

Report Eurasian Dotterel 2024

By
Rafaela Fernandes

Introduction

The Eurasian dotterel (*Eudromias morinellus*) is a small migratory shorebird that breeds in Northern Eurosiberia, the Scottish Highlands, and the Alps, inhabiting flat, open uplands, mountain ridges, and plateaus with sparse vegetation. It also nests in coastal and inland Arctic tundra that features moss, short grass, lichen, and bare rocky areas¹. Their winter range is restricted to a narrow region that extends from Morocco to Iran², where its habitats include stony and shrubby steppe, semi-desert areas, cultivated farmland, and the borders of agricultural zones¹. During its migratory period, the Eurasian dotterel is a regular migrant in certain suitable areas in Catalonia, particularly during the post-nuptial passage⁴. This species exhibits sex-role reversal, with males handling all parental care while females compete for access to males³.

EB Montseny Station is conducting a project since 2023 to assess the abundance of the Eurasian dotterel and determine how human activity impacts this species during migration. The field studies are being conducted in Matagalls, a popular spot for hikers, runners, and dog walkers within Montseny Natural Park, where some groups of dotterels (Figure 1) stop every year during autumn migration to rest and feed before continuing their journey to their wintering grounds⁵.



Figure 1. Group of dotterels in Matagalls.

Materials and Methods

From August 22 to September 27, 2024, the volunteers of EB Montseny undertook the project in a specific area of Matagalls, focusing on the habitat preferences of the species (Figure 2) within Montseny Natural Park. For this study, we included data from our own fieldwork, as well as observations from ornitho.cat and personally communicated.

During the specified period, volunteers searched for dotterels 2 to 3 times a week, alternating between mornings (6 times) and afternoons (6 times) on different days. The observations lasted between 1 and 2 hours. The volunteers used field sheets, pens, binoculars, and cameras to document dotterel behaviour. Whenever a person or dog passed through the area where the dotterels were located, the volunteers recorded the following data:

Date: Date of observation

Start and end time: The time the dotterels were discovered and when the observations were completed.

Time of reaction: The time the birds responded to visitors and/or their dogs. If the birds displayed ignorance during an observation, the time when the visitors were closest to the dotterels was recorded.

Number of people: The number of people to whom the birds responded.

Human activity: Four categories were established: “sitting” for when the birds reacted to people seated nearby, “walking” for when people passed by on foot, “running” for instances where people were running or jogging close to the birds and “taking pictures” for when people approached the birds to capture photographs.

Noise: Two noise categories were established: “soft,” which referred to situations where people were quiet or spoke at a low volume, inaudible beyond 25 meters, and “loud,” which involved shouting or loud conversations that could be heard from more than 25 meters away.

Number of leashed/unleashed dogs: The number of dogs near the dotterels was recorded separately for those on leashes and those roaming freely.

Reaction distance: The distance at which the dotterels altered their behavior (such as eating or resting) in response to visitors was noted. If the dotterels did not change their behavior (when the reaction was ignorance), the nearest distance between the visitors and the dotterels was recorded.

Reaction of birds: Seven categories of behavior were identified. “Ignorance” refers to situations where the dotterels do not alter their activities (such as eating or resting) in response to visitors. “Vigilance” is when the dotterels exhibit a vigilant response, turning their heads to assess the situation. “Ducking” occurs when the dotterels lower their bodies and remain still for an extended period. “Walking away” is when the dotterels cease their previous activity and leave their location on foot to distance themselves from visitors. “Alarming” describes when the dotterels remain in place but emit alarm calls. The “flying” reaction occurs when the dotterels take flight without making alarm calls. Finally, “flying + alarming” is the most intense response, noted when the dotterels both fly away from visitors and produce alarm calls.

Number of birds: The number of dotterels that were visible at the time of observation.

Observers: The names of the people who conducted the observations.

Comments: Any factors that may be significant for the observation.

