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OBSERVATIONS OF TERRESTRIAL BIRDS ON SELVAGEM GRANDE, IN SEPTEMBER 1990.

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With 1 table

ABSTRACT: During a 17 days stay on Selvagem Grande 92 individuals of Berthelot's pipit *Anthus berthelotii* were caught and an estimate of the population size was calculated to 300 - 400 individuals. 26 species of non-breeding terrestrial birds were observed of which, Black Kite *Milvus migrans*, Collared Turtle Dove *Streptopelia decaocto*, Icterine Warbler *Hippolais icterina*, and Orphean Warbler *Sylvia hortensis* have not been recorded before.

RESUMO: OBSERVAÇÕES DE AVES TERRESTRES NA SELVAGEM GRANDE, DURANTE O MÊS DE SETEMBRO DE 1990. Durante uma estadia de 17 dias na Selvagem Grande, foram capturados 92 indivíduos de Correcaminho *Anthus berthelotii*, estimando-se a sua população em cerca de 300-400 indivíduos. Foram observadas 26 espécies de aves terrestres não nidificantes. Destas, o Milhafre-preto *Milvus migrans*, a Rola-turca *Streptopelia decaocto*, a Felosa *Hippolais icterina* e a Toutinegra-real *Sylvia hortensis*, não tinham sido ainda assinaladas para a Selvagem Grande

INTRODUCTION

Selvagem Grande was visited during the period of 3rd to 20th Sept. 1990 with the main purpose to obtain DNA-samples from the Berthelot's Pipit. 92 individuals of Berthelot's Pipit and one Kestrel were caught which are believed to be the only two resident species of terrestrial birds on the island. During these 17 days 26 species of non-breeding terrestrial birds were observed, four of which have not been recorded before.

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Species / Date	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Captured birds
<i>Ardea cinera</i>	5	16	15									2	10	10			0
<i>Milvus migrans</i>																1	0
<i>Arenaria interpres</i>							1										0
<i>Numenius phaeopus</i>						1		1				2				1	0
<i>Tringa hypoleucos</i>		1				1	1								1		0
<i>Streptopelia decaocto</i>		1					1										0
<i>Apus melba</i>													1				0
<i>Apus unicolor</i>			1									1					0
<i>Upupa epops</i>		1															0
<i>Hirundo rustica</i>													1	1	2		1
<i>Delichon urbica</i>	1	1	1														0
<i>Oenanthe oenanthe</i>	2	2	6	3	3	3	3	3	5	4	9	6	7	6	10	9	12
<i>Sxicola rubetra</i>					2	2		1	2			1					1
<i>Phoenicurus phoenicurus</i>			2	1	1	1								1			1
<i>Acrocephalus scirpaceus</i>				1	3			3	4		3	2	3	1	1	2	2
<i>Hippolais icterina</i>				4													1
<i>Hippolais pallida</i>			1		1												0
<i>Sylvia borin</i>		4	1													1	1
<i>Sylvia communis</i>			1			1				1					1		1
<i>Sylvia hortensis</i>					1												0
<i>Phylloscopus collybita</i>											1		1		1		1
<i>Phylloscopus trochilus</i>		1		8	11	5	2	5	5	5	2						5
<i>Muscicapa striata</i>				3		4	6	7	4		5					1	0
<i>Muscicapa hypoleuca</i>		2	3	1	2	1					2		1		1		3
<i>Anthus trivialis</i>								1									0
<i>Motacilla cinerea</i>														1		1	0

Table 1. Daily observations of non-breeding birds on Selvagem. There were no major events of incoming birds. The weather was stable most of the period with a steady NNE breeze and good visibility. The only change from this was on the 11th and 12th of September when the wind turned south, with a minor rainfall. The last column is the number of non-breeding birds captured during the whole period.

The Selvagem Islands are located in the eastern part of the Atlantic Ocean at 30°N and 16°W. The group of islands belong to Portugal and are situated 190 km north of Tenerife and about 290 km south of Madeira. The largest of the islands is Selvagem Grande with its 2.2 Km² the only of the tree islands supporting breeding terrestrial birds. On Selvagem Grande a flat and stony plateau is surrounded by steep cliffs. On the rim of the island there are three prominences rising to a height of 107 m, 136 m and 154 m. The Islands give a dry and barren impression and the only abundant plants are *Nicotiana glauca*, three species of ice-plants and a species of seablite.

