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Project Newsletter

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We plan to launch a smart ecological game-based learning station on Yim Tin Tsai starting weekends from December 2025. The public can interact with our project ambassadors to learn more about the island's ecology and use an AR smart application for ecological exploration on the island! Additionally, we plan to introduce AR-guided tours from January 2026. Further details will be announced later. Stay tuned!



Overview

The research project, 'Application Research on Augmented Models and Smart Experiential Engagement in Ecological Conservation of Yim Tin Tsai, Sai Kung' (Project Number: EEB(EB) 27/24/11-48), successfully launched on 1 September 2024. For easy recognition, we have named the project *Exploring YTT Nature ARchive*.

This project is funded by Countryside Conservation Funding Scheme (CCFS) and the Countryside Conservation Office (CCO) under the category of 'Research Activities on Countryside Conservation and Revitalisation'. It is in collaboration with the Division of Integrative Systems and Design at The Hong Kong University of Science and Technology, Outdoor Wildlife Learning Hong Kong, Yim Tin Tsai Village Committee, and the Salt and Light Preservation Centre.

The project team is utilising Augmented Reality (AR) technology to showcase the ecological richness of Yim Tin Tsai (YTT). This initiative aims to create an innovative, interactive, and stimulating learning experience that deepens villagers, understanding and interest in the island's ecology, biodiversity, and the use of smart technology for nature conservation among villagers, local community members and the public. Eventually, we seek to raise awareness, foster a sense of responsibility, and encourage engagement in promoting and conserving the island's natural and cultural resources. Further, we wish to contribute long-term benefits to remote countryside conservation and revitalisation efforts by highlighting the potential and significance of integrating smart technological innovation into ecological research and nature conservation.

Throughout the three-year project period, a series of research activities and public events are planned, including ecological survey, day-and-night ecological workshop, smart ecological game-based station, and AR-based guided tours.

Whether you are a nature lover or a technology enthusiast, please stay tuned for updates on this project!

Scan the QR codes to visit our website and social media platforms for latest event information and research findings updates!





Facebook



Website



Field and Research Methods

Point Count

We employed various sampling methods to measure species diversity during our ecological surveys. One key technique was the Point Count method, which was used to document species such as butterflies, dragonflies, and birds. As the team traversed the island, species spotted along the trail were identified, called out, and recorded in a track book. The survey included ten designated stopping points, where the team paused for ten minutes at each location to observe and count species present during that time frame.

Interestingly, not all species were directly visible. Sometimes, the team relied on auditory cues, such as calls or sounds, to identify species, such as birds and frogs. If confident in their recognition of these sounds, the data was recorded accordingly. This highlights the dynamic nature of ecological surveying, where even subtle indicators of a species' presence can contribute to the dataset. For example, team members would call out observations like "Dragonfly three" or "Butterfly two" in quick succession.



Effective teamwork was vital, requiring sharp focus, coordination, and collaboration among all members.

This method provides valuable insights into temporal and spatial variability in species abundance. By analysing these variations, we gain a deeper understanding of biodiversity, ecosystem stability, and any ecological changes that might be occurring. Ultimately, the Point Count method enables us to closely monitor the island's ecosystems, revealing patterns and relationships between species and their environment.

Transect Count

The Transect Count was another significant method used during fieldwork on Yim Tin Tsai. This approach involves mapping out a series of transects across various habitat zones.

This method is particularly effective for measuring species abundance across a dispersed area and analysing changes over time. By dividing a large habitat into smaller, manageable sections, the transact system ensures that most of the accessible parts of the area are represented. This minimises disparities in data collection and reduces the likelihood of errors.

Utilizing both Point Count and Transect Count methods in ecological survey offers a comprehensive understanding of species distribution and abundance, facilitates standardized observations, and effectively



captures habitat variations. By employing these field methods, our team can thoroughly document species diversity and abundance, monitor ecological changes, and gain deeper insights into the health and stability of Yim Tin Tsai's natural environment. These techniques form the foundation of our research and contribute to the long-term conservation of biodiversity.

"My experiences on the fieldwork conducted by the research team have been eye-opening to the groundwork in Hong Kong. I found it inspiring that in a seemingly urban jungle that is Hong Kong, there are still initiatives to preserve biodiversity and culture, especially on a historically important site such as Yim Tin Tsai".

