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2016 臺灣鳥類 紅皮書名錄

The Red List of Birds of Taiwan, 2016



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Thalasseus bernsteini

黑嘴端鳳頭燕鷗

Chinese Crested Tern

NCR D

何瑞暘 / 攝



2016 臺灣鳥類紅皮書名錄

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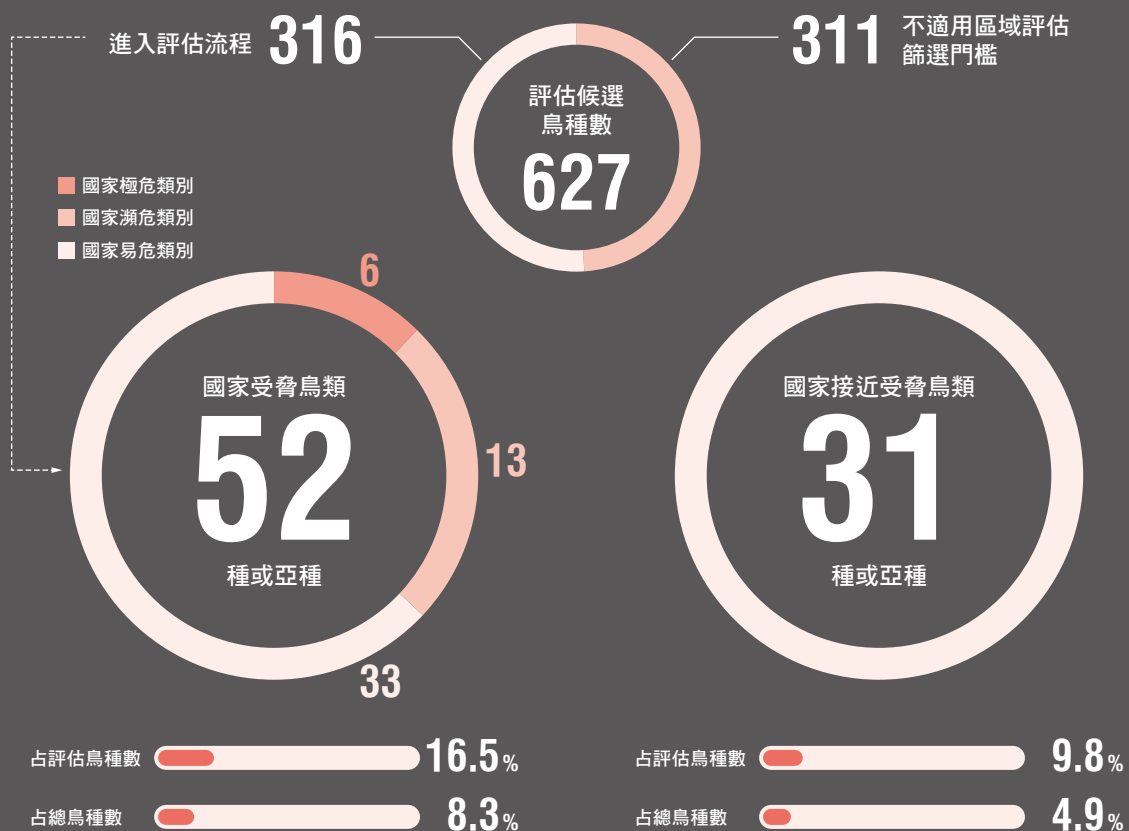
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摘要

本報告為臺灣第一次依據國際自然保育聯盟 (International Union for Conservation of Nature) 建議類別與標準對所有原生鳥種進行國家鳥類紅皮書名錄評估。納入評估候選鳥種共 627 種，其中 311 種不適用 (Not Applicable) 區域評估篩選門檻，316 種進入評估流程。結果臺灣有 52 種或亞種國家受脅 (Nationally Threatened) 鳥類，其中屬國家極危 (Nationally Critical) 類別有 6 種或亞種，屬國家瀕危 (Nationally Endangered) 類別有 13 種或亞種，屬國家易危 (Nationally Vulnerable) 類別有 33 種或亞種，另有 31 種或亞種歸於國家接近受脅 (Nationally Near-threatened)。國家受脅及接近受脅鳥種數分別占評估鳥種數的 16.5% 及 9.8%，以及總鳥種數的 8.3% 及 4.9%。另出現於臺灣的全球受脅鳥種有 37 種，其中 14 種屬國家受脅，1 種屬國家接近受脅，22 種列於 Not Applicable。





1. 前言

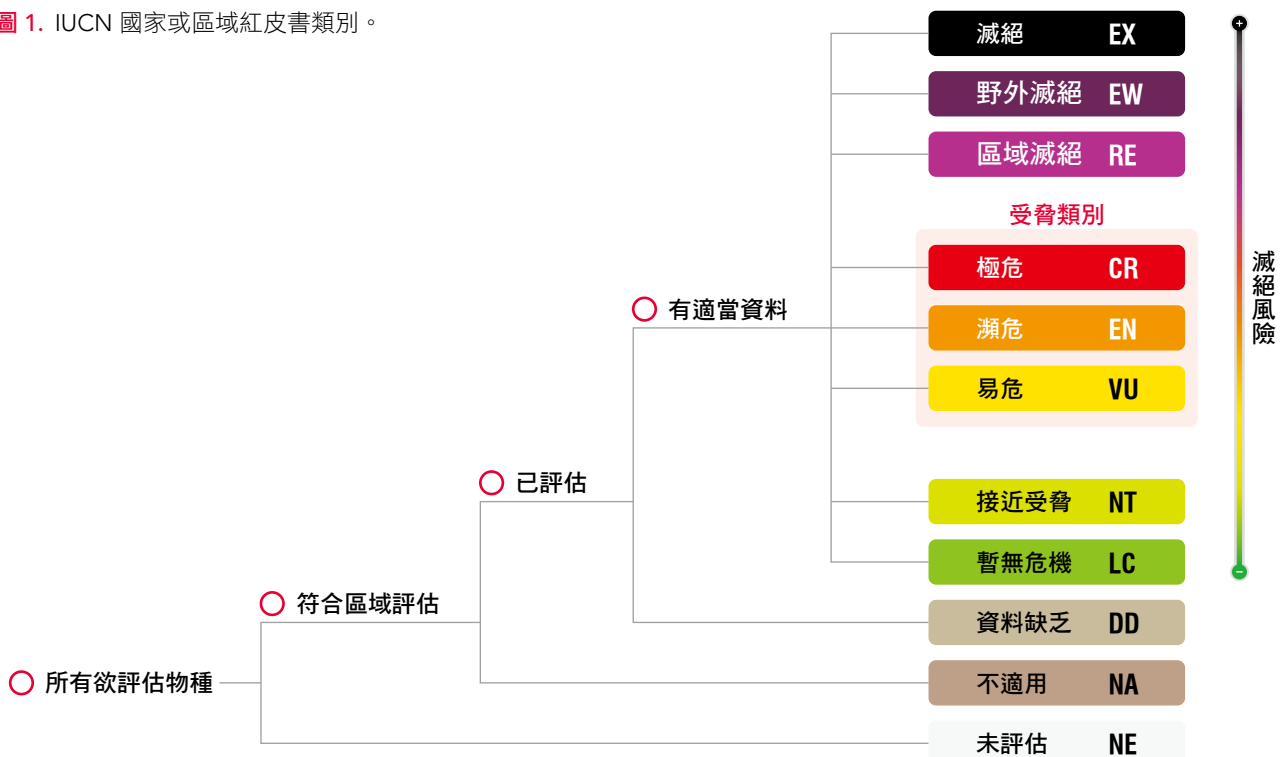
物種或分類群 (taxon) 面臨滅絕的風險是保育經營管理的重要課題。依據受威脅程度所列出的清單是復育計畫、研究、監測與保育措施排列優先順序的參考依據，同時也是爭取社會支持棲地保護及輔助資源分配決策的重要工具 (Townsend et al. 2007)。

由國際自然保育聯盟 (International Union for Conservation of Nature, IUCN) 物種存續委員會 (Species Survival Commission) 負責的 IUCN 紅皮書名錄 (IUCN Red List of Threatened Species)，自 1964 年開始發布以來，已逐步成為評估全球物種保育狀況與變化趨勢最重要的參考依據 (Rodrigues et al. 2006；IUCN 2016)，另其類別

(圖 1) 及評估標準 (criteria)，乃至後續發布的 IUCN 紅皮書名錄地區及國家級評估標準應用指南，亦成為許多國家評估其國境內受脅物種名錄的首要參考依據 (Townsend et al. 2007；IUCN 2012a)。藉此標準化的評估方法，不僅有助於各國立法與執法，也讓全球紅皮書評估涵蓋的物種更加完整 (Rodrigues et al. 2006)。

如果一個國家或地區稱其國家或區域紅皮書的產生是依據 IUCN 系統，那麼就必須無偏差地根據 IUCN 紅皮書類別及標準 (IUCN Red List Categories and Criteria) 進行評估 (IUCN 2012b)。而所謂區域 (region) 指的是地球範圍內，任何一個可明確界定的空間範圍，如大陸、

圖 1. IUCN 國家或區域紅皮書類別。



國家及州省等 (IUCN 2012a)。由全球至區域時，對受脅物種評估而言，自然會產生原生或外來種，繁殖或非繁殖物種，或如先前曾經分布，但已局部滅絕的區域現象 (IUCN 2012a)。本報告採用的評估標準與類別係依據 IUCN 紅皮書名錄類別與標準：3.1 版 (IUCN 2012b)。然而，由於空間尺度的關係，當前述標準應用於分布不完全侷限於評估範圍的物種時，評估流程與標準設定的閥值可能並不適當，因此必須有所有調整。IUCN 紅皮書名錄地區及國家級評估標準應用指南提供調整建議 (IUCN 2012a)。

在臺灣，方偉宏等曾選定部分鳥種進行評估並於 2004 出版臺灣首份鳥類紅皮書報告 (方 2004)，又於次年出版中英文並陳之臺灣受脅鳥種圖鑑 (方 2005)，為臺灣鳥類受脅的種類與狀態評估奠定基礎。然而，過往十餘年間，無論臺灣、東亞乃至於全球的生物多樣性變化劇烈，



Milvus migrans
黑鳶 Black Kite
NVU D1
何瑞暘 / 攝

亟需更新臺灣所有鳥類的受脅狀態。本報告蒐集及更新臺灣所有原生鳥種的分布範圍、族群趨勢、數量與受脅原因等資訊，依據 IUCN 類別與標準評估各鳥種的最新受脅狀態。



Nisaetus nipalensis
熊鷹 Mountain Hawk-eagle
NEN C2a(ii)
黃永坤 / 攝



2. 評估流程

本報告臺灣各鳥種或亞種受脅狀態的評估流程與方法簡述如下：

2.1 界定納入評估之分類群

以 2014 年臺灣鳥類名錄為基礎 (Ding et al. 2014)，將所有收錄之 626 種鳥列入候選評估鳥種，但本報告將近年分類經常變化的虎鵝，分成白氏地鵝 (*Zoothera aurea*) 及虎斑地鵝 (*Z. dauma*) 進行評估，另將 2014 年出現於臺灣的全球受脅鳥種白鵞 (*Leucogeranus leucogeranus*) 納入，排除 1908 年後未曾自然出現的朱鷺 (*Nipponia nippon*) (劉等 2012)，故總候選評估鳥種數為 627 種。其次依據 IUCN 紅皮書名錄地區及國家級評估標準應用指南

(IUCN 2012a) 的建議流程，排除具表 1 所列特性的鳥種或亞種，其餘出現於臺灣國土涵蓋範圍內之留鳥、夏繁殖鳥、冬候鳥及過境鳥均列入正式評估清單。IUCN Red List 全球受脅物種，包含極危 (Critically Endangered, CR)、瀕危 (Endangered, EN) 及易危 (Vulnerable, VU) 類別，同樣依據表 1 標準進行篩選。627 種中，有 311 種不適用 (Not Applicable) 於區域評估篩選門檻，316 種進入評估流程。

表 1. 排除正式評估之篩選條件

繁殖 / 非繁殖	其他條件
繁殖	外來種
	非年年穩定繁殖且年數量紀錄 < 250 隻
	1950 年後自然出現，但連續繁殖未超過 10 年，且數量 < 250 隻
非繁殖	迷鳥或非穩定出現 (連續出現未超過 10 年)
	穩定出現數量比例未達全球族群量 0.5% 或總數 < 250 隻

評估的分類群原則為「種」，但國土範圍內同時有特有亞種及其他亞種出現時則分別評估。另繁殖與訪問 (遷徙且無繁殖) 族群可區分時，亦依據 IUCN 紅皮書名錄地區及國家級評估標準應用指南 (IUCN 2012a) 之建議分別評估。若同時有外來種與原生種族群分布於國土範圍內，僅針對原生種族群進行評估。

| *Saundersilarus saundersi*
 黑嘴鷗 Saunder's Gull
 NCR C1
 何瑞暘 / 攝



2.2 資訊蒐集與初步評估

完成評估對象篩選後，依據 IUCN 評估標準 (IUCN 2012b) 製作每一受評估分類群的資料表。資料表各欄位就所需資訊，盡量蒐集既有學術報告、研究報告、資料庫及相關專家意見等，除填列數據同時載明資料來源並進行必要說明。

本報告評估的空間範圍為中華民國實質控制的陸、海領域，包括臺灣本島及周遭島嶼，如澎湖、蘭嶼及綠島，及鄰近中國大陸的金門及馬祖。然而針對會遷徙的繁殖族群及訪問族群仍須考量到評估範圍外的狀況對各評估標準的影響。針對遷徙繁殖族群，需考慮到評估範圍外的狀況對分布範圍和下降趨勢的影響。針對不繁殖的訪問族群在評估族群過去和未來下降趨勢時，必須檢視評估範圍外的族群狀況，特別是繁殖地的情形 (IUCN 2012a)。

每一受評分類群均依照 IUCN 紅皮書名錄類別與標準使用指南：12 版進行評估 (IUCN Standard and Petitions Subcommittee

2016)。評估流程係由包括：A. 快速族群下降 (Rapid population reduction)、B. 分布侷限、碎裂化，同時存在族群下降或嚴重波動 (Small range and fragmented, declining, or extreme fluctuations)、C. 小族群且持續下降 (Small population and declining)、D. 非常小的族群 (Very small population)，以及 E. 量化分析 (Quantitative analysis) 等五大標準及對應之次要標準 (Sub-criterion) 及資格限制 (Qualifiers) 所構成之決策樹 (logic tree) 進行 (表 2)。某一物種經過評估後，無法符合國家極危 (Nationally Critical, NCR)、國家瀕危 (Nationally Endangered, NEN) 及國家易危 (Nationally Vulnerable, NVU) 的類別，但已很接近或未來可能達到國家易危類別時，可列入國家接近受脅 (Nationally Near-threatened, NNT)。由於 IUCN 紅皮書名錄類別與標準並無明確的接近受脅 (Near Threatened, NT) 標準定義，本報告根據前述原則設定本報告國家接近受脅的標準 (表 2)。

表 2. IUCN 紅皮書受脅 (極危、瀕危、易危) 及接近受脅類別評估標準簡要內容。修正自 IUCN Standard and Petitions Subcommittee (2016)

物種紅皮書受脅類別判定標準	極危 (CR)	瀕危 (EN)	易危 (VU)	接近受脅 (NT)
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A. 族群量下降 (時間區間為 10 年或 3 個世代，以較長者為優先)

A1	≥ 90%	≥ 70%	≥ 50%	≥ 30%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%	≥ 20%

- A1. 經由以下列舉任何方式所觀察、推估、推測或懷疑物種族群下降已經發生，而造成下降的原因明顯是可逆的且原因已知並且停止：
- 直接觀察。[A3 除外]
 - 適合該分類群的物種豐度指數。
 - 分布範圍、占有面積或棲地品質減少或下降。
 - 實際或潛在的開發破壞。
 - 受外來種、雜交種、病原、污染源、競爭者或寄生物之影響。
- A2. 經由 A1 所列舉任何方式所觀察、推估、推測或懷疑物種族群降低已經發生，但造成降低的原因仍未停止、不明或不可逆。
- A3. 經由 A1 所列舉任何方式所預估、推測或懷疑物種族群未來近期内會降低 (時間最長為 100 年)。
- A4. 經由 A1 所列舉任何方式所觀察、推估、推測或懷疑物種族群未來任何一段時間會降低，造成降低的原因仍未停止、不明或不可逆。



物種紅皮書受脅類別判定標準	極危 (CR)	瀕危 (EN)	易危 (VU)	接近受脅 (NT)
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B. 分布範圍之判定標準

B1. 占有面積 (EOO)	< 100 平方公里	< 5,000 平方公里	< 20,000 平方公里	<20,000 平方公里 (繁殖原生鳥種)
B2. 分布範圍 (AOO)	< 10 平方公里	< 500 平方公里	< 2,000 平方公里	< 2,000 平方公里 (繁殖原生鳥種)

族群需遭遇以下至少兩種情況 (至少一種狀況適用於 NT 類別)

(a) 嚴重破碎化或居留區數目為右項數值者	= 1	≤ 5	≤ 10	≤ 10 (繁殖原生鳥種)
(b) 經由觀察、推估、推測或預估，下列各項情況之一的數值仍持續下降者：(i) 占有面積；(ii) 分布範圍；(iii) 棲地之區域、實際面積或品質；(iv) 生長地點或亞族群之數目；(v) 能繁殖之成熟個體數				
(c) 下列各項情況其中之一的數值呈現劇烈變動時：(i) 占有面積；(ii) 分布範圍；(iii) 生長地點或亞族群之數目；(iv) 能繁殖之成熟個體數				

C. 族群量小且下降之判定標準

族群內之成熟個體數	< 250	< 2,500	< 10,000	<20,000 (繁殖原生鳥種)
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物種族群遭遇以下至少兩種情況：

C1. 經由觀察、推估或預估物種族群成熟個體數持續下降。 (時間至少為未來 100 年)	3 年或下一代 下降 25%	5 年或下一代 下降 20%	10 年或下一代 下降 10%	10 年或下一代 下降 10% (繁殖原生鳥種)
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C2. 經由觀察、推估或預估，能繁殖之成熟個體數持續下降，而且其族群結構遭遇下列至少一種情況者：

a(i) 每個亞族群能繁殖之成熟個體數	≤ 50	≤ 250	≤ 1,000	≤ 1,000 (繁殖原生鳥種)
a(ii) 成熟個體都生長在一個單獨的小族群內所占比例	90%	95%	100%	100% (繁殖原生鳥種)

(b) 成熟個體呈現劇烈變動

D. 族群數量極少且分布侷限之判定標準

族群遭遇以下情況：

D. 成熟個體數	< 50	< 250	D1. < 1,000	D1. < 2,500
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與或遭遇以下情況：

D2. 出現面積受限或位於居留區的物種族群在未來有可能會面臨威脅，使之受脅程度提升至極危或瀕危等級 (此準則只用於評估易危及接近受脅等級)。	NA	NA	D2. 出現面積 < 20km ² 或分布地點 ≤ 5	D2. 出現面積 < 50km ² 或分布地點 ≤ 10 (繁殖原生鳥種)
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E. 量化分析

在野外絕種之機率	10 年內或三個世代內 在野外絕種之機率 超過 50%	20 年內或五個世代內 在野外絕種之機率 超過 20%	100 年內在野外絕種之 機率超過 10%	100 年內在野外絕種之 機率超過 5%
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2.3 類別調整原則

依據資料完成初步評估後，需進一步考慮受評估分類群的區域滅絕機率受到評估範圍外相同分類群其他族群的影響程度 (IUCN 2012a)。

調整流程原則依照 IUCN(2012a) 建議流程，針對臺灣繁殖族群區域標準，說明如下：

1. 特有種或特有亞種維持步驟 2.2 之評估結果。
2. 非屬特有 (亞) 種，於臺灣及鄰近離島，如澎湖、蘭嶼及綠島之繁殖族群，則視其移動能力及族群屬性調整。若 10 年或 3 代內幾無與範圍外族群有交流情形者，原則維持步驟二之評估結果。反之，若有交流情形，且遷入個體預期不會減少且本地族群非屬持續下降情形時 (sink population)，滅絕風險理應降低，故受脅類別調降一級。
3. 金門及馬祖等地之繁殖族群視為歐亞大陸之連續分布，且因其面積小，故以步驟二之評估類別調降二級。
4. 降級後非屬國家受脅類別物種，另依據國家接近受脅 (NNT) 別之評估標準，區別屬於國家接近受脅或國家暫無危機 (Nationally Least Concern, NLC) 類別。

至於非繁殖族群 (過境或度冬)，主要考慮評估範圍內、外是否持續惡化的情形，以及評估範圍外的繁殖族群是否可減緩非繁殖族群滅絕風險，若預期可降低地區滅絕風險，則由步驟二評估結果調降受脅類別一級。若有不符合前述原則之處理，均於資料表中詳述理由。

2.4 公開意見徵詢

經由步驟 2.1 至 2.3 產生的評估結果於 2016 年 4 月至 6 月由臺灣相關專家仔細審視收錄資料的正確性及補充闕失資訊，2016 年 7 月至 8 月公開完整的資料與初版報告，並於 8 月辦理論壇，廣泛徵求鳥類專家、賞鳥人及政府部門意見，最後再依據更新之資訊，再次執行 2.1 至 2.3 步驟後產生本報告。



Acridotheres cristatellus formosanus
台灣八哥 Crested Myna
NEN A2be
何瑞暘 / 攝



3. 國家受脅及接近受脅鳥類評估結果

評估結果有 6 種或亞種為國家極度瀕危，13 種或亞種為國家瀕危，33 種或亞種為國家易危，合計 52 種或亞種為國家受脅，另有 31 種屬國家接近受脅，分別占評估鳥種數 316 種的 16.5% 及 9.8%，以及總候選評估鳥種數 627 種

的 8.3% 及 4.9%。另資料不足 (Data Deficient) 者有 1 亞種。各分類群的學名及英文俗名依據 IUCN 採用的 BirdLife International Checklist 9.0 版名錄 (BirdLife International 2016)。本報告所有鳥種評估資料及結果請聯繫通訊作者索取。

3.1 國家極度瀕危 (NCR) 類別鳥類名錄

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Aythya baeri</i> (Radde, 1863) 青頭潛鴨	V	D	CR	1
<i>Phasianus colchicus formosanus</i> Elliot, 1870 環頸雉	B	C2a(ii)	LC	<1
<i>Turnix sylvaticus</i> (Desfontaines, 1787) 林三趾鷄	B	C2a(i); D	LC	<1
<i>Saundersilarus saundersi</i> (Swinhoe, 1871) 黑嘴鷗	V	C1	VU	1
<i>Calidris pygmaea</i> (Linnaeus, 1758) 琵嘴鶺	V	C1; D	CR	1
<i>Thalasseus bernsteini</i> Schlegel, 1863 黑嘴端鳳頭燕鷗	B	D	CR	20

3.2 國家瀕危 (NEN) 類別鳥類名錄

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Synoicus chinensis</i> (Linnaeus, 1766) 小鶴鶉	B	B2ab(ii, iii, v); C1	LC	<1
<i>Ciconia boyciana</i> Swinhoe, 1873 東方白鶴	V	D [-1]	EN	<1
<i>Nisaetus nipalensis</i> Hodgson, 1836 熊鷹	B	C2a(ii)	LC	1
<i>Numenius madagascariensis</i> (Linnaeus, 1766) 黥鶉	V	D [-1]	EN	<1
<i>Calidris tenuirostris</i> (Horsfield, 1821) 大濱鶉	V	A2a [-1]	EN	<1
<i>Tringa guttifer</i> (Nordmann, 1835) 諾氏鶉	V	C1; D [-1]	EN	1
<i>Tyto longimembris pithecopis</i> Swinhoe, 1866 草鴞	B	C1	LC	<1
<i>Ketupa flavipes</i> (Hodgson, 1836) 黃魚鴞	B	C1	LC	2
<i>Pitta nympha</i> Temminck & Schlegel, 1850 八色鳥	B	A2b	VU	20
<i>Garrulax taewanus</i> Swinhoe, 1859 台灣畫眉	B	A3e+4e	NT	100
<i>Acridotheres cristatellus formosanus</i> Hartert, 1912 台灣八哥	B	A2be	LC	<1
<i>Emberiza aureola</i> Pallas, 1773 金鷄	V	A2b; C1	EN	<1
<i>Passer cinnamomeus</i> (Temminck, 1836) 山麻雀	B	B2b(iii)c(ii); C2a(i)	LC	<1



3.3 國家易危 (NVU) 類別鳥類名錄

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Aix galericulata</i> (Linnaeus, 1758) 鴛鴦	B	D1	LC	1
<i>Mareca falcata</i> Georgi, 1775 羅文鴨	V	D [-1]	NT	<1
<i>Anas crecca</i> Linnaeus, 1758 小水鴨	V	A2a [-1]	LC	<1
<i>Egretta eulophotes</i> (Swinhoe, 1860) 唐白鷺	V	D [-1]	VU	10
<i>Milvus migrans</i> (Boddaert, 1783) 黑鳶	B	D1	LC	<1
<i>Gallicrex cinerea</i> (Gmelin, 1789) 董雞	B	D [-1]	LC	<1
<i>Hydrophasianus chirurgus</i> (Scopoli, 1786) 水雉	B	D1	LC	<1
<i>Numenius arquata</i> (Linnaeus, 1758) 大杓鷺	V	C1 [-1]	NT	2
<i>Limosa limosa</i> (Linnaeus, 1758) 黑尾鷺	V	C1 [-1]	NT	<1
<i>Limosa lapponica</i> (Linnaeus, 1758) 斑尾鷺	V	C1 [-1]	NT	<1
<i>Calidris canutus</i> (Linnaeus, 1758) 紅腹濱鷺	V	A2a; C1 [-1]	NT	<1
<i>Calidris temminckii</i> (Leisler, 1812) 丹氏濱鷺	V	C1 [-1]	LC	<1
<i>Calidris ruficollis</i> (Pallas, 1776) 紅胸濱鷺	V	A2a; C1 [-1]	NT	<1
<i>Calidris alpina</i> (Linnaeus, 1758) 黑腹濱鷺	V	A2a [-1]	LC	<1

3.3 國家易危 (NVU) 類別鳥類名錄 (續)

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Macropygia tenuirostris</i> Bonaparte, 1854 長尾鳩	B	D1	LC	<1
<i>Treron formosae formosae</i> Swinhoe, 1863 紅頭綠鳩	B	D1	NT	10
<i>Glaucidium brodiei pardalotum</i> Swinhoe, 1863 鸺鷂	B	C1	LC	5
<i>Strix leptogrammica</i> Temminck, 1831 褐林鴞	B	D1	LC	2
<i>Ceryle rudis</i> (Linnaeus, 1758) 斑翡翠	B	C1; D [-2]	LC	<1
<i>Picus canus</i> Gmelin, 1788 綠啄木	B	D1	LC	<1
<i>Coracina macei</i> (Lesson, 1831) 花翅山椒鳥	B	D1	LC	<1
<i>Lanius schach</i> Linnaeus, 1758 棕背伯勞	B	C1	LC	<1
<i>Oriolus chinensis</i> Linnaeus, 1766 黃鸝	B	D1	LC	<1
<i>Garrulus glandarius taivanus</i> Gould, 1862 松鴉	B	C1	LC	<1
<i>Corvus torquatus</i> Lesson, 1831 玉頸鴉	B	D [-1]	NT	<1
<i>Sitta europaea</i> Linnaeus, 1758 茶腹鴉	B	A2a	LC	<1



3.3 國家易危 (NVU) 類別鳥類名錄 (續)

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Pycnonotus taivanus</i> Styan, 1893 烏頭翁	B	A3ce	VU	100
<i>Phylloscopus ijimae</i> (Stejneger, 1882) 飯島柳鶯	V	D [-1]	VU	3
<i>Enicurus scouleri fortis</i> Hartert, 1910 小剪尾	B	C1	LC	1
<i>Prunella collaris fennelli</i> Deignan, 1964 岩鷓	B	C1	LC	1
<i>Emberiza sulphurata</i> Temminck & Schlegel, 1848 野鷲	V	C1; D1	VU	10
<i>Pyrrhula erythaca owstoni</i> (Rothschild and Hartert, 1907) 灰鷲	B	A2a+3a; C1	LC	10
<i>Lonchura atricapilla formosana</i> (Swinhoe, 1865) 黑頭文鳥	B	C1; D1	LC	<1

3.4 國家接近受脅 (NNT) 類別鳥類名錄

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Calonectris leucomelas</i> (Temminck, 1835) 大水雞鳥	V	A2b [-1]	NT	?
<i>Hydrobates monorhis</i> (Swinhoe, 1867) 黑叉尾海燕	V	A2b; C1 [-1]	NT	?
<i>Platalea minor</i> Temminck & Schlegel, 1849 黑面琵鷺	V	D1	EN	60
<i>Pernis ptilorhynchus</i> (Temminck, 1821) 東方蜂鷹	B V	D1 [-1]	LC	<1

3.4 國家接近受脅 (NNT) 類別鳥類名錄 (續)

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Ictinaetus malaiensis</i> (Temminck, 1822) 林鵰	B	D1	LC	3
<i>Accipiter soloensis</i> (Horsfield, 1821) 赤腹鷹	V	A2a [-2]	LC	20
<i>Lewinia striata taiwanus</i> (Yamashina, 1932) 灰胸秧雞	B	B2b(ii)	LC	2
<i>Haematopus ostralegus</i> Linnaeus, 1758 蠟嘴	B V	D [-2]	NT	<1
<i>Pluvialis squatarola</i> (Linnaeus, 1758) 灰斑鶺	V	A2b [-2]	LC	<1
<i>Charadrius leschenaultii</i> Lesson, 1826 鐵嘴鶺	V	A2a; C1 [-1]	LC	<1
<i>Tringa brevipes</i> (Vieillot, 1816) 黃足鶺	V	C1 [-1]	NT	10
<i>Numenius minutus</i> Gould, 1841 小杓鶺	V	D1 [-1]	LC	<1
<i>Sternula albifrons</i> Pallas, 1764 小燕鷗	B V	A2a [-1]	LC	2
<i>Otus elegans botelensis</i> Kuroda, 1928 蘭嶼角鴞	B	B1a+2a; D1	NT	5
<i>Strix nivicolium yamadae</i> Yamashina, 1936 東方灰林鴞	B	D1	LC	2
<i>Halcyon smyrnensis</i> (Linnaeus, 1758) 蒼翡翠	B	D [-2]	LC	2
<i>Dendrocopos leucotos insularis</i> (Gould, 1863) 大赤啄木	B	D1	LC	<1
<i>Pericrocotus solaris</i> Blyth, 1846 灰喉山椒鳥	B	C1	LC	5



3.4 國家接近受脅 (NNT) 類別鳥類名錄 (續)

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準 [類別調整]	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Terpsiphone atrocaudata</i> <i>periophthalmica</i> (Ogilvie-Grant, 1895) 紫綬帶	B	B2a	LC	5
<i>Sittiparus castaneiventris</i> Gould, 1863 赤腹山雀	B	B1b(v)	LC	100
<i>Parus monticolus insperatus</i> Swinhoe, 1866 青背山雀	B	B1b(v)	LC	5
<i>Parus holsti</i> Seebohm, 1894 黃山雀	B	A2a; B1b(v); C1	NT	100
<i>Troglodytes troglodytes taivanus</i> Hartert, 1910 鷓鴣	B	B1b(i, v); C1	LC	<1
<i>Cettia acanthizoides concolor</i> Ogilvie-Grant, 1912 深山鶯	B	B1b(i)	LC	10
<i>Bradypterus alishanensis</i> Rasmussen, Round, Dickinson & Rozendaal, 2000 台灣叢樹鶯	B	A2(a); B1b(i, v)	LC	100
<i>Prinia crinigera striata</i> Swinhoe, 1859 斑紋鷓鴣	B	A2b	LC	<1
<i>Alcippe formosana</i> (Ogilvie-Grant, 1906) 褐頭花翼	B	B1b(i, v)	LC	100
<i>Paradoxornis webbianus</i> <i>bulomacha</i> (Swinhoe, 1866) 粉紅鸚嘴	B	A2b	LC	5
<i>Garrulax ruficeps</i> Gould, 1863 台灣白喉噪眉	B	D1	LC	100
<i>Brachypteryx montana goodfellowi</i> Ogilvie-Grant, 1912 小翼鶉	B	A2a; B1b(ii, v)	LC	5
<i>Turdus poliocephalus niveiceps</i> (Hellmayr, 1919) 白頭鶉	B	B1c(ii)+2c(i); D1	LC	2

3.5 數據缺乏 (DD) 類別

分類群	繁殖 (B)/ 非繁殖 (V)	評估標準	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Ramphiculus leclancheri taiwanus</i> Ripley, 1962 小綠鳩	B	—	LC	<1

4. 臺灣全球受脅鳥種

本報告納入評估候選之 627 種鳥中有 37 種為全球受脅鳥種，其中 14 種屬國家受脅，1 種屬國家接近受脅，其餘 22 種臺灣非其主要分布地點，列於 Not Applicable (NA)。

分類群	繁殖 (B)/ 非繁殖 (V)	國家紅皮書類別	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Anser cygnoid</i> (Linnaeus, 1758) 鴻雁	V	NA	VU	<1
<i>Anser erythropus</i> (Linnaeus, 1758) 小白額雁	V	NA	VU	<1
<i>Anas luzonid</i> (Fraser, 1839) 呂宋鴨	V	NA	VU	<1
<i>Aythya ferina</i> (Linnaeus, 1758) 紅頭潛鴨	V	NA	VU	<1
<i>Aythya baeri</i> (Radde, 1863) 青頭潛鴨	V	CR	CR	1
<i>Clangula hyemalis</i> (Linnaeus, 1758) 長尾鴨	V	NA	VU	<1
<i>Mergus squamatus</i> Gould, 1864 唐秋沙	V	NA	EN	<1
<i>Podiceps auritus</i> (Linnaeus, 1758) 角鴨	V	NA	VU	<1
<i>Phoebastria albatrus</i> (Pallas, 1769) 短尾信天翁	V	NA	VU	<1



臺灣全球受脅鳥種 (續)

分類群	繁殖 (B)/ 非繁殖 (V)	國家紅皮書類別	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Ciconia boyciana</i> Swinhoe, 1873 東方白鶴	V	EN	EN	<1
<i>Pelecanus crispus</i> Bruch, 1832 卷羽鵜鶘	V	NA	VU	<1
<i>Egretta eulophotes</i> (Swinhoe, 1860) 唐白鷺	V	EN	VU	10
<i>Gorsachius goisagi</i> (Temminck, 1835) 麻鷺	V	NA	EN	<1
<i>Platalea minor</i> Temminck & Schlegel, 1849 黑面琵鷺	V	NT	EN	60
<i>Clanga clanga</i> Pallas, 1811 花鵞	V	NA	VU	<1
<i>Aquila heliaca</i> Savigny, 1809 白肩鵟	V	NA	VU	<1
<i>Antigone vipio</i> Pallas, 1811 白枕鶴	V	NA	VU	<1
<i>Grus monacha</i> Temminck, 1835 白頭鶴	V	NA	VU	<1
<i>Grus japonensis</i> (Müller, 1776) 丹頂鶴	V	NA	VU	<1
<i>Leucogeranus leucogeranus</i> (Pallas, 1773) 白鶴	V	NA	CR	<1
<i>Numenius madagascariensis</i> (Linnaeus, 1766) 黥鶺	V	EN	EN	<1
<i>Calidris tenuirostris</i> (Horsfield, 1821) 大濱鶺	V	EN	EN	<1
<i>Calidris pygmaea</i> (Linnaeus, 1758) 琵嘴鶺	V	CR	CR	1

臺灣全球受脅鳥種 (續)

