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Taiwan New Year Bird Count

Filling in the data gaps for migratory
waterbirds along the EAAF

Da-Li Lin, An-Yu Chang, Allen Lyu, *[Scott Pursner](#), Yong-Lun Lin, Kun-Hai Lin,
Kung-Kuo Chiang, Ruey-Shing Lin, Tatsuya Amano, Richard A. Fuller

AWC workshop

2020 Dec 27

The state of Taiwan's Birds 2020



THE STATE
OF
TAIWAN'S BIRDS
2020

Highlights

674 Bird species which occur in Taiwan

52 Threatened bird species in Taiwan

7 Number of threatened bird species whose numbers have increased

29 Species of breeding bird whose numbers have declined

15 Species of migratory waterbirds whose numbers have declined

3,656 Active eBirders who contribute their observations

450,700 Number of completed bird checklists logged since 1972



Background

Migratory birds of EAAF decreased rapidly

Amano et al. 2010; Wilson et al. 2011; MacKinnon et al. 2012; Conklin et al. 2014; Ma et al. 2014; Studds et al. 2017

due to multiple threats

mudflat loss

Ma et al. 2014; Murray et al. 2014; Studds et al. 2017

climate change & hunting,

Amano et al. 2020; Gallo-Cajiao et al. 2020

The new Great Wall in East Asia

Ma et al. 2014; Luo et al. 2015; Choi et al. 2017

Governance is the key

Amano et al. 2018

They use artificial wetlands

Jackson et al. 2020

Background

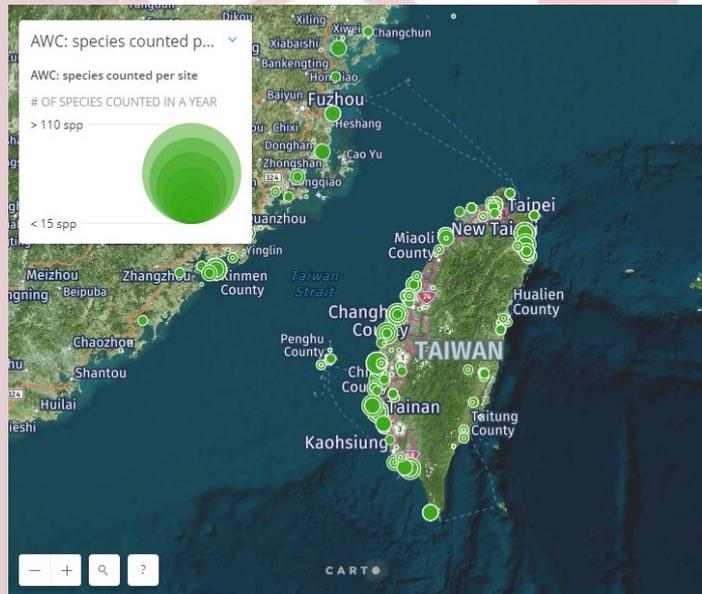
New Year Bird Survey (1973-1984)

東大與台中賞鳥協會聯合舉辦
合歡山新年鳥類調查活動

賞鳥通知 | 合歡山新年調查 (詳P)

1. 時間：12月24～25日，兩天一夜。
2. 集合：24日下午一時30分於臺中市市府廣場。

※東海大學之會友於下午一時在東海郵局前開



This island need a nationwide monitoring project for migratory waterbirds



Taiwan New Year Bird Count (NYBC Taiwan) since 2013 winter

- Btw mid-December and early January, a volunteer team chose one day to count the birds within a circle sample area (radius = 3 km).



