https://www.biodiversityjournal.com - Edizioni Danaus
Biodiversity Journal, 2024, 15 (2): 265–269 - **Monograph**
https://doi.org/10.31396/Biodiv.Jour.2024.15.2.265.269

Biodiversity Journal
ISSN 2039-0394 (Print Edition)
ISSN 2039-0408 (Online Edition)

Current status and expansion of Western Red-rumped Swallow *Cecropis daurica rufula* (Temminck, 1835) (Aves Hirundinidae) in Sicily

Salvatore Surdo[1*], Andrea Cusmano[2], Giovanni Cumbo[3], Nino Di Lucia[4], Manuel Andrea Zafarana[5] & Paolo Galasso[6]

[1]Department of Agriculture, Food and Forest Sciences, University of Palermo - Viale delle Scienze, 90128 Palermo
Orcid:0000-0002-0300-837X
[2] Via Alessio Narbone 52, 90138 Palermo, Italy
[3] Stazione Ornitologica "Aegithalos", via Aquino Molara 75 - Palermo
[4] via Rocco Chinni 9, 92016 Ribera
[5] Lipu ODV, Delegazione di Niscemi, via Angelo Marsiano snc, 93015 Niscemi, Italy
[6]Stiftung Pro Artenvielfalt®, Meisenstraße 65, 33607 Bielefeld, Germany; Orcid: 0000-0002-1482-4831
*Corresponding author, e-mail: salvatore.surdo@unipa.it

ABSTRACT The recent paper published by Corso et al. (2021) about the status of the Western Redrumped Swallow, *Cecropis daurica rufula* (Temminck, 1835) (Aves Hirundinidae), in Sicily was mainly focused on updating the distribution of breeding pairs in the south-eastern part of the region; hence the decision to provide a more complete and up-to-date regional picture of the current status of this species collecting unpublished data and investigating the most suitable locations in the period 2011–2022. This survey highlights as, also in western and central Sicily, the species has been showing an increase in number of breeding pairs, found in 18 new UTM squares (11 of these for which the breeding was ascertained and 7 for which was very probable) in comparison to the last updated data. A new map of the distribution of the Western Red-rumped Swallow in Sicily is therefore presented here.

KEY WORDS Breeding; distribution; Hirundinidae; Italy.

Received 28.11.2023; accepted 02.02.2024; published online 30.06.2024
Proceedings of 6th International Congress on Biodiversity "*Biodiversity and the new scenarios on alien species, climate, environment and energy*" - Trapani (Italy, Sicily) 2–3 September 2022

INTRODUCTION

The Western Red-rumped Swallow (Aves Hirundinidae) (Fig. 1) occurs in Europe exclusively with the subspecies *Cecropis daurica rufula* (Temminck, 1835) (Birds of the World, 2022), which mainly breeds in Mediterranean regions with higher densities found in the Iberian peninsula and Balkans and a fragmented, scarce occurrence in the Italian peninsula (Keller, 2020). In Italy, it is a rare local migrant breeder, with an estimate range of 20–60 pairs since 2000 mainly concentrated in Tuscany, Apulia and Calabria (Brichetti & Fracasso, 2020), even if more recently more than 31 pairs were reported for Calabria only (Pucci, 2016).

In Sicily, it is a scarce regular migrant, a rare breeding and an occasional wintering species (Massa et al., 2021). Even though a possible nesting was already reported in 1970 near Catania (Baglieri, 1977), breeding was first proven and reported by Corso in 1995, near the nature reserve of Vendicari,

Syracuse (Corso, 2005). For the Trapani's province, in the north-western of Sicily, a first ascertained breeding was reported in 1987 in Valderice (Di Maggio & Surdo, 1998). Subsequently, a number of 8 occupied UTM squares (10 x10 km) was reported for the whole Sicily (AA.VV., 2008) and subsequently, also a new single station near Palermo (Cumbo, 2014). More recently, a first breeding for the Iblei Mountains (Ragusa's province) was reported (Duchi & Giampiccolo, 2021), as well as a last general update about the status of this species in Sicily (Corso et al., 2021). Being this last published paper mainly focused on south-eastern of Sicily, we decided to provide a more complete and up-to-date regional picture of the whole Sicilian breeding population.

MATERIAL AND METHODS

All available bibliography was analysed. New data were collected on the field by authors during the years 2011–2022, investigating all potentially suitable areas (mainly represented by small villages along the coast or near wetlands) on the basis of available previous data. Not all the historical sites were checked during this study, so, most of data were regularly collected in new areas in western and central Sicily. When a pair was found, breeding was ascertained with additional investigations on the field, in some locations. To the data directly collected by authors, additional data from birdwatchers and ornithologists were evaluated and integrated, often by means of digital platforms such as Ornitho.it, Ubird, eBird and INaturalist. Data provided by members of Facebook groups (Fauna Siciliana, EBN ITALIA and AFNI - Sezione Sicilia) were evaluated and integrated as well.

