

The Red-throated pipit *Anthus cervinus* is a regular wintering in Sicily

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Abstract - We present a review of the phenology of the Red-throated Pipit *Anthus cervinus* and its wintering status in Sicily. We collected and analysed 91 different records related to a total of 280 individuals. Data were collected both through direct observations on the field and by consulting recent literature and ornithological databases. The species has been regularly found overwintering during the last 11 winters (December 2012-January 2023), with the only exception of the winter of 2014/2015, likely due to the lack of coverage and targeted research, with an estimated population of 180-190 individuals. The average value is 3.07 individuals/records observed in 18 different locations related to four Sicilian provinces (Caltanissetta, Catania, Siracusa, Trapani), mainly near wetlands and, more specifically, in Mediterranean and thermo-Atlantic halophytic meadows and Mediterranean salt meadows. The number of wintering sites in the recent years appears to be increasing.

Key words: *Anthus cervinus*, overwinter, *Juncetalia maritima*, *Sarcocornietea fruticosa*.

Riassunto - La pispola golarossa *Anthus cervinus* svernante regolare in Sicilia.

Presentiamo una revisione della fenologia della pispola golarossa *Anthus cervinus* e del suo status di svernamento in Sicilia. Abbiamo raccolto ed elaborato 91 diversi avvistamenti riferiti ad un totale di 280 individui. I dati sono stati raccolti tramite osservazioni dirette sul campo e consultando la bibliografia recente e i database ornitologici. La specie è stata regolarmente riscontrata come svernante durante gli ultimi 11 inverni (Dicembre 2012 - Gennaio 2023) con l'unica eccezione dell'inverno 2014/2015, probabilmente per mancanza di copertura e ricerche mirate, con una stima di un contingente di 180-190 individui. La media è di 3,07 individui/avvistamenti, osservati in 18 diverse località di 4 province (TP, CL, SR, CT), principalmente in prossimità di aree umide e, più specificatamente, nelle praterie alofile mediterranee e nei prati salmastri. Il numero di siti di svernamento utilizzati negli ultimi anni sembra in aumento.

Parole chiave: pispola golarossa, svernamento, *Juncetalia maritima*, *Sarcocornietea fruticosa*.

INTRODUCTION

The Red-throated Pipit is a monotypic species that nests in wet tundra and on open mountain slopes with watercourses and willow stands from northernmost Fennoscandia east to Kamchatka, with smaller numbers in W Alaska. Winters in N & C Africa, Nile Valley, Red Sea coast, Middle East, locally in Arabia and Gulf States, and commonly in SE Asia (Burma eastwards) (Shirihai & Svensson, 2018). European populations mostly winter in sub-Saharan Africa, but scattered wintering sites exist in south-east Italy, Turkey and North Africa (Hagemeijer & Blair, 1997). Eastern populations migrate mainly to south-east Asia, south-east China and Taiwan (China) (Tyler, 2020).

The Red-throated Pipit is unmistakable in its summer plumage, and even in winter, it is easily identifiable thanks to its very characteristic call: a thin, high-pitched and shrill “pssiiih” (Svensson *et al.*, 2012), only slightly downslurred.

It is a regular migrant in Italy, arriving from late March to late May, and in autumn from September to mid-November, with the peak of migration occurring in October (Brichetti & Fracasso, 2007). In terms of conservation status, the species is evaluated as “Least Concern” (LC), indicating that it is not currently considered to be at significant risk of extinction (BirdLife International, 2023).

In Sicily, Iapichino & Massa (1989) only reported one winter record in January, suggesting the species is scarcer on return passage, from mid-October to early December. The first confirmed case of wintering occurred in the winter 1994/95 in Syracuse (Corso, 2005). Subsequently, few winter occasional records were reported, mainly for the wetlands of eastern Sicily, such as Lentini Lake, Simeto River, ex Saltpans of Syracuse and especially in Pantano Longarini, with a maximum of 31 individuals recorded on January 10, 2001 (Corso, 2005); the same observation is reported, erroneously, for the nature reserve of Vendicari by Brichetti & Fracasso (2007). In the last Sicilian bird checklist, it is classified as a regular migratory and irregular wintering species (Massa *et al.*, 2021).

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MATERIAL AND METHODS

Most of the data were collected through periodic visits to the most suitable wintering sites in Sicily, selected based on previously reported observations and bibliographical data. Unpublished data were also obtained from personal communications of local birdwatchers and ornithologists, by means of literature review and consulting digital databases available on www.ornitho.it consulted on July 10, 2023, mailing lists, and regional birdwatching websites (e.g., EBN Sicilia birdwatching).

All data collected were carefully reviewed and validated using only those documented with photographs or from experienced observers, both visually and by their calls/songs.