2014

2015

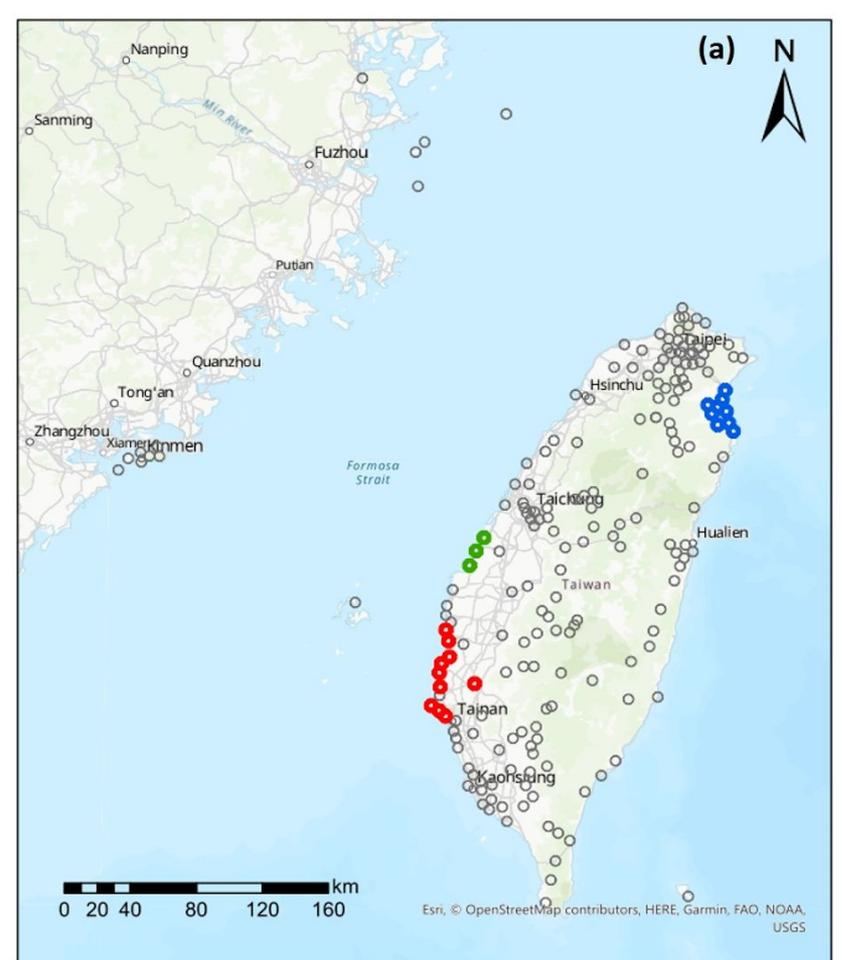
2016



2017

2018

2019



Methods

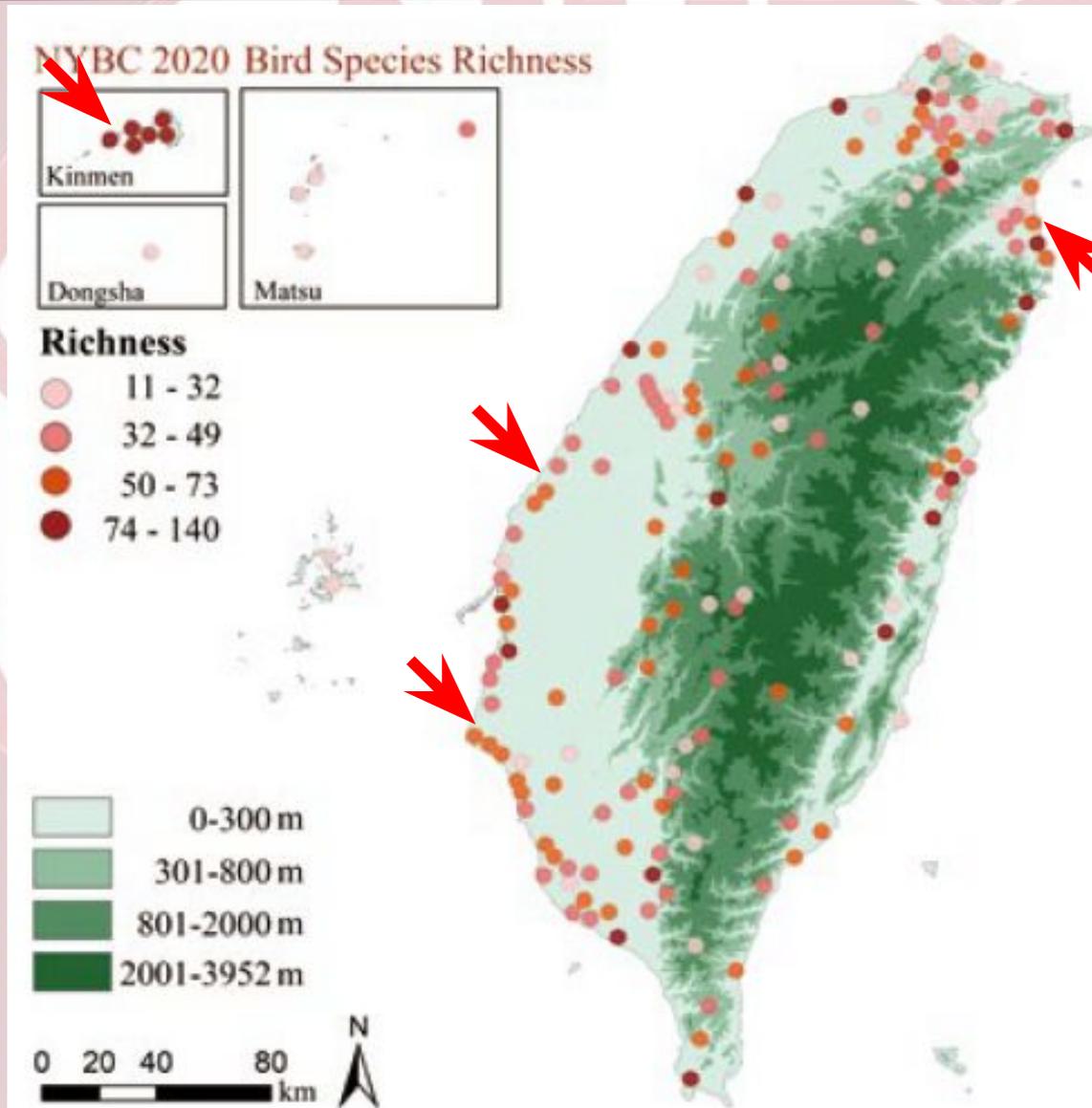
- **Duration:** mid-December to early January
- **Location:** a circle sample area (radius = 3 km)
- **Composition of volunteer team:**
 - leader (coordinator)
 - bird surveyors (able to conduct bird survey independently)
 - volunteers (any people want to join the activities)
- **Methods:** point count, line transect, flock count, area survey



