

4 環境教育推廣與遊憩服務 Environmental Extension Education and Recreational Services

多樣性的動物與生態展示

本年度內推出「牛轉乾坤」牛年生肖特展、「蜻豆初開時」蜻蜓特展、「聲音之美生物特展」，以及「寵物終身照護」動物福祉觀念常設展等多項教育特展

1. 牛轉乾坤—牛年生肖特展

(展期) 自110年1月30日起至110年11月30日止

110年是十二生肖的牛年，從1月30日起在兒童動物區、教育中心、熱帶雨林區前花坡等地點，推出「牛轉乾坤—牛年生肖特展」，帶領大家認識牛科動物這個大家族成員。整個牛科共包含143種動物，可以定義為廣義的牛，但牛科動物其實包含了牛與羊，而牛科動物最為人津津樂道的，莫過於4個胃的奧妙與「反芻」的特殊習性。此外人類的生活幾乎處處可以看到牛各種產製品，舉凡食用牛肉、牛奶、皮衣、皮包、皮鞋、皮帶、皮革、帳棚、牛車、耕作牛等，涵蓋了各種民族的食衣住行等多樣利用。開幕活動透過「犀牛面對面VR親親體驗」、「角和腳傻傻分不清楚」、「此胃非彼胃」、「牛造型筆筒DIY」、「牛創意春聯DIY」、「牛年生肖提燈DIY」及「超牛戰隊紀念章收集」等活動，增進大家對牛科動物的認識。



充滿喜氣的彩繪牛



人類的生活幾乎處處可以看到牛各種產製品(黃牛)



牛轉乾坤牛年生肖特展 跟著動物園的「超牛戰隊」，一起來探索牛的知識



「牛牛大觀園」位於熱帶雨林區正對面的草坡處

Diverse Exhibitions on Animals and Ecologies

The zoo has launched various special education exhibitions in the year, such as the special exhibition of the ox year, special exhibition of dragonflies "As the Dragonflies", "The Beauty of Sound Special Biological Exhibition" and the permanent animal welfare exhibition "Quality Pet Care for Life".

1. Special Exhibition of Ox Year

The exhibition was from January 30, 2021 to November 30, 2021

2021 is the ox year of the Chinese zodiac. Starting from January 30, the "Special Exhibition of the Ox Year" will take place at Children's Zoo, Education Center and the flower hill in front of the Tropical Rain Forest Area. Through this exhibition, people will know about the big family of Bovidae. The Bovidae has 143 species, which can be generally defined as "cattle". Nevertheless, the Bovidae family actually includes goats and sheep as well. The most interesting thing about Bovidae species is that they are ruminants and have four stomachs. Besides, various cattle products can be seen almost everywhere in human life. For example, beef, milk, leather cloths, leather bag, leather shoes, belt, leather, tent, ox cart and farming cattle, covering almost every category from food to clothing to housing and to transportation. At the opening ceremony, the zoo held a series of activities, including "Rhino Face to Face VR Kiss", "Indistinguishable Horns and Feet", "This Stomach is not that Stomach", "Ox Pen Holder DIY", "Creative Spring Couplets for the Year of Ox DIY", "Ox Lantern DIY" and "Super Ox Team Medal Collection", to facilitate people's understanding of Bovidae animals.



牛轉乾坤牛年生肖特展開幕活動—牛年生肖提燈



牛轉乾坤牛年生肖特展開幕活動—牛造型筆筒DIY



牛轉乾坤牛年生肖特展開幕活動—牛年春聯DIY



牛轉乾坤牛年生肖特展開幕活動



2. 「蜻豆初開時」蜻蜓特展

〔展期〕自110年10月30日起至112年3月31日止

蜻蜓和豆娘是一群生活在水邊的昆蟲，牠們具有敏銳的視力和旺盛的精力，在夏天水邊經常可見到牠們活動的身影。夏天也是牠們求偶和產卵的主要季節，各種愛心姿勢和蜻蜓們精采的互動，讓人怦然心動。相信透過蜻蜓特展，大家能更認識這群有魅力的水邊精靈，同時喚起對水資源與水域生態環境保護議題的關心與注意。



小紅蜻蜓吃飛蟲 (李宜龍 / 攝)

