BADIA RESEARCH & DEVELOPMENT CENTRE			FIELD UNIT:	AL3
Principal Topic:	**Origins of Desert Pavement (reg)**			
Location:	Safawi*			
Related Topics:	1.	Desert climate, hydrology and vegetation		
	2.	Animal husbandry		
	3.	Population densities		
Questions:	1.	What is the nature of the surface material? (size; shape; sorting etc)		
	2.	What is the nature of the subsurface material?		
	3.	Does the surface vary with slope angle?		
	4.	Does vegetation play a part in the processes?		
	5.	Is there any evidence of surface water flow?		
Hypotheses:	1.	The reg desert surface is caused by wind deflation		
	2.	Clast size decreases with depth		
	3.	Gravitational processes dominate on steeper slopes		
	4.	Vegetation serves to arrest sediment transfer		
	5.	Moisture levels increase with soil depth		

METHODS:		EQUIPMENT:
1.	Select a transect to comprise a range of slopes	Clinometer (+FRS-1)
2.	Measure clast type, size, shape & pH	Tape, range pole, Ruler, Cailleux card (FRS-3)
3.	Plot the vegetation density/type	poly bags, sieve
4.	Record evaporation rates through the day	Quadrat (+FRS-4)
5.	Measure infiltration rates	Evaporation pan
6.	Field sketches & photographs	Infiltrometer (+FRS-2) Notebook, camera etc

NOTES:

This study has implications beyond the purely geomorphological. Water retention is critical for rangeland studies and maintenance of livestock levels. Perhaps the artificial creation of suitable ground conditions (as at Tal Rima) can serve to improve the quality of the vegetation for grazing.

*There are many locations where this study could be carried out.

FRS-1: HILLSLOPE TRANSECT SHEET						Recorders:				
Station:	Length:	Angle:	Surface (%):			Vegetation (%):			Infiltration Reference:	Notes:
	cm	+/-	Fines	Stones	Boulder	Shrubs	Grasses	Other		
1 - 2:										
2 - 3:										
3 - 4:										
4 – 5:										
5 – 6:										
6 – 7:										
7 - 8										
8 - 9										
9 - 10										
10 - 11										
11 - 12										

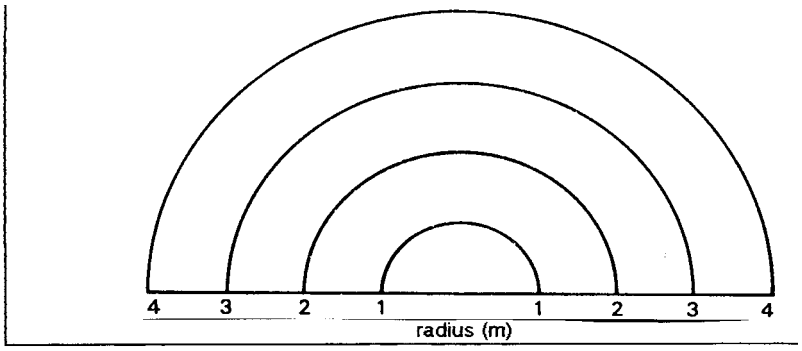
FRS - 2: BOOKING SHEET FOR INFILTRATION FIELDWORK

	SITE 1		SITE 2		SITE 3		SITE 4		SITE 5	
Location:										
TIME ELAPSED (minutes)	FALL OF WATER (millimetres)	INFILTR. RATE (mm./hr)	FALL OF WATER (millimetres)	INFILTR. RATE (mm./hr)	FALL OF WATER (millimetres)	INFILTR. RATE (mm./hr)	FALL OF WATER (millimetres)	INFILTR. RATE (mm./hr)	FALL OF WATER (millimetres)	INFILTR. RATE (mm./hr)
1 MIN.		0		0		0		0		0
2 MIN.		0		0		0		0		0
3 MIN.		0		0		0		0		0
4 MIN.		0		0		0		0		0
5 MIN.		0		0		0		0		0
6 MIN.		0		0		0		0		0
7 MIN.		0		0		0		0		0
8 MIN.		0		0		0		0		0
9 MIN.		0		0		0		0		0
10 MIN.		0		0		0		0		0
11MIN.		0		0		0		0		0
12 MIN.		0		0		0		0		0
13 MIN.		0		0		0		0		0
14 MIN.		0		0		0		0		0
15 MIN.		0		0		0		0		0
MEAN INFILTR. RATE (mm./hr.)	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0
COMMENTS										

FRS-3: CAILLEUX ROUNDNESS INDEX

Pebble Roundness data:								
	1	2	3	4	5	6	7	8
Long axis (a)								
Radius (r)								
Powers' Scale								
	9	10	11	12	13	14	15	16
Long axis (a)								
Radius (r)								
Powers' Scale								
	17	18	19	20	21	22	23	24
Long axis (a)								
Radius (r)								
Powers' Scale								
	25	26	27	28	29	30	31	32
Long axis (a)								
Radius (r)								
Powers' Scale								
	33	34	35	36	37	38	39	40
Long axis (a)								
Radius (r)								
Powers' Scale								
	41	42	43	44	45	46	47	48
Long axis (a)								
Radius (r)								
Powers' Scale								
	49	50	LOCATION of Readings:					
Long axis (a)								
Radius (r)			Cailleux Roundness Index (R) = (2r / a) x 1000					
Powers' Scale			1000 = perfectly rounded					

Concentric rings for measuring pebble radius for Cailleux roundness index. Place the sharpest corner of the stone (in its flattest plane) on the chart to assess the radius of curvature.



Visual Chart for Powers' scale of roundness

CLASS					
1	2	3	4	5	6
very angular	angular	sub-angular	sub-rounded	rounded	well rounded
					
					

FRS-4: QUADRAT SURVEY

LOCATION:

DATE: **RECORDER:**

	A	B	C	D	E	F	G	H	J	K
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Comments

KEY:

	Fines		Stones		Boulders
	Shrubs		Grasses		Other

LOCATION:

DATE: **RECORDER:**

	A	B	C	D	E	F	G	H	J	K
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Comments

KEY:

	Fines		Stones		Boulders
	Shrubs		Grasses		Other