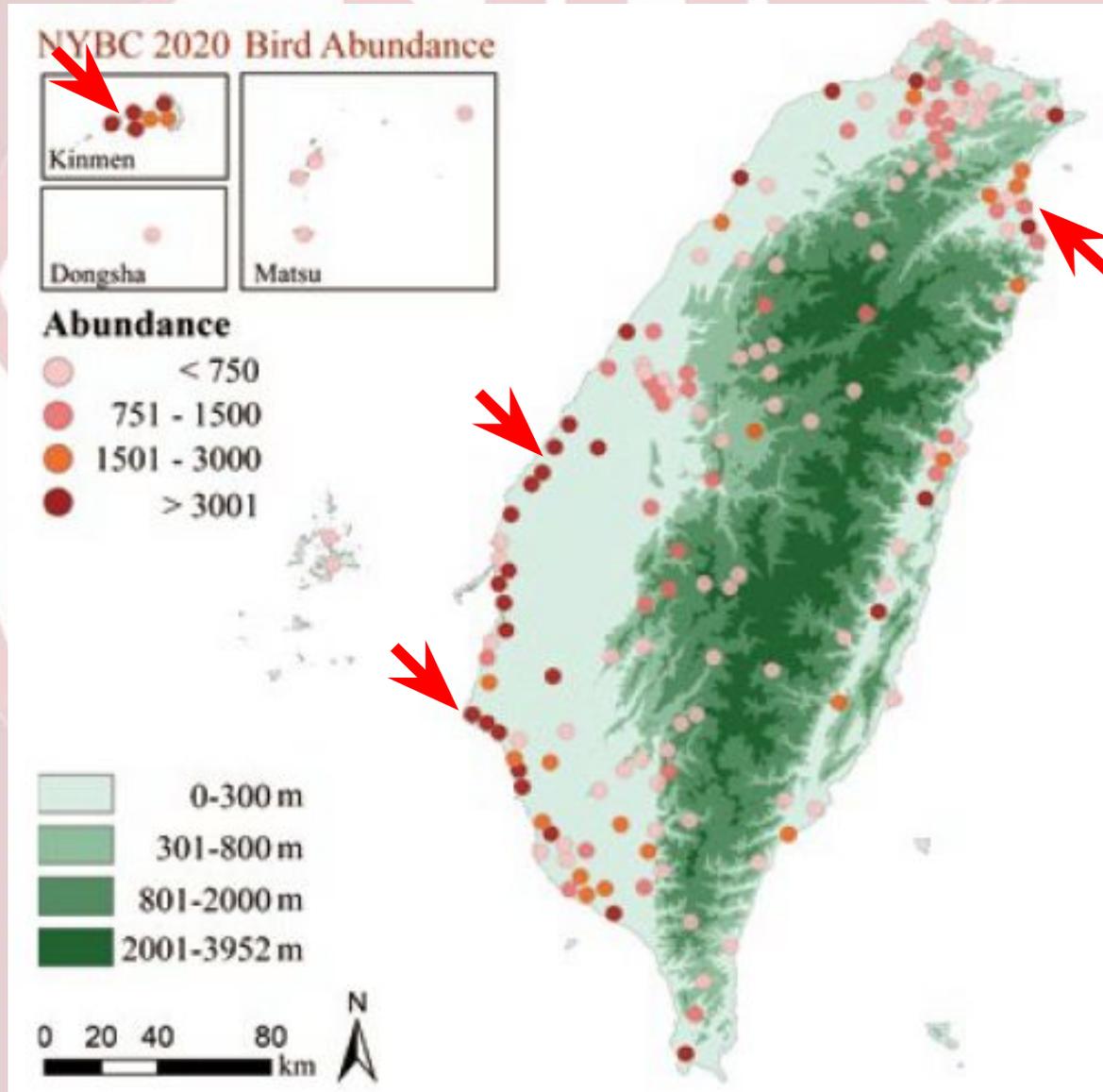
Key numbers

Year	# sites	# volunteers	richness	abundance	# records
2014	122	598	292	189,280	5,462
2015	134	967	319	205,319	20,627
2016	156	1,116	331	292,837	19,303
2017	175	1,258	340	316,928	11,197
2018	172	1,296	334	303,426	15,151
2019	179	1,365	325	312,948	15,338
2020	176	1,054	350	323,979	20,135
2021	173	1,056	337	328,453	

Bird Species Richness



Relative abundance



Northern Shoveler	0.58	▲	1.03	▲	-54.00	●	
Eurasian Wigeon	210.00	▲	3.13	▲	-64.00	●	
Eastern Spot-billed Duck	0.11	●			-15.00	●	
Northern Pintail	0.40	●	0.68	●	212.00	●	
Green-winged Teal	0.24	●	-0.37	●	-62.00	▼	-0.72 ●
Tufted Duck	0.26	●	2.59	▲	-98.00	▼	
Eurasian Coot	161.00	▲	17.94	▲	-23.00	●	
Black-winged Stilt	0.30	●	-0.20	●	68.00	●	-0.54 ●
Pied Avocet	2.66	▲	2.82	▲			44.66 ●
Grey Plover	0.65	●	0.26	●	-53.00	●	0.95 ●
Pacific Golden Plover	-0.10	●	2.58	▲	-47.00	●	-0.47 ●
Lesser Sand Plover	0.11	●	8.13	▲			
Greater Sand Plover	1.60	●					1.58 ●
Kentish Plover	0.40	●	1.94	▲	-71.00	▼	0.01 ●
Little Ringed Plover	-0.38	●	-0.10	●	-49.00	▼	4.32 ▲
Eurasian Curlew	-0.38	●	0.89	●			
Ruddy Turnstone	-0.36	●					-0.23 ●
Long-toed Stint	-0.61	●	-0.63	●	-34.00	●	
Red-necked Stint	1.45	●	2.31	●	-93.00	▼	
Sanderling	-0.47	●					-0.86 ▼
Dunlin	-0.09	●	1.44	▲	-71.00	▼	-0.50 ●
Common Snipe	-0.62	▼	-0.99	▼	-70.00	▼	-0.98 ▼
Common Sandpiper	-0.16	●	-0.25	●	-55.00	▼	-0.72 ▼
Common Greenshank	-0.24	●	0.31	●	-72.00	▼	2.51 ●
Marsh Sandpiper	0.25	●	2.04	●	-45.00	●	-0.37 ●
Wood Sandpiper	-0.38	▼	-0.75	●	-34.00	●	-0.98 ▼
Common Redshank	-0.10	●	-0.05	●			
Saunders's Gull	130.00	●					
Black-headed Gull	55.00	●	1.30	▲	-100.00	●	
Caspian Tern	1.77	▲	1.64	▲			
Whiskered Tern	3.23	●	3.47	●			