Nearby locations were combined on the maps for cartographic purposes, but not for statistical analysis: “Salt pans of San Teodoro”, “Isola Lunga”, and the Birgi Airport (Trapani) were included in the same area, as well as the Plain of Gela with Gelo Wetland (Caltanissetta) and the marshes of “Pantano Cuba” together with “Pantano Longarini” (Siracusa); the Nature reserve of “Salt pans of Priolo” was instead unified to “Peninsula Magnisi” (Siracusa).

RESULTS AND DISCUSSION

During the study period, we collected 91 records, related to a total of 280 individuals, with an average value of 3.07 individuals per sighting (ranging from 1 to 50 individuals per site; standard deviation = 5.7). Standing to the maximum number of individuals observed at each location during the same season, a total of 188 wintering individuals were recorded over the years (Fig. 1). The species was observed in 18 different sites distributed across four Sicilian provinces (Caltanissetta, Catania, Siracusa, Trapani), with higher densities recorded at Peninsula Mag-

nisi, Cape Murro di Porco and Pantano Cuba (Siracusa). In the Salt pans of Trapani (Trapani) the species showed a high frequency of wintering and around the marsh of Pantano Cuba (Siracusa) it has been regularly observed, as already reported by one of the authors (Galasso *et al.*, 2021), every winter during the period of the study (Fig. 2). Most of the records are from coastal locations, usually near wetlands and related wet meadows.

This study of the winter presence of Red-throated Pipit in Sicily demonstrates that this passerine, contrary to previous beliefs, regularly wintered in the region over the past 10 years (Shirihai & Svensson, 2018; Massa *et al.*, 2021).

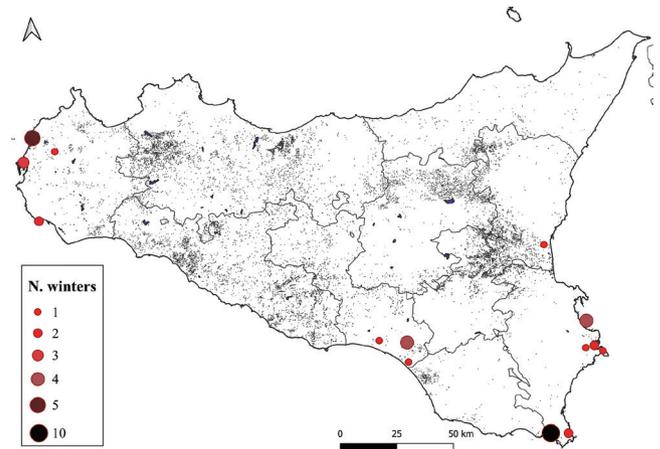


Fig. 2 - Frequency of observation of Red-throated Pipit at the various Sicilian wintering sites/areas in relation to the number of winters in which the species was recorded (December 2012-January 2023) / Frequenze di osservazione di pispola golarossa nei vari siti di svernamento siciliani in base al numero di inverni in cui la specie è stata osservata (Dicembre 2012-Gennaio 2023).

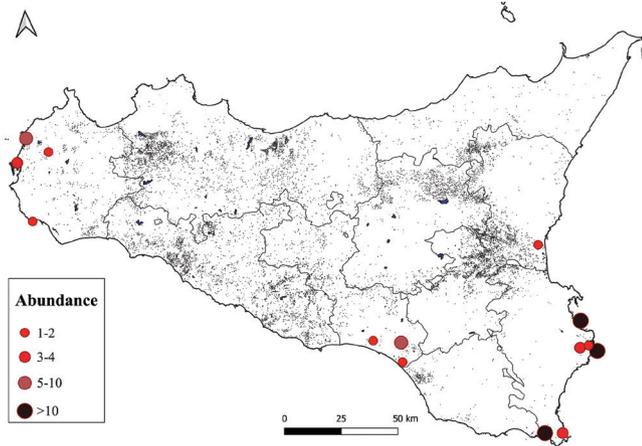


Fig. 1 - Distribution of winter records of Red-throated Pipit in Sicily (December 2012-January 2023). Please notice that some localities have been merged together and considered as a single area in order to improve the readability of the map (see Materials and Methods) / Distribuzione degli avvistamenti invernali di pispola golarossa in Sicilia (Dicembre 2012-Gennaio 2023). Si noti che alcune località sono state accorpate e considerate come un'unica area al fine di migliorare la leggibilità della mappa (vedi Materiali e Metodi).

