Table of Contents

Acknowledgments	v
List of Tables	vi
List of Figures	
List of Figures	VII
Chapter	
1 Introduction	1
Turpes of Date	1
Types of Data Ethnographic Information	2
Eunographic information Experimental Deconstruction	2
Context and Distribution	23
Artifact Observations	2
Analog Information	<u>ј</u>
The Study Area	4
Report Organization	4
2 Nenhrite	6
Chemical and Physical Properties of Nenhrite	6
Sources in the Pacific Northwest	6
Nenhrite Sources in British Columbia	6
The Lillooet Segment	7
Omineca Segment	, 7
Cassiar Segment	7
Yukon and Alaska Nenhrite Sources	8
Washington State and Oregon Nephrite Sources	8
Wyoming Nephrite Sources	9
Prehistoric Source Usage	9
Alternate Materials to Nephrite	10
Serpentine	10
Greenstone	10
Jadeite	10
Vesuvianite	10
3 Ethnographic and Archaeological Background of Nephrite Use	11
Ethnolinguistic Groups in the Study Area	11
Plateau Lifestyle	11
Cultural Complexity on the Plateau	11
Ethnographic Use of Nephrite .	13
Nephrite Procurement	13
Nephrite Manufacturing	14
Types of Artifacts made of Nephrite	16
Use of Nephrite Implements	16
Woodworking	16
Property Items	1/
Warrare Commercial Lloss	10
Other Uses	10
Uller Uses Trada of Nanhrita Implementa	10
Summery of Ethnographic Manhrite Lice	19
British Columbia Plateau Drahistory	20
The Early Period (\\$000 BP)	20
The Middle Period (2000 Dr)	20
The Late Period ($4000/3500 \text{ pr}$)	20
Complexity in the Past	20
The Prehistoric Development of the Nephrite Industry	22
remotered	

Chapter

4 Groundstone Tool Technology	25
Principles and Methods of Groundstone Tool Technology	25
Pecking	26
Grinding	26
Materials Used in Groundstone	28
Optimization of Lithic Technologies	29
Surplus and Non-Otification Functionality	31
Celt Manufacture	32
Pebble Modification	32
Flaked Blank Modification	32
Sawn Blank Modification	. 32
Previous Observations and Experiments on Nenhrite	
Manufacturing Time	33
Ethnographic Information on Nephrite	
Manufacturing Times	33
Experimental Data on Jade Manufacturing	33
Manufacturing Experiments	34
Experimental Procedures	34
Results	35
Critique of the Experimental Results	36
Comparison of Reduction Techniques and Materials	37
Cost-Benefits	38
5 Colt Manufacture Contact and Distribution	
5 Cell Manufacture, Context, and Distribution	12
Colt Plank Manufacture	43
Celt Blank Modification	45
Material Type Identification	40
Time estimates for Manufacturing Celts	49
Celt Use Wear	52
Summary	52
Context and Distribution	53
Background to Exchange Studies	54
The Data Set	58
Context and Distribution	62
Changes in Nephrite Technology through Time	63
The Distribution of Nephrite Artifacts	63
Celt Sizes Over Distance from the Source	71
Summary of Distribution and Size	/1
The Contexts of Nephrite Artifacts	82
Conclusion on Context and Distribution	88 88
	00
6. Discussion and Conclusion	91
Recommendations for Future Research	93
References	95
Amendian	
Appendices	
1 Museums Collection Data .	108
2 Inephilite Anilacis from Literature Review	112
A Non-Nenbrite Containing Sites	114
5 Non-celt Artifacts from Literature Deview	118
J THERE ATHACTS TOTAL LICEALULE REVIEW	121