分類群	繁殖 (B)/ 非繁殖 (V)	國家紅皮書類別	全球紅皮書類別	臺灣占全球 數量百分比 (種)
<i>Tringa guttifer</i> (Nordmann, 1835) 諾氏鷸	V	CR	EN	1
<i>Synthliboramphus wumizusume</i> (Temminck, 1835) 冠海雀	V	NA	VU	<1
<i>Saundersilarus saundersi</i> (Swinhoe, 1871) 黑嘴鷗	V	CR	VU	1
<i>Larus relictus</i> Lönnerberg, 1931 遺鷗	V	NA	VU	<1
<i>Thalasseus bernsteini</i> Schlegel, 1863 黑嘴端鳳頭燕鷗	B	CR	CR	20
<i>Pitta nympha</i> Temminck & Schlegel, 1850 八色鳥	B	EN	VU	20
<i>Pycnonotus taivanus</i> Styan, 1893 烏頭翁	B	VU	VU	100
<i>Phylloscopus ijimae</i> (Stejneger, 1882) 飯島柳鶯	V	VU	VU	3
<i>Acrocephalus sorghophilus</i> (Swinhoe, 1863) 細紋葦鶯	V	NA	EN	<1
<i>Acrocephalus tangorum</i> La Touche, 1912 遠東葦鶯	V	NA	VU	<1
<i>Locustella pleskei</i> Taczanowski, 1889 史氏蝗鶯	V	NA	VU	<1
<i>Rhinomyias brunneatus</i> (Slater, 1897) 白喉林鶯	V	NA	VU	<1
<i>Emberiza aureola</i> Pallas, 1773 金鷓	V	EN	EN	<1
<i>Emberiza sulphurata</i> Temminck & Schlegel, 1848 野鷓	V	VU	VU	10



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The Red List of Birds of Taiwan, 2016

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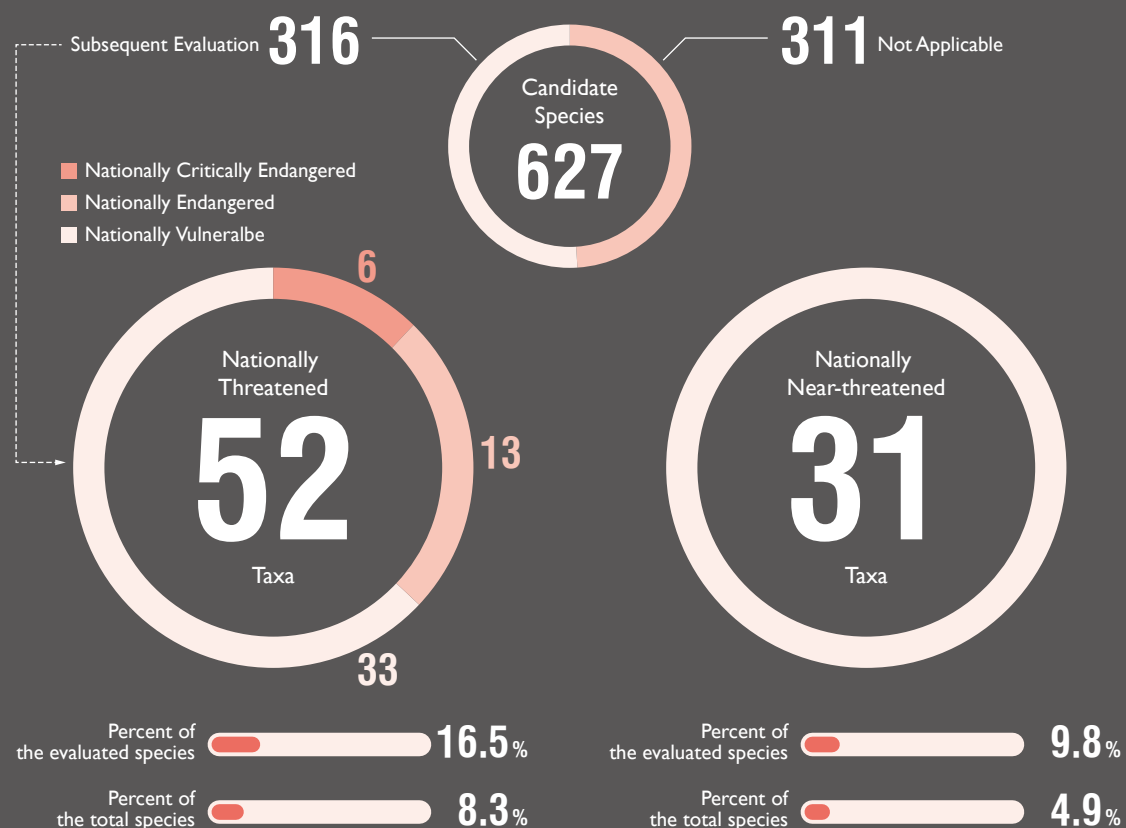
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Abstract

This report is the first National Red List compiled by Taiwan in accordance with the suggested guidelines and criteria of the International Union for Conservation of Nature (IUCN) to assess all of the native bird species. A total of 627 candidate species was selected, 311 of which did not fulfill the inclusion criteria (categorized as Not Applicable), and the remaining 316 species were subjected to subsequent evaluation. The results showed that 52 and 31 taxa were categorized as Nationally Threatened and Nationally Near-threatened, respectively, corresponding to 16.5% and 9.8% of the evaluated species and 8.3% and 4.9% of the total number of bird species in Taiwan. The evaluation results were ranked on the basis of the IUCN Red List categories, assigning six, 13 and 33 taxa as Nationally Critical, Nationally Endangered and Nationally Vulnerable, respectively. In addition, 37 species were categorized as Globally Threatened by IUCN, among which 14 were also categorized as Nationally Threatened, and one was Nationally Near-threatened, while 22 were Not Applicable.





1. Introduction

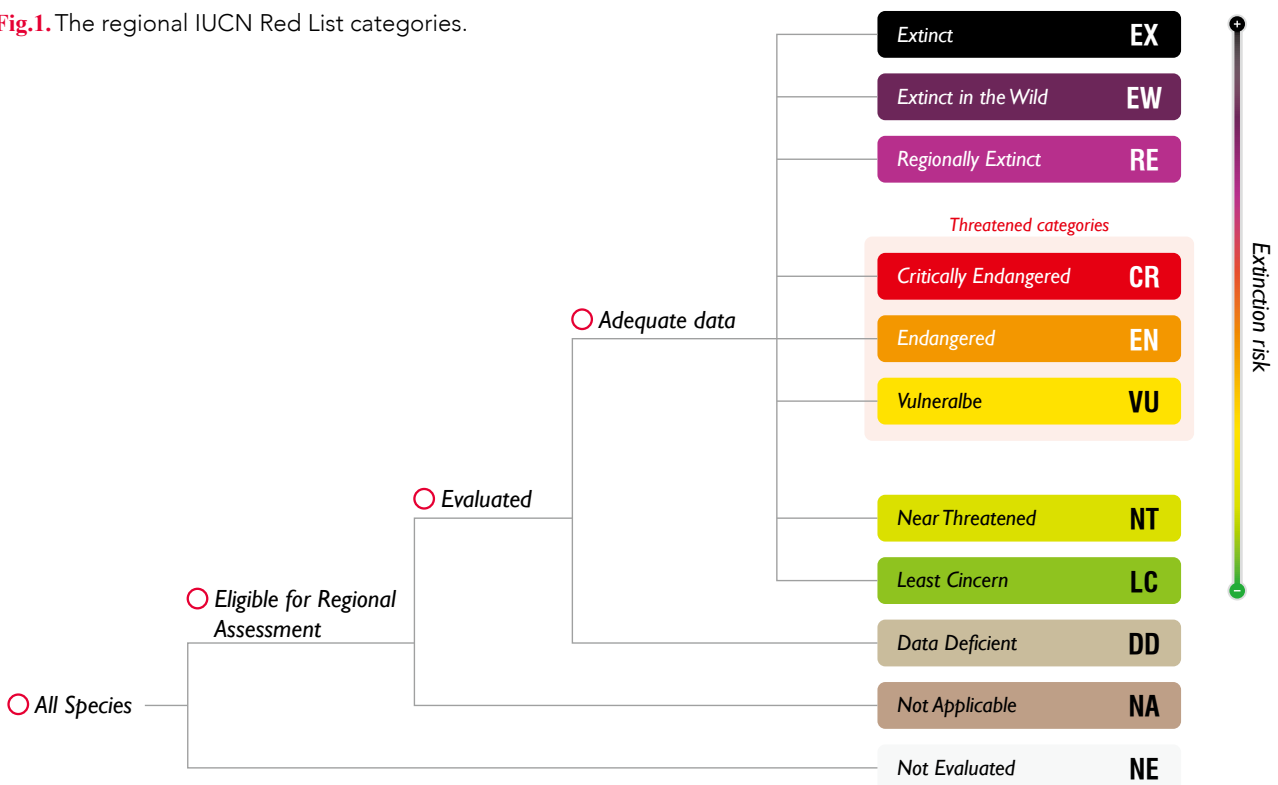
The risk of extinction faced by a species or taxon is an essential topic of conservation management. Concise listings of taxa by threat levels provide a basis for prioritizing recovery programs and research, monitoring the adequacy of conservation measures, gaining support for habitat protection, and facilitating resource allocation (Townsend *et al.* 2007).

