

## Chapter X

### REANALYSIS OF BORDEN LOCARNO BEACH COMPONENTS

#### i) The Locarno Beach Type Site.

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The Locarno Beach culture was first defined by Charles E. Borden on the basis of excavations at the Locarno Beach and Whalen Farm sites. As part of the overall investigation of the nature of the Locarno Beach culture, we re-evaluated these early collections, which have never been fully described. Borden (1950, 1951) did initially produce fairly complete preliminary reports and later published a check-list definition (1970). Mitchell (1968) developed a detailed presence-absence attribute list which was reproduced (with changes) by Matson (1974). Matson (1974) also published some preliminary counts for these Locarno components (and DhRt 4, the Musqueam NE site), and Mitchell (1968, 1971, 1990) produced a detailed summary of this culture, partially based on the Locarno Beach and Whalen Farm components. Steifel (1985) also undertook faunal analyses of Locarno components including material from both Locarno Beach and Whalen Farm, using a sample of existing faunal remains and midden samples.

All of these various investigations were preliminary, neither of the Whalen and Locarno Beach (DhRt 6) components had been fully reported, and counts for all but a few exotic artifact types were either lacking or in the case of Matson (1974) - clearly had some problems. In addition the early solid carbon dates for these two sites reported by Borden (1970) and Mitchell (1971) did not agree with those reported from other Locarno components. In an attempt to alleviate these problems we re-analyzed the collections using the artifact classification described earlier in this volume. This artifact analysis included examining the level bags (known as "AssMat" bags for "Assorted Materials") from the Locarno Beach and Whalen Farm sites to see whether previously undetected tools were present that had not been recognized in the late 1940s or had been overlooked when the artifacts had been catalogued. Charcoal samples from the original excavations were also located and three submitted for dating in the hopes of clarifying the age of the components.

In addition to the Locarno component at the Whalen Farm site, designated by Borden as "Whalen I", the enigmatic Whalen II component is also present there. Borden thought that Whalen II represented a culture that existed between the Marpole and Stselax cultures (Borden 1970) and this component is reported on in detail in the next section of this chapter by Thom. Others, including Mitchell (1971) and Burley (1980), believed that the Whalen II culture was simply a variant of the Marpole culture. This component, too, needed a fuller description than previously existed before this issue could be definitively settled.

The Locarno Beach site.

The Locarno Beach site (DhRt 6) is located on the north coast of the community of Point Grey, which is a part of the city of Vancouver (Figure II-1). It is located on the eastern end of Spanish Banks separated from the beach that bears its name by Northwest Marine Drive. During the summer of 1989 we began to organize both the collection and the field notes from Borden's excavation in the spring and summer of 1948 of the Locarno Beach site (Borden 1950:14-17). The original Borden field notes, as well as photographs and maps, helped us in this endeavor. The artifacts from the original 1948 excavation were organized into artifact types, measured, and weighed. A number of artifact types were found that were present from our assemblages at Crescent Beach, so these were added to those created for the Crescent Beach artifact assemblage and are denoted by "lb" in Chapter V.

A second problem soon presented itself with the Locarno Beach artifact assemblage. There were two separate trenches excavated, and although both of them were presumably supervised by C.E. Borden, one trench (Trench 4) was excavated solely by volunteers. Borden gives little information about Trench 4 in his field notes and we could not locate any diagrams or maps of the trench, although there are a few photographs (Figure X-1). Uncertainty about where the Trench 4 artifact assemblage fit in with the Trench 1 artifact assemblage resulted in the decision to separate the two trench's artifacts in Table X-2.



Figure X-1. Locarno Beach site Trench 4 (1948).

The spring of 1948 was very rainy and the trenches suffered considerable damage due to cave-ins. Uncertainty about the provenience of the artifacts found within the cave-in slumped material lead us to group all cave-in artifacts together and not include them with the other artifacts found during excavations. It appears that only the 'better' artifacts were collected from the trench cave-in events, leading to their over representation in the overall artifact collection. Artifacts recovered from the cave ins are listed in Table X-3.

Although some existing catalogued artifacts were not included in our tabulations because of their uncertain provenience, some new artifacts were added by inspection of the AssMat bags collected during the 1948 field season. Those artifacts were collected and catalogued if they had good provenience (i.e., we could understand the writing on the AssMat bags), and incorporated into our artifact counts.

There is the possibility of an existing Marpole phase component from the top strata at Locarno. This was recognized in later salvage excavations at other locations of the Locarno Beach site, such as by Arcas in 1993. Whether this component also exists in the collection reported here is unclear at this point.

Borden (1970) reported two radiocarbon dates from his early Locarno Beach excavations, one from Locarno Beach of  $2430 \pm 160$  RCYBP (S-3) and one from Whalen Farm of  $2450 \pm 160$  RCYBP (S-18) (Wilmeth 1976). These dates were used to support a duration of between 2000 and 2800 RCYBP for the Locarno Beach phase (Borden 1970). Mitchell's (1971, 1990) syntheses on the other hand, including a

number of more recent radiocarbon dates, indicated a time range of 2500 to 3200 RCYBP and some later dates suggest 3300 RCYBP as a beginning time. Matson and Coupland (1995:156) indicate a beginning date of 3300 to 3500 RCYBP, as does Chapter XI of this volume. The original Borden dates appear to be anomalies for Locarno Beach, or may indicate that these assemblages included Marpole material.

Table X-1 Locarno Beach site (DhRt 6) Radiocarbon Dates.

<u>Lab Number</u>	<u>Provenience</u>	<u>Date (RCYBP)</u>	<u>Notes</u>
S-3	95" below datum	2430 $\pm$ 160	Solid Carbon method
SFU 767	70-90" below datum	2840 $\pm$ 80	Borden collected charcoal
SