	Fresh			Dry				Mineralized
Behrensmeyer (1978)	Weathering Stage 0		Weathering Stage 1		Weathering Stage 2			Weathering Stages 3-5
	Phase 0	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5		
	High-level moisture content	Initial moisture loss	Low level moisture loss	Low-level to advanced moisture loss	Advanced moisture loss	Advanced moisture loss		
Johnson (1985)	No desiccation features	Split lines may begin to form without interference	Split lines begin to form and cause interference	Split line interference	Split line interference	Split line interference		Mineral Replacement
	Marrow fresh	Marrow unsoured, edible	Marrow still unsoured, edible	Marrow soured, unedible	Marrow decay	No marrow		
	Impact point	Impact point	Impact point	Probably no impact point	No impact point	No impact point		
	Helical fracture	Helical fracture	May be combination of helical and horizontal tension failure	Mainly horizontal tension failure	Horizontal tension failure	Horizontal tension failure		
Morlan (1984) (After Bonnichsen 1979; Morlan 1980, and Stanford *et al.* 1981)	Possible negative impact scars			Possible negative impact scars				No impact scars
	Smooth fracture surface			Smooth or rough fracture surface				Rough (pebbly) fracture surface
	Acute, obtuse, or right angle of fracture to outer surface			Acute, obtuse, or right angle of fracture to outer surface				Right angle of fracture to outer surface
	Fracture termination prior to epiphysis			Fracture may cross-cut epiphysis				Fracture may cross-cut epiphysis
	Color of fracture same as outer surface			Little or no color contrast with outer surface				Color often contracts sharply with outer surface
	Straight, diagonal, curved, spiral; generally smooth fracture outline			All outlines seen in fresh bones, often perturbed by split lines				Usually straight, transverse, or longitudinal fracture outline; can be curved, rarely spiral, often perturbed by split lines.
Outram (1999, 2001)	FFI Score 0-1	FFI Score 1-2	FFI Score 2-3	FFI Score 3-4	FFI Score 4-5			FFI Score 5-6

APPENDIX B

DATA FOR DEGRADATION IN FROZEN BONES (CHAPTER 5)

This appendix presents the complete frozen bone dataset reported in Chapter 5 of this thesis, including the calculations used to derive the averages reported in that chapter. Complete data for a fresh bone control sample, and samples of bones frozen for 1, 10, 20, 40, and 60 weeks is reported here:

Fresh Bone (Control Sample)

Femur

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	26 cm
LARGE FRAGMENT 2	1	29 cm
SMALL FRAGMENT 1	1	24 cm
SMALL FRAGMENT 2	1	18.5 cm
SMALL FRAGMENT 3	0	13.5 cm
SMALL FRAGMENT 4	0	10.5 cm
SMALL FRAGMENT 5	0	12.0 cm
SMALL FRAGMENT 6	0	9.5 cm
SMALL FRAGMENT 7	0	6.5 cm
SMALL FRAGMENT 8	0	2 cm
SMALL FRAGMENT 9	0	3.5 cm

Tibia

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	16 cm
LARGE FRAGMENT 2	1	24 cm
SMALL FRAGMENT 1	0	13.5 cm

Radius

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	24 cm
LARGE FRAGMENT 2	0	27 cm
SMALL FRAGMENT 1	1	32 cm
SMALL FRAGMENT 2	1	25 cm
SMALL FRAGMENT 3	1	13 cm
SMALL FRAGMENT 4	1	14 cm
SMALL FRAGMENT 5	0	14 cm
SMALL FRAGMENT 6	0	7.5 cm

Humerus

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	24 cm
LARGE FRAGMENT 2	1	26 cm
SMALL FRAGMENT 1	1	28 cm
SMALL FRAGMENT 2	0	12.5 cm
SMALL FRAGMENT 3	1	10.5 cm
SMALL FRAGMENT 4	0	8.5 cm
SMALL FRAGMENT 5	0	7 cm
SMALL FRAGMENT 6	0	7 cm
SMALL FRAGMENT 7	0	5.5 cm

Metatarsal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	18 cm
LARGE FRAGMENT 2	0	18 cm

Metacarpal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	54 cm
LARGE FRAGMENT 2	1	21 cm
SMALL FRAGMENT 1	1	19.5 cm
SMALL FRAGMENT 2	0	17 cm
SMALL FRAGMENT 3	0	9 cm
SMALL FRAGMENT 4	0	5 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Radius	156.5 cm	.69
Humerus	123.5 cm	.52
Femur	155 cm	.63
Tibia	53.5 cm	.44
Metacarpal	125.5 cm	.75
Metatarsal	36 cm	0
TOTAL	650 cm	Total of FFIs/6= Method A: .505

Method B:

Total Fracture Length: 650 cm
Total Fracture Length of Fragments x FFI Score = 362.5 cm

362.5 cm/650 cm = Method B: .56

Method C:

Fragments with FFI score 0 = 23
Fragments with FFI score 1 = 16
Total Fragments = 39

16/39 = Method C: .41

Frozen 1 Week

Radius

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	27 cm
LARGE FRAGMENT 2	1	27 cm

Humerus

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	18 cm
LARGE FRAGMENT 2	0	17.5 cm
SMALL FRAGMENT 1	0	8 cm
SMALL FRAGMENT 2	0	8 cm
SMALL FRAGMENT 3	0	4 cm

Femur

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	22.5 cm
LARGE FRAGMENT 2	0	22 cm
SMALL FRAGMENT 1	0	25 cm

Tibia

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	15 cm
LARGE FRAGMENT 2	0	15 cm

Metatarsal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	18 cm
LARGE FRAGMENT 2	0	22 cm
SMALL FRAGMENT 1	1	5 cm
SMALL FRAGMENT 2	0	3 cm
SMALL FRAGMENT 3	0	3cm

Metacarpal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	19 cm
LARGE FRAGMENT 2	0	20.5 cm
SMALL FRAGMENT 1	0	7 cm
SMALL FRAGMENT 2	0	8 cm
SMALL FRAGMENT 3	0	2 cm
SMALL FRAGMENT 4	0	2 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Radius	54 cm	1
Humerus	55.5 cm	0
Femur	69.5 cm	0
Tibia	30 cm	0
Metacarpal	58.5 cm	.32
Metatarsal	51 cm	.1
TOTAL	318.5 cm	Total of FFIs/6= Method A: .24

Method B:

Total Fracture Length: 318.5 cm
Total Fracture Length of Fragments x FFI Score = 78 cm

78 cm/318.5 cm = Method B: .24

Method C:

Fragments with FFI score 0 = 23
Fragments with FFI score 1 = 4
Total Fragments = 27

4/23 = Method C: .15

Frozen 10 Weeks

Radius

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	17 cm
LARGE FRAGMENT 2	1	16 cm
SMALL FRAGMENT 1	0	1 cm

Humerus

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	17 cm
LARGE FRAGMENT 2	0	17 cm

Femur

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	38 cm
LARGE FRAGMENT 2	1	38 cm
SMALL FRAGMENT 1	0	2 cm

Tibia

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	25 cm
LARGE FRAGMENT 2	0	24 cm
SMALL FRAGMENT 1	0	40 cm
SMALL FRAGMENT 2	0	5 cm

Metatarsal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	17.5 cm
LARGE FRAGMENT 2	0	18 cm
SMALL FRAGMENT 1	0	3 cm

Metacarpal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	19 cm
LARGE FRAGMENT 2	1	17.5 cm
SMALL FRAGMENT 1	1	7 cm
SMALL FRAGMENT 2	0	3 cm
SMALL FRAGMENT 3	0	3 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Radius	34 cm	.97
Humerus	34 cm	0
Femur	78 cm	.97
Tibia	94 cm	0
Metacarpal	38.5 cm	.88
Metatarsal	49.5 cm	0
TOTAL	328 cm	Total of FFIs/6= Method A: .46

Method B:

Total Fracture Length: 328 cm
Total Fracture Length of Fragments x FFI Score = 152.5 cm

152.5 cm/328 cm = Method B: ..46

Method C:

Fragments with FFI score 0 = 13
Fragments with FFI score 1 = 7
Total Fragments = 20

7/20 = Method C: .35

Frozen 20 Weeks

Radius

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	18 cm
LARGE FRAGMENT 2	0	24 cm
SMALL FRAGMENT 1	1	18 cm
SMALL FRAGMENT 2	1	13.5 cm

Humerus

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	26 cm
LARGE FRAGMENT 2	0	26 cm

Femur

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	21.5 cm
LARGE FRAGMENT 2	1	21 cm
SMALL FRAGMENT 1	0	18 cm
SMALL FRAGMENT 2	1	11 cm
SMALL FRAGMENT 3	0	3 cm
SMALL FRAGMENT 4	1	5 cm
SMALL FRAGMENT 5	0	3 cm
SMALL FRAGMENT 6	0	3 cm

Tibia

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	28 cm
LARGE FRAGMENT 2	1	19 cm
SMALL FRAGMENT 1	0	25 cm

Metatarsal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	17 cm
LARGE FRAGMENT 2	1	17 cm

Metacarpal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	19 cm
LARGE FRAGMENT 2	0	18 cm
SMALL FRAGMENT 1	1	2.5 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Radius	73.5 cm	.67
Humerus	52 cm	0
Femur	85.5 cm	.68
Tibia	72 cm	.65
Metacarpal	34 cm	1
Metatarsal	40.5 cm	.09
TOTAL	357.5 cm	Total of FFIs/6= Method A: .52

Method B:

Total Fracture Length: 357.5 cm
Total Fracture Length of Fragments x FFI Score = 192.5 cm

192.5 cm/357.5 cm = Method B: .54

Method C:

Fragments with FFI score 0 = 10
Fragments with FFI score 1 = 13
Total Fragments = 23

13/23 = Method C: .57

Frozen 40 Weeks

Radius

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	29 cm
LARGE FRAGMENT 2	1	18 cm
SMALL FRAGMENT 1	0	19 cm
SMALL FRAGMENT 2	1	18 cm
SMALL FRAGMENT 3	1	5 cm
SMALL FRAGMENT 4	1	6 cm

Humerus

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	2	17 cm
LARGE FRAGMENT 2	2	17 cm
SMALL FRAGMENT 1	0	3 cm

Femur

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	16 cm
LARGE FRAGMENT 2	0	18 cm
SMALL FRAGMENT 1	0	2 cm
SMALL FRAGMENT 2	0	2 cm
SMALL FRAGMENT 3	0	2 cm

Tibia

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	31 cm
LARGE FRAGMENT 2	1	23 cm
SMALL FRAGMENT 1	1	28 cm
SMALL FRAGMENT 2	1	3 cm
SMALL FRAGMENT 3	2	8 cm
SMALL FRAGMENT 4	2	9 cm
SMALL FRAGMENT 5	0	4 cm

Metatarsal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	19 cm
LARGE FRAGMENT 2	1	17 cm
SMALL FRAGMENT 1	0	6 cm

Metacarpal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	21 cm
LARGE FRAGMENT 2	1	19 cm

SMALL FRAGMENT 1	0	6 cm
SMALL FRAGMENT 2	1	3 cm
SMALL FRAGMENT 3	0	2 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Radius	95 cm	.8
Humerus	37 cm	1.84
Femur	40 cm	0
Tibia	106 cm	1.12
Metacarpal	51 cm	.84
Metatarsal	42 cm	.86
TOTAL	371 cm	Total of FFIs/6= Method A: .91

Method B:

Total Fracture Length: 371 cm
Total Fracture Length of Fragments x FFI Score = 342 cm

342 cm/371 cm = Method B: .92

Method C:

Fragments with FFI score 0 = 11	(0 * 11 = 0)
Fragments with FFI score 1 = 14	(1 * 14 = 14)
Fragments with FFI score 2 = 4	(2 * 4 = 8)
Total Fragments = 27	Total FFI points = 22

22/27 = Method C: .81

Frozen 60 Weeks

Radius

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	23 cm
LARGE FRAGMENT 2	1	24 cm
SMALL FRAGMENT 1	1	28 cm
SMALL FRAGMENT 2	1	25 cm
SMALL FRAGMENT 3	1	9.5 cm
SMALL FRAGMENT 4	1	10 cm

Humerus

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	21 cm
LARGE FRAGMENT 2	2	24 cm
SMALL FRAGMENT 1	1	18 cm
SMALL FRAGMENT 2	2	15 cm

Femur

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	29 cm
LARGE FRAGMENT 2	1	29 cm

Tibia

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	21 cm
LARGE FRAGMENT 2	1	24 cm
SMALL FRAGMENT 1	0	11 cm

Metatarsal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	19 cm
LARGE FRAGMENT 2	1	21 cm
SMALL FRAGMENT 1	2	7 cm
SMALL FRAGMENT 2	1	11 cm

Metacarpal

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	20.5 cm
LARGE FRAGMENT 2	1	20.5 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Radius	119.5 cm	1
Humerus	78 cm	1.5
Femur	58 cm	1
Tibia	56 cm	.80
Metacarpal	58 cm	1.12
Metatarsal	42 cm	1
TOTAL	410.5 cm	Total of FFIs/6= Method A: 1.07

Method B:

Total Fracture Length: 410.5 cm
Total Fracture Length of Fragments x FFI Score = 445.5 cm

445.5/410.5 cm = Method B: 1.09

Method C:

Fragments with FFI score 0 = 1	(0 * 1 = 0)
Fragments with FFI score 1 = 17	(1 * 17 = 17)
Fragments with FFI score 2 = 3	(2 * 3 = 6)
Total Fragments = 21	Total FFI points = 23

23/21 = Method C: 1.1

APPENDIX C

DATA FOR DEGRADATION OF BONES IN HOT AND DRY CONDITIONS

(CHAPTER 5)

This appendix presents the heated and dried bone dataset reported in Experiment 1 of this thesis, including the calculations used to derive the figures reported in that chapter. Complete data for a fresh bone control sample, and samples of bones exposed to a hot, dry environment for 1, 3, 7, 14, and 21 days is reported here:

Fresh Bone (Control Sample)

Femur 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	16 cm
LARGE FRAGMENT 2	1	17.5 cm
SMALL FRAGMENT 1	0	13 cm
SMALL FRAGMENT 2	1	3 cm
SMALL FRAGMENT 3	1	7 cm
SMALL FRAGMENT 4	0	5 cm

Femur 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	18.5 cm
LARGE FRAGMENT 2	1	17 cm
SMALL FRAGMENT 1	1	8 cm
SMALL FRAGMENT 2	0	9.5 cm
SMALL FRAGMENT 3	0	6.5 cm

Tibia 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	20.5 cm
LARGE FRAGMENT 2	1	16.5 cm
SMALL FRAGMENT 1	0	11 cm
SMALL FRAGMENT 2	0	5.5 cm

Tibia 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	16.5 cm
LARGE FRAGMENT 2	1	16.5 cm

Radius 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	22.5 cm
LARGE FRAGMENT 2	0	19 cm
SMALL FRAGMENT 1	0	7.5 cm
SMALL FRAGMENT 2	1	2.5 cm

Radius 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	1	23.5 cm
LARGE FRAGMENT 2	0	19 cm
SMALL FRAGMENT 1	0	14 cm
SMALL FRAGMENT 2	0	11.5 cm
SMALL FRAGMENT 3	0	10.5 cm
SMALL FRAGMENT 4	1	5.5 cm

Humerus 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	22 cm
LARGE FRAGMENT 2	1	24.5 cm
SMALL FRAGMENT 1	1	8 cm
SMALL FRAGMENT 2	0	12.5 cm
SMALL FRAGMENT 3	1	9 cm

Humerus 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	25.5 cm
LARGE FRAGMENT 2	1	22.5 cm
SMALL FRAGMENT 1	1	6.5 cm
SMALL FRAGMENT 2	0	6 cm
SMALL FRAGMENT 3	0	7 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Femur 1	61.5 cm	.71
Femur 2	59.5 cm	.73
Tibia 1	53.5 cm	.31
Tibia 2	33 cm	1.0
Radius 1	51.5 cm	.49
Radius 2	84 cm	.35
Humerus 1	76 cm	.55
Humerus 2	67.5 cm	.43
TOTAL	486.5 cm	

Method A = .54 (sum of FFI scores for each bone/8 = .54)

Method B:

Total Fracture Length: 486.5 cm
Total Fracture Length of Fragments x FFI Score = 261 cm

Method B = .57 (261 cm/486.5 cm = .57)

Method C:

Fragments with FFI score 0 = 23
Fragments with FFI score 1 = 16
Total Fragments = 39

Method C = .51 (16/39 = .51)

1 Day

Femur 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	23.5 cm
LARGE FRAGMENT 2	3	26.5 cm
SMALL FRAGMENT 1	3	21 cm
SMALL FRAGMENT 2	3	17 cm
SMALL FRAGMENT 3	2	2 cm
SMALL FRAGMENT 4	2	3.5 cm

Femur 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	23 cm
LARGE FRAGMENT 2	3	22 cm
SMALL FRAGMENT 1	2	6 cm
SMALL FRAGMENT 2	2	5 cm
SMALL FRAGMENT 3	2	3.5 cm
SMALL FRAGMENT 4	2	3.5 cm
SMALL FRAGMENT 5	2	3 cm

Tibia 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	16 cm
LARGE FRAGMENT 2	3	17.5 cm
SMALL FRAGMENT 1	2	3 cm

Tibia 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	16 cm
LARGE FRAGMENT 2	3	17.5 cm
SMALL FRAGMENT 1	2	5.5 cm

Radius 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	25 cm
LARGE FRAGMENT 2	3	23 cm
SMALL FRAGMENT 1	3	16.5 cm
SMALL FRAGMENT 2	3	7 cm
SMALL FRAGMENT 3	2	2 cm
SMALL FRAGMENT 4	2	3 cm

Radius 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	22 cm
LARGE FRAGMENT 2	4	23.5 cm
SMALL FRAGMENT 1	3	17 cm
SMALL FRAGMENT 2	3	3 cm
SMALL FRAGMENT 3	3	8.5 cm
SMALL FRAGMENT 4	2	5.5 cm

Humerus 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	23 cm
LARGE FRAGMENT 2	2	21 cm
SMALL FRAGMENT 1	3	16.5 cm
SMALL FRAGMENT 2	2	5 cm
SMALL FRAGMENT 3	2	9.5 cm
SMALL FRAGMENT 4	2	2.5 cm

Humerus 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	25.5 cm
LARGE FRAGMENT 2	3	26 cm
SMALL FRAGMENT 1	2	4 cm
SMALL FRAGMENT 2	2	3 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Femur 1	93.5 cm	2.94
Femur 2	66 cm	2.68
Tibia 1	38.5 cm	3.39
Tibia 2	39 cm	2.86
Radius 1	76.5 cm	2.86
Radius 2	79.5 cm	3.50
Humerus 1	77.5 cm	2.51
Humerus 2	58.5 cm	2.88
TOTAL	529 cm	

Method A = 2.95 (sum of FFI scores for each bone/8 = 2.95)

Method B:

Total Fracture Length: 529 cm
Total Fracture Length of Fragments x FFI Score = 1554 cm

Method B = 2.94 (1554 cm/529 cm = 2.94)

Method C:

Fragments with FFI score 2 = 20
Fragments with FFI score 3 = 18
Fragments with FFI score 4 = 3
Total Fragments = 41

Method C = 2.59 ([(20*2)+(18*3)+(3*4)]/41 = 2.59)

3 Days

Femur 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	25.5 cm
LARGE FRAGMENT 2	3	27.5 cm
SMALL FRAGMENT 1	3	13 cm
SMALL FRAGMENT 2	3	12 cm
SMALL FRAGMENT 3	2	5.5 cm
SMALL FRAGMENT 4	2	5 cm
SMALL FRAGMENT 5	2	5 cm

Femur 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	25 cm
LARGE FRAGMENT 2	3	23.5 cm
SMALL FRAGMENT 1	3	19 cm
SMALL FRAGMENT 2	2	7 cm
SMALL FRAGMENT 3	2	3.5 cm

Tibia 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	19 cm
LARGE FRAGMENT 2	3	21.5 cm
SMALL FRAGMENT 1	2	8 cm

Tibia 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	18 cm
LARGE FRAGMENT 2	3	17 cm
SMALL FRAGMENT 1	3	4.5 cm

Radius 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	19.5 cm
LARGE FRAGMENT 2	4	19.5 cm
SMALL FRAGMENT 1	3	14 cm
SMALL FRAGMENT 2	2	5 cm
SMALL FRAGMENT 3	2	6.5 cm

Radius 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	23 cm
LARGE FRAGMENT 2	3	19.5 cm
SMALL FRAGMENT 1	3	20 cm
SMALL FRAGMENT 2	3	13 cm
SMALL FRAGMENT 3	2	6.5 cm
SMALL FRAGMENT 4	2	7.5 cm

Humerus 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	24 cm
LARGE FRAGMENT 2	4	26 cm
SMALL FRAGMENT 1	4	28 cm
SMALL FRAGMENT 2	3	12.5 cm
SMALL FRAGMENT 3	2	10.5 cm
SMALL FRAGMENT 4	2	8.5 cm
SMALL FRAGMENT 5	2	7 cm

Humerus 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	0	24 cm
LARGE FRAGMENT 2	1	26 cm
SMALL FRAGMENT 1	1	28 cm
SMALL FRAGMENT 2	0	12.5 cm
SMALL FRAGMENT 3	1	10.5 cm
SMALL FRAGMENT 4	0	8.5 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Femur 1	93.5 cm	3.11
Femur 2	78 cm	2.87
Tibia 1	48.5 cm	2.84
Tibia 2	39.5 cm	3.0
Radius 1	64.5 cm	3.12
Radius 2	89.5 cm	2.84
Humerus 1	75 cm	3.35
Humerus 2	93.5 cm	3.97
TOTAL	582 cm	

Method A = 3.13 (sum of FFI scores for each bone/8 = 3.13)

Method B:

Total Fracture Length: 582 cm
Total Fracture Length of Fragments x FFI Score = 1848.5 cm

Method B = 3.18 (1848.5 cm/582 cm = 3.18)

Method C:

Fragments with FFI score 2 = 13
Fragments with FFI score 3 = 22
Fragments with FFI score 4 = 6
Fragments with FFI score 5 = 1
Total Fragments = 42

Method C = 2.88 ([(13*2)+(22*3)+(6*4)+(1*5)]/42 = 2.88)

7 Days

Femur 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	22 cm
LARGE FRAGMENT 2	3	20 cm
SMALL FRAGMENT 1	3	17 cm
SMALL FRAGMENT 2	3	6 cm
SMALL FRAGMENT 3	3	4 cm
SMALL FRAGMENT 4	3	2.5 cm
SMALL FRAGMENT 5	3	5.5 cm
SMALL FRAGMENT 6	3	5.5 cm
SMALL FRAGMENT 7	2	3.5 cm

Femur 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	21 cm
LARGE FRAGMENT 2	3	21 cm
SMALL FRAGMENT 1	3	9.5 cm
SMALL FRAGMENT 2	3	3.5 cm
SMALL FRAGMENT 3	3	3.5 cm

Tibia 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	20.5 cm
LARGE FRAGMENT 2	3	20 cm
SMALL FRAGMENT 1	3	4.5 cm
SMALL FRAGMENT 2	3	6 cm

Tibia 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	3	20 cm
LARGE FRAGMENT 2	3	20 cm
SMALL FRAGMENT 1	2	5 cm
SMALL FRAGMENT 2	2	4 cm
SMALL FRAGMENT 3	2	4.5 cm

Radius 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	21 cm
LARGE FRAGMENT 2	3	20 cm
SMALL FRAGMENT 1	3	6 cm
SMALL FRAGMENT 2	3	5 cm
SMALL FRAGMENT 3	3	4 cm
SMALL FRAGMENT 4	3	3.5 cm

Radius 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	21.5 cm
LARGE FRAGMENT 2	3	18.5 cm
SMALL FRAGMENT 1	3	7.5 cm

Humerus 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	24.5 cm
LARGE FRAGMENT 2	4	23.5 cm
SMALL FRAGMENT 1	4	14.5 cm
SMALL FRAGMENT 2	3	10 cm
SMALL FRAGMENT 3	3	3.5 cm

Humerus 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	23 cm
LARGE FRAGMENT 2	4	20 cm
SMALL FRAGMENT 1	4	12.5 cm
SMALL FRAGMENT 2	3	3.5 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Femur 1	86 cm	3.22
Femur 2	58.5 cm	3
Tibia 1	51 cm	3.40
Tibia 2	52.5 cm	2.75
Radius 1	59.5 cm	3.35
Radius 2	47.5 cm	3.45
Humerus 1	76 cm	4.14
Humerus 2	59 cm	4.33
TOTAL	491 cm	

Method A = 3.46 (sum of FFI scores for each bone/8 = 3.46)

Method B:

Total Fracture Length: 491 cm
Total Fracture Length of Fragments x FFI Score = 1706.5 cm

Method B = 3.48 (1706.5 cm/491 cm = 3.48)

Method C:

Fragments with FFI score 2 = 4
Fragments with FFI score 3 = 27
Fragments with FFI score 4 = 8
Fragments with FFI score 5 = 2
Total Fragments = 41

Method C = 3.20 ([(4*2)+(27*3)+(8*4)+(2*5)]/41 = 3.20)

14 Days

Femur 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	23.5 cm
LARGE FRAGMENT 2	4	22.5 cm
SMALL FRAGMENT 1	4	13 cm
SMALL FRAGMENT 2	3	10 cm
SMALL FRAGMENT 3	4	4 cm
SMALL FRAGMENT 4	4	5 cm
SMALL FRAGMENT 5	4	4.5 cm

Femur 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	25.5 cm
LARGE FRAGMENT 2	5	21 cm
SMALL FRAGMENT 1	4	12.5 cm
SMALL FRAGMENT 2	4	12 cm
SMALL FRAGMENT 3	3	12 cm
SMALL FRAGMENT 4	4	5 cm
SMALL FRAGMENT 5	3	3 cm
SMALL FRAGMENT 6	4	2 cm

Tibia 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	19.5 cm
LARGE FRAGMENT 2	4	20.5 cm
SMALL FRAGMENT 1	4	12 cm
SMALL FRAGMENT 2	4	10 cm
SMALL FRAGMENT 3	4	2.5 cm

Tibia 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	17.5 cm
LARGE FRAGMENT 2	4	19.5 cm
SMALL FRAGMENT 1	3	8 cm

Radius 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	24 cm
LARGE FRAGMENT 2	4	23 cm
SMALL FRAGMENT 1	4	12.5 cm
SMALL FRAGMENT 2	4	4 cm
SMALL FRAGMENT 3	3	4.5 cm

Radius 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	23 cm
LARGE FRAGMENT 2	4	22.5 cm
SMALL FRAGMENT 1	4	13 cm
SMALL FRAGMENT 2	4	12 cm
SMALL FRAGMENT 3	3	3 cm
SMALL FRAGMENT 4	4	3 cm
SMALL FRAGMENT 5	4	3 cm
SMALL FRAGMENT 6	3	2.5 cm

Humerus 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	22 cm
LARGE FRAGMENT 2	4	20.5 cm
SMALL FRAGMENT 1	4	14.5 cm
SMALL FRAGMENT 2	4	3 cm
SMALL FRAGMENT 3	4	4 cm
SMALL FRAGMENT 4	4	3 cm

Humerus 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	22.5 cm
LARGE FRAGMENT 2	4	22 cm
SMALL FRAGMENT 1	4	15 cm
SMALL FRAGMENT 2	4	2 cm
SMALL FRAGMENT 3	5	3 cm
SMALL FRAGMENT 4	3	2 cm
SMALL FRAGMENT 5	3	2 cm
SMALL FRAGMENT 6	3	2.5 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Femur 1	82.5 cm	3.88
Femur 2	93 cm	4.34
Tibia 1	64.5 cm	4
Tibia 2	45 cm	3.82
Radius 1	68 cm	3.93
Radius 2	82 cm	3.45
Humerus 1	67 cm	4.14
Humerus 2	71 cm	4.33
TOTAL	573 cm	

Method A = 4.02 (sum of FFI scores for each bone/8 = 4.02)

Method B:

Total Fracture Length: 573 cm
Total Fracture Length of Fragments x FFI Score = 2314 cm

Method B = 4.04 (2314 cm/573 cm = 4.04)

Method C:

Fragments with FFI score 3 = 10
Fragments with FFI score 4 = 36
Fragments with FFI score 5 = 4
Total Fragments = 50

Method C = 3.88 ([(10*3)+(36*4)+(4*5)]/50 = 3.88)

21 Days

Femur 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	17.5 cm
LARGE FRAGMENT 2	5	19 cm
SMALL FRAGMENT 1	5	12 cm
SMALL FRAGMENT 2	4	6 cm
SMALL FRAGMENT 3	4	4 cm
SMALL FRAGMENT 4	4	5 cm
SMALL FRAGMENT 5	4	3.5 cm

Femur 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	20.5 cm
LARGE FRAGMENT 2	4	19.5 cm
SMALL FRAGMENT 1	4	14 cm
SMALL FRAGMENT 2	3	8.5 cm
SMALL FRAGMENT 3	5	4.5 cm
SMALL FRAGMENT 4	5	4.5 cm
SMALL FRAGMENT 5	4	4 cm
SMALL FRAGMENT 6	4	4 cm

Tibia 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	20 cm
LARGE FRAGMENT 2	5	19.5 cm
SMALL FRAGMENT 1	4	4 cm

Tibia 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	18.5 cm
LARGE FRAGMENT 2	4	19 cm
SMALL FRAGMENT 1	4	5.5 cm

Radius 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	20.5 cm
LARGE FRAGMENT 2	4	22 cm
SMALL FRAGMENT 1	4	7 cm
SMALL FRAGMENT 2	4	4.5 cm
SMALL FRAGMENT 3	4	4 cm
SMALL FRAGMENT 4	4	4 cm

Radius 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	5	19.5 cm
LARGE FRAGMENT 2	4	20.5 cm
SMALL FRAGMENT 1	4	5 cm
SMALL FRAGMENT 2	4	3.5 cm
SMALL FRAGMENT 3	4	3 cm
SMALL FRAGMENT 4	4	3 cm

Humerus 1

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	20.5 cm
LARGE FRAGMENT 2	4	18.5 cm
SMALL FRAGMENT 1	4	6 cm
SMALL FRAGMENT 2	4	5.5 cm
SMALL FRAGMENT 3	4	4 cm
SMALL FRAGMENT 4	4	4 cm
SMALL FRAGMENT 5	4	2.5 cm

Humerus 2

Fragment	FFI Score	Length of Fracture Surface
LARGE FRAGMENT 1	4	20.5 cm
LARGE FRAGMENT 2	5	20.5 cm
SMALL FRAGMENT 1	4	9.5 cm
SMALL FRAGMENT 2	4	5 cm
SMALL FRAGMENT 3	4	4.5 cm
SMALL FRAGMENT 4	4	4 cm
SMALL FRAGMENT 5	4	2.5 cm
SMALL FRAMGNET 6	4	2 cm

Method A:

	Total Fracture Surface Length:	FFI Score:
Femur 1	67 cm	4.46
Femur 2	79.5 cm	4.01
Tibia 1	43.5 cm	4.91
Tibia 2	43 cm	4
Radius 1	62 cm	4.33
Radius 2	54.5 cm	4.36
Humerus 1	61 cm	4
Humerus 2	68.5 cm	4.30
TOTAL	479 cm	

Method A = 4.30 (sum of FFI scores for each bone/8 = 4.30)

Method B:

Total Fracture Length: 479 cm
Total Fracture Length of Fragments x FFI Score = 2047.5 cm

Method B = 4.30 (2047.7 cm/479 cm = 4.30)

Method C:

Fragments with FFI score 3 = 1
Fragments with FFI score 4 = 36
Fragments with FFI score 5 = 9
Total Fragments = 46

Method C = 4.17 ([(1*3)+(36*4)+(9*5)]/46 = 4.17)

APPENDIX D

ROCKFALL EXPERIMENT DATA: PSEUDOFLAKES CREATED BY ROCKFALL (CHAPTER 7)

This appendix contains the observations made concerning the pseudoflakes created through repeated events of rockfall in various environments. This includes two tables for each of the environments used in the rockfall experiments reported in Experiment 3: Frozen, Fresh, Frozen Fleshed, Fresh Fleshed, Dried, and Dried 20 Days.

A=Angled

T=Transverse

L=Longitudinal

X indicates the presence of a given characteristic.

? indicates ambiguity in trait identification

Frozen #1

	Long/Trans/Angled	Platform	Bulb	Feather Term.	Other
1	A	?	?	X	
2	T	X		X	
3	T	?	?	X	
4	T	X	X	X	
5	T			?	
6	T	X	X	?	
7	L?			X	
8	T	?	?	X	
9	A				
10	?				
11	L	?	X	X	
12	T			?	
13	?			?	
14	T			X	
15	L			?	Perverse

					Fragment
16	L?			X	
17	T			?	
18	?			?	
19	?				
20	?				
21	?	X	?		
22	T				
23	?			X	
24	?			X	
25	?				
26	?				
27	T			?	
28	T			?	
29	T	X	X	X	
30	T			?	
31	T				
32	?				
33	T				
34	T				
35	T				
36	T				
37	T				
38	T	X	X	X	
39	T				
40	T				
41	T			?	Termination seems to follow lamella
42	T	X	X	X	
43	L	X	X	X	
44	L	X	X	X	

Frozen #2

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T			X	
2	L	?	?	?	
3	T	X	X	X	
4	T	X	X	X	
5	A	X	X	X	
6	T	X	X	X	
7	L	X	X	X	
8	T			X	
9	L?		X		
10	T	X		X	
11	?				