Taiwan

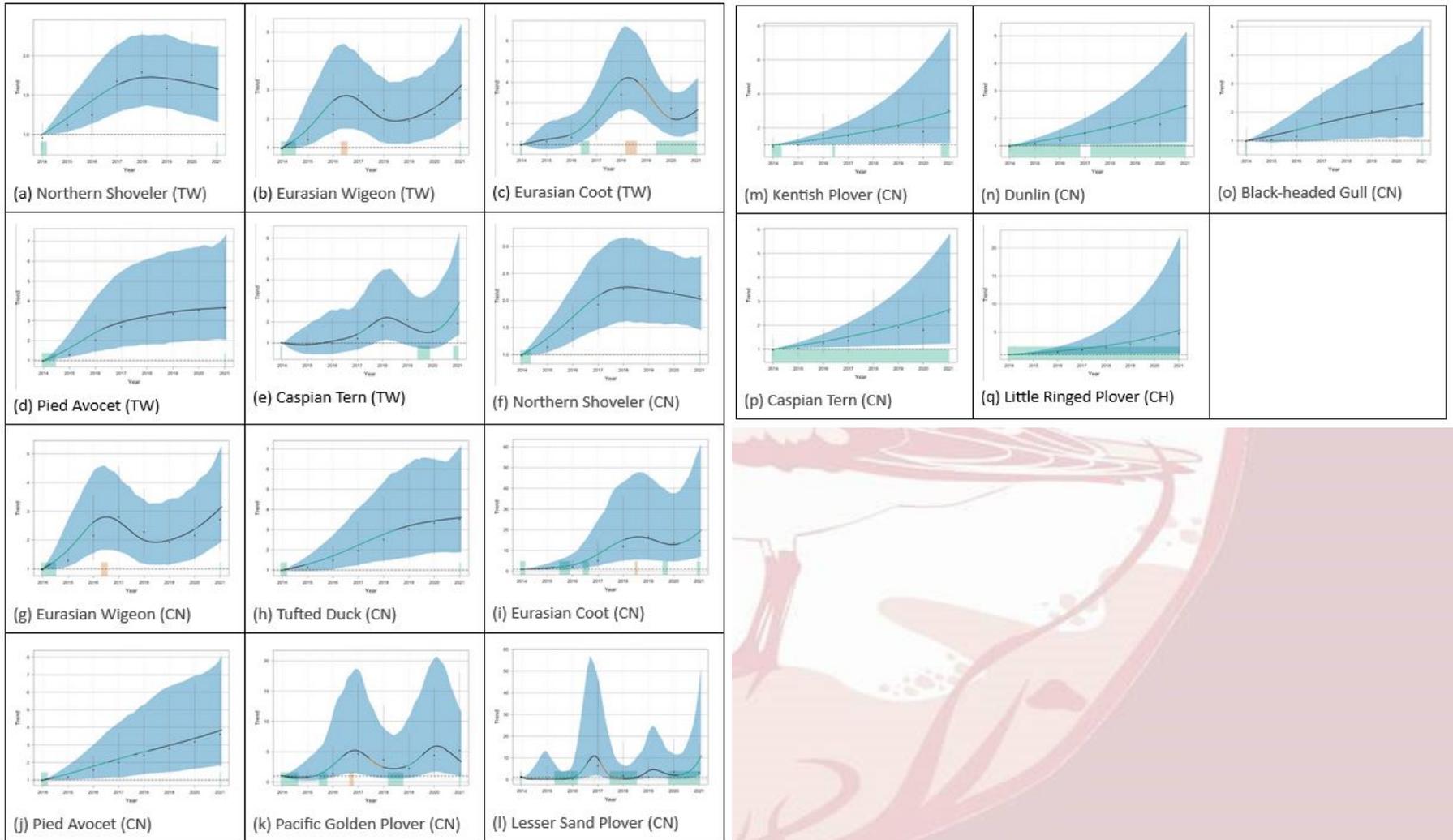
Chia-Nan

Yi-Lan

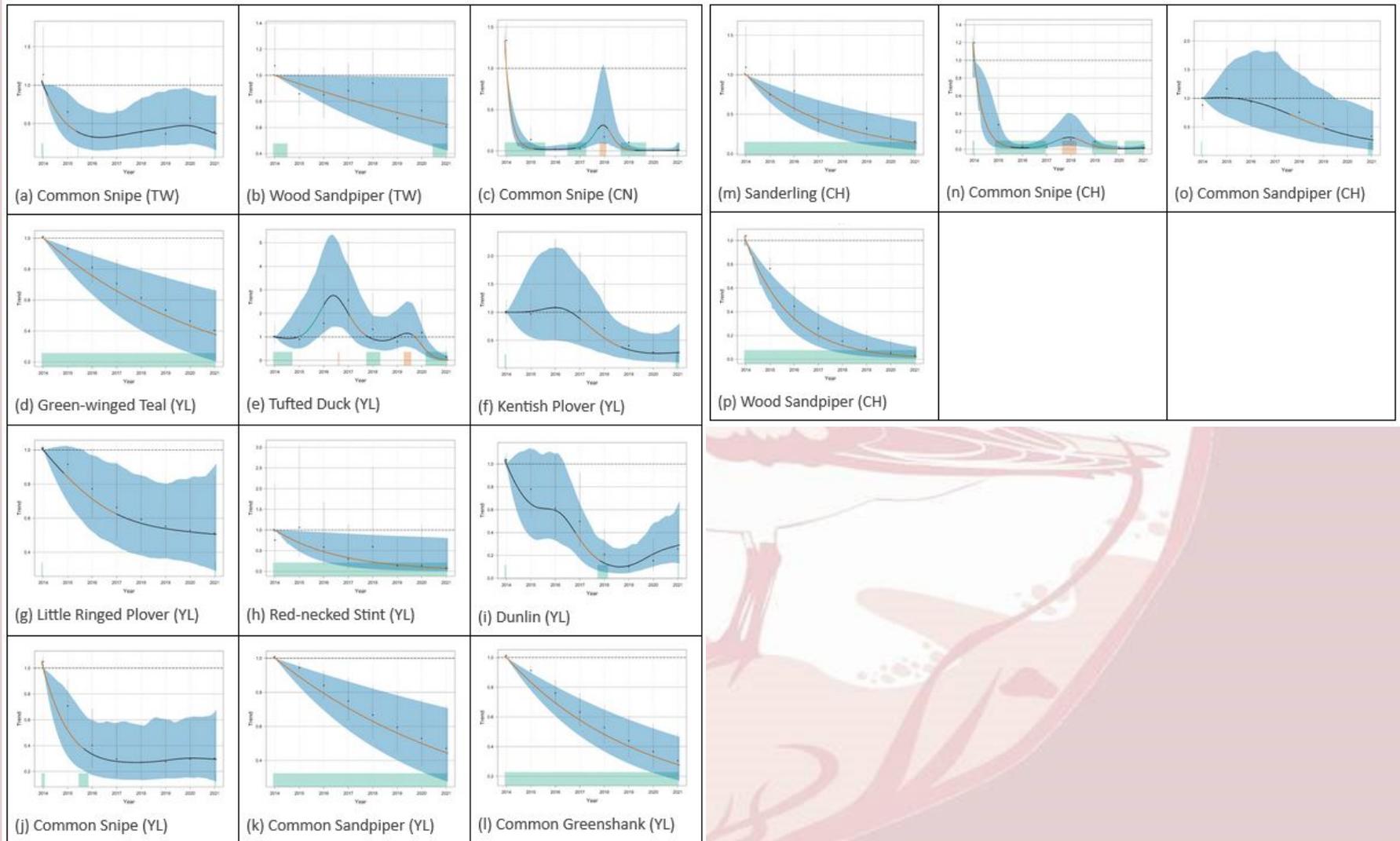
Chang-Hua

Regions

increasing species

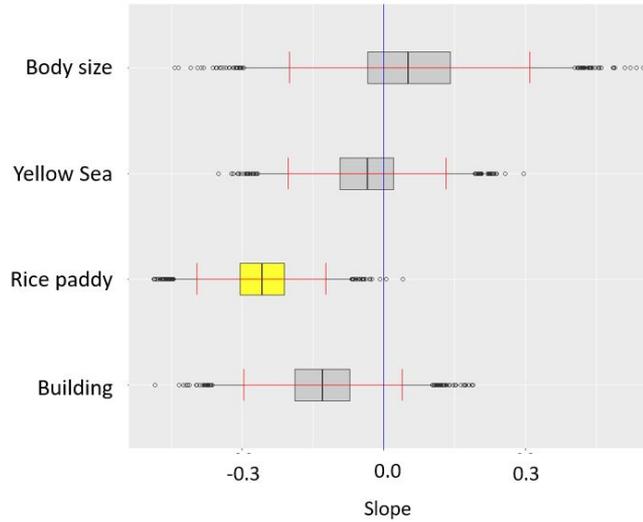


declining species

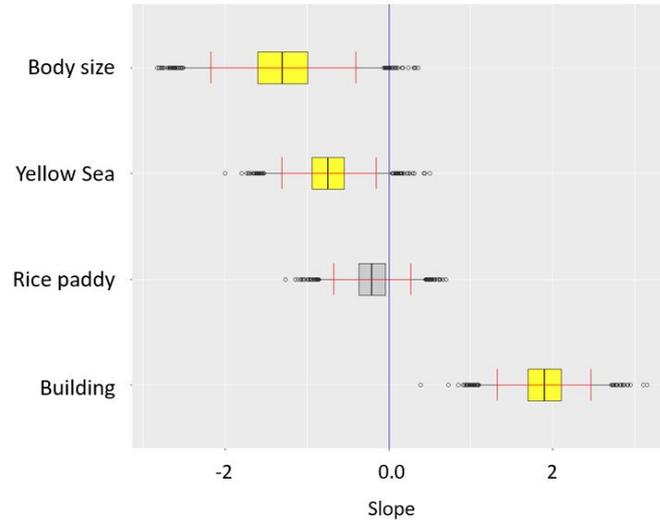


