) with funding from the Global Environment Facility (GEF) Small Grants Programme (SGP) and implemented in partnership with the United Nations Development Programme (UNDP), set out to rehabilitate and safeguard fragmented urban green spaces in the Klang Valley. The initiative focuses on maintaining and extending ecosystem biodiversity by connecting community forests, riparian zones, and parks through community-driven conservation. One of its key sites is the Pulai Trail Community Forest, strategically located at Bukit Persekutuan and directly bordering Rimba Ilmu, UM.

UM plays a vital role in this initiative by anchoring ecological connectivity through its living laboratory of biodiversity at Rimba Ilmu, which is home to numerous species of plants, fungi, and wildlife. The Pulai Trail serves as a gateway for connectivity between Bukit Persekutuan and UM's green spaces, with the potential to link to wider open areas in Bangsar. This ecological corridor strengthens urban biodiversity by allowing wildlife safe passage, reducing fragmentation, and enhancing genetic diversity for long-term species conservation. In the same year, UM also participated in the RUGS Multi-stakeholder Landscape Stewardship Platform (RUGS-MLSP), contributing to collaborative strategies that integrate research, education, and community action for urban ecological resilience. With the Pulai Trail Bangsar Connector, led by Free Tree Society under RUGS, UM's green campus spaces become integral to restoring and extending biodiversity within a highly urbanised landscape.



Left: The map of the Rantaian Urban Green Spaces (RUGS) project, which includes Rimba Ilmu in UM.
Photo credit: Free Tree Society Kuala Lumpur

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Pulai Trail - RUGS

A collaboration prioritizing ecological support by

Rakan Muda Universiti Malaya 2024

On 9 March 2024, the Sports Exco and Environment Exco of the Universiti Malaya Rakan Muda Secretariat (SRMUM) jointly organised the “Hiking While Cleaning” programme. The initiative was designed to enhance environmental sustainability awareness among students while simultaneously promoting personal health and physical endurance. The programme took place at Bukit Gasing, Selangor, where participants actively engaged in hiking activities while contributing to environmental preservation by collecting litter along the trail. The effort not only fostered appreciation for natural surroundings but also encouraged responsible behaviour towards maintaining clean and sustainable green spaces.

Additionally, the Program Karnival Rakan Muda (KARMUDA) Universiti Malaya 2024 was held on 19 and 20 December 2024 at the Kompleks Perdanasiswa car park, Universiti Malaya. Organised by the Sekretariat Rakan Muda Universiti Malaya (session 2024/2025), the carnival showcased exhibitions related to the ten Rakan Muda lifestyles and student-led sales booths. Among these, the Rakan Bumi exhibition highlighted the importance of biodiversity and conservation through engaging displays and activities. The Rakan Bumi exhibition featured collaborations with the Department of Wildlife and National Parks (PERHILITAN) Malaysia, emphasising ecosystem biodiversity and the enforcement of wildlife protection. Educational displays included preserved animals and items such as python leather shoes, which served as impactful reminders of the threats posed by illegal wildlife trade. Interactive activities such as remote-controlled excavator challenges attracted students and participants, creating greater awareness of the role of conservation in maintaining ecosystems. By showcasing how wildlife protection is directly linked to sustaining ecosystems under threat, the exhibition aligned with the objective to maintain and extend existing ecosystems and their biodiversity of both plants and animals.



Above: Activities conducted by Rakan Muda Universiti Malaya in 2024, including hiking while cleaning and exhibitions in collaboration with PERHILITAN Malaysia

Ecosystem-Based Management Fieldwork at Perak

On 22nd to 23rd November 2024, students from Environmental Management, Environmental Studies, Geography, and Ecology & Biodiversity backgrounds carried out a field visit to Perak as part of the subject SIH2022 Ecosystem-Based Management, taught by Associate Prof. Dr. Rozainah binti Mohamad Zakaria from the Institute of Biological Sciences, Universiti Malaya (UM). The visit focused on applying the Coastal Integrity Vulnerability Assessment Tool (CIVAT) and the Integrated Shoreline Management Plan (ISMP) to assess the condition of the coastline.

Through this activity, students conducted practical coastline assessments, biodiversity observations, and presented their findings, strengthening their understanding of ecosystem-based management. The fieldwork emphasised the importance of working directly to maintain and extend existing ecosystems and their biodiversity, particularly coastal ecosystems under threat, while highlighting the interdependence of plants, animals, and their habitats. This initiative equipped future environmental managers with the knowledge and tools to protect and conserve fragile ecosystems through practical, science-based approaches.



Above: UM students from various programmes in the Faculty of Science participating in activities to assess the coastline condition at Tanjung Piandang, Perak

Below: Group photo of the students with Associate Prof. Dr. Rozainah binti Mohamad Zakaria (seated in the second row, fourth from the left)



Indigenous Practices for Cultivation of Fruit Plants in Kampung Dukuh, West Java, Indonesia

In May 2024, a research collaboration between the Ethnobiological Society of Indonesia, Universitas Indonesia, Universiti Malaya, and Research Center for Ecology and Ethnobiology, National Research and Innovation Agency (BRIN) documented the indigenous practices of fruit plant cultivation in Kampung Dukuh, West Java. Dr. Yong Kien-Thai from the Faculty of Science, Institute of Biological Sciences, Universiti Malaya, served as co-researcher, contributing to field observations and analysis of local ecological knowledge.

The study found that indigenous communities in Kampung Dukuh maintain high fruit plant diversity, with 587 individual plants belonging to 90 species and 38 families, particularly dominated by Moraceae, Anacardiaceae, and Rutaceae. Their cultivation practices—covering land classification, site preparation, tree care, and harvesting—demonstrate sustainable methods that help to maintain and extend ecosystems' biodiversity, ensuring both ecological services and food security. By working directly with indigenous communities, this project highlights the role of traditional ecological knowledge in sustaining biodiversity and protecting ecosystems under threat.

Left: Documentation of indigenous practices in cultivating pomelo fruits (Photo credit: Authors of 'Indigenous Practices for Cultivation of Fruit Plants in Kampung Dukuh, West Java, Indonesia')

Below: Researchers conducting a bryophyte diversity study at Bukit Anak Takun and Bukit Takun



A Mossy Tale of Two Hills: Bryophyte Diversity

From October 2023 to January 2025, the study “A Mossy Tale of Two Hills: Bryophyte Diversity of Bukit Anak Takun and Bukit Takun, Selangor, Malaysia”, conducted by Dr Yong Kien Thai (Universiti Malaya), Cheah Yih Horng, Shyam Venkatachalam, and Leong Qi Jia, focused on the collection and identification of bryophytes in two limestone hill ecosystems. Limestone hills are recognised as fragile ecosystems under threat from quarrying and land-use change, making biodiversity assessments in these habitats both timely and necessary.

The findings documented a rich diversity of bryophytes, showcasing their vital role in maintaining ecosystem functions, including water regulation, soil formation, and providing microhabitats for other species. By systematically recording moss and liverwort diversity at Bukit Anak Takun and Bukit Takun, the research provides essential scientific evidence to maintain and extend existing ecosystems' biodiversity, particularly within threatened limestone environments.



