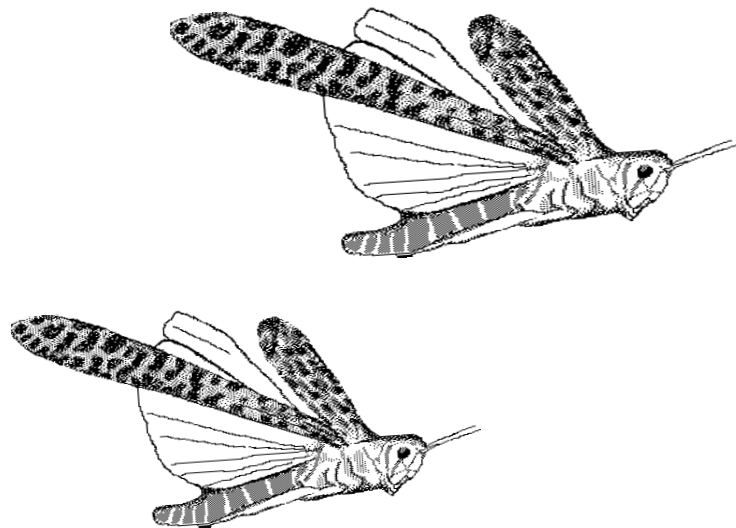


Desert Locust Joint Survey in the Spring Breeding Areas of the I.R. Iran and Pakistan

April 2008



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Desert Locust Joint Survey
In the Spring Breeding Areas of Pakistan and I.R. Iran

April 2008

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Table of Contents

<i>Acknowledgements</i>	<i>i</i>
<i>Summary and Recommendations</i>	<i>ii</i>
Introduction	1
Methodology.....	1
Discussion.....	1
Results.....	1
Northern Baluchistan.....	2
Central Baluchistan	2
Southern Baluchistan.....	2
Conclusion & Recommendations.....	2
Appendix 1. List of participants	4
Appendix 2. Itinerary	5
Appendix 3. Rainfall station data, May 2007 – April 2008	6
Appendix 4. Survey results.....	10
Appendix 5. Map.....	13
Appendix 6. Joint Survey 2009 itinerary	14
Appendix 7. Photos	15

Acknowledgements

The joint survey team would like to express their special gratitude to the Plant Protection Advisor and Director General, Department of Plant Protection (DPP), Government of Pakistan, and to the Director of Plant Protection Organization (PPO) of I.R. Iran for extending generous support and guidance. The participants also appreciate the assistance of the Sistan and Baluchistan Jihad-e Agriculture Organization and the Plant Protection Manager in the Sistan and Baluchistan province for providing facilities. Special thanks are also due to Mr. Ghaemian from I.R. Iran for sending the results of the survey to the FAO Desert Locust Information Service (DLIS) in Rome, the DPP in Karachi, and PPO in Tehran, and for training rendered to the Iranian participants, for preparing special maps for GPS and for his assistance and technical support before, during and after the survey.

The team is extremely grateful to the FAO Headquarters and the Organization's representatives in Islamabad and Tehran for providing technical and financial assistance and arrangements. The team appreciates the efforts of Keith Cressman, FAO Locust Forecasting Officer and Secretariat of the FAO Commission for Controlling the Desert Locust in Southwest Asia (SWAC), in finalizing and distributing this report.

Summary and Recommendations

The 2008 Desert Locust Joint Survey was the 14th survey of the spring breeding areas of southern Baluchistan in Pakistan and I.R. Iran. The survey was conducted in Pakistan from 1 to 16 April. On 17 April, the survey teams crossed into I.R. Iran and concluded on 30 April. On 1 May, the Directors of the National Locust Units in both countries met in Zahedan to discuss the results and problems that the joint team faced during the survey.