Harry Wong, student intern from the CUHK Summer Undergraduate Research Programme)

Featured Species

Hong Kong Eagle's Claw

The Hong Kong Eagle's Claw (*Artabotrys hongkongensis Hance*), a member of the Annonaceae family, is a climbing shrub renowned for its distinctive appearance and ecological value. Its English name, "Hong Kong Eagle's Claw," derives from its claw-like floral structure. First discovered in 1853 on Mount Gough, Hong Kong Island, the species can now be found in various locations within the region, including Mount Parker, Happy Valley, Lantau Island, Tai Tam, Lam Tsuen, Fanling, Sheung Shui, and Yuen Long. Beyond Hong Kong, it is also distributed in Guangdong, Hunan, Guangxi, Yunnan, and Vietnam. Classified as "Least Concern" (LC) in mainland China, its population is considered relatively stable.

The Hong Kong Eagle's Claw is a climbing shrub with eagle-claw-like hooked thorns on its branches and can grow up to 6 meters long. It is typically found in dense forests or shaded, moist valleys at altitudes of 300 to 1,500 meters. Its leathery leaves are elliptical to oblong, measuring 6 to 12 cm in length, with acute or rounded tips and a nearly circular or slightly asymmetrical base. The flowering period is from April to July, while fruiting occurs from May to December. The flowers are bisexual, solitary, and arranged in two whorls of petals, curving inward into a claw-like shape. The outer petals are covered with silky hairs and emit a fragrant aroma. When mature, the fruit is elliptical and spherical, turning black when dry, with a diameter of approximately 1.5 to 3 cm.

The Hong Kong Eagle's Claw is not only visually appealing but also has potential value due to the aromatic nature of its flowers. Most of its habitats in Hong Kong are located within country parks, where the species is well-protected. However, its reliance on shaded and moist environments highlights the importance of ongoing conservation efforts.

As one of Hong Kong's native plant species, the Hong Kong Eagle's Claw has a long history of discovery and study, dating back to the 19th century. In 1870, botanist H. F. Hance provided a detailed description of the species in the Journal of Botany, British and Foreign, laying the foundation for further scientific understanding. In recent years, heightened awareness of conservation has brought increased attention to the ecological and cultural significance of this rare plant, making it an important symbol of Hong Kong's natural heritage.

The Hong Kong Eagle's Claw is not commonly found on Yim Tin Tsai, but it can still be spotted in certain dense forests, shrubland or shaded, moist valleys on the island. As a native species, it is rare yet contributes to the biodiversity of Yim Tin Tsai and plays a role in its ecological system. Visitors during its flowering season from April to July may be fortunate enough to observe its leathery, elliptical leaves and fragrant flowers with careful observation. The rarity of this plant on Yim Tin Tsai underscores the importance of preserving the island's natural environment to ensure the survival of this unique species.



Featured Species

Floating Fern

The Floating Fern (Ceratopteris thalictroides), also known as the Water Fern, is an aquatic or semi-aquatic herbaceous plant belonging to the family Parkeriaceae. It has a short, erect rhizome that roots in mud and produces clustered dimorphic leaves. The sterile leaves are bipinnatifid, typically 20–30 cm in length, with linear lobes, while the fertile leaves are longer, bipinnate, and bear sori along the longitudinal veins. These sori are protected by the reflexed edges of the ultimate segments of the pinnules, which are thin, translucent, and about 1.5-4 cm long and 2 mm wide.

The Floating Fern thrives in marshy or flooded areas such as ponds, paddy fields, and ditches, and can sometimes be seen floating on the water's surface. It is distributed in Sham Chung, Lai Chi Chong, Kam Tin, Plover Cove, and Po Toi Island in Hong Kong, as well as in southern and southwestern China, and tropical and subtropical regions worldwide. While widely distributed, this species has specific habitat requirements, and its range and population are decreasing globally due to habitat loss.

As one of the few fern species adapted to wetland environments, the Floating Fern holds significant ecological value and botanical interest. It is classified as "Vulnerable (VU)" in China and is a national second-class protected wild plant. Additionally, its stems and leaves have medicinal applications. The conservation



of this unique plant is vital to maintaining the biodiversity of wetland ecosystems.