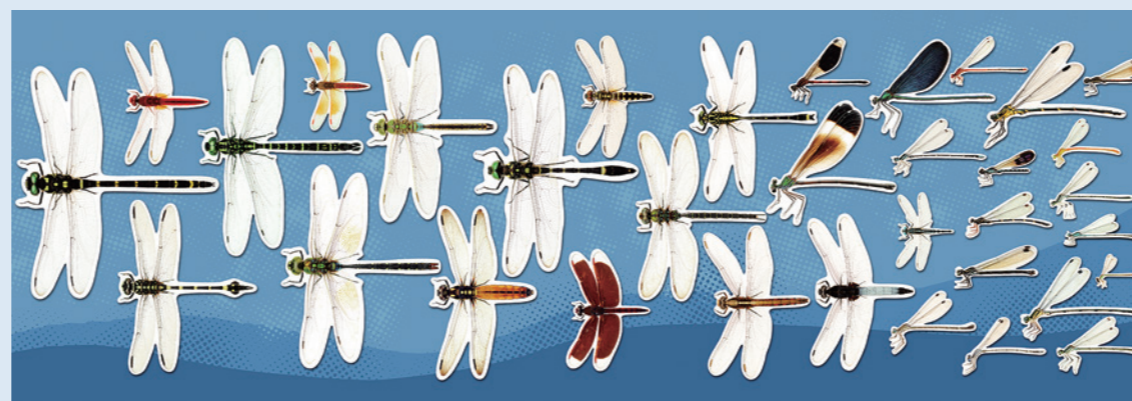
2. "Special Exhibition of Dragonflies

The exhibition was from October 30, 2021 to March 31, 2023

Dragonflies and Damselflies are a group of insects living by the water. They have sharp eye sight and exuberant energy; and can often be seen by the water during summer. Summer is also the primary courtship and spawning season that you can see various loving gestures and wonderful interactions, making you palpitate. It is believed that, through this special exhibition of dragonflies, you will be able to know more about these charming waterside elves; and will pay attention to and be interested in water resource and water ecological environmental protection related issues.



蜻豆初開時~做伙看田螺



臺北市立動物園於昆蟲館推出「蜻豆初開時-臺北動物園蜻蜓特展」



本次展覽是全臺首次以蜻蜓目昆蟲作為主題的特展

3. 「聲音之美生物特展」

〔展期〕自109年8月1日起至110年10月31日止

與臺北市政府教育局輔導團合作，持續於教育中心《聲音之美生物特展》結合科學與藝術的生物特展，精選臺灣8種生物，以聲音之美為主題，融合視覺及音樂藝術，建置互動體驗、內容豐富的特展，包括臺灣獼猴、臺灣騷蜚、五色鳥、領角鴉、臺灣熊蟬、中華白海豚、歐亞水獺及翡翠樹蛙，以聲音及發聲原理，融合視覺及音樂藝術，並呼應12年國教跨領域統整理念，讓民眾透過耳朵來聆聽大自然聲音，用眼睛觀察生物發聲的特性，動手體驗生物發聲的科學原理與樣態。



聲音之美特展

3. "Beauty of Sound and Biological Special Exhibition"

The exhibition is from August 1, 2020 to October 31, 2021

Cooperated with Department of Education, Taipei City Government to continuously hold "Beauty of Sound and Biological Special Exhibition" at the Education Center. This special biological exhibition has combined science and arts, selected 8 kinds of creatures in Taiwan, with the theme of beauty of sound, integrated visual and musical arts, built interactive experiences and rich content special exhibitions including Formosan macaque, katydid (*Mecopoda elongata*), Taiwan barbet, collared scops-owl, cicada (*Cryptotympana holsti*), Indo-pacific humpback dolphin (*Sousa chinensis*), Eurasian otter, and Emerald green treefrog (*Zhangixalus prasinus*) through using the principles of sound and vocalization, integrating visual and musical arts and responding the 12-year cross-domain integration concept of basic education, to allow people to listen the sounds of nature through their ears, observe the characteristics of biological vocalization with their eyes, and experience the scientific principles and patterns of biological vocalization with hands.





