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主席的話 CHAIR'S MESSAGE

## 啟迪創新 推動保育: 開闊視野拓展未來

LEVERAGING INNOVATION FOR CONSERVATION: SEEKING SOLUTIONS FOR THE FUTURE

氣候變化、過度開發資源、環境污染等種種因素, 令約一百萬種動植物面臨滅絕危機,而人類亦難以獨善其身。

根據由聯合國支援的生物多樣性和生態系統服務政府 間科學政策平台(IPBES)發表的全球野生物種資源 可持續開發報告,全球每五人即有一人直接倚賴野生 物種作為食物或收入來源。

這無疑是一個驚人的數字,尤其是對城市人而言。不過即使身處石屎森林,其實亦不難發現我們對大自然苛索的痕跡,從衣食住行到醫藥用品以至生活各方面,我們每日都在對大自然予取予求,卻甚少顧及可持續發展的重要。這個問題不只關乎我們的下一代能否見到北極熊,更關乎目前全球數十億人的存續,包括發展中和已發展國家。氣候變化、過度開發資源、環境污染等種種因素,令約一百萬種動植物面臨滅絕危機,而人類亦難以獨善其身。氣候變化與保育息息相關,地球環境正在改變,要應對這些問題和提升抗逆力,我們必須尋求創新方法。

二零二三年的聯合國氣候變化大會(COP 28)於杜拜舉行期間,再次重申近年多次強調的議題,表明各國政府必須投入的不單是經濟與投資支援,還要為有需要地區提供技術轉移和人才培訓。保育基金二零二三至二零二四年報以「開拓創新思維 保育生態未來」作為主題,為的就是突顯創新進步在個人以至社會層面上的重要性。而我們其中一項使命,就是團結公私營界別的保育人士與專家,連繫學術與非政府機構,協助香港政府於二零二五年推出新階段的《生物多樣性策略及行動計劃》(BSAP),完善本地保育政策。

除上述大藍圖外,我們亦在年內積極推行多個保育項目,守護不同物種,包括瀕危的眼斑水龜。保育基金多年來一直致力保育眼斑水龜,在二零二三年透過「本地河溪生態館」與公眾分享保育本地物種的重大意義,海洋公園並於二零二四年舉行了眼斑水龜世界自然保護聯盟專家會議,制訂五年保育計劃。此外,我們亦藉由人工繁殖和野放等科研計劃,期望恢復眼斑水龜的野外種群數量。



保育路上需要的不只是專家,還有每一個人的參與,小至日常餐具選擇都可以是一個保育任務。保育基金一直致力宣揚走「塑」,呼籲大家停止使用即棄塑膠產品,更透過「無飲管運動」和「無塑生活週」鼓勵大家身體力行從日常生活做起,而二零二四年四月實施的即棄塑膠管制新法例對我們而言是一大鼓舞。我們期望大家可以一起踏出走「塑」這一步,同心協力逆轉氣候變化危機,為地球未來貢獻個人力量。

千里之行始於足下,我們每一個人的一小步,都是推動世界改變的動力。在此我衷心感謝所有與我們一起踏步前行的企業伙伴及非政府機構,還有各位持分者、捐助者與義工,每一分支持對我們都至關重要。我們特別鳴謝海洋公園提供科技、資源及專業支援,並協助我們向公眾推廣保育訊息,亦向劉鑾雄慈善基金、Edrington Hong Kong及其他企業伙伴誠心致意,感謝他們慷慨贊助我們舉辦不同宣傳與籌款活動。另外還要多謝受託委員與各委員會成員、研究團隊,以及保育基金上下各同事沿途的付出與努力,令我們得以在保育路上繼續向前。

全賴大家支持,與我們結伴同行迎向變化與挑戰, 保育基金才得以發掘保育新構思與新可能,堅持 不懈邁向塑造可持續發展的旅程。

陳晴, JP 基金主席 66

A million plant and animal species face extinction due to climate change, overexploitation, pollution, and similar issues. We humans will not be unaffected by their loss.

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According to a new global report on the sustainable use of wild species "UN-backed Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)", one in five people around the world directly rely on wild species for food or income.

It is a startling figure, especially for those of us in cities. But even here, amidst the concrete, steel and glass, nature finds us: in our food, clothing, and medications, in many parts of our everyday life that we take for granted, and often with little thought to sustainability. It is not a question of whether our hypothetical great-grandchildren will live in a world that still has polar bears, but a matter of survival for billions of people worldwide, in developed and developing nations alike. A million plant and animal species face extinction due to climate change, overexploitation, pollution, and similar issues. We humans will not be unaffected by their loss. Climate change is intrinsically linked to conservation issues; addressing these issues and to strengthen our resilience in the face of a changing planet will require us all to find innovative new solutions.

At the 2023 United Nations Climate Change Conference (COP 28) in Dubai, a recurring theme was the need not just for financial support and investment from global governments, but for technology transfer and capacity building. The theme of our 2023/24 annual report, **Our Present and Future: From Innovation to Conservation**, acknowledges this necessary evolution, both as a societal issue and on more personal fronts. As part of our mission, OPCFHK brought together conservationists and experts from the public and private sectors, including academics and NGOs, to lend their expertise as the Hong Kong Government works towards the next phase of the city's Biodiversity Strategy and Action Plan (BSAP), to be released in 2025.

That "big picture" work continues alongside conservation measures aimed at individual species, such as ongoing efforts to save the endangered Beale' s-eyed turtle. In 2023, the exhibition Dive Into Local Diversity helped engage the public on the significance of safeguarding indigenous species. Ocean Park played host to a gathering of Beale' s-eyed turtle experts for an International Union for Conservation of Nature (IUCN) meeting in 2024, where they worked on a five-year conservation plan. We have also pushed the envelope on scientific interventions as we work on restoring wild populations through breeding and reintroduction.

Conservation isn't just for the experts, though: every person has a role to play, and it can be as simple as your silverware. OPCFHK's ongoing efforts against single-use plastics, like the No Straw Campaign and No Plastic Week, have brought the mission home to the individual, helping the community see how small personal changes can make a big global impact. The new regulations passed on disposable plastics in April 2024 are a welcome change that we support whole-heartedly, and, I hope, an example of us all embracing personal change to battle climate change.

A journey of a thousand miles begins with a single step, any big change has to start with small changes by you and me, and our fellow citizens of the Earth. We could not do our work without support from many parties: corporate partners, NGOs, stakeholders, donors and volunteers. Every one of you has played a crucial role in our shared mission. In particular, I would like to thank Ocean Park for their commitment of technology, resources and expertise, which has been helping us reach the public with our shared message of conservation. I would also like to extend our gratitude to the Joseph Lau Luen Hung Charitable Trust, Edrington Hong Kong and other corporate partners who enabled events that raised awareness and funds for important conservation issues. For the trustees, committee members, research teams and staffers who keep the organisation itself running: we literally could not do this without you. You inspire us to keep going.

We appreciate you all, and your willingness to accompany us through all the changes and challenges ahead as we explore new ideas and possibilities for conservation on our quest to make a difference.

Judy CHEN, JP Foundation Chair

總監的話 DIRECTOR'S MESSAGE

## 創新猷·同心行: 提升大自然抗逆力

INNOVATION AND SYNERGY:
A PATH TO WILDLIFE RESILIENCE

要守護未來,

我們必須由現在起開拓新思維與發掘新機遇。

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誠如今年年報主題所言,要守護未來,我們必須由現在 起開拓新思維與發掘新機遇。保育基金其中一項核心 工作,是不斷構思新穎方式向公眾推廣保育,但當然 我們的使命遠不止於此。為提升保育工作的成效,我們 致力凝聚各界力量,與時並進善用各種新科技,並鑽研 新方法協助原住民與當地基層社區融入保育潮流 之中,確保他們的需要與聲音受到重視。

我們每一項工作都以創新為核心,因為我們明白未來的生生不息,必須建基於保育界的不斷發展。

為此,我們積極透過創新方式推動不同界別合作。 其中在中南大羚保育項目上,保育基金贊助 Saola Foundation成立聯合搜索團隊,由經過特別訓練 的 犬 隻 協 助, 並 採 用 針 對 中 南 大 羚 研 發 的 基 因 測 試 檢測蒐集到的糞便樣本,致力尋覓「亞洲獨角獸」的 蹤跡。值得一提的是,這個項目還募集了當地生物學家 和村民,他們對當地地勢和野生生態瞭如指掌,對這次 調查項目貢獻良多。誘過這個項目,我們見證到科技 與人力互相配合,國際科研與在地經驗連成一線 的龐大力量,這點在另一個由保育基金贊助, Borneo Nature Foundation (BNF) 推行的項目同樣可以 感受得到。此項目旨在修復婆羅洲的熱帶泥炭沼澤 森林,首要任務是引入先進的監控及巡邏系統,建立 一個區域消防網絡,與草根組織一起防火。婆羅洲 的熱帶泥炭沼澤森林長年因商業利益而疏於管理, 此計劃的長遠目標不單是要逆轉這個情況,更要推動 當地社區帶頭進行保育,將森林的可持續未來交到 有切身關係的人手上。



科技的力量,同樣可以幫我們革新保育未來。以犀鳥為例,牠們經常成為非法野生動物貿易的獵物,情況已迫在眉睫。有見及此,保育基金特別撥款支援馬來西蒙納士大學、香港大學及雙威大學的科學家,合力一體新新的基因組工具,追蹤犀鳥族群內部及族群之間的基因多樣性及近親繁殖情況,並鎖定非法捕獵者針對的族群,從而制定有效應對措施。在打擊本地淡水外線,指機監測淡水棲息地,蒐集偷獵證據。另一方面,推行多年的馬蹄蟹保育項目在本年度推出全港首個自動化水底聲學遙測追蹤研究,並借助無人機及人工智能(AI)技術,在提升研究數據蒐集效能同時,避免對這個瀕危物種及其棲息地造成干擾。

除了上述項目外,保育基金於二零二三至二零二四年度還贊助及支援了多個亞洲區內及本地研究項目,包括十五個全新項目,合共撥款逾港幣五百萬元。各項努力與成果均有賴社會各界義工和公眾支持,加上保育基金團隊的竭誠盡責,還有企業伙伴及各位捐款者慷慨解囊,才得以實現。藉此機會,我衷心感謝各界過去和現在的支持,亦期望未來可以繼續借助大家的力量,迎向保育路上更多挑戰與機遇。

祝效忠 基金總監 66

Embracing new ideas and new opportunities is how we act in the present to safeguard the future.

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As we reflect on this year's theme, embracing new ideas and new opportunities is how we act in the present to safeguard the future. At our core, we constantly strive to raise awareness for conservation issues by finding new ways to engage the public. It does not and cannot stop there, however. We embrace new ways to bring disparate sectors together in synergy so we can amplify the efficacy of our efforts. We leverage new technologies as they emerge. We seek new ways to help communities, particularly indigenous and vulnerable communities, adapt to a changing world so that their needs aren't lost in the conversation.

Innovation is at the heart of everything we do, because there is no future without conservation.

We innovate to facilitate synergy between sectors. One example is our effort to find and gather data on the saola, also known as the elusive Asian unicorn. OPCFHK sponsored the Saola Foundation in assembling a tracking team with specially trained dogs and a saola-specific DNA test to identify spoor. Perhaps most importantly, the team included indigenous ecologists and local villagers, whose expertise on the local terrain and wildlife were invaluable to this effort. This integration of technology and manpower, scientific know-how and local experience, can also be seen in OPCFHK's support of the Borneo Nature Foundation (BNF) in the conservation of Borneo's tropical peat swamp forests, which began with grassroots organisation to create a regional firefighting network supported by technologically enhanced monitoring and patrolling systems. The end goal was not only to correct years of mismanagement in the name of profit, but to enable local communities—those with a real vested interest in the long-term health of the land—to take the lead in conservation efforts.

We have also not shied away from leveraging the potential of technology to radically change the face of conservation itself. For example, hornbills are unfortunately very popular in the illegal wildlife trade, so conservation management of the species is of utmost importance. Scientists at Monash University Malaysia, The University of Hong Kong and Sunway University, with sponsorship from OPCFHK, are pioneering new genomic tools that will not only help track genetic diversity within and between groups for more effective conservation measures, but could also be used to identify populations targeted by poachers to develop anti-poaching initiatives. We have also turned tech on the poachers themselves by deploying infrared cameras in freshwater turtle habitats to catch interlopers in the act. And one of our most popular long-term efforts, tracking Hong Kong's endangered horseshoe crab, has gone high-tech with our first underwater automated acoustic telemetry system and the use of unmanned Al systems to better gather data without disturbing the creatures or their habitats.

These are only a few of the many projects OPCFHK sponsored and supported, including 15 new projects and numerous local research initiatives, with over HK\$5 million in funding in 2023/24. These efforts would not be possible without the generous support of many individuals and organisations, from our teams, donors and volunteers to schools, communities and corporate partners. Support for our mission comes from many different sectors, and I offer my thanks to those who have supported us and who continue to support us. We will continue to rise to the challenges ahead by innovating and embracing the opportunities your support offers.

Howard CHUK Foundation Director

## 保育年度回顧

#### HIGHLIGHTS OF THE YEAR

對香港海洋公園保育基金(保育基金)而言,二零二三至二零二四年度的關鍵詞是「創新」。從公眾教育推廣到 研究項目,保育基金均不斷探索新構思,並引入嶄新科技,結合科學與人的力量,致力提升保育工作。

In 2023/24, innovation was the keyword. OPCFHK brainstormed new ways to engage and educate the public, and integrated new technologies into ongoing conservation efforts, bringing together science and people power.



#### 中南大羚:以創新科技尋找亞洲獨角獸

保育基金贊助Saola Foundation與保育軟件公司CyberTracker Conservation合作 成立了一支由野生動物搜索員、受訓犬隻及訓練員組成的聯合團隊,在東南亞 茂密森林之中,尋找中南大羚及其他有蹄動物的糞便氣味和出沒踪跡,再進行 一小時快速PCR測試以作確認。是項研究除了有野生動物搜索員、專門搜索犬 及中南大羚基因測試三大支柱支援外,還有當地社區及原住民生態學家作強力 後盾。

#### SAOLA: INNOVATING TO FIND THE ASIAN UNICORN

With funding and support by OPCFHK, the Saola Foundation worked with CyberTracker Conservation to assemble a team of wildlife trackers, dogs and handlers specially trained to seek out saola and other ungulate spoor and signs in the dense Southeast Asian forests where the species dwells, and to apply a rapid PCR test for saola DNA capable of returning results within an hour. These three key components—wildlife trackers, specialised tracking dogs and a saola-specific DNA test—were bolstered by the expertise of local communities and indigenous conservationists.



#### 猩猩:運用科技復修消失的家園

婆羅洲的熱帶泥炭沼澤森林是許多瀕危物種的家園,更是地球上重要的陸上 碳匯。保育基金支持由BNF持續推行的棲息地復修項目,旨在加強當地社區保護 自然棲息地的能力。項目內容包括與草根組織合作建立區域消防網絡,以及引入 無人機等新科技監測當地野生生態及其面臨的威脅,充分體現人力資源與科研 結合的力量,以守護當地瀕危物種,並保障倚賴森林資源為生的社區居民。

#### APES: USING TECHNOLOGY TO HELP RESTORE A DISAPPEARING HABITAT

Borneo's extensive tropical peat swamp forests house an incredible range of endangered biodiversity and serve as important terrestrial carbon storage reservoirs. Supported by OPCFHK, BNF backs local communities in the protection and restoration of this habitat through support of grassroots organisation efforts, such as the establishment of a regional firefighting network, and the use of new technologies, such as aerial drones, to monitor local wildlife and threats to it. This combination of people power and technology protects endangered native species and the livelihood of those communities that depend on these vital forests.

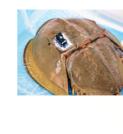


#### 海洋生物擱淺行動組

保育基金自二零零六年起與漁農自然護理署(漁護署)合作,調查本港水域鯨豚 擱淺及死亡個案的主因。海洋生物擱淺行動組於二零二三至二零二四年度處理 的個案合共多達三十七宗,包括一宗布氏鯨出沒及死亡個案。

#### MARINE LIFE STRANDING RESPONSE TEAM

Since 2006, OPCFHK has collaborated with the Agriculture, Fisheries and Conservation Department (AFCD) to investigate cetacean death and stranding in Hong Kong's waters. In 2023/24, the Marine Life Stranding Response Team responded to a total of 37 stranding cases, including the sighting and the subsequent death of a Bryde's whale.



CONSERVATION

**EDUCATION** 

COMMUNITY

ENGAGEMENT

#### 馬蹄蟹: 啟動全新馬蹄蟹保育方案

保育基金由二零零九年起展開「馬蹄蟹普查計劃」、記錄香港馬蹄蟹產卵及育幼 的海岸其年幼個體的數量和分佈。

在二零二三至二零二四年度,保育基金除繼續推出不同項目以提升馬蹄蟹繁殖 及存活率外,更推出全港首個自動化水底聲學遙測追蹤馬蹄蟹研究,為馬蹄蟹保 育工作開啟重要里程。

#### HORSESHOE CRABS: NEW MEASURES TO CONSERVE AN ANCIENT SPECIES

Since 2009, the Horseshoe Crab Population Survey has documented the population and distribution of juvenile horseshoe crabs on their spawning and nursery shores in Hong Kong. In 2023/24, in addition to ongoing efforts to enhance breeding and survival rates, OPCFHK launched Hong Kong's first horseshoe crab underwater automated acoustic telemetry tracking system - an important milestone in the species' conservation.



#### 淡水龜:拯救非法捕獵受害者

香港現存的野生淡水龜,可能是華南地區僅存的種群。保育基金正為其採取 全方位保育行動,包括增設紅外線相機,以監測淡水龜棲息地及偵察懷疑非法 捕獵行為,並與遠足組織合作清潔淡水龜棲息地,以及清理疑似捕龜裝置。

#### FRESHWATER TURTLES: POACHED TO THE BRINK

Efforts to conserve Hong Kong's freshwater turtles, possibly the last such populations in southern China, are taking place on several fronts, including the installation of infrared cameras to monitor turtle habitats for suspected poaching activities, and collaboration with hiking groups to clean up litter and look out for suspected turtle-catching devices.



#### 「殼中瑰寶」社區教育展覽

保育基金在企業伙伴Edrington Hong Kong的捐款資助及太古城中心的場地贊助 下舉行「殼中瑰寶」社區教育展覽,讓公眾透過互動學習體驗了解本地瀕危物種 及其棲息地。

#### DISCOVERING THE HIDDEN TREASURES OF CARAPACE WONDERS

OPCFHK presented the exhibition Discovering the Hidden Treasure of Carapace Wonders, supported by the generous donation from our corporate partner Edrington Hong Kong and with venue sponsorship from Cityplaza, an engaging learning experience which allowed visitors to explore local endangered species and their habitats.



#### 牛熊保衛賽2023

「生態保衛賽」於二零二三年十二月三日圓滿舉行,吸引逾一千八百名跑手及 義工參加。

#### **RUN FOR SURVIVAL 2023**

The annual charity event Run for Survival concluded successfully on 3 December 2023. More than 1,800 runners and volunteers participated in this meaningful event.



本年度賣旗日召集超過二千四百名義工擔任社區保育大使在街上賣旗籌款, 呼籲大家身體力行支持保育。

#### **HONG KONG ISLAND FLAG DAY 2023**

On Flag Day, over 2,400 community conservationists and volunteers took to the streets to inspire the public to take action to safeguard biodiversity for biodiversity.