The Floating Fern grows in semi-wet and semi-dry environments and can occasionally be found in the marshy or wetland habitats of Yim Tin Tsai, such as ponds or paddy fields. As one of the few fern species capable of thriving in such conditions, it holds ecological and medicinal value. However, its wild populations have been shrinking due to habitat loss, making it a species of special conservation concern. In China, it is listed as a national second-class protected wild plant, emphasizing the need to preserve its delicate habitats on Yim Tin Tsai and beyond.



Taxa	Order	Scientific Name	English Name
		Duttaphrynus melanostictus	Asian Common Toad
		Eleutherodactylus planirostris	Greenhouse Frog
		Hoplobatrachus chinensis	Chinese Bullfrog
Amphibia	Anura	Kaloula pulchra pulchra	Asiatic Painted Frog
		Microhyla fissipes	Ornate Pigmy Frog
		Polypedates megacephalus	Brown Tree Frog
		Sylvirana guentheri	Günther's Frog
			Amphibia: 7
		Accipiter trivirgatus	Crested Goshawk
	A a a in it wife was a a	Haliaeetus leucogaster	White-bellied Sea Eagle
	Accipitriformes	Milvus migrans	Black Kite
		Pandion haliaetus	Western Osprey
	Caprimulgiformes	Caprimulgus jotaka	Grey Nightjar
		Actitis hypoleucos	Common Sandpiper
		Charadrius dubius	Little Ringed Plover
	Charadriiformes	Chroicocephalus ridibundus	Black-headed Gull
		Tringa brevipes	Grey-tailed Tattler
		Tringa glareola	Wood Sandpiper
A		Tringa nebularia	Common Greenshank
Aves		Tringa ochropus	Green Sandpiper
		Chalcophaps indica	Common Emerald Dove
	Columbiformes	Spilopelia chinensis	Spotted Dove
		Streptopelia orientalis	Oriental Turtle Dove
	Coraciiformes	Alcedo atthis	Common Kingfisher
		Halcyon pileata	Black-capped Kingfisher
		Halcyon smyrnensis	White-throated Kingfisher
	Cuculiformes	Centropus sinensis	Greater Coucal
		Clamator coromandus	Chestnut-winged Cuckoo
		Cuculus micropterus	Indian Cuckoo
		Eudynamys scolopaceus	Asian Koel

Taxa	Order	Scientific Name	English Name
	Falconiformes	Falco peregrinus	Peregrine Falcon
	Gruiformes	Amaurornis phoenicurus	White-breasted Waterhen
		Rallina eurizonoides	Slaty-legged Crake
		Acridotheres cristatellus	Crested Myna
		Aethopyga christinae	Fork-tailed Sunbird
		Anthus cervinus	Red-throated Pipit
		Anthus hodgsoni	Olive-backed Pipit
		Copsychus saularis	Oriental Magpie Robin
		Corvus macrorhynchos	Large-billed Crow
		Corvus torquatus	Collared Crow
		Dicaeum cruentatum	Scarlet-backed Flowerpecker
		Dicrurus hottentottus	Hair-crested Drongo
		Dicrurus macrocercus	Black Drongo
	Passeriformes	Emberiza pusilla	Little Bunting
		Emberiza spodocephala	Black-faced Bunting
Aves		Garrulax canorus	Chinese Hwamei
		Gracupica nigricollis	Black-collared Starling
		Hemixos castanonotus	Chestnut Bulbul
		Hirundo rustica	Barn Swallow
		Lalage melaschistos	Black-winged Cuckooshrike
		Lanius schach	Long-tailed Shrike
		Larvivora sibilans	Rufous-tailed Robin
		Lonchura punctulata	Scaly-breasted Munia
		Motacilla alba	White Wagtail
		Muscicapa dauurica	Asian Brown Flycatcher
		Muscicapa griseisticta	Grey-streaked Flycatcher
		Myophonus caeruleus	Blue Whistling Thrush
		Orthotomus sutorius	Common Tailorbird
		Parus minor	Japanese Tit
		Phoenicurus auroreus	Daurian Redstart