Factors affect trajectories

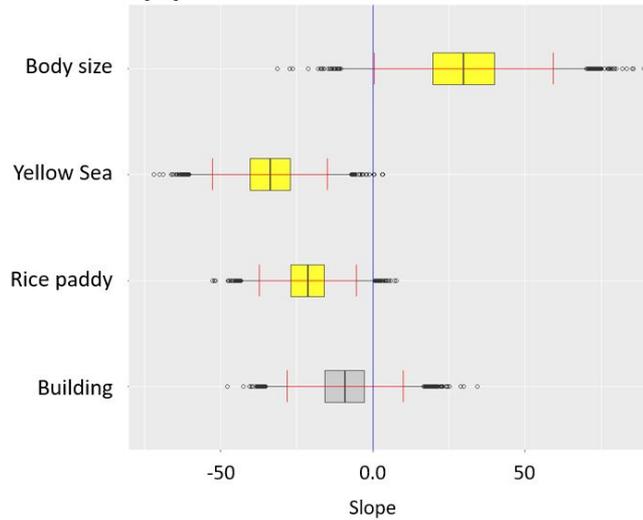
(a) Taiwan



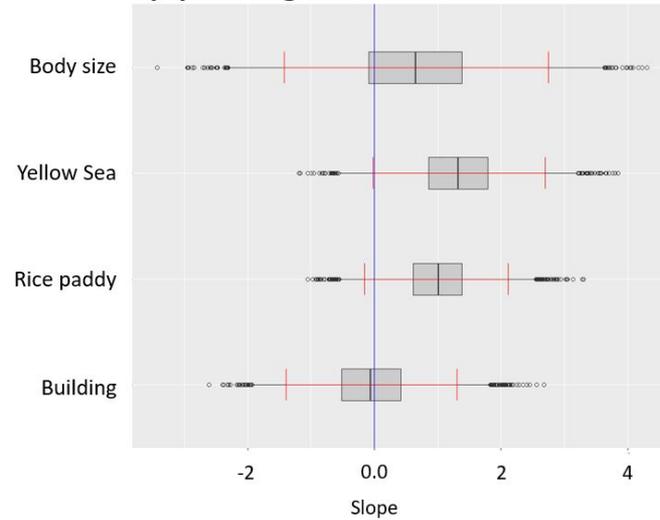
(b) Chia-Nan



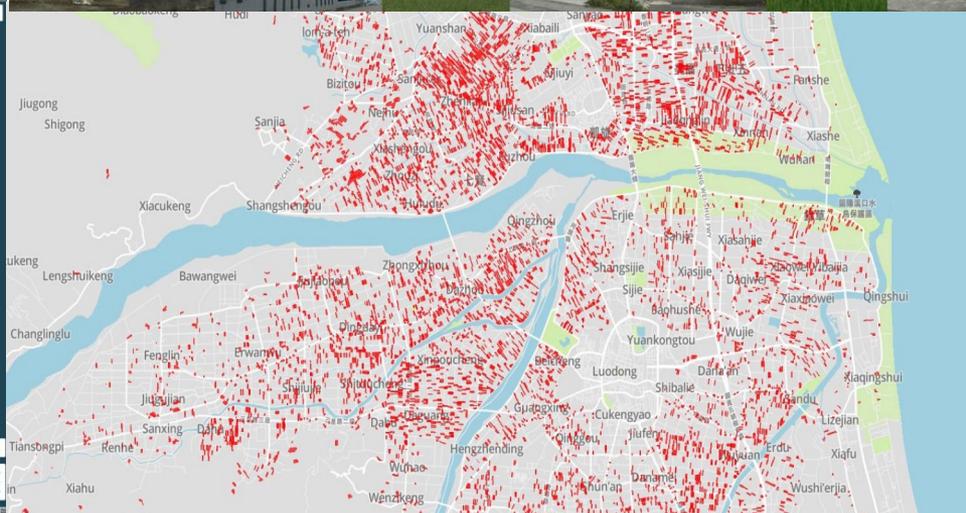
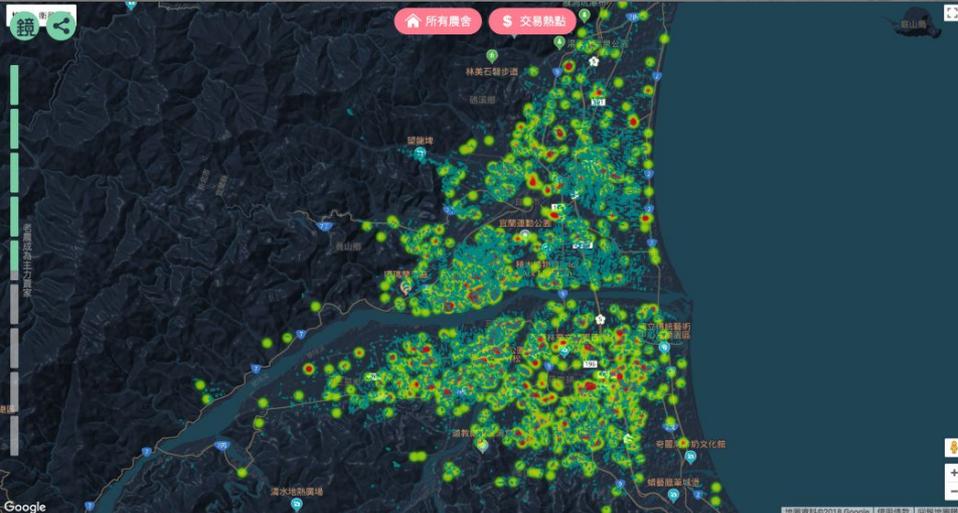
(c) Yi-Lan



