

Contents

List of Figures.....	ix
List of Tables.....	xii
Abstract.....	xiv
Chapter 1. Introduction.....	1
Chapter 2. The Context for the Research in the Northern Three Rivers Region	5
2.1 Landscape and Geography	5
2.2 Chronology.....	5
2.2.1 The Archaic and Formative/Preclassic Periods	6
2.2.2 The Classic Period.....	7
2.2.3 The Maya ‘Collapse’ to the Historic Period.....	7
2.3 Historical Perceptions of the Maya	8
2.4 Maya Political Structure.....	9
2.4.1 Status and Social Structure.....	10
2.4.2 Houses, Homes, and Household Theory	10
2.4.3 Linages and the Concept of ‘House’	11
2.4.4 Burial Practices and Mortuary Context.....	12
2.5 Maya Diet.....	14
Chapter 3. Osteology and Health Indicators.....	17
3.1 Bone Structure.....	17
3.2 Methods and Sampling.....	17
3.3 The Taphonomic Processes	18
3.3.1 Preservation of Human Remains in Mesoamerica	18
3.4 A History of the Study of Osteology in the Maya Area	18
3.5 Health Indicators	19
3.5.1 Dental Pathologies.....	19
Dental Caries	20
Dental Calculus	20
Periodontal Disease	20
Antemortem Tooth Loss (AMTL)	21
Linear Enamel Hypoplasia (LEH).....	21
3.5.2 Osteoarthritis and Degenerative Joint Diseases	21
3.5.3 Schmorl’s Nodes	21
3.5.4 Porotic Hyperostosis and Cribra Orbitalia	22
3.5.5 Nonspecific Infection: Osteomyelitis and Periosteal Reaction	23
3.5.6 Skeletal Trauma.....	23
3.5.7 Nonmetric Variation	24
3.6 Cranial and Dental Modifications to the Skeleton	24
3.6.1 Cranial Modification.....	24
3.6.2 Dental Modification.....	25
Chapter 4. The Sample and Locational Context.....	27
4.1 The Northern Three Rivers Region	27
4.2 Study Site 1: Blue Creek.....	28
4.2.1 Blue Creek: The Blue Creek Site Core	30
Blue Creek: Structure 13 Courtyard Group.....	31
Blue Creek: Structure 19 Courtyard Group.....	31
Blue Creek: Structure 25 group.....	31
Blue Creek: Structure 1	31
Blue Creek: Structure 9	31
Blue Creek: Structure 24	31

4.2.2 Blue Creek: Kin Tan.....	33
4.2.3 Blue Creek: Chan Cahal.....	33
4.2.4 Blue Creek: Chum Balam Nah.....	34
4.2.5 Blue Creek: Akab Muklil.....	34
4.2.6 Blue Creek: Aak Witz.....	34
4.2.7 Blue Creek: Sayap Ha'.....	34
4.3 Study Site 2: Nojol Nah.....	35
4.3.1 Nojol Nah: El Palacio Courtyard, Nojol Nah Site Core.....	36
4.3.2 Nojol Nah: Operation 3, Nojol Nah Site Core.....	38
4.3.3 Nojol Nah: Courtyard 5E, Nojol Nah Site Core.....	39
4.3.4 Nojol Nah: The Nojol Nah Settlement Zone.....	39
4.3.5 Nojol Nah: Tulix Mul.....	40
4.4 Study Site 3: Xnoha.....	42
4.4.1 Xnoha: Courtyard Group 65.....	43
4.4.2 Xnoha: Patio 78.....	43
4.4.3 Xnoha: Structure 10.....	44
4.4.4 Xnoha: Structures 16, 16a, and Platform 17.....	44
4.4.5 Xnoha: Structure 103.....	44
Chapter 5. Osteological Methods.....	45
5.1 Estimating Age at Death.....	45
5.1.1 Immature Remains.....	45
5.1.2 Mature Remains.....	45
Pelvis.....	46
Dentition.....	46
Cranial Sutures.....	46
5.2 Estimating Biological Sex.....	46
5.2.1 Immature Remains.....	46
5.2.2 Mature Remains.....	46
Pelvis Morphology.....	47
Cranial Morphology.....	47
5.3 Health Indicators.....	47
5.3.1 Dental Pathology.....	47
Dental Caries.....	47
Dental Calculus.....	48
Dental Abscesses.....	48
Linear Enamel Hypoplasia (LEH).....	48
5.3.2 Porotic Hyperostosis.....	48
5.3.3 Cribra Orbitalia.....	49
5.3.4 Osteoarthritis and Degenerative Joint Disease.....	49
5.3.5 Skeletal Trauma and Lesions.....	49
5.4 Skeletal Modifications.....	49
5.4.1 Cranial Modifications.....	49
5.4.2 Dental Modifications.....	49
5.5 Statistical Analysis.....	50
Chapter 6. Sex and Age-at-Death: First Steps Towards a Population Demography.....	51
6.1 Population Demography of the Northern Three Rivers Region.....	51
6.1.1 The Dating of the Skeletal Sample.....	51
6.1.2 Biological Sex in the northern Three Rivers Region.....	52
6.1.3 Age at Death in the Three Rivers Region.....	53
6.2 The Blue Creek Skeletal Population.....	54
6.3 The Nojol Nah Skeletal Population.....	54
6.4 The Xnoha Skeletal Population.....	56
6.5 Biological Sex and Age at Death Results.....	56
Chapter 7. Dental Health Indicators in the Northern Three Rivers Region.....	59
7.1 The Dental Study Material.....	59
7.2 Caries.....	60
7.2.1 Caries: Dentitions.....	60

