Friends of Skomer and Skokholm Long Term Volunteer Report

Introduction

My name is Megan Jones and I was the long term people engagements volunteer on Skomer Island for three months, (25th of June till the 18th of September). I gained a great deal of experience during my time here and learned a great deal of new skills that I will take with me for the rest of my life. Some of these skills varied from driving the tractor and helping to manage the hostel, to the monitoring of seabirds, (guillemots and razorbills) and seals, and much more! During my time here I also carried out research on the grasshoppers and allied insects of Skomer.
This project will mainly look at the *Acrididae,* (grasshopper family*)* species of Skomer Island, their productivity and will briefly describe some variations in colour. I will also include a list of other interesting insect species that I identified during my time here.
Due to the great change in habitat that the island has undergone over the years, there is a possibility that some rarer species may inhabit the island. There is evidence that Skomer was possibly once wooded. This could be an indication that woodland invertebrates may also still inhabit the island, and have adapted to their new surroundings. It would also add to the evidence that Skomer was once covered in trees. Unfortunately, no woodland species were found during this project.
Another hypothesis was that due to the isolation of the island, there might have been some variations in the colour of species found. There was a connection between the pink varieties of grasshoppers with the Yorkshire Fog, a pinkish coloured grass that is very common on the island. The colour of the grasshoppers matched the Yorkshire Fog very well, therefore these pink varieties were much better camouflaged than the others.

Methodology

Table 1 – Methodology used for this project

Method	Target Invertebrates	Target Habitat
Sweep Netting	Flying invertebrates such as Flies, Bees, Grasshoppers, Butterflies etc.	All habitat
Ground Disturbance (turning over rocks etc.)	Ground living invertebrates such as Carrabid beetles etc.	Barer soils (around disturbance from rabbits)
Direct Observation	All species	All habitat

The best and least detrimental way of gathering data will be to use a sweep net method. Pitfall traps are a useful tool for catching ground insects, for example, carabid beetles. However this may cause a problem to the Skomer Vole, (a sub-species endemic to the island) as they would be unable to escape from the traps and consequently may drown. Due to their status and protection this method of data gathering is unsuitable. A sample of plant species will be of use in order to compare with the grasshopper data collected. The

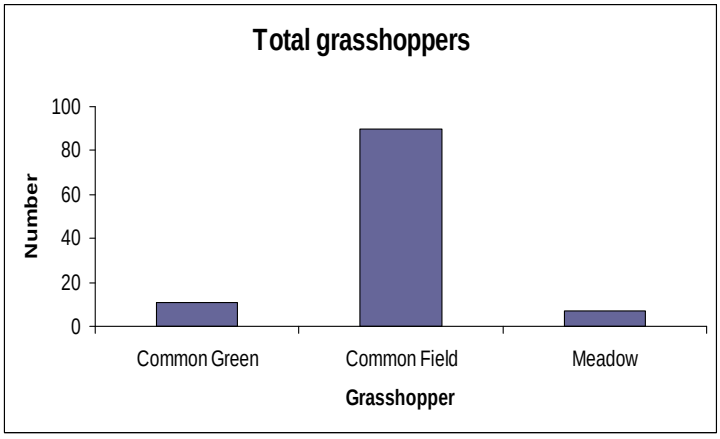
data for this will be recorded through direct observation of the chosen site used for grasshopper data gathering. Data will be collected from 5 locations - South of farm, North of farm, Bull Hole, Green Pond, and South Haven. Each location will have 3 sample areas, and within each area the method of sweep netting and direct observation will be used. Data gathering for each site will take 1 hour, (30 minutes direct observation and 30 minutes sweep netting).

Table 1 shows the methods that were used for gathering invertebrate data for this survey. The method for data gathering for Sample 3, in South Haven was slightly different to the other samples as it covered a larger area than the other samples. I adopted a method similar to the butterfly transects. The butterfly transect on Skomer is carried out through direct observation, walking slowly around the same route. The reason for using this method in sample 3 was due to the high density of burrows and fragility of the ground. This method meant that there was no need to go off the path. The only fault in this method was that there was less time to identify some grasshoppers, and consequently were only identified as 'grasshopper sp.'

Results

As shown in graph 1, the most common species of grasshopper on the island is *Chorthippus brunneus*, (Common Field grasshopper), with a total of 90 individuals caught. Even when excluding sample 3, (South Haven), it is still the most abundant species with 40 individuals caught. This outcome was expected as this species is the most adaptable to its surroundings and can be found in many different habitats.

Table 1 – Total Grasshoppers found in Project

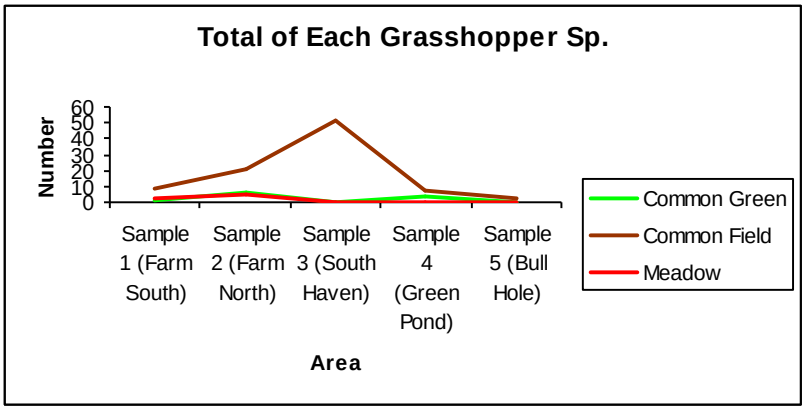


The area with the highest abundance of Common Field grasshopper was in South Haven from South Stream up to Captain Kites. Excluding this area, the sample with the highest abundance of all grasshopper species was in Sample 2 – North part of farm (in the garden). The area with the highest abundance in Sample 2 was in area 1, (by the workshop), with a record of 9 grasshoppers caught during the sweep netting, and 11 during direct observation. The area with the least density of grasshoppers was in sample 5, at Bull Hole in amongst the heather. This site was chosen due to the different flora present there, namely the heather. It was important to include a site with heathland habitat as this is the favored habitat of *Myrmeleotettix maculates* (the mottled grasshopper). There were no Mottled grasshoppers caught during this project although there was one calling over at Tom's

