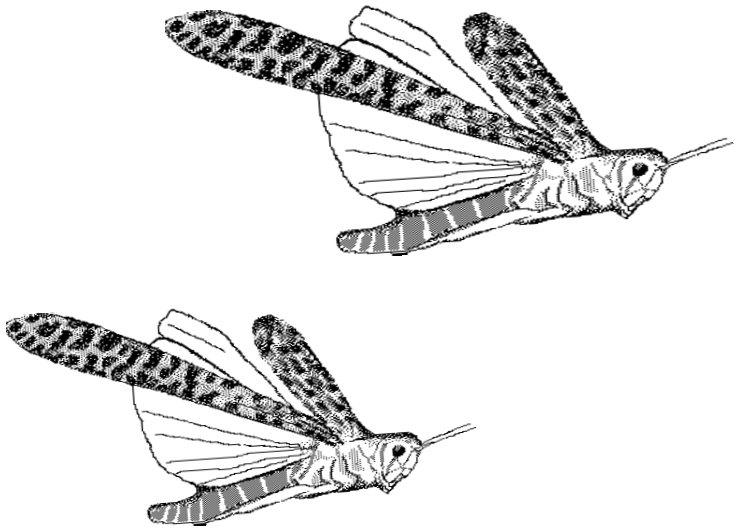
The First Desert Locust Joint Survey in the Winter Breeding Areas in Djibouti and Somalia

February 2004



FAO EMPRES/CR
Commission for Controlling the Desert Locust in the Central Region

The First Desert Locust Joint Survey in the Winter Breeding Areas in Djibouti and Somalia

February 2004

By

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

The First Desert Locust Joint Survey in the Winter Breeding Areas in Djibouti and Somalia 14 – 18 February 2004

1. Summary

An area of around 1963 Ha has been surveyed during the joint survey from 14 to 18 February 2004 between Djibouti & Somaliland of which 1783 ha were in Djibouti & 180 ha were in Somaliland. The distance travelled during the survey was 776kms (46 km Djibouti, 730 Somaliland) . The Somaliland team travelled an extra 580km corresponding the distance from & to Hargeisa & Djibouti. The situation was calm in general, though some isolated solitary adult locusts were seen in following sites:

N°	Name	Coordinates	N° DL	Habitat	Comments
1	Shirdon	N 11 03 33 E 043 27 22	1	Wadi, *Aerva gevenica* & *Panicum* dominated with some *Balanites raximosa*	At the beginning of the large Geriyad plain. Good habitat for DL breeding. Whole Geriyad should be monitored during the coming surveys.
2	Faragorgorley	N 10 44 23 E 043 33 10	3	Plain dominated by *Helitropium* and *Aerva gevenica.* Soil is sandy and favourable for DL breeding	Possibility in increasing numbers. Need to be surveyed within 3 weeks. Grazing area for camels
3	Ban awl	N 10 35 19 E 043 56 57	3	Plain, dominated by grasses with *Balanites raximosa* & *Accacia*	The locusts may concentrate in the green areas if there is no rains during the coming weeks.
4	Eel Sheikh	N 10 25 22 E 044 14 01	2	Plain, dominated by Panicum with *Accacia* & *Balanites raximosa* & *egytiaca*	Good habitat for breeding. Some developments is expected. To be visited within 3 weeks.
5	Bullahar	N 10 23 03 E 044 24 06	1	Sand dunes, *Accacia* with *Panicum & Sueda fruticosa*	Need to be monitored during the coming weeks. To be included the regular surveys from Hargeisa.
6	Bararis	N 10 26 29 E 044 10 54	2	Wadi, *P*anicum & *Purithinica*	Upper parts of the wadi need to be surveyed during the coming period.
7	Abdi Guide	N10 31 30 E44 02 45	1	Sand soil suitable for breeding one locust seen	To be surveyed in the regular surveys by Somali team.