## 二零二三至二零二四年度保育成果

2023/24 ACHIEVEMENTS IN NUMBERS

全賴你的支持,保育基金得以於本年度繼續在香港以至亞洲推動 保育和研究工作,守護生物多樣性。以下數字展示我們過去一年 的成果:

Your support has enabled OPCFHK to fund conservation projects throughout Asia and locally in Hong Kong. These numbers speak for themselves about our efforts to preserve biodiversity:

## 個亞洲物種得到保育基金幫助

species in Asia benefitted from OPCFHK funding, including

- 8 兩棲動物
- 爬行類 Reptiles
- 鳥類
- 陸生哺乳類(包括大熊貓) Terrestrial mammals (including giant panda)
- Others





HK\$5,296,304

善款用作支持亞洲野生生態保育項目。 was spent to support wildlife conservation projects in Asia.

個涵蓋於保育基金保育工作中的物種,被世界自然保護聯盟 瀕危物種紅色名錄列為「瀕危」或「極度瀕危」。

of the species OPCFHK helped are listed as "Endangered" or "Critically Endangered" on the IUCN Red List of Threatened Species.

詳情可參閱第十三至十四頁。

For more information, please refer to pages 13 to 14.



299,000+

名學生及公眾受惠於保育基金的教育活動。 students and members of the general public benefitted from OPCFHK's education programmes.



12,800+

個義工工時。

volunteer man-hours were received.

宗本地鯨豚擱淺個案獲跟進。

marine life stranding cases in Hong Kong were investigated.

- 29 江豚 Finless porpoise cases
- 中華白海豚 Chinese white dolphin cases
- 8 Others

詳情可參閱第三十一至三十二頁。

For more information, please refer to pages 31 to 32.



你的每一分捐獻,都能幫助保育基金與各界伙伴 繼續推行保育研究、公眾教育與宣傳項目,為守護 亞洲物種、生物多樣性及生態系統努力。我們衷心 感謝你的支持,期望你能繼續與我們攜手護生態、

Your generous donations allow OPCFHK to continue the very important work of preserving Asia's species, biodiversity and ecosystems through research, education, partnerships and awareness campaigns. Join us as we work to create a better future. Thank you for your support!



立即捐款



**DONATE NOW** 



## 二零二三至二零二四年度保育項目

CONSERVATION PROJECTS IN 2023/24

#### 越南 VIETNAM

研究和保育越南與中國跨境區石灰岩地貌的豐富爬行物種

Exploration to safeguard the high value of reptile diversity on the spectacular limestone landscape in the transboundary region between Vietnam and China



Huu Lien Tiger Gecko



憑祥臉虎 Chinese Leopard Gecko



Chinese Water Dragon



湯氏壁虎/春境壁虎 Canh's Gecko



Sun Bear



Sunda Pangolin

婆羅洲南部瀕危猿類棲息地的保護、恢復和可持續管理

Protection, restoration and sustainable management of

endangered ape habitat in Southern Borneo



印度尼西亞 INDONESIA

罪価壓勁 Sunda Clouded Leonard



婆羅洲猩猩 Bornean Orangutan



婆羅洲白鬚長臂猿 Bornean White-bearded Gibbon

#### 馬來西亞 MALAYSIA

進行基因組學研究以保育馬來西亞的盔犀鳥和馬來犀鳥 Conservation genomics for helmeted and rhinoceros hornbills in Malaysia

透過公民科學來強化不丹和印度之間瀕危金葉猴的跨境保育

Strengthening transboundary conservation cooperation on

endangered Gee golden langur (*Trachypithecus geei*) between



不丹、印度 BHUTAN, INDIA

Bhutan and India, through citizen science

盔犀鳥 Helmeted Hornbill

合作



馬來犀鳥 Rhinoceros Hornbill

■加強社區護林員計畫以打擊印尼西爪哇省Mt. Tilu自然 保護區的野生動物罪案

Strengthened community ranger programme to fight wildlife crime in Mt. Tilu nature reserve, West Java, Indonesia

#### 中國 CHINA

放歸大熊貓生境選擇與覓食策略研究

Study on habitat preference and feeding strategy of reintroduced

涼山山系大熊貓自然保護區訓練班

Liangshan Mountain giant panda nature reserve training course



大能貓 Giant Panda



金葉猴 Gee Golden Langur



保育狀況 CONSERVATION STATUS

根據世界自然保護聯盟瀕危物種紅色名錄:

戴帽葉猴 Capped Langur

CR 極度瀕危 Critically Endangered













DD 数據缺乏

在氣候變化下,為實證保育尼泊爾巴迪亞國家公園極危 恆河鱷提供科學信息

Generating scientific information for evidence-based conservation of critically endangered gharials (Gavialis gangeticus) in Bardia National Park of Nepal, in the face of climate change



尼泊爾 NEPAL

恆河鱷 Gharial



印度穿山田 Indian Pangolin



孟加拉鴇 Bengal Florican

尼泊爾的印度穿山甲保育:評估現狀及氣候適應性,並加強 保育教育和社區監測計劃

Conservation of the Indian pangolin in Nepal: Assessing the status, climate resilience and scaling up conservation education and community-led monitoring programmes

促進舒克拉潘塔國家公園的緩衝區與農田土地共存,以保育 極度瀕危的孟加拉鴇

Promoting land-sharing in farmlands of Suklaphanta National Park Buffer Zone to conserve critically endangered Bengal

#### 伊朗 IRAN

評估伊朗山丘蝰屬(蛇亞目:蝰科)的保育情況 In situ conservation assessment to the genus Montivipera (Serpentes: Viperidae) in Iran



Kuhrang山蝰 Kuhrang Mountain Viper



岩蝰 Armenian Viner



魏氏蝰 Wagner's Viper



Latifi蝰 Latifi's Viper

## 老撾 LAO PEOPLE'S DEMOCRATIC REPUBLIC

以創新方法尋找並拯救亞洲獨角獸--中南大羚 An innovative approach to finding, and saving, the Asian Unicorn, the Saola



中南大羚 Saola

#### 香港 HONG KONG

採用跨專業方式實行保育並打擊香港非法野生動物貿易: 在亞洲國際城市中建立聯網來實現可行的研究成果 Multidisciplinary approaches towards conservation and combating the illegal wildlife trade in Hong Kong: creating strong connections for actionable research outcomes in Asia's global city

## 斯里蘭卡 SRI LANKA

斯里蘭卡中部高地特有極度瀕危樹蛙的遺傳多樣性、生態、 行為及保育

Genetic diversity, ecology, behaviour and conservation of Critically Endangered, endemic shrub frogs in the central hills of Sri Lanka



Davawansa樹蛙 Dayawansa's Shrub Frog



Jagath Gunawardana樹蛙 Jagath Gunawardana's Shrub Frog



Samarakoon樹蛙 Samarakoon's Shrub Frog



Bambaradeniya樹蛙 Bambaradeniya' s Shrub Frog

建立私人管理土地以保育生存於保護區網絡之外的全球 受威脅物種

Establishing a privately managed landscape to conserve globally threatened species occurring outside the protected area network



斯氏角吻蜥 Mountain Horned Agama



Alwis東虎 Alwis' s Day Gecko

According to the International Union for Conservation of Nature (IUCN) Red List of Threatened Species 亞洲區內保育工作 REGIONAL CONSERVATION EFFORTS

# 中南大羚:

## 以創新科技尋找亞洲獨角獸

SAOLA: INNOVATING TO FIND THE ASIAN UNICORN



中南大羚棲息於越南和老撾安南山脈的茂密山林之中,是一種非常稀有的牛科動物,雖然外貌與羚羊相似,但基因卻與黃牛或水牛更接近。科學界直到一九九二年才發現有中南大羚這個物種,但野外所偵測到的數量由二零零五年開始一直下降(由二零一三年起更未有人確實目擊過,亦未有圈養個體),令生物學家對這個神秘物種的情況非常憂慮。要逆轉中南大羚的滅絕危機,就必須先在野外找到牠們的蹤跡,但根據世界自然保護聯盟的資料,目前中南大羚的分佈範圍只有百分之五經過確切數量普查。

#### 慘被誤捕的獨角獸

雖然中南大羚本身並不是獵人的主要目標,但狩獵活動卻對牠們的生存構成重大威脅。在整個安南地區,人們為了野味貿易而從事非選擇性誘捕,令大量哺乳類物種陷入困境,引發了所謂的「東南亞誘捕危機」。儘管中南大羚的貿易價值不高,但與許多其他物種一樣,牠們亦面臨被誤捕的風險。

#### 組成中南大羚聯合團隊

要踏遍中南大羚棲息的東南亞茂密森林,尋找這種行蹤神秘的亞洲獨角獸,就必須要有一支技術超卓、訓練有素且裝備齊全的團隊。Saola Foundation的目標,就是在保育基金的贊助及支持下成立這支團隊。

年內,Saola Foundation與保育軟件公司CyberTracker Conservation合作成立了一支由國際及當地野生動物搜索員組成的聯合團隊,並由受過保育工作犬組織Working Dogs for Conservation (WD4C)訓練的犬隻及訓練員協助,在野外尋找中南大羚的糞便氣味和出沒痕跡,再進行由紐約國際野生生物保護學會Molecular Diagnostics Laboratory研發的一小時快速PCR中南大羚基因測試。有了野生動物搜索員、專門搜索犬及中南大羚基因測試這三大支柱,搜索隊的準備工作已幾近完成。

最後,鼓勵當地原住民成為生態學家,一起承擔保育中南大羚的工作亦非常重要。因為他們往往更熟悉區內地形,能找出有機會搜索到中南大羚的區域,並為保育團隊提供實地考察支援。這種做法能融合當地知識與尖端科技,是一種創新的保育方法,除了能守護中南大羚,對保育其他物種亦有幫助。



# SEEKING AND SAVING THE ELUSIVE SAOLA

Found in the dense mountain forests of the Annamite Range in Vietnam and Laos, the saola is a rare bovid that is more closely related to the domestic cow or water buffalo than to the antelopes it resembles. While science only became aware of the saola in 1992, the decline in detections of the wild community since 2005 (with no conclusive sightings since 2013 and no individuals in captivity) has biologists concerned about this elusive species. Finding saolas in the wild is crucial to safeguarding the species from extinction, but according to the IUCN, only 5% of its range has been adequately searched.

#### ACCIDENTALLY HUNTING THE UNICORN

The saola itself is not a common target of hunting, yet hunting is the biggest threat to its survival. Across the Annamites, non-selective snaring for the wild meat trade has devastated many mammal species in what has been termed "Southeast Asia's snaring crisis". Though the saola does not have a high trade value, it, like many other species, is at risk of being snared as by-catch.

#### ASSEMBLING TEAM SAOLA

Finding the elusive Asian unicorn would require a highly skilled, well-trained and well-equipped team committed to searching the dense Southeast Asian forests where the saola dwells. Building this team was the mission of the Saola Foundation, with funding and support from OPCFHK.

The Saola Foundation worked with CyberTracker Conservation to assemble a joint international/national team of wildlife trackers, aided by dogs and handlers trained by Working Dogs for Conservation (WD4C) to seek out saola spoor and signs in the wild, which was then tested for saola DNA using a rapid PCR test developed by the Wildlife Conservation Society (WCS)'s Molecular Diagnostics Laboratory in New York and capable of returning results within an hour. With these three pillars in place—wildlife trackers, specialised tracking dogs and a saola-specific DNA test—the team was almost ready.

Last, but certainly not least, was the work of local villagers as indigenous ecologists. Familiar with the region and the terrain, they identified promising search areas, provided support for the team in the field, and took on the mantle of saola conservationists. This integration of indigenous expertise with cutting edge technology is an innovative, transformative approach to conservation that holds promise for many other species in addition to the saola.



#### 成效顯著的方法

雖然團隊尚未透過糞便樣本測試找到中南大羚的 蹤跡,但通過這種搜尋方法,日後能在特定區域偵察到 中南大羚的可能性甚高(超過百分之五十),而隨著 團隊的能力提升,相信可能性將會隨之增加。

搜索工作還有兩個額外好處。首先,團隊能收集有關 老撾有蹄類動物族群、生物多樣性、狩獵壓力及保育 相關的客觀數據,為區內的保育工作提供寶貴資訊。 另外,由於參與的犬隻是WD4C首批專為保育工作 而進行嗅覺訓練的搜索犬,能驗證此理念的可行性。 在尋找中南大羚的過程中,團隊還同時記錄到其他 八種受威脅物種,其中包括非常難得地目擊到的 瑞氏紅嘴地鵑(Carpococcyx renauldi)。此雀鳥已從其 大部分分佈範圍中消失,近年已絕少在安南山脈被 目睹。團隊透過培訓當地馴犬師對犬隻進行嗅覺訓練, 相信能增加日後發現中南大羚蹤影的機會。

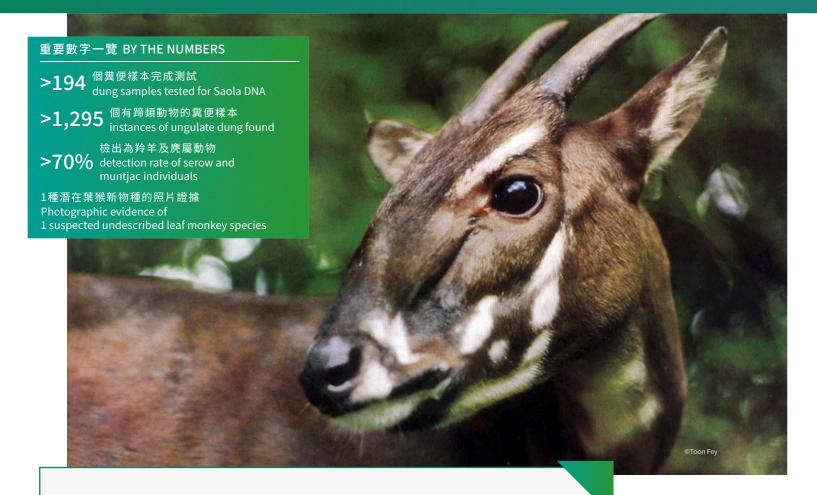


#### A METHOD WITH PROMISE

While the team has not yet found proof of the saola's presence through tested dung samples, its intense methodology ensures a high likelihood of detection (over 50%) for any saola in a given surveyed area – a percentage that will only increase with team capacity.

Two side benefits from the effort have emerged. The team has collected the first objective data on ungulate populations, biodiversity, hunting pressure and similar concerns in Laos, providing invaluable information for conservationists in the region. The second benefit is proof of concept for generalised scent training for dogs in conservation, as these are the first dogs trained by WD4C towards this goal. While searching for saolas, the team also recorded eight other at-risk species, including an exciting sighting of the Coral-billed Ground-Cuckoo (*Carpococcyx renauldi*), a species that has disappeared from most of its range and is now rarely recorded in the Annamites. By training local dog handlers for generalised scenting, the team has increased the odds that one day, they will find signs of the saola.





學名 **SCIENTIFIC NAME**  Pseudoryx nghetinhensis

#### 概覽 **OVERVIEW**

直至1992年才被正式發現,僅在老撾及越南安南山脈出沒,是一種非常 稀有的洞角科物種。科學家對此物種所知甚少,但牠們很可能是世界上 最瀕危的大型陸牛哺乳類動物。

Only officially discovered in 1992, little is known about this rare bovid species found only in the Annamite Mountains of Laos and Vietnam, except that it may be the world's most endangered large terrestrial mammal.

保育狀況 CONSERVATION 極度瀕危\*

Critically Endangered\*

估計數量 ESTIMATED

STATUS

25-750隻(最佳估計有50-300隻) 25-750 (best estimate: 50-300)

**POPULATION** 

棲息地類型

TYPE OF HABITAT

潮濕的常綠森林 Wet evergreen forest

主要威脅

被非目標性誘捕所誤捕

MAJOR THREATS By-catch from non-selective snaring

\*根據世界自然保護聯盟瀕危物種紅色名錄

\* According to the IUCN Red List of Threatened Species

#### 你知道嗎?

至今還未有科學家在野外親眼見過 中南大羚!

這種害羞的生物叫聲很普通,沒有慣常 的出沒路徑,足跡與區內其他體型相若 的有蹄動物亦很相似。加上牠們數量 稀少,要尋找實在難上加難,因此被稱為 「亞洲獨角獸」。

#### **DID YOU KNOW?**

No scientist has ever seen a saola in the wild!

This shy, solitary creature makes no known vocalisations, doesn't use habitual trails, and its tracks are indistinguishable from similarly sized hoofed animals in the area. That makes the already rare saola very difficult to find, earning it the nickname "the Asian unicorn".



#### 影響全球的地區性問題

對於保育專家來說,婆羅洲南部的熱帶泥炭沼澤森林 非常重要,其生態價值絕不只局限於印尼。從當地角度 看,這些廣闊的森林是許多瀕危物種的家園,亦支撐著 當地社區的經濟文化與社會發展,效益不容小覷。從 全球宏觀來看,這些森林更是地球上重要的陸上碳匯。

然而,由於土地管理不善,農地需求不斷擴張,導致 這些森林不斷消失,火災發生頻仍。除了令當地居民 健康受損,進一步危及當地物種,同時亦導致全球溫室 氣體排放增加,對全球人類構成威脅。

保育基金於二零一九年開始支持由BNF持續推行的 棲息地復修項目,旨在加強當地社區保護自然棲息地的 能力。當中的一系列新措施透過擴展保育工作及支持 可持續發展,為靈長類提供長遠保護,包括極度瀕危的 婆羅洲猩猩、易危的婆羅洲白鬍長臂猿以及其他物種, 並為依賴這些森林生存的居民帶來保障。

#### 婆羅洲森林的保育意義 CONSERVATION SIGNIFICANCE OF THE BORNEO FORESTS

126 億噸估計碳儲存量 12.6 Gt of estimated carbon storage

的婆羅洲猩猩及其他受威脅物種的棲息地 50% Inhabited by 50% of all remaining Bornean orangutans and other threatened species

>700,000 人依賴森林生存 people depend on the forests

#### 你知道嗎?

印尼中加里曼丹省擁有全球現存最大的熱帶 雨林,可是森林流失率亦是全球最高。於1973年 至2015年期間,已失去近144,000平方公里的 森林,截至該期間完結時,僅剩下7.4%的泥炭地 未受破壞。

到了2018年,區內的森林流失面積估計已達到 每年42,291公頃,相當於甘肅官鵝溝國家森林 公園的面積。

亞洲區內保育工作 REGIONAL CONSERVATION EFFORTS

## 運用科技復修消失的家園

APES: USING TECHNOLOGY TO HELP **RESTORE A DISAPPEARING HABITAT** 

#### A LOCAL PROBLEM WITH GLOBAL RAMIFICATIONS

For conservationists, the role of southern Borneo's extensive tropical peat swamp forests extends far beyond the borders of Indonesia. Locally, these forests support a diverse range of endangered biodiversity as well as local human communities, for whom their economic, cultural and social benefits cannot be understated. Globally, they also function as important terrestrial carbon storage reservoirs.

Mismanagement of the land due to rising demand for agricultural expansion, however, has led to degradation of these forests and more frequent wildfires. This has not only led to health problems for local communities and further endangered local species, but has also led to increased global greenhouse gas emissions - a threat to us all.

In 2019, OPCFHK began supporting an ongoing community habitat restoration project initiated by BNF that seeks to empower local communities to protect local habitat. By expanding conservation efforts and supporting green, sustainable growth, this new initiative aims to ensure the long-term protection of primates such as the critically endangered Bornean orangutans (Pongo pygmaeus) and vulnerable Bornean white-bearded gibbons (Hylobates albibarbis), as well as other species and the local human communities who depend on these vital forests.