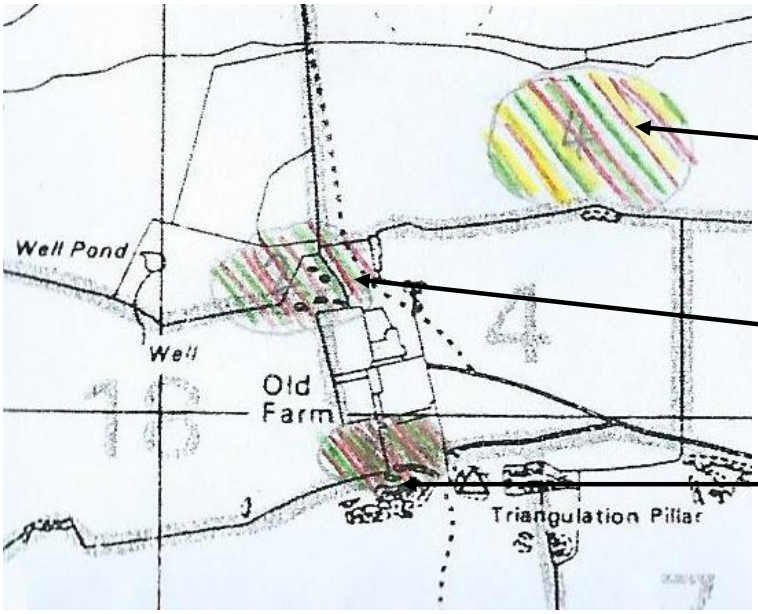
House. Previous records of the mottled grasshopper were on the Wick footpath and in South Park. This species has only been recorded on the record cards 3 times. This leads me to believe that the Mottled grasshopper is the least abundant species on the island and is found only in a small localized patch in the southern end of the island. Sample 5 could also have had a higher abundance although the data gathering was cut short as the ground was very fragile and there was no indication of high numbers present, (i.e. none calling). Another reason for the absence of the Mottled grasshopper within sample 5 is that it is possible that this heathland habitat is fairly new compared with the other patches scattered across the island. It is also quite isolated and could therefore be difficult for heather loving insect species to reach and colonize.

Omocestus viridulus, or the Common Green grasshopper was the second most abundant species on the island, (see graph 1 and 2), with a total of 11 caught. However, as shown in graph 2, this species was only caught within sample 2 (north of the farm) and in sample 4, (Green Pond). It is not surprising that none were found in Sample 5, (Bull Hole heathland) as this is an unsuitable habitat for the species. Having said that, it is unclear why there were none found in sample 3.

Graph 2 – Total Grasshopper Species in Each Sample area



Map 1 -Map of Sample Areas and Grasshopper Species Distribution, (Sample 1, 2 and 4)

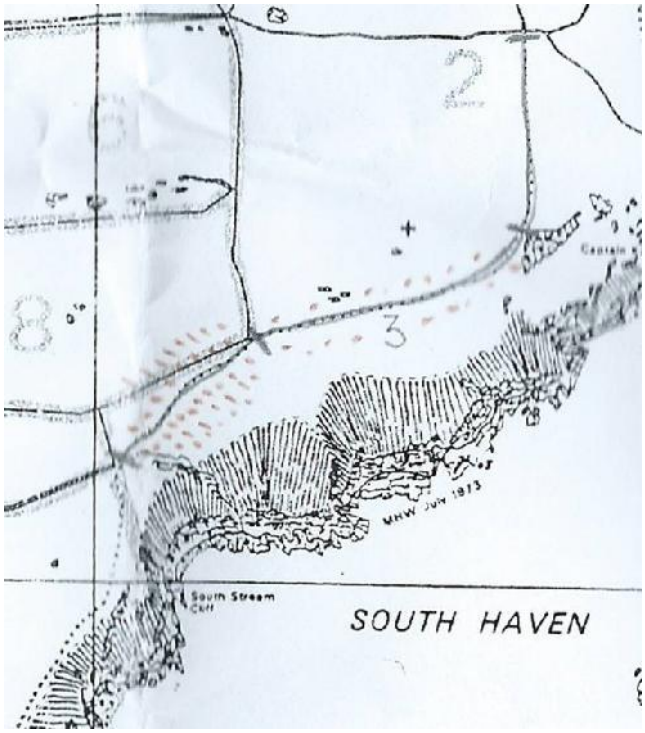


Sample 4 – Meadow, Common Green, Common Field, Speckled Bush Cricket

Sample 2 – Common Green, Common Field, Meadow

Sample 1 - Common Green, Common Field, Meadow

Map 2 – Map of Sample Area 3 (South Haven) and Distribution of the Common Field Grasshopper



The most densely populated area of this transect was from South Stream to the top of the hill. This could be due to the fact that this area was the most sheltered and the sunniest.
The third section of the transect (Captain Kites), had no grasshoppers at all. One possible reason for this is that this area is always very windy.

Map 3 – Map of Sample Area 4 and the Distribution of the Common Field Grasshopper