Taxa	Order	Scientific Name	English Name
		Phylloscopus fuscatus	Dusky Warbler
		Phylloscopus inornatus	Yellow-browed Warbler
		Phylloscopus proregulus	Pallas's Leaf Warbler
		Phylloscopus tenellipes	Pale-legged Leaf Warbler
		Pica serica	Oriental Magpie
		Prinia flaviventris	Yellow-bellied Prinia
		Pterorhinus chinensis	Black-throated Laughingthrush
		Pterorhinus perspicillatus	Masked Laughingthrush
	Passeriformes	Pycnonotus aurigaster	Sooty-headed Bulbul
		Pycnonotus jocosus	Red-whiskered Bulbul
		Pycnonotus sinensis	Chinese Bulbul
		Saxicola stejnegeri	Stejneger's Stonechat
Aves		Terpsiphone incei	Amur Paradise Flycatcher
		Turdus hortulorum	Grey-backed Thrush
		Turdus mandarinus	Chinese Blackbird
		Urocissa erythroryncha	Red-billed Blue Magpie
		Zosterops simplex	Swinhoe's White-eye
	Pelecaniformes	Ardea alba	Great Egret
		Ardeola bacchus	Chinese Pond Heron
		Butorides striata	Striated Heron
		Egretta garzetta	Little Egret
		Egretta sacra	Pacific Reef Heron
		Ixobrychus sinensis	Yellow Bittern
		Nycticorax nycticorax	Black-crowned Night Heron
	Strigiformes	Otus lettia	Collared Scops Owl
			Aves: 77
	Lepidoptera	Abisara echerius	Plum Judy
		Acytolepis puspa	Common Hedge Blue
Insecta		Aeromachus jhora	Grey Scrub Hopper
		Ampittia dioscorides	Bush Hopper
		Argyreus hyperbius	Indian Fritillary

Taxa	Order	Scientific Name	English Name
		Ariadne ariadne	Angled Castor
		Artipe eryx	Green Flash
		Astictopterus jama	Forest Hopper
		Athyma nefte	Colour Sergeant
		Athyma perius	Common Sergeant
		Athyma selenophora	Staff Sergeant
		Baoris farri	Paintbrush Swift
		Borbo cinnara	Formosan Swift
		Catochrysops strabo	Forget-me-not
		Catopsilia pomona	Lemon Emigrant
		Cepora nerissa	Common Gull
		Cethosia biblis	Red Lacewing
		Charaxes bernardus	Tawny Rajah
		Chilades lajus	Lime Blue
		Chilades pandava	Plains Cupid
Insecta	Lepidoptera	Chilasa clytia	Common Mime
		Cupha erymanthis	Rustic
		Cyrestis thyodamas	Common Mapwing
		Danaus genutia	Common Tiger
		Delias pasithoe	Red-base Jezebel
		Deudorix epijarbas	Cornelian
		Discophora sondaica	Common Duffer
		Elymnias hypermnestra	Common Palmfly
		Euchrysops cnejus	Gram Blue
		Euploea core	Common Indian Crow
		Euploea midamus	Blue-spotted Crow
		Euploea mulciber	Striped Blue Crow
		Eurema blanda	Three-spot Grass Yellow
		Eurema hecabe	Common Grass Yellow
		Euthalia aconthea	Baron

Taxa	Order	Scientific Name	English Name
		Euthalia lubentina	Gaudy Baron
		Euthalia phemius	White-edged Blue Baron
		Faunis eumeus	Large Faun
		Graphium agamemnon	Tailed Jay
		Graphium doson	Common Jay
		Graphium sarpedon	Common Bluebottle
		Halpe porus	Dark Brown Ace
		Hasora badra	Common Awl
		Hebomoia glaucippe	Great Orange Tip
		Heliophorus epicles	Purple Sapphire
		Hestina assimilis	Red Ring Skirt
		Hyarotis adrastus	Tree Flitter
		Hypolimnas bolina	Great Egg-fly
	Lepidoptera	lambrix salsala	Chestnut Bob
		Ideopsis similis	Ceylon Blue Glassy Tiger
Insecta		Iraota timoleon	Silver Streak Blue
		Jamides bochus	Dark Cerulean
		Jamides celeno	Common Cerulean
		Junonia almana	Peacock Pansy
		Junonia atlites	Grey Pansy
		Junonia lemonias	Lemon Pansy
		Kaniska canace	Blue Admiral
		Lampides boeticus	Long-tailed Blue
		Lexias pardalis	Common Archduke
		Matapa aria	Common Redeye
		Megisba malaya	Malayan
		Melanitis phedima	Dark Evening Brown
		Mycalesis mineus	Dark Brand Bush Brown
		Mycalesis zonata	South China Bush Brown
		Nacaduba kurava	Transparent 6-line Blue