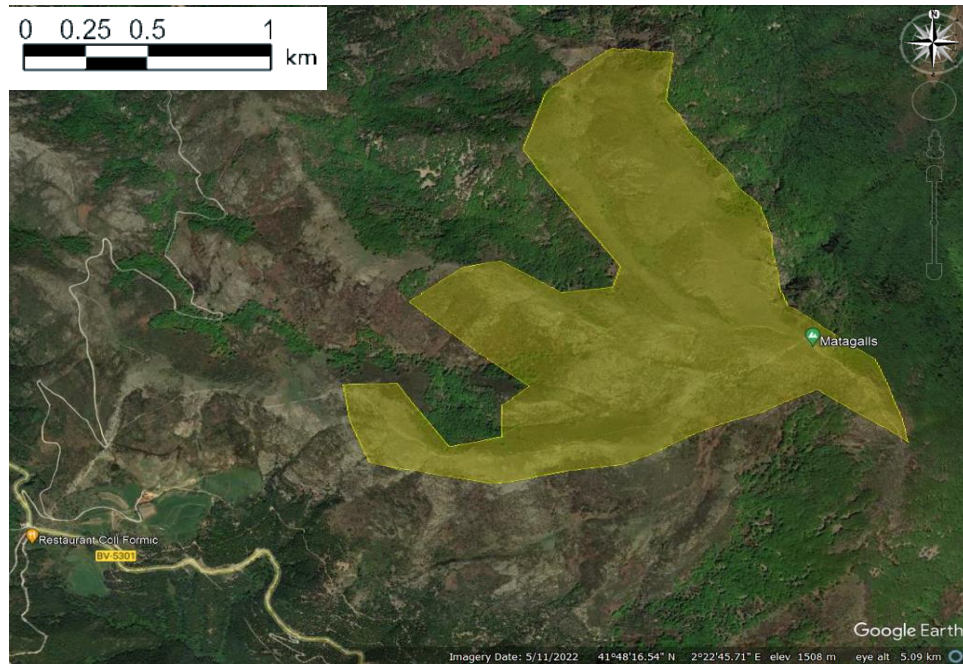


Figure 2. Study area of dotterels in Matagalls.

Results:

During the field season EB Montseny's volunteers found dotterels on 5 out of 12 field days. In addition to their observations, other observers recorded sightings of dotterels on 4 out of 8 days (including 4 field days from ornitho.cat with 2 observations, and 4 field days with 2 observations from observers known to have been searching for dotterels). So in total dotterels were found on 9 out of 20 days. In the "presence and absence" graph (Figure 3), sightings of dotterels reported by observers outside of the project, but within the study area, are also included. The first observation of dotterels was on August 31 by Eb Montseny's volunteers and the last observation was on September 24 by others. In total 72 dotterels were found.

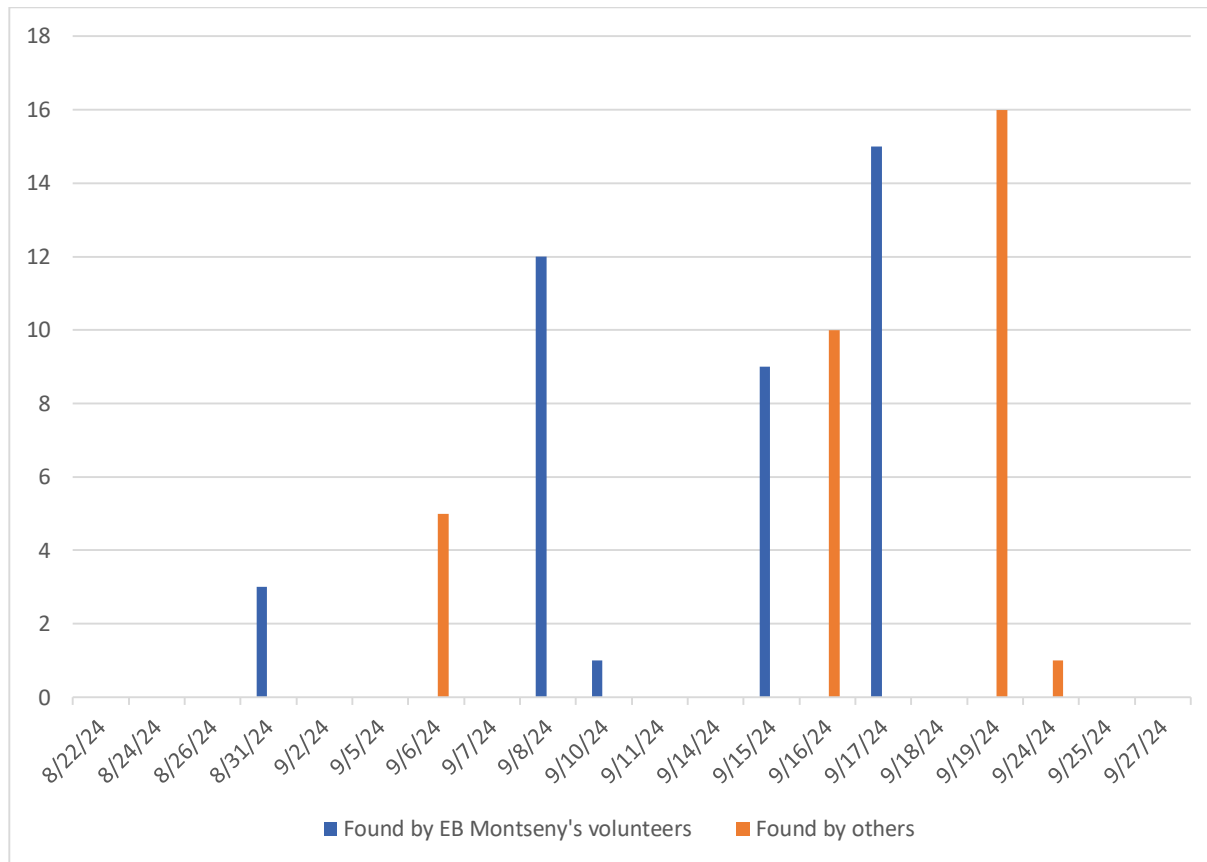


Figure 3. The presence and absence of dotterels in the Matagalls study area throughout the field season.

In total there were 24 reactions recorded from 3 different field days. The total observation time was 4 hours and 58 minutes. The most common reaction was “ignorance” (n=16), followed by “vigilance” (n=4) and “walking away” (n=4). Most of the reactions were towards “walking” people (n=19). Only 2 reactions were related to “sitting” and 2 to “running” people (Figure 4). 1 reaction was not associated with any human activity; it was a dog heard in the distance, and it was unclear whether it was accompanied by people or if it was leashed or unleashed, therefore it is not included in any of the graphs.

The reaction distance for all observations varied between 12 and 200 meters (Figure 5). In the case of the “ignorance”, the range of reaction distance was between 40 and 200 meters with a mean of 121,56 meters. For “vigilance” the range of reaction distance was between 15 and 200 meters with a mean of 91,25 meters. And for “walking away” the range of reaction distance was between 12 and 60 meters with a mean of 26,75 metres.

Regarding the noise level, there were 15 reactions related to “loud” the most common one was “ignorance” (n=12), followed by “walking away” (n=2) and “vigilance” (n=1). There were 8 reactions related to “soft”, the most common one was “ignorance” (n=4), followed by vigilance (n=2), and walking away (n=2). Dogs were present in only 4 reactions (including the reaction not

associated with any human activity mentioned earlier), the most common was ignorance (n=3) followed by vigilance (n=1) (Figure 6).

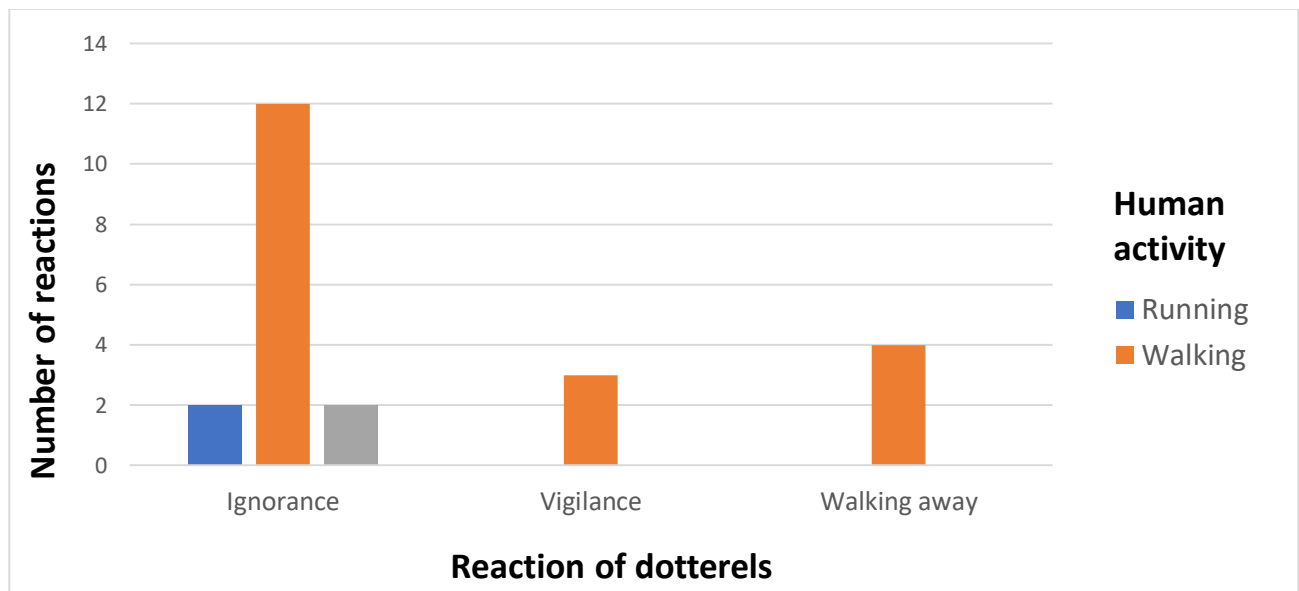


Figure 4. Reaction type towards human activity.

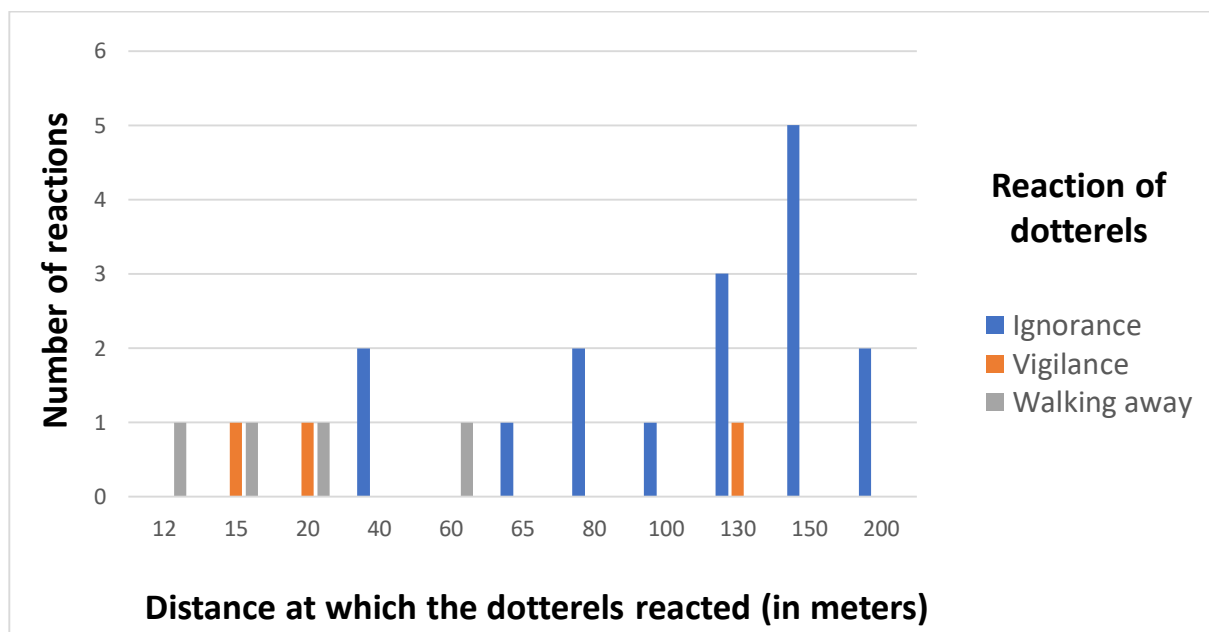


Figure 5. Reaction type towards distance.

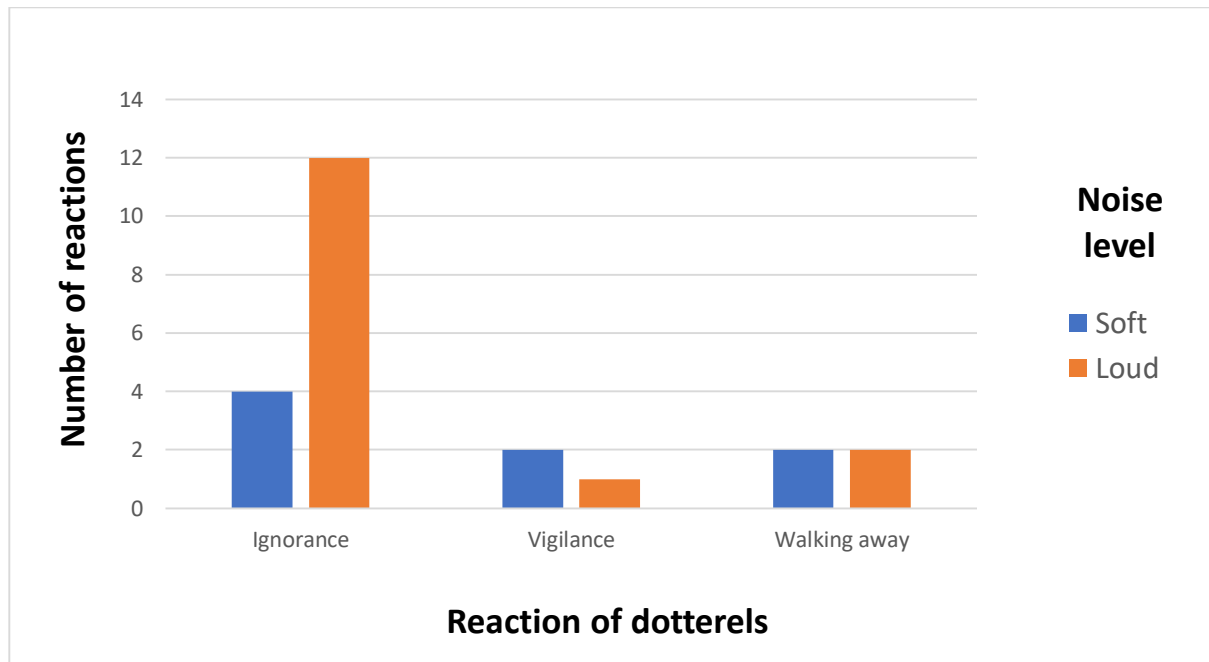


Figure 6. Reaction type towards noise level.

In 2023, a total of 44 dotterels were observed on 8 out of 14 fieldwork days from August 16 to September 17, while 72 dotterels were observed on 9 out 20 field days from August 22 to September 27, 2024. 2023 has a more diverse range of reactions, with "walking away" (n=16) being the most common reaction, followed by "ignorance," (n=9) and a few additional reactions such as "ducking," (n=4) "flying," (n=1) and "flying and alarming" (n=3). There are fewer reaction types in 2024 compared to 2023 (Table 1).

Reaction type	2023 (n=33)	2024 (n=24)
Ignorance	n=9	n=16
Vigilance	n=0	n=4
Walking away	n=16	n=4
Ducking	n=4	n=0
Flying	n=1	n=0
Flying and alarming	n=3	n=0

Table 1. Comparison of the number and types of dotterel's reactions between 2023 and 2024.