4. 「寵物終身照護常設展」

110年6月30日更新為常設展

以兩棲類與爬蟲類動物作為寵物有逐步普及化的趨勢，然而飼養這群特別的寵物絕沒想像中簡單，飼主除了需要評估自身條件、做好事前準備是否適合飼養寵物，伴隨著寵物體型成長與年長，還要考慮是否能持續提供良好且適當的照養環境等。健全動物福祉是本次常設展希望為想養寵物的飼主引入健全的飼養觀念，教導大家飼養寵物前所需的準備工作，歡迎喜愛動物的大小朋友一起學習，成為一位滿分飼主！



動物寶寶常因為小巧的外型受人喜愛，當寵物越長越大、甚至出現疾病，部分飼主的興趣很容易逐漸消退，從而導致隨意丟棄放生的行為



飼養寵物必須給予一輩子的照護，不能不想養了就任意拋棄或放生



飼養寵物前要先做好功課哦！

推展主題教育活動及保育行銷

本年度1至5月中旬在新冠肺炎疫情狀態下，本園配合防疫安全措施持續執行核定環境教育課程，辦理「探索兩棲爬蟲的奧秘」、「酷COOL節能屋—三隻小豬來減碳、水來挑戰」、「動物保母講古」、「昆蟲保育小學堂」等，然因應後續新冠肺炎嚴峻的疫情，本園自5月15日起閉園3個月，面對不一樣的挑戰，動物園開發出新型態的



螢火蟲營隊大合照

網路教學的模式，其中包括針對國小學童的「不可思議的動物園」營隊課程。與日本生物學家合作針對高中生及社會人士所設計的「臺日高中生生物調查體驗營線上課程」。另將本園110年環保署補(捐)助計畫主題為「動物與牠們的棲息地—SDGs與綠色生活環境教育計畫」部分改為線上辦理，其中包括「教師培力線上研習」、「異想雨林世界」與「一個紅毛猩猩的故事」線上闖關活動，即使受疫情影響，仍致力推廣聯合國永續發展目標(SDGs)與生物多樣性保育概念並連結至民眾個人日常生活中可實踐的綠色消費與行動，共計辦理418場課程活動，參與人數1萬5,418人次。另因應場域特殊性並發展其他多元環境教育活動方案，如週日綠手指教室—環保DIY、「牛轉乾坤·牛年生肖營」體驗營、「動物御膳房，上

4. "Quality Pet Care for Life"

Renewed as a permanent exhibition on June 30, 2021

Although there is a tendency for people to consider amphibians and reptiles as pet, it is definitely not that simple to feed these special pets. The owners shall not only evaluate their personal conditions and make a good preparation before taking them home, but also think clearly if they can provide these pets a good and appropriate caring environment as they will become bigger and older. The objectives of setting this permanent exhibition are to ensure that those who wish to become a pet owner shall be appropriately educated and pay attention to animals' welfare. This exhibition will teach everyone preparation works required before taking a pet back home. The parents and children who love animals are welcome to learn more and become a 100% pet owner!



兩棲爬蟲動物會藉由曬太陽使體溫上升，必須提供具有多種溫度的微環境(亞達伯拉象龜)



有些物種在幼年期與成年後的體型外表天差地別(鱷龜)

Themed Educational Activities and Conservation Marketing

During the pandemic situation between January and middle of May, the Zoo has, in compliance with pandemic prevention and control measures, carried out environmental education courses such as "Exploring the Mysteries of Amphibians and Reptiles", "Cool Energy-Saving House - The Three Piggies' Carbon Reduction and Water Saving



農村體驗營-採收回來的茭白筍，由學員自己動手剝除外殼

Challenges", "Animal Keeper's Talk" and "Insect Conservation Classroom". Nevertheless, as the pandemic become even more serious, the Zoo was closed for three months starting from May 15. Facing such different challenge, the Zoo has developed a new type of online teaching mode, such as the "The Unbelievable Zoo During the pandemic" camp specially designed for elementary school students; and "Taiwan-Japan Senior High School Biological Investigation Camp Online Course" specially designed for senior high school students and people from the society under the collaboration with Japanese biologists. Moreover, the Zoo also changed a part of "Animals and Their Habitats - SDGs and Green Living Environment Education Program", a program subsidized by Environmental Protection Administration (EPA) in 2021, to an online program. "Teachers Empowerment Online Learning", "The Magical World of Rain Forest" and "About an Orangutans" online tournament