Tables

2.1 Comparison of Hardness and Toughness Values for Various Stone Minerals	10
3.1 Woodworking tasks on the Plateau as recorded in Teit (1900, 1906, 1909a)	17
4.1 Materials Generally Exploited by Flaked Stone and Groundstone Techniques	28
4.2 Results of Experimental Sawing	36
4.3 Time Involved in Celt Manufacturing Techniques for Different Materials	39
4.4 Results of Chopping Experiments	40
5.1 Numbers and Average Dimensions of Observed Artifact Types	44
5.2 Celt Portions Analyzed	44
5.3 Artifact Provenience	45
5.4 Celt Blank Types	46
5.5 Nephrite Determination	50
5.6 Time Estimates for Manufacturing Nephrite Celts	51
5.7 Observable Use Wear Damage on Celt Bits	53
5.8 Possible Use Wear on Complete Celts	58
5.9 Hardness of Tested Specimens	54
5.10 Tentative Nephrite Identification for Sawn Blanks	54
5.11 Site Types Reviewed from British Columbia Plateau	60
5.12 Reported Nephrite Artifacts Types for the British Columbia and Columbia Plateaus	62
5.13 Artifact Material Types	64
5.14 Distribution of Nephrite Artifacts During the Plateau Pithouse Tradition	83
5.15 Frequencies and Rates of Nephrite Recovery	83
5.16 Presence/Absence of Nephrite Artifacts within Plateau Site Types	83
5.17 Sites on the British Columbia Plateau with Nephrite Compared to those without	84
5.18 Rates of Nephrite Occurrence in Site Types during the Plateau Pithouse Tradition	84
5.19 Frequency of Nephrite Artifact Forms in Site Types	84
5.20 Celt Dimensions in Burial Contexts	85
5.21 Celt Integrity Within Site Types	88

Figures 1.1 Study Area

1.1 Study Area	5
2.1 Location of Nephrite Bearing Strata in British Columbia	7
2.2 The Lillooet Segment	8
3.1 Ethnolinguistic Divisions on the British Columbia Plateau	12
3.2 Early Celt Occurrences in the Pacific Northwest, North to South	23
4.1 Methods Involved in Pecking	27
4.2 Methods Involved in Grinding	27
4.3 The Cost Benefit Function (after Boydston 1989:71)	30
4.4 Time Neweded to Manufacture Celts from Different Material Types	37
4.5 Comparison of Areas Chopped to Averages Presented by Boydston	41
4.6 Estimated Cost-Benefits Based on Manufacturing Time and Fracture Toughness	42
4.7 Model of Benefits for Nephrite Celts Based on Length	42
5.1 Size Ranges fro Complete Celts	45
5.2 Method 1	47
5.3 Method 2	47
5.4 Method 3	47
5.5 Method 4	47
5.6 Celt Blank Modification	48
5.7 Larger Celt Sectioning	48
5.8 Contexts of Celt Production, Acquisition, and Consumption	55
5.9 Parameters of Celt Value in Ritual versus Non-Ritual Sites	58
5.10 Sites with Nephrite on the British Columbia and Columbia Plateau	60
5.11 Nephrite Artifact Distribution by Grid Zone	65
5.12 Celt Distribution on the British Columbia and Columbia Plateaux	66

Figures (Continued)

5.13 Distribution of Non-Celt Nephrite Artifacts	67
5.14 Nephrite Artifact Frequency from the Source	68
5.15 Nephrite Artifact Distribution by Grid Zone	69
5.16 Nephrite Artifact Rates (artifacts/m2) for Grid Zones	70
5.17 Distribution of Non-Nephrite Celts	72
5.18 Distribution and Rates of Nephrite Artifacts in the Shuswap Horizon	73
5.19 Distribution and Rates of Nephrite Artifacts in the Plateau Horizon	74
5.20 Distribution and Rates of Nephrite Artifacts in the Kamloops Horizon	75
5.21 Average Celt Length (mm) Versus Distance (km) from Source	76
5.22 Average Celt Size in Grid Zones	77
5.23 Distribution of Nephrite Celt Lengths	78
5.24 Average Celt Sizes for Grid Zones in the Kamloops Horizon	79
5.25 Average Celt Lengths for Grid Zones in the Shuswap and Plateau Horizon	80
5.26 Proposed Structure of Nephrite Exchange on the British Columbia	81
5.27 Distribution of Celt Sizes in Burial, Housepit and Campsite Contexts	86
5.28 Housepit Sizes where Nephrite Celts have been Recovered	86
5.29 Percentage of Nephrite Artifacts in Site Types per Grid Zone	87