3 動物保育與研究 Animal Conservation and Research

動物經營管理

1. 動物飼養展示與繁殖

園區飼養展示之動物以脊椎動物為主，共約351種2,425隻（未計算昆蟲、部分魚類及農委會收容計畫動物）。本年度內保育繁殖計畫成果，累計達43種150隻動物個體，繁殖小貓熊、小爪水獺、水豚、白頸狐猴、加拿大河狸、伊蘭羚羊、弓角羚羊、狐獴、網紋長頸鹿、羊駝、東非劍羚、南美小食蟻獸、非洲野驢、無尾熊、斑哥羚羊、歐亞水獺、查普曼斑馬、梅花鹿、阿氏夜猴、青鸞、栗喉蜂虎、黑天鵝、紅鸚、智利紅鶴、灰頸冠鶴、黑頸天鵝、黑頸冠鴿、領角鴞、鴛鴦、鵜鶘、紅藍吸蜜鸚鵡、綠絲冠僧帽鳥、亞達伯拉象龜、犀牛圓尾蠑螈、射紋陸龜、豹紋象龜、三色枯葉蛙及臺北赤蛙等瀕臨絕種或珍貴稀有之野生動物。

斑哥條紋羚寶寶「小雅」是目前在戶外活動場內唯一還沒有長角的嬌小羚羊

飼育動物數量統計表

種類 / 時間	哺乳類		鳥類		爬蟲類		兩棲類		魚類		總計	
	種數	隻數	種數	隻數	種數	隻數	種數	隻數	種數	隻數	種數	隻數
107年底	96	768	106	710	118	632	24	265	7	50	351	2,425

Animal Operation and Management

1. Animal Feeding Exhibition and Breeding

The zoo features mainly vertebrata and has 351 animal species (totally 2,425 animals, excluding insects, certain fish species and the rescued animals). Regarding the wildlife conservation and management plan of this year, the Zoo has successfully fostered 150 endangered or precious wildlife from 43 species, including red panda (*Ailurus fulgens*), oriental small-clawed otter (*Aonyx cinerea*), capybara (*Hydrochoeris hydrochaeris*), black-and-white ruffed lemur (*Varecia variegata*), American Beaver (*Castor canadensis*), common eland (*Taurotragus oryx*), addax (*Addax nasomaculatus*), meerkat (*Suricata suricatta*), reticulated giraffe (*Giraffa reticulata*), alpaca (*Vicugna pacos*), East African oryx (*Oryx beisa*), Southern tamandua (*Tamandua tetradactyla*), African wild ass (*Equus africanus somaliensis*), koala (*Phascolarctos cinereus*), bongo (*Tragelaphus eurycerus*), Eurasian otter (*Lutra lutra*), Chapman's zebra (*Equus quagga chapmani*), Formosan sika deer (*Cervus nippon taiouanus*), Azara's night monkey (*Aotus azarae*), great argus (*Argusianus argus*), blue-tailed bee-eater (*Merops philippinus*), black swan (*Cygnus atratus*), scarlet ibis (*Eudocimus ruber*), Chilean flamingo (*Phoenicopterus chilensis*), grey crowned crane (*Balearica regulorum*), black-necked swan (*Cygnus melancoryphus*), black crowned crane (Balearica pavonina), collared scops Owl (*Otus lettia*), Mandarin duck (*Aix galericulata*), emu (*Dromaius novaehollandiae*), red-and-blue lory (*Eos histrio*), Guinea turaco (*Tauraco persa*), Aldabra giant tortoise (*Aldabrachelys gigantea*), rhinoceros iguana (*Cyclura comuta*), radiated tortoise (*Astrochelys radiata*), leopard tortoise (*Stigmochelys pardalis*), Malayan horned frog (*Megophrys nasuta*), and Taipei grass frog (*Hylarana taipehensis*).

在愚人節這天，白頸狐猴「白依」誕下了一對雙胞胎（左「依特」右「依斯」）

野山羊家族又多了位新成員，在媽媽「長茗」的悉心守護下，寶寶「長稻」正穩定地成長中！

美洲獅寶寶出生53天的樣貌

Statistics of Animals

Category / Time	Mammals		Birds		Reptiles		Amphibians		Fish		Total	
	Species	Numbers	Species	Numbers	Species	Numbers	Species	Numbers	Species	Numbers	Species	Numbers
End of 2018	96	768	106	710	118	632	24	265	7	50	351	2,425

2. 動物醫療保健及防疫

在動物醫療保健方面，除執行日常突發性之外傷及內科疾病治療外，依計畫進行動物的健康檢查及疾病監測預防等工作，並協助處理中央農政單位查緝沒入之保育類動物、國內民眾贈入及國內外動物園業間交換的動物檢疫工作，計58隻；另救傷動物109隻，協助地方政府照顧收容穿山甲、山羌、大赤鼯鼠、赤腹松鼠、鳳頭蒼鷹、臺灣藍鵲、領角鴞、松雀鷹、紫嘯鶇、眼鏡凱門鱷、斑龜、食蛇龜、鼬獾和白鼻心等動物，以及多次協助臺北市鳥會和桃園縣政府治療救傷之鳥類及其他哺乳動物。

年內購置內視鏡胃鏡組、小動物氣體麻醉機、電動手術台、大動物超音波探頭、超低溫冷凍櫃、二氧化碳波型偵測器、高壓滅菌鍋等儀器設備，用於動物醫療手術及臨床檢驗診斷、動物急救和住院照護等，得以針對立即性及潛在性的醫療問題進行治療，並透過影像診斷及強化麻醉操作準確性，得以提升動物的手術操作安全性及動物疾病診斷準確率，增加動物醫療福利，並強化本園人工繁殖保育研究工作。

救傷的穿山甲「穿莓」和寶寶–「穿莓」會把寶寶抱在懷裡保護

大貓熊「圓圓」於今日上午第2度進行人工授精

3. 保育類野生動物收容

本園野生動物收容中心專責收容保育主管機關查獲之走私與違法獵捕、販售與展示的保育類野生動物。本年度協助支援保育類查緝案件鑑定物種12次21種，並持續協助各縣市政府相關單位所委託處理之野生動物救傷，與持續照養歷年所委託收容之各類動物，包含熊科動物、大型貓科動物、鳥類(鸚鵡)、靈長類動物、兩棲爬蟲動物，計101種1,196隻；另提供收容動物專業技術研習與教育觀摩活動等解說導覽服務，導覽參觀22個團體，共441人次，參訪與研習團體包含國內生物相關科系師生、國際學生和學程、地方保育主管機關、林務局、環境保護人員訓練所、農訓協會及來自大陸與全球的動物園、政府動保單位和動植物防檢局等單位。

協助地方保育主管機關執行野生動物鑑定服務12件；生命教育保育宣導或出版品共19場次451人次；派員講授保育相關課程共1梯次75人次。執行動物環境改善包括靈長類、龜類以及鳥類籠舍維護及豐富化共21案；執行查緝收容之兩棲爬蟲類疱疹病毒及黴漿菌感染之流行病學、組織病理學、分子生物學、血液生化學等疾病篩檢研究，採集樣本數共538件，並且完成分子生物篩檢實驗共857次；執行救傷及收容動物野放與追蹤研究，共41種200隻。

全球首例以人工哺育養大的穿山甲「芎梧」

2. Animal Health Care and Epidemic Prevention

Regarding animal medical and healthcare services, the Zoo not only deal with accidently trauma and internal diseases, but also conduct routine animal health check and disease monitoring / prevention. We also assisted central agricultural agency in handling smuggled conservation importance species , and carried out quarantine for animals donated by nationals or exchanged between domestic and foreign zoos (58 animals in total); treated 109 animals; assisted local government in taking care of and sheltering Formosan pangolin (*Manis pentadactyla pentadactyla*), Formosan Reeves' muntjac (*Muntiacus reevesi micrurus*), Formosan giant flying squirrel (*Petaurista philippensis grandis*), red-bellied tree squirrel (*Callosciurus erythraeus thaiwanensis*), Formosan crested goshawk (*Accipiter trivirgatus formosae*), Formosan magpie (*Urocissa caerulea*), collared Scops Owl (*Otus lettia*), besra (*Accipiter virgatus*), Formosan whistling thrush (*Myiophoneus insularis*), spectacled caiman (*Caiman crocodilus*), Chinese stripe-necked turtle (*Mauremys sinensis*), yellow-margined box turtle (*Cuora flavomarginata*), Formosan ferret-badger (*Melogale moschata subaurantiaca*) and Formosan masked palm civet (*Paguma larvata taivana*); and, for long term co-operations, assisted Wild Bird Society of Taipei and Taoyuan County Government in helaping rescued birds and other mammals.

In this year, the Zoo purchased gastroscopy for endoscopy set, veterinary anesthesia machine for small animals, electrical surgical operation table, ultrasonic probe for large animals, ultra low temperature Freezer, anesthetic CO2 detector, autoclaves and Commercial Sterilisers and other equipment for animal surgery and clinic diagnosis, animal rescue and hospital care. These instruments / equipment enable the Zoo to treat immediate and potential medical problems, and to enhance the accuracy of image diagnosis and anesthesia operation for improving the safety of animal operations and disease diagnosis. All of these will enhance medical benefits for animals and intensify artificial breeding and conservation projects and research of Taipei Zoo.

3. Protected Wildlife Rescue

The Zoo's Wildlife Rescue Center is dedicated to shelter smuggled and illegally hunted, sold and exhibited protected wildlife that are seized by the competent authority of animal conservation and protection. This year, the Zoo supported to identify 21 species of 12 investigation cases; assisted county / city government units in wildlife rescue; and continued to take care of all species of animals taken in by shelter over the years. The said animals include those of bears, tigers, birds (parrot), Primates, Amphibian and Reptile, totally 1,196 animals of 101 species. Besides, the Zoo provides workshops related to animal shelter skills and educational tour services. The said services were provided to 441 people of 22 groups. The workshop opened for teachers, students and researchers in the biology or relevant department in Taiwan, students from international programs, local conservation institute, Forest Bureau, Environmental protection personnel training institute, National Training Institute for Farmers' Organizations, and the zoos, governmental animal protection institute, bureau of animal and plant health inspection from China and all over the world.

Taipei zoo assisted conservation authority institute identified 12 cases of wild animals. The life education and conservation promotion or publication had attracted 451 participants in 19 sessions. We also sent colleagues to give lecture on conservation. There were 75 participants. We implemented the improvement and enrichment of the animal environment for primates, turtles, and birds, with a total of 21 cases. We conducted the Herpesvirus infection of amphibians and reptiles from the confiscated housing, epidemiology of mycoplasma, histopathology, molecular biology, biochemistry, and other medical screening. The total sample gathered were 538 cases, and the completed molecular biology screening experiment 857 times. We conducted rescue and shelter animal and release and tracking studies. We had done 41 species and 200 animals.

4. 動物引進及交換

為更新動物血緣與豐富教育展示效益，持續與國內外重要動物園或照養機構進行動物繁殖合作、交換或互贈，除直接與個別重點動物園的動物交流合作外，持續推動參與全球瀕危物種保育組織及計畫，以提升對於野生動物保育之貢獻度，並再度繁殖非洲野驢1隻；另國際交流的突破，也開啟未來加入格利威斑馬、侏儒河馬、蒙古野馬及指猴等保育合作計畫的可行性。

本年度計引進鳥類8種27隻、哺乳類18種39隻、爬蟲類9種50隻、兩棲1種4隻，共計引入36種120隻，並續與新加坡動物園、荷蘭猴山動物園、捷克布拉格動物園、澳洲庫倫賓動物園、德國法蘭克福動物園及奧地利龜島保育中心、日本上野動物園等洽談動物交流中，重要成果如下：

▶為執行與歐洲動物園暨水族館協會大猩猩瀕危物種保育委員會合作之個體調度繁殖計畫：借殖出西部大猩猩（金剛猩猩）1雄至荷蘭猴山靈長類動物園。

▶捷克布拉格動物園贈入：馬來貘1雄。

▶澳洲庫倫賓動物園借殖入：無尾熊1雄。

▶德國法蘭克福動物園借殖入：棕蜘蛛猴4雄

▶奧地利龜島保育中心交換入：羅地島蛇頸龜20隻、北印度稜背龜6隻、黑頸烏龜10隻。

▶新加坡交換入：馬來潮龜2對、大食蟻獸1雌、小爪水獺1雄、紅猴2雄、棉頭絹猴2對。

新生的非洲野驢寶寶近期在媽媽「Gina」的引領下，已經順利的融入群體生活

7月7日誕生的小食蟻獸小寶寶，未來將和大家在熱帶雨林區見面

▶花蓮遠雄海洋公園贈入：揚子鱷1雌；借殖展出：小爪水獺2雄。

▶花蓮兆豐農場交換出：水牛1雌、黃牛1雌、雜豬1雌、羊駝1對、絨鼠1對、狐獴3雄2雌。

▶與特有生物研究中心更換個體：借殖入石虎1雌，借殖出石虎1雌。

▶苗栗縣政府贈入：石虎1對。

▶屏東科技大學收容中心借殖入：石虎1雄。

▶高雄壽山動物園借殖入：智利紅鶴4雄3雌。

▶臺北市動物保護處收容入：黃頭亞馬遜鸚鵡1雌。

▶陽明大學移入收容入：臺灣獼猴1對、馬來獼猴1雄。

▶ 自頑皮世界野生動物園借殖入：水豚2對，借殖出：侏儒河馬1雌、伊蘭羚羊1雄2雌、小紅鶴3雄5雌。

▶救傷中心移入：大赤鼯鼠1雄、臺灣獼猴1雌、穿山甲1雄、紫鷺1雄。

▶查緝沒入移入：綠鬣蜥1雄2雌，絨鼠1隻。

▶芝山文化生態園收容入：臺灣八哥2雄1雌、黃鸝鳥1雄。

▶自南元休閒農場交換出：鵪鶉2雌。

▶蛙展結束野放：金線蛙2隻、褐樹蛙1隻、日本樹蛙1隻。

▶民眾贈入：密西西比地圖龜2隻、綠樹蟒2隻。

另外，購入猴尾蜥2隻、南美小食蟻獸1雌、黑尾草原犬鼠1雄、黑帝王魟2對、蘭嶼豬6雌。

4. Introduction and Exchange of Animals

To maintain captive wildlife genetic diversity and enriching educational exhibitions, the Zoo continued to cooperate with important domestic and foreign zoos or animal institutions to breed or exchange animals. Apart from directly cooperating and exchanging with important zoos, the Zoo continued to promote and participate in global endangered species conservation plans, and succeeded in breeding one African Wild ass (*Equus africanus somaliensis*) this year. On the other hand, another breakthrough in international cooperation opened up the feasibility in conservation of Grévy's zebra (*Equus grevyi*), pygmy hippopotamus (*Choeropsis liberiensis*), Przewalski's horse (*Equus ferus przewalskii*) and aye-aye (*Daubentonia madagascariensis*).

The Zoo totally introduced 27 birds of 8 species, 39 mammals of 18 species, 50 reptiles of 9 species and 4 amphibians of 1 species this year; and continuously negotiate with Singapore Zoo, Apenheul Primate Park (the Netherlands), Prague Zoological Garden (Czech Republic), Currumbin Wildlife Sanctuary (Australia), Frankfurt Zoological Garden (German), Turtle Island, Graz (Austria), and Ueno Zoo (Japan) for animal exchanges. The important results are as follows:

▶In order to implement the coopertation with European Association of Zoos and Aquaria (EAZA) on Gorilla EEP project, lending one female Western gorilla (*Gorilla gorilla*) to Apenheul Primate Park in the Netherlands.

▶Gift from Prague Zoological Garden: Malayan Tapir (*Tapirus indicus*) (male)

▶Breeding loan from Currumbin Wildlife Sanctuary: Koala (*Phascolarctos cinereus*) (male)

▶Breeding loan from Frankfurt Zoological Garden: 4 black-headed spider monkey (*Ateles fusciceps*) (male)

▶Exchange in with Turtle Island Graz, Austria: 20 Roti Island snake-necked turtles (*Chelodina mccordi*), 6 Indian roofed turtles (*Pangshura tecta*), 10 Red-necked pond turtles (*Mauremys nigricans*).

▶Exchange in with Singapore: two pairs of Southern river terrapin (*Batagur affinis*), one female giant anteater (*Myrmecophaga tridactyla*), one male oriental small-clawed otter (*Aonyx cinerea*), two male patas monkey (*Erythrocebus patas*), two pairs of cottontop tamarin (*Saguinus oedipus*).

▶Gift from Farglory Ocean Park, Hualien: one female Chinese alligator (*Alligator sinensis*). Lending out: two female oriental small-clawed otter (*Aonyx cinerea*).

▶Exchange with Harvest Ranch, Hualien: one female buffalo (*Bubalus bubalis*), one female cattle (*Bos taurus*), one female domestic Pig (*Sus scrofa*), a pair of alpaca (*Vicugna pacos*), a pair of chinchilla (*Chinchilla lanigera*), three males and two females meerkats (*Suricata suricatta*).

▶Exchange with Endemic Species Research Institute: Borrow one female leopard cat (*Prionailurus bengalensis*) and lend out one male leopard cat (*Prionailurus bengalensis*).

▶Gift from Miaoli county government: a pair of leopard cats (*Prionailurus bengalensis*).

▶Breeding loan from Pingtung Rescue Center: a leopard cat (male) (*Prionailurus bengalensis*).

▶Breeding loan from Kaohsiung City Shoushan Zoo: Chilean flamingo (*Phoenicopterus chilensis*), 4 males and 3 females

▶Taipei City Animal Protection Office housed: Yellow-headed Amazon (*Amazona oratrix*), one female

▶Rescued from National Yang-Ming University: a pair of Formosan rock macaque (*Macaca cyclopis)*, a female crab-eating Macaque (*Macaca fascicularis*).

▶Exchange with Wanpi World Safari Zoo: landed two pairs of capybara (*Hydrochoeris hydrochaeris*), borrowed one female pygmy hippopotamus (*Choeropsis liberiensis*), one male and two females common eland (*Taurotragus oryx*), and 3 males and 5 females lesser flamingos (*Phoenicoparrus minor*).

▶Transfered from rescue center: a male Formosan giant flying squirrel (*Petaurista philippensis*), one female Formosan rock macaque (*Macaca cyclopis*), one male Formosan pangolin (*Manis pentadactyla pentadactyla*), one male purple heron (*Ardea purpurea*).

▶Transfered from the confiscated: one male and two females green iguanas (*Iguana iguana*), and one Chinchilla (*Chinchilla lanigera*).

▶Shelter from Zhishan Ecological Garden: two male and one female crested mynas (*Acridotheres cristatellus*), and one female black-naped oriole (*Oriolus chinensis*).

▶Exchange from Nan Yuan Resort: two emus (*Dromaius novaehollandiae*).

5. 本土域內外保育推展—臺北赤蛙保育計畫

本園投注於本土珍稀兩棲類的域內與域外保育已10餘年，「臺北赤蛙」保育為重點推動工作之一。基於臺北赤蛙族群保育的急迫性與復育的重要意義，臺北市政府與新北市政府雙方自104年起特將「臺北赤蛙復育與棲地營造計畫」納入「雙北合作平臺」中「環境資源組」子項議題，由本園與新北市政府農業局共同合作，透過雙方綿密的合作與資源的整合，更有效地朝向臺北赤蛙復育的目標發展。

在雙北合作平臺架構下的臺北赤蛙域內外保育分工，新北市政府農業局著力於臺北赤蛙棲地復育與棲地營造，本園則發展臺北赤蛙圈養繁殖技術，雙方均有突破性發展與初步成果。

本園於104年突破繁殖刺激因子之關鍵，105年起透過與國際合作學習，在園內架設兩棲類獨立圈養空間，加強圈養族群飼養操作技術精進；106年度以確認臺北赤蛙標準圈養繁殖條件與操作為重點，共12對產卵27批，平均孵化率提升至81.2%，後續將持續針對孵化成功之蝌蚪，提高其變態率與育成率，另外也將在園區所營造之棲地，進行幼蛙半野放試驗工作，期能透過科學性試驗與評估，研擬出臺北赤蛙族群再引入之域外保育工作：107年度起除持續、菁化與穩定圈養繁殖技術與操作流程外，更針對於園內試行之族群再引入野放流程進行持續追蹤。域內工作，107年除透過雙北合作平臺，持續與新北市政府進行原棲地族群監測與合適棲地營造與復原外，更將保育的觸角延伸關心全臺灣現有臺北赤蛙野生族群之地區，包括屏東縣、臺南市，更與臺南市鳥會所經營管理之水雉教育園區進行合作，透過夥伴團隊聯繫與調查訓練班的辦理進行公民科學家之養成與培訓，建構聯繫網絡，共同進行全臺灣之臺北赤蛙分布現況之群聚變化；更以友善農業為立基，共同推動與協助友善農業與綠色保育之連結，更從臺北赤蛙保育聯結至關心整體淺山物種與棲地之完整。另透過棲地的普查，將歷史分布地區與現仍有分布之地區，以棲地變化與合適棲地之記錄，作為未來朝向域外保種與後續再引入原棲地等域內保域之發展核心為目標，期能重新建立野外臺北赤蛙族群，以落實域內保育及域外保育之實踐。

動物園進行「臺北赤蛙」域內外保育研究，域外圈養繁殖部分已有良好成果

- Release after the frog exhibition: two green pond Frogs (*Pelophylax fukienensis*), one robust Buerger's frog (*Buergeria robusta*), and one Japanese Buerger's frog (*Buergeria japonica*).
- Donation from the public: two Mississippi map turtles (*Graptemys pseudogeographica kohni*), two green tree pythons (*Morelia viridis*)

Besides, Taipei Zoo introduced two prehensile-tailed skinks (*Corucia zebrata*), one Southern tamandua (*Tamandua tetradactyla*), one black-tailed prairie dog (*Cynomys ludovicianus*), two pairs of pearl stingray (*Dasyatis margaritella*), 6 female Lanyu Pigs (*Sus scrofa*).

5. In and *Ex Situ* Conservation Expansion in Local – Taipei Grass Frog (*Hylarana taipehensis*) Conservation Plan

The Zoo has contributed to in and *ex situ* protection and conservation of native amphibians for over ten years, and Taipei grass frog (*Hylarana taipehensis*) is one of the primary targets. Due to the urgency of protecting and conserving Taipei Grass Frog, and the importance of repopulating this species, Taipei City Government and New Taipei City Government included the "Taipei Grass Frog Repopulation and Habitat Creation Plan" in the "Environment Resource Team" of the "Cooperating Platform of Taipei City and New Taipei City" in 2015. That is, through the cooperation and resource integration of Taipei Zoo and Agriculture Department of New Taipei City, local governments are heading towards the target of repopulating Taipei Grass Frog even more efficiently.

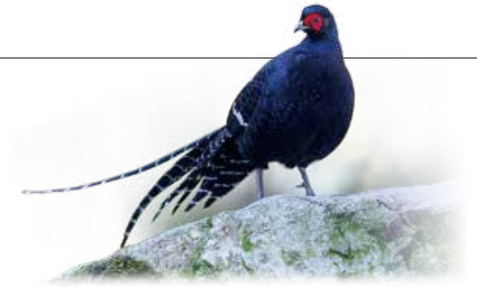
Under the framework of the Taipei City and New Taipei City Cooperating Platform, the two governments have divided the Taipei grass frog (*Hylarana taipehensis*) in and *ex situ* protection and conservation works: Agricultural Department of New Taipei City government targets on the rehabitation and creation of this species' habitat, whereas Taipei Zoo focuses on developing breeding technology. Both parties made a breakthrough development and preliminary results.

The Zoo found the key reproduction-stimulating factors in 2015. Starting from 2016, it has, through international cooperation and learning activities, established an independent captive space for amphibians in the Zoo to enhance relevant feeding operations and techniques. In 2017, the Zoo focused on standardizing captive and breeding conditions and operations of Taipei grass frog (*Hylarana taipehensis*). It totally hatched 27 batches of eggs from 12 pairs, successfully enhanced the hatching rate to 81.2%. In the future, it will continue to enhance the metamorphosis and breeding rates of hatched tadpoles and, within the habitat created inside the Zoo, carried out a trial reintroduction project on baby frogs. It is our expectation that, through scientific tests and evaluations, we will be able to reintroduce Taipei grass frogs (*Hylarana taipehensis*) to areas outside the zoo and enhance our *ex-situ* animal conservation works. Start from 2018, we continued to prioritize and stabilize confinement rearing and breeding techniques and operation, also keep tracking the re-introduced groups releasing into wild in our zoo. Regarding *in-situ* works, we have continued to monitor endemic species, create ideal habitats and restore the old habitats with New Taipei City Government through the Taipei-New Taipei City cooperation platform in 2018 and extended our scope to all the Taipei grass frogs (*Hylarana taipehensis*) habitats in Taiwan, including Pingtung county and Tainan city. We also cooperated with the Jacana Educational Center under Tainan Bird Association. Through team networking and investigation training workshops to cultivate and train citizen scientists, we built up the communication network and cooperated on the group change of Taipei grass frogs (*Hylarana taipehensis*) in Taiwan. We based on the principle of agriculture friendly and promoted and assisted linking friendly agriculture and green conservation. From protecting Taipei grass frogs to caring the whole lowland species and the completeness of habitats. On the other side, through the survey on habitat, we recorded the historical distribution and the current distribution. Based on the change of habitats and the suitable habitats records, we aim at *ex-situ* conservation and *in-situ* conservation of re-introduction to the original habitats as core goals, expecting to restore wild Taipei grass frogs (*Hylarana taipehensis*) and fulfill in-situ and *ex-situ* animal conservation.

6. 與學術界建教合作及推廣教育

續與臺灣大學等獸醫學院在動物診療技術方面，保持密切建教合作關係，並舉辦臺北市立動物園保育醫學病理研討會，進行前一年度死亡病例研討，增進臨床醫療與病理交流與連結，提升動物醫療品質。年內多位學者專家來園指導，邀請臺灣大學獸醫專業學院余品奐助理教授演講「鳥類影像學」，陳俊陞演講「小動物神經學檢查」、林辰栖及陳慧文助理教授演講「分子檢測技術在野生動物的應用」及「禽流感檢測」、王齡敏獸醫師演講「猛禽醫療」等專題。除與獸醫界的合作外，亦透過與人醫及牙醫的專業交流與合作，以及積極運用中醫於野生動物醫療，加速提升野生動物的診療技術。

另與其他相關機構建教合作及教育推廣，或提供國內獸醫師及國內外獸醫系大學生前來實習，包括：1月國內獸醫系實習生4名；4月印尼獸醫系實習生1名；5月加拿大、德國及美國獸醫系實習生各1名；6月新加坡實習生1名；8月美國實習生1名；9月日本及紐西蘭獸醫系實習生各1名；10月比利時及澳洲獸醫系實習生各1名及2名；11月澳洲獸醫實習生2名；12月美國及澳洲獸醫實習生各1名及2名。提供國內各大學獸醫學、生物學、觀光遊憩管理等相關科系學生，進行整學期實習或為期1-2個月的寒暑期實習。如：臺北市立大學6位社會暨公共事務學系學生來園進行「市政管理與為民服務」機關實習課程（實習期間9-11月），7-8月國內實習生67人、9至12月國內獸醫系實習生5名，提供學生野生動物醫療、生物學、生態學等觀摩學習。協助各單位辦理之演講



拍攝於大雪山林道上的雄性臺灣帝雉。（謝郁震先生 提供）

及課程有：6月協助農業科技研究院辦理動物管制人員訓練進階班課程共計3 梯次超過80個學員結訓。

7. 辦理專業工作坊、研討會

- 邀集林務局、特有生物中心、科博館、臺大及民間公益團體等各單位專家學者及夥伴，於園內會議室召開「夥伴連結．迎向未來」金門水獺保育座談會，共同研商水獺保育工作進度與未來工作目標，約50人參加。
- 邀請高雄壽山動物園、六福村野生動物園等臺灣動物園暨水族館協會（TAZA）夥伴參與本園「淺山環境議題教育工作坊」，課程內容有淺山保育議題專題演講、教案設計和討論，共計50人參加。
- 辦理保育醫學病理研討會，園內外共計59人參加。
- 與農業科技研究院於本園國際會議廳合辦107年度強化動物保護觀念扎根計畫第1場次動物實驗小組（IACUC）委員會小組成員之基礎訓練班，本園有11名同仁參與訓練。
- 本園與石虎保育協會合辦雲豹再引入國際研討會暨工作坊，國內外約120人與會。
- 「2018強化野生貿易管理研習會」由本園與臺北野生物貿易研究委員會共同辦理，林務局、動保處、防檢局與機場海關等單位共約80人與會。

「臺灣帝雉全基因體解碼計畫」由國立臺灣大學生醫電子與資訊學研究所莊曜宇所長組成之跨領域研究團隊、臺北市立動物園、科技部和臺灣大學共同資助完成

6. School-Enterprise Cooperation with Academia and Promoting Education

The Zoo has maintained a close relationship with School of Veterinary Medicine of National Taiwan University for practical and educational cooperation. It also held "Taipei Zoo Animal Conservation Medicine and Pathology Symposium" to discuss deaths of the previous year; enhance clinical, medical and pathological exchanges and connections; and increase the quality of animal medicine and treatment. A number of scholars and experts also visited the Zoo share with us their experiences and expertise. We invited Assistant Professor Yu, Pin-Huan, from School of Veterinary Medicine, National Taiwan University to give a speech on "Bird Radiology," Prof. Chen, Jun-sheng on "Neurological examination on small animals," Associate Prof. Lin C.S. and Chen, H.W. on "Application of Molecular Diagnostic techniques on Wild Animals" and "Detection of Avian Influenza," and Dr. Wang, L.M on "Raptor Medical Techniques." In addition to the close network with various Veterinary Medicine associations, we also communicate with Human doctors and dentists, and actively apply Chinese Medicine on wild animal treatment, facilitating and enhancing the wild animal diagnosis.

We also deeply participated in education and cooperation with many veterinary schools to provide internship opportunities for Taiwanese veterinaries or undergraduates from of veterinary schools both in Taiwan or overseas. This year, we accepted four Taiwanese interns in January, one intern from veterinary department in Indonesia in April, three interns from Canada, Germany, and the United States in May, one intern from Singapore in June, one from the United States in August, two from Japan and New Zealand in September, one from Belgium and two from Australia in October, two from Australia in November and one from the United States and two from Australia in December. We also collaborated with the school of veterinary medicine, department of biology, and department of tourism and recreation management. We welcomed students to have their practical or internship for the whole semester or one to two months during the winter and summer vacation in our zoo. For example, 6 students from the Department of Social and Public Affairs, University of Taipei came for their "municipal administration and public service" course and did their internships from September to November. There were 67 Taiwanese interns during July and August, 5 students from the school of veterinary medicine from September to December, assisting students to learn more about wild animal medical, biology and ecology. We also assisted other departments to organize speeches and courses, including organizing an advanced training program for animal control personnel in Agricultural Technology Research Institute in June. There were three sessions with over 80 participants completed the courses.

7. Hold the Professional Workshop and Symposium

- Invited professionals and colleagues from Forestry Bureau, Endemic Species Research Institute, National Museum of Natural Science, NTU and NGO to attend the "United and face the future: Kinmen Eurasian otter (*Lutra lutra*) conservation forum." We discussed the process of otter conservation and future goals. There were around 50 people attended.
- Taipei Zoo invited Kaohsiung Shoushan Zoo, Leofoo Village Theme Park Zoo, and TAZA to attend the lowland environmental educational workshop. The workshop had lowland conservation keynote speech, teaching plan, and discussion. There were 50 participants attended.
- Taipei Zoo organized Pathology in Conservation conference. There were 59 participants.
- Agricultural Technology Research Institute and Taipei Zoo co-organized 2018 Strengthen Animal Protection Awareness program. The first session took place in the International Conference Hall in Taipei Zoo and was the basic training courses for the IACUC committee. There were 11 colleagues participated.
- Taipei zoo and leopard cat Association of Taiwan co-organized the International conference and workshop on re-introducing Clouded leopard to Taiwan. There were 120 international and domestic participants.
- Taipei Zoo and TRAFFIC East Asia – Taipei co-organized 2018 Strengthening wild animal trade and management seminar. There were around 80 participants from Forestry Bureau, Taipei City Animal Protection Office, Bureau of Animal and Plant Health Inspection and Quarantine and airport customs.

國際合作與交流

本園於民國75年遷園前後所擴充的大批人力，近年已陸續面臨退休世代更替的時刻，在此關鍵年代，本園在國際交流與專業精進上，積極培植園內新一代的核心人力，並集中較多資源投注於保育重要性較高的物種，期能更深入接軌國際專業、參與全球及在地物種保育工作，深化保育貢獻及影響力。

本年度於臺北辦理「第13屆亞太地區生殖科技國際論壇（ARBC, Asian Reproductive Biotechnology Congress）」、「犀牛輔助繁殖工作坊」、「2018 歐亞水獺保育暨再引入國際研討會」、「2018野生動物域外保育族群管理研討會－整合典藏評估與計劃（ICAP）工作坊」等國際會議及相關專業工作坊，邀集國內外的專家學者與會，進行國際專業交流，積極發展國內與國際間的保育合作，擴大保育互動網絡與合作機制，形成更緊密的保育夥伴關係，以利跨國推動專業事務，並為本土野生動物域內保育開拓新契機。

此外，指派人員出國進行國際合作與交流，參與各國際組織的運作、深化與他國動物園的交流，以建立焦點物種的合作聯絡網絡、搭建與其他動物園的長期合作橋梁及對話，並藉此經驗分享、學習及促進物種交流，本年度推展重點有：持續推動巨猿類展示、保育繁殖及照養等專業，派員赴歐洲參與由世界動物園暨水族館協會舉辦之分類專家群主席聯合會議（2018 Joint TAG Chairs Meeting），直接參與物種討論及學習統整族群管理相關溝通工作，更於會中取得與歐洲動物園暨水族館協會所屬巨猿類專家群（Great Ape TAG）的合作機會，預定於2020年共同舉辦巨猿類照養及醫療工作坊。另派員參與東南亞動物園暨水族館協會之物種管理委員會工作會議（2018 SEAZA Species Management Committee Working Meeting），持續參與東南亞區域人猿、馬來貘、白手長臂猿及馬來熊族群管理工作；本年度指派出席國際會議及研討會計8梯次27人次；指派參與之觀摩與交流計3梯次7人次。

因空間資源有限，單一動物園的獨立運作，無法有效維持族群基因多樣性並避免近親繁殖，且在符合動物福利之前提下，多數物種無法典藏大量的族群。因此，動物園間連結組成協會，透過彼此合作進行族群管理，維持域外族群具有健康的基因多樣性與年齡結構，即為動物園（水族館）的域外族群管理和域內再引入保育工作的重要基礎。

本園除了已加入世界動物園暨水族館協會（World Association of Zoos and Aquariums, WAZA）及東南亞動物園暨水族館協會（Southeast Asia Zoos and Aqua, SEAZA），歷經多年的耕耘，於2018年9月通過審查，正式成為歐洲動物園暨水族館協會（European Association of Zoos and Aquaria, EAZA）的會員（Associate Member），此亦為本園參與國際動物保育事務之重大里程碑。

繼加入該協會大猩猩物種保育計畫（Gorilla EEP）、索馬里非洲野驢保育計畫（Somali Wild Ass EEP）等國際保育計畫，並引進這2種極度瀕危物種（Critically Endangered Species）之後，除成為歐洲動物園暨水族館協會的會員外，更為參與歐洲地區其他瀕危動物族群管理與交流注入強心針，讓本園保育事務、典藏計畫的推動，得以持續透過參與國際重要保育組織會議，和國際合作並與域內和域外保育計畫充分連結，故提出本計畫延續長期參與歐洲動物園保育合作，扮演國際動物保育事務重要角色，增加國際競爭力。

「犀牛輔助生殖技術工作坊」為期兩天的研討議程。

International Cooperation and Exchanges

The group of people whom the Zoo hired in 1986 when moving to the current address are successively retired in recent years. In this critical moment, the Zoo therefore trained some key figures in the new generation to enhance international exchange and become even more professional. The Zoo also invests more resources in species that are relatively more important with an expectation of connecting to the world, participating in global and local species conservation works, making more contributions in animal conservation and protection, and becoming even more influential.

This year we organized several international conference and professional workshops, including the 13th Asian Reproductive Biotechnology Congress, Rhino Assisted Reproductive Workshop, 2018 International Conference on Eurasian otter Conservation and Re-introduction, and 2018 The Integrated Collection Assessment and Planning Workshop for *Ex-situ* Conservation Programs. We invited domestic and international specialists and professionals to attend and build a communication network. We actively developed domestic and international conservation collaboration and explored new possibilities for our native wild animal in-situ conservation.

Besides, the Zoo dispatched personnel to overseas for international cooperation and exchange. For example, participating in international organizations' operations, enhancing the partnership with zoos of other countries. The purposes are to establish a cooperation network for target species, build long-term partnership and conversations with other zoos, share experiences with the others, and expand and facilitate the exchange on knowledge of different species. The forces this year included keeping promoting the exhibition of Great Ape and conservation and care. We sent colleagues to Europe to attend the 2018 Joint TAG Chairs Meeting, directly participating in species discussion and learning group management and communication. We also obtained the collaboration changes with Great Ape TAG and we plan to co-organize Great Ape Care and Medical Workshop in 2020. We also sent colleagues to attend 2018 SEAZA Species Management Committee Working Meeting. We keep participating in the group management of Borean orangutan (*Pongo pygmaeus*), Malayan tapir (*Tapirus indicus*), Lar gibbon (*Hylobates lar*), and sun bear (*Helarctos malayanus*) in Southeast Asia. This year, the Zoo dispatched 27 staffs to join 8 sessions of international meetings and seminars, and dispatched 7 staffs to join 3 sessions of observation and exchange tours.

With the limited space, an independent Zoo cannot effectively maintain the diversity of the group genes and avoid inbreeding. In the premise of animal welfare, a zoo cannot keep many of the same species. Therefore, zoos build up a network and associations. Through the collaboration to maintain the group, keeping the ex-situ conservation with health gene diversity and age structure. This is the significant foundation for the *ex-situ* conservation and *in-situ* re-introduction conservation.

In addition to the membership in World Association of Zoos and Aquariums, WAZA and Southeast Asia Zoos and Aqua, SEAZA, Taipei Zoo, after years of effort, has been approved as an associate member of European Association of Zoos and Aquaria, EAZA since September 2018. This is an important milestone for us participating in international conservation affairs.

Taipei Zoo jointed international conservation projects, the Gorilla (*Gorilla gorilla*) EEP, and Somali Wild Ass (*Equus africanus somaliensis*) EEP, and also introduced two critically endangered species. In addition to joining EAZA as an associate member, taking care of the two critically endangered species also strengthen our participation and communication in this issue. We keep working on conservation and collection. Though participating in important conservation organization meetings and collaborating with global organizations, liking in-situ and ex-situ conservations, we would like to extend our long-term conservation cooperation with European Zoos, playing an important role on international animal conservation and increasing our competence.

1. 參加國際性會議

月份	會議名稱	參與人數
4	赴匈牙利參加2018物種專家群主席聯合會議	2
6	赴緬甸參加2018東南亞動物園暨水族館協會物種管理委員會工作會議（2018 SEAZA Species Management Committee working meeting）	1
8	赴美國參加穿山甲照護及保育國際研討會（International symposium on pangolin care and conservation）	1
9	赴希臘及德國參加歐洲動物園暨水族館協會年會（2018 EAZA annual conference）與至鄰近國家洽談物種族群管理合作計畫	2
10	赴捷克布拉格業務接洽及參加2018AAZV美國動物園獸醫學會年會	2
10	赴阿聯酋大公國阿布達比Al Ain Zoo參加第24屆國際動物園教育者協會雙年會（The 24th International Zoo and Aquarium Educators'（IZE）Biennial Conference）	2
10	赴泰國參加2018保育計畫專家群年會及第73屆世界動物園暨水族館協會年會	3
10	赴印尼參加亞洲保育醫學會ASCM2018年會	2
10	赴泰國出席2018東南亞動物園暨水族館協會SEAZA年會	10
12	赴中國大陸參加2018年大貓熊保護與繁育國際大會族群管理協調會議	2

2. 觀摩與交流

107年度外派參與之觀摩與交流一覽表

月份	名　　稱	參與人數
3	赴荷蘭猴山靈長類動物園（Apenheul Primate Park）執行西部低地大猩猩「寶寶」運送計畫	2
7	赴日本執行國際焦點物種之繁殖技術與科學化照養之建立計畫	2
11	赴澳洲庫倫賓野生動物保護區執行無尾熊運回計畫	3

貴賓和粉絲一起來動物園，為「寶寶」送上祝福！

臺北市柯文哲市長及荷蘭貿易暨投資辦事處紀維德代表，為即將遠行的「寶寶」加油打氣，跟他Say Goodbye！並祝福他一路順風！

1. Participation in International Conferences

Month	Conference Name	No. of Participants
4	Attending the 2018 Species expert chairman joint meeting in Hungary.	2
6	Attending the 2018 SEAZA Species Management Committee working meeting held in Burma.	1
8	Attending International symposium on pangolin care and conservation held in the United States.	1
9	Attending 2018 EAZA annual conference in Greece and German and visit neighbor countries to discuss about collaboration on population management project.	2
10	Visited Prague, the Czech Republic to discuss about business and attended 2018AAZV annual conference.	2
10	Visited Abu Dhabi, the United Arab Emirates to attend the 24th International Zoo and Aquarium Educators' (IZE) Biennial Conference.	2
10	Attending the 2018 Conservation Planning Specialist Group, CPSG, Meeting and the 73rd World Association of Zoos and Aquariums in Thailand.	3
10	Attending ASCM2018 annual meeting in Indonesia.	2
10	Attending 2018 SEAZA annual meeting in Thailand.	10
12	Attending 2018 Giant Panda Protection and Breeding International Conference on Population Management Negotiation Meeting in China.	2

2. Observation and Exchanges

List of Observations and Exchanges in 2018 that Dispatched Personnel Attended

Month	Name	No. of Participants
3	Visited Apenheul Primate Park in the Netherlands to conduct the west lowland gorilla (*Gorilla gorilla gorilla*) BaoBao delivery project	2
7	Visited Japan to implement the breeding techniques of International emphasized species and scientific caring project	2
11	Visited Currumbin Wildlife Sanctuary in Australia to bring back the Koala (*Phascolarctos cinereus*)	3

左：大小朋友到非洲動物區親手寫下對「寶寶」的祝福與叮嚀！
中：雖然下著毛毛雨，民眾還是專程來跟「寶寶」Say Goodbye！
右：「寶寶」很喜歡臺灣在地生產的水果，像是芭樂、木瓜和柳丁等

3. 辦理國際會議及專業研討會

國際生殖科技專家齊聚～為生物多樣性永續努力！


各國代表遵循大會的傳統，前往熱帶雨林館基地參與植樹活動

第13屆亞太地區生殖科技國際論壇

亞太生殖科技國際論壇於2018年5月3-6日首度於臺灣舉辦，本次中心議題為：生殖生物科技用於界定、描繪和展示人類和動物的世界。

亞太生殖科技國際論壇團隊主席日本Dr Takashi Nagai（永井卓博士，試管豬繁殖學家）與行政院農業委員會畜產試驗所育種組吳明哲組長（為臺灣代表委員），邀請本園共同主辦2018年大會，並將大會生殖科技之領域推展含括人醫生殖、家畜禽繁殖、實驗動物、動物園保育動物、昆蟲復育，期望能藉重人醫生殖的專業技術與畜產試驗所優秀的家畜禽繁殖技術和國外保育的經驗，應用於野生動物保育上，對瀕危動物的育種繁殖，給予更多的建議與期待更多創新合作。

臺北市立動物園與行政院農業委員會畜產試驗所共同辦理「第13屆亞太地區生殖科技國際論壇

此次大會主題及內容分為八大議題：生殖醫學、生殖細胞保存、輔助生殖、細胞庫及組織庫、動物複製技術、胚胎發育技術、細胞再生學、生物學及經濟學，並依照不同物種如人類、家禽畜、實驗動物、動物園動物、爬蟲類、兩棲類、魚類、昆蟲，分別介紹相關技術與重點。

此次大會2018年5月3-6日進行4天的正式大會及生殖科技的專業論文發表。與會者共155人，分別來自13個國家及地區，包括有臺灣、日本、菲律賓、泰國、越南、馬來西亞、新加坡、中國、香港、韓國、法國、德國、美國。共發表口頭論文67篇（其中包括10篇專題演講），發表海報論文6篇。並舉辦「生殖細胞冷凍技術工作坊」共5場，講師6人，助教3人，參與者35人。

於5月6日大會閉幕典禮上，ARBS 委員正式簽署，同意於臺灣登記為正式的國際性社團組織。後續，將由畜試所與臺北動物園進行社團組織登記作業。

「犀牛輔助繁殖工作坊」

為強化國內外犀牛麻醉及人工輔助繁殖技術與合作，於5月5-8日由臺北動物園及莊福文教基金會附設動物園共同辦理「2018犀牛輔助繁殖技術工作坊」，邀請德國來布尼茲動物園及野生動物研究機構兩位大動物輔助繁殖專家與美國國家動物園繁殖專家來臺擔任授課及技術示範講座，會議期間包括授課、動物麻醉及輔助繁殖技術操作示範，共9國77位與會。

3. Holding of International Conferences and Professional Seminars

The 13th Asian Reproductive Biotechnology Congress, ARBC (ARBC, Asian Reproductive Biotechnology Congress)

The Asian Reproductive Biotechnology Congress (ARBC) was held on May 3rd to 6th 2018 in Taiwan for the first time. The theme of this year was Reproductive Biotechnology for defining, delineating, and displaying the world of human and animal.

The chair of the ARBC team and an animal breeding and reproduction specialist, Dr. Takashi Nagai from Japan, and Mr. Wu, Ming-che, Taiwan representative committee, from Livestock Research Institute, Council of Agriculture, Executive Yuan, invited Taipei Zoo to co-organized the 2018 annual Congress. We aimed to apply the biotechnology, including reproductive medicine, livestock breeding, laboratory animals, and zoo conservation animals, and insect restoration, on the protection of wild animals, the breeding of the endangered animals. We hope to learn from the experience of the professional reproductive medicine and the outstanding livestock breeding techniques. We also hope to receive more suggestions and looking forward to more innovative collaboration.

The theme and 8 sub-themes of the congress was reproductive medicine, fertility preservation, assisted reproduction, cell and tissue bio-banking, animal cloning, embryo development, cell reprogramming, biology and economics. Also, according to different species, such as human, livestock, laboratory animals, zoo animals, reptiles, amphibians, fish, insects, there were relevant techniques and focus.

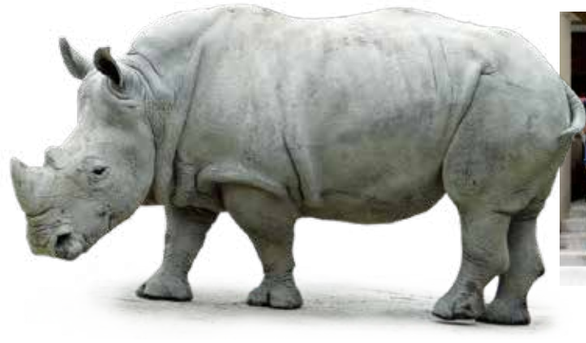
The annual congress took place for four days, from May 3rd to 6th 2018. There were the annual meeting and professional paper presentations on biotechnology. There were 155 participants from 13 countries and regions, including Taiwan, Japan, Philippines, Thailand, Vietnam, Malaysia, Singapore, China, Hong Kong, South Korea, France, German, and the United States. There were 67 papers presented, including 10 keynote speeches, and 6 posters. The Germ Cell Freezing Technology Workshop was held. There were five sessions with 6 lecturers, 3 assistants, and 35 participants.

On the closing ceremony on May 6th, the ARBS committee signed and agreed Taiwan registered as an official International membership. Later one, the Livestock Research Institute and Taipei Zoo followed up the registration process.

Rhino Assisted Reproductive Workshop

In order to strengthen the techniques and collaboration on rhino (*Rhinocerotidae*) anesthesia and assisted reproduction, Taipei Zoo and Chuang Foo Foundation Zoo co-organized 2018 Rhino Assisted Reproductive Workshop on May 5th to 8th. We invited the two specialists from Leibniz Institute for Zoo and Wildlife-Research and a breeding specialist from National Zoological Park, the United States to give us lectures and tutorials. There were lectures, and animal anesthesia and assisted reproduction tutorials. There were 77 participants from 9 countries.


莊福文教基金會莊秀石董事長5月7日出席「犀牛輔助生殖技術工作坊」（圖：莊福文教基金會 提供）



犀牛輔助生殖技術工作坊

歐亞水獺媽媽「金莎」捕捉到魚之後，交給寶寶飽餐一頓！

2018 歐亞水獺保育暨再引入國際研討會

7月23至27日本園與農委會林務局、農委會特有生物研究保育中心、金門縣政府及金門國家公園共同主辦「2018歐亞水獺保育暨再引入國際研討會」（2018 International Conference on Eurasian Otter Conservation and Re-introduction），邀集臺灣大學、師範大學、東海大學等國內專家學者，以及來自荷蘭、德國、南韓、波蘭、英國、新加坡、阿拉伯聯合大公國、香港、日本共計10國18位國外專家來臺分享經驗，總計超過252人與會。總計5日的會議包含主題報告、棲地現勘、討論工作坊、座談會等多樣化議程，其中3日半的議程於金門舉行，並於短時間內統整國際與在地意見，歸納出棲地及水系、路殺、公民意識、族群調查、保育中心等31個行動方案，以專業、熱情及效率點燃金門在地歐亞水獺保育行動之火。

2018野生動物域外保育族群管理國際研討會：域外保育計畫之整合典藏評估與計畫工作坊

於10月23日至10月26日邀請國際自然保護聯盟物種存續委員會保育策略專家群（IUCN SSC Conservation Planning Specialist Group, CPSG）講師及東南亞動物園暨水族館協會關鍵成員來園，舉辦野生動物域外保育指導課程，以及整合典藏保育及計畫工作坊，協助推展最新族群管理概念，並協助本園本土種及龜類等物種典藏計畫，共計4國58位與會者，包含國際自然保護聯盟專家群、國際動物園暨水族館相關組織、國內單位如：特有生物研究保育中心、國立臺灣大學、國立師範大學、屏東科技大學等保育專業研究者整合討論共33種本土動物及64種龜類動物域外保育之優先順位，並對本園物種典藏核心計畫提出建議，提升本園在保育上的貢獻。

野生動物臨床病理技術工作坊

為強化東南亞國家臨床病理檢驗技術，本園於10月31日由亞洲保育醫學會委託辦理野生動物臨床病理技術工作坊，由本園2位同仁並邀請國立中興大學臨床病理學專家於亞洲保育醫學會年會舉辦期間，於印尼峇里島野生動物園內舉辦。總計有25位來自東亞及東南亞共9個國家的學員報名參加。

4. 其他專業交流

▶日本京都大學野生動物研究所助教和日本猴類研究中心研究員–大渕希郷先生 (Masato Obuchi)，蒞園發表其與大牟田動物園、九州大學共同執行的「動物園的屋久鹿計畫–動物園獅子的食物豐富化」專題演講。

▶上海動物園閆妮娜獸醫、周立晨保育員，蒞園發表「上海動物園園的現況與發展」專題演講。

▶北卡教學動物醫院神經科獸醫李俊陞演講，蒞園發表「小動物神經學檢查」專題演講。

▶美國加州牙醫，蒞園發表「牙科根管治療新知」專題演講。

▶菲律賓Malbuwaya基金會的營運總監Marites Balbas女士，蒞園發表「菲律賓鱷的域內與域外保育」專題演講。

▶緬甸史密森尼研究機構的Ohnmar Aung博士，蒞園發表「緬甸防疫一體」專題演講。

2018 International Conference on Eurasian Otter Conservation and Re-introduction

The 2018 International Conference on Eurasian Otter (*Lutra lutra*) Conservation and Re-introduction was co-organized by Taipei Zoo, Forest Bureau, Endemic Species Research Institute, Kinmen County Government, and Kinmen National Park. It took place on July 23rd to 27th, 2018. We had invited domestic professors and specialists from National Taiwan University, National Taiwan Normal University, and Tunghai University, and also international scholars from the Netherlands, German, South Korea, Poland, the United Kingdom, Singapore, United Arab Emirates, Hong Kong, and Japan. There were 18 International professors and specialists from 10 countries to participate. The total number of participants exceeded 252. During the five days conference, there were keynote speeches, inspection on habitat, workshops, panel discussion, and others. Three days of the conference took place in Kinmen. The conference organized international and domestic suggestions and feedbacks and had proposed 31 action projects, including habitat, water system, roadkill, civic consciousness, and group investigation, conservation center and so on. With profession and enthusiasm, the conference lighted up the protection and conservation action on Eurasian otter in Kinmen.

2018 The Integrated Collection Assessment and Planning Workshop for *Ex-situ* Conservation Programs

Taipei Zoo invited specialists from IUCN SSC Conservation Planning Specialist Group (CPSG) and members of Southeast Asian Zoos and Aquariums Association (SEAZA) to visit us on October 23rd to 26th. We had organized wildlife conservation workshop, integrated collection assessment and planning workshop, promoting group management concept and assisted our zoo to conduct the archive collection of indigenous species and turtles. There were 58 participants from four countries, including CPSG, World Association of Zoos and Aquariums (WAZA), and domestic institutes, such as endemic species research institute, National Taiwan University, National Taiwan Normal University, and National Pingtung University of Science and Technology. They are all professionals in the animal conservation field. They discussed and integrated the priority of 33 indigenous species and 64 turtles for *ex-situ* conservation and also contributed their suggestions and recommendations to our zoo archive collection project, enriching our contribution to conservation.

Clinical Pathology of Wild Animal Workshop

In order to strengthen the clinical pathology techniques among Southeast Asian countries, Taipei zoo was commissioned by Asian Society of Conservation Medicine to organize Clinical Pathology of Wild Animal Workshop on October 31st. Two of our zoo colleagues also invited clinical pathology professors from Chung Hsin University to visit Bali Safari and Marine Park, Indonesia during the annual meeting of Asian Society of Conservation Medicine. There were 25 participants from East Asia and Southeast Asian, in a total of 9 countries.

4. Other Professional Exchanges

▶Dr. Masato Obushi, assistant professor of Wildlife Research Center, Kyoto University and researcher of Japan Monkey Centre visited Taipei Zoo and presented the keynote speech on "the Japanese Sika (*Cervus nippon yakushimae*) project in zoo: enrich food for zoo lions ", the research project that he collaborated with Omuta City Zoo and Kyushu University.

▶Veterinarian Yan, Ni-na and Keeper Chou, Li-chen from Shanghai Zoo visited Taipei Zoo and presented a speech, "The current and development of Shanghai Zoo."

▶Veterinarian Lee, Jun-sheng from North Carolina Animal Teaching Hospital visited Taipei Zoo and gave a speech on "Neuroscience Check on Small Animals."

▶The Veterinary Dentist from California, the United States visited Taipei Zoo and gave a speech on "News on Dental Root Canal Therapy."

▶Madam Marites Balbas from Malbuwaya Foundation, Philippines, visited Taipei Zoo and gave a speech on "the *In-situ* Conservation and *Ex-situ* Conservation on Philippine Crocodile (*Crocodylus mindorensis*)."

▶Dr. Ohnmar Aung from Smithsonian, Burma visited Taipei Zoo and gave a speech on "Epidemic prevention in Burma."