菜！」研習營、「大象保育員」體驗營及環境教育團體預約課程等，共計辦理326場課程暨活動，2萬2,871人參與。

結合保育主題、節慶等重點，辦理多元教育推廣活動，讓民眾透過參與，建立保育觀念，110年於新冠疫情趨緩之際，配合主題節慶辦理多項活動如元旦連假打卡活動贈限量「獺金尋寶」貢糖、「牛轉乾坤—牛年生肖特展」、「同心協力·危險歸0—Save Pangolin」穿山甲日、「干我什麼『樹』」植樹節活動、「Zoobaby」自導式闖關活動、「愛地球綠行動-親愛的動物寶寶，地球沒塑的！」世界地球日系列活動、大貓熊「團圓、團圓」17歲生日會、「三貓悠遊中秋綠色市集」、「野生動物福祉月」系列活動、「石虎大貓熊線上遊」IG限時動態濾鏡等活動，共約47場次，計有1萬5,891人參與。



「熊熊森友會」-分組體驗式課程，讓孩子們學習團隊合作



「熊熊森友會」-學員尋找野生動物的足跡

另透過多元管道如雙語解說設施、編印出版遊園摺頁、動物園雜誌等文宣及出版品，傳達生態保育觀念，亦透過機關網即時更新之本園中英文網站資訊服務，新聞發布、社群媒體，例如Facebook活動、Youtube新聞影像、「愛臺北APP—愛遊動物園」資訊服務，以多元活動內容及通路向外推展保育及教育訊息，提供觀眾豐富線上學習寓教於樂的服務。110年疫情期間，除定期性的新聞發布外，更運用社群媒體及套裝遊戲，以直播雙向互動等線上課程或體驗學習型態，以動物保母講古及行銷活動等野生動物溫馨話題，提供觀眾無法實體到園的動物園服務，以遠距模式引領民眾認識野生動物。線上學習服務如辦理票選活動、網路直播影片等，主題內容包含預測石虎、金剛猩猩新生寶實性別及徵名系列活動及抽獎、「沒『人』氣動物園」動物直播影片、「圓寶」抓周及大貓熊慶生系列活動、動物會客室線上直播、特展聲音之美—樹林間的雙蟲奏APP線上遊戲趣、中秋節線上柚燈大賞活動、園慶線上「第107屆ZOO界保育頒獎典禮」系列活動、「野生動物守護者」生態保育成果海報競賽等教育行銷活動，共約45場次，計有40萬4,006人參與。



保育員體驗營

activities are also included in the program to, regardless of the impact of COVID-19, promote United Nation's SDGs and biodiversity conservation concepts; and to connect them to people's ordinary life in order to become practical green consumption and actions. This year, the zoo has totally held 418 course activities participated by 15,418 people in total. Besides, in response to site specificity and development of multiple environmental education activities (e.g., "Sunday Green Finger Classroom – Eco-friendly DIY", "Special Exhibition of the Ox Year", "Animals' Imperial Kitchen, Serve the Dishes!" camp, "Elephant Zookeeper" experiencing camp and other courses for environmental education group to reserve). There were a total of 326 courses and activities be organized with 22,871 participants.

The zoo held a number of educational promotions and camps related to animal protection and conservation this year. The purposes of holding these activities were to enhance all citizens' recognition towards the zoo's philosophy of animal conservation and to deliver relevant message through different channels. As the pandemic of COVID-19 has gradually slowed down in 2021, the zoo has organized a number of activities to echo the festival themes such as get the "Otter Gold Treasure Hunt" peanut candy by checking in social media during the New Year vacation; "Special Exhibition of the Ox Year"; the World Pangolin Day event "Work Together, Zero Risk – Save Pangolin"; the arbor day event "An Inseparable Relationship with the Tree"; the self-guided tournament activity "Zoobaby"; the World Earth Day activity "Love Earth, Green Action – Love Cubs and Leave no Plastic on the earth", the 17th birthday party



動物御膳房，上菜！研習營

of the giant pandas "Tuan Tuan and Yuan Yuan"; "Sanmao Moon Festival Green Market"; "Wildlife Welfare Month" series activities; the online Instagram filter interactive activity "Leopard Cat – Giant Panda Online Interactive Game"; and so on. There were 47 sessions with a total of 15,891 participants.

