



肯亞納庫魯湖國家公園

# 天際線最美的身影

The Most Beautiful Silhouette on the Skyline

Lake Nakuru National Park

採訪 & 撰文 Interview & Text / 邱和珍 Jane Chiu

特別感謝 Special thanks to / 財團法人都市更新研究發展基金會的張隆盛董事長 Lung-sheng Chang, Chairman of the Urban Regeneration R&D Foundation、廖美莉秘書 Secretary Mei-li Liao

翻譯 Translator / 汪芃 Miranda Wang



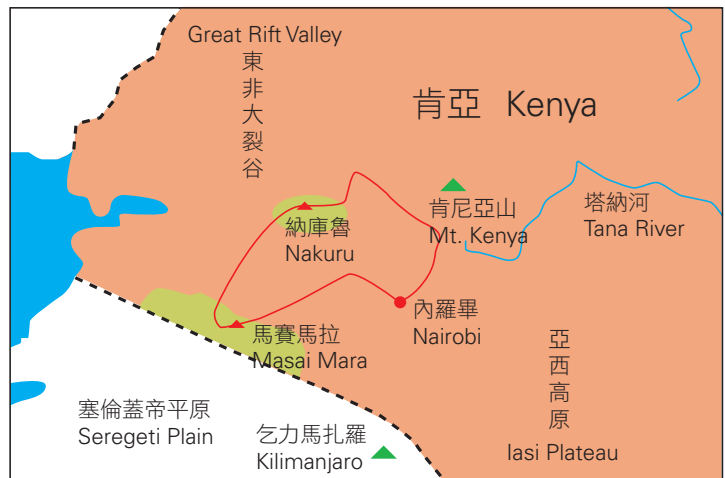
這條總長9,600公里，從土耳其一路延伸至莫三比克的東非大裂谷，布滿了大小不一的高原湖泊。這裡的湖泊，水色湛藍，遼闊浩蕩，不僅是旅遊觀光勝地，而且湖區水量豐富，湖濱植被茂盛，吸引許多野生動物前來棲息、覓食，其中又以肯亞的納庫魯湖國家公園因有四百多種禽鳥在此棲息而享有盛名。

目前擔任財團法人都市更新研究發展基金會的張隆盛董事長，曾於營建署長任內大力推動設置國家公園，足跡遍及全球七大洲的世界遺產及自然保護區。談到兩次考察納庫魯湖國家公園的經驗，仍相當推崇該公園的生態保護成效。近日剛由全世界三極之一的喜馬拉雅山返國的張隆盛，對於7年前在納庫魯湖國家公園，目睹數以萬計的紅鶴群聚於湖中覓食、偶爾舞動時所掀起的陣陣紅濤壯觀景象，猶歷歷在目。

Running from Turkey to Mozambique, the 9,600-kilometer-long East African Rift is scattered with numerous highland lakes. Not only does the vast expanse of azure lakes draw tourists but the abundant water supply also nourishes thick lakeside vegetation and attracts wild animals to inhabit and feed here. Home to more than 400 bird species, Lake Nakuru National Park (LNNP) is particularly one of the best known spots along the rift.

Lung-sheng Chang, Chairman of the Urban Regeneration R&D Foundation, praised LNNP's ecological efforts as he shared his two study visits to the park during his term as Director-general of Construction & Planning Agency. During his effort to promote the establishment of Taiwan's national parks, Chang had visited many natural preserves around the world. Among all trips, Chang has always remembered well how, seven years ago, he had witnessed tens of thousands of flamingos feeding in LNNP and flapping their wings to form red waves.