The Species Survival Commission of the International Union for Conservation of Nature (IUCN) is responsible for compiling the IUCN Red List of Threatened Species. Since its first publication in 1964, the list has gradually become a key reference for assessing the conditions and trends of threatened species on a global scale (Rodrigues *et al.* 2006; IUCN 2016). Moreover, the

categories (Fig.1), assessment criteria as well as the regional guidelines published by the IUCN have been adopted by many countries as the primary basis for listing threatened species in their own territories (Townsend *et al.* 2007; IUCN 2012a). The standardized assessment method of the IUCN Red List not only facilitates formulating and executing conservation policies worldwide, but also improves the comprehensiveness of the assessment of the global conservation status of plant and animal species (Rodrigues *et al.* 2006).

When a country or region claims that its red list is compiled in accordance with the IUCN system, the classification process of the list must completely follow the IUCN Red List Categories and Criteria (IUCN 2012b). A regional-level

Fig.1. The regional IUCN Red List categories.



assessment pertains to any region on Earth with a clearly defined boundary, such as a continent, country, or state (IUCN 2012a). When the status assessment is redirected from the global scale to a local level, issues such as native or alien species, breeding or nonbreeding populations, and locally extinct species naturally emerge. (IUCN 2012a). The present report is compiled using the IUCN Red List Categories and Criteria: Version 3.1 (IUCN 2012b). However, the assessment process and thresholds of the criteria might be inadequate for evaluating species whose distribution ranges extend beyond the defined spatial area; thus, adjustments were made using the Guidelines for Application of IUCN Red List Criteria at Regional and National Levels (IUCN 2012a).

Fang (2004) adopted the IUCN Categories and Criteria to evaluate some of bird species of Taiwan. Fang (2005) also published a Chinese and English guide of threatened bird species in Taiwan, paving the foundation for assessing the biodiversity and conservation status of these species. However, in the past decade, biodiversity statuses in Taiwan, East Asia, and worldwide have changed drastically; hence, updating the conservation status of bird species in Taiwan is imperative. In accordance with the IUCN Red List Categories and Criteria, the present report compiles the up-to-date information on native bird species in Taiwan, including the distribution, population trends, number, and threats, to address the latest conservation status.

■ *Hydrophasianus chirurgus*
水雉 Pheasant-tailed Jacana
NVU D1
何瑞暘 / 攝





2. Assessment process

The four steps for assessing the threat status of each bird species or subspecies are explained as follows:

2.1 Defining the taxa to be included in the evaluation

All of the 626 bird species in the 2014 Checklist of the Birds of Taiwan (Ding *et al.* 2014), except *Nipponia nippon* which was last recorded in 1908 (Severinghaus *et al.* 2012), were targeted as potential candidates for evaluation. In addition, the present study incorporated *Zoothera aurea*, a species recently separated from *Z. dauma*, and *Leucogeranus leucogeranus*, a Globally Threatened species that appeared in Taiwan in 2014, yielding a total of 627 candidate species. The Guidelines for Application of IUCN Red List

Criteria at Regional and National Levels (IUCN 2012a) was employed to exclude candidate species with characteristics listed in Table 1. The globally threatened species on the IUCN Red List, including Critically Endangered, Endangered, and Vulnerable species, were also screened using the criteria listed in Table 1. Of these species, 311 did not fulfill the inclusion criteria and were thus determined to be Not Applicable, and the remaining 316 species were subjected to the preliminary evaluation.

Table 1. Exclusion criteria for evaluation

Breeder/ Visitor	Other Criteria
Breeder	Alien species
	Non-stable breeders and maximum breeding population size < 250
	Have appeared naturally after 1950, but have not bred consecutively for 10 years and maximum breeding population size < 250
Visitor	Vagrant or have not appeared consistently for >10 years
	Regional population does not reach 0.5% of the global population, or is < 250 mature individuals

“Species” was adopted as the unit of classification. However, endemic subspecies were evaluated independently. When breeding and visiting (nonbreeding) populations were distinguishable, they were evaluated separately according to the Guidelines for Application of

IUCN Red List Criteria at Regional and National Levels (IUCN 2012a). When both alien and native conspecific populations were found to appear within the territory of Taiwan, only the native population was evaluated.

2.2 Data collection and preliminary evaluation

After the evaluation targets were selected, a data table was created for each targeted taxon according to the IUCN criteria (IUCN 2012b). Each blank on the data table was filled with the corresponding information to incorporate as much data as possible from existing academic reports, gray literature, databases as well as related-expert opinions. The data sources were also recorded, and necessary explanations were provided.

The geographical area of this report covers the land and sea under the jurisdiction of the government of the Republic of China (widely known as 'Taiwan'), including Taiwan Island and its adjacent islands (Penghu, Lanyu, and Ludao), and two groups of outlying islands near mainland China: Matsu islands and Kinmen islands. However, to investigate the statuses of migratory breeding populations and nonbreeding populations, related factors outside of the targeted spatial scope (i.e., external factors) must also be considered. In other words, evaluating migratory breeding populations should also consider how external factors affect the population distribution and the declining trends of migratory breeding species. When assessing the past and future declining trends of passage

migrant population, external factors, in particular the condition of the native breeding site, should be examined (IUCN 2012a).

Every targeted species was assigned a preliminary threat category in accordance with the Guidelines for Using the IUCN Red List Categories and Criteria, Version 12 (IUCN Standard and Petitions Subcommittee 2016). The evaluation process involved using a logic tree constituted of the following criteria: A. Rapid population reduction; B. Small range and fragmented, declining, or extreme fluctuations; C. Small population and declining; D. Very small population; and E. Quantitative analysis. Each criterion also contained several subcriteria and qualifiers. When a species currently cannot be assigned to Nationally Critical (NCR), Nationally Endangered (NEN), or Nationally Vulnerable (NVU), but is likely to reach the NVU level in the near future, it can be classified as Nationally Near-threatened (NNT). Because the IUCN Red List Categories and Criteria does not provide a clear standard for Near Threatened, the present report applies the aforementioned criteria and refers to the IUCN Red List Categories and Criteria to define NNT (Table 2).

Table 2. A simplified overview of Red List criteria adopted in this study. Modified from IUCN Standard and Petitions Subcommittee (2016)

Use any of the criteria A-E	Critically Endangered	Endangered	Vulnerable	Near Threatened
A. Population size reduction (declines measured over the longer of 10 years or 3 generations)				
A1	≥ 90%	≥ 70%	≥ 50%	≥ 30%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%	≥ 20%

A1. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased, based on and specifying any of the following:

- (a) direct observation. [except A3]
- (b) an index of abundance appropriate to the taxon.
- (c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality.
- (d) actual or potential levels of exploitation.
- (e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

A2. Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.

A3. Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3]

A4. An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.



Use any of the criteria A-E	Critically Endangered	Endangered	Vulnerable	Near Threatened
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B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)

B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²	< 20,000 km ² (Breeding natives)
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²	< 2,000 km ² (Breeding natives)

AND at least 2 of the following 3 conditions (at least one for Near-threatened category):

(a) Severely fragmented OR # locations	= 1	≤ 5	≤ 10	≤ 10 (Breeding natives)
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or sunpopulations; (v) number of mature individuals				
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or sunpopulations; (iv) number of mature individuals				

C. Small population size and decline

Number of mature individuals	< 250	< 2,500	< 10,000	< 20,000 (Breeding natives)
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AND at least one of C1 or C2

C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation	20% in 5 years or 2 generations	10% in 10 years or 3 generations	10% in 10 years or 3 generations (Breeding natives)
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C2. An observed, estimated, projected or inferred continuing decline AND at least one of the following 3 conditions:

a(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1000	≤ 1000 (Breeding natives)
a(ii) % of mature individuals in one subpopulation =	90%	95%	100%	100% (Breeding natives)

(b) Extreme fluctuations in the number of mature individuals

D. Very small or restricted population Either:

D. Number of mature individuals	< 50	< 250	D1. < 1000	D1. < 2500
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AND/OR

D2. Only applies to the VU and NT category Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	NA	NA	D2. AOO < 20 km ² or number of locations ≤ 5	D2. AOO < 50 km ² or number of locations ≤ 10 (Breeding natives)
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E. Quantitative Analysis

Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations (100 year max.)	≥ 20% in 20 years or 5 generations (100 year max.)	≥ 10% in 100 years	≥ 5% in 100 years
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2.3 Categories adjusting

After the preliminary evaluation was completed, how the regional extinction risk of a population is affected by other populations of the same taxon outside of the targeted spatial scope should be investigated (IUCN 2012a).

The category adjustment process was based on the suggested procedures of the IUCN (2012a):

1. The Red List Category of endemic species and endemic subspecies were retained.
2. The preliminary Red List Category of a breeding population of a nonendemic species or subspecies in Taiwan and its off-islands were adjusted according to its mobility and occurrence statuses. If the population has not interacted with other populations within 10 years or three generations, the preliminary categorization was retained; otherwise, if the migrating population was expected to maintain its number, and the local population was not identified as a sink population, the threat category of the investigated group was downlisting by one-step.
3. Because the Kinmen and Matsu were close to mainland China, and the areas of these two regions are relatively small, the preliminary categories of these populations were downlisted by two-steps.
4. When the threat level of a previously classified Naturally Threatened species was downlisted, it was reassigned to Nationally Near-threatened or Nationally Least Concern according to the related criteria.