#### **DID YOU KNOW?**

Central Kalimantan province is home to some of the world's largest remaining expanses of tropical rainforest, as well as its highest rates of deforestation. It lost 144,000 km<sup>2</sup> of forest between 1973 and 2015, with only 7.4% of its peatland in good condition at the end of that period.

In 2018, deforestation in the area was estimated to stand at 42,291 hectares per year - an area the size of China's Guanegou National Forest Park.

## FIGHTING FIRE WITH GRASSROOTS ORGANISATION

## 盔犀鳥和馬來犀鳥: 應用基因組學守護大自然

**HELMETED AND RHINOCEROS HORNBILLS:** GENOMIC SCIENCE COMES TO THE AID OF CONSERVATION

#### 與草根組織一起防火

項目其中一個首要目標,是建立一個區域消防網絡, 首先由新的森林巡邏隊及由現有團隊培訓的消防 小隊開始,並與當地執法及災難應對組織合作,確保 相關的資源、培訓及設備被妥善運用。

此項工作將採用先進的SMART監控及巡邏系統,團隊 現正努力研發各種新技術以提供支持,例如設置火災 預警系統、以無人機追蹤地下泥炭火災及點算猩猩 巢穴、使用聲學監測檢測非法活動及進行靈長類物種 調查,另外還有為當地靈長類物種而設的可複製監測 系統,此系統具備成本效益,而且對土地管理及其他 工作人員而言亦易於使用。

團隊早前已將上述策略成功應用於Sebangau國家公園 東北部類似的棲息地,以及應用於科研與人力結合 項目中,包括重新造林、建造水壩及外展等工作。

#### 讓社區掌握自己的未來

保育基金及BNF的長遠目標,是讓社區帶頭進行保育 工作,推行以持份者為依歸的棲息地保護,達至可持續 發展,創造可持續生計,務求減少甚至逆轉森林流失的 情況,有效保護婆羅洲南部的易危物種,尤是紅毛猩猩 和長臂猿。為此,項目於二零二四年的目標是:

- 在10個新村莊成立林業發展互助社
- 2024年底前種植25萬棵幼苗及20萬棵樹
- 開發環境教育模組及培訓資源
- 绣渦提供額外的培訓、資源和協調,提升社區消防 和巡邏隊的能力

One of the project's first goals is the establishment of a regional firefighting network, starting with new forest patrols and firefighting teams trained by existing teams and working in coordination with local law enforcement and disaster mitigation agencies to ensure that resources, training and equipment go where they are needed.

This effort will be backed by SMART monitoring and patrolling systems, with teams hard at work developing new technologies to aid in the effort, such as early-warning fire systems, aerial drones to track underground peat fires and conduct orangutan nest counts, acoustic monitoring devices to detect illegal activities and survey primate species, and a replicable monitoring system for local primate species that is both cost-effective and easily interpreted by land managers and other stakeholders.

It is a strategy that has proved successful before in a similar grassroots habitat protection model in the northeast region of the Sebangau National Park, as well as through other measures combining scientific and technological research with people power, such as reforestation efforts, sustainable dam construction and community outreach programmes.



#### PUTTING COMMUNITIES IN CONTROL OF THEIR FUTURE

OPCFHK and BNF's long-term goal is to empower communities to take the lead on conservation efforts that centre stakeholder-based habitat protection, sustainable development and sustainable livelihoods to reduce and even reverse deforestation and protect vulnerable species in southern Borneo, particularly orangutans and gibbons. To that end, the project's targets for 2024 are:

- Initiate social forestry development in 10 new villages
- Produce 250,000 seedlings and plant 200,000 trees by end of 2024
- Develop environmental educational modules and training resources
- Build capacity within community firefighting and patrol teams, by providing additional training, resources and coordination





#### 重要數字一覽 (截至<u>2024年9月)</u> BY THE NUMBERS (AS OF SEPTEMBER 2024)

164,457 標樹苗於2023年10月至2024年7月期間完成種植 seedlings planted between October 2023 and July 2024

- 48 座水壩沿拉紹運河 (Rasau Canal) 興建以修復濕地 dams built along the Rasau Canal to restore wetland conditions
- 場社區活動,862位參與者 community events with 862 participants
- 20 間社區苗圃,遍佈7個村莊 community seedling nurseries established, across 7 villages
- 181 名社區成員接受培訓 community members trained



被用作為雕刻工藝的材料,稱之為 「鶴頂紅」或「紅象牙」,每公克價格較真 象牙高出數倍,是黑市狩獵的主要對象。 The helmeted hornbill is one of the most threatened bird species in Southeast Asia. Their

solid, dense casques are the sources of the ornamental material known as hornbill ivory, red ivory or golden jade, which is favoured for ornamental carvings. With products several times more valuable per kilogram than true ivory, the material is very lucrative for the black market.

保育狀況 CONSERVATION STATUS

森林

極度瀕危\* Critically Endangered\*

估計數量 ESTIMATED POPULATION 未知,但預計在未來三十年將迅速減少 Unknown, but predicted to undergo an extremely rapid and severe decline over the next three decades

棲息地類型 TYPE OF HABITAT Forest

主要威脅 MAJOR THREATS

盔 犀 鳥 是 非 法 捕 獵 和 野 生 動 物 貿 易 的 目標,其實心盔突尤其有價有市;森林 流失亦令其棲息地和食物減少。

The helmeted hornbill is targeted by the hunting and illegal wildlife trade, particularly for its solid casque, but is also at threat of habitat and food loss due to deforestation.

- \*根據世界自然保護聯盟瀕危物種紅色名錄
- \* According to the IUCN Red List of Threatened Species



馬來犀鳥 RHINOCEROS HORNBILL

Buceros rhinoceros

馬來犀鳥是馬來西亞的國鳥,與盔犀鳥 一樣是東南亞最受威脅的鳥類之一。 除了遭到非法捕獵,馬來犀鳥亦容易受 棲息地改變影響。其活動範圍主要局限 於原生林,對人類活動尤其敏感。

The rhinoceros hornbill is the national bird of Malaysia, and like the helmeted hornbill is also one of the most threatened bird species in Southeast Asia. In addition to the threat presented by poaching, the bird's sensitivity to changes in its habitat make it particularly vulnerable to human activities, as it is largely restricted to primary or "old-growth" forests.

易危\* Vulnerable\*

未知,但正在減少 Unknown but decreasing

原生常綠林

Primary evergreen forest

馬來犀鳥雖然在其棲息地分佈極廣,但 由於對環境改變極為敏感,森林流失對 其存續構成重大威脅,而其頭骨和羽毛 亦是非法捕獵和野生動物貿易的目標。 Despite being widespread within its range,

deforestation poses a great risk to this habitatsensitive species, which is also targeted for its casque and feathers by hunting and illegal wildlife trade.



#### 犀鳥的困境

不幸的是,犀鳥是非法野生動物貿易的常見獵物,經常因其羽毛、顱骨和盔突(頭骨上盔甲狀的凸起)被獵殺。 光在馬來西亞,十個品種的犀鳥當中就有九種令保育專家感到擔憂,當中包括極度瀕危的盔犀鳥和易危的 馬來犀鳥。透過收集野生族群的基因數據,保育專家可以評估非法動物貿易對野生族群的影響,從而推動當局加強執法,堵塞目前的偷獵漏洞。

#### 運用犀鳥DNA打擊非法偷獵

要守護野生族群,關鍵不僅在於數量。一個物種要能健康繁衍,基因多樣性同樣非常重要。憑著基因組工具,保育專家就能追蹤族群內部及族群之間的基因多樣性及近親繁殖情況,並統計族群歷史及規模等數據,以評估野生族群在大自然與人為威脅下的存活能力。

與此同時,只要能夠掌握基因數據,就可以迅速追蹤 因非法野生動物貿易被偷獵的犀鳥的來源,以便執法 人員對偷獵熱點及貿易路線進行三角測量,從而更 有效打擊偷獵,有助守護犀鳥和其他特定的野生動物。

迄今為止,當局對馬來西亞的盔犀鳥和馬來犀鳥還未 進行過任何系統性的基因組分析。在保育基金的贊助 下,來自馬來西亞蒙維許大學、香港大學及雙威大學的 科學家將合力肩負起這項具挑戰性的使命,擬定一個 以基因為導向的保育管理計劃書。

#### 透過遺傳多樣性促進生物多樣性

團隊自二零二四年九月開始為測序提取 DNA,並已保存好所需的生物材料,包括來自阿拉斯加科學與自然博物館的血液和組織樣本、來自二十五至四十隻盔犀鳥的頭骨鑽孔粉末,以及馬來犀鳥的羽毛樣本。此外,團隊亦已取得從十二個野外地點收集到的犀鳥糞便樣本,用以分析其飲食偏好,發現其主要食物包括昆蟲和植物,尤其是榕屬植物。這些分析旨在更清楚顯示犀鳥的飲食習慣、對棲息地的要求,以及牠們對棲息地生態系中所發揮的綜合作用。

這些跨學科的研究合作,不僅能保育馬來西亞甚至 整個東南亞的標誌性物種,同時能推動基因組分析 成為保育界廣泛使用的方法。

#### THE PLIGHT OF THE HORNBILLS

Unfortunately, hornbills are a mainstay of the illegal wildlife trade, and highly sought for their feathers, severed heads and casques ("helmet"). Conservationists are concerned for nine of the ten species that occur in Malaysia alone, including the critically endangered helmeted hornbill and vulnerable rhinoceros hornbill. Genomic data can help assess the wildlife trade's effects on wild populations, aiding conservationists to push for strengthened law enforcement against illegal trade and close loopholes that currently allow it to flourish.

#### USING HORNBILL DNA TO STOP POACHING IN ITS TRACKS

Preserving a population isn't just about numbers. For a species to be healthy and thrive, genetic diversity matters. Genomic tools help to track genetic diversity and inbreeding within and between groups, along with demographic data on populations such as history and size, allowing conservationists to assess how viable wild populations are in the face of natural and anthropogenic threats.

Identifying genomic variation in these hornbill species can also facilitate rapid tracing-of-origin for poached hornbills in the illegal wildlife trade. This may allow enforcement officials to triangulate poaching hotspots and trade routes, giving them greater leverage in enforcing anti-poaching laws to the benefit of the hornbills and other targeted wildlife.

To date, no systemic genomic analyses have been conducted on these two hornbill species in Malaysia, but with the sponsorship of OPCFHK, leading scientists from Monash University Malaysia, The University of Hong Kong and Sunway University have come together to rise to the challenge and draft a genetically informed conservation management programme.

#### PROMOTING BIODIVERSITY THROUGH GENETIC DIVERSITY

As of September 2024, the team has begun DNA extraction for sequencing. Biological materials have been secured, including tissue samples from the Alaska Museum of Science and Nature, drilled casque powder from 25-40 helmeted hornbills, and feather samples from rhinoceros hornbills. Additionally, faecal samples obtained from 12 wild locations are being analysed to study dietary preferences, which predominantly include insects and plants, especially fig species. These analyses aim to provide a clearer understanding of the hornbills' diet, habitat needs, and their complex ecological roles in the areas they inhabit.

This collaborative effort towards interdisciplinary research will not only offer insights to help guide conservation efforts for these iconic species in Malaysia and throughout Southeast Asia, but also advance the use of genomic analysis in conservation as a methodology.



# 所採用的基因組技術與方法 GENOMIC TECHNOLOGIES AND METHODS ADOPTED

#### 全基因組測序(WGS)

此方法讓研究人員能全面掌握個別犀鳥的基因組成,並將之與其他犀鳥基因進行比對,從而找出與適應進化、健康和族群動態相關的特定遺傳差異。

#### WHOLE GENOME SEQUENCING (WGS)

WGS gives researchers a comprehensive view of an individual hornbill's genetic makeup. These results can be compared to other individuals, allowing researchers to identify specific genetic variations associated with adaptation, health, and population dynamics.

#### 族群基因組分析

以WGS獲得的數據為基礎,對犀鳥族群之間進行 大規模比較,從而識別出特定族群的關聯與差異 模式,藉以加強區內的物種識別及法證工作,鞏固 其他長期保育措施。

#### **POPULATION GENOMICS ANALYSIS**

Built on the foundation of WGS, population genomics analysis is a large-scale comparison between hornbill groups which can identify patterns of connectivity and differentiation between specific populations to enhance species identification, forensic enforcement and ongoing conservation efforts in the region.

#### 飲食習性分析

此創新方法使用糞便進行基因組分析,讓研究人員在不干擾犀鳥的情況下研究牠們的飲食。

#### **DIETARY ANALYSIS**

Opposing to direct observations, the novel approach of analysing hornbills dietary using molecular techniques can reveal their preferred food plants without disturbing the animal themselves, which is vital in being a key reference point for those involved in tree planting initiatives.







#### 你知道嗎?

大部分犀鳥的盔突均為空心,估計有助增強鳴叫,而盔犀鳥等小部分犀鳥的盔突卻為實心,用以在與雄性打鬥時作為武器互相撞擊,甚至在半空衝撞比拼。

#### **DID YOU KNOW?**

Most hornbills have a hollow casque that is believed to help amplify their calls. However, the solid-casqued helmeted hornbill and a few other species have been observed "jousting" with them: The males take aim, charge at each other and butt heads – sometimes in mid-air!

## 鲨魚:

## 將魚鰭當成識別物種的指紋

SHARKS:

TURNING FINS TO FINGERPRINTS FOR CONSERVATION

#### 代價太高的奢侈品



自二零零三年以來,已有十四種鯊魚被列入《瀕危野生動植物種國際貿易公約》附錄。儘管過去十年的魚翅貿易總量有所下降,但香港仍是全球最大的魚翅入口/轉口港及銷售市場。香港身處於傳統飲食習慣和全球保育風潮之間,不得不面對非法魚翅貿易這個敏感話題。



#### 填補鯊魚解剖學尚存的空白

打擊非法魚翅貿易的其中一個主要挑戰,是識別出 魚翅是否來自受保護物種。現代科學對魚鰭解剖學的 認識有限,很難單憑外觀來確認物種,而且處理魚鰭亦 需要時間和資源,成為一大困難。在保育基金的支持 下,香港城市大學(城市大學)運用嶄新科技,為保育 專家和執法人員提供可靠的工具,加強打擊非法貿易。

無論站於商業利益或保育專家的立場,魚鰭解剖學的 知識同樣非常重要。經處理的魚翅會在魚翅湯中呈現 一梳梳像骨膠原般的細絲狀軟骨,又稱為角質鰭條, 而魚鰭中骨化的軟骨與角質鰭條的比例,就是識別出 魚鰭是否屬於受保護物種的關鍵。然而,由七十年代 末期以來,一直沒有就這些組織的結構進行研究。

#### A LUXURY THE WORLD CANNOT AFFORD

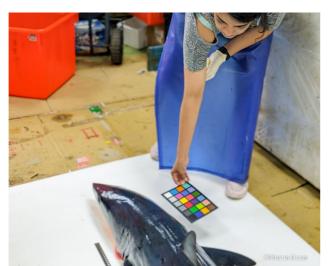
Shark fins hold a long-standing, yet contentious place in Asian cuisine. As a popular soup served at banquets, it is seen as a luxury item and status symbol. Overexploitation of sharks in meeting the demand for this luxury ingredient is the primary threat to shark biodiversity today. The process of finning, in which sharks are caught, fins cut, and the animals thrown back alive into the ocean, is particularly controversial.

Since 2003, 14 shark species have been added to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendices. While trade overall has decreased in the past decade, Hong Kong remains the largest global importer/re-exporter and consumer of shark fins. Caught between local tradition and global conservation, the illegal shark fin trade remains a hot-button topic for the city.

#### FILLING IN THE GAPS ON SHARK ANATOMY

One major challenge to efforts in combating the illegal fin trade is simply the ability to identify if the fins are from a restricted species. Modern science's limited understanding of fin anatomy can make it difficult to confirm species based on external appearance alone, and processing fins takes time and resources. It is a challenge that City University of Hong Kong (CityU) has taken up, with the support of OPCFHK, in an effort to give conservationists and law enforcement specialists the tools required to enforce existing laws.

Shark fin anatomy, while relevant to commercial interests, is also of importance to conservationists as well. Tapered bundles of collagen-like tissue known as ceratotrichia are highly prized in fin soups, and the ratio of mineralised cartilage to ceratotrichia in fins is key to understanding which species are targeted by the fin trade. Yet the structure and development of this tissue has not been a subject of major research since the late 1970s.



#### 香港的魚翅現實 HONG KONG ON THE HOOK

#### 2021年

- 在同一批次貨物中查獲26噸魚翅
- 是2020年全年查獲數量的2倍以上
- 超過38,000條受保護鯊魚受害

#### 2000年至2011年

- 在全球魚翅進口、再出口及消費市場排行第一
- 進口魚翅達10,500噸
- 佔全球進口量的2/3
- 出口量是第二大出口港的2倍以上

#### IN 2021

- 26 tons of fins seized in a single shipment
- 2x + the number seized in the whole of 2020
- 38,000 + protected sharks decimated

#### FROM 2000 TO 2011

- Ranked #1 in global fin imports, re-exports and consumer market
- ~10,500 tons imported
- Accounts for 2/3 of global imports
- Exports 2x + as much as the next highest exporter

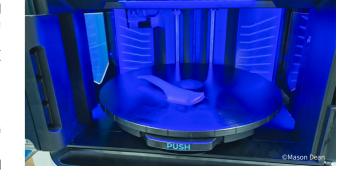
為了填補對魚鰭知識的空白,城大的研究人員聯同海洋公園團隊嘗試研發出一個以精細微型電腦斷層掃描 (micro-CT) 為本的3D魚鰭模型。第一步是要改良基於碘的可逆染色技術,此技術可在micro-CT下令原本看不清的角質鰭條與軟組織呈現鮮明對比,甚至可以對珍貴的博物館標本進行安全無損的染色。

研究人員根據所得數據為不同物種魚鰭之間的差異確立基準線,再建構出一個用以識別物種的數據庫,以及多個可互動及打印的高清3D模型,並加入詳細的外部和內部解剖結構和特徵。

#### 未來的法證範例

迄今為止,此項目已製作了三個基於micro-CT的斷層模型,使用者可以旋轉、分拆各層並識別組織。這種先進的斷層技術採用了Amira軟件中的光纖檢測科技,是一種具備時間與成本效益的分析方法。

團隊的長遠目標,是製作更多圖像和模型,以及一個可進行虛擬解剖和3D打印的資料庫,令解剖探索工作更容易實行,推動鯊魚保育和打擊非法買賣的法證工作。



To address this knowledge gap, CityU researchers, in collaboration with Ocean Park, sought to develop 3D shark fin models from various species using fine scale micro computed tomography (micro-CT). To do this, as the first step, the team optimised an iodine-based reversible staining protocol which allows contrast enhancement of otherwise invisible ceratotrichia and soft tissues of shark fins under micro-CT. This technique allows safe and non-destructive staining of even rare museum specimens.

The data produced allows researchers to establish a baseline understanding of differences between the fins of different species and to build from that a database for identification, as well as high-resolution interactive and printable 3D models, with external and internal anatomy detailed and annotated.







#### AN INNOVATIVE MODEL FOR FUTURE FORENSICS

To date, the project has generated three micro-CT-based segmented models that users can rotate, remove layers and identify tissues. This advanced segmentation was accomplished using fibre detection in the Amira Software, showcasing the efficiency in both time and cost of the project's methods.