(d) Chang-Hua



Building houses on the farmlands



The new threat: solar panels



Nordmann's
Greenshank
(EN)



Spoon-billed
Sandpiper
(CR)



Great Knot
(EN)



Saunders's Gull
(VU)



Red Knot
(NT)

Engage volunteers

- **Social media**: interact with them, answer their questions, provide feedback
- **Annual reports**: collate their contribution (observations), honor the passionate volunteers, popular science articles
- **Souvenirs**: stickers, spring couplets
- **Open data**: make them are both data contributors and users
- **Side events**: guess magical number, support student teams to access remote sites
- **Mascot**: we chose mascot every year as logo
- Joining bird count is a reunion with birders

Data provision & Annual Reports

Academic Sinica

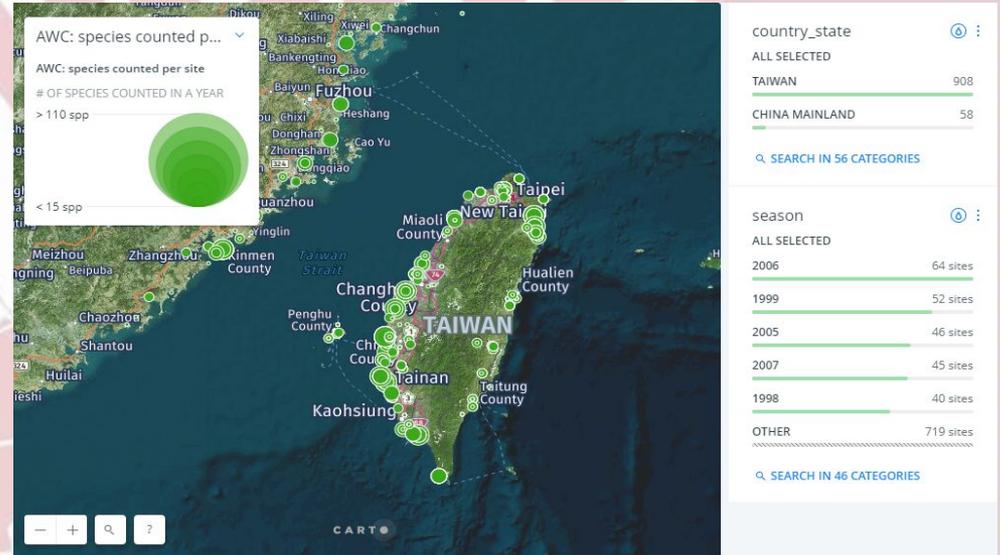
Chiayi University

National Taiwan University

University of Queensland

Wetlands International

Asian Waterbird Census



2014

2015

2016

2017

2018

2019

2020

Open data

詮釋資料集 | 註冊於 2021年6月24日

Taiwan New Year Bird Count

發布者為 [Taiwan Endemic Species Research Institute](#)

Lin D

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[資料集](#) [專案](#) [活動](#) [下載](#) [首頁](#)

57,941 出現紀錄

2 引用書目

The Taiwan New Year Bird Count (Taiwan NYBC) is a citizen science project that aims to monitor the status and trends of migratory waterbirds in Taiwan proper and its outlying islands. It was launched by the Taiwan Wild Bird Federatiopn (TWBF), the Wild Bird Society of Taipei (WBST), the Kaohsiung Wild Bird Society (KWBS) and Taiwan Endemic Species Institute(ESRI) in December 2013. The monitoring methods of the Taiwan NYBC follow the basic principles laid out in the more commonly known Christmas ... [更多](#)

專案 ID: NYBC Taiwan

發布日期: 2021年12月1日

最後修改的詮釋資料: 2021年12月1日

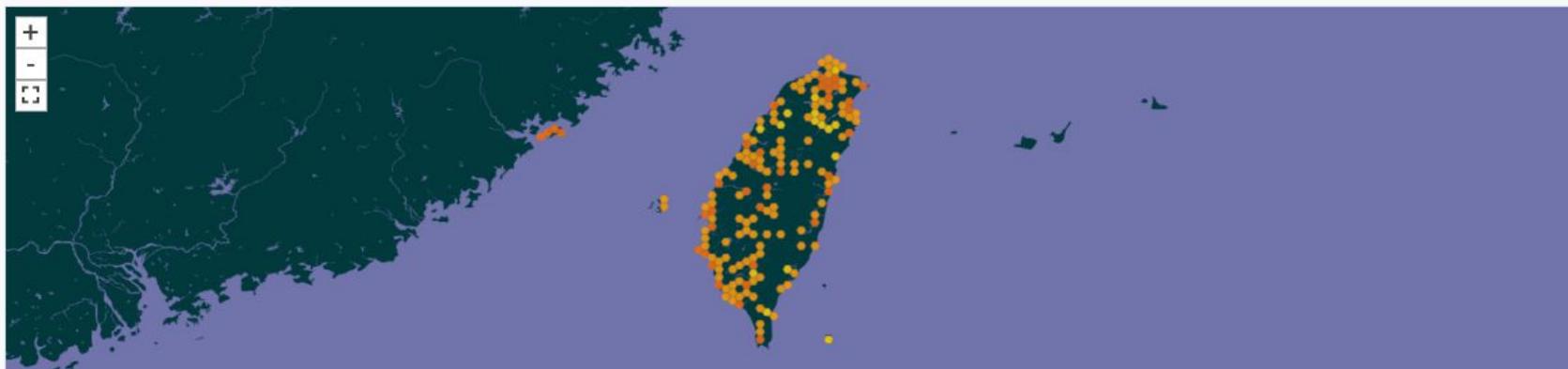
託管者: [Taiwan Biodiversity Information Facility \(TaiBIF\)](#)