RESULTS AND DISCUSSION

Western Red-rumped swallow was confirmed as ascertained breeder (occupied complete nests,

Figure 1. Adult Western Red-rumped Swallow photographed in Ustica Island (Sicily, Italy) on 19.IV.2021. Photo by D. D'Amico.

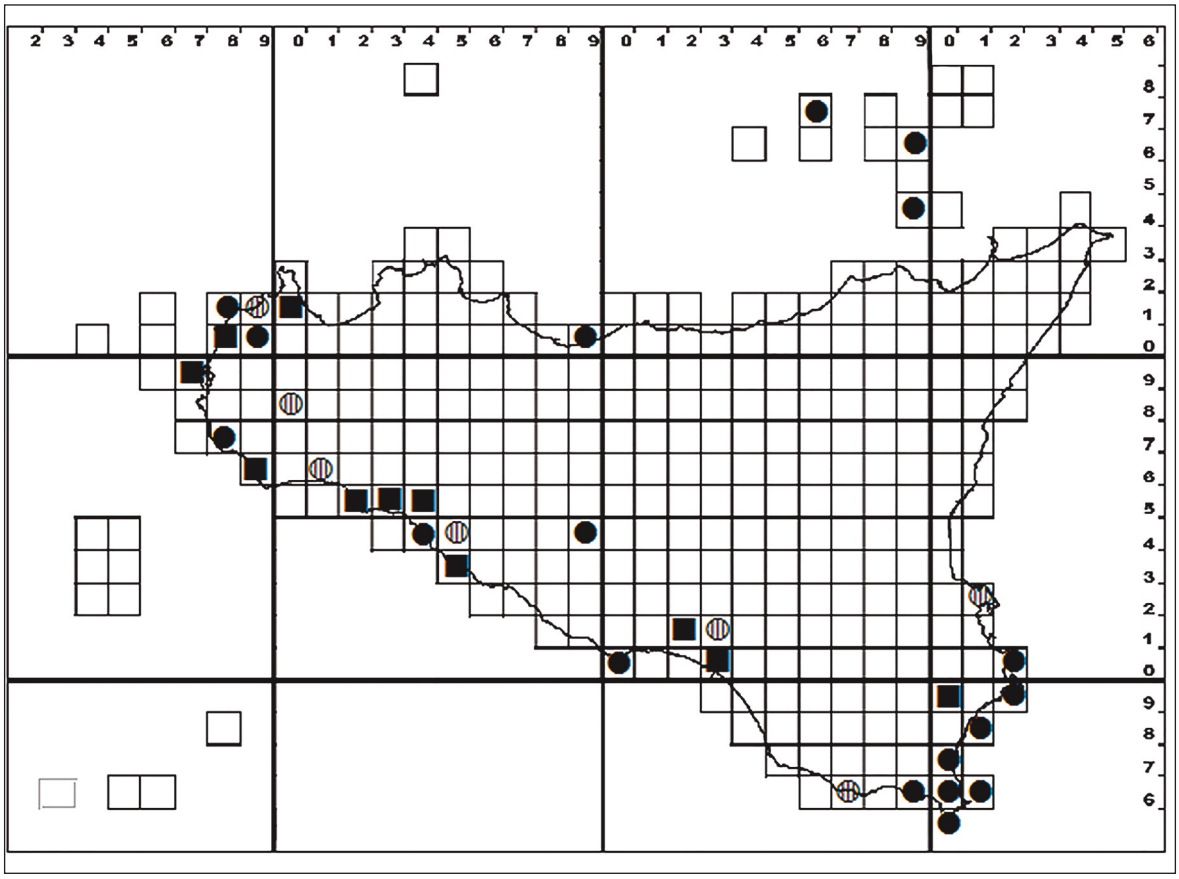

Figure 2. New distribution map of Western Red-rumped Swallow in Sicily*:* black spots refer to breeding pairs in UTM square already reported by Atlas 2008 and subsequent bibliographical data, as Corso et al. (2021). Empty spots refer to new data referring to probable but not ascertained breeding and black squares refer to new data of ascertained breeding pairs.

chicks or just fledged juveniles observed) in 11 new UTM square and as probable breeder (nests under construction, pair observed several times at unverifiable sites) in other additional 7 squares, for a total of 18 new reported UTM squares (Fig. 2) in comparison to the previous data (Ientile & Massa, 2008; Corso et al., 2021). In contrast to what reported by Corso (2021) for the south-eastern of Sicily, for which many different pairs were recorded for some UTM squares along the coast, the new squares here reported in western and middle of Sicily refer to no more than 1–2 breeding pairs found for each square (Table 1).