In 2023, the vast majority of reactions (28 out of 33) were towards walking people, whereas 2024 recorded fewer reactions towards walking people (19 out of 24). Both years had a similar number of reactions towards running and sitting people (Table 2).

Human Activity	2023 (n=33)	2024 (n=24)
Walking	n=28	n=19
Sitting	n=3	n=2
Running	n=2	n=2

Table 2. Comparison of the number of dotterel's reactions towards human activity between 2023 and 2024.

2023 has a more constrained range of reaction distances, with reactions occurring at shorter distances (4-60 meters). 2024 shows a much wider range, particularly for "ignorance" and "vigilance," with distances reaching up to 200 meters (Table 3).

Reaction Type	2023 Distance Range (m)	2024 Distance Range (m)	Mean Distance
Ignorance	7-60 meters	40-200 meters	28 meters (2023) vs 121.56 meters (2024)
Vigilance	-	15-200 meters	91.25 meters (2024)
Ducking	20-35 meters	-	27.5 meters (2023)
Walking Away	4-40 meters	12-60 meters	25 meters (2023) vs 26.75 meters (2024)
Flying	20 meters	-	20 meters (2023)
Flying Alarming +	4-10 meters	-	6 meters (2023)

Table 3. Comparison of dotterel's reaction types towards distance range between 2023 and 2024.

The number of loud reactions in 2024 (n=15) increased significantly compared to 2023 (n=2). In contrast, the total number of reactions to soft noise in 2024 (n=6) was much lower than in 2023 (n=31). (Table 4).

Noise Level	Reaction Type	2023	2024
Loud	Ignorance	-	12
	Vigilance	-	1
	Ducking	1	-
	Walking Away	1	2
Soft	Ignorance	9	4
	Ducking	3	-
	Walking Away	15	2
	Flying	1	-
	Flying and Alarming	3	-

Table 4. Comparison of dotterel's reaction types towards noise level between 2023 and 2024.

Both years show a relatively low number of dog-related reactions, with a slight decrease in 2024 (4 reactions) compared to 2023 (5 reactions). In 2023, reactions were more varied, with "ducking" and "walking away" each occurring twice (n=2), and "ignorance" occurring once (n=1). In 2024, the reactions were fewer, with "ignorance" being the most common (n=3), followed by "vigilance"(n=1).

Conclusion:

In 2024, the observation of Eurasian dotterels increased compared to 2023, with sightings recorded on 9 out of 20 field days, as opposed to 8 out of 14 in 2023. This rise in observations is consistent with a longer fieldwork season in 2024, which saw a greater number of field days dedicated to monitoring dotterels. Despite the increase in observations, the range of recorded behavioral reactions in 2024 was narrower than in 2023. The most frequent reaction in 2023 was “walking away” and in 2024 was "ignorance”. The number of loud reactions in 2024 saw a significant increase compared to 2023. In contrast, reactions to soft noise were notably fewer in 2024 compared to 2023. Furthermore, the reaction distance in 2024 showed a much wider range, particularly for "ignorance" and "vigilance," where responses were noted from up to 200 meters away, compared to the more limited range of 4-60 meters observed in 2023. While both years displayed a similar number of dog-related reactions, these were relatively rare overall. In 2024, there was a slight decrease in dog-related reactions, but "ignorance" remained the dominant response. Overall, while there was a marked increase in dotterel sightings and fieldwork days in 2024, the observed behavioral responses exhibited some shifts, particularly in terms of reaction types and distances. To gain a deeper understanding of dotterel behavior at their stopover sites, it is essential to collect more data in the upcoming migratory seasons.

Literature:

1. BirdLife International (2024) Species factsheet: *Eudromias morinellus*.
2. Hable E., Saari L. (1997): Dotterel. - The EBCC Atlas of European Breeding Birds: their distribution and abundance. London: T & AD Poyser. 264-265.
3. Owens, I. P., Burke, T., & Thompson, D. B. (1994). Extraordinary sex roles in the Eurasian dotterel: female mating arenas, female-female competition, and female mate choice. *The American Naturalist*, 144(1), 76-100.
4. Sioc.cat (2024) Eurasian dotterel factsheet.
5. Ornitho.cat