In time, the team aims to generate more images and models, as well as a database that allows virtual dissection and 3D printing for user-friendly exploration of anatomy, with incredible potential for shark conservation and trade forensics in general.

## 馬蹄蟹:

## 推出香港首個自動化水底聲學 遙測追蹤馬蹄蟹研究

**HORSESHOE CRABS:** 

LAUNCHING HONG KONG' S FIRST HORSESHOE CRAB
UNDERWATER AUTOMATED ACOUSTIC TELEMETRY TRACKING SYSTEM

#### 瀕危的活化石

香港是馬蹄蟹重要的棲息地之一,極具生態價值,在全球現存的四種馬蹄蟹之中,以香港為棲息地的佔兩種,包括圓尾鱟(Carcinoscorpius rotundicauda)及瀕危物種中國鱟(Tachypleus tridentatus)。然而,由於遭人類過度捕撈及使用,以及沿岸棲息地的喪失,令馬蹄蟹數量進一步下降。馬蹄蟹成長速度緩慢,保育基金多年來一直推出不同項目以提升其繁殖及存活率,本年度更決定在企業伙Edrington Hong Kong的資助下再進一步,實行研究成年馬蹄蟹在水底活動的項目。於2023年10月,保育基金利用自動化水底聲學遙測技術推展全港首個追蹤瀕危馬蹄蟹的先導研究,為馬蹄蟹保育工作奠定重要甲程。

#### AN ANCIENT SPECIES IN PERIL

Well-known for its ecologically important horseshoe crab habitats, Hong Kong is home to two of the four existing horseshoe crab species, the mangrove horseshoe crab (Carcinoscorpius rotundicauda) and the endangered tri-spine horseshoe crab (Tachypleus tridentatus). Unfortunately, these prehistoric wonders are under threat of extinction due to unsustainable consumption by humans and loss of coastal habitats, extending the population decline on this slow growth rate species. In addition to ongoing projects to enhance breeding and survival rates, OPCFHK decided to take on a key challenge to investigate the ecology of the adult horseshoe crab underwater, with generous support from Edrington Hong Kong. In October 2023, work began on the design and implementation of the first underwater automated acoustic telemetry system, to be used in a pilot tracking study for Hong Kong's endangered horseshoe crabs - an important milestone to formulate conservation initiatives for the species.



#### 追蹤東涌馬蹄蟹族群

大嶼山東涌沿岸常有成年馬蹄蟹聚集產卵和幼年 馬蹄蟹孵化,研究團隊因而選址於東涌灣、鱟殼灣及 沙螺灣開展項目。所有在該等水域獲救的成年馬蹄蟹 均會裝上特製聲學標籤,再在原水域放歸,藉助水底 聲學遙測,我們可以更準確了解成年馬蹄蟹的繁殖 行為,包括了解其對繁殖地的偏好,並應用相關數據 評估人類活動對馬蹄蟹及其棲息地的影響,以履行可持續的自然資源管理和保育工作。

#### 重要數字一覽 BY THE NUMBERS

- 4 個聲學接收器完成設置 acoustic receivers set
- 3 平方公里監測範圍 km² survey area covered

#### THE REAL HORSESHOE CRABS OF TUNG CHUNG

Along the coast of Tung Chung, on Lantau Island, adult horseshoe crabs gather to spawn and hatch juvenile horseshoe crabs. The team strategically positioned acoustic receivers in Tung Chung Bay, Hau Hok Wan and Sha Lo Wan to monitor this significant habitat. Each adult horseshoe crab rescued in these waters was equipped with a coded transmitter before being released back into the same waters. With the use of acoustic-tracking telemetry, we can gain an accurate understanding of the reproductive behaviour of adult horseshoe crabs, such as breeding site preferences. The collected data can also be utilised in assessing the impact of human activities on horseshoe crabs and their habitats, supporting sustainable natural resource management and conservation efforts.

#### 潛入馬蹄蟹的世界

二零二四年二月二十一日,研究團隊於東涌灣放歸首批已標籤的成年馬蹄蟹,並將透過水底接收器收集成年馬蹄蟹的行為、活動範圍及時間等資訊,以蒐集制訂馬蹄蟹未來的保育工作的數據。

## A GLIMPSE INSIDE THE WORLD OF THE HORSESHOE CRAB

On 21 February 2024, the first batch of tagged adult horseshoe crabs was released in Tung Chung Bay, where underwater receivers will share information on their behaviours, activity range and time. The data will give valuable insights for future conservation efforts for these remarkable creatures.

## 「活化石」小檔案

馬蹄蟹自數億年前出現以來基本上一直 沒太大演化轉變,對進化學和生物學研究 都極具價值。可惜育幼泥灘的流失、棄置 漁具造成的誤纏風險,都對馬蹄蟹在香港 的存續造成極大威脅。

#### THE LIVING FOSSIL

As an ancient species relatively unchanged by time, the horseshoe crab is a living lesson on evolution and biology. Sadly, it faces many threats in modern Hong Kong, from the loss of nursery beaches to entanglement in abandoned fishing nets.





## 概覽

- 早於4.75億年前已在地球出現
- 香港族群年幼馬蹄蟹數量估計不足1萬隻
- 雌性馬蹄蟹每年繁殖季節分批總共可以產下6萬至12萬粒卵子。但馬蹄蟹 首年由卵子成長至年幼馬蹄蟹的機會卻只有萬分之一。

#### **OVERVIEW**

- Has thrived on Earth for 475 million years
- Estimated population of less than 10,000 juvenile horseshoe crabs in Hong Kong
- A female horseshoe crab can lay between 60,000 and 120,000 eggs in batches
  during breeding season. However, the survival rate of a horseshoe crab in its first
  year is only one in ten thousand.

 $\sim$  25

## 馬蹄蟹普查計劃: 引入嶄新科技推動研究發展

HORSESHOE CRAB POPULATION SURVEY:

BRINGING CUTTING-EDGE TECHNOLOGY TO THE LONG-TERM PROJECT



#### 持續監察馬蹄蟹保育情況

保育基金由二零零九年起展開「馬蹄蟹普查計劃」。 在二零二三至二零二四年度,「馬蹄蟹普查計劃」繼續 記錄香港馬蹄蟹產卵及育幼的海岸其年幼個體的數量 和分佈。透過長時間的數據比較,分析其存續趨勢,以 制訂更有效的保育方案。普查計劃收集的數據更於 二零二一年起獲納入世界自然保護聯盟鱟專家組啟動 組成的「亞太區鱟觀測站網絡」。

「亞太區鱟觀測站網絡」在香港劃出六個調查站, 保育基金自責其中三個,包括下白泥、沙頭角及鹿頸。 二零二三年,鹿頸的年幼圓尾鱟(Carcinoscorpius rotundicauda)分佈及數量密度排名下跌至全國第五, 足見有需要進一步加強保育工作。

#### 重要數字一覽 BY THE NUMBERS

15 <sup>次調查</sup> surveys conducted

- 4 個調查地點:下白泥、沙頭角、鹿頸及東涌灣 sites covered: Ha Pak Nai, Sha Tak Kok, Luk Keng and Tung Chung Bay
- 2023年12月在東涌灣調查區域外發現13隻圓尾觷,
- 13 mangrove horseshoe crabs in December 2023 and 20 in June 2024 were found outside the tracking area in Tung Chung Bay

#### ONGOING MONITORING OF THE HORSESHOE CRAB

Since 2009, OPCFHK began the Horseshoe Crab Population Survey. This ongoing effort continued in 2023/24, documenting the population and distribution of juvenile horseshoe crabs on their spawning and nursery shores in Hong Kong to compare data over a range of time and identify trends so more effective conservation measures can be implemented. The data collected also contributed to the new Asian Horseshoe Crab Observation Network established by the IUCN SSC Horseshoe Crab Specialist Group (HCSG) since 2021.

Of the six monitoring stations identified by the Asian Horseshoe Crab Observation Network in Hong Kong, OPCFHK surveyed those in Ha Pak Nai, Sha Tau Kok and Luk Keng, and noted that the distribution and population density of juvenile mangrove horseshoe crabs (Carcinoscorpius rotundicauda) in Luk Keng dropped to fifth place nationally in 2023, signalling a pressing need for further conservation actions.



#### 藉由當代科技復育遠古活化石

保育基金同時與多個組織結成伙伴,為保育工作引入 嶄新科技力量。其中一個合作項目由香港中文大學 機械及自動化工程學系教授陳本美及其團隊帶領,將 無人機系統及人工智能技術(AI)應用於「馬蹄蟹 普查計劃」中。研究團隊先到下白泥進行數次實地 考察,建立人工智能所需的數據庫,透過無人機影像 辨識馬蹄蟹。香港城市大學(城市大學)化學系副教授 張肇堅及世界自然保護聯盟鱟專家組項目幹事兼 指導委員會成員Kevin Laurie亦加入提供實地支援, 提升人工智能辨識準繩度,大大降低了在蒐集數據時 對馬蹄蟹及其棲息地造成的干擾。







#### **NEW MEASURES TO CONSERVE AN ANCIENT SPECIES**

OPCFHK collaborates often with a wide variety of organisations to bring scientific technology to the conservation fight. This year, the group joined hands with Prof. Chan Ben-mei of the Department of Mechanical and Automation Engineering at the Chinese University of Hong Kong (CUHK) and his team to use unmanned systems and artificial intelligence in the Horseshoe Crab Population Survey. This started with a few field visits to Ha Pak Nai to build up a database for the AI system, so it could identify horseshoe crabs through video images taken by drones. With huge on-site support from Prof. Cheung Siu-gin, Associate Professor of the Department of Chemistry, City University of Hong Kong (City U), and Kevin Laurie, IUCN Horseshoe Crab Specialist Group, Programme Officer, Steering Committee Member and Species Conservation Planning Focal Point, to enhance the accuracy of its identification, this technology will offer researchers the opportunity to gather data with minimal disturbance to the creatures and their habitat.



野生馬蹄蟹數量在二零零二年至二零零九年期間急降 逾九成,而且中國鱟(Tachypleus tridentatus)在世界 自然保育聯盟紅色名錄中的等級,已在二零一九年由 「數據缺乏」更新為「瀕危」。

請即加入我們守護馬蹄蟹,支持泥灘清潔活動,逆轉 活化石的滅絕趨勢。

Wild horseshoe crab populations dropped by over 90% between 2002 and 2009. In 2019, the tri-spine horseshoe crab (Tachypleus tridentatus) was reclassified, going from "data deficient" to "endangered" under the IUCN Red List of Endangered Species.

Join in the effort to reverse this upsetting trend and save this valuable species by signing up for mudflat clean-up activities.



## 淡水龜: 拯救非法捕獵受害者

FRESHWATER TURTLES:
POACHED TO THE BRINK

#### 守護華南地區最後的淡水龜族群

香港現存的野生淡水龜,可能是華南地區僅存的族群。 烏龜(Mauremys reevesii)、金錢龜(Cuora trifasciata)、 眼斑水龜(Sacalia bealei)、中華鱉(Pelodiscus sinensis) 和大頭龜(Platysternon megacephalum)五種本地原生 淡生龜之中,其中四種已被世界自然保護聯盟的瀕危 物種紅色名錄列為「瀕危」或「極度瀕危」。專家估計 眼斑水龜在香港野外的數量不足一百隻,金錢龜更 幾乎已在野外滅絕,如果情況持續,本地原生淡水龜將 功能性滅絕,因為無法持續繁育而最終導致絕種。對 香港以至整個華南地區而言,守護本地原生淡水龜的 工作已經刻不容緩。

#### 凝聚力量復育淡水龜

保育基金正採取全方位行動,積極保育本地淡水龜族群,打擊非法捕獵。在二零二零年至二零二二年之間,漁護署合共檢獲超過四百個捕龜裝置,而研究人員亦透過紅外線相機,發現多次懷疑非法捕獵活動。有見及此,保育基金在企業伙伴Edrington Hong Kong的資助下,在非法捕獵黑點增設紅外線相機,以更有效監測淡水龜的棲息地,同時偵察非法捕獵行為。此外,保育基金亦與多個遠足組織合作成立河溪保育糾察隊,招募並培訓義工清潔淡水龜棲息地,以及辨別與清理疑似捕龜裝置。為逆轉淡水龜數量

下跌的趨勢,保育基金更與海洋公園、嶺南大角基學及香港兩棲及爬行動物保育基合作,展開眼斑水龜等瀕危淡水龜物種的復育項目,透過人工繁殖、育幼護理及野外放歸工作,為未來復育計劃奠定基礎。

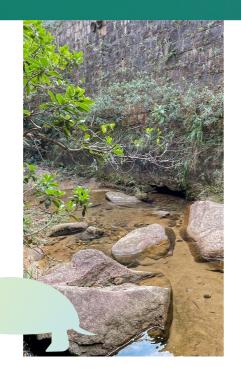


#### 你知道嗎?

如果在郊外發現龜籠等疑似非法捕獵裝置,請 立即致電1823,通知漁護署處理。

#### **DID YOU KNOW?**

If you encounter any suspected animal traps, such as turtle cages, please report them as soon as possible to the AFCD via 1823.



# THE LAST STAND FOR SOUTHERN CHINA'S FRESHWATER TURTLES

Hong Kong's freshwater turtles are likely one of the last such populations in southern China. Of the five native species found in the area—the Reeves' turtle (*Mauremys reevesii*), the golden coin turtle (*Cuora trifasciata*), the Beale's-eyed turtle (*Sacalia bealei*), the Chinese softshell turtle (*Pelodiscus sinensis*), and the big-headed turtle (*Platysternon megacephalum*)—four have been classified "endangered" or "critically endangered" by the IUCN Red List of Threatened Species and face functional extinction in the wild, unable to sustain viable breeding numbers. In particular, experts estimate fewer than 100 Beale's-eyed turtles remain, and fear the golden coin turtle may already be extinct in the wild. The ongoing loss of these wild populations may result in the loss of vital reproduction that threatens the very survival of these species. Safeguarding Hong Kong's local native freshwater turtles is crucial not just for the city, but for the species and the region.

#### **ENLISTING PARTNERS TO PROTECT THE TURTLES**

Efforts to conserve these populations and combat illegal hunting are taking place on several fronts. Between 2020 and 2022, the AFCD seized over 400 turtle traps, while researchers spotted many instances of suspected poaching activity through infrared cameras. With the support of corporate partner Edrington Hong Kong, OPCFHK installed additional infrared cameras in selected hotspots to enhance monitoring of turtle habitats and watch for suspected illegal poaching activities. The team also collaborated with hiking groups to launch the Stream Conservation Warden programme, recruiting volunteers to clean up litter in freshwater habitats and training them to identify and remove any suspected turtle-catching devices they might find. To help revive dwindling populations, OPCFHK also partnered with Ocean Park, Lingnan University and the Hong Kong Society of Herpetology Foundation on breeding and husbandry programmes to breed, rear and reintroduce endangered freshwater turtles for future restoration programmes, including one specifically focused on the Beale's-eyed turtle.

本地保育工作 LOCAL CONSERVATION EFFORTS

# 猴子絕育計劃: 借助科技力量管理野猴族群

MONKEY CONTRACEPTIVE PROGRAMME: PUTTING TECH TO WORK TO MANAGE MONKEY BUSINESS

香港於二十世紀初在九龍山區重新引入野猴。此後 由於人類餵飼,再加上沒有天敵,野猴族群數量急速 上升。此外,與人類頻繁接觸,亦令野猴對人類失去 戒心,大大改變了人猴互動的行為模式。 In the early 1900s, wild monkeys were reintroduced to the hills of Kowloon. Due to human provisioning and the absence of natural predators to control their population, their numbers grew rapidly. As contact with humans has become more frequent, wild monkeys have lost their wariness towards people, often resulting in negative encounters.



保育基金自二零零九年起受漁護署委託進行「捕捉、絕育、放回」計劃(TNR),以創新形式,為野猴進行內窺鏡輸卵管或輸精管切除手術,取代傳統的性腺摘除手術,避免干擾野猴荷爾蒙,讓牠們在絕育後仍可如常交配,維持族群內必要的社交行為。

Since 2009, the OPCFHK has been commissioned by the AFCD to address this issue through a trap-neuter-release (TNR) programme. This innovative approach involves performing endoscopic tubectomies or vasectomies instead of full castration or spaying. This method prevents the monkeys from breeding while preserving their natural hormones and the sexual behaviours essential to their social group dynamics.

本計劃已成功令野生猴子的生育率 從二零零九年的逾百分之六十下降至 近年約百分之三十。而在二零二三至 二零二四年度合約期間,保育基金 合共為四十六隻雌性和十六隻雄性 猴子進行絕育手術。

The programme has successfully reduced the birth rate of the monkeys from over 60% in 2009 to around 30% in recent years. During the 2023/24 contract period, 46 females and 16 males were sterilised.





#### 重要數字一覽 BY THE NUMBERS

62 隻猴子已接受絕育<sup>,</sup>包括: monkeys sterilised, including

46 <sup>隻雌性</sup> females

16 <sup>隻雄性</sup>

## 海洋生物擱淺行動組: 引領未來保育與監察行動

MARINE LIFE STRANDING RESPONSE TEAM:

SHAPING FUTURE MONITORING AND CONSERVATION EFFORTS

保育基金自二零零六年起與漁護署合作,引用最新 科技調查本港水域鯨豚擱淺及死亡個案的主因。 其中絕大部分個案所確認的死因都與人為因素 有關,最常見的是被船隻所傷或漁具誤纏。

有賴海洋公園經驗豐富的獸醫及動物護理團隊 提供頂尖專業技術及器材支援,保育基金的「海洋 生物擱淺行動組」一直致力應對鯨豚擱淺問題,而 於二零二三至二零二四年度處理的個案合共多達 三十七宗。 Since 2006, OPCFHK has collaborated with the AFCD to investigate cetacean death and stranding in Hong Kong's waters, using new technologies to determine the primary causes. In the overwhelming majority of cases where cause of death could be determined, human activity was the main culprit, most often through direct injuries inflicted by boats or by entanglement in fishing gear.

OPCFHK's Marine Life Stranding Response Team is dedicated to addressing this problem, with the support of cutting-edge technical expertise, experienced veterinary and husbandry staff and advanced equipment from Ocean Park. In 2023/24, the Marine Life Stranding Response Team responded to a total of 37 stranding cases.



#### 個案一 CASE 1

布氏鯨出沒及死亡個案

A BRYDE'S WHALE SIGHTING AND UNFORTUNATE DEATH

日期 Date 二零二三年七月十三至三十一日

13 – 31 July 2023

地點

牛尾海

Location Port Shelter, Sai Kung

詳情 Details 香港東岸水域於七月十三日接獲布氏鯨出沒報告,保育基金隨即參與協助漁護署及其他相關部門監察情況,並發出新聞稿呼籲公眾避免追鯨,以應對突然急升的觀鯨活動。該布氏鯨在十八天後被發現死亡,身上有兩個由螺旋漿新造成的嚴重外傷,推斷其受到快速行駛的船隻撞擊,傷及背部和脊椎導致即時死亡。

就是次鯨豚死亡個案,除了團隊進行現場解剖和組織收集外,政府還制定了三級應變計劃,詳列日後香港水域發現非本地棲息鯨豚動物時,政府採取的應對行動。

A Bryde's whale was spotted in Hong Kong's eastern waters on 13 July. OPCFHK assisted the AFCD and other parties in monitoring the whale's activities, and issued a press release urging the public to avoid approaching the animal in response to the surge in whale-watching that followed the rare sighting. Unfortunately, the animal was found dead 18 days later with two very fresh and severe propeller cuts, indicating that it had been struck by a fast-moving vessel, injuring its back and spine, resulting in a quick death.