In general the area surveyed was green except east of Geeri to Berbera, which is not suitable for DL breeding due to salty soil and the type of vegetation. Regarding the ground truthing of the satellite images received from the FAO DLIS headquarter. The team observed that most areas

matched on the image as green area is confirmed during the survey. The clouds were observed during mornings and afternoons.

2. Introduction

The present joint survey was initiated during the recent visit of the EMPRES coordinator to Somaliland & Djibouti on mid of the last year after discovering the potential habitat for locust breeding in those areas. The joint border surveys between EMPRS member countries was given the attention by EMPRES & CRC to encourage these countries to conduct surveys at borders as a potential areas for desert locust breeding.

Due to the importance of the coastal area of Djibouti to Somaliland EMPRES& CRC in a good collaboration with two Governments agreed to conduct the first joint surveys at area between Loyadda & Berbera. The findings will assess the two countries to undertake the arrangements for facilitating the teams to cross borders easily during survey operations.

The arrangements of both countries were relay nice and there were no obstacles. The visa & the security clearance were done on time within a short notice. Both the border authorities were very collaborative and even facilitated and welcomed the collaboration & cooperation between the two countries. In terms of awareness at the high officials there was a positive reaction and were supportive to the overall concept.

Joint team agreed to carry out similar surveys during applicable seasons at regular basis. This is for the interest of the two parts and of course will reduce the possible infestation at central region.

3. Survey Methodology

The joint team implemented during the survey to both two methods of surveying as follows:

- **Foot transects:** Each survey officer has walked about 150 – 200 meter in each stop at the survey site with the wind to his face. Locust adults are been counted in a width of 1.5m - 2m strip in front of each officer. The total number of locusts counted and the length and width of the foot transect are been recorded on the survey form. Furthermore, the officers have noted the presence or absence of locusts and their appearance, behavior, and maturity as well as the ecology at the survey site. If several officers conduct transects at the same location, the total number of locusts seen in the total length of transect should be recorded on the survey form (including those officers who did not see any locusts in their transect), assuming that the transect width is the same for each officer.

- **Vehicle transects:** A vehicle transect was made for at least one kilometer while driving slowly in low gear with the wind from behind. The officers counted the number of adults that fly up across the front of the vehicle.

4. Survey findings

The team recognised that coastal areas of Djibouti & Somaliland can be divided into 4 main habitats:

1. A sandy plain named GERIYAD, which starts from AishaAdda & extend to Gerisa downwards to the seacoast to Lughaya. Panincum & other grasses, which are favourable for Desert Locust, dominate it. The *Acacia* & *Balanites* trees as well as Aervia *javanica* are also disbursed in the area..
2. The triangle area between Gerisa, Lughayo & Bullahar has a same type of vegetation & more wadis is spread over that area. The vegetation is dominated by *Aervia javanica* together with *Panicum* & other grasses at a low density. While the *Acacia* trees are

more in number than the Geriyad plain. This area falls under a protected depressions by mountain ranges, so less windy and serve desert locust to settle down & possibly breed. Most of the locust reported was found at this site.

3. Dunes, dominated by acacia with some panicum grasses, characterize the area in between Bullahar & Geeri. The Desert locust habitat within this area is distributed in small patches.
4. The area between Geeri & Berbera is classified as non-desert locust habitat. It is dominated by *Sueda fruticosa*. This is due to high level of salty sandy soils. This area has less importance to Dl activities.

Detailed results of the survey are attached on the survey forms annexe 6.4.

An on job training was carried during the survey operation for both two teams which comprises mainly on the following:

- Use of GPS
- Proper recording in the FAO survey & control forms.
- Information collection during the survey.
- Identification of DL & its different phases.
- Transmission of DL information through HF radios.
- Organisation of joint survey.
- How to make ground truthing.
- Familiarisation of filed camping.