New Insights into Tropical Moss Diversity: Conservation Efforts at Gunung Arong and Sekayu

In September and October 2024, a research team led by Dr. Yong Kien Thai from the Institute of Biological Sciences, Faculty of Science, Universiti Malaya, in collaboration with the Rimba Ilmu Botanic Garden and Universiti Kebangsaan Malaysia, conducted bryophyte surveys during the Forestry Department's Scientific Expedition to Gunung Arong and Sekayu Forest Eco Park. These expeditions were dedicated to documenting moss diversity as a key step to maintain and extend current ecosystems' biodiversity, focusing on tropical ecosystems under increasing environmental stress.

The surveys revealed remarkable findings. At Sekayu Forest Eco Park, the team recorded 62 species, 1 subspecies, and 1 variety, belonging to 32 genera and 14 families, including 2 new species records for Terengganu. At Gunung Arong, 64 species and 2 varieties were documented, representing 29 genera and 12 families, with several rare and ecologically valuable records. Particularly notable was the presence of certain highland species thriving in lowland areas, which provides critical insights into ecosystem resilience and adaptation. Such discoveries highlight the importance of safeguarding both rare and common mosses as they contribute significantly to ecological stability.

These expeditions, under the leadership of Dr. Yong embodies the mission of maintaining and extending current ecosystems' biodiversity by working directly to conserve and extend the biodiversity of existing ecosystems, especially those under threat. By expanding scientific knowledge and recording new species occurrences, the study strengthens biodiversity databases and informs conservation strategies. The work ensures that forest ecosystems such as Gunung Arong and Sekayu are not only appreciated for their richness but also actively protected through data-driven biodiversity management and conservation policies.



Above: Bryophyte diversity surveys conducted at Gunung Arong and Sekayu Forest Eco Park

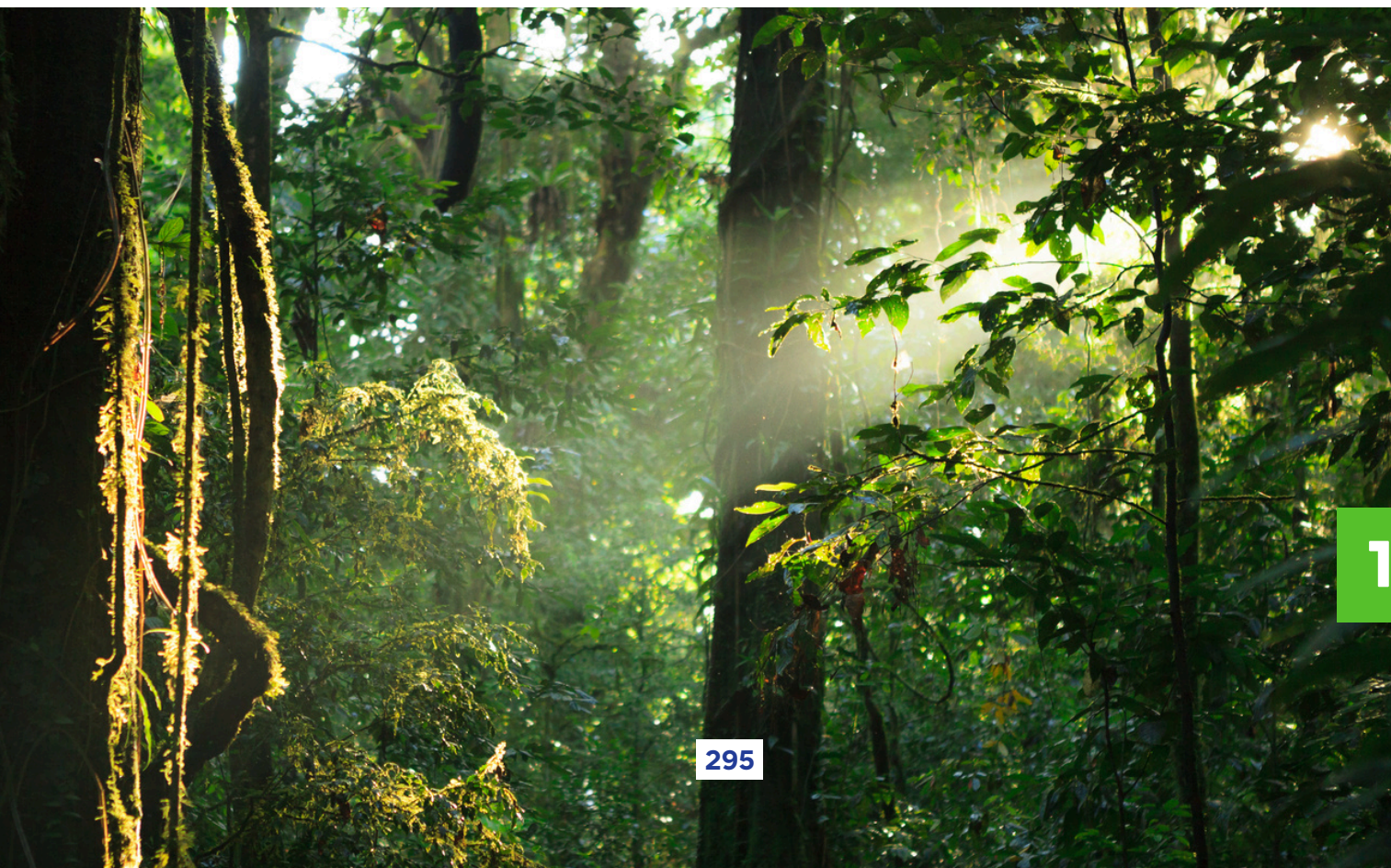
Discovery of a New Grasshopper Species in Terengganu Rainforest

On 9 October 2024, researchers from Universiti Malaya (UM), led by Dr. Nurul Ashikin Abdullah (UM), together with the Department of Forestry Peninsular Malaysia (Jabatan Perhutanan Semenanjung Malaysia, JPSM), successfully documented a new insect species, the Belalang Sekayu (*Eufalconius sekayu*), during the Scientific Expedition on Forest Biological Diversity at Hutan Simpan Hulu Terengganu Tambahan. This newly identified grasshopper species belongs to the genus *Eufalconius*, which is unique to Peninsular Malaysia.

This discovery represents a direct contribution to the maintenance and extension of biodiversity by expanding scientific knowledge of Malaysia's unique rainforest ecosystems. Recording new species not only strengthens the biodiversity baseline for future conservation planning but also highlights the critical ecological value of fragile forest reserves. The research underlines the importance of protecting tropical rainforests as threatened ecosystems, which serve as habitats for rare and endemic species increasingly vulnerable to deforestation and climate change.



Above: A newly recorded species of Belalang Sekayu. Poster credit: JPSM



Field Visit to MARDI Cameron Highlands

The field visit organised under the UM–Fulbright Specialist Programme at MARDI Cameron Highlands offered participants a hands-on exploration of the unique highland ecosystems and their ecological and agricultural significance. Guided by experts from MARDI and Mr. Gabriel Lewis Sachter-Smith, a Fulbright Specialist in banana biodiversity, participants visited selected montane sites to learn about native and cultivated plant diversity, habitat characteristics, and the conservation value of wild bananas in highland environments.