In addition to an on-site dissection carried out by the Team and sample collection from the deceased whale, the AFCD has set up a three-tiered response plan that the government might take in the event of future non-resident cetacean sightings in Hong Kong's waters.

#### 個案二 CASE 2

江豚雌性死胎

A STILLBORN FEMALE FINLESS PORPOISE

日期 Date 二零二四年三月九日 9 March 2024

地點 Location

Cheung Chau

詳情 Details

長洲

一條仍帶有臍帶的雌性江豚被發現死亡,其肺部沉於水中(即尚未通氣),顯示其從未呼吸,屬於死產。 A neonatal female finless porpoise was found with the umbilicus present, and its lungs sank in water (i.e. were not aerated), confirming that it had not taken a breath and was thus a stillbirth.

## 個案三 CASE 3

患有腹膜炎的年幼雄性江豚 PERITONITIS IN A JUVENILE MALE FINLESS PORPOISE

日期 Date 二零二四年三月十六日

16 March 2024

地點 Location

Cheung Chau

長洲

詳情 Details 解剖結果顯示該江豚腹腔由正常的紫紅色變為紅色,而且腸繋膜淋巴結腫大,兩者均屬炎症病徵。

The abdominal content did not show a typical post-mortem colour (reddish instead of the normal red-purple) and the mesenteric lymph nodes were enlarged – both signs of inflammation.





## 馬蹄蟹校園保母計劃: 善用科技力量啟迪未來保育人才

JUVENILE HORSESHOE CRAB SCHOOL REARING PROGRAMME: INSPIRING TECH-SAVVY FUTURE CONSERVATIONISTS



#### 培育未來保育人才

「馬蹄蟹校園保母計劃」於二零零九年推出,旨在為中學生提供親身體驗保育工作的機會,傳授有關馬蹄蟹基本生物學、生態學及棲息地的資訊。此計劃由保育基金與香港城市大學合作推行,多年以來已有數以千計學生參與,運用智能世代獨有的技能與知識完成保育任務,為未來投身保育界奠下基礎。不少曾參與計劃的學生在畢業後從事與保育相關的研究和工作,將「馬蹄蟹校園保母計劃」的意義薪火相傳。此計劃於二零二四年迎向十五周年,並以「如果馬蹄蟹消失了!」為主題。

#### **EMPOWERING STUDENTS FOR A GENERATION**

Since 2009, the Juvenile Horseshoe Crab School Rearing Programme has offered secondary school students a hands-on experience in conservation, teaching them about the general biology, ecology and habitat of this ancient species. A collaborative effort between OPCFHK and CityUHK, the programme has successfully engaged thousands of students over the years, encouraging them to apply their talents and know-how as "tech natives" to the task at hand, and to carry what they learn forward into their future endeavours. Many have even gone on to

study and work in adjacent fields – an impressive mark of the programme's long-term impact. For the Juvenile Horseshoe Crab School Rearing Programme's 15<sup>th</sup> anniversary in 2024, it adopted a special theme: What If Horseshoe Crabs Disappear.





#### 2023/24年度重要數字一覽 BY THE NUMBERS IN 2023/24

21 <sup>間學校參與</sup> schools

391 名學生擔任保母 student foster parents

2009年起重要數字一覽 BY THE NUMBERS SINCE 2009

>320,000 名公眾人士參與 people reached

355 简学校参照 schools

6,942 名學生擔任保母 student foster parents

2,000 **隻馬蹄蟹放回棲息地** horseshoe crabs released

#### 釋放學生潛能

由學生主導的項目一直以來都是「馬蹄蟹校園保母計劃」 的核心元素,過程中參與的學生可以發揮創意,運用先進 科技以別出心裁的生動形式推動馬蹄蟹保育。

#### LETTING STUDENTS LEAD THE WAY

A long-standing part of the programme is student projects in which participants showcase their creativity in promoting and protecting the horseshoe crab, often using advanced technology in dynamic and inspiring new ways.

#### 馬蹄蟹趣味問答

拔萃女書院的學生利用鐳射打印和3D打印技術製作馬蹄蟹飾物作為問答環節禮物,鼓勵大眾認識馬蹄蟹。

#### **HORSESHOE CRAB QUIZ**

Students from Diocesan Girls' School use laser and 3D printing to make horseshoe crab-related gifts to encourage others to learn more about this species.



#### 優化馬蹄蟹養殖方法

皇仁書院的學生鑽研及實習繁殖 豐年蝦,並研究牠們的趨光行為, 為人工繁殖的馬蹄蟹提供更好的 飼料。

#### **ENHANCEMENT OF HORSESHOE CRAB HUSBANDRY**

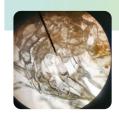
Queen's College students hatched and studied the brine shrimps' phototactic behaviours to provide a better supply of food to artificial-bred horseshoe crabs.

#### 「幫幫馬蹄蟹」網頁遊戲

遊戲由保良局胡忠中學學生製作, 讓玩家能夠代入馬蹄蟹的角色, 探索海洋與尋找生存之路。

#### "SAVE THE HORSESHOE CRAB" ONLINE GAME

Developed by students from Po Leung Kuk Wu Chung College, players explore the sea and find their way to survival as a horseshoe crab.



#### 科學觀察

香海正覺蓮社佛教正覺中學的學生透過顯微鏡觀察馬蹄蟹蛻殼成長。

#### SCIENTIFIC OBSERVATION

At HHCKLA Buddhist Ching Kok Secondary School, students observe the moulting of horseshoe crabs under a microscope.



#### 官揚保育

天主教新民書院學生以敘事方式 創作短片,向同學介紹馬蹄蟹及其 生存困境。

#### ADVOCATING CONSERVATION

Newman Catholic College students used their storytelling skills to create a video introducing the horseshoe crab and its plight to fellow students.

# 受啟發的學生 INSPIR

「在計劃中,我們需要親自照料馬蹄蟹,包括養育 牠們、定期檢查飼養環境、維持合適的生活條件 等。這些任務需要我們深入了解馬蹄蟹的生理 需求和生態習性。通過這個過程,我們學會了 如何妥善照顧一種瀕危物種,並認識到保育工作 的意義和挑戰。」

"We personally care for horseshoe crabs, nurturing them, regularly checking and maintaining their living environment. This requires a deep understanding of the biological needs and ecological habits of horseshoe crabs. Through this programme, I have learned how to care for an endangered species and have come to understand the significance and challenges of conservation work."

東華三院馬振玉紀念中學學生 TWGHs CY Ma Memorial College

#### 你知道嗎?

早於2012年,「馬蹄蟹保母計劃」已開始與企業伙伴合作,為企業員工培養保育意識。計劃啟動以來,參與者已成功野放38隻馬蹄蟹,包括在2023/24年度野放7隻回到泥灘棲息地。

#### **DID YOU KNOW?**

Since 2012, the related Juvenile Horseshoe Crab Rearing Programme has worked with corporate partners to provide their staff with a personal conservation lesson as well. Participants of that programme have released 38 horseshoe crabs since the programme's inception, with 7 released to mudflat in 2023/24.

## 環境及自然保育基金資助 守衛本地原生淡水龜及其生境生物多樣性: 募集公民科學家和保育專家參與

**ENVIRONMENT AND CONSERVATION FUND** 

SAFEGUARDING NATIVE FRESHWATER TURTLES AND ITS HABITAT'S BIODIVERSITY:
RECRUITING COMMUNITY SCIENTISTS AND CONSERVATIONISTS

#### 培育青少年保育意識

二零二三年,保育基金在環境及自然保育基金的再次 資助下,繼續開展「守衛本地原生淡水龜及其生境生物 多樣性」教育計劃,呼籲大家支持保育工作。



此計劃以學生為主要目標對象,透過工作坊、野外考察及淡水龜護理工作培訓中學及大學學生成為「淡水生態教育大使」。學生將知識經驗學以致用:中學生組織校內保育宣傳活動;大學生為小學和幼稚園學生製作教學素材。計劃鼓勵學生嘗試運用科技推動保育,其中仁濟醫院靚次伯紀念中學學生設計了一個以機械臂來清理河溪廢物的示範以帶出污染的問題。



公眾人士亦有機會透過此計劃參與保育,例如與本地遠足團體合作,培訓喜歡遠足人士組成「河溪保育糾察隊」打擊非法捕獵,參與淡水龜棲息地清潔活動,並學習如何辨別和清理非法捕龜裝置。

# TRAINING THE NEXT GENERATION OF CONSERVATIONISTS

In 2023, OPCFHK received renewed funding from the Environment and Conservation Fund (ECF) to continue the ECF-funded education programme Safeguarding Native Freshwater Turtles and its Habitat's Biodiversity, which raises awareness and advocates for conservation actions.



The programme has a special focus on students. Participating secondary and university students trained to be Student Conservation Educators through workshops, field trips, and freshwater turtle care and husbandry activities. Young Educators shared what they learned by organising in-school conservation promotion activities, and producing teaching materials for primary and kindergarten students. All students were encouraged to explore the potential of technology in conservation, as Yan Chai Hospital Lan Chi Pat Memorial Secondary School's students invented a mechanical arm to remove debris from a stream to demonstrate the problem of pollution.



The programme also reaches out to the general public to take action. For instance, to help combat poaching, local hiking groups were trained as Stream Conservation Wardens to help spot and remove illegal turtle traps while engaged in habitat clean-up activities.



#### 透過繁殖飼養計劃拯救眼斑水龜

保育基金自二零一八年起與海洋公園、香港兩棲及爬行動物保育基金合作,並聯同嶺南大學科學教研組助理教授宋亦希,於海洋公園推行眼斑水龜人工繁殖及護理項目。在宋教授團隊的支持下,該計劃能夠增建可以容納更多眼斑水龜繁殖的設施,從而提升繁殖率,為復育野外瀕危眼斑水龜數量寫下重要里程。

#### 增設淡水河溪生態展覽普及保育知識

作為計劃的其中一環,海洋公園將「金魚寶殿」改建為「本地河溪生態館」,於二零二三年十一月正式開幕。 館內展示了本地淡水棲息地及相關原生物種、河岸 動植物及常見的外來物種,與公眾分享淡水生態系統 的價值,了解本地淡水生物多樣性。

#### 重要數字一覽 BY THE NUMBERS

100 名中學學生,來自10間中學及

secondary students from 10 secondary schools and

19 名大學學生,來自5間大學,成為「淡水生態教育大使」 tertiary students from 5 universities recruited as Freshwater Conservation Educators

フィア 名幼稚園及小學學生參與

kindergarten and primary students reached

248 名公眾人士參與 public participants

70 名遠足人士經培訓加入「河溪保育糾察隊」 hikers trained as Stream Conservation Wardens

受啟發的學生 —

「我們真的很喜歡這些活動和參觀項目,讓我 們能夠更深入了解淡水龜保育。」

"We really enjoyed the activities and visits, aiming to get close with the conservation of freshwater turtles"

拔萃男書院 Ethan FONG Ethan FONG, Diocesan Boys' School

# SAVING THE BEALE' S-EYED TURTLE THROUGH BREEDING AND HUSBANDRY

Since 2018, OPCFHK, Ocean Park, and the Hong Kong Society of Herpetology Foundation have worked with Lingnan University's Prof. Sung Yik-hei, Assistant Professor in the Science Unit, on the establishment of a breeding and husbandry programme for the Beale's-eyed turtle at Ocean Park. With this concentrated support behind Prof. Sung's team, the programme has been able to deploy more infrastructure to accommodate more mating pairs, increasing the number of successful breedings – a vital step towards the ultimate goal of reintroducing these endangered turtles to the wild.

## REACHING A WIDER AUDIENCE WITH A NEW FRESHWATER EXHIBITION

Funding for this programme also supported the transformation of Ocean Park's Goldfish Treasures into the Dive Into Local Diversity exhibit. Opened in November 2023, the exhibit showcased local freshwater habitat, with native freshwater species, live riparian organisms and even common invasive species, to educate visitors on the value of freshwater ecosystems and local freshwater biodiversity.

#### 你知道嗎?

非法捕獵、環境污染及外來物種帶來的 威脅,引致本地野生淡水龜族群大量 流失,面臨比大熊貓更高的滅絕風險。 本地專家相信,香港的淡水龜族群很大 可能是華南地區最後的倖存者。

#### **DID YOU KNOW?**

Most wild populations of freshwater turtles have been destroyed by illegal poaching and trafficking, pollution, and competition with invasive species. They are at greater risk of extinction than even the giant panda. Local experts believe Hong Kong's freshwater turtles are most likely among the last in southern China.

## 「殼中瑰寶」:與EDRINGTON HONG KONG -起培育公眾保育意識

DISCOVERING THE HIDDEN TREASURES OF CARAPACE WONDERS: **EDUCATING THE PUBLIC WITH EDRINGTON HONG KONG** 

#### 啟迪公眾保育本地原生龜

二零二四年三月二十八日至四月三日復活節假期 期間,保育基金在企業伙伴Edrington Hong Kong的捐款 資助及太古城中心的場地贊助下舉行「殼中瑰寶」教育 展覽。是次展覽讓公眾透過沉浸式體驗了解本地瀕危 物種及其棲息地,特別是馬蹄蟹和淡水龜。這兩個物種 皆擁有獨特的生態價值,在其棲息地擔任重要角色,卻 因為人類過度採捕、非法捕獵等威脅而面臨滅絕危機。

#### INSPIRING THE PUBLIC TO CONSERVE NATIVE TURTLES

During the Easter holidays, from 28 March to 3 April 2024, OPCFHK presented the exhibition "Discovering the Hidden Treasure of Carapace Wonders", supported by the generous donation from our corporate partner Edrington Hong Kong and with venue sponsorship from Cityplaza. This exhibition offered visitors an immersive experience of local endangered species and their habitats, particularly horseshoe crabs and freshwater turtles, which not only hold significant ecological value but also fulfil unique roles in these habitats. Unfortunately, they are also under threat due to human activities such as over-harvesting and poaching.





#### 認識我們的原住民鄰居

展覽在港島東最大的商場太古城中心舉辦,參觀者 可參與各種互動體驗,包括由視覺藝術、聲音裝置 及多層展板搭成的立體佈景等,從中尋找生態 瑰寶。現場並設有年幼馬蹄蟹展區,展示這個早在 四億七千五百萬年前已出現的「活化石」。此外,活動 亦展出了由回收膠樽升級「塑」造的眼斑水龜,呼籲 市民減少飲用以一次性塑膠樽包裝的飲料,保護淡水 動物的棲息地。參觀者可以透過參與故事分享會及 藝術拓印工作坊,學習欣賞大自然,同時認識稀有物種 面臨的生存困境。

#### MEET OUR NATIVE NEIGHBOURS

With the immersive exhibition at Cityplaza, the largest shopping mall in Hong Kong Island East, visitors engaged in interactive activities showcasing the "treasures" of these animals, including a captivating three-dimensional setting for visual art, sound installations and multi-layered panels, and a visit with live juvenile horseshoe crabs, an ancient species dating back 475 million years. The exhibition also featured an eco-art installation of a Beale's-eyed turtle made from upcycled plastic bottles to encourage reduced consumption of beverages bottled in disposable plastics and the protection of freshwater habitats, as well as a storytelling workshop on the challenges facing this rare species, and an ink rubbing workshop to nurture an appreciation for nature.

#### 重要數字一覽 BY THE NUMBERS

parents and children

名家長及小童參<u>加工作</u>坊 oined the workshops



## 重要企業伙伴 A DEVOTED CORPORATE PARTNER **EDRINGTON HONG KONG**

Edrington Hong Kong於2023年舉辦首個慈善晚宴,所得 善款用以支援保育基金的野生生態保育工作,包括推出 首個馬蹄蟹遙控聲納追蹤研究,以在野外增設紅外線相機 以打擊淡水龜非法捕獵,而由其贊助的眼斑水龜人工繁殖 項目,更在年內成功繁育兩隻幼龜。

Edrington Hong Kong以行動履行「回饋社會」的企業承諾。

In 2023, Edrington Hong Kong's first-ever charity gala raised funds to support OPCFHK's wildlife conservation work, including launching Hong Kong's first horseshoe crab underwater automated acoustic telemetry tracking system, deploying infrared cameras to combat poaching in the wild, and a Beale's-eyed turtle breeding programme that successfully reared two hatchlings.

Edrington Hong Kong has truly showcased its corporate value of "Giving More"!





## 環境及自然保育基金資助 守護本地海洋資源公民教育計劃: 動員潛水愛好者拯救海洋

**ENVIRONMENT AND CONSERVATION FUND** CITIZENSHIP EDUCATION PROGRAMME FOR LOCAL MARINE CONSERVATION: ENLISTING DIVERS TO HELP TO SAVE OUR OCEANS

#### 「深」入保育

保育基金於二零二四年初獲環境及自然保育基金 資助,推行為期兩年的「守護本地海洋資源公民教育 計劃」。此計劃旨在提升潛水愛好者對本地海洋生態 及生物多樣性的認識,宣揚從源頭減廢的「走塑」生活。 計劃旨在針對較遠離市區並具高生態價值的沿岸 和海域,尤其著重清理俗稱「鬼網」的廢棄漁具等海洋 垃圾。

為進一步推廣海洋保育理念,是項計劃與中國香港 潛水總會合作,在世界海洋日(即6月8日)與 「鬼網特工」培訓班的潛水員啟動首次淨海活動。

#### 重要數字一覽 BY THE NUMBERS

- 52 位潛水愛好者參與培訓並完成任務 divers trained and completed missions
- 10 次「鬼網」清潔由受訓志願潛水愛好者完成 ghost net cleanups by trained volunteer divers

1000+ 公斤廢棄漁具及其他海洋垃圾被清理 kg of ghost fishing gear and other marine debris cleared



#### A DEEP DIVE INTO CONSERVATION

In early 2024, with funding from the Environment and Conservation Fund, OPCFHK kicked off the two-year Environment and Conservation Fund Citizenship Education Programme for Local Marine Conservation. Aimed at local divers, the programme educates participants on local marine ecology and biodiversity, and promotes a plastic-free lifestyle to reduce waste at its source. Its primary emphasis is on the conservation of remote coastal areas of high ecological value, particularly the importance of cleaning up marine debris such as abandoned fishing nets, also known as

To reinforce its message and extend the reach of its efforts to restore the marine habitat. OPCFHK collaborated with the Hong Kong China Underwater Association to kick-start the first cleanup on World Ocean Day (8 June), as part of the Ghost Net Awareness Enhancement Programme.



#### 你知道嗎?

每年估計有64萬噸漁具被廢棄、遺失或 棄置在海中,佔全球海洋塑膠垃圾總量達 10%。

大部分廢棄漁具(尤其是「鬼網」)仍具有 捕獵功能,為海洋生物帶來嚴重威脅。 根據保育基金與漁護署共同成立的「海洋 生物擱淺行動組」的數據顯示,誤纏 「鬼網」是本港鯨豚擱淺死亡的其中一個 主要原因。

#### DID YOU KNOW?

Every year, an estimated 640,000 tons of fishing gear are abandoned, lost or discarded in the ocean, accounting for up to 10% of global marine plastic debris.

Most of this debris, particularly the "ghost nets", is still functional and poses a serious threat to marine species. According to data gathered by the Marine Life Stranding Response Team, a joint OPCFHK and AFCD taskforce, entanglement in these "ghost nets" is one of the major causes of death for local cetaceans.