5. Recommendation

The joint team recommends:

- The duration of the survey should be increased one day when area between Geeri and Berbera is under joint survey.
- Due to lack of electricity, there is a need of battery power lamps for the team to conduct night discussions & to avoid the wild animals to approach the camping site.
- Some protective facilities are needed like blankets specially to protect the individuals/team from possible rains or cold.
- The team should be at the beginning be autonomous in terms of food & water supply to increase the area to be surveyed.
- Advance arrangements are needed to avoid any delay in starting.
- It is recommended that both vehicles are equipped with radios.
- One palmtop computer (PSION) needs to be available for the Somalia to send survey results of the JS and regular survey as eLocust files.

6. Acknowledgement

The joint team would like to forward their satisfaction to the two Governments particularly the border authorities for their efforts in facilitating the border movements. They as well would like at this occasion to thank the EMPRES sraff & particularly the technical guidance of Mr Fuad Bahakim NPO/EMPRES during the preparation, implementation & reporting of the present joint survey. Finally the team recognise the financial assistance from FAO/ EMPRES & CRC.

7. Annexes

7.1. List of participants

Djibouti Team

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Somaliland team

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FAO/ EMPRES/CRC

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7.2. Itinerary

Date	*Starting*	*End*
14/02/04	Djibouti	Gerisa
15/02/04	Gerisa	Geeri
16/02/04	Geri – Berbera	Bullahar
17/02/04	Bullahar	Loyadda.
18/02/04	Loyadda	Djibouti

7.3. Photo images

1. Joint team discussing findings

2. Ashyada (N111030 E432622) part of Geriyad plains

3. Geriyad plains with clouds at afternoon

4. Faragorgorley (N10 44 23 - 43 33 81) with dense green vegetation

5. Eeel Shaikh (N10 25 22 - E44 14 01)

6. On – job -Training on how to use the GPS

7.4. Survey forms

Please send to FAO HQ by fax (+39-06-57055271) or e-mail (eclo@fao.org) (page 1 of 4) *(indicate appropriate information as required)*

1	SURVEY STOP	1	2	3	4	5	6
1-1	Date	14/02/04	14/02/04	14/02/04	14/02/04	14/02/04	15/02/04
1-2	Name	Barisley	waraboodka	shirdonqarni	Dhuur	Giriyey	Hubey
1-3	Latitude (N)	11 25 10	11 13 30	11 03 33	10 51 55	10 49 50	10 40 33
1-4	Longitude (E or W)	43 18 34	43 18 54	43 27 22	43 25 50	43 25 43	43 28 50
2	**ECOLOGY**						
2-1	Area (ha) of survey	80 ha	80 ha	95 ha	100 ha	125 ha	95 hq
2-2	Habitat (wadi, plains, dunes, crops)	wadi	wadi	Plains	Wadi	Plains	Wadi
2-3	Date of last rain	15/01/04	15/01/04	18/01/04	1/02/04	1/02/04	1/02//04
2-4	Rain amount (mm, low moderate high?)	L	M	M	M	M	M
2-5	Vegetation (dry, greening, green, drying)	green	dray	Green	Green	Green	Green
2-6	Vegetation density (low medium dense)	L	L	M	M	M	M
2-7	Soil moisture (wet/dry)	**D**	D	D	D	W	W
3	**LOCUSTS**						
3-1	**Present or absent**	A	A	**A**	A	**P**	A
3-2	Area infested (ha)						
4	**HOPPERS**						
4-1	Hopper stages (H123456F)	H123456F	H123456F	H123456F	H123456F	H123456F	H123456F
4-2	Appearance (Solitary, transience, gregarious)	S T G	S T G	S T G	S T G	S T G	S T G
4-3	Behavior (isolated, scattered, groups)	I S G	I S G	I S G	I S G	I S G	I S G
4-4	Hopper density (/site, /m2, low med high)						
5	**BANDS**						
5-1	Band state (H12345F)	H12345F	H12345F	H12345F	H12345F	H12345F	H12345F
5-2	Band density (/m2 or low medium high)						
5-3	Band sizes (/m2 or ha)						
5-4	Numbers of bands						
6	**ADULTS**						
6-1	Maturity (immature, mature)	I M	I M	I M	I M	M	I M
6-2	Appearance (solitary, transience, gregarious)	S T G	S T G	S T G	S T G	S	S T G
6-3	Behavior (isolated, scattered, groups)	I S G	I S G	I S G	I S G	I 1	I S G
6-4	Adult density (/transect, /ha, L M H)						
6-5	Breeding (copulating, laying)	C L	C L	C L	C L	C L	C L
7	**SWARMS**						
7-1	Maturity (immature, mature)	I M	I M	I M	I M	I M	I M
7-2	Swarm density (/m2 or low medium high)						
7-3	Swarm size (km2 or ha)						
7-4	Number of swarms						
8-5	Breeding (copulating, laying)	C L	C L	C L	C L	C L	C L
7-6	Flying (direction, time passing)						
7-7	Flying height (low medium high)	L M H	L M H	L M H	L M H	L M H	L M H
8	**CONTROL**						
8-1	Pesticide name and formulation						
8-2	Application rate (l/ha or g/ha)						
8-3	Quantity (1)						
8-4	Area treated (ha)						
8-5	Ground or air	G A	G A	G A	G A	G A	G A
8-6	Estimated % kill						
9	**COMMENTS**						
		Sand soil Acacia Tree Is awaible	Sand soil paniciu, tree is awaible	Sand soil paniciu, tree is dominant	Sand soil panicium tree is awaible	Sand soil with panicim tree; only one locust	Sand soil balanite;prosop is tree is awaible