肯亞的納庫魯湖國家公園因有四百多種禽鳥在此棲息而享有盛名 / 葉玲瑤攝  
Lake Nakuru National Park in Kenya is a well-known for the more than 400 bird species that inhabit in it. / by Ling-yao Ye



### 生態豐富的絕美棲地

1,200萬年以前，非洲大陸板塊因漂移運動而形成東非大裂谷，當抬升運動不斷的進行，大陸板塊不斷的斷裂，使得地下熔岩相繼湧出，漸漸形成火山，而從火山口流出來的水，就形成了一連串的湖泊，有些是淡水湖，有的則是鹹水湖。

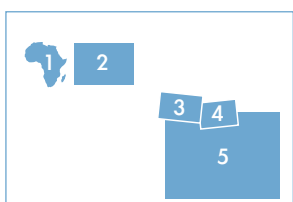
於1968年成立的納庫魯湖國家公園，就是一個含鹼、遠看像一個梨形藍色的湖泊，占地約有188平方公里。湖裡生長著紅鶴愛吃的藍綠藻，此地紅鶴數量最多時可達200萬隻以上，約占全世界紅鶴總數的三分之一。

「退而不休」的張隆盛談起各地豐富的地理環境資源，仍津津樂道：「雖然納庫魯湖國家公園佔地不大，除了紅鶴以外還有四百多種鳥，以及很多的動物像是黑犀牛、狒狒、羚羊等等，這裡可說是動物的天堂。」

### A Beautiful Habitat Full of Life

The East African Rift was formed 12 million years ago when the African continental plates drifted apart. As tectonic uplift continued, the underground lava flows surged through the rifts and formed volcanoes. Water gushing out of the volcanoes in turn formed a series of lakes; some are freshwater, while others are saltwater.

Established in 1968, LNPN covers an area of some 188 km<sup>2</sup>. The majority of it is a blue, pear-shaped alkaline lake, whose abundance of blue-green algae attracts sometimes as many as more than two million flamingos, about a third of the bird's total population around the world. "Though Lake Nakuru National Park is small, it is home to more than 400 bird species besides flamingos, as well as other animals, like black rhinos, baboons, and gazelles. It's a paradise for animals." Though half-retired, Chang still delighted in talking about the natural resources of this Kenyan national park.



1-2. 肯亞 (圖1) 納庫魯湖國家公園地形圖 (圖2) 繪圖參考來源：  
 (圖1 <http://www.agoda.com.hk/africa.html>)，(圖2 <http://www.panden.com.cn/?thread-380-112.html>)  
 Map of Lake Nakuru National Park (Picture 2), Kenya (Picture 1) / Reference: Picture 1 <http://www.agoda.com.hk/africa.html>, Picture 2 <http://www.panden.com.cn/?thread-380-112.html>  
 3-5. 除了紅鶴以外，犀牛、狒狒、羚羊等也是園區中的常見動物 / 張隆盛攝  
 Besides flamingos, there are other animals commonly seen in the park, such as black rhinos, baboons, and gazelles. / by Lung-sheng Chang

納庫魯湖自然生態豐富是吸引鳥類來此棲息的原因，除了藻類，長得像蝦子的橈腳類（一種甲殼類浮游動物）也是紅鶴的肥美大餐之一。張隆盛表示，納庫魯湖國家公園把鳥類視為重要物種，為確保鳥類飲食安全，極盡所能排除如污水等外來污染源，使水質乾淨，如此才能使禽鳥及其他動物來此安心棲息與覓食。

然而，納庫魯湖是否會因氣候變遷，雨量減少，使得在此棲息覓食的紅鶴因湖泊消失而瀕臨滅絕的危機？張隆盛認為，其實可以不用太擔心。因為即便雨量變少，水岸逐漸縮小，但湖面下仍有地下水冒出來，像這種天然形成的湖泊突然消失的機率比較小。「如果不幸有那麼一天的話，鳥有翅膀，它會飛到其他地方覓食，更何況，納庫魯湖只是紅鶴的覓食地之一，並非繁殖地，因此不至於對牠們造成太大影響。」張隆盛說。

Birds flock to Lake Nakuru because of the natural resources there. Besides algae, Lake Nakuru also attracts flamingos and other birds with its abundance of copepods, a class of shrimp-like crustacean zooplankton. To safeguard birds and their food sources, said Chang, the national park has strived to protect its water quality from pollution so as to provide birds and other fauna with safe food and shelter.