During this year's joint survey, the team surveyed 4,797 km in Pakistan and 5,369 km in I.R. Iran, making 65 stops in Pakistan and 71 stops in I.R. Iran. The team observed no gregarious Desert Locust activities in Pakistan during the entire survey period. Only insignificant numbers of solitary adults at a density of 5-6 adults/ha were observed in five locations of the Kharan area near Asepwall (283124N/652512E) on 3-4 April where green vegetation and soil moisture were available because of rainfall on 3 April 2008. In I.R. Iran, the team observed a low population of gregarious hoppers of different stages at five locations on the southern coast between Chabahar and Jask near Jug (252224N/612854E) and Karag (252236N/612019E) where ecological conditions were favorable due to high rainfall. Control operations against gregarious hoppers were in progress and 80% mortality was observed. Moreover, low populations of solitarious adults, up to 30 adults/ha, and hoppers of varying instars were observed in some desert areas of I.R. Iran. As vegetation dries out, locusts are likely to move within the area.

The team suggests the following recommendations for improving future joint surveys:

1. Training at national level should be organized and assisted by FAO for staff of the national locust units in both countries to update with locust survey and control methods, use of eLocust2 and other equipment provided by FAO.
2. Regular local survey of winter/spring breeding areas in southern Baluchistan should be started in both countries from 1 February to 30 June each year to check for locust activity in local breeding areas and for any movement of adults from the Persian Gulf.
3. As the joint survey is a tough job, the DSA rate must be increased in view of inflation.
4. The joint survey should continue in the coming years to assess the locust situation and possible infestation from crossing Persian Gulf.
5. The vehicles in Pakistan should be renewed.
6. Because of inflation and increasing in expenses, especially fuel prices (four-fold increase in the past year), the Commission should consider increasing the GOE for the joint survey.
7. Because of long discussion and border working hours, it is recommended that an additional day is allocated for the border meeting so that it is two days, plus two days for travel.

**Desert Locust Joint Survey in the Spring Breeding areas
of Pakistan and I.R. Iran
April 2008**

Introduction

This is the 14th of the annual joint survey recommended by the 19th Session of the FAO Commission for Controlling the Desert Locust in Southwest Asia (SWAC). The survey was undertaken by a joint Pakistan/I.R. Iran team at the time of year when Desert Locusts are mostly likely to be present.

Methodology

The present joint survey was conducted according to the *FAO Desert Locust Guidelines, II. Survey*. The team checked all potential areas including historical habitats. Attention was mainly given to the areas of green vegetation and recent rainfall.

A total 136 stops were made in both countries. In most cases, data was collected by making foot transects of about 300-400 m in length and about 1-4 m in width.

Each team used eLocust2 for recording coordinates and sending the survey data. The results were also recorded on the *FAO Locust Survey and Control Form* by the locust officers of both countries. This year, the teams entered survey results every evening into RAMSES (the geographic information system that countries use to manage and analyze field data) that was installed on I.R. Iran's laptop computer.

The team made all efforts to collect rainfall data from every locust outpost in the surveyed area.

Discussion

The entire spring breeding area of western Pakistan remained free of significant Desert Locust activities this year due to unfavourable ecological conditions and no rains for the last three months except in the Kharan Valley near Asepwall (283124N/652572E) where vegetation was green because of good rainfall.

In I.R. Iran, the team observed a low population of gregarious hoppers of different instar stages at five locations near Chabahr and Jask at Karag (252236N/612019E) and Jur (252224N/612054E) where ecological conditions were seen favorable due to high rainfall. Control operations against gregarious hoppers were in progress and 80% locust mortality was observed. Moreover, low numbers of solitary adults and hoppers were present in most of the spring breeding areas in southeast I.R. Iran.

Results

For the purpose of the preparation of final report, the surveyed region of Baluchistan in both countries can be divided geographically into three regions: northern, central and southern.

Northern Baluchistan

The Northern part of Baluchistan is the area from near Taftan in I.R. Iran up to Nushki in Pakistan. High elevation sand and rocky plains are present between Zahedan (I.R. Iran) to Nushki (Pakistan). The vegetation from Taftan to Nushki was drying and soil moisture was dry.