Was a GPS used to determine locations? Yes

Country : Somaliland

Locust officer Joint Survey Team

Date : 18/02/04

1	SURVEY STOP	1	2	3	4	5	6
1-1	Date	15/02/04	15/02/04	15/02/04	15/02/04	15/02/04	15/02/04
1-2	Name	Karuure	Fargorley	beyohliban	Beenhawil	Habooyada	Eeel sheik
1-3	Latitude (N)	10 44 38	10 44 23	11 03 33	10 35 19	10 23 10	10 25 22
1-4	Longitude (E or W)	43 33 16	43 33 81	43 27 22	43 56 59	44 08 03	44 14 01
2	**ECOLOGY**						
2-1	Area (ha) of survey	100 ha	115 ha	95 ha	80 ha	118 hq	95 hq
2-2	Habitat (wadi, plains, dunes, crops)	Plains	Plains	Plains	Plains	Dunes	Plain
2-3	Date of last rain	25/02/04	25/01/04	25/01/04	16/01/04	15/01/04	1/02//04
2-4	Rain amount (mm, low moderate high?)	M	L	M	M	M	M
2-5	Vegetation (dry, greening, green, drying)	green	Green	Green	Green	Green	Green
2-6	Vegetation density (low medium dense)	M	M	M	D	M	M
2-7	Soil moisture (wet/dry)	W	D	D	D	W	W
3	**LOCUSTS**						
3-1	**Present or absent**	A	P	**A**	A	**A**	P
3-2	Area infested (ha)						
4	**HOPPERS**						
4-1	Hopper stages (H123456F)	H123456F	H123456F	H123456F	H123456F	H123456F	H123456F
4-2	Appearance (Solitary, transience, gregarious)	S T G	S T G	S T G	S T G	S T G	S T G
4-3	Behavior (isolated, scattered, groups)	I S G	I S G	I S G	I S G	I S G	I S G
4-4	Hopper density (/site, /m2, low med high)						
5	**BANDS**						
5-1	Band state (H12345F)	H12345F	H12345F	H12345F	H12345F	H12345F	H12345F
5-2	Band density (/m2 or low medium high)						
5-3	Band sizes (/m2 or ha)						
5-4	Numbers of bands						
6	**ADULTS**						
6-1	Maturity (immature, mature)	I M	M	I M	I M	M	I
6-2	Appearance (solitary, transience, gregarious)	S T G	T	S T G	S T G	S	S
6-3	Behavior (isolated, scattered, groups)	I S G	I 3/2/200	I S G	I S G	I 1	S 2/2/150
6-4	Adult density (/transect, /ha, L M H)						
6-5	Breeding (copulating, laying)	C L	C L	C L	C L	C L	C L
7	**SWARMS**						
7-1	Maturity (immature, mature)	I M	I M	I M	I M	I M	I M
7-2	Swarm density (/m2 or low medium high)						
7-3	Swarm size (km2 or ha)						
7-4	Number of swarms						
8-5	Breeding (copulating, laying)	C L	C L	C L	C L	C L	C L
7-6	Flying (direction, time passing)						
7-7	Flying height (low medium high)	L M H	L M H	L M H	L M H	L M H	L M H
8	**CONTROL**						
8-1	Pesticide name and formulation						
8-2	Application rate (l/ha or g/ha)						
8-3	Quantity (1)						
8-4	Area treated (ha)						
8-5	Ground or air	G A	G A	G A	G A	G A	G A
8-6	Estimated % kill						
9	**COMMENTS**						
		Sand soil baaread Tree Is awaible	Sand soil 2 mature locust	Sand soil paniciu, tree is the most awaible	Sand soil panicium with panicium	Prosopis tree is abandand	Sand soil paniciu, is tree is awaible 2 locust immature