12	A	X	X	X	
13	T	X			
14	?			?	
15	T			?	
16	?	X	X	X	
17	T	X	X	X	
18	T			X	
19	?		X	X	Broken platform end
20	T	X	X	X	

Fresh #1

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T	X	X		
2	T			?	
3	T				
4	T			?	
5	T	?	?		
6	T	X	X	?	
7	?			?	
8	T	?		?	
9	T	X	X	X	
10	T			X	
11	T	?	X	X	
12	T	?	?		
13	T				
14	L	X	X	X	
15	T	X	X	X	
16	T	?	?	?	
17	A	X	X	X	
18	A?				
19	T	X	X	X	
20	A	?			
21	T			?	
22	T				
23	T	X	X		
24	?	X	X	X	
25	T				
26	?				
27	T				
28	?				
29	T	X	X	X	
30	L?				
31	T				
32	?	?	?	?	
33	A				

34	A?				
35	T				
36	T	?	?	?	
37	T	X	X	X	
38	T				

Fresh #2

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	?			X	
2	T	?			
3	T	?	?	X	
4	T				
5	T	X	X	X	
6	?				
7	T			?	
8	T				
9	L	X	X	X	
10	T	?			
11	?			?	
12	T				
13	?			X	
14	T	X	X	X	
15	?	X	X	?	
16	T			?	
17	T	?	?	?	
18	T			?	
19	T			?	
20	?			?	
21	T	?	?	X	
22	?			X	
23	T	?	?	X	

Frozen Fleshed #1

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T	X		?	
2	A	X			
3	A	X	X	X	
4	T		X	X	
5	A	X		X	
6	A	X			
7	?				
8	T	X	X	X	
9	T	X		?	
10	?				Refits to 11

11	?				Refits to 10
12	?	?			
13	T	?		?	
14	?				
15	?				
16	T	X	X	?	
17	T	?			
18	T	?			
19	?				
20	?				
21	?				
22	T	X	?		
23	?				
24	?				
25	?				
26	?				
27	T	X	X	X	
28	L	?	?	?	
29	T	?		?	
30	T	?		?	

Frozen Fleshed #2

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	L	?			
2	T	X		?	
3	T	?	?	?	
4	?	?		?	
5	L	?	?	?	
6	T	?	X	X	
7	T	?	?		
8	T	X	X	X	
9	T	?	?	X	
10	T	X	X	?	
11	T	X	X	?	
12	?	?	?	?	
13	T	?	?	?	
14	T	X			
15	A	?		X	
16	?			X	
17	T	?		X	
18	T	?		?	
19	T	X	X	X	
20	T	X		?	
21	?	?			
22	A	X	?	X	
23	T	X			
24	?	?	?	?	

Fleshed Fresh #1

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T		X	X	Near epiphysis, some cancellous bone
2	T			X	
3	T			?	
4	T	X	X	X	
5	T	X	?	X	
6	T	X			
7	T	X	X		
8	L	X	X	X	
9	T	X	X	X	
10	T			X	
11	T				
12	A			?	
13	?	?	?	?	
14	T				
15	A	X		X	
16	A	?	?		
17	?	?		?	
18	T			?	
19	T	?			
20	A	X	X	X	
21	L	?	?	X	
22	T	X	X	X	
23	T	?	?	?	

Fleshed Fresh #2

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T	?	X		Perverse shape
2	L or A	X	X	?	2 possible platforms/bulbs
3	T	X	X	X	
4	A	X	?	X	
5	T		?	?	
6	T	?		X	
7	T		X	X	
8	T		?	?	
9	T	X		?	
10	T	X	X	X	

11	T	X	X		
12	T	X		?	
13	T	X			
14	T	?		?	
15	T	X		?	
16	T	?	X		
17	L	X	?		Possibly Transverse, More likely Longitudinal
18	T	?			
19	T or A	X	X	?	
20	T	X	X		
21	A	?	?		
22	L	?			
23	T	?	?	?	
24	T	?	?	X	
25	T	X			
26	T	X			
27	A	?			
28	L	X	X	?	
29	T	X	X	X	
30	T	?	X	X	
31	?			X	
32	A	?	?		
33	?				
34	?			X	
35	T	X			
36	?			X	
37	T	X			
38	T	X			
39	?	?		?	

Dry 40 hours #1

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T	X			
2	T	X			
3	L	?	?	X	
4	?	?		?	
5	T	?		?	
6	T	?			
7	?	?		?	
8	?				Perverse Morphology
9	T	?			
10	?	?		?	
11	?	?			

12	?			?	
13	T	?	?	X	

Dry 40 Hours #2

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T	X	?		
2	T	X	X	X	
3	?	?		?	
4	L	X	?	X	
5	T	X			
6	T	?		?	
7	T	?			
8	?	?		?	
9	T	?		?	
10	T	?			
11	T	?		?	
12	A	?		?	
13	L	X	?	X	Through Nutrient Foramen
14	A	X	X	X	
15	T	X	?	?	

Dry 20 Days #1

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	?	X	X	X	
2	T	X			
3	T	X	X	X	
4	T	?	X	X	
5	A	?		X	
6	?	X			
7	T	X	X	X	Follows Split-line crack, broken flake
8	T	X	X	X	
9	T	X			
10	?				
11	A	X	X	X	
12	T	X	X	X	Ridge on Ventral Surface— Flake removed from end of

					bone fragment?
13	T	?	?	X	
14	T	?	X	X	Extreme Platform Angle—135°
15	A	X			
16	T	X		X	
17	T	X	?	X	
18	T	X	?	X	
19	?				
20	T	X		X	Wholly Cortical
21	T	X	X	X	
22	L	X		X	
23	A	X			
24	?				
25	T	?	?	X	
26	T	X		X	
27	T	?	?	X	
28	T	?	?		
29	?				

Dry 20 Days #2

	Long/Tran/Angled	Platform	Bulb	Feather Term.	Other
1	T	X	X	X	
2	?				
3	T	X	X	X	
4	L	X	?	X	
5	T	X		X	
6	T	?			
7	T	?	?	X	
8	T	?	?	X	
9	?			X	
10	T	X	X	X	
11	?	?	?	?	
12	T	X		X	
13	?				
14	T	X	X	X	Broken Flake
15	?				
16	?				
17	T	X	X	X	
18	T	X	X	X	

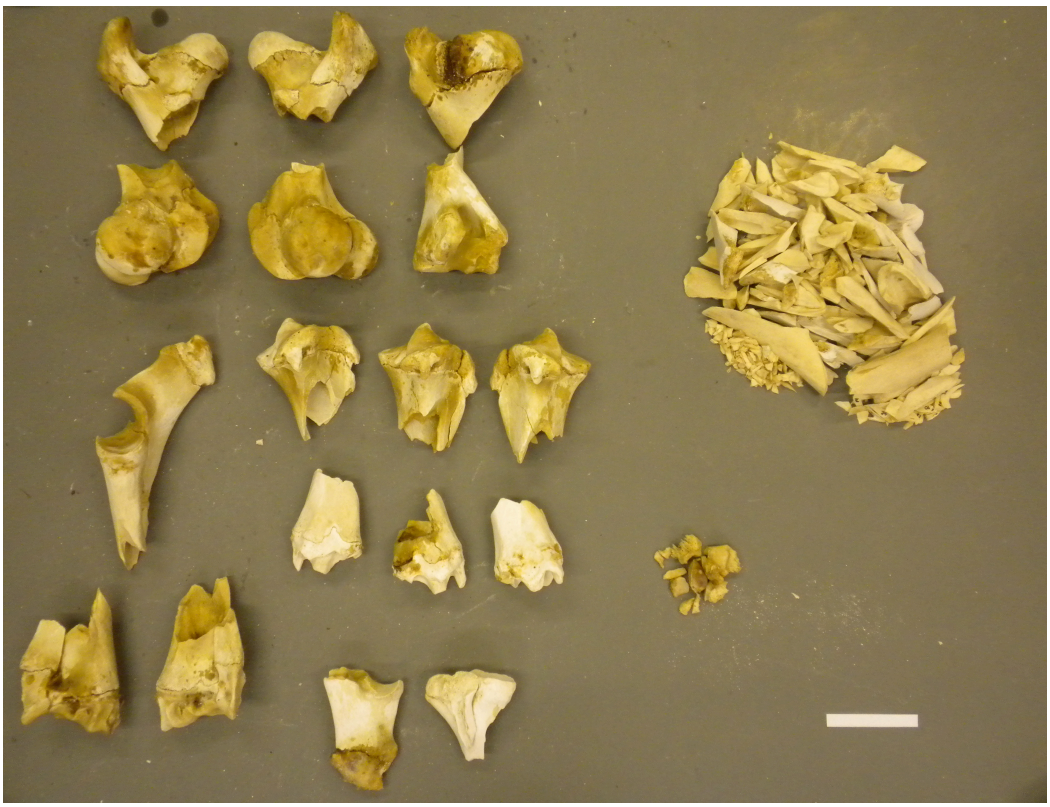
19	?			X	
20	?	X	X	X	Superimposed flake—bulb scar on dorsal surface, prominent bulb on ventral surface.
21	?				
22	T	?		?	
23	?				Jagged, rough surface.