METHODS

The birds were caught in mistnets located on the flat plateau at the middle of the island, hidden as well as possible in the sparse vegetation of *Nicotiana*. Three 12 m nets and three 6 m nets with 4 shelves were used. The nets were opened at sunrise and closed again by midday. A total of 54 m net x 5 hours x 15 days = 4050 net-metre-hours were used. The nets were inspected every 20 minutes. Most Berthelot's pipit were rushed into the net by yelling and arm waving. All captured Berthelot's Pipits and other passerine birds (see Table 1.) were ringed with C.E.M.P.A. - LISBOA rings. Bloodsamples were taken from the wing vein with a sterile syringe and stored in 1 ml EDTA-buffer to conserve the DNA (ARCTANDER, 1988). The bloodsampling does not harm the birds, and that the wounds heal quickly was seen from recaptured birds.

OBSERVATION OF BREEDING BIRDS

BERTHELOTS'S PIPIT

Berthelot's Pipit, a small passeriforme in the family Motacillidae genus *Anthus*, species *Anthus berthelotii* is endemic to the Canary Islands, Selvagem and Madeira. Being only 14 cm in length it is the smallest of the European pipits. It is greyish above and buff-white below, with marked pattern on a pale face, pale double wing-bar and tertial fringes, and streaked crown, mantle and chest (CRAMP 1988).

The pipits on Selvagem Grande were quiet tame (would come to within 4-6 metre of the observer). They were reluctant to fly and the most common way of retreat was running. The birds were not claiming territory at the time the island were visited.

They were moving around in small groups up to six birds, possibly family groups. It seems that the pipits were feeding equally all over the island with no

preference for any particular terrain or vegetation. The pipits were most active from sunrise to midday.

ESTIMATING THE POPULATION SIZE OF BERTHELOT'S PIPIT ON SELVAGEM GRANDE

It was possible to make an estimate of the population size of Berthelot's Pipits on Selvagem Grande. 92 individuals were ringed and 14 were recaptured. The population size can be estimated with Graig's formula;

$$\log_e (N/N-R)=S/N$$

where **N** is the population size, **R** the number of ringed birds, and **S** the total number of captured birds (ringed plus recaptured birds). **N** is found by iteration. By this calculation the population size **N** is estimated to 364 birds. One requirement, that all birds have the same chance of being caught is not met, as non-ringed birds were selectively driven into the nets, in order to get as many different DNA-samples as possible. Another attempt to estimate the total number of birds was made by an observation tour covering the whole island. A total of 44 birds was seen of which 11 were marked. After a simple catch recatch calculation from a total of 92 marked birds results in $92 \times 44/11 = 368$ individuals. The two methods of estimating the population gives very similar results of around 300 - 400 individuals. In September 1971 SANTOS JUNIOR estimated 100 - 200 individuals. In September 1980 D. B. CAMARA estimated 30 individuals. J. C. HARTOG *et al.* visited the island in October 1978 and in May-June 1980 and estimated the population at 60 - 100 individuals.

KESTREL

The only other terrestrial bird breeding on Selvagem is the Kestrel *Falco tinnunculus*. There were daily observations of three to five individuals, two adult and three young Kestrels. The adult female was caught while trying to feed on captured birds in a net. The Kestrel is darker and heavier barred than the European subspecies and seemed to belong to the western race *F.t.canariensis* which was described from the five most westerly Canary Islands and Madeira (BANNERMANN 1963 and 1965).

OBSERVATIONS OF NON-BREEDING BIRDS ON SELVAGEM GRANDE

Four species were new to Selvagem Grande (according to MOUGIN, 1987): The Black Kite *Milvus migrans*, Collared Turtle Dove *Streptopelia decaocto*, Icterine Warbler *Hippolais icterina*, and Orphean Warbler *Sylvia hortensis*.

The most abundant species of migrant birds were the Wheatear *Oenanthe oenanthe* of which 12 individuals were caught. The Wheatears on Selvagem all appear to be of the *O.o.leucorrhoea* subspecies from Greenland (OTTOSSON 1990). The average wing length is 103.3 mm standard deviation 2.71 mm (ranges 99 - 109 mm).

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