展望來年,此計劃將繼續誘過與其他項目、活動及論壇 合作,提升海洋保育推廣成效。此計劃並正籌辦視覺 藝術設計比賽,以及出版電子小冊子,分享收集和處理 海洋垃圾的安全指引及宣傳源頭減廢等。

#### PLANS FOR THE SECOND YEAR

The programme will continue to expand its reach in its second year through collaboration with other programmes, events and forums, with plans in the works for a visual arts competition and an e-booklet sharing guidelines on safely clearing marine debris and reducing waste at the source.



# 「停止餵飼野生動物」教育計劃: 教育公眾停止餵飼及如何避免與動物發生衝突

THE "DON' T FEED WILD ANIMALS" EDUCATION PROGRAMME:

EDUCATING THE PUBLIC TO STOP FEEDING ANIMALS AND PREVENT HUMAN-WILDLIFE CONFLICTS

#### 臨界的衝突風險

人類與野生動物活動空間重疊,難免會發生衝突。在毗鄰動物棲息地的民居或郊野地區,例如金山、獅子山和城門郊野公園,野生動物(如猴子和野豬)可能會因覓食而走近民居,甚至走入鬧市之中,這可能導致人類與動物衝突、動物襲擊、交通事故及環境衛生風險等問題。

#### AT THE EDGE OF AN ALARMING SITUATION

The overlap of human and wildlife activities inevitably creates potential conflicts. In residential or rural areas adjacent to animal habitats, such as Kam Shan, Lion Rock and Shing Mun Country Parks, wild animals (such as monkeys and wild pigs) may approach residential areas in search of food, even straying into urban areas. This can lead to various problems, including animal nuisance and even attacks, traffic accidents and environmental hygiene issues.

自二零一八年起,為減緩人類與野生動物之間的矛盾, 保育基金獲漁護署委託,推行「停止餵飼野生動物」 教育計劃,提醒公眾讓野生動物自行覓食的重要性。

保育基金於二零二三至二零二四年度舉辦多場活動,傳遞猴子和野豬等野生動物生態和習性的資訊,並向公眾講解餵飼野生動物的不良後果。保育基金期望透過這些措施,改變公眾對野生動物的認知及採取預防措施,減少人類與野生動物之間的衝突。

Since 2018, to reduce the risk of conflict between humans and wild animals, the AFCD has commissioned OPCFHK's "Don't Feed Wild Animals" education programme to raise awareness among the public on the importance of leaving wildlife to manage their own meals.

In 2023/24, OPCFHK organised a number of activities to share information about the ecology and habits of wild animals, including monkeys and wild pigs, and educate the public on the negative consequences of intentionally feeding these animals. It is hoped that these efforts will change public perception of wild animals and encourage the public to take preventive measures to reduce human-wildlife conflicts.

#### 引起問題的因素

- 餵飼野生動物會令牠們對人類失去戒心及改變其習性,同時導致牠們在社區內過度聚集及頻繁出現。
- 戶外垃圾管理不當,可能使動物將垃圾視為容易獲取的覓食目標。由於這些食物容易獲得,但往往對動物不健康,更 導致動物產生依賴性。
- 城市朝郊區擴展,亦增加了人類與動物衝突的風險。

#### **UNDERSTAND THE PROBLEMS**

- Feeding wildlife can cause animals to lose their natural fear of humans and alter their behaviour, and contributes to their overpopulation in areas where encounters are most likely to occur.
- Improper outdoor rubbish management may result in animals looking for easy meals. Unhealthy but readily available, these meals can easily lead to dependency.
- The expansion of human settlements into fringe areas also increases the risk of human-wildlife conflicts.

#### 餵飼野牛動物得不償失

新修訂的《野生動物保護條例》(《條例》)已於2024年8月1日起生效。《條例》引入定額罰款港幣5,000元,並提升最高刑罰至港幣10萬元及監禁一年。漁護署自2024年第一季起推出新一系列以「全城唔餵」為主題的宣傳活動,教育公眾餵飼野生動物及野鴿帶來的負面影響及解釋最新的禁餵規定和相關罰則。保育基金亦由2024年初起,把「全城唔餵」主題和內容加入原有的教育計劃中,協助相關宣傳教育。

#### FEEDING WILDLIFE DOESN'T PAY

Effective from 1 August 2024, the amended Wild Animals Protection Ordinance introduced a fixed penalty of HK\$5,000, and increased the maximum penalty to HK\$100,000 and imprisonment for one year. In the first quarter of 2024, the AFCD launched a new campaign themed "All for No Feeding" to educate the public on the negative impacts of feeding wild animals and feral pigeons, as well as to explain the latest feeding restrictions and the associated penalties. In early 2024, OPCFHK incorporated the "All for No Feeding" theme and content to the original educational programme to assist in related publicity and education.



#### 教育自幼做起

二零二三至二零二四年度,保育基金分別以「自然· 有禮」及「大自然調查員」為主題,在幼稚園及小學舉行 講座並寓教於樂,將角色扮演、音樂活動及為較年長 的孩子設計的模擬猴子調查等融入到講座內容中, 並以遊戲學習形式吸引小朋友關注。活動不僅講解 遇到野生動物時應該有的正確行為,更鼓勵小朋友 與他人分享相關知識。

#### **GETTING KIDS IN ON THE ACT**

In 2023/24, OPCFHK utilised the themes "Nature Manners" and "Nature Surveyors" respectively for talks aimed at kindergarten and primary school students. To effectively reach younger generations, OPCFHK harnessed the power of play, pairing a short presentation with role-playing, music and movement, and simulated monkey surveys for older kids. The aim is not only to model correct behaviours for animal encounters, but also to empower kids to share what they' ve learned with others.

#### 導賞團

雖然野豬和猴子不屬於人類社區,但牠們在大自然 棲息地卻扮演著重要角色。在導賞團中,保育基金向 參加者講解大自然的平衡法則,並教導他們成為公民 科學家,鼓勵他們以正確的方式幫助動物,例如參與 郊野公園清潔活動,以清理人類食物垃圾等。

#### **GUIDED TOURS**

Wild pigs and monkeys don't belong in human settlements, but they play a vital role in their own natural environment. In guided tours, OPCFHK explained this natural balance while also teaching participants how to become citizen scientists, and encouraged the public to take correct actions that actually do help the animals, such as clean-up activities that remove human food from country parks.



#### 保育無限「耆」

部分長者可能出於對大自然的愛護及對動物的憐憫之心,加上渴望與動物連結,養成餵飼野生動物的習慣。保育基金透過「保育無限耆工作坊」,鼓勵長者改以參與宣傳教育活動及製作手工藝的方式,以負責任的行為表達對大自然的熱愛,為下一代樹立榜樣。

#### **REACHING OUT TO SENIOR CITIZENS**

For older citizens with a deep love of nature, compassion for animals and desire to connect, feeding wildlife may be a longstanding habit. Through Responsible Citizenship Workshops, OPCFHK encourages elders to redirect that compassion through education and handcrafts, offering ways to express their love for nature and model responsible behaviours to the next generation.

#### 重要數字一覽 BY THE NUMBERS

40 <sup>場教育攤位</sup> booth days

14,000+ 人次參觀教育攤位 booth visitors

16 個導賞團 guided tours

260+ 人次參加導賞團 guided tour participants

63 場學校講座 school talks

**3,200+** 人次參加學校講座 school talk participants

20 場長者工作坊 elderly worksho

300+ 人次參加長者工作坊 participants in the elderly workshops

## 「自然保育小先鋒」培訓計劃: 培育保育新世代

THE CONSERVATION EDUCATION EXPERIENCE PROGRAMME FOR YOUTH (CEEPY): NURTURING THE NEXT GENERATION OF CONSERVATIONISTS



要讓新生代明白環境保育的重要性,必須從幼年 教育做起。保育基金在劉鑾雄慈善基金的資助下,由 二零二一年起展開為期五年的「自然保育小先鋒」培訓 計劃,每年招募三百名四至六年級小學生參與保育 活動及工作坊,傳遞有關氣候變化及生物多樣性的 知識,培育他們成為未來保育領袖,共同應對氣候變化 的挑戰。

Reaching the next generation on the importance of environmental conservation means starting early. Since 2021, OPCFHK's Conservation Education Experience Programme for Youth (CEEPY) has operated with the support of the Joseph Lau Luen Hung Charitable Trust. This five-year programme recruits 300 students from Primary 4-6 each year to take part in conservation activities and workshops that teach them about climate change and biodiversity, developing them into Conservation Youth Leaders ready to lead their peers in the fight against climate change.



#### 重要數字一覽 BY THE NUMBERS

2023/24年度 In 2023/24

300+ 名學生參與 students recruited

10 間學校參加

primary schools participated

自2021年起 Since 2021

900+ <sup>名學生參與</sup> students recruited

30 間學校參加 primary schools participated













#### 啟迪創新保育行動

每間參與計劃的學校都會選定一個環保議題, 在保育基金教育團隊的指導下進行專題研習, 並以新穎創意方式展示報告成果。過程中參與的 學生會克服種種難關,提出各種新奇有趣的 想法,激發出他們的保育思維與科技視野。其中 德萃小學在校內設立「龜客棧」進行保育研習, 藉以宣揚保護原生淡水龜的重要性。



#### INSPIRING INNOVATIONS IN CONSERVATION

As part of the programme, each school's students selected an issue to focus their attention on, working on it as a project under the guidance of OPCFHK team who encouraged them to think outside the box and be innovative in their final presentations. The children took up the challenge, coming up with a variety of inventive ideas that cultivated a conservation mindset and an eye for science. For example, freshwater turtle conservation has drawn the attention of Hilary's Primary School, where students shared the need for and importance of protecting native freshwater turtles by setting up a "turtle inn" at the school to learn more about valuable local freshwater species.

#### 你知道嗎?

在2015年聯合國氣候變化大會(COP21),各國 達成受法律約束的多邊協定,承諾在2100年前將 全球暖化幅度控制在2°C甚至1.5°C以下。然而, 根據目前情況,預計在約定限期前,全球升溫幅度 將達至3℃至4℃。

COP21舉行六年後,第26次締約方會議(COP26) 於2021年在格拉斯哥舉行,會上各國再次呼籲 共同合作,目標是在2050年前實現淨零碳排放 並遏止雨林流失,以符合將全球暖化控制在1.5°C 以下的必要條件。然而,即使有關目標達成,預計 全球氣溫仍將攀升2.4°C。

將全球暖化幅度控制在1.5°C以下,是保護生物 多樣性及確保人類安全的重要一步,我們必須 採取更多有力措施,你的支持亦必不可少。

#### **DID YOU KNOW?**

At the 2015 United Nations Climate Change Conference (often referred to as COP 21), nations agreed in a legally binding treaty to keep global warming below 2°C by 2100, preferably even below 1.5°C. Unfortunately, under present conditions, it is predicted that the world will see warming of 3-4°C in this time frame.

Six years later in 2021, at COP 26 in Glasgow, countries again pledged to work together, aiming for net zero carbon emissions by 2050 and to end deforestation, both essential to reach the 1.5°C target; even with these measures, temperatures are still expected to climb by 2.4°C.

Limiting global warming to 1.5°C, a necessary step to preserve biodiversity and ensure human safety, will require more urgent measures and your support.

UNIVERSITY STUDENT SPONSORSHIP PROGRAMME (USSP) IN WILDLIFE CONSERVATION: NURTURING THE NEXT GENERATION

保育基金於二零零五年推出「野外生態保育大學生 贊助計劃」(USSP),與本地專上學院攜手為年青人 提供亞洲保育工作實習機會,鼓勵他們投身保育行業。 USSP於疫情後在二零二三至二零二四年度復辦,資助 二十四名學生分別前往內地、台灣、越南、菲律賓、 馬來西亞及斯里蘭卡,與九個野外生態保育及研究 團隊合作,參與當地的生態保育工作。過程中,學生 除了學習如何推行研究項目,並有機會與專家及保育 人士交流,在指導下成功籌辦講座和導賞團等社區 推廣活動,協助提升公眾保育意識。





的

**STUDENTS** 



「我們很高興可以參與由Oceanus Conservation 主辦的海洋峰會。菲律賓的保育工作十分完善, 發展遠勝許多國家。在海洋峰會上,我們認識到 保育工作都不只專注於研究海藻和珊瑚覆蓋率 等海洋環境變化,更著重人類在海洋保育當中 扮演的角色。」

"It was our pleasure to be able to join the ocean summit organised by Oceanus Conservation. Conservation works in the Philippines were well developed and far ahead of some other countries. At the ocean summit, we learned that conservation work is focussed not just on investigating marine environment changes in the Philippines, such as variations in algal coverage and coral coverage, but more importantly, on the role of human connections in ocean conservation."

> USSP學生Odelia Lai Odelia Lai, USSP Alumni

Through the University Student Sponsorship Programme in Wildlife Conservation (USSP), OPCFHK has partnered with local institutions since 2005 to offer young people the opportunity to gain hands-on experience in conservation projects throughout Asia and inspire them to pursue careers in the field. The USSP resumed in 2023/24 after the pandemic, connecting nine wildlife conservation and research teams with a total of 24 students to participate in wildlife conservation works in Mainland China, Taiwan, Vietnam, the Philippines, Malaysia and Sri Lanka. Participating students learned how to carry out research projects, met with experts and conservationists, and received guidance on organising community outreach activities such as talks and field-excursions to raise public awareness.

#### 巴拉望社區策動的儒艮監測及保育計劃

儒艮是大型海洋草食哺乳類動物,以海草為主食,牠們 擁有像船槳一樣的寬大前鰭和尾鰭,主要生活於溫暖 的淺水海岸。由於動作緩慢,加上儒艮肉、油脂、皮膚、 骨頭及牙齒在東南亞國家都具有商業價值,令牠們 容易成為捕獵目標。

四名學生诱過USSP計劃跟隨巴拉望非政府機構 Community Centred Conservation(3C)了解如何透過 社區計劃保育儒艮。實地考察期間,參與學生展開多元 學習旅程,不單出席了當地的海洋峰會,還參與實地 生態調查,考察海草與儒艮的分佈情況,以及協助推動 一個社區教育計劃,從不同體驗中學習。

#### COMMUNITY-DRIVEN MONITORING AND CONSERVATION OF PALAWAN'S THREATENED DUGONGS

Dugongs are large marine mammals with paddle-like front flippers and a tail made for swimming in warm and shallow coastal waters. These gentle giants are herbivorous and graze primarily on seagrasses, but their slow pace makes them an easy target for hunters: their meat, oil, skin, bones, and teeth are all valuable commodities in Southeast Asian

To learn how local NGOs work to conserve dugongs through community engagement in Palawan, OPCFHK connected four students with Community Centred Conservation (3C) through the USSP. During the work placement, 3C arranged for students to participate in a local ocean summit, on-site ecological survey and monitoring of seagrasses and dugong distribution, as well as a community education programme, as part of a diversified learning experience.

#### 湖北長江天鵝洲白鱀豚國家級自然保護區 長江江豚研究

長江江豚是中國長江獨有物種,也是世上現存唯一 一種淡水江豚,屬國家一級保護動物,然而長江沿岸 一帶的發展工程及污染持續為其野生族群存續帶來

保育團隊現主要透過原地和遷地保育,以及人工繁殖 方式守護長江江豚。USSP兩名學生在華中農業大學 研究團隊帶領下,深入認識遷地保育與人工繁殖方法、 了解實驗室工作、江豚的日常照顧、病症診斷與監護 工作等。

#### PRESERVING THE YANGTZE FINLESS PORPOISE IN THE TIAN' EZHOU BAIJI DOLPHIN NATIONAL NATURE RESERVE, HUBEI

Found only in the Yangtze River in China, the Yangtze finless porpoise is also the only freshwater porpoise in the world. The species has been designated a first-grade state protected animal, but the wild population is still under threat from construction and pollution due to development along the Yangtze River.

Conservation for the Yangtze finless porpoise currently consists of in-situ, ex-situ, and artificial breeding approaches. Two students were connected with the research team from Huazhong Agricultural University to learn more about the ex-situ conservation approach and artificial breeding, including laboratory work, daily husbandry, disease diagnosis and monitoring.





「要在野外見到長江江豚並不容易,我們很幸運 能夠在自然保護區內見到一條。這條長江江豚的 出現,反映了保育措施與棲息地管理工作能夠 塑造合適環境,有助復育長江江豚。此外,我們 還獲分派照顧獲救的長江江豚,有機會與牠們 近距離接觸,這同樣是寶貴的經驗。」

"The Yangtze finless porpoise is very hard to observe in the wild. We were lucky to encounter a wild individual within the Nature Reserve. Its presence indicated that the pro-active conservation and habitat management works provided a suitable environment for the reintroduction of native individuals to the area. In addition, another treasured experience was being deployed to take care some of the rescued Yangtze finless porpoises, which allowed us to interact with them up at close range."

> USSP學生周詩雅 Chow Sze Nga, USSP Alumni

#### 重要數字一覽 BY THE NUMBERS

2023/24年度 In 2023/24

24 <sup>名學生</sup> students

6 間本地大學 local universities

○ 個保育研究項目 Participating in conservation research projects

自2021年起 Since 2021

448

次實地考察

field trips

15 個亞洲國家/地區 Asian countries/regions



## 生態保衛賽2023:

## 推出全新構思吸引保育生力軍

**RUN FOR SURVIVAL 2023:** 

NEW ELEMENTS DRAW ATTENTION TO THE RACE TO RAISE AWARENESS

FOR CONSERVATION



#### 全城起跑關注生物多樣性

「生態保衛賽2023」以「守護生物多樣性」為主題 於二零二三年十二月三日在海洋公園舉行,推廣守護 生物多樣性及海洋保育的重要性。活動成功吸引社會 大眾踴躍參與,並獲得各界領袖、保育大使及星級跑手 全力支持。其中漁農自然護理署副署長黎存志、 海洋公園公司行政總裁暨保育基金受託委員會成員 黃嗣輝、保育基金總監祝效忠、保育基金大使吳旭茉、 江忞懿及莊莎娜、保育基金海洋保育大使陳天明、藝人 洪永城更聯同保育基金企業伙伴及海洋公園董事局 成員一同挑戰三公里領袖賽,並在活動上分享日常 環保心得,鼓勵大家支持生態保育,攜手共建永續 未來。



#### A DIVERSE CROWD RUNNING TOGETHER FOR BIODIVERSITY

On 3 December 2023, OPCFHK's annual Run for Survival themed "Saving Our Biodiversity" — was held at Ocean Park to promote awareness of the importance of biodiversity and marine conservation. Alongside significant public attention, the event garnered widespread support from influential public leaders, dedicated OPCFHK ambassadors, and accomplished celebrity runners. Among the notable attendees were: Patrick Lai, Deputy Director of the Agriculture, Fisheries and Conservation Department (AFCD); Ivan Wong, Chief Executive of Ocean Park Corporation and Trustee Member of OPCFHK; Howard Chuk, Foundation Director of OPCFHK; OPCFHK Ambassadors Jessica Ng, Yvette Kong and Sarah Zhuang; OPCFHK Marine Conservation Ambassador Harry Chan; beloved artist Tony Hung; and OPCFHK's corporate partners; and board members of Ocean Park Corporation, who wholeheartedly embraced the challenge of the 3 km Leaders' Run. This esteemed panel of conservation headliners also shared valuable eco-friendly insights for everyday life, encouraging participants to actively engage in safeguarding the environment in their day-to-day routines and collaborate with intent on collectively shaping a sustainable future.