APPENDIX E

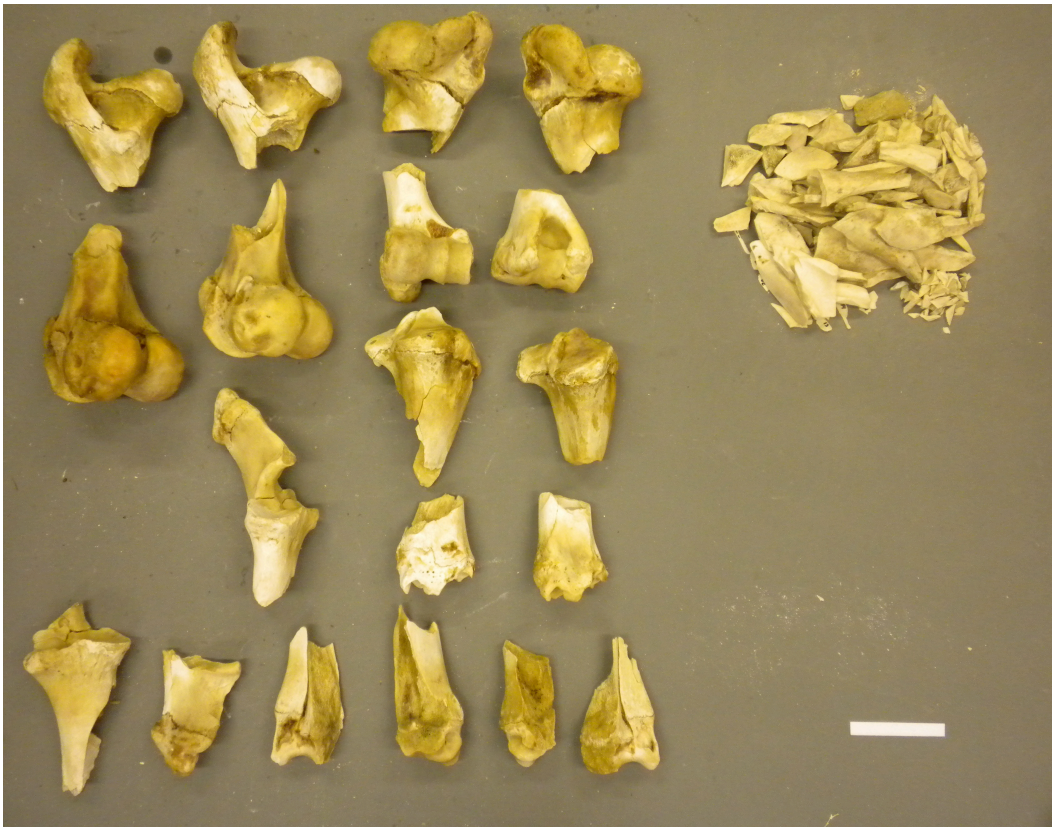
ROCKFALL EXPERIMENT PHOTOS (CHAPTER 7):

BONE SAMPLES AFTER ROCKFALL

This appendix presents photographs of each sample of bones subjected to rockfall in Chapter 7. Complete epiphyses and large epiphyseal fragments are arranged on the left of each photograph. The large epiphyseal fragments are most often epiphyses that became fractured during rockfall, but that remain in fragments sufficiently large as to be easily identifiable to element. Diaphyseal fragments including pseudoflakes are to the top right, and any small fragments of epiphyses or small fragments of trabecular bone are at the bottom right of the photographs. The white scale in each photograph is 10 cm long.