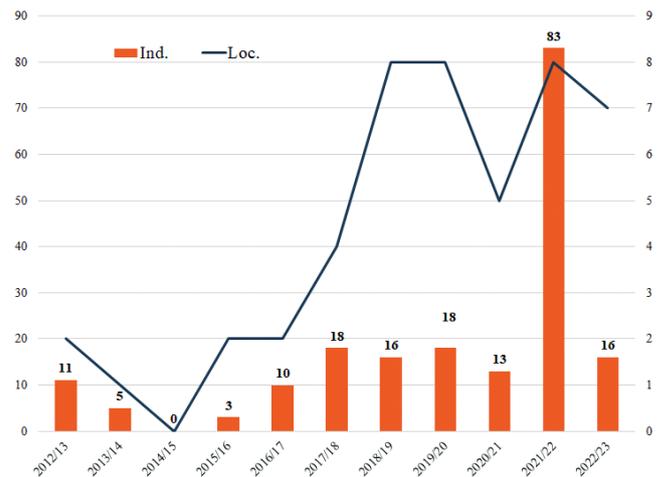


Fig. 3 - Total number of wintering Red-throated Pipit individuals (left) per number of wintering sites (right) in the last decade (2012/13-2022/23). For each location, only the maximum number of individuals recorded was considered / Numero complessivo di individui di pispola golarossa svernanti (sinistra) per numero di siti di svernamento (destra) nell'ultimo decennio (2012/13-2022/23). Per ogni località è stato considerato solo il numero massimo di individui osservati.

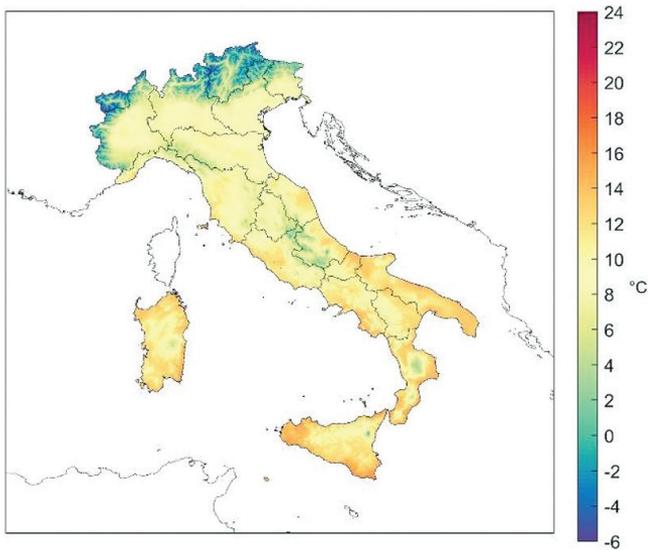


Fig. 4 - Minimum temperatures in the years 1991-2020 (modified from Fioravanti *et al.*, 2022) / Temperature minime nel periodo 1991-2020 (modificato da Fioravanti *et al.*, 2022).

The number of wintering individuals per site does not exceed a dozen, except for two notable observations reported in the EBN annual report, which significantly increased the range of recorded individuals (20 individuals in Peninsula della Maddalena and 50 individuals together in Peninsula Magnisi, near Syracuse, both on 24th December 2021).

The distribution is mostly related to coastal wetland areas surrounded by halophytic meadows, but also to inland wetlands up to 80 m above the sea level, with grazing or flooded meadows and ploughed fields (Fig. 5).

More specifically, the most used habitat is the Mediterranean and thermo-Atlantic halophytic scrubs *Sarcocornietea fruticosi* (Code 1420) often in a mosaic with other habitats (Figs. 5A and 5B), as the Mediterranean salt meadows *Juncetalia maritimi* (Code 1410, Fig. 5C), codes referred to Directive Habitat (Angelini *et al.*, 2016) and the Mediterranean temporary ponds (code 3170, Fig. 5D) *Damasonium bourgaei*-*Crypsietum aculeata* at Gela Plain (Brullo *et al.*, 2022). These vegetation communities are very specific and characterised, hosting only few different bird species, both common such as *Galerida cristata*, *Cisticola juncidis*, *Anthus pratensis* and rare such as *Anthus richardii* and *Lymnocyptes minimus* (Massa *et al.*, 2021). The ecological value of such habitats can be better appreciated also in relation to invertebrates: they host, among the many species, also an endemic species of orthoptera, *Pterolepis elymica*, found in halophytic meadows of western Sicily (Massa, 1994).

These peculiar habitats have suffered sharp and drastic reductions due to land reclamation and urbanisation. For these reasons, the only left nowadays can be classified as relict habitats and, despite most of them are fortunately included in protected areas, they are still subject to grazing activities and strong anthropic pressure.