#### 全民參與共同保育

活動為不同年齡和程度人士開設多個組別,包括 五公里計時賽(個人組)、三公里同樂跑(個人組)、 三公里同樂跑(家庭組)及一公里歡樂跑(家庭組)。 其中一公里歡樂跑為今年增設的組別,旨在讓大小 朋友化身「保育英雄」,以趣味的方式學習如何保護 生物多樣性,培育下一代的保育意識。參賽家庭須合力 完成五個互動關卡,認識不同野生動物正面對的威脅。

重要數字一覽 BY THE NUMBERS

HK\$1,350,000 <sup>善款</sup>

>1,800 <sup>名參賽者及義工</sup> runners and volunteers

#### A RACE FOR EVERYONE

A number of different races were offered to suit participants of different ages and experience levels, including the 5 km Timed Challenge (Individual), 3 km Fun Run (Individual), 3 km Fun Run (Family) and, introduced just this year, the 1 km Kid Run (Family). This exciting addition aims to inspire the next generation by inviting families to embrace their role as "Conservation Heroes" and have fun while learning how to protect biodiversity. Together, participating families conquered five checkpoints with interactive activities that showcased the threats faced by wildlife.



#### 你知道嗎?

「生態保衛賽」參賽者、義工及贊助商慷慨撥捐的善款, 將會用作支持保育基金的亞洲野生生態保育工作。 保育基金自2005年擴展以來,已撥款資助587項研究, 涵蓋物種包括鯨豚、大熊貓及淡水龜等,資助總額 逾港幣1.12億元。

#### **DID YOU KNOW?**

With the generous support of participants, volunteers and sponsors, the funds raised from the charity run were used to support Asian wildlife conservation efforts. Since its expansion in 2005. OPCFHK has allocated over HK\$112 million to fund 587 research projects on species including cetaceans, giant pandas, and freshwater turtles.

# 育 感 言 **INSPIRATIONAL SHARING**

「生物多樣性正面臨嚴峻威脅。有見及此, 保育基金多年來積極支援本地及亞洲各地的科研 及保育工作,同時推行不同環境教育項目,凝聚 一眾愛護自然生態人士的力量,實踐我們對保護 生物多樣性的承諾。」

"Biodiversity is facing severe risks. Uniting nature enthusiasts in our shared commitment to safeguard our biodiversity, OPCFHK has consistently supported research and conservation endeavours within local and Asian communities for numerous years, alongside a wide range of education programmes and initiatives."

基金主席陳晴

「地球上的物種豐富多樣,人類與自然生物互為 影響、互相依存。現時全球的生物多樣性岌岌 可 危,我 希 望 能 為 環 境 略 盡 綿 力。因 此 我 支 持 保育基金的工作,亦呼籲大家積極保護野生物種 的棲息環境。」

"Human beings and the diverse species on Earth are interconnected in a complex web of life. Recognising the threats to biodiversity, I am determined to make a positive impact on the environment. One way I intend to do this is by supporting OPCFHK, while also urging others to join me in safeguarding nature and wildlife."

> 藝人洪永城 Tony Hung, Artist

Judy Chen, Foundation Chair of OPCFHK

## 二零二三年港島區賣旗日: 多管齊下籌款保護生物多樣性

HONG KONG ISLAND FLAG DAY 2023: RALLYING DIVERSE FUNDRAISING CHANNELS TO CONSERVE BIODIVERSITY

二零二三年八月二十六日,保育基金在港島區舉行一年一度的賣旗日,召集義工擔任社區保育大使在街上賣旗籌款,同時呼籲大家身體力行支持保育。籌款活動同時推出以「齊來守護生物多樣性」為主題的金旗認捐套裝,包括由著名時裝設計師譚燕玉(Vivienne Tam)設計的環保袋和限量版金旗貼紙。旗紙印上十五款動物大使圖案,包括紅毛猩猩、黃胸鵐、小熊貓、亞洲象、綠海龜及本地原生物種眼斑水龜等,宣傳生物多樣性的重要性。

為了進一步提高籌款額,保育基金於二零二三年八月 一日至三十一日期間在滙豐銀行PayMe流動應用 程式發佈電子籌款廣告,所有善款將用作支持保育基金 本地鯨豚擱淺處理行動、社區教育計劃及本地物種 的科研項目。

















On 26 August 2023, OPCFHK organised its annual Flag Day event on Hong Kong Island, recruiting volunteers as community conservationists to sell flag stickers on the streets to inspire people to take action to conserve biodiversity. The fundraising campaign also launched a special Gold Flag set, themed "Let's Protect Our Biodiversity Together", that included an eco-bag designed by famous fashion designer Ms Vivienne Tam and a limited edition gold flag sheet. To everyone's delight, 15 animal ambassadors were featured in the stickers, including orangutans, yellow-breasted buntings, red pandas, Asian elephants, green sea turtles, and local native Beale's-eyed turtles, to promote the importance of biodiversity.

To further the fundraising impact, OPCFHK also solicited donations through placement of an e-donation banner on the HSBC PayMe app from 1 to 31 August 2023. All proceeds from the event went to support OPCFHK's cetacean stranding work in Hong Kong, community education programmes and scientific research projects on local species.

重要數字一覽 BY THE NUMBERS

HK\$761,112 <sup>善款</sup>
raised

>2,400 <sup>名義工</sup>
volunteers

「保育英雄支援計劃」募集社會各界力量,全力支持保育基金踐行保育亞洲野生生態的工作。氣候變遷、塑膠污染、過度捕撈、非法野生動物貿易及棲息地喪失等因素,都使生物多樣性變得岌岌可危。個人及企業機構均可以透過單次或每月捐款參加此計劃,向保育科學研究及教育出一分力,一同保護地球及

The Conservation Hero Support Programme allows people from all walks of life to aid OPCFHK in its conservation mission on behalf of Asian wildlife. Climate change, plastic pollution, overfishing, the illegal wildlife trade and habitat loss are all putting biodiversity at severe risk. Through this programme, individuals and corporations can make a single or recurring monthly donation to advance conservation research and education.

保育英雄支援計劃:

踴躍奉獻 成就美好未來

PITCHING IN TO MAKE A DIFFERENCE

CONSERVATION HERO SUPPORT PROGRAMME:

保育基金特別鳴謝以下企業伙伴於二零二三至二零二四年度的慷慨支持:

OPCFHK would like to thank the following corporate partners in particular for their generous support in 2023/24:

鉑金級捐款者(港幣10萬元或以上) PLATINUM DONORS (\$100,000 AND ABOVE)

生態系統。



華僑銀行(香港)有限公司 OCBC Bank (Hong Kong) Limited

金級捐款者(港幣6萬元或以上) GOLD DONORS (HK\$60,000 AND ABOVE)



恒生銀行有限公司 Hang Seng Bank Limited



Payment Asia Services Limited

銀級捐款者(港幣3萬元或以上) SILVER DONORS (HK\$30,000 AND ABOVE)



三共生興(亞太)有限公司

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銅級捐款者(港幣1.8萬元或以上) BRONZE DONORS (HK\$18,000 AND ABOVE)



寶達貿易發展 (香港) 有限公司 Boatat Trading Development (Hong Kong) Limited



Chi Ho Development Holdings Limited



中遠海運港口有限公司 COSCO SHIPPING Ports Limited

#### 加入我們成為「保育英雄」

不論是單次或是每月捐款, 你所捐出的一分一毫均會直接成為 我們保育工作的動力,用於:

- 資助本地保育研究項目
- · 「海洋生物擱淺行動組」工作
- 學校及機構保育教育活動

#### JOIN US AS A CONSERVATION HERO

Show your support with a one-time donation or a monthly contribution! Your donation will directly contribute to our conservation efforts, such as:

- The funding of research projects in Hong Kong and Asia
- The Marine Life Stranding Response Programme
- $\bullet \quad \hbox{Conservation education for schools and organisations}$

掃描了解詳情!

SCAN TO LEARN MORE!

## 基金之友:

## 以熱誠點燃保育力量

FRIENDS OF THE FOUNDATION: TURNING PASSION INTO PRAXIS

保育基金每年為「基金之友」舉辦各種有趣的保育 活動及限定體驗,讓會員探索和認識亞洲野生動物 及香港生態環境,會員更有機會參加保育基金的 研究項目,親身參與守護物種棲息地,以行動實踐 保育熱誠。

OPCFHK offers exciting conservation experiences and exclusive engagement programmes for Friends of the Foundation (FOF), packed with opportunities to explore and learn more about Asian wildlife and Hong Kong ecology. Many of these activities involve participating in OPCFHK's conservation projects, allowing nature lovers to get hands-on in the effort to preserve habitats and put their passion for the wild into action.



#### 與EDRINGTON HONG KONG合作清潔泥灘

「基金之友」在Edrington Hong Kong的慷慨支持下於二零二四年一月 二十日及五月四日舉行兩場免費導賞團,帶領會員分別參觀下白泥及 水口的馬蹄蟹棲息地,並身體力行清潔泥灘,保護馬蹄蟹棲息地。

#### MUDFLAT CLEAN-UP WITH EDRINGTON HONG KONG

With the generous support of Edrington Hong Kong, FOF members took a complementary guided tour of the horseshoe crab habitats at Ha Pak Nai and Shui Hau on 20 January and 4 May 2024, respectively, before rolling up their sleeves to help pick up trash and restore the mudflats for this precious creature.

#### 夜間牛熊導當團

「基金之友」分別於二零二四年六月十四日及二十八日舉辦導賞團 與會員分享香港夜間生態。參加會員能夠藉此機會一睹各種夜間 動物,包括蠑螈、蜥蜴、本地蛙類及多種原生動物,欣賞香港入夜後的 大自然奇觀。

#### **NIGHT ECOLOGY TOURS**

In 2024, FOF shared Hong Kong's nighttime ecology with members through two tours held on 14 and 28 June 2024. Participants enjoyed this opportunity to catch a rare glimpse of the area's "night shift", including newts, skinks, several local frog species and other native nocturnal animals.



#### 響應大自然的召喚 NATURE IS CALLING

成為「基金之友」會員,優先參與一系列保育活動,與我們一起攜手保護大自然。 Become a FOF member and enjoy priority access to a wide range of conservation activities and events. Help us safeguard nature together!

掃描了解詳情! SCAN TO LEARN MORE!



# 攜手商界: 共同拓展保育新機遇

**COLLABORATING WITH THE BUSINESS SECTOR:** IDENTIFYING NEW OPPORTUNITIES FOR CONSERVATION TOGETHER

有賴香港商界及企業伙伴的支持,保育基金本年度得以 繼續推行各項別具意義的生態保育宣傳活動,並作出更多 創新嘗試,向公眾推廣環保永續的訊息。

With the support of Hong Kong's business sector and its corporate partners, OPCFHK is able to explore new ideas for the promotion of wildlife and ecosystem conservation and protection, including a wide variety of engaging events and activities.



#### 姜濤香港後援會

姜濤香港後援會向保育基金捐出港幣 三十八萬元,並向首三十名加入「保育英雄支援 計劃」的參加者贈送《12怪盜》電影換票證,讓 保育成為流行文化的一部分。

#### **KEUNG SHOW HONG KONG FAN CLUB**

The Keung Show Hong Kong Fan Club showed its enthusiastic support for OPCFHK's conservation efforts by making a donation of HK\$380,000. It also offered "WE12" movie tickets to the first 30 new members of the Conservation Hero Support Programme, leveraging pop culture for conservation.



## 由香港中華煤氣有限公司資助的 二零二三至二零二四年度

「野外生態保育大學生贊助計劃」

是次計劃在香港中華煤氣有限公司資助下,成功招募 二十四名本地大學生參與亞洲地區九個野外生態保育 及研究項目。獲資助學生回港後舉辦了九場社區教育 活動及分享會,分享活動所得,並與保育基金代表一同 於二零二四年八月十五日,參與由香港中華煤氣有限公司 及港華智慧能源有限公司主辦的「生物多樣性暨新能源 高峰論壇」。

#### THE HONG KONG AND CHINA GAS COMPANY & THE 2023/24 UNIVERSITY STUDENT SPONSORSHIP PROGRAMME (USSP)

With the generous support of The Hong Kong and China Gas Company, 24 local university students took part in nine conservation and research projects in Asia in 2023/24. The students organised nine community education and sharing sessions of their own upon their return to share what they learned, and joined OPCFHK representatives in the Biodiversity and New Energies Symposium organised by The Hong Kong and China Gas Company and Towngas Smart Energy to commemorate National Ecology Day on 15 August 2024.

#### 香港康得思酒店兒童天地計劃-小熊貓康迪及康康

香港康得思酒店將其品牌大使康迪及康康毛公仔 所得的零售收益撥捐予保育基金,以作保育瀕危 物種小熊貓及其棲息地的用途。此外,酒店住客亦可 將善款放置於客房內提供的慈善捐款信封內,以 支持保育基金的工作。

#### **RED PANDA AMBASSADORS OF CORDIS KIDS PROGRAMME - CODY & COCO**

Long-time OPCFHK partner Cordis, Hong Kong shows its ongoing support through its Cordis Kids Programme via sales of the programme's red panda plush toys, Cody and Coco, with all proceeds going to help conserve this endangered species and its habitats. Guests can support OPCFHK by placing donations in the charity campaign envelopes provided in guestrooms.

## 香港海洋生物救護及 教育中心開放日導賞團

THE HONG KONG MARINE LIFE STRANDING AND EDUCATION CENTRE'S OPEN DAY GUIDED TOURS

香港海洋生物救護及教育中心會定期舉辦開放日 導賞團,帶領公眾深入了解保育基金工作,認識 鯨豚擱淺救援行動,同時宣揚海洋保育訊息,呼籲 公眾身體力行支持環保。此項活動在二零二三至 二零二四年度深受公眾歡迎,報名反應踴躍。

The regular open day guided tours at the Hong Kong Marine Life Stranding & Education Centre offer the public abehind-the-scenes look at OPCFHK's work and helps raise awareness on issues of marine conservation, cetacean strandings and response actions – as well as actions everyone can take to help. The 2023/24 guided tours received overwhelming support from the public.

重要數字一覽 BY THE NUMBERS

100 個導賞團 tours

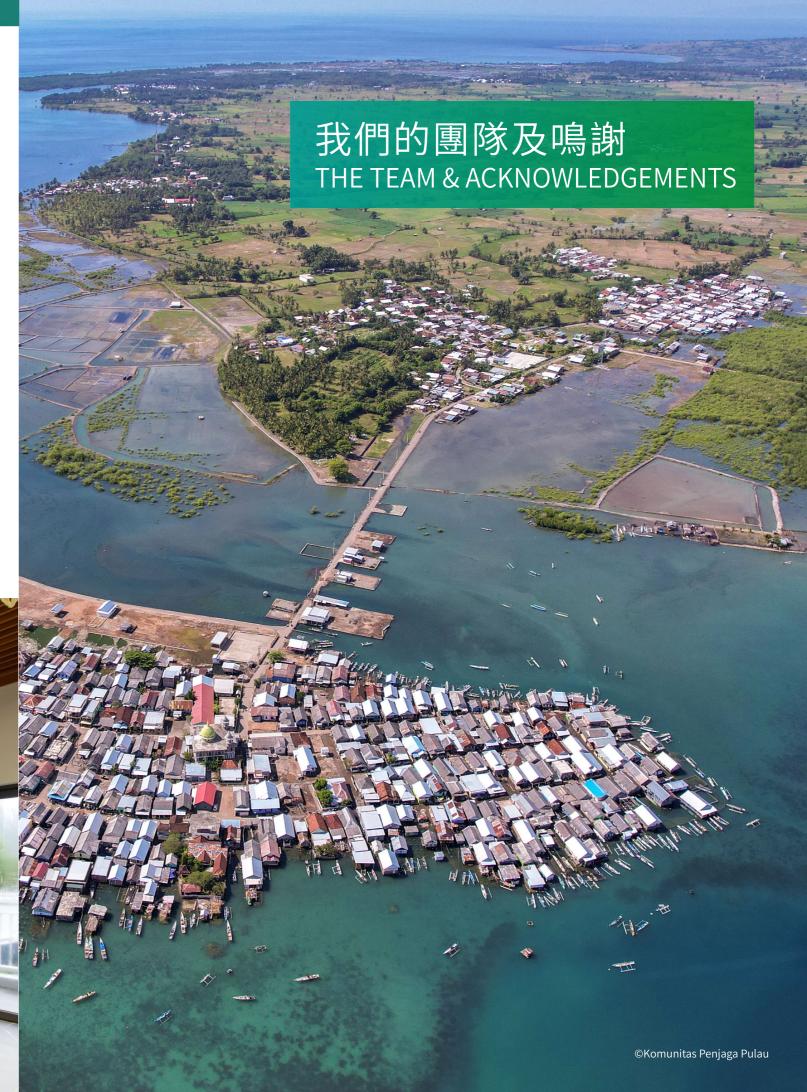
1,299 <sup>名參加者</sup> participants











## 我們的團隊

#### THE TEAM

鳴謝 **ACKNOWLEDGEMENTS** 

受託委員會成員 MEMBERS OF BOARD OF TRUSTEES



陳晴女士, JP Ms. Judy CHEN, JP 基金主席 Foundation Chair



鄭詩韻女士 Ms. Michelle CHENG



孔令成先生, GBS, JP Mr. Leo KUNG Lin-cheng, GBS, JP



盧佩瑩教授 Prof. Becky LOO Pui-ying



龐建貽先生, BBS, JP Mr. Paulo PONG Kin-Yee, BBS, JP



韋念時教授 Prof. Gray A. WILLIAMS



黃智祖先生, GBS, JP Mr. Joe WONG Chi-cho, GBS, JP



陳善瑜女士 Ms. Ysanne CHAN



方蘊萱女士 Ms. Loretta FONG Wan-huen



李繩宗先生 Mr. Matthias LI



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曾立基先生 Mr. Richard TSANG



黃嗣輝先生 Mr. Ivan WONG



黃思遠先生 Mr. Stephen WONG

梁鈞澤

助理科研經理

Assistant Scientific Manager

#### 職員(截至二零二四年六月三十日) STAFF MEMBERS (AS OF 30 JUNE 2024)

祝效忠 Howard CHUK Hau-chung 基金總監

Foundation Director 姚姵如 Pearlie YIU Pei-yu

傳訊經理 Communication Manager

温翰芝 Judy WAN Hon-chi 保育及社區合作經理 Conservation & Community Partnerships Manager

黃潔婷 Alexandra WONG Kit-ting 高級野猴生態調查員

Senior Survey Officer

## 黃麗媚

Josephine WONG Lai-mei 副總監 Deputy Director

李煥生 Calvin LEE Woon-sang

高級發展經理 Senior Development Manager

羅卓文 Kayson LO Cheuk-man 項目經理 Project Manager

華嘉昌 Abcat WA Ka-cheong

野猴生態調查員

## 鄧慧芬

Fanny TANG Wai-fan 行政經理 Administration Manager

Senior Community Education Officer

李美芳 譚寧鋒 Aiden TAM Ning-fung Ada LI Mei-fong

助理發展經理 助理發展經理 Assistant Development Manager Assistant Development Manager

黃加蔚 霍家樂 Kenneth WONG Ka-wai 項目主任 Project Officer 高級社區教育主任

John FOK Ka-lok

陳思允

Edgar LEUNG Kwan-chak Sharon CHAN Sze-wen 科學主任 Scientific Officer

> 鄧耀聰 Jason TANG Yiu-chung 發展主任 Development Officer

梁錦鴻 Ray LEUNG Kam-hung 社區教育主任 Community Education Officer





陳國基先生, GBS, IDSM, JP Mr. CHAN Kwok-ki, Eric, GBS, IDSM, JP

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鮑磊先生, GBS, CBE Mr. Martin BARROW, GBS, CBE

施雁飛女士 Mrs. Anthea STRICKLAND

特使 ADVOCATE



陳凱韻女士 Ms. CHAN Hoi-wan

大使 AMBASSADORS



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郭晶晶女士 Ms. GUO Jing-jing

海洋保育大使 Marine Conservation Ambassador



劉鳴煒先生, GBS, JP Mr. LAU Ming-wai, GBS, JP





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劉心悠女士

Ms. Annie LIU

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Mr. Harry CHAN, мн

Marine Conservation Ambassador

Marine Conservation Ambassador

海洋保育大使

海洋保育大使

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Ambassador

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林嘉欣女士 Ms. Karena LAM



孔美琪博士, BBS, JP Dr. Maggie KOONG, BBS, JP 教育大使

**Education Ambassador** 



吳旭茉女士 Ms. Jessica NG





張家朗先生, SBS Mr CHEUNG Ka-long, SBS

Ambassador

榮譽核數師 **HONORARY AUDITOR** 

安永會計師事務所 Ernst & Young

保育基金聘用二十五位兼職保育助理支援本地保育工作,包括「海洋生物擱淺行動組」,並成立了一個由項目經理Karthi MARTELLI獸醫督導的特別小組, 專責調查香港野猴數量及為野猴進行絕育手術。

 $The Foundation \ also \ employs \ 25 \ part-time \ Conservation \ Assistants \ to \ support \ local \ conservation \ efforts \ including \ the \ Marine \ Life \ Stranding \ Response \ Team.$ A special team supervised by Project Manager Dr. Karthi MARTELLI was formed to conduct macaque population survey and contraception in Hong Kong.