Was a GPS used to determine locations? Yes

Country : Somaliland

Locust officer Joint Survey Team

Date : 18/02/04

1	SURVEY STOP	1	2	3	4	5	6
1-1	Date	16/02/04	16/02/04	16/02/04	17/02/04	17/02/04	15/02/04
1-2	Name	hinweyne	Geri	Bullahar	Bargariso	Abdi guedi	banhawil
1-3	Latitude (N)	10 21 03	10 21 56	10 22 12	10 26 29	10 31 30	10 36 38
1-4	Longitude (E or W)	44 39 28	44 31 57	44 25 52	44 10 53	44 02 45	43 56 45
2	**ECOLOGY**						
2-1	Area (ha) of survey	80 ha	120 ha	60 ha	100 ha	120 ha	100 ha
2-2	Habitat (wadi, plains, dunes, crops)	Wadi	Wadi	dunes	Wadi	Plzin	Plain
2-3	Date of last rain	15/01/04	6/01/04	6/01/04	23/01/04	23/01/04	2301//04
2-4	Rain amount (mm, low moderate high?)	L	L	L	M	M	L
2-5	Vegetation (dry, greening, green, drying)	green	Green	Green	Green	druing	Green
2-6	Vegetation density (low medium dense)	L	L	L	L	M	M
2-7	Soil moisture (wet/dry)	D	D	D	W	D	D
3	**LOCUSTS**						
3-1	**Present or absent**	A	**A**	**P**	P	**P**	P
3-2	Area infested (ha)						
4	**HOPPERS**						
4-1	Hopper stages (H123456F)	H123456F	H123456F	H123456F	H123456F	H123456F	H123456F
4-2	Appearance (Solitary, transience, gregarious)	S T G	S T G	S T G	S T G	S T G	S T G
4-3	Behavior (isolated, scattered, groups)	I S G	I S G	I S G	I S G	I S G	I S G
4-4	Hopper density (/site, /m2, low med high)						
5	**BANDS**						
5-1	Band state (H12345F)	H12345F	H12345F	H12345F	H12345F	H12345F	H12345F
5-2	Band density (/m2 or low medium high)						
5-3	Band sizes (/m2 or ha)						
5-4	Numbers of bands						
6	**ADULTS**						
6-1	Maturity (immature, mature)	I M	M	I	M	I	I
6-2	Appearance (solitary, transience, gregarious)	S T G	T	S	S	S	S
6-3	Behavior (isolated, scattered, groups)	I S G	I	I	I	I	I
6-4	Adult density (/transect, /ha, L M H)		3/2/200			1/2/200	3/2/200m
6-5	Breeding (copulating, laying)	C L	C L	C L	C L	C L	C L
7	**SWARMS**						
7-1	Maturity (immature, mature)	I M	I M	I M	I M	I M	I M
7-2	Swarm density (/m2 or low medium high)						
7-3	Swarm size (km2 or ha)						
7-4	Number of swarms						
8-5	Breeding (copulating, laying)	C L	C L	C L	C L	C L	C L
7-6	Flying (direction, time passing)						
7-7	Flying height (low medium high)	L M H	L M H	L M H	L M H	L M H	L M H
8	**CONTROL**						
8-1	Pesticide name and formulation						
8-2	Application rate (l/ha or g/ha)						
8-3	Quantity (1)						
8-4	Area treated (ha)						
8-5	Ground or air	G A	G A	G A	G A	G A	G A
8-6	Estimated % kill						
9	**COMMENTS**						
		Sand soil acacia tree is dominat	Sand soil Mixed with moroh	Sand soil swada tree; one locust seen at night	Sand soil 2 mature locust	Sand soil suitable for breeding one locust seen	Expecting to be multiple if rain fall down