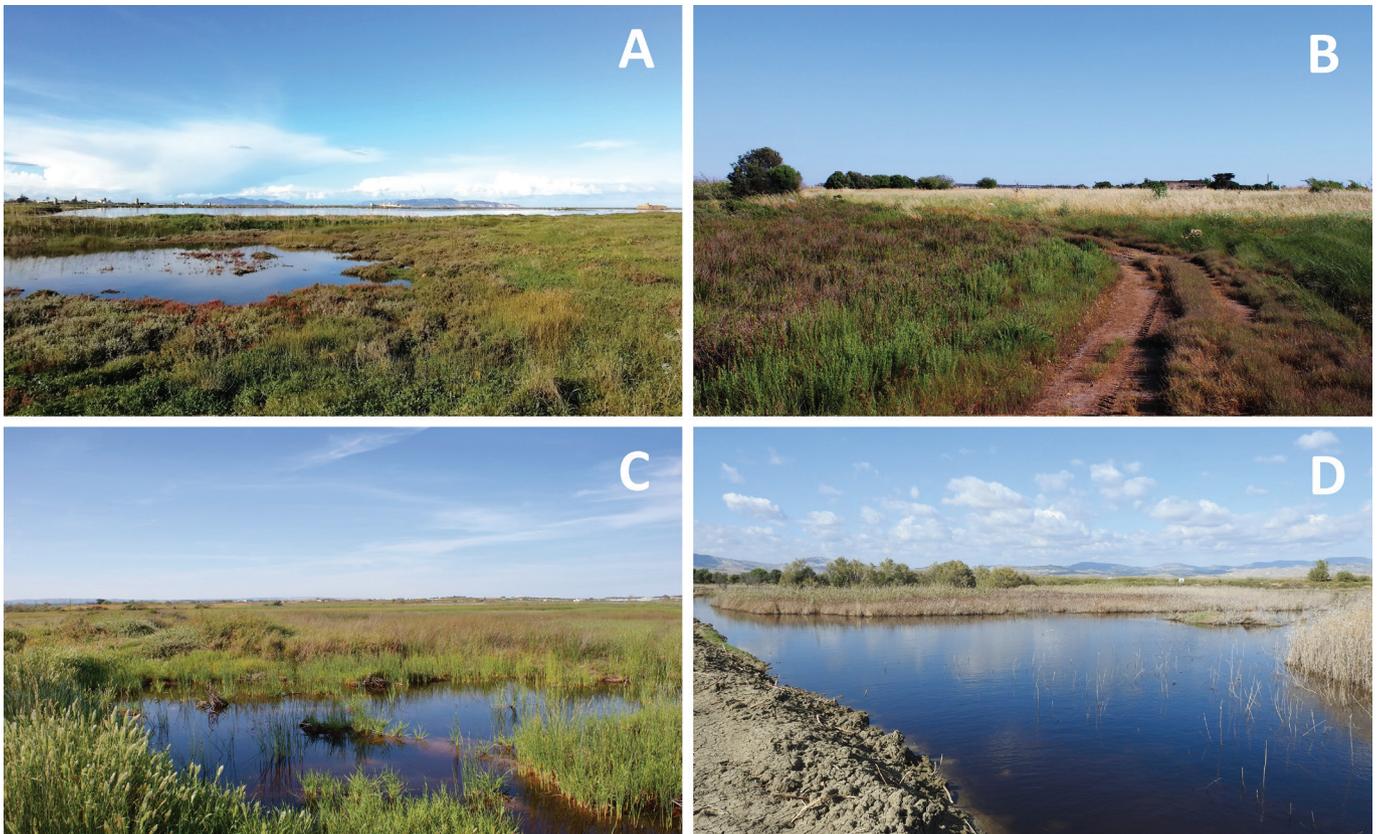


Fig. 5 - Typical wintering habitats in different Sicilian locations / Tipici habitat di svernamento in diverse località siciliane: A) Salt pans of Trapani; B) Pantano Cuba; C) Pantano Longarini; D) Gelo Wetland.

Despite these habitats (1420 and 1410) are quite widespread along the Italian coast, winter records of Red-throated Pipit are mostly limited to Sicily, and, only in recent years, also to Puglia, Campania and Lazio with few records (Ornitho.it consulted on July 10, 2023). An important parameter that must be considered when attempting to explain the winter distribution of this species is the minimum winter temperature, which in Sicily, in all the areas interested by Red-throated Pipit wintering, is around 14 C° (Fig. 4). In other Italian wintering areas, used only occasionally by the species, minimum winter temperature does not fall below 12 C° (Fioravanti *et al.*, 2022). Lower temperatures seem to be a limiting factor for the wintering of the species.

The growing number of winter records in Sicily could be a consequence of the increased and more detailed investigation on the field by ornithologists and birdwatchers, but a relation with climate changes and their effects is not to be excluded, as already noted for this species in nesting areas in the northern latitudes (Virkkala *et al.*, 2008).

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