授權: CC BY 4.0

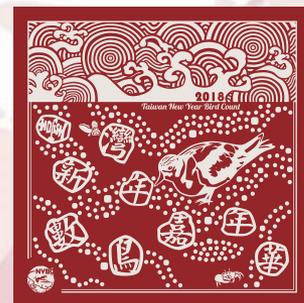
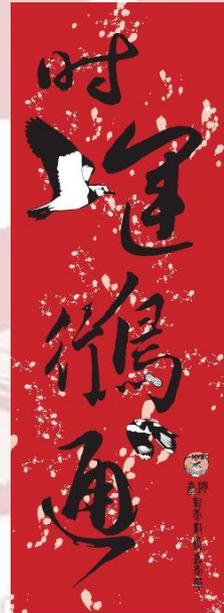
[如何引用](#) [DOI](#) 10.15468/mm9hwy



57,046 地理參照紀錄



Souvenirs



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臺灣新年數鳥嘉年華

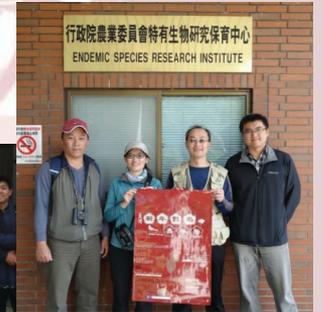
活動目標：瞭解冬季的鳥類數量與變遷狀況

2018年度

1296	172	334	303426
參與人次	完成樣區	種鳥類紀錄	筆鳥類隻次數



Thank you!
from hundreds of volunteers



Taiwan's Birds By the Numbers:

● Endemic species:	29	● Transient migrants:	91
● Endemic subspecies:	55	● Seabirds:	29
● Non-endemic residents:	69	● Vagrants:	171
● Summer visitors:	14	● Outlying island species*:	36
● Winter visitors:	162	● Invasive species (with stable breeding population):	18

*Species with this designation more regularly occur on one or more Taiwan's outlying islands such as Kinmen, Matsu, and Orchid island.

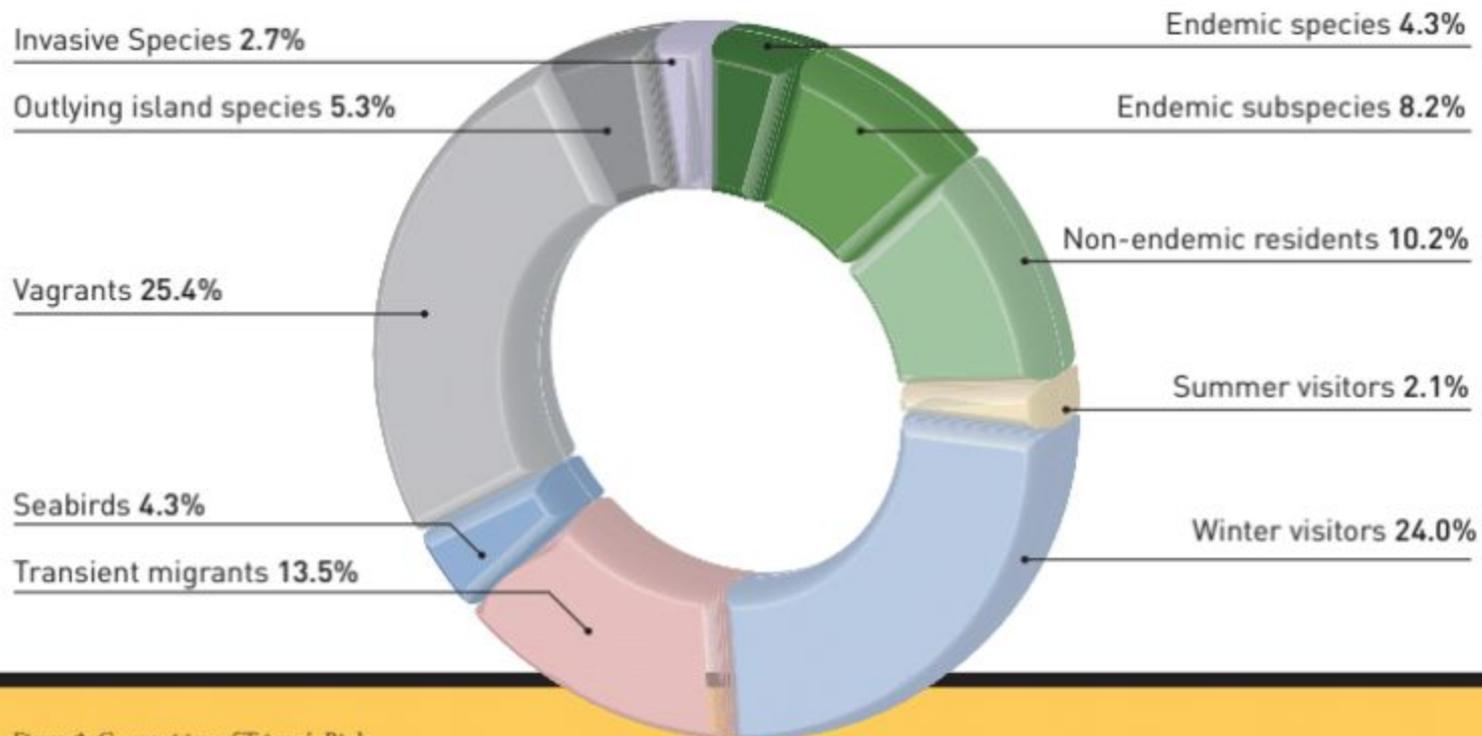
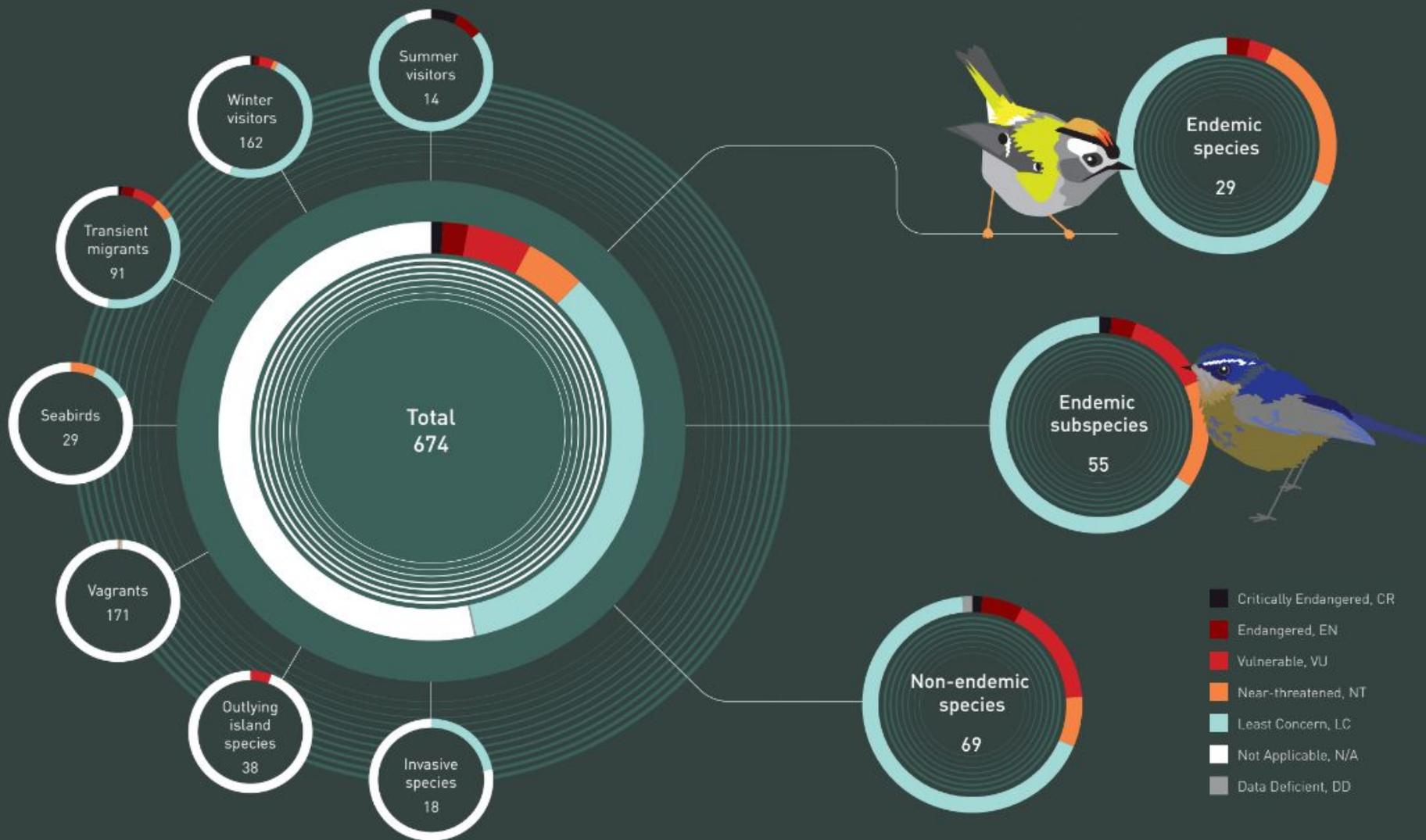