No solitarious or gregarious locust activity was observed in these areas.

Central Baluchistan

The central part of Baluchistan extends from south of Taftan and the Ras Kooh Mountains to the Kech and Mand mountains north of Turbat in Pakistan. This region consists of the Great Sandy Desert, the Kharan valleys and Rakhshan valleys of Panjgur that extend west to Saravan, Suran, Zaboli valleys in I.R. Iran, and eventually ends west of the Jaz Murian Basin near Kahnuj. Vegetation was mostly drying in these areas.

No gregarious Desert Locust were observed in this area. However, a population of solitarious adults and hoppers was seen in the Jaz Murian Basin near Kahnuj.

Southern Baluchistan

The southern part of Baluchistan consists of coastal areas that extend from Bandar Abbas, Jask, Chabahar, Gwatar in I.R. Iran to Jiwani, Gwadar, Pasni, Ormara and Uthal in Pakistan. In Pakistan, the area between Pasni to Ormara is famous for locust breeding while areas from Chabahar to Gwatar in Iran are also potential breeding areas for locusts.

Solitarious and gregarious hoppers of different instars and solitarious adults were observed in the Chabahar and Jask areas of I.R. Iran. Control operations against gregarious hoppers were in progress in both areas.

Conclusion & Recommendations

(a) Desert Locust

The survey results indicate that the Desert Locust situation in Pakistan was calm. Weather was mostly dry and the ecological conditions were unfavourable for breeding. However Desert Locust situation in Iran is alarming because the team observed low population of gregarious hopper near Chabahar and Jask area where control operation were in progress. The team also observed solitary adult population through out the desert area of Iran. In case of rainfall in near future, locust situation in I.R. Iran became more alarming.

(b) Joint Survey of 2009

1. It is proposed that the joint survey should be undertaken during 2009.
2. The experts participating in the joint survey must be experienced and well informed of the survey procedures.
3. The drivers must be familiar with driving in desert areas and under off-road conditions.
4. The vehicles in Pakistan should be renewed.
5. The Director of Pakistan's Locust Unit crossed the border this year at 09:00h, arrived in Zahedan at 10:30h and immediately started discussions with the Team Leaders and the head of the Locust Unit in I.R. Iran. The discussion took long time because of the locust situation in I.R. Iran. As the border was closed, the Pakistani team had to stay one more night in Zahedan and crossed the border on 2 May. It is recommended that border meeting be extended by an extra day.

APPENDICES

Appendix 1. List of participants

I.R. Iran

<i>Team Leader</i>	Abdol Rashid Balochi	Tehran PPO
<i>Locust Officer</i>	Mohammad Jaffar Rashidi	Chabahar
<i>Environmental Asst.</i>	Abolfazl Mahzouz	Minab
<i>Drivers</i>	Shahbakhs Rahmani	Chabahar
	Mohammad Gholamizadeh	Bandar Abbas
	Ali Khosro abadi	Tehran
	Hossein Ali Nouri	Zahedan

Pakistan

<i>Team Leader</i>	Malik Muhammad Bakhsh	Multan
<i>Locust Officer</i>	Syed Mujajiz Hussain Naqvi	Quetta
<i>Environmental Asst.</i>	Ahsan Shah	Islamabad
<i>Drivers</i>	Hur Ali	Peshawar
	Khalid Perviz	Bahawalpur
	Naveed	Lahore
	Muhammad Sarwar	Karachi