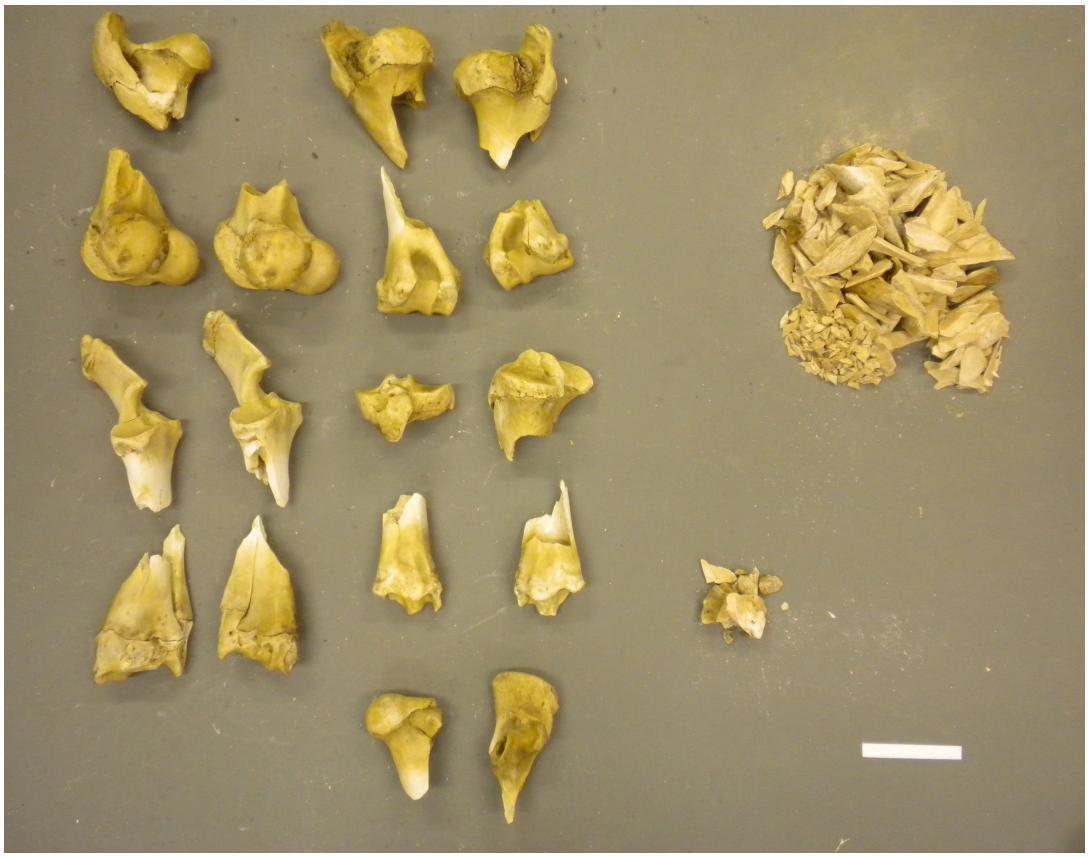


Results of Rockfall - Frozen #1



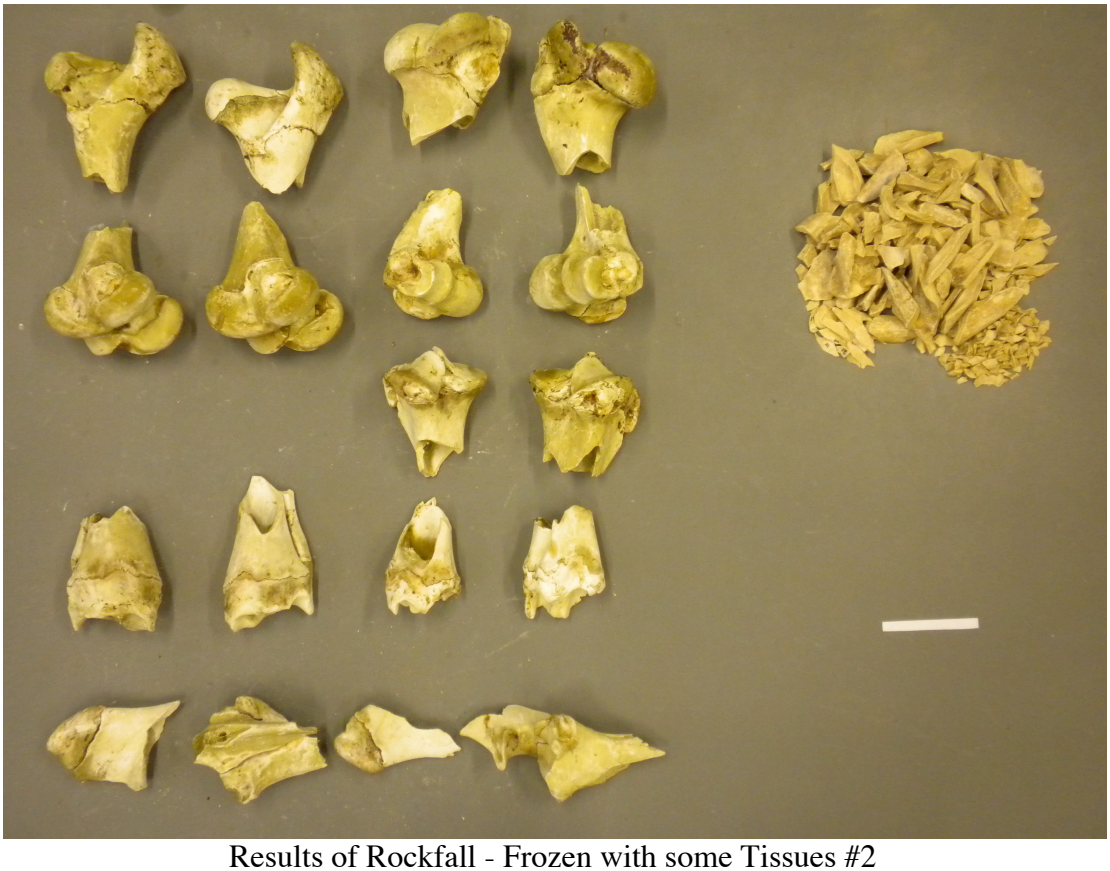
Results of Rockfall - Frozen #2

Results of Rockfall - Fresh #1

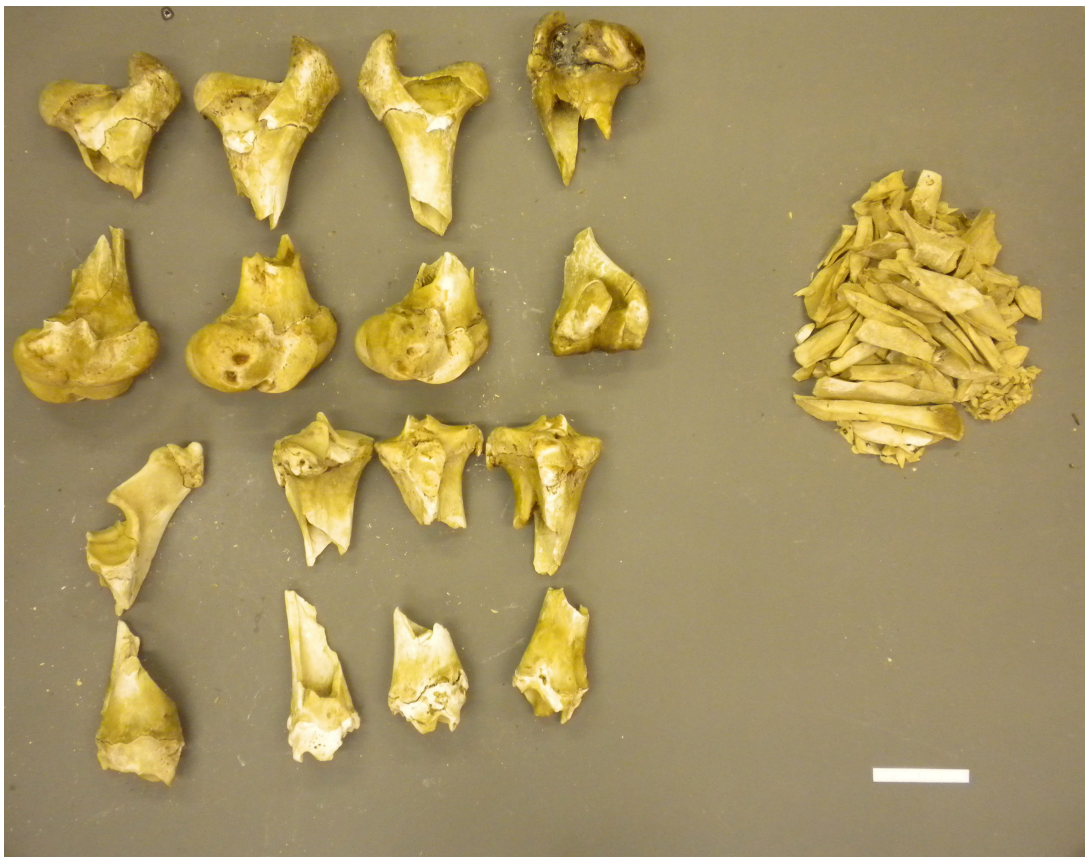


Results of Rockfall - Fresh #2

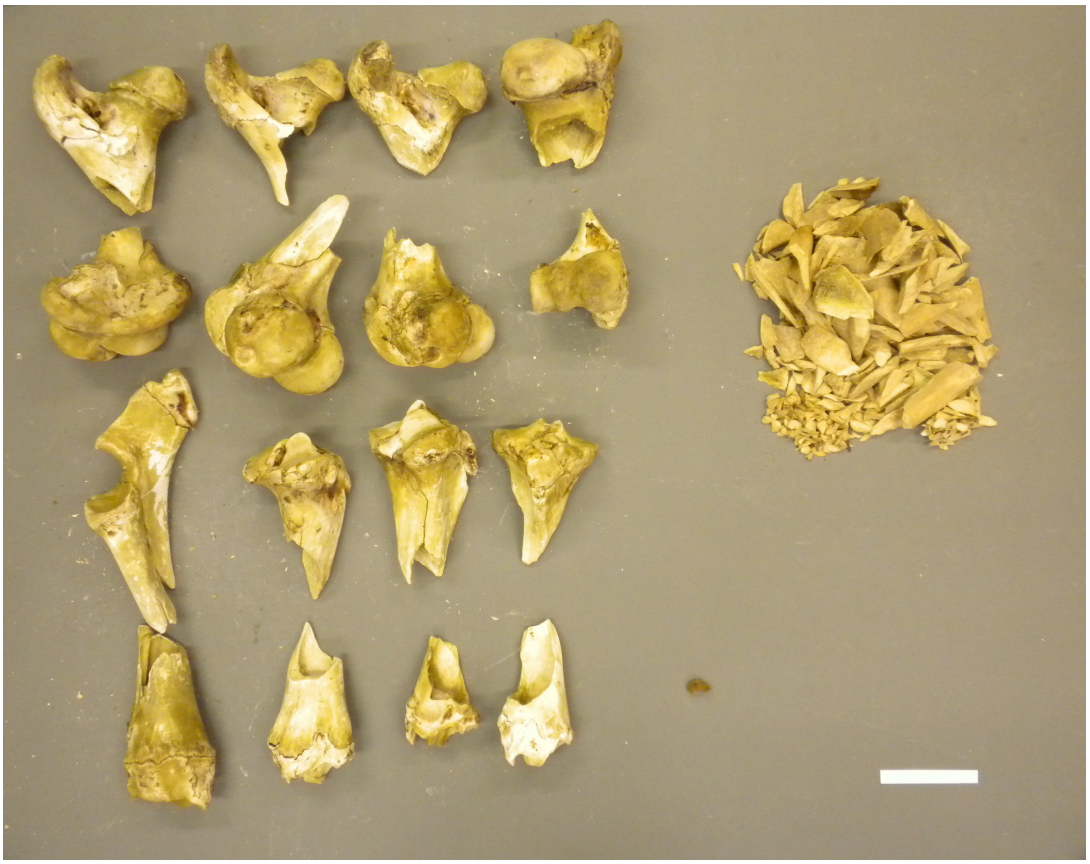
Results of Rockfall - Frozen with some Tissues #1