However, will the flamingos face threats as the lake keeps shrinking due to reduced rainfall resulting from climate change? This is still no cause for concern now, Chang assured. Because even though the lake is shrinking due to diminished rainfall, such a natural lake is unlikely to totally disappear, since it will still be fed by underground water. "Even if it does, birds can still fly to other habitats. What's more, Lake Nakuru is only a feeding ground for flamingos, not a breeding ground; the impacts posed to the birds are limited," Chang reassured.





### 限量管理 自制約束

有別於台灣國家公園在解說員人力上的大量分配，納庫魯湖國家公園內只有編制少數管理人員，園區也有流量管制，防止遊客滯留或從事非法行為，因此只設置一個大門供遊客進出園區。其園區四周都有鐵絲網圍著，主要是用來防止鹿、犀牛、狒狒等動物到處亂竄。前來造訪的遊客大多是自行開車，或是有導遊隨行的團體，大家對動物均極為友善，行為也都能自制。

談到提高遊客入園費用，是否可以改善國家公園的軟硬體設備，張隆盛慎重地表示，「國家公園如擁有收入分配權，的確可以解決許多及時性的業務需要，但必須依各國的國情及政策考量。以南非克魯格國家公園為例，

### Self-discipline in Addition to Flow Control

Different from the management practices of Taiwan's national parks, which usually use many guides, LNNP has a limited staff. To better monitor the number of visitors and prevent unlawful stays or activities, the park has only one entrance/exit. Furthermore, wire fencing is used all around the park to prevent animals such as deer, rhinos, or baboons from straying. Either driving their own cars or coming in guided groups, visitors show great respect to animals and behave themselves.

When asked if a raise in admission fees could help improve the facilities of national parks, Chang gave a discreet answer. "It does help to address many pressing needs if a national park can allocate its own income.



其每年80%收入是分配給其他國家公園使用，我想納庫魯湖國家公園的收入也將由國家統籌分配。由於台灣國家公園財政方面採取統支制度，其收入全部上繳國庫，所需經費是以編列預算方式去支應的。而如同居家周遭的公園般，台灣國家公園是完全開放性的，加上裡面還有當地的居民，若要收取門票是不適宜的作法。」

### 天然、零污染、無人為干擾

納庫魯湖國家公園位於海拔 1,500 公尺的高原上，旁邊就是肯亞第四大城，張隆盛分析納庫魯湖國家公園成功的關鍵在於，獨一無二的天然湖泊、零污染的生態環境及鮮少有人為干擾，讓來去自如的禽鳥喜歡來這裡棲息與覓食。

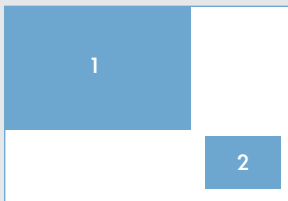
但同樣為濕地型鳥類生態為主的台江國家公園，只有在河口處有天然溼地，其他是隨處可見的魚塢、鹽田及人為濕地，可見管理上面臨特殊的挑戰。「由於黑面琵鷺喜歡棲息在沒有人為干擾的地區，因此

However, policies varying from country to country must be taken into consideration. Take Kruger National Park in South Africa for example; 80 percent of its income is allotted to other national parks. Similarly, the income of Lake Nakuru National Park may also be reallocated by the government. Likewise, the funds of Taiwan's national parks are also reallocated by the government. What's more, Taiwan's national parks are open to the public, just like ordinary parks, with local residents living in them, so it's improper to charge visitors for admission."

### A Natural, Unpolluted, Undisturbed Paradise

LNNP is situated on a plateau at an elevation of 1,500 meters and next to the fourth largest city in Kenya. The key to this park's success, as Chang analyzed, is its unique natural lakes and unpolluted, undisturbed ecology, which make it an ideal shelter and feeding ground for birds.