Discontinuity in breeding recorded throughout the years, may be related to the difficulty in detecting isolated pairs in absence of specific and focused field investigations.

The Western Red-rumped Swallow may be benefiting from its ecological flexibility in nest-site selection by making extensive use of made-man infrastructures, such as bridges and road underpasses (Kirwan et al., 2008; Delgado et al., 2018) or abandoned buildings (Urso & Mingozzi, 2009). A similar increase in distribution of breeding pairs was recorded in Sicily also for the Eurasian Crag Martin *Ptyonoprogne rupestris*: such an expansion is related to the increased availability of made-man infrastructures (bridges, quarries, mines and other) to be used as nesting sites (Surdo et al., 2021).

In addition to breeding data, we also want to report interesting observations referring to relevant migratory flocks, mostly during post-reproductive movements, at the private nature reserve "Geloi Wetland" (Gela, CL): 60–80 individuals recorded together in August 2020, 30–50 during August and September 2021 and about 60–80 per day in August and September 2022.

UTM Square	Location	N. of pairs	A/P	Year	Observer
TB77	Petrosino	1	A	2020	A. Cusmano
TB77	Petrosino	1	P	2021	S. Surdo
TB79	San Teodoro	1	P	2017, 2018	S. Surdo
TB79	San Teodoro	1	A	2022	G. Cumbo
TB87	Capo Feto	1	A	2022	D. D'Amico
TB96	Lago Preola	1	A	2021, 2022	S. Surdo; A. Cusmano
TB96	Pantano Leone	1	P	2022	J. Reeve
TB96	Torretta Granitola	1	P	2022	A. Cusmano
TC70	Saline di Trapani	1	A	2016, 2021, 2022	L. Barraco; S. Surdo
TC90	Valderice (Crocci)	1	A	2016	S. Surdo
TC91	Lido Valderice	1	P	2022	S. Surdo
TC91	Valderice	1	P	2022	S. Surdo
UB06	Triscina	1	A	2018	E. Di Trapani
UB08	Salemi	1	P	2022	J. Reeve
UB16	Porto Palo	2	A	2016, 2017	A. Cusmano
UB35	Sciacca	1	A	2016, 2019	A. Volpe
UB44	Ribera (Seccagrande)	1	A	2019, 2020, 2021	C. Amata
UB44	Ribera (C.da Piana Grande)	1	P	2022	G. Cumbo
UB45	Ribera	1	A	2019	N. Di Lucia
UB54	Montallegro	1	P	2016, 2020	N. Di Lucia; S. Surdo
UB54	Cattolica Eraclea	1	P	2021	N. Di Lucia
UC01	Riserva Zingaro	1	A	2010	A. Volpe
UC01	Riserva Zingaro	1	P	2022	J. Reeve
UC90	Termini Imerese	1	A	2018, 2019, 2020	G. Cumbo
VA76	Sampieri	1	P	2016	L. Pini
VB21	Butera – Lago Comunelli	1	P	from 2016 to 2020	A. Nardo, M. A. Zafarana
VB21	Butera – Cozzo Bombara	1	A	2019	M. A. Zafarana
VB31	Mazzarino – Lago Disueri	1	P	2019	M. A. Zafarana
VB30	Gela	1	A	2020	C. Cusimano & R. Lo Duca
WA06	Pantano Scirbia	1	A	2019	M. A. Zafarana
WA06	Pantano Longarini	1	P	2021	P. Galasso
WA06	Noto	1	A	2016	N. Bonassin
WA09	Canicattini Bagni-Oasi Don Bosco	1	A	2007	G. Papale
WA16	Pachino	1	P	2020	S. Surdo
WA29	Capo Murro di Porco	1	P	2011, 2016, 2017, 2019	S. Baglieri, R. Ientile, S. Bellomo, F. Cilea, M. Sighele

Table 1. List of new breeding pairs reported in this paper with related year and locations: A=ascertained; P=probable.

These individuals observed at Geloi Wetland were in constant feeding activity. This indicates how important this location is as non-breeding site, used for feeding to accumulate energy resources necessary to reach the wintering areas in Africa, according to the strategy of itinerancy (Wrong et al., 2022). Longer (1–2 months) stops at the same site can be advantageous, if compared to shorter refueling stopovers which are simply necessary for continued travels.