Educational discussions highlighted the importance of maintaining biodiversity, the impacts of land-use change and climate pressures, and approaches to sustainable land management in fragile montane ecosystems. The use of the MusaHunter mobile app—originally developed under the wild banana project—further enriched the learning experience by allowing participants to collect geotagged data and images, integrating traditional field observation with digital citizen science.

By combining expert-led fieldwork, species identification, and technology-based documentation, the programme strengthened participants' understanding of biodiversity conservation and encouraged active involvement in safeguarding highland ecosystems.

Right: UM researchers with experts from MARDI and Mr. Gabriel Lewis Sachter-Smith documenting wild banana species in Cameron Highlands using the MusaHunter mobile app



Scientific and Mangrove Conservation Expedition at Lamnga Village, Aceh Besar, Indonesia

On 9 August 2024, the Department of Geography, Universiti Malaya, led by Prof. Gs. Dr. Rosmadi Fauzi, alongside Dr. Tengku Adeline Adura Tengku Hamzah and Dr. Aimee Halim, participated in an International Research Collaboration “*Ekspedisi Ilmiah & Konservasi Mangrove*” at Desa Lamnga, Aceh Besar, Indonesia, hosted by Universitas Syiah Kuala (USK). This initiative directly supported the efforts to maintain and extend existing ecosystems and their biodiversity, with a focus on mangrove conservation, an ecosystem under severe threat from coastal erosion, land-use change, and climate impacts.

The programme brought together UM academics, USK faculty members, undergraduate students, and the local Lamnga community, engaging in hands-on conservation activities such as mangrove planting, while also exchanging knowledge on post-disaster rehabilitation and community-based ecosystem management. By working directly on the ground to restore coastal habitats, this collaboration enhanced the biodiversity of mangrove ecosystems, supporting both plant and animal species that depend on these critical coastal forests for survival.

Beyond field activities, the collaboration produced important agreements on joint academic supervision, student exchange, and shared research in spatial analysis and environmental management, demonstrating a commitment to long-term biodiversity protection. The initiative highlighted how universities can extend their impact internationally by working with local communities and regional partners to safeguard fragile ecosystems. This integration of academic research, conservation practice, and community involvement showcases how higher education institutions can take an active role in preserving threatened ecosystems while advancing scientific and regional cooperation.



Right and below: Representatives from UM and USK with members of the Lamnga community during the mangrove conservation planting and exchange activity



Educational Programmes on Ecosystems

UM delivers diverse educational programmes on ecosystems that engage local and national communities in conserving wild flora and fauna. Initiatives such as the City Nature Challenge: Klang Valley and the IOI Properties Group City Nature Challenge foster citizen science and urban biodiversity appreciation, while student-led projects like Fungi Guardians highlight lesser-known ecosystem drivers.

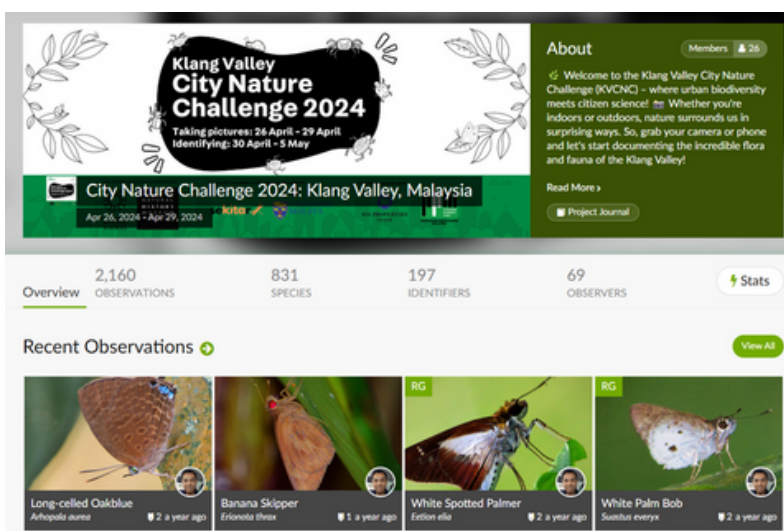
Complementing these are expert-driven events such as Biodiversity Day 2024 and the Citizen Science Banana Hunter Project Workshop in collaboration with MARDI, which build ecological knowledge and conservation skills. Together, these programmes raise public awareness, promote ecosystem stewardship, and equip communities to contribute actively to biodiversity protection and sustainability.

City Nature Challenge: Klang Valley 2024

From 26 April to 5 May 2024, the City Nature Challenge 2024: Klang Valley (KVCNC) was organised by Sekitar Kita and the Universiti Malaya Sustainable Development Centre (UMSDC), with support from the Librarian's Association of Malaysia. This global citizen science initiative encouraged the local community to engage with urban biodiversity, offering them a chance to observe and document wild flora and fauna directly within their surroundings. By using the iNaturalist platform, participants not only learned to identify species but also contributed to scientific datasets that support conservation research.

The programme successfully involved 69 observers, who collectively recorded 2,160 observations and identified 831 species across the Klang Valley. Such initiatives embody educational programmes on ecosystems, as they create opportunities for local communities to understand ecological diversity and the importance of protecting natural habitats, even in urban environments. The hands-on experience of documenting plants, animals, and ecosystems heightened awareness of Malaysia's rich biodiversity and the threats posed by rapid urbanisation and habitat loss.

Beyond raising awareness, the challenge also strengthened community-science linkages, empowering individuals to become active contributors to ecological knowledge. The challenge emphasises the need for universities and partners to offer educational programmes on ecosystems for national and local communities. Through this collaborative effort, the Klang Valley community not only celebrated its biodiversity but also advanced global conservation efforts by sharing valuable ecological data with the world.



Above: The City Nature Challenge 2024: Klang Valley project page on the iNaturalist platform



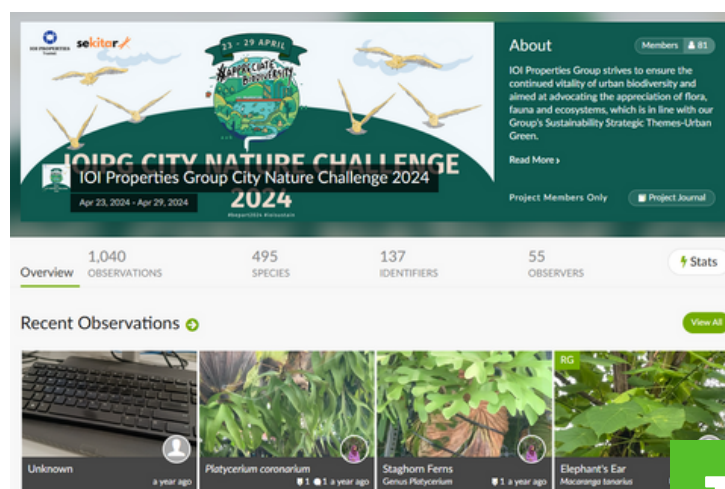
Above: Participants observing wild plants during the City Nature Challenge 2024: Klang Valley using the iNaturalist app

IOI Properties Group City Nature Challenge 2024

The IOI Properties Group City Nature Challenge 2024 (project created 2 April 2024; observation week 23–29 April 2024) promoted urban biodiversity appreciation across Malaysia and nearby locations by encouraging public participation in documenting wild flora and fauna using the iNaturalist platform. As a community-driven citizen-science event, the challenge provided an accessible way for residents to learn about local ecosystems, contribute biodiversity observations (Research Grade / Needs ID / Casual), and understand the value of urban green spaces for conservation and ecosystem services.