By comparison, Taiwan's Taijiang National Park, though also featuring wetlands and bird life, has a tougher challenge to face. In the park, natural wetlands exist only around the estuary; scattered in the rest of the park are fish farms, salt pans and man-made wetlands. "Black-faced Spoonbills



1. 鳥瞰整座納庫魯湖國家公園，那美麗粉紅色的色帶，其實是成千上萬的紅鶴所組成的奇景。  
Looking down Lake Nakuru National Park from sky, the beautiful pink ribbon is in fact a spectacle constituted by millions of flamingos.
2. 為防止遊客滯留或從事非法行為，納庫魯湖國家公園只設置一個大門供遊客進出園區 / 張隆盛攝  
To prevent unlawful stays or activities, Lake Nakuru National Park has only one entrance/exit. / by Lung-sheng Chang



必須對牠的覓食行為、生活習性、族群分布、繁殖棲地、遷移路線等方面進行深入研究，才能投其所好，吸引更多的禽鳥來此棲息，人們就可以近距離觀賞，再也不必用50倍的望遠鏡了。所以，如何使人與鳥相安無事，是一個值得面對的課題！」張隆盛頗有感觸的說。

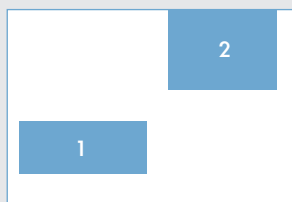
台灣國家公園依園區內現有土地利用型態及資源特性劃分為五大分區，並分別以不同管制程度來管理。張隆盛指出，像是生態保護區、特別景觀區及史蹟保存區等核心區，必須做到絕對的保護，防止人為干擾；至於核心區周圍的緩衝區，包括一般管制區及遊憩區，即是為了緩衝外界及人類行為對核心區的衝擊及影響。以墾丁國家公園為例，夏日前往墾丁的民衆可以在墾丁大街遊憩區內玩樂，但一進入生態保護區像是龍坑生態保護區、南仁山生態保護區等核心區，就會遇上各種管制措施，就是為了保護核心區脆弱的生態資源。

肯亞，一個較台灣貧窮許多的國家，其在保護野生動物的棲地環境上，卻有著不輸先進國家的智慧與方法。「他們甚至有一半以上的人口，平均每天收入不到一塊美元，但其在動物、遊客與當地居民三

(*Platalea minor*) only inhabit areas undisturbed by humans, so it's necessary to research into their feeding, behavior, distribution, breeding and migration routes in order to create a favorable habitat for more of them to stay. That way, visitors can watch birds at close distance without using telescopes. So, the mission is to create an environment where humans and birds can get along!" Chang noted.

Divided into five areas according to land use types and resources, Taiwan's national parks are managed at different levels of protection. For instance, Chang explained, the ecological protected areas, scenic areas, and cultural/historic areas are core zones strictly protected from unwanted human activities. Around the protected areas are existing use areas or recreational areas, which serve as buffer zones to reduce external and man-made impacts on the core zones. Take Kenting National Park for example. Free sightseeing is allowed in the recreational area, whereas regulatory measures are imposed in Longkeng and Nanrenshan Ecological Protected Areas to protect the delicate ecosystems in these core zones.

Compared with Taiwan, despite its much wider poverty gap, Kenya rivals developed countries with regard to conservation of wildlife habitats. "It's a country in which half of the population earn as little as less than one U.S. dollar a day, but the harmony between animals, tourists and local people there



1. 肯亞在經營動物、遊客與當地居民三者之間的平衡管理方式有其智慧，值得我們學習與警惕 / 張隆盛攝  
The Kenyan wisdom of bringing animals, tourists and local people into harmony with balanced management is something for us to learn from. / by Lung-sheng Chang
2. 暮色靄靄下，倦鳥群聚靜謐湖面，張隆盛希望，如此生生不息的畫面不應只在攝影圖片上被釘放著 / 張隆盛攝  
In the twilight, birds congregate on the lake; Chang hopes that this lively scene should not just appear in the photograph. / by Lung-sheng Chang