AKNOWLEDGMENTS

We want to thank the following people for sharing their personal data: Camillo Cusimano and Rocco Lo Duca (VB30), Ciro Amata (UB44), Gabriele Papale (WA09), Andrea Volpe (UB35), Davide D'Amico and Luigi Barraco (TC70), Lorenzo Pini (VA76), Eduardo Di Trapani (UB06), Nicola Bonassin (WA06), Angelo Nardo (VB21), Salvatore Baglieri, Renzo Ientile, Simone Bellomo, Fabio Cilea and Maurizo Sighele (WA29). We would also like to thank Angelo Scuderi, Fabio Lo Valvo and Marcello Panzica for helping us in finding bibliographical sources.

REFERENCES

AA.VV ., 2008. Atlante della Biodiversità della Sicilia: Vertebrati terrestri. Studi & Ricerche Arpa Sicilia, Palermo, 6.

Baglieri S., 1977. La Rondine rossiccia (*Hirundo daurica rufula* Temminck) nella Sicilia orientale. Gli Uccelli d'Italia, 2: 13–16.

Birds of the World, 2022. Edited by: Billerman S.M., Keeney B.K., Rodewald P.G. & Schulenberg T.S., Cornell Laboratory of Ornithology, Ithaca, NY, USA. https://birdsoftheworld.org/bow/home

Brichetti P. & Fracasso G., 2020. The Birds of Italy. Vol. 2. Pteroclidae-Locustellidae. Edizioni Belvedere, (LT).

Corso A., Starnini L. & Penna V., 2021. Update to the status of Western Red-rumped Swallow *Cecropis daurica rufula* (Temminck, 1835) (Aves Hirundinidae) in Sicily. Il Naturalista siciliano, 45: 265–268.

Corso A., 2005. Avifauna di Sicilia. Palermo, L'Epos, 324 pp.

Cumbo G., 2014. Nidificazione di Rondine rossiccia *Cecropis daurica* (Laxmann, 1769) in provincia di Palermo. Il Naturalista siciliano, 38: 391–392.

Delgado J.D., Morelli F., Arroyo N.L., Duàràn J., Rodrìguez A., Rosal A., Palenzuela M. & Rodriguez J., 2018. Is vertebrate mortality correlated to the permeability by underpasses along low-traffic roads? Journal of Environmental Management, 221: 53–62.

Di Maggio A. & Surdo S., 1998. Brevi note ornitologiche dalla Sicilia occidentale. Il Naturalista siciliano, 22: 229–230.

Duchi A. & Giampiccolo M., 2021. Primo sito di nidificazione di Rondine rossiccia *Cecropis daurica* (Laxmann, 1769) (Aves Hirundinidae) negli Iblei (Valle del Tellesimo, Ragusa-Siracusa). Il Naturalista siciliano, 45: 269–274.

Keller V., Herrando S., Vorisek P., Franch M., Kipson M., Milanesi P., Martí D., Anton M., Klvanová A., Kalyakin M.V., Bauer H.-G. & Foppen R.P.B., 2020. European Breeding Bird Atlas 2: Distribution, Abundance and Change. European Bird Census Council & Lynx Edicions, Barcelona.

Kirwan G.M., Boyla K,A,, Castell P., Demirci B., OzenM., Welch H & Marlow T., 2008. The Birds of Turkey: The Distribution, Taxonomy and Breeding of Turkish Birds. Cristopher Helm, London.

Massa B., Ientile R., Aradis A. & Surdo S., 2021 One hundred and fifty years of ornithology in Sicily, with an unknown manuscript by Joseph Whitaker. Biodiversity Journal, 12: 27–89.

Pucci M., 2016. Nidificazioni di Rondine rossiccia *Cecropis daurica* in provincia di Crotone. Picus, 42: 32–34.

Surdo S., La Mantia T., La Mantia A., Lo Cascio P. & Massa B., 2021. Espansione della Rondine montana *Ptyonoprogne rupestris* (Scopoli) in Sicilia (Aves Hirundinidae). Il Naturalista siciliano, 45: 159–164.

Urso S. & Mingozzi T., 2009. "Colonia" riproduttiva di Rondine rossiccia *Cecropis daurica* in un borgo disabitato in Aspromonte (Calabria). Atti XV Convegno italiano di Ornitologia, Alula, 16: 145–147.

Wong J.B., Turon F., Fernández-Tizón M. & Hahn S., 2022. First insights into migration routes and non-breeding sites used by Red-rumped Swallows (*Cecropis daurica rufula*) breeding in the Iberian Peninsula. Journal of Ornithology, 163: 1045–1049. https://doi.org/10.1007/s10336-022-02011-1.