In support of the challenge, Universiti Malaya delivered online training for IOI staff and registered participants on the City Nature Challenge methodology and how to use iNaturalist effectively, and also led a practical nature walk for participants to practice species observation and data recording. These training and field components functioned as educational programmes on ecosystems, building capacity in biodiversity monitoring, species identification and community engagement—key elements of effective ecosystem education for local and national communities.

By combining digital citizen science with hands-on field learning, the IOI City Nature Challenge offered structured educational outreach about ecosystems and gave citizens concrete skills to observe and care for urban biodiversity. The initiative strengthened public awareness of wild flora and fauna, expanded local biodiversity datasets, and fostered ongoing stewardship of urban green spaces through science-based community participation.

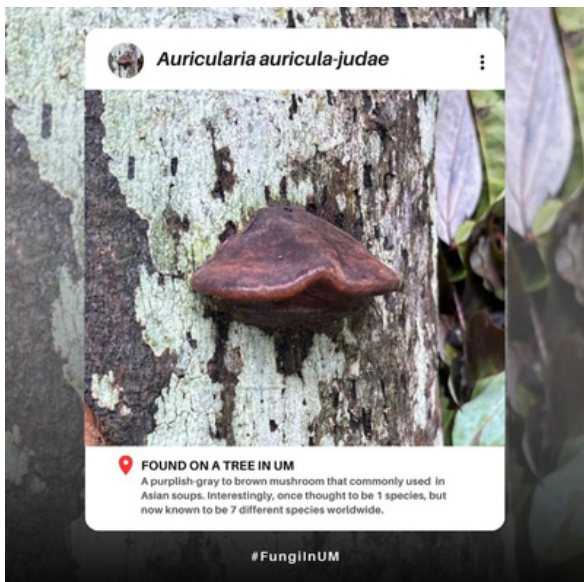


Above: The IOI Properties Group City Nature Challenge 2024 project page on the iNaturalist platform

Fungi Guardians

In 2024, Fungi Guardians, a student-led initiative under The Planet Prodigy Universiti Malaya, was launched with the aim of documenting fungal diversity within the UM campus. The project utilizes platforms such as Instagram and iNaturalist to share findings and engage with the university community as well as the wider public. By highlighting the often-overlooked role of fungi, the initiative offers educational programmes on ecosystems that focus on wild flora and fauna in UM's green spaces, with a particular emphasis on fungi.

Fungi play a critical role as ecosystem drivers, contributing to nutrient cycling, soil health, and biodiversity conservation. However, they are frequently given less attention compared to plants and animals. Through its documentation efforts and awareness campaigns, Fungi Guardians serves as a platform to educate communities about the significance of fungi in maintaining balanced ecosystems. This promotes learning and awareness on the importance of conserving wild flora and fauna within a university context. This initiative also reflects Universiti Malaya's commitment to advancing sustainability and biodiversity protection by encouraging student-led, research-based conservation efforts. By empowering students to share ecological knowledge with local and national communities, UM reinforces its role as a hub for environmental stewardship and contributes meaningfully to global sustainability goals.



Above: Fungi Guardian volunteers observing wild fungi on the Universiti Malaya campus

Left: Photos of fungi shared on their Instagram page

Citizen Science Banana Hunter Project Workshop

The Citizen Science Banana Hunter Project Workshop was a full-day programme held on 20 August 2024 at Rimba Ilmu Botanic Garden, Universiti Malaya, under the theme “Preserving the Future: Wild Banana Conservation through Citizen Science.” The workshop aimed to engage participants from diverse backgrounds in the identification, documentation, and conservation of wild bananas through a citizen science approach.

The event featured expert talks covering topics such as Global Banana Diversity—its history, significance, and the role of wild bananas in crop improvement—by Gabriel Lewis Sachter-Smith, Fulbright Specialist; Banana Diversity in Malaysia, highlighting germplasm collection and conservation efforts, by Ms. Maimun Tahir from MARDI; and Field Exploration Challenges, offering practical insights on collecting and identifying banana samples, presented by Ts. Muhammad Shafie Md Sah from MARDI.

Hands-on sessions followed, including Herbarium Work, focusing on specimen preparation, research applications, and its importance in banana studies, led by Dr. Mohd Norfaizal Ghazali (MARDI); a Banana Exploration Tour in Rimba Ilmu guided by Dr. Sarah Abdul Razak and Gabriel Lewis Sachter-Smith; and Molecular Identification Techniques as an alternative to traditional morphological methods, conducted by Dr. Teo Chee How and Dr. Nur Ardiyana Rejab.

The workshop also introduced and piloted the MusaHunter mobile app, a tool designed for participants to collect geotagged images and data on wild bananas across Malaysia. Ultimately, the programme sought to empower citizen scientists—including secondary school students, university students, adults, and seniors—to actively contribute to biodiversity conservation through technology-enabled fieldwork.

Right: Group photo of the Citizen Science Banana Hunter Project Workshop, followed by an expert talk and a hands-on herbarium specimen preparation session



Biodiversity Day 2024: Educational Talk

On 6 March 2024, the Malaysian Palm Oil Green Conservation Foundation (MPOGCF) and Universiti Malaya organised Biodiversity Day 2024 at the Faculty of Science, UM. The event strengthened understanding of ecosystem conservation, highlighting the importance of protecting Malaysia's wild flora and fauna. Bringing together experts, students, and the community, it addressed issues of biodiversity, sustainable land management, and global conservation efforts.

The programme featured a keynote by Prof. Dr. Zulqarnain Mohamed, Dean of the Faculty of Science, alongside sessions on national conservation initiatives, palm oil sustainability, and plantation-level practices. A townhall and career talk fostered dialogue on the skills, challenges, and opportunities in advancing environmental sustainability.



Above: Poster for Biodiversity Day 2024, co-organised by UM and MPOGCF

Below: Sharing on topics such as conservation initiatives in Malaysia and sustainable palm oil



Educational Outreach on Sustainable Land Management for Agriculture

Universiti Malaya (UM) actively advances the sustainable management of land for agriculture through a diverse range of educational outreach and community engagement programmes that connect research, teaching, and societal needs. Initiatives such as the CEBAR Expert Seminar Series 2024, the Smart Engineering and Sustainable Urban Farm, and the Komuniti@UniMADANI aquaponics education programme in religious schools showcase how scientific expertise and innovation are translated into accessible learning for students, educators, and communities.

Beyond campus, UM strengthens regional and global impact through programmes like the Biochar Between Two Nations project with Universitas Airlangga, Indonesia, and the Youth Soil Sustainability Intervarsity Forum, which engages ASEAN youth in soil stewardship. Locally, hands-on activities such as the D.I.Y. Urban Garden at SM Teknik Kuala Lumpur and the SULAM-UM Soil Doctor Programme in Kampung Seri Bunian demonstrate how experiential learning empowers communities to adopt context-specific, climate-smart agricultural practices. Together, these initiatives integrate education, capacity building, and stakeholder collaboration to promote sustainable land use, biodiversity conservation, and food security across multiple scales.