者之間所能維持的和諧關係，卻相當值得我們學習與警惕。」張隆盛語重心長地說著。

展翅高飛紅鶴群，其生生不息的生命力在攝影圖片上被釘放著，一如張隆盛對環境保育所永持在心的那份關懷，如此耀眼、執著又令人印象深刻。🌐

is something for us to learn from." Chang commented with a feel of heaviness in his voice.

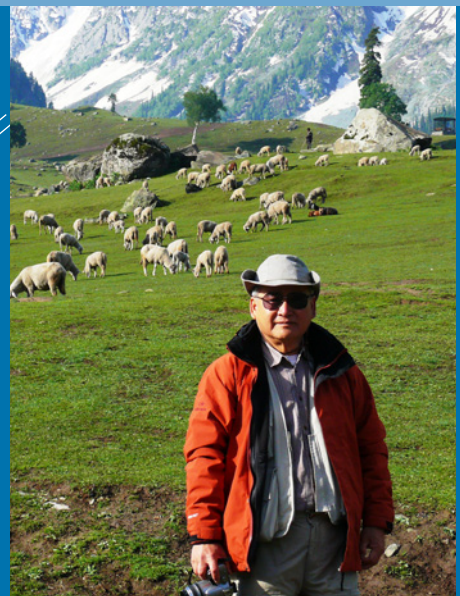
In a photograph presented by Chang, flamingos flap wings and soar high in the sky, bursting with vitality. And Chang's concern for environmental conservation is just as impressive and inspiring. 🌐

## 簡介 Profile

### 張隆盛 Lung-sheng Chang

畢業於國立成功大學建築學系，後赴美國賓州大學專研都市與區域計畫。曾任內政部營建署長、內政部常務次長、經建會副主任委員、環保署長等職。目前擔任財團法人牽成永續發展文教基金會以及都市更新研究發展基金會董事長，著有「勇闖企鵝王國」、「漫遊白令的領域－堪察加紀行」等書。

Chang graduated from the Department of Architecture at National Cheng Kung University, and earned a master's degree in City and Regional Planning at University of Pennsylvania (U.S.A). He had served as Director-general and Administrative Deputy Minister of Construction and Planning Agency, Deputy Minister of the Council for Economic Planning and Development, Minister of the Environmental Protection Administration, etc., and currently the chairman of Chien-Chen Sustainable Development Foundation and of Urban Regeneration R&D Foundation. He had also published books include *Expedition to Penguin Kingdom* and *Roaming in the Bering Sea: Travel Notes on the Tour to Kamchatka*.



※ 本篇感謝部落客 Henry Hou 先生與葉玲瑤 (Ling-yao Ye) 小姐於圖片與資訊上的熱情贊助與提供。欲欣賞更多精采的納庫魯湖國家公園圖文，請上射手玩童 (<http://photo.xuite.net/henry8hou/3830945>) 與 ([http://tw.myblog.yahoo.com/jw!J8L60Y2LFR\\_f\\_4GWnE\\_Mxu91/article?mid=2866](http://tw.myblog.yahoo.com/jw!J8L60Y2LFR_f_4GWnE_Mxu91/article?mid=2866)) 網站。

※ Many thanks to blogger Mr. Henry Hou and Ms. Ling-yao Ye who offered us many excellent pictures and detailed information. If you intend to appreciate more pictures of Nakuru National Park, please go to: <http://photo.xuite.net/henry8hou/3830945> & [http://tw.myblog.yahoo.com/jw!J8L60Y2LFR\\_f\\_4GWnE\\_Mxu91/article?mid=2866](http://tw.myblog.yahoo.com/jw!J8L60Y2LFR_f_4GWnE_Mxu91/article?mid=2866)