## 委員會

#### COMMITTEE

保育基金於過往一年承蒙籌款委員會、提名委員會、科研委員會及科研顧問委員會的支持,特此致謝。 於二零二三至二零二四年度,委員會成員,包括業界的專業人士和獨立權威的科學家,為我們的籌款活動 及研究申請書提供其專業知識和寶貴意見,為我們作出了不可多得的貢獻。

We would like to extend our deepest gratitude to our Fundraising Committee, Nomination Committee, Scientific Committee and Scientific Advisory Committee. In 2023/2024, the members of the Committees, including the professionals from various industries and the independent and respected scientists, contributed their expertise and knowledge in fundraising and evaluating our conservation funding proposals. Their insightful advice throughout the year has been invaluable.

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曾立基先生(主席)	Mr. Richard TSANG (Chair)	Chairman, Strategic Public Relations Group	
陳晴女士, JP	Ms. Judy CHEN, JP	Foundation Chair, OPCFHK	
陳善瑜女士 (自二零二三年十月起)	Ms. Ysanne CHAN (Since October 2023)	Deputy Chief Executive & Chief Financial Officer, Ocean Park Hong Kong	
鄭紹康先生	Mr. Francis CHENG	Founder & CEO, Number One PR Communication Limited	
祝效忠先生	Mr. Howard CHUK	Foundation Director, OPCFHK	
司徒廣釗先生	Mr. Ralph SZETO	Co-Founder, CMRS Group	
黃嗣輝先生	Mr. Ivan WONG	Chief Executive, Ocean Park Hong Kong	
黃德源先生	Mr. Peter WONG	Managing Director, Integrated Publicity Services	
鄔翁嘉穗女士	Mrs. Virginia WU	Director, Seven Sea Latex & Chemical Corp. Limited	

## 提名委員會 NOMINATION COMMITTEE

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陳晴女士, JP	Ms. Judy CHEN, JP	Foundation Chair, OPCFHK
祝效忠先生	Mr. Howard CHUK	Foundation Director, OPCFHK
盧佩瑩教授	Prof. Becky P. Y. LOO	Professor, Department of Geography, The University of Hong Kong
黃嗣輝先生	Mr. Ivan WONG	Chief Executive. Ocean Park Hong Kong

#### 科研委員會 SCIENTIFIC COMMITTEE

\* 增選成員 Co-opt members

刊前女兵自 50		
盧佩瑩教授(主席)	Prof. Becky LOO P. Y. (Chair)	Professor, Department of Geography, The University of Hong Kong
祝效忠先生	Mr. Howard CHUK	Foundation Director, OPCFHK
韋念時教授	Prof. Gray WILLIAMS	Professor, School of Biological Sciences, Faculty of Science, The University of Hong Kong
張肇堅教授*	Prof. CHEUNG Siu-gin	Associate Professor, Department of Chemistry, City University of Hong Kong
方家熙教授*	Prof. James FANG Kar-hei	Associate Professor, Department of Food Science and Nutrition, The Hong Kong Polytechnic University
邱建文教授*	Prof. QIU Jianwen	Professor and Associate Head of Department, Department of Biology, Hong Kong Baptist University
蘇詠梅教授*	Prof. Winnie SO Wing-mui (Retired in June 2024)	Professional Advisor for the Jockey Club Project on Primary Science Education, Department of Science and Environmental Studies, The Education University of Hong Kong
談儉邦教授*	Prof. Kevin TAM Kim-Pong	Professor, Division of Social Science, Hong Kong University of Science and Technology
徐子祺教授	Prof. Martin TSUI Tsz-ki	Associate Professor, School of Life Sciences, The Chinese University of Hong Kong

科研顧問委員會 SCIENTIFIC ADVISORY COMMITTEE

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魏偉寶先生	Mr. Grant ABEL	Director of Life Sciences, Seattle Aquarium
Bob L. BROWNELL Jr. 博士	Dr. Robert L. BROWNELL Jr.	Senior Scientist, Southwest Fisheries Science Center, Marine Mammal & Turtle Division, NOAA
陳堅峰先生	Mr. Simon CHAN Kin-Fung	Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department
張定安博士	Dr. Lewis CHEUNG Ting-on	Professor in Tourism and Events Management, York Business School York St. John University, UK
范朋飛教授	Prof. FAN Pengfei	Professor, School of Life Sciences, Sun Yat-Sen University
霍年亨博士	Dr. Lincoln FOK	Associate Professor, Department of Science and Environmental Studies, Education University of Hong Kong
侯智恆博士	Dr. Billy HAU	Principal Lecturer, School of Biological Sciences, The University of Hong Kong
姜波處長	Mr. JIANG Bo	Director of General Office, China Fisheries Law Enforcement, Ministry of Agriculture and Rural Affairs
賈力誠博士	Dr. Leszek KARCZMARSKI	Director, Cetacean Research Institute
Nancy KARRAKER博士	Dr. Nancy KARRAKER	Associate Professor, University of Rhode Island
Kanitha KRISHNASAMY 女士	Ms. Kanitha KRISHNASAMY	Director, TRAFFIC Southeast Asia
劉惠寧博士	Dr. Michael LAU Wai-neng	Chairman, The Hong Kong Wetlands Conservation Association (HKWCA)
馬伯樂獸醫	Dr. Paolo MARTELLI	Director of Veterinarian Services, Ocean Park Hong Kong
Daniel K. ODELL博士	Dr. Daniel K. ODELL	Former Senior Research Biologist, Hubbs-Sea World Research Institute
冉江洪教授	Prof. RAN Jianghong	Professor, College of Life Science, Sichuan University
冼雍華博士	Dr. Simon SIN	Assistant Professor, School of Biological Sciences, The University of Hong Kong
Craig STRANG博士	Dr. Craig STRANG	Associate Director for Learning and Teaching, Lawrence Hall of Science, University of California, Berkeley
William STREET先生	Mr. William STREET	Senior Vice President, Indianapolis Zoo
宋亦希博士	Dr. SUNG Yik-hei	Adjunct Assistant Professor, Science Unit, Lingnan University
王福義博士	Dr. WONG Fook-yee	Adjunct Professor, Geography Resource Management, The Chinese University of Hong Kong
嚴佳代教授	Dr. YEN Chia-dai	Assistant Professor, National Taiwan Ocean University
張和民教授	Prof. ZHANG Hemin	Director, China Conservation and Research Center for the Giant Panda
張澤鈞教授	Prof. ZHANG Zejun	Vice President, College of Life Science, China West Normal University

# 首席研究員

## PRINCIPAL INVESTIGATORS

陸生哺乳類 TERRESTRIAL MAMMALS				
首席研究員 PRINCIPAL INVESTIGATOR	所屬機構 INSTITUTE/ ORGANISATION	研究物種 SUPPORTED SPECIES	研究工作 CONSERVATION PROJECT	
Mr. Kuenzang DORJI	Nature Study Center	金葉猴,戴帽葉猴 Gee Golden Langur, Capped Langur	透過公民科學來強化不丹和印度之間 瀕危金葉猴的跨境保育合作 Strengthening transboundary conservation cooperation on endangered Gee golden langur ( <i>Trachypithecus geei</i> ) between Bhutan and India, through citizen science	
Mr. Robert TIMMINS	Saola Foundation	中南大羚 Saola	以創新方法尋找並拯救亞洲獨角獸— 中南大羚 An innovative approach to finding, and saving, the Asian Unicorn, the Saola	
Ms. Prativa KASPAL	Women for Conservation Nepal	印度穿山甲 Indian Pangolin	尼泊爾的印度穿山甲保育: 評估 現狀及氣候適應性,並加強保育 教育和社區監測計劃 Conservation of the Indian pangolin in Nepal: Assessing the status, climate resilience and scaling up conservation education and community-led monitoring programmes	
李德生教授 Prof. LI Desheng	中國大熊貓保護 研究中心 China Conservation and Research Center for Giant Panda	大熊貓 Giant Panda	放歸大熊貓生境選擇與覓食策略研究 Study on habitat preference and feeding strategy of reintroduced giant pandas	
楊旭煜先生 Mr. Xuyu YANG	四川省自然保護地 工作總站 Sichuan Provincial Nature Reserve Work Station	大熊貓 Giant Panda	制定涼山山系大熊貓自然保護區訓練課程及實施 Liangshan Mountain giant panda nature reserve training course	

首席研究員 PRINCIPAL INVESTIGATOR	所屬機構 INSTITUTE/ ORGANISATION	研究物種 SUPPORTED SPECIES	研究工作 CONSERVATION PROJECT
Dr. Nayana WIJAYATHILAKA	斯里賈亞瓦德納普拉科特大學 University of Sri Jayewardenepura	樹蛙 Bambaradeniya's Shrub Frog, Dayawansa's Shrub Frog, Jagath Gunawardana's Shrub Frog, Karunarathna's Shrub Frog, Newton Jayawardanei's Shrub Frog, Samarakoon's Shrub Frog	斯里蘭卡中部高地特有極度瀕危樹蛙 的遺傳多樣性、生態、行為及保育 Genetic diversity, ecology, behaviour and conservation of critically endangered, endemic shrub frogs in the central hills of Sri Lanka
Dr. Hai Ngoc NGO	Green Environment Centre	友蓮瞼虎,憑祥瞼虎, 長鬣蜥/中國水龍, 湯氏壁虎/春境壁虎 Huu Lien Tiger Gecko, Chinese Leopard Gecko, Chinese Water Dragon, Canh's Gecko	研究和保育越南與中國跨境區石灰岩地貌的豐富爬行物種多樣性Exploration to safeguard the high value of reptile diversity on the spectacular limestone landscape in the transboundary region between Vietnam and China
Mr. Ashish BASHYAL	Biodiversity Conservancy Nepal	恆河鱷 Gharial	在氣候變化下,為實證保育尼泊爾 巴迪亞國家公園極危恆河鱷提供 科學信息 Generating scientific information for evidence-based conservation of critically endangered gharials ( <i>Gavialis gangeticus</i> ) i Bardia National Park of Nepal, in the face of climate change
Prof. Eskandar RASTEGAR POUYANI	哈基姆·薩卜澤瓦爾 大學 Hakim Sabzevari University	Kuhrang山蝰,岩蝰, 魏氏蝰,Latifi蝰 Kuhrang Mountain Viper, Armenian Viper, Wagner's Viper, Latifi's Viper	評估伊朗山丘蝰屬 (蛇亞目: 蝰科) 的保育情況 In situ conservation assessment to the genus Montivipera ( <i>Serpentes: Viperidae</i> ) in Iran

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首席研究員 PRINCIPAL INVESTIGATOR	所屬機構 INSTITUTE/ ORGANISATION	研究物種 SUPPORTED SPECIES	研究工作 CONSERVATION PROJECT	
Dr. Chloe HATTEN	香港城市大學 City University of Hong Kong	-	採用跨專業方式實行保育並打擊香港非法野生動物貿易:在亞洲國際城市中建立聯網來實現可行的研究成果Multidisciplinary approaches towards conservation and combating the illegal wildlife trade in Hong Kong: creating strong connections for actionable research outcomes in Asia's global city	
Dr. Shamen VIDANAGE	IUCN Sri Lanka Country Office	斯氏角吻蜥,Alwis東虎, 大足樹蛙,斯里蘭卡陸蛙, 斯里蘭卡曙鳳蝶, 斯里蘭卡嘯鶇 Mountain Horned Agama, Alwis's Day Gecko, Bigfoot Shrub Frog, Montane Frog/Sri Lanka Paddy Field Frog, Malabar Rose, Sri Lanka Whistling-thrush	建立私人管理土地以保育生存於 保護區網絡之外的全球受威脅物種 Establishing a privately managed landscape to conserve globally threatened species occurring outside the protected area network	
Mr. Juliarta BRAMANSA OTTAY	Borneo Nature Foundation Indonesia	婆羅洲白鬚長臂猿,馬來熊, 馬來穿山甲,巽他雲豹, 馬來犀鳥,婆羅洲猩猩 Bornean White-bearded Gibbon, Sun Bear, Sunda Pangolin, Sunda Clouded Leopard, Rhinoceros Hornbill, Bornean Orangutan	婆羅洲南部瀕危猿類棲息地的保護、恢復和可持續管理 Protection, restoration and sustainable management of endangered ape habitat in Southern Borneo	
Mr. Made WEDANA	The Aspinall Foundation (Indonesia)	-	加強社區護林員計畫以打擊印尼 西爪哇省Mt. Tilu 自然保護區的 野生動物罪案 Strengthened community ranger programme to fight wildlife crime in Mt. Tilu Nature Reserve, West Java, Indonesia	
Mr. Suraj BARAL	Nepalese Ornithological Union	孟加拉鴇 Bengal Florican	促進舒克拉潘塔國家公園的緩衝區 與農田土地共存,以保育極度瀕危的 孟加拉鴇 Promoting land-sharing in farmlands of Suklaphanta National Park Buffer Zone to conserve critically endangered Bengal Florican	
Prof. Qasim AYUB	馬來西亞蒙納士大學 Monasa University Malaysia	盔犀鳥,馬來犀鳥 Helmeted Hornbill, Rhinoceros Hornbill	進行基因組學研究以保育馬來西亞的 盔犀鳥和馬來犀鳥 Conservation genomics for helmeted and rhinoceros hornbills in Malaysia	

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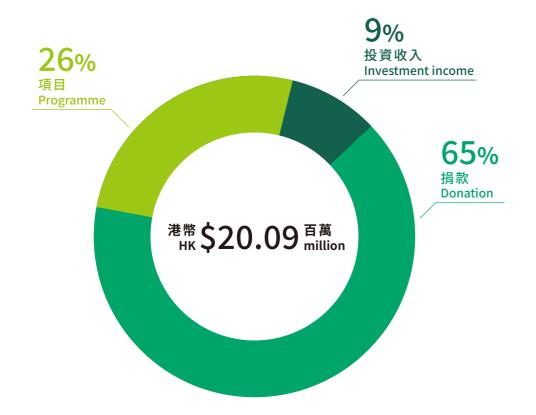
LEE Woon Sang MAN Huen Pok NG Cheuk Hin SAU Fei Man TSE Mei Ying



## 二零二三至二零二四年度財務摘要

FINANCIAL SUMMARY 2023/24

## ■ 2023/24 收入INCOME



收入	INCOME	2023/24 港幣HK\$	2022/23 港幣HK\$
捐款	Donation	13,131,017	10,908,656
項目	Programme	5,225,980	5,871,753
投資收入	Investment income	1,736,788	970,508
		總額 TOTAL 20,093,785	17,750,917

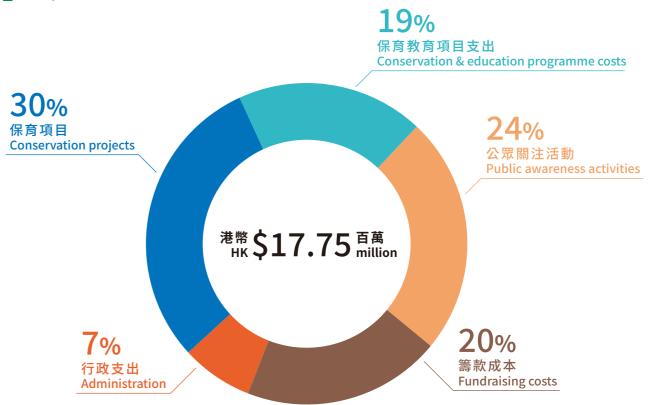
保育基金本年度總收入為港幣二千零九萬元,較去年增加百分之十三,並錄得盈餘港幣二百三十四萬元,主要是由於 捐款及投資收入增加。

而由於外展活動增加,加上保育基金在本年度增撥資源贊助亞洲區內保育項目,促使年內總支出上升百分之十三, 達港幣一千七百七十五萬元。

我們在保育研究、公眾關注活動及其他保育及教育計劃上的開支佔總支出的百分之七十三,其中保育研究的支出達港幣五百三十萬元,用以資助十五個涉及三十四個物種的全新項目,以及眾多已開展的項目及公眾關注活動。展望來年,除了支援亞洲保育項目外,保育基金並將啟動全新計劃,透過香港生物多樣性保育基金為本地項目提供經費資助,同時與科學家及各持分者緊密合作,拓展在香港以至全亞洲的保育藍圖。

註:核數師報告及財務報表已上載至保育基金網頁,以供閱覽。

#### 2023/24 支出EXPENDITURE



支出	EXPENDITURE		2023/24 港幣HK\$	2022/23 港幣HK\$
保育項目	Conservation projects		5,296,304	4,711,961
保育教育項目支出	Consevation & education programme costs		3,439,997	3,768,710
公眾關注活動	Public awareness activities		4,292,975	3,052,960
籌款成本	Fundraising costs		3,500,735	3,232,771
行政支出	Administration		1,221,141	917,879
		總額 TOTAL	17,751,152	15,684,281

Total income for the year increased by 13% to HK\$20.09 million. Overall, OPCFHK recorded a surplus of HK\$2.34 million, mainly due to increased income from donations and investment income.

Total expenditure increased by 13% to HK\$17.75 million with increased outreach activities and increased funding support to conservation projects in Asia.

Of our total expenditure, 73% was spent on conservation projects, public awareness activities and other local conservation and education programmes. Our projects expenditures amounted HK\$5.30 million, stemming from 15 new projects for 34 species, and many ongoing projects and public awareness efforts throughout the year. In the coming year, apart from conserving biodiversity in Asia, OPCFHK will begin a new initiative to sponsor local projects through the Hong Kong Biodiversity Conservation Fund for the first year. In addition to on-going efforts to collaborate with scientists and stakeholders, we are looking to make an even bigger impact in Asia and Hong Kong.

Remarks: Auditor's report and full financial statements were uploaded to website for reference.

## 香港海洋公園保育基金

OCEAN PARK CONSERVATION FOUNDATION, HONG KONG

香港 香港仔 海洋公園 Ocean Park, Aberdeen, Hong Kong



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