Results of Rockfall - Frozen with some Tissues #2

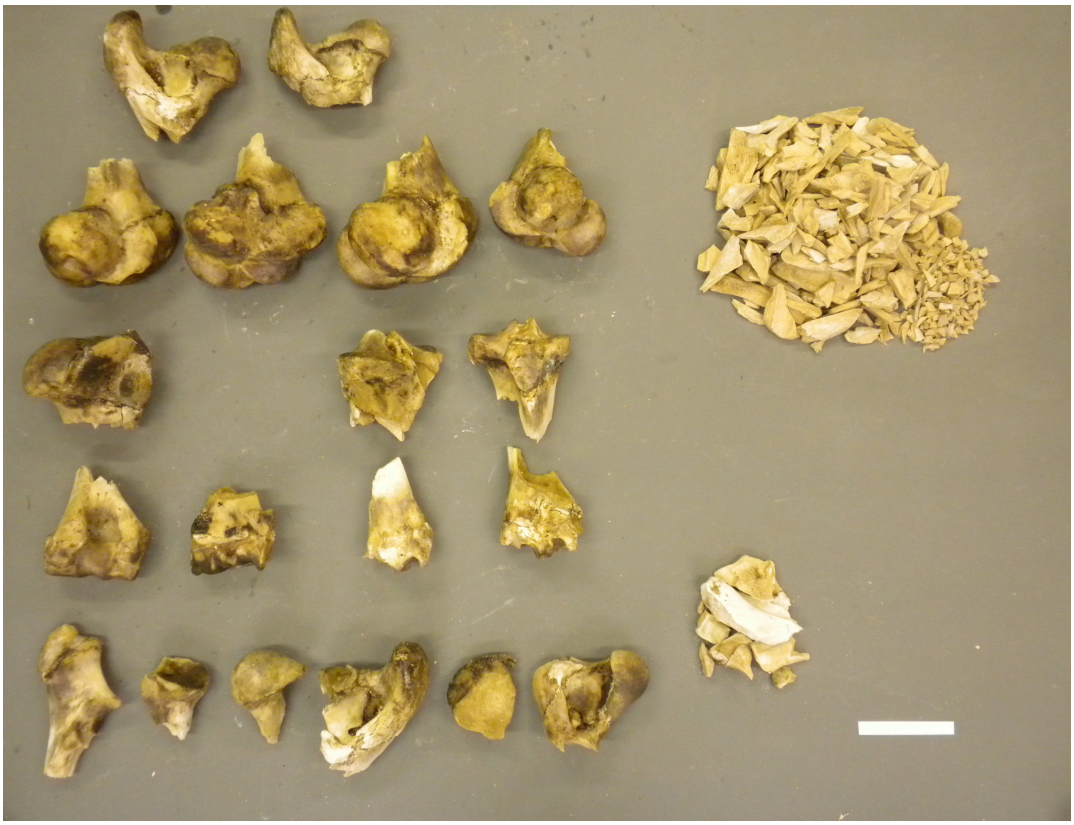


Results of Rockfall - Fresh with some Tissues #1

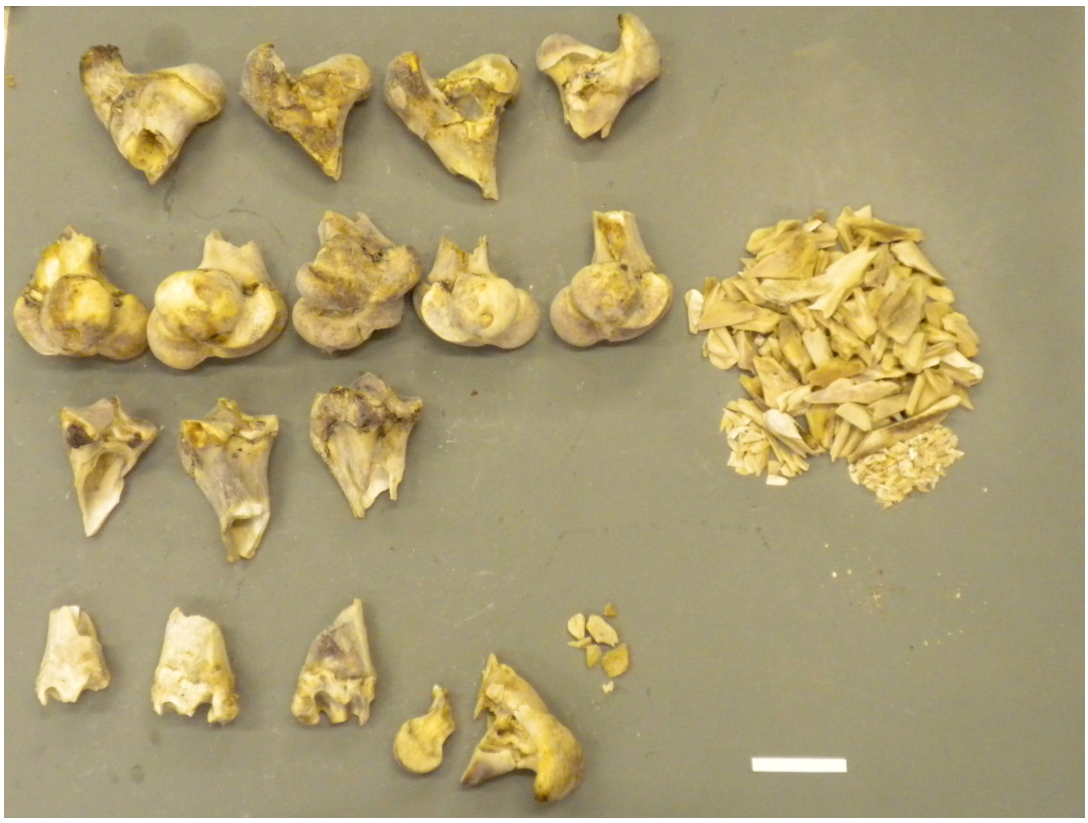


Results of Rockfall - Fresh with some Tissues #2

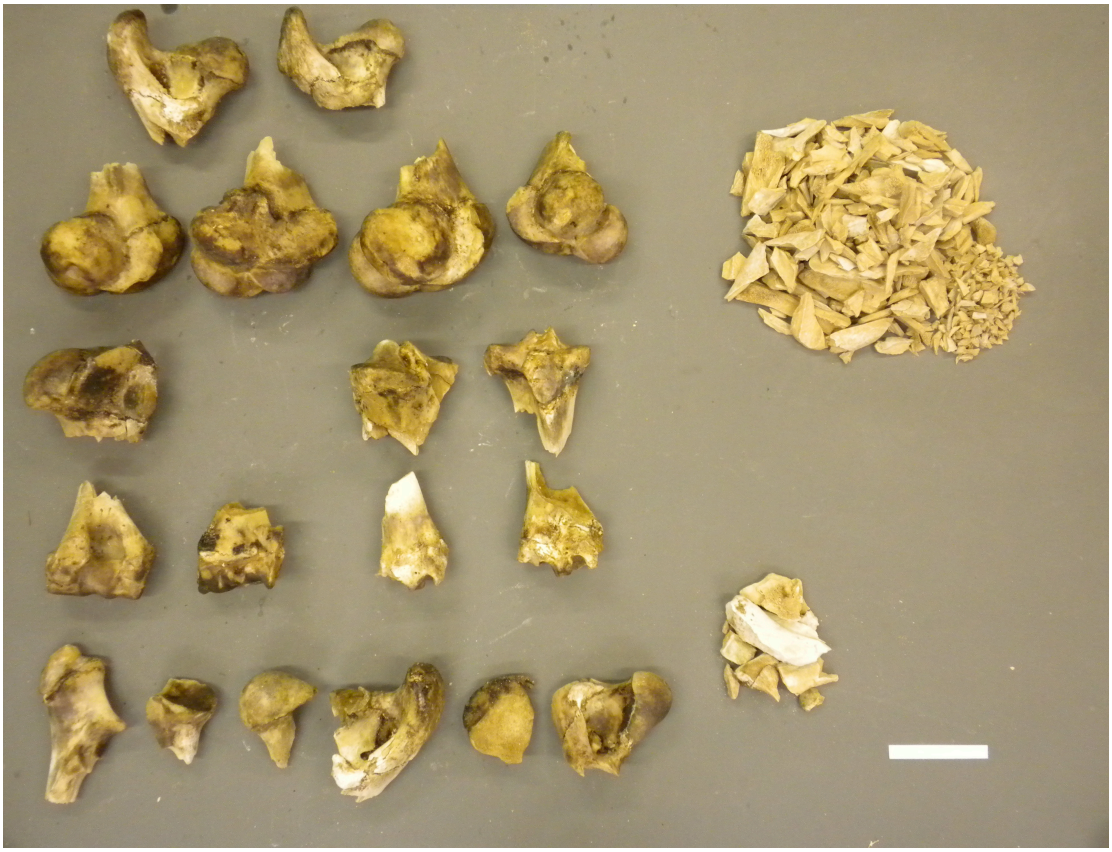
Results of Rockfall - Dried for 40 hours #1



Results of Rockfall - Dried for 40 hours #2



Results of Rockfall - Dried for 20 days #1



Results of Rockfall - Dried for 20 days #2

APPENDIX F

ROCKFALL EXPERIMENT PHOTOS: PSEUDO-FLAKES AND PSEUDO-CORES (CHAPTER 7)

This experiment presents photographs of the pseudo-flakes and pseudo-cores produced by rockfall in Experiment 3. One photograph of pseudo-flakes is presented here for each bone sample used in this experiment. A photograph of pseudo-cores is presented only for the samples that produced fragments that could be identified as pseudocores. Six experiments produced pseudo-cores, four did not. The scale in each photograph is 5 cm long.

Pseudo-Flakes – Frozen #1

Pseudo-Flakes – Frozen #2

Pseudo-Flakes – Fresh #1

Pseudo- Flakes – Fresh #2

Pseudo-Flakes – Frozen with some Tissues #1

Pseudo-Flakes – Frozen with some Tissues #2

Pseudo-Flakes – Fresh with some Tissues #1

Pseudo-Flakes – Fresh with some Tissues #2

Pseudo-Flakes – Dried 40 hours #1

Pseudo-Flakes – Dried 40 hours #2

Pseudo-Cores – Frozen #1

Pseudo-Cores – Frozen #2

Pseudo-Cores – Fresh #1

Pseudo-Cores – Fresh #2

Pseudo-Cores – Fresh with some Tissues #1

Pseudo-Cores – Dried 40 hours #2