Appendix 2. Itinerary

Date	Route	km	Overnight
1 Apr	Cross the border		Taftan
2 Apr	Taftan, Dalbandin, Chagai Hills, Nushki		Noshki
3 Apr	Kharan Area (Naru)		Kharan
4 Apr	Kharan Area (Shamsi)		Kharan
5 Apr	Kharan, Basima, Nag, Punjgur		Punjgur
6 Apr	Punjgur, Prome		Punjgur
7 Apr	Punjgur, Hoshab, Turbat		Turbat
8 Apr	Turbat, Solaika		Turbat
9 Apr	Turbat, Gowadar		Gowadar
10 Apr	Gowadar, Kulanch, Pasni		Pasni
11 Apr	Pasni area		Pasni
12 Apr	Pasni, Ormara, Uthal		Uthal
13 Apr	Uthal, Quetta		Quetta
14 Apr	<i>Rest day</i>		Quetta
15 Apr	<i>Prepare the 1st half report</i>		Quetta
16 Apr	Quetta, Nushki, Taftan		Taftan
17 Apr	Cross Taftan to Mirjaveh; <i>send 1st half report</i>		Zahedan
18 Apr	Zahedan, Khash, Gosht, Saravan		Saravan
19 Apr	Saravan, Souran, Zaboli		Iranshahr
20 Apr	Iranshahr, Jolgeh Chah hashem		Iranshahr
21 Apr	Iranshahr, Espakeh, Nikshahr, Chabahar		Chabahar
22 Apr	Chabahar, Beris, Sham, Govater, Chabahar		Chabahar
23 Apr	Chabahar, Vashnam, Dashtiari, Negur		Chabahar
24 Apr	Chabahar, Zar Abad, Jask, Jask area		Jask
25 Apr	Jask, Minab, Bandar Abbas		Bandar Abbas
26 Apr	<i>Rest day</i>		Bandar Abbas
27 Apr	Bandar Abbas, Kahnoj, Ghale Ganj, Sowlan, Kahnoj		Kahnooj
28 Apr	East Jaz Murian, Zeh Kalout, Dalgan, Bampour, Sardegan, Iranshahr		Iranshahr
29 Apr	prepare 2 nd half report		Iranshahr
30 Apr	Iranshahr, Zahedan; finalize JS08 report		Zahedan
1 May	Border Meeting		Zahedan
2 May	Zahedan, Mirjaveh; Pakistani Team cross the border		Taftan

Total distance covered in I.R. Iran	5369 km
Total distance covered in Pakistan	4797 km
Total distance covered in JS 2008	10166 km
Total area surveyed in I.R. Iran	6330 ha
Total area surveyed in Pakistan	6770 ha
Total area surveyed in JS 2008	13100 ha
Total stops visited in I.R. Iran	71
Total stops visited in Pakistan	65
Total stops visited in JS 2008	136

Pasni																									
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm
		7	13													1	87	2	26						
		8	16													15	13								
																28									
Turbat																									
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm
3	7	7	25											11	1	5	10	8	12						
15	4	10	35													9	8								
		18	120													20	15								
		25	20																						
		29	20																						
Uthal																									
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm
5	2	22	15			9	1							11	7	7	4	2	6						
		24	2			17	55							23	1	8	5								
		26	35													24	2								
		27	3																						
		28	2																						
		29	14																						

B. I.R. Iran

Iranshahr																							
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr	
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm		
		1	18	21	2	19	3									5	8						
		2	4													6	6						
		5	4													7	7						
		7	15													11	2						
		8	9													14	35						
		22	33													15	47						
		25	7													17	7						
																18	7						

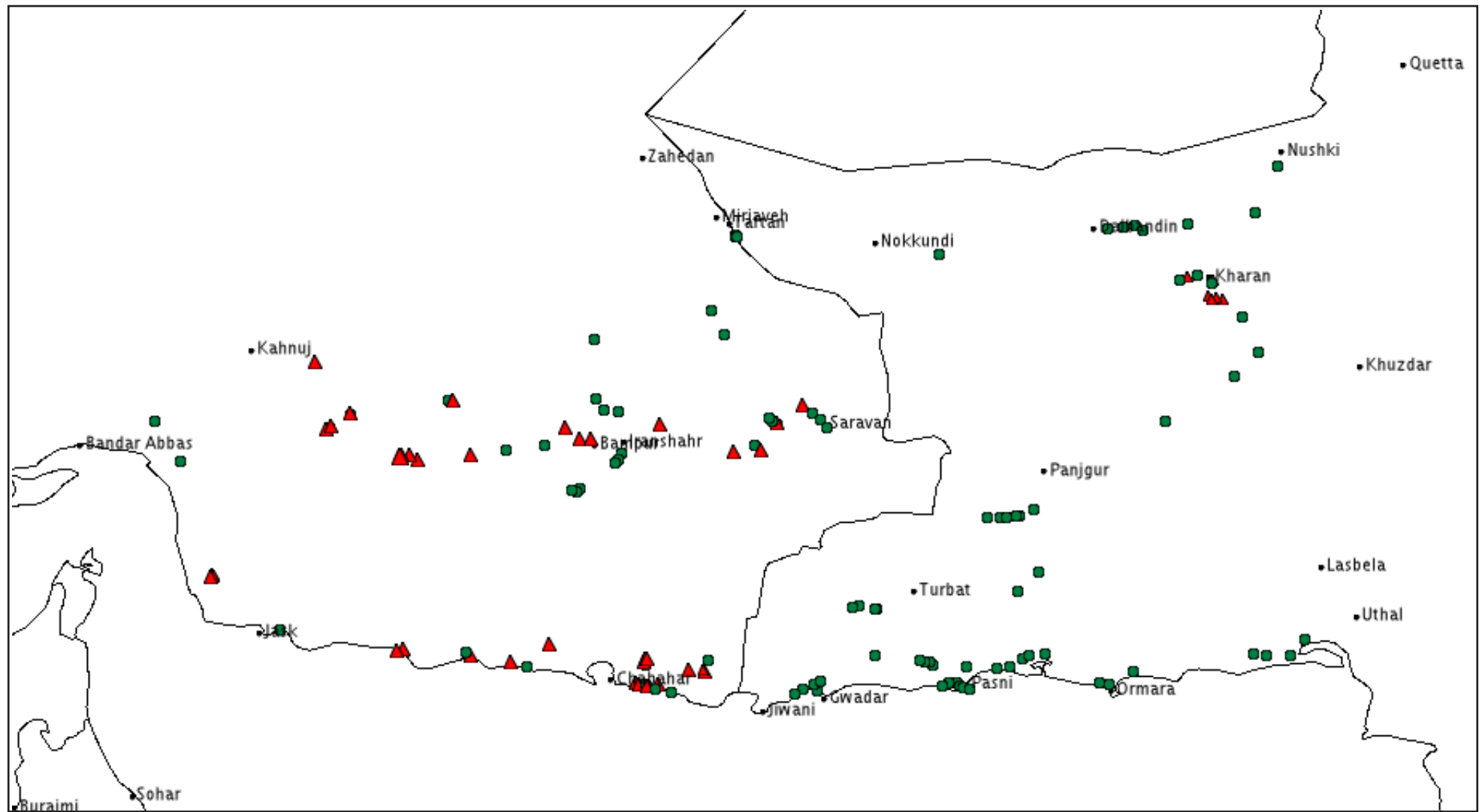
Jask																							
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr	
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm		
		7	62													6	3	4	2				
		8	92													7	1						
		9	6													12	3						
																14	14						
																15	8						
																16	30						
																17	12						
																28	4						
																29	1						

Kahnuj																							
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr	
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm		
26	10	1	4													4	20						
		27	13													5	54						
																6	20						
																12	13						
																14	13						
																15	15						
																16	11						
																17	24						

Minab																							
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr	
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm		
		7	6									27	1	4	9	5	8						
		9	10													6	5						
																7	3						
																12	16						
																14	21						
																15	23						
																16	4						
																27	2						
																28	17						

Chabhar																									
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm
		6	16									22	10			5	4	2	24						
		7	91													6	107								
		8	2													14	44								
		27	37													16	8								
Konarak																									
May		June		July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr			
day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm	day	mm
												28	2	15	1	6	11								
																13	3								
																14	56								
																15	1								
																16	5								
																28	2								