Regarding nonbreeding populations (passage migrants or winter visitors), their population declining or increasing trends in and away from Taiwan was evaluated, in addition to examining whether their breeding counterparts outside of the targeted spatial scope can reduce their risk of extinction. If the aforementioned criteria were inapplicable to categorize a population, the reasons were addressed in detail.

2.4 Expert opinions

The categorization results obtained through the aforementioned procedures were examined by experts from April to June 2016, ensuring the adequacy of data collection and adding missing information. Knowledgeable individuals from the wider ornithological community were invited to a workshop held in Taipei in late August, 2016 to discuss the status of all candidate taxa. At the same time, the draft list and data for assessment were disseminated among the birdwatching community to solicit comments. Finally, the updated data were used to repeat Steps (1) – (3) to revise the categorization results and create this report.

I *Enicurus scouleri fortis*
小剪尾 Little Forktail
NVU C1
白欽源 / 攝





3. Nationally Threatened and Near-threatened bird species of Taiwan

The results revealed 52 Nationally Threatened and 31 Nationally Near-threatened species or subspecies, corresponding to 16.5% and 9.8% of the evaluated taxa and 8.3% and 4.9% of the total number of bird species in Taiwan. The conservation statuses of the evaluated taxa were grouped in accordance with the IUCN Red List Categories. There are six, 13 and 33 taxa ranked in Nationally Critical, Nationally Endangered and Nationally

Vulnerable, respectively. One subspecies was categorized as Data Deficient. The classification system of the present report was based on the BirdLife International Checklist 9.0 (BirdLife International 2016), which was also been adopted by the IUCN. The complete evaluation results and the data table are available from the corresponding author.

3.1 List of Nationally Critical bird taxa in Taiwan

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Aythya baeri</i> (Radde, 1863) Baer's Pochard	V	D	CR	1
<i>Phasianus colchicus formosanus</i> Elliot, 1870 Common Pheasant	B	C2a(ii)	LC	<1
<i>Turnix sylvaticus</i> (Desfontaines, 1787) Common Buttonquail	B	C2a(i); D	LC	<1
<i>Saundersilarus saundersi</i> (Swinhoe, 1871) Saunders's Gull	V	C1	VU	1
<i>Calidris pygmaea</i> (Linnaeus, 1758) Spoon-billed Sandpiper	V	C1; D	CR	1
<i>Thalasseus bernsteini</i> Schlegel, 1863 Chinese Crested Tern	B	D	CR	20

3.2 List of Nationally Endangered bird taxa in Taiwan

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Synoicus chinensis</i> (Linnaeus, 1766) Asian Blue Quail	B	B2ab(ii, iii, v); C1	LC	<1
<i>Ciconia boyciana</i> Swinhoe, 1873 Oriental Stork	V	D [-1]	EN	<1
<i>Nisaetus nipalensis</i> Hodgson, 1836 Mountain Hawk-eagle	B	C2a(ii)	LC	1
<i>Numenius madagascariensis</i> (Linnaeus, 1766) Far Eastern Curlew	V	D [-1]	EN	<1
<i>Calidris tenuirostris</i> (Horsfield, 1821) Great Knot	V	A2a [-1]	EN	<1
<i>Tringa guttifer</i> (Nordmann, 1835) Spotted Greenshank	V	C1; D [-1]	EN	1
<i>Tyto longimembris pithecops</i> Swinhoe, 1866 Eastern Grass-owl	B	C1	LC	<1
<i>Ketupa flavipes</i> (Hodgson, 1836) Tawny Fish-owl	B	C1	LC	2
<i>Pitta nympha</i> Temminck & Schlegel, 1850 Fairy Pitta	B	A2b	VU	20
<i>Garrulax taewanus</i> Swinhoe, 1859 Taiwan Hwamei	B	A3e+4e	NT	100
<i>Acridotheres cristatellus</i> <i>formosanus</i> Hartert, 1912 Crested Myna	B	A2be	LC	<1
<i>Emberiza aureola</i> Pallas, 1773 Yellow-breasted Bunting	V	A2b; C1	EN	<1
<i>Passer cinnamomeus</i> (Temminck, 1836) Russet Sparrow	B	B2b(iii)c(ii); C2a(i)	LC	<1



3.3 List of Nationally Vulnerable bird taxa in Taiwan

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Aix galericulata</i> (Linnaeus, 1758) Mandarin Duck	B	D1	LC	1
<i>Mareca falcata</i> Georgi, 1775 Falcated Duck	V	D [-1]	NT	<1
<i>Anas crecca</i> Linnaeus, 1758 Common Teal	V	A2a [-1]	LC	<1
<i>Egretta eulophotes</i> (Swinhoe, 1860) Chinese Egret	V	D [-1]	VU	10
<i>Milvus migrans</i> (Boddaert, 1783) Black Kite	B	D1	LC	<1
<i>Gallicrex cinerea</i> (Gmelin, 1789) Watercock	B	D [-1]	LC	<1
<i>Hydrophasianus chirurgus</i> (Scopoli, 1786) Pheasant-tailed Jacana	B	D1	LC	<1
<i>Numenius arquata</i> (Linnaeus, 1758) Eurasian Curlew	V	C1 [-1]	NT	2
<i>Limosa limosa</i> (Linnaeus, 1758) Black-tailed Godwit	V	C1 [-1]	NT	<1
<i>Limosa lapponica</i> (Linnaeus, 1758) Bar-tailed Godwit	V	C1 [-1]	NT	<1
<i>Calidris canutus</i> (Linnaeus, 1758) Red Knot	V	A2a;C1 [-1]	NT	<1
<i>Calidris temminckii</i> (Leisler, 1812) Temminck's Stint	V	C1 [-1]	LC	<1
<i>Calidris ruficollis</i> (Pallas, 1776) Red-necked Stint	V	A2a; C1 [-1]	NT	<1
<i>Calidris alpina</i> (Linnaeus, 1758) Dunlin	V	A2a [-1]	LC	<1

3.3 List of Nationally Vulnerable bird taxa in Taiwan (cont.)

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Macropygia tenuirostris</i> Bonaparte, 1854 Philippine Cuckoo-dove	B	D1	LC	<1
<i>Treron formosae formosae</i> Swinhoe, 1863 Taiwan Green-pigeon	B	D1	NT	10
<i>Glaucidium brodiei pardalotum</i> Swinhoe, 1863 Collared Owlet	B	C1	LC	5
<i>Strix leptogrammica</i> Temminck, 1831 Brown Wood-owl	B	D1	LC	2
<i>Ceryle rudis</i> (Linnaeus, 1758) Pied Kingfisher	B	C1;D [-2]	LC	<1
<i>Picus canus</i> Gmelin, 1788 Grey-faced Woodpecker	B	D1	LC	<1
<i>Coracina macei</i> (Lesson, 1831) Large Cuckooshrike	B	D1	LC	<1
<i>Lanius schach</i> Linnaeus, 1758 Long-tailed Shrike	B	C1	LC	<1
<i>Oriolus chinensis</i> Linnaeus, 1766 Black-naped Oriole	B	D1	LC	<1
<i>Garrulus glandarius taivanus</i> Gould, 1862 Eurasian Jay	B	C1	LC	<1
<i>Corvus torquatus</i> Lesson, 1831 Collared Crow	B	D [-1]	NT	<1
<i>Sitta europaea</i> Linnaeus, 1758 Wood Nuthatch	B	A2a	LC	<1
<i>Pycnonotus taivanus</i> Styan, 1893 Taiwan Bulbul	B	A3ce	VU	100
<i>Phylloscopus ijimae</i> (Stejneger, 1882) Izu Leaf-warbler	V	D [-1]	VU	3



3.3 List of Nationally Vulnerable bird taxa in Taiwan (cont.)

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Enicurus scouleri fortis</i> Hartert, 1910 Little Forktail	B	C1	LC	1
<i>Prunella collaris fennelli</i> Deignan, 1964 Alpine Accentor	B	C1	LC	1
<i>Emberiza sulphurata</i> Temminck & Schlegel, 1848 Yellow Bunting	V	C1; D1	VU	10
<i>Pyrhula erythaca owstoni</i> (Rothschild and Hartert, 1907) Grey-headed Bullfinch	B	A2a+3a; C1	LC	10
<i>Lonchura atricapilla formosana</i> (Swinhoe, 1865) Chestnut Munia	B	C1; D1	LC	<1

3.4 List of Nationally Near-threatened bird taxa in Taiwan

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Calonectris leucomelas</i> (Temminck, 1835) Streaked Shearwater	V	A2b [-1]	NT	?
<i>Hydrobates monorhis</i> (Swinhoe, 1867) Swinhoe's Storm-petrel	V	A2b; C1 [-1]	NT	?
<i>Platalea minor</i> Temminck & Schlegel, 1849 Black-faced Spoonbill	V	D1	EN	60
<i>Pernis ptilorhynchus</i> (Temminck, 1821) Oriental Honey-buzzard	B V	D1 [-1]	LC	<1
<i>Ictinaetus malaiensis</i> (Temminck, 1822) Black Eagle	B	D1	LC	3
<i>Accipiter soloensis</i> (Horsfield, 1821) Chinese Sparrowhawk	V	A2a [-2]	LC	20
<i>Lewinia striata taiwanus</i> (Yamashina, 1932) Slaty-breasted Rail	B	B2b(ii)	LC	2