In addition, not only are the zoo's ecological and conservation concepts delivered through multiple channels including bilingual facilities, fold-out of the zoo, zoo magazine and other brochure and publications, but also the information services on the zoo's Chinese and English websites – such as press release and social media information (e.g., Facebook activities, Youtube new image and "Love Taipei APP – Tour to Taipei Zoo") – are updated in real-time through the zoo's official website. The purposes are to promote conservation and educational information through multiple activity contents and channels; and to provide the audience with abundant online learning and entertaining services. During the pandemic of 2021, the zoo is not only releases news on a regular basis, but also uses social media and package games to, through online courses/experience learning (i.e., live broadcast of two-way interaction) or affectionate wildlife subjects (i.e., Animal Keeper's Talk and marketing activities), provide the audience with services that meet their demand without going to the zoo (e.g., guiding citizens to know about wildlife in distance). The online learning services refer to online voting and live stream videos with various themes. For example, the leopard cat and Western lowland gorilla cub gender guessing and naming activities incorporated with a lucky draw; live stream the animal video "The Zoo without People"; Yuan Bao's one-year-old catch and giant pandas' birthday celebration activities; live stream the "Animal Chatroom" show; The "Duet Among the Forest APP Online Game" of the special exhibition "The Beauty of Sounds"; the Online Moon Festival Pomelo Lantern Award event; Taipei Zoo's online anniversary activity "The 107th Zoolloween Animal Conservation Awarding Ceremony"; poster contest for the ecological conservation results of "The Wildlife Guardian"; and so on. The zoo totally held 45 sessions of education and marketing activities participated by 404,006 people.



建構節水節能環教園區

在節水節能教育推廣方面，持續推動園區節水節能改善工作，並辦理遊客參觀本園「節水節能設施及雨/中水利用」導覽解說，本年度受疫情影響，共計26人次。

節約用水方面，本園定期清洗園區雨水蓄水池，增加雨水回收利用率，每月回收可用雨水逾2,000噸，並定期維護鳥園、穿山甲館、熱雨區、大貓熊館及兒童動物區中水系統，結合回收雨水，提供環境造景、植栽澆灌、水生植物、公廁等用水，以降低自來水用量。另進行全園水池及水管查漏，改善管壓及管路漏水現象，並更換老舊閥體及給水器材，以提升用水品質及降低用水量，本年度較基期（107）年用水量節約9.2%（52,575度水）。

節約能源方面，本園持續進行各館區照明燈光由T5及T8螢光燈具改為LED節能燈具，節省用電量，預估汰換後每盞燈具用電效率提升約35%，每年約可節約4萬4,702度電；另維護本園太陽能發電設施，以降低夏季用電尖峰負載，每年約可供電8萬度。持續辦理年度空調系統保養，並進行全園老舊空調汰換，改善空調主機用電效率，以期達每年節約用電1%之目標。

逐年編列預算，完善現有水力、電力及空調監控系統，有效管控用水及用電，並能即時發現管路異常問題，以及瞭解用水用電流量與使用情形，進而避免水電浪費，達到有效節水節電目標。



梅花鹿是一種溫馴的動物，生性敏感而機警
(詹德川 / 攝)



居住在兒童區的普通獼



伊蘭羚羊打架
(詹德川 / 攝)

Construct Water-Saving and Energy-Saving Environmental Education Zoo

In the aspect of educational promotion of saving water and energy, we continue to promote the improvement work in the zoo towards saving water and energy, and handled the guests in visiting the "Water-Saving and Energy-Saving Facility and the Use of Rain and Grey Water" guided tour, with a total of 26 people this year due to the impact of COVID-19 pandemic.