Was a GPS used to determine locations? Yes

Country : Somaliland & Djibouti

Locust officer Joint Survey Team

Date : 18/02/04

1	SURVEY STOP	1	2	3	4	5	6
1-1	Date	17/02/04	18/02/04	18/02/04			
1-2	Name	odowaderi	loyadda	Bahur			
1-3	Latitude (N)	11 06 42	11 28 24	11 29 38			
1-4	Longitude (E or W)	43 30 32	043 13 20	043 12 34			
2	**ECOLOGY**						
2-1	Area (ha) of survey		100ha	80			
2-2	Habitat (wadi, plains, dunes, crops)		plian	dunes			
2-3	Date of last rain	1/02/04	4wks	4wks			
2-4	Rain amount (mm, low moderate high?)	L	L	L			
2-5	Vegetation (dry, greening, green, drying)	D	grrn	drying			
2-6	Vegetation density (low medium dense)	L	L	L			
2-7	Soil moisture (wet/dry)	D	D	D			
3	**LOCUSTS**						
3-1	**Present or absent**	A	A	**A**			
3-2	Area infested (ha)						
4	**HOPPERS**						
4-1	Hopper stages (H123456F)	H123456F					
4-2	Appearance (Solitary, transience, gregarious)	S T G					
4-3	Behavior (isolated, scattered, groups)	I S G					
4-4	Hopper density (/site, /m2, low med high)						
5	**BANDS**						
5-1	Band state (H12345F)	H12345F					
5-2	Band density (/m2 or low medium high)						
5-3	Band sizes (/m2 or ha)						
5-4	Numbers of bands						
6	**ADULTS**						
6-1	Maturity (immature, mature)	I M					
6-2	Appearance (solitary, transience, gregarious)	S T G					
6-3	Behavior (isolated, scattered, groups)	I S G					
6-4	Adult density (/transect, /ha, L M H)						
6-5	Breeding (copulating, laying)	C L					
7	**SWARMS**						
7-1	Maturity (immature, mature)	I M					
7-2	Swarm density (/m2 or low medium high)						
7-3	Swarm size (km2 or ha)						
7-4	Number of swarms						
8-5	Breeding (copulating, laying)	C L					
7-6	Flying (direction, time passing)						
7-7	Flying height (low medium high)	L M H					
8	**CONTROL**						
8-1	Pesticide name and formulation						
8-2	Application rate (l/ha or g/ha)						
8-3	Quantity (1)						
8-4	Area treated (ha)						
8-5	Ground or air	G A					
8-6	Estimated % kill						
9	**COMMENTS**						
		Sand soil with panicuim trees sweda	Sand soils Accacia &Cassia Itlauica	Dunes dominated prospice & cassia italica			

Was a GPS used to determine locations? Yes

Country : Somaliland

Locust officer Joint Survey Team

Date : 18/02/04