Appendix 5. Map



▲ locusts
● no locusts

Appendix 6. Joint Survey 2009 itinerary

Date	Route	Overnight
1 Apr	Cross the border	Taftan
2 Apr	Taftan, Dalbandin, Chagai Hills, Nushki	Noshki
3 Apr	Kharan area (Naru)	Kharan
4 Apr	Kharan area (Shamsi)	Kharan
5 Apr	Kharan area	Kharan
6 Apr	Kharan, Basima, Nag, Punjgur	Punjgur
7 Apr	Punjgur, Prome	Punjgur
8 Apr	Punjgur, Hoshab, Turbat	Turbat
9 Apr	Turbat, Solaika	Turbat
10 Apr	Turbat, Gowadar	Gowadar
11 Apr	Gowadar, Kulanch, Pasni	Pasni
12 Apr	Pasni area	Pasni
13 Apr	Pasni, Ormara, Uthal	Uthal
14 Apr	Uthal, Quetta, <i>Prepare the 1st half report</i>	Quetta
15 Apr	<i>Rest day</i>	Quetta
16 Apr	Quetta, Nushki, Taftan	Taftan
17 Apr	Cross Taftan to Mirjaveh; <i>send 1st half report</i>	Zahedan
18 Apr	Zahedan, Khash, Gosht, Saravan	Saravan
19 Apr	Saravan, Souran, Zaboli	Iranshahr
20 Apr	Iranshahr, Jolgeh Chah hashem	Iranshahr
21 Apr	Iranshahr, Espakeh, Nikshahr, Chabahar	Chabahar
22 Apr	Chabahar, Beris, Sham, Govater, Chabahar	Chabahar
23 Apr	Chabahar, Vashnam, Dashtiari, Negur	Chabahar
24 Apr	Chabahar, Zar Abad, Jask, Jask area	Jask
25 Apr	Jask, Minab, Bandar Abbas	Bandar Abbas
26 Apr	<i>Rest day</i>	Bandar Abbas
27 Apr	Bandar Abbas, Kahnoj, Ghale Ganj, Sowlan, Kahnoj	Kahnooj
28 Apr	East Jaz Murian, Zeh Kalout, Dalgan, Bampour, Sardegal, Iranshahr	Iranshahr
29 Apr	<i>prepare 2nd half report</i>	Iranshahr
30 Apr	Iranshahr, Zahedan; <i>Head of Pakistan's locust unit crosses the border for border meeting, finalize JS08 report</i>	Zahedan
1 May	Zahedan, Mirjaveh; Pakistani Team and Head of Pakistan's locust unit cross the border and return to Pakistan	Taftan

Appendix 7. Photos



Green vegetation from recent rains in the Shamsi area of Kharan Valley, Pakistan (4 April 2008)



Dry vegetation in the Soleika area near Turbat, Pakistan (8 April 2008)



Dry vegetation on the coastal plains near Pasni, Pakistan (11 April 2008)



Checking for soil moisture at a survey stop on the coast near Pasni, Pakistan (11 April 2008)



Throughout the joint survey, the team recorded field observations on a form that they entered into the RAMSES GIS every evening.



At each survey stop, the team also entered their observations and results that were immediately sent via satellite to Tehran and Karachi.



Low drying vegetation in the Solan valley near Saravan, I.R. Iran (19 April 2008)



Green vegetation in the Jolgeh Chah Hashem area near Iranshahr, I.R. Iran (20 April 2008)



Checking bushes for hopper infestations between Iranshahr and Chabahar, I.R. Iran (21 April 2008)



Results of control operations against mature transiens and gregarious adults in the Jag area near Chabahar, I.R. Iran (22 April 2008)



Results of control operations against late instar gregarious hoppers in the Karag area near Chabahar, I.R. Iran (22 April 2008)



Joint Survey 2008 officers (left-right): M. J. Rashidi, A. R. Balochi (I.R. Iran); S. M. Naqvi, M. M. Bakhsh (Pakistan)