7.2.2 Caries: Dental Arcades	62
7.3 Calculus.....	62
7.3.1 Calculus: Dentitions	62
7.3.2 Calculus: Dental Arcades	65
7.4 Periodontal Disease.....	65
7.5 Dental Abscesses.....	65
7.6 Antemortem Tooth Loss (ATML)	67
7.7 Linear Enamel Hypoplasia (LEH)	67
7.8 Dental Arcades: Supernumerary Dentition	67
7.9 Dental Health among immatures in the northern Three Rivers Region.....	69
7.9.1 Immature Dentition: Caries and Calculus	70
7.9.2 Immature Dentition: Linear Enamel Hypoplasia (LEH).....	70
7.10 Summary of Results	70
Chapter 8. Skeletal Health Indicators in the Northern Three Rivers Region.....	71
8.1 Degenerative Joint Disease (DJD)	71
8.2 Porotic Hyperostosis (PH).....	72
8.3 Cribra Orbitalia (CO).....	72
8.4 Skeletal Trauma and Fractures	73
8.5 Mastoiditis.....	75
8.6 Osteomyelitis and Periosteal Reaction.....	75
8.7 Nonmetric Traits.....	76
8.8 Burials of Special Interest	76
8.8.1 Nojol Nah Burial 15b	76
8.8.2 Xnoha Burial 14-05.....	77
8.9 Summary of Results	77
Chapter 9. Cranial and Dental Modifications to the Skeleton and Dentition	79
9.1 Cranial Modification in the northern Three Rivers Region	79
9.2 Cranial Modification, Porotic Hyperostosis, and Cribra Orbitalia.....	80
9.3 Dental Modification in the northern Three Rivers Region.....	81
9.3.1 Dental Modification and Biological Sex	83
9.3.2 Dental Modification at Blue Creek.....	83
9.3.3 Dental Modification at Nojol Nah.....	84
9.3.4 Dental Modification at Xnoha	85
9.3.5 Dental Modification and Caries.....	86
9.3.6 Dental Modification and Immature Dentition	86
9.4 Summary of Results	86
Chapter 10. Burial Contexts and Artefact Assemblages in the Northern Three Rivers Region.....	87
10.1 Burial Practices of the Northern Three Rivers Region	87
10.2 Non-Conforming Burials	89
10.2.1 Blue Creek Tomb 5.....	89
10.2.2 Blue Creek Kin Tan Chultun J-14	90
10.2.3 Burial Caches	90
10.3 Burial Type, Biological Sex, and Age at Death.....	91
10.4 Artefact Assemblages in Burial Contexts in the northern Three Rivers Region.....	91
10.5 Burial Status and Health Indicators.....	93
10.6 Summary of Results	94
Chapter 11. Discussion.....	95
11.1 Dental Health of the northern Three Rivers Region.....	95
11.2 Skeletal Health of the Northern Three Rivers Region	96
11.3 Stability Through Time: The Case of the Three Rivers Region.....	98
11.4 Health and Status in the Northern Three Rivers Region.....	99
11.5 Health and Biological Sex in the Three Rivers Region.....	101
11.6 Cultural Modifications to the Skeleton and Health Patterns	101
11.7 Funerary Rites in the Northern Three Rivers Region.....	102
11.8 Health of the Ancient Maya: The Northern Three Rivers Region in Context.....	105

Chapter 12. Conclusion	107
Bibliography	109
Appendix A. Complete Burial Summaries.....	133
Appendix B. Complete Burial List	163