Figure 3. Composition of Taiwan's Birds.

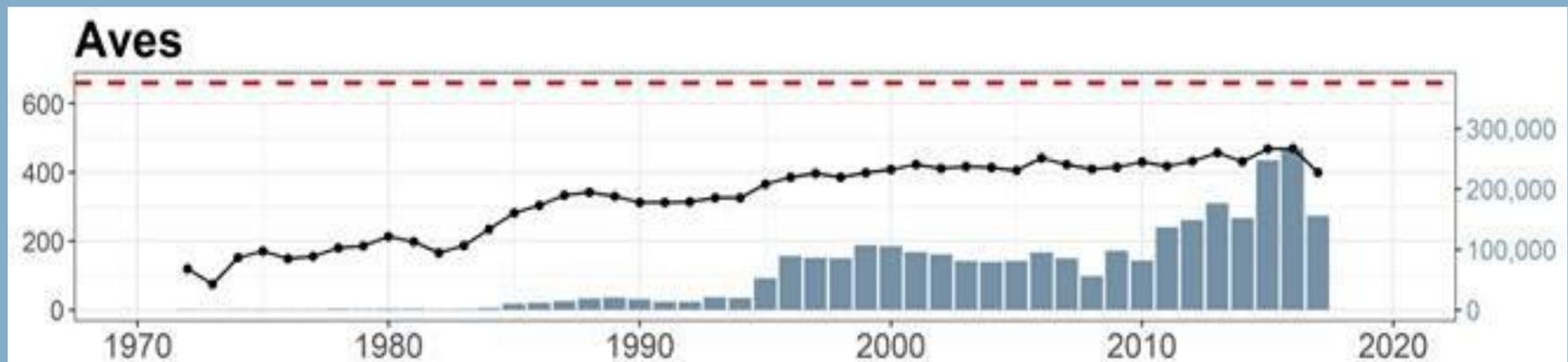
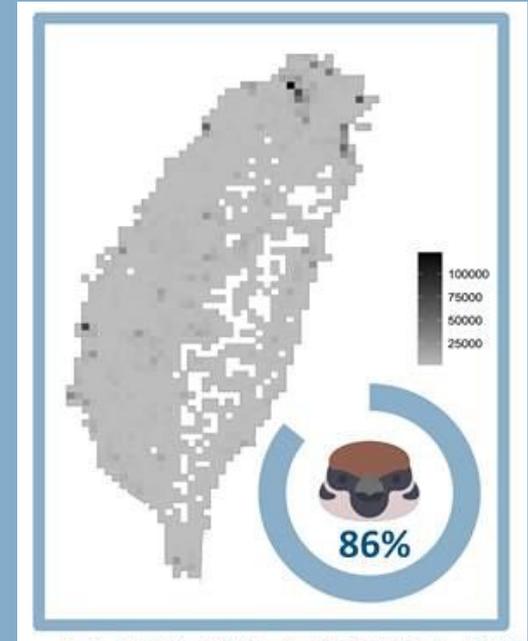
Summary of the Red List of Birds of Taiwan



Open data & open the data

Species richness: 565
of records: 2,827,070

- Open database of the Environmental Protected Administration, Taiwan
- GBIF / Taiwan Biodiversity Information Facility (TaiBIF)
- iNaturalist



records