3.4 List of Nationally Near-threatened bird taxa in Taiwan (cont.)

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Haematopus ostralegus</i> Linnaeus, 1758 Eurasian Oystercatcher	B V	D [-2]	NT	<1
<i>Pluvialis squatarola</i> (Linnaeus, 1758) Grey Plover	V	A2b [-2]	LC	<1
<i>Charadrius leschenaultii</i> Lesson, 1826 Greater Sandplover	V	A2a; C1 [-1]	LC	<1
<i>Tringa brevipes</i> (Vieillot, 1816) Grey-tailed Tattler	V	C1 [-1]	NT	10
<i>Numenius minutus</i> Gould, 1841 Little Curlew	V	D [-1]	LC	<1
<i>Sternula albifrons</i> Pallas, 1764 Little Tern	B V	A2a [-1]	LC	2
<i>Otus elegans botelensis</i> Kuroda, 1928 Ryukyu Scops-owl	B	B1a+2a; D1	NT	5
<i>Strix nivicolium yamadae</i> Yamashina, 1936 Himalayan Owl	B	D1	LC	2
<i>Halcyon smyrnensis</i> (Linnaeus, 1758) White-breasted Kingfisher	B	D [-2]	LC	2
<i>Dendrocopos leucotos insularis</i> (Gould, 1863) White-backed Woodpecker	B	D1	LC	<1
<i>Pericrocotus solaris</i> Blyth, 1846 Grey-chinned Minivet	B	C1	LC	5
<i>Terpsiphone atrocaudata periophthalmica</i> (Ogilvie-Grant, 1895) Japanese Paradise-flycatcher	B	B2a	LC	5
<i>Sittiparus castaneiventris</i> Gould, 1863 Chestnut-bellied Tit	B	B1b(v)	LC	100



3.4 List of Nationally Near-threatened bird taxa in Taiwan (cont.)

Taxon name	Breeder/ Visitor	Criteria [Category adjusting]	Global Red List Category	Proportion (%) of Global Population
<i>Parus monticolus insperatus</i> Swinhoe, 1866 Green-backed Tit	B	B1b(v)	LC	5
<i>Parus holsti</i> Seebohm, 1894 Yellow Tit	B	A2a; B1b(v); C1	NT	100
<i>Troglodytes troglodytes taivanus</i> Hartert, 1910 Winter Wren	B	B1b(i, v); C1	LC	<1
<i>Cettia acanthizoides concolor</i> Ogilvie-Grant, 1912 Yellowish-bellied Bush-warbler	B	B1b(i)	LC	10
<i>Bradypterus alishanensis</i> Rasmussen, Round, Dickinson & Rozendaal, 2000 Taiwan Bush-warbler	B	A2(a); B1b(i, v)	LC	100
<i>Prinia crinigera striata</i> (Swinhoe, 1859) Striated Prinia	B	A2b	LC	<1
<i>Alcippe formosana</i> (Ogilvie-Grant, 1906) Taiwan Fulvetta	B	B1b(i,v)	LC	100
<i>Paradoxornis webbianus bulomacha</i> (Swinhoe, 1866) Vinous-throated Parrotbill	B	A2b	LC	5
<i>Garrulax ruficeps</i> Gould, 1863 Rufous-crowned Laughingthrush	B	D1	LC	100
<i>Brachypteryx montana</i> <i>goodfellowi</i> Ogilvie-Grant, 1912 White-browed Shortwing	B	A2a; B1b(ii,v)	LC	5
<i>Turdus poliocephalus niveiceps</i> (Hellmayr, 1919) Island Thrush	B	B1c(ii)+2c(i); D1	LC	2

3.5 The bird in category of Data Deficient in Taiwan

Taxon name	Breeder/ Visitor	Criteria	Global Red List Category	Proportion (%) of Global Population
<i>Ramphiculus leclancheri taiwanus</i> Ripley, 1962 Black-chinned Fruit-dove	B	—	LC	<1

4. Globally Threatened bird species of Taiwan

Of the 627 candidate species, 37 species were listed as Globally Threatened by IUCN in 2016 (IUCN 2016). Of them, 14 were Nationally Threatened and one was Nationally Near-threatened. Another 22 species were vagrant or rare in Taiwan and categorized as Not Applicable.

Taxon name	Breeder/ Visitor	National Red List Category	Global Red List Category	Proportion (%) of Global Population
<i>Anser cygnoid</i> (Linnaeus, 1758) Swan Goose	V	NA	VU	<1
<i>Anser erythropus</i> (Linnaeus, 1758) Lesser White-fronted Goose	V	NA	VU	<1
<i>Anas luzonid</i> (Fraser, 1839) Philippine Duck	V	NA	VU	<1
<i>Aythya ferina</i> (Linnaeus, 1758) Common Pochard	V	NA	VU	<1
<i>Aythya baeri</i> (Radde, 1863) Baer's Pochard	V	CR	CR	1
<i>Clangula hyemalis</i> (Linnaeus, 1758) Long-tailed Duck	V	NA	VU	<1
<i>Mergus squamatus</i> Gould, 1864 Scaly-sided Merganser	V	NA	EN	<1
<i>Podiceps auritus</i> (Linnaeus, 1758) Horned Grebe	V	NA	VU	<1
<i>Phoebastria albatrus</i> (Pallas, 1769) Short-tailed Albatross	V	NA	VU	<1

**Globally Threatened bird species of Taiwan (cont.)**

Taxon name	Breeder/ Visitor	National Red List Category	Global Red List Category	Proportion (%) of Global Population
<i>Ciconia boyciana</i> Swinhoe, 1873 Oriental Stork	V	EN	EN	<1
<i>Pelecanus crispus</i> Bruch, 1832 Dalmatian Pelican	V	NA	VU	<1
<i>Egretta eulophotes</i> (Swinhoe, 1860) Chinese Egret	V	EN	VU	10
<i>Gorsachius goisagi</i> (Temminck, 1835) Japanese Night-heron	V	NA	EN	<1
<i>Platalea minor</i> Temminck & Schlegel, 1849 Black-faced Spoonbill	V	NT	EN	60
<i>Clanga clanga</i> Pallas, 1811 Greater Spotted Eagle	V	NA	VU	<1
<i>Aquila heliaca</i> Savigny, 1809 Eastern Imperial Eagle	V	NA	VU	<1
<i>Antigone vipio</i> Pallas, 1811 White-naped Crane	V	NA	VU	<1
<i>Grus monacha</i> Temminck, 1835 Hooded Crane	V	NA	VU	<1
<i>Grus japonensis</i> (Müller, 1776) Red-crowned Crane	V	NA	VU	<1
<i>Leucogeranus leucogeranus</i> (Pallas, 1773) Siberian Crane	V	NA	CR	<1
<i>Numenius madagascariensis</i> (Linnaeus, 1766) Far Eastern Curlew	V	EN	EN	<1
<i>Calidris tenuirostris</i> (Horsfield, 1821) Great Knot	V	EN	EN	<1
<i>Calidris pygmaea</i> (Linnaeus, 1758) Spoon-billed Sandpiper	V	CR	CR	1

Globally Threatened bird species of Taiwan (cont.)

Taxon name	Breeder/ Visitor	National Red List Category	Global Red List Category	Proportion (%) of Global Population
<i>Tringa guttifer</i> (Nordmann, 1835) Spotted Greenshank	V	CR	EN	1
<i>Synthliboramphus wumizusume</i> (Temminck, 1835) Japanese Murrelet	V	NA	VU	<1
<i>Saundersilarus saundersi</i> (Swinhoe, 1871) Saunders's Gull	V	CR	VU	1
<i>Larus relictus</i> Lönnerberg, 1931 Relict Gull	V	NA	VU	<1
<i>Thalasseus bernsteini</i> Schlegel, 1863 Chinese Crested Tern	B	CR	CR	20
<i>Pitta nympha</i> Temminck & Schlegel, 1850 Fairy Pitta	B	EN	VU	20
<i>Pycnonotus taivanus</i> Styan, 1893 Taiwan Bulbul	B	VU	VU	100
<i>Phylloscopus ijimae</i> (Stejneger, 1882) Izu Leaf-warbler	V	VU	VU	3
<i>Acrocephalus sorghophilus</i> (Swinhoe, 1863) Streaked Reed-warbler	V	NA	EN	<1
<i>Acrocephalus tangorum</i> La Touche, 1912 Manchurian Reed-warbler	V	NA	VU	<1
<i>Locustella pleskei</i> Taczanowski, 1889 Pleske's Grasshopper-warbler	V	NA	VU	<1
<i>Rhinomyias brunneatus</i> (Slater, 1897) Brown-chested Jungle-flycatcher	V	NA	VU	<1
<i>Emberiza aureola</i> Pallas, 1773 Yellow-breasted Bunting	V	EN	EN	<1
<i>Emberiza sulphurata</i> Temminck & Schlegel, 1848 Yellow Bunting	V	VU	VU	10



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