CEBAR Expert Seminar Series 2024

The Centre for Research in Biotechnology for Agriculture (CEBAR), Universiti Malaya, organised a series of expert seminars throughout 2024, inviting distinguished local and international researchers to share their expertise in areas directly linked to sustainable land management and biodiversity conservation. Among the highlights, on 15 August 2024, Professor Dr. Kim Pil Joo from Gyeongsang National University, South Korea, delivered a seminar on Organic Matter Management in Rice Paddy: Grand Challenges and Golden Opportunities under Global Warming. The talk emphasised how soil carbon sequestration and improved agricultural practices could mitigate climate change while enhancing soil health, thereby ensuring the sustainable utilisation of land for agriculture.

Similarly, other CEBAR Expert Seminars in 2024 showcased cutting-edge biotechnology solutions presented by distinguished researchers from Universiti Malaya and international institutions. For example, Dr. Audrey Yi-Hui Teh (St. George's University of London) delivered a seminar on Plant Molecular Farming (PMF), a revolutionary approach that uses plants as biofactories to produce recombinant proteins and high-value metabolites. Her session emphasised how PMF can transform the manufacturing of biologics, such as plant-made cancer immunotherapeutics, offering a cost-effective, scalable, and sustainable alternative to conventional systems.



In another seminar, Dr. Hazwani Mat Saad (Universiti Malaya) explored the cosmeceutical potential of *Artocarpus heterophyllus* (jackfruit). Her research highlighted how bioactive compounds from jackfruit, particularly the stem bark, exhibit anti-cancer, anti-inflammatory, antioxidant, and anti-tyrosinase properties with promising applications in skincare. By investigating natural-origin cosmetics, her work aligns with the growing demand for sustainable, non-invasive, and eco-friendly products derived from biodiversity.

In addition to the seminars, CEBAR hosted multiple visits to its Plant Biotech Facility, welcoming UM students, students from MAZ International School, international collaborators from the University of Queensland and UM's mobility programme with Japan, as well as representatives from the Ministry of Higher Education, PT Bio Company, Universiti Malaysia Sarawak (UNIMAS), and others. These engagements further strengthened capacity-building and collaborative research efforts.

These initiatives provide platforms to support and promote conservation-oriented approaches and sustainable use of land through education, research, and stakeholder engagement. By addressing agricultural biotechnology, soil management, and ecological resilience, the Expert Seminar Series contributes to nurturing informed communities and future scientists equipped to tackle challenges in land use sustainability.



Above: Example poster from the CEBAR Expert Seminar Series

Below: Visit to CEBAR's Plant Biotech Facility



Smart Aquaponics Urban Farm as a Living Laboratory

In 2024, Universiti Malaya (UM) advanced its learning and outreach on sustainable agriculture through the Smart and Sustainable Engineering Urban Farm, led by Dr. Fathiah Mohamed Zuki from the Department of Chemical Engineering. Supported by a Universiti Malaya Living Labs (UMLL) grant under the UM Sustainability and Development Centre (UMSDC), the rooftop project repurposes unused campus space into a small aquaponic farm powered by solar energy, rainwater harvesting, and composting systems.

Throughout 2024, the farm hosted several learning visits and engagement sessions introducing participants to aquaponics—a system that integrates aquaculture (fish farming) with hydroponics (soil-less plant cultivation). These sessions provided hands-on exposure to sustainable agricultural practices, showing how compact urban areas can be managed productively while reducing resource use and waste.

By combining renewable energy use, waste reduction, and biodiversity-friendly design, the Smart and Sustainable Engineering Urban Farm demonstrates how educational programmes can promote sustainable agriculture within both learning and community settings, supporting UM's contribution to the goals of SDG 14 and SDG 15.



Right: Visitors at the Smart and Sustainable Engineering Urban Farm (top), Dr. Fathiah with the farm's produce (middle), and students relaxing at the rooftop urban farm beside the aquaculture tank (bottom)

Urban Farming Technology Transfer in Religious Schools

In 2024, an aquaponics education programme was implemented under the Komuniti@UniMADANI grant by the Ministry of Finance Malaysia, led by Dr. Abd. Aziz Rekan and Dr. Mohd Istajib Mokhtar of UM. The initiative reflects the principles of Education for Sustainable Development (ESD), integrating intellectual, physical, emotional, and spiritual growth within teaching and learning. It highlights that education for the Sustainable Development Goals (SDGs) must balance scientific knowledge with moral and spiritual values.

The aquaponics system serves as a sustainable agricultural learning tool, simulating natural ecosystems and demonstrating resource efficiency, climate action, and the interdependence of plants and animals. Through hands-on learning, students explore food security, urban farming, and circular economy practices while reducing ecological impact. Adaptable across the curriculum, it supports Elemen Merentas Kurikulum (EMK) and integrates sustainability and values into subjects such as Science, Islamic Education, and Moral Studies.

Collaborating with schools including SMAP Kajang, SAM Bestari Subang Jaya, MRSM Sg Besar, and SBPI Sabak Bernam, the programme equips students with practical and ethical foundations for sustainable farming. By linking educators, universities, communities, and industries, it cultivates future stewards of the environment—technologically competent and morally grounded as khalifah on earth.

Right: Hydroponic technology transfer session at religious schools (top), and a sharing session on the same topic with Apa Khabar Malaysia featuring Dr. Mohd Istajib Mokhtar (UM) and Mohd Yusaimi Md Yusoff (GRASS) (bottom)



UM Empowers Rural Indonesian Farmers with Biochar in Desa Ngerong

On 25 July 2024, UM through the Faculty of Science, partnered with Universitas Airlangga, Indonesia, to organise a knowledge-sharing programme titled “Biochar Between Two Nations” in Desa Ngerong, Kecamatan Gempol, Kabupaten Pasuruan, Indonesia. The initiative, led by Assoc. Prof. Dr. Rosazlin Abdullah and supported by Prof. Ling Tau Chuan, aimed to empower local hydroponic farmers with sustainable solutions for managing agricultural waste. With the world producing over 2 billion tons of waste annually, much of it from agriculture, this educational outreach demonstrated how converting organic biomass into biochar can reduce pollution, enrich soil fertility, and strengthen food security.

The programme introduced farmers to biochar production, its uses, and its benefits as a preservative, absorber, and soil enhancer. Over 30 participants learned how agricultural residues can be transformed into valuable resources to improve yields. The hands-on session underscored sustainable land management’s role in tackling climate change and boosting productivity, with participants calling biochar a “game-changer” for their community.

This cross-border initiative equipped farmers in Desa Ngerong with sustainable agricultural practices, strengthening rural capacity and fostering future collaboration between UM and Universitas Airlangga. Such partnerships demonstrate how international academic cooperation empowers communities, advances sustainable farming, and supports food security and environmental conservation.



Above: Associate Professor Dr. Rosazlin Abdullah delivering a talk on biochar for hydroponic farmers at Desa Ngerong

Below: Group photo with the farmers and researchers

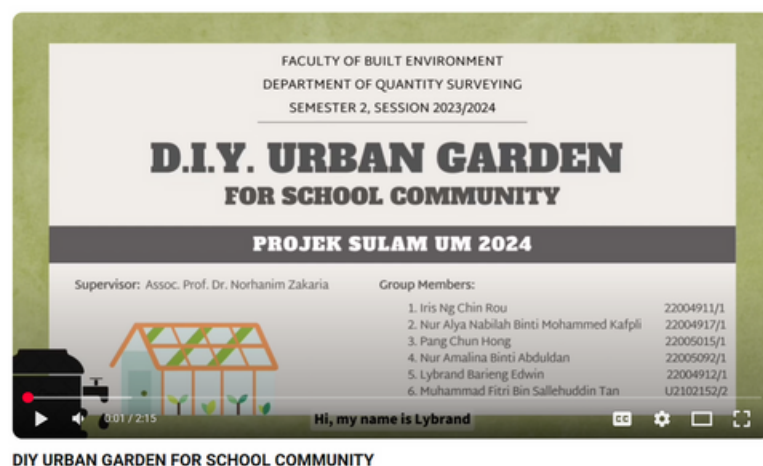


D.I.Y. Urban Garden at SM Teknik Kuala Lumpur

In July 2024, the Faculty of Built Environment, Universiti Malaya proposed the Urban Garden Project (*Projek Kebun Bandar*) at SM Teknik Kuala Lumpur as part of its educational outreach efforts to promote the sustainable management of land for agriculture. This initiative aimed to transform the school's open space into an urban garden equipped with a greenhouse and a rainwater harvesting system. Designed and built through a "DIY" approach by teachers and students with carpentry skills, the greenhouse was proposed to address the school's long-standing issue of wild monkey disturbances, while also providing a controlled environment for agricultural learning. The rainwater harvesting system was introduced to aim to reduce reliance on treated water and to ensure a sustainable supply during frequent water disruptions in Kuala Lumpur.

The greenhouse, constructed from polycarbonate and steel structures, not only aimed to enhance food production in an urban setting but also to demonstrate innovative land-use management that reduces environmental pressures. Meanwhile, the rainwater harvesting system sought to highlight the importance of conserving water resources while ensuring resilience against climate and urban infrastructure challenges. Through this proposed initiative, students were expected to gain hands-on exposure to sustainable land use management, developing practical skills while fostering environmental responsibility.

Collaboration was also a key component of the project, reflecting the spirit of community engagement in sustainable development. The Faculty of Built Environment partnered with the Free Tree Society, a non-profit organization, to provide technical support, agricultural tools, soil, and seeds. Workshops were proposed to further equip students and teachers with the knowledge needed to maintain the garden, ensuring the project's long-term sustainability. By embedding educational outreach within a real-life agricultural project, Universiti Malaya aimed to demonstrate how urban schools can serve as platforms for advancing sustainable land management, community awareness, and agricultural innovation.



Above: Video on the proposed DIY urban garden for the school community

Below: Decorative photo illustrating the urban garden concept

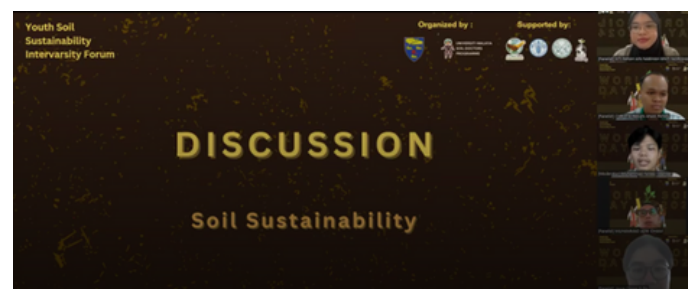


Youth Soil Sustainability Intervarsity Forum

In conjunction with World Soil Day 2024, Universiti Malaya second-year students from the Environmental Management Programme successfully organised the Youth Soil Sustainability Intervarsity Forum on 5 December 2024. Supported by the Malaysian Society of Soil Science, the Food and Agriculture Organization (FAO), and the Global Soil Partnership, the programme served as an educational outreach initiative to promote the sustainable management of land for agriculture. With the theme “Caring for Soils: Measure, Monitor, Manage”, the forum highlighted the critical importance of healthy soil in ensuring long-term food security and sustainable development. The forum featured panelists from Universiti Teknologi Mara (UiTM), Universiti Malaysia Terengganu (UMT), Universiti Malaya (UM), and Universiti Putra Malaysia (UPM), moderated by a UM student, fostering intervarsity knowledge exchange.

Discussions focused on the role of soil data in guiding sustainable agricultural practices, emphasizing how youth can contribute to responsible land use, soil health monitoring, and resilience against environmental degradation. By engaging students and academics from across Malaysia and ASEAN—including the Philippines, Indonesia, and Thailand—this initiative expanded its reach beyond national boundaries, reflecting the regional importance of soil stewardship in sustainable agriculture.

The Youth Soil Sustainability Intervarsity Forum successfully empowered young people with the knowledge and awareness to manage soils more effectively. Through knowledge-sharing, open dialogue, and regional collaboration, the event demonstrated how youth-led initiatives can bridge academia, local communities, and international networks in promoting sustainable management of land for agriculture. This not only enriches the academic experience of students but also strengthens the collective effort toward protecting soil as a vital natural resource for future generations.



Above: The event poster for the Youth Soil Sustainability Intervarsity Forum and a glimpse of the online discussion session

Sustainable Peatland Agriculture in Kampung Seri Bunian

As part of the SULAM (Service Learning Malaysia – University for Society) programme, students from the Bachelor of Science in Environmental Management, Universiti Malaya delivered an educational outreach titled “*Empowering the Use of Peatlands for Sustainable Agriculture in Facing Climate Change*” in Kampung Seri Bunian, Pontian from 27–29 December 2024. Implemented under the UM Soil Doctor Programme (UMSDP), the activity targeted a community where peatlands comprise some 75% of the landscape. The SULAM-UMSDP team — 24 UM students and 2 UM lecturers — worked directly with local farmers, Asnaf families and the JPKK Seri Bunian to promote sustainable management of land for agriculture adapted specifically to peatland conditions.

The programme combined practical UMSDP clinics, hands-on demonstrations and participatory workshops on peat-appropriate practices including water table management, use of organic amendments, erosion control techniques, alternative cropping and small-scale adaptive technologies. Field sessions and problem-solving clinics enabled capacity building for farmers, while community activities (Anak Angkat opening ceremony, Sukaneka, Cultural Night) strengthened community engagement and local ownership. Collaborators included the Department of Agriculture (Johor & Putrajaya), ensuring the technical recommendations were aligned with government extension services and follow-up support.

By delivering context-specific training and direct community support, this SULAM-UMSDP outreach directly advances sustainable management of land for agriculture through targeted educational outreach on sustainable agricultural land management.



Above: A workshop on sustainable peatland agriculture under the UM Soil Doctor Programme (UMSDP)

Educational Outreach on Sustainable Land Tourism

In 2024, Universiti Malaya (UM) supported several educational activities linking land management with responsible tourism. Its spin-off social enterprise, Inspirasi Kawa, based in Kuala Selangor, ran eco-tourism programmes involving mangrove nursery care, tree planting, and river clean-ups with local and visiting groups. UM geology students also introduced geotourism concepts at Kanching Eco Forest Park while promoting conservation and visitor safety.

Additionally, a community programme with Universitas Airlangga in Pantai Dalam explored the use of lemongrass and jujube plants for eco-friendly body scrub production as a small-scale tourism product. UM students further contributed through a SULAM project to revive the Sungai Lalang Hot Spring in Semenyih (see page 132), engaging the community through exhibitions, outreach, and a gotong-royong to improve the site as a potential geotourism destination. These efforts provided opportunities to share knowledge and encourage more responsible approaches to land-based tourism.

Promoting Sustainable River and Mangrove Tourism at Kuala Selangor

UM continues to support its spin-off social enterprise, Inspirasi Kawa, which has been actively operating from 2014 to 2025 in Kuala Selangor—an area renowned for its firefly tourism. The enterprise focuses on downstream river conservation along Sungai Selangor, integrating environmental stewardship with community-based tourism.

Through this collaboration, Inspirasi Kawa delivers educational outreach programmes that engage local, national, and international communities in sustainable land tourism. Activities include establishing and maintaining mangrove nurseries, mangrove tree planting, and river clean-up initiatives. These efforts not only enhance ecosystem health but also raise public awareness on the importance of conserving mangrove and river habitats, ensuring the long-term sustainability of eco-tourism in the region.

Below: Inspirasi Kawa conducting mangrove nursery seeding and planting activities as an eco-tourism initiative (left), and measuring the health of the planted mangrove trees (right)



Promoting Sustainable Geotourism at Kanching Waterfalls

In June 2024, a group of Universiti Malaya students from the Bachelor of Science in Applied Geology carried out a project highlighting the geotourism potential at Kanching Eco Forest Park (Taman Eko Rimba Kanching Waterfalls). The main objective was to promote the site as a sustainable geotourism destination while raising awareness among local communities, particularly the Village Development and Security Committee (JKK). The initiative emphasised the importance of geoscience education, environmental conservation, and sustainable land use for tourism by showcasing the unique geology and natural beauty of the waterfalls. As part of the outreach, the students conducted research on the background of the waterfall, the benefits of geotourism, potential hazards, available facilities, and the geological characteristics of the site. They also developed brochures distributed at Universiti Malaya to encourage greater appreciation and responsible tourism at Kanching Waterfalls.

The project also provided educational outreach to the community by sharing knowledge on geology, eco-tourism development, and conservation practices. Recommendations were made to the JKK for infrastructure upgrades such as improved walking paths, safety fences, warning signboards, and additional sanitary facilities. These enhancements would not only improve visitor safety and comfort but also support the sustainable management of land for tourism, ensuring that tourism growth benefits the local economy while safeguarding the ecosystem. Furthermore, engagement with visitors at the site offered opportunities for informal learning, where students explained the role of geology in eco-tourism and its potential to strengthen local environmental awareness.

Conservation was also a major focus of the initiative. The distributed brochures stressed the need to preserve the natural environment, as Kanching Waterfalls is home to diverse flora and fauna that contribute to clean air, fresh water, and fertile soil. By educating both the local community and tourists on the risks of pollution, biodiversity loss, and ecosystem imbalance, the project promoted a deeper understanding of why sustainable land tourism management is essential. Through educational programmes and outreach, the initiative demonstrated how geotourism can be developed in harmony with nature, ensuring long-term ecological balance while creating socio-economic opportunities for the community.



Right: UM Geology students at Kanching Eco Forest Park distributing flyers and conducting research

Eco-Friendly Body Scrub for Sustainable Tourism

The Community Development Programme: Formulation of Mixed Lemongrass (Serai) and Jujuba (Bidara) Emulsified Body Scrub supports sustainable land use for tourism by integrating biodiversity-based products into local tourism economies. Held on 17 November 2024, this hands-on educational programme was conducted with the participation of the community from PPR Seri Pantai, Pantai Dalam, through a collaboration between Universiti Malaya (under UMCares) and Universitas Airlangga, Indonesia.

The programme trained members of the local community to cultivate and process 'lemongrass' and 'jujuba' plants that can be grown sustainably without degrading the land.

Participants learned about:

- Sustainable cultivation practices to ensure long-term productivity of the land.
- Value-added product development using locally sourced ingredients.
- Eco-friendly processing methods to reduce environmental impact.

The body scrub is designed for sale to eco-tourism visitors, homestays, and local markets, providing communities with an alternative income stream that encourages the sustainable use of plant resources and supports the tourism sector. By linking agricultural biodiversity with tourism products, this programme empowers communities to become active stewards of their land while benefiting economically from sustainable tourism opportunities.



Above: UM researchers demonstrating the process of making a sustainable body scrub, followed by participants from the Pantai Dalam community trying it out themselves

Below: Group photo with members of the local community



Protecting Campus Land Ecosystems Through Meaningful Action

Throughout 2024, Universiti Malaya strengthened the care of campus land ecosystems through collaborative stewardship at Rimba Ilmu and other field sites. Students, NGOs, volunteers, and corporate partners participated in clean-ups, post-storm restoration, tree planting, and garden maintenance—ensuring that shared green spaces remain healthy, resilient, and accessible for learning and recreation.

In parallel, the university expanded ecosystem education and research through workshops, guided activities, and hands-on field training. Rimba Ilmu's 50th anniversary highlighted its role as a 60-hectare botanical garden conserving over 1,700 plant species, while initiatives such as the Chigger Workshop and student fieldwork at Glami Lemi connected conservation with scientific learning. These efforts demonstrate how collaboration and knowledge-sharing can sustain campus land ecosystems for future generations.

Rimba Ilmu Conservation and Community Engagement 2024

Throughout 2024, the Rimba Ilmu Botanic Garden at Universiti Malaya organised and hosted a series of collaborative programmes with volunteers, NGOs, students, and corporate partners to strengthen efforts in the maintenance and preservation of shared land ecosystems. These activities focused on sustainability, conservation, and ecological care, reflecting the importance of protecting campus-based ecosystems as shared community assets.

On 4 May 2024, Universiti Malaya held an environmental stewardship and community engagement programme at Rimba Ilmu with The Rimba Project 2.0, Youthcare Malaysia, SEKRUM, and UM Green Community. UM students, volunteers, and partner organisations joined a Forest Clean-Up and Photo Scavenger Hunt, combining practical conservation work with biodiversity awareness. The programme promoted sustainable forest management, encouraged community involvement, and fostered collaboration between student bodies, NGOs, and university initiatives.

On 3 September 2024, post-storm restoration efforts were carried out with Rimba Jiva and Carsome to repair affected areas of the garden.

This was followed by a Shade House gotong-royong on 28 October 2024 with Sunway Student Volunteers, who assisted in weeding and maintaining nursery trails. On 9 November 2024, KPM Beranang students joined a river cleanup and restoration programme, working to clear detritus and branches to improve river flow.

Later in the month, the Rimba Ilmu Cleanup Programme on 15 November 2024, held in collaboration with the Universiti Malaya Sustainable Development Centre (UMSDC), mobilized 20 volunteers to organise fallen logs, collect leaves, and clear roots from garden roofs—practical activities that maintained the garden's ecological health. This was followed by Carsome's CSR tree planting initiative on 25 November 2024, which restored storm-affected areas of the botanical garden through planting and fertilizing seedlings with over 40 bags of fertilizer, promoting sustainable regrowth.

These initiatives illustrate how collaboration with the local community and corporate partners plays a crucial role in safeguarding and managing shared ecosystems, ensuring Rimba Ilmu remains a thriving green lung for education, biodiversity, and urban sustainability.



Above: Rimba Ilmu volunteers trimming palms and organising fallen logs with the UM Sustainable Development Centre (left), and planting trees and fertilising seedlings around the botanical garden with Carsome (right)

Below: Stream cleanup at Rimba Ilmu with KPM Beranang (left), and a Shade House cleanup with Sunway Student Volunteers (right)



Below: Clearing and removing fallen trees at Rimba Ilmu after a storm with Rimba Jiva and Carsome (left), and a cleaning and maintenance session at Rimba Ilmu with Youthcare Malaysia, SEKRUM, and UM Green Community (right)



Rimba Ilmu 50th Anniversary Celebration: Belukar Dah Jadi Rimba

In celebrating its 50th anniversary, the Rimba Ilmu Botanic Garden, Universiti Malaya, highlighted its long-standing role as a hub for conservation, environmental awareness, and shared responsibility for land ecosystems. Once an abandoned rubber estate, Rimba Ilmu has been transformed into a thriving 60-hectare botanical garden that conserves more than 1,700 plant species, making it a key ecosystem resource in the heart of Kuala Lumpur. Its evolution reflects the university's commitment to sustaining land-based ecosystems through education, conservation, and public engagement.

The anniversary programme, held in August 2024, included Sunda Talks and Rimba Workshops, offered in collaboration with local experts, international partners such as the University of St Andrews, and organisations like the Royal Geographical Society (with IBG). These sessions engaged the local community in discussions on tiger and elephant conservation, environmental journalism, and nature-inspired art, alongside guided walks, nature play workshops, and poetry activities. Such collaborative educational initiatives illustrate how universities can partner with the public to maintain shared land ecosystems while promoting appreciation of Malaysia's unique biodiversity.

The Belukar Dah Jadi Rimba exhibition (17 August–17 September 2024) further fostered public participation by showcasing the history and conservation journey of Rimba Ilmu. By working together with alumni, researchers, artists, and the community, Universiti Malaya demonstrated a strong model of collaboration for shared land ecosystems. This milestone event reflects how universities can actively integrate research, conservation action, and community outreach to safeguard ecosystems for future generations.

Right: The event poster for the Belukar Dah Jadi Rimba celebration (top), the team behind its planning (middle), and Dr. Yong Kien Thai showing a fruit during a guided walk in Rimba Ilmu (bottom)

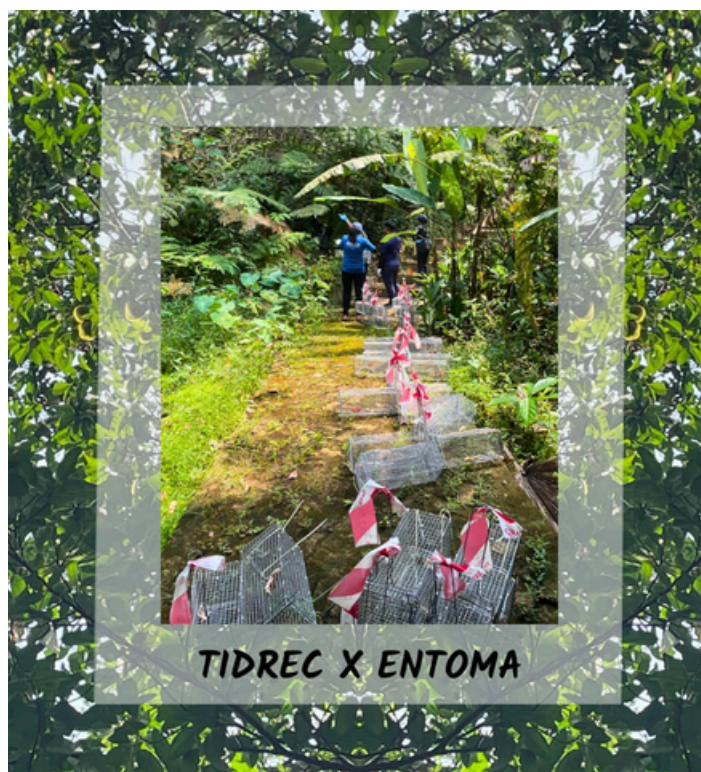


Chigger Workshop-The Neglected Vector

On 14 October 2024, the Tropical Infectious Diseases Research & Education Centre (TIDREC) in collaboration with the Entomological Society of Malaysia (ENTOMA) successfully organised Chigger Workshop 1.0 – The Neglected Vector at Rimba Ilmu, Universiti Malaya. This initiative highlights the university's commitment to supporting land ecosystems through action by providing its shared land areas for scientific research, capacity building, and community outreach.

During the workshop, participants were introduced to the ecological role of the parasitic chigger mite (Trombiculidae), commonly found in small mammals such as rats, squirrels, and shrews. With Rimba Ilmu's garden, nursery, and bambusetum areas serving as the study site, multiple cage traps were set up to facilitate field-based learning and ecosystem monitoring. The collaborative activity underscores the importance of biodiversity awareness, land-based ecosystem stewardship, and practical research engagement on shared green spaces within the campus.

The captured small mammals, some hosting chiggers in their ears, provided valuable specimens for slide preparation and species identification conducted later at TIDREC, Universiti Malaya. This collaborative programme exemplifies cross-institutional partnerships between a university research centre, a national scientific society, and a campus botanical garden to maintain and enhance shared land ecosystems. By linking research, education, and ecological management, the workshop contributes to the collaboration for shared land ecosystems, ensuring that campus green spaces are actively used for sustainable science, conservation, and public awareness.



Right: Photos during the Chigger workshop

Glami Lemi Biotechnology Research Centre Gotong Royong by UM Biotechnology Club

On 1–2 June 2024, the UM Biotechnology Club conducted a field visit and gotong-royong at the Glami Lemi Biotechnology Research Centre (PPBGL), Negeri Sembilan. This initiative reflects active collaboration with the local community in maintaining shared land ecosystems, which cover agricultural land, lakes, and equatorial forests across the 150-acre site. Through communal activities such as waste clean-up and land stewardship, the visit strengthened collective responsibility for the sustainable management of natural resources.

The PPBGL field site is uniquely positioned within the Jelebu district, surrounded by rich biodiversity and near Taman Negeri Kenaboi. By engaging students in practical exposure to agricultural biotechnology, aquaculture, and animal husbandry, the programme fostered both scientific learning and ecosystem conservation practices. Students also gained valuable insights into the Barbados Black Belly Sheep as part of livestock research in PPBGL, linking biotechnology studies with sustainable agriculture and biodiversity conservation.

Importantly, this activity promoted the integration of education, research, and community engagement. With facilities for long-term research and training, PPBGL provides a platform for stakeholder collaboration between academia, local communities, and policymakers. The initiative demonstrates how partnerships can strengthen the protection of shared land ecosystems through knowledge exchange, community participation, and sustainable land-use practices.



Above: UM students at the Glami Lemi Biotechnology Research Centre