Regarding water saving: Washed the zoo's rainwater tanks to better collect and use the rainwater. The zoo has recycled over 2,000 tons of water each month for regular maintaining water system of Bird World, Pangolin Dome, Tropical Rainforest Area, Giant Panda House and Children's Zoo combined with rainwater recovery, and providing water for environmental landscaping, plant watering, aquatic plants, and public toilets to reduce tap water consumption. To enhance the water quality and reduce the water consumption, the zoo also checked all ponds and pipelines to improve pipeline pressure, detect and fix leaks, and replace old valve blocks and water supply equipment to improve the water quality. This year, we saved 9.2% (52,575 cubic meters) of the water usage compared to how much we used in 2018.

Regarding energy saving: the zoo continuously changing the lights in each fenced animal area from the original T5 and T8 types to LED light bulbs to improve energy saving and save power consumption. It is estimated that after the replacement, the electricity efficiency of each lamp can increase by about 35%, and about 44,702 kWh of electricity can be saved every year. In addition, the photovoltaic power generation facilities of the zoo are maintained to reduce the peak load of electricity consumption in summer, which can supply approximately 80,000 kWh every year. The zoo continuously carry out the annual maintenance of air-conditioning system and the replacement of old air-conditioners throughout the zoo, to improve the electric power utilization efficiency of air-conditioning hosts, with a view to achieving the goal of saving 1% of electricity every year.

We budget every year to improve the water system, electric system and air-condition monitor system, effectively controlling our water, electricity and we are able to detect the abnormal situation and responds. We know the water and electricity usage and how they went to prevent any waste so that we can save energy, achieving our goals.



馬來長吻鱷入冬後活動量會減至最低，每年10月到隔年4月間，保育員也不需要餵食牠們



自製腐熟有機質資材與運用推廣

本園以動物排遺與食餘植物性資材產製腐熟有機質資材(俗稱堆肥)，本年度共生產腐熟有機質資材共280.06公噸作為景觀綠地土壤改善。同時配合市府田園城市政策，本園無償提供臺北市信義區新仁里、興雅里、財團法人臺北市松年長春社會福利基金會等共計3所機關及非營利組織申請

本園自製動物糞便腐熟有機質資材共7.98公噸於綠美化植栽使用，同時搭配環境教育解說共計14人次參與，另參與跨機關單位多元推廣「友善農耕」及「循環農業」等食農教育，同時達到知識與資源共享目的。

Production, Utilization and Promotion of Self-Made Mature Organic Matter

The zoo uses animal feces and plant food waste to produce mature organic matter. In this year, 280.06 tons of mature organic matter are made and used to change the composition of the soil. In the meantime, complying with the City Garden policy, the zoo provided free mature organic matter to Xinren Village and Xingya Village of Xinyi District in Taipei City and to Taipei City Songnian Zhong-

hun Social Welfare Foundation. Totally 7.98 metric tons of mature organic matter was distributed to those institution mentioned above, and environmental education sessions were held along with this activity to promote the concept of "eco-friendly farming" and "circular agriculture", sharing knowledge and resources with the others.

遊客數及入園門票統計

本年度遊客量177萬2,753人次，門票收入6,435萬5,973元；新光特展館入館參觀遊客95萬4,370人次、穿山甲館入館參觀遊客55萬0,946人次；遊客列車搭車人數達157萬9,692人次(購票乘車達121萬6,438人次)。



Visitor Count and Entrance Ticket Count

This year there were 1,772,753 visitors, with an income of NT\$64,355,973 with the tickets; there were 954,370 visitors that visited the special exhibition house; there were 550,946 visitors that visited the pangolin dome; there are 1,579,692 visitors took the zoo shuttle bus, 1,216,438 visitors purchased tickets for the shuttle buses.



解封開園·遊客入園防疫措施



8/1-8/9動物園微解封 各項措施指引		
實聯制	門票	入園限制
實聯制掃描2週1 -1922簡訊 -台北通	電子票證4選1 (悠遊卡、一卡通、 愛金卡、有錢卡) 於自動驗票閘門付 款入園或使用本園 購票網站提前購票	1.入園預約制 (每日入園人數上限為16000人) 2.入園全程配戴口罩 3.遊客列車採梅花座 4.賣站、餐廳及部分區域暫停開放 (除防疫需要) 5.園區內禁止飲食 (除防疫需要外，遊客、員工於此舉後立即關閉入口)
詳細資訊請見本園網站公告·造成不便之處·敬請見諒·		