Таха	Order	Scientific Name	English Name
		Neptis clinia	Southern Sullied Sailer
		Neptis hylas	Common Sailer
		Notocrypta curvifascia	Restricted Demon
		Odontoptilum angulatum	Chestnut Angle
		Papilio bianor	Chinese Peacock
		Papilio demoleus	Lime Butterfly
		Papilio helenus	Red Helen
		Papilio memnon	Great Mormon
		Papilio paris	Paris Peacock
		Papilio polytes	Common Mormon
		Papilio protenor	Spangle
		Parantica aglea	Glassy Tiger
		Parathyma sulpitia	Five-dot Sergeant
		Parnara ganga	Rare Swift
		Parnara guttata	Common Straight Swift
Insecta	Lepidoptera	Pathysa antiphates	Five-bar Swordtail
		Phaedyma columella	Short-banded Sailer
		Pieris canidia	Indian Cabbage White
		Pieris rapae	Small Cabbage White
		Polytremis lubricans	Contiguous Swift
		Prosotas dubiosa	Tailless Line Blue
		Pseudozizeeria maha	Pale Grass Blue
		Rapala manea	Slate Flash
		Remelana jangala	Chocolate Royal
		Spindasis Iohita	Long-banded Silverline
		Suastus gremius	Indian Palm Bob
		Symbrenthia lilaea	Common Jester
		Tagiades litigiosus	Water Snow Flat
		Tajuria cippus	Peacock Royal
		Telicota ohara	Dark Palm Dart

Taxa	Order	Scientific Name	English Name
	Lepidoptera	Tirumala limniace	Blue Tiger
		Udaspes folus	Grass Demon
		Ypthima baldus	Common Five-ring
Insecta		Zeltus amasa	Fluffy Tit
		Zemeros flegyas	Punchinello
		Zizina otis	Lesser Grass Blue
		Zizula hylax	Tiny Grass Blue
			Insecta - Lepidoptera: 102
		Acisoma panorpoides	Asian Pintail
		Anax guttatus	Pale-spotted Emperor
		Brachydiplax flavovittata	Blue Dasher
		Brachythemis contaminata	Asian Amberwing
		Ceriagrion auranticum ryukyuanum	Orange-tailed Sprite
		Copera marginipes	Yellow Featherlegs
		Diplacodes trivialis	Blue Percher
	Odonata	Gynacantha japonica	Blue-spotted Dusk-hawker
		Gynacantha subinterrupta	Dingy Dusk-hawker
		Lyriothemis elegantissima	Forest Chaser
		Neurothemis fulvia	Russet Percher
Insecta		Neurothemis tullia tullia	Pied Percher
		Orthetrum chrysis	Red-faced Skimmer
		Orthetrum glaucum	Common Blue Skimmer
		Orthetrum luzonicum	Marsh Skimmer
		Orthetrum pruinosum neglectum	Common Red Skimmer
		Orthetrum sabina sabina	Green Skimmer
		Pantala flavescens	Wandering Glider
		Pseudothemis zonata	Pied Skimmer
		Rhyothemis variegata arria	Variegated Flutterer
		Tramea transmarina euryale	Ocean Glider
		Tramea virginia	Saddlebag Glider
			Insecta - Odonata : 22

Taxa	Order	Scientific Name	English Name
	Artiodactyla	Sus scrofa	Eurasian Wild Pig
Mammalia	Chiroptera	Hipposideros armiger	Himalayan Leaf-nosed Bat
IviaiTiITialia	5	Hystrix brachyura	East Asian Porcupine
	Rodentia	Rattus andamanensis	Indochinese Forest Rat
			Mammalia: 4
	Squamata	Gekko chinensis	Chinese Gecko
		Hemidactylus bowringii	Bowring's Gecko
		Hemidactylus brookii	Brook's Gecko
		Hemidactylus garnotii	Garnot's Gecko
Reptilia		Indotyphlops braminus	Common Blind Snake
		Lycodon aulicus	Common Wolf Snake
		Ophiophagus hannah	King Cobra
		Sphenomorphus indicus	Indian Forest Skink
		Trimeresurus albolabris	Bamboo Snake
			Reptilia: 9
			Total: 221

Supplementary information: The fauna survey result is preliminary and data collection is now ongoing. The flora survey is currently in progress.Acknowledgement: Harry Wong, the CUHK Summer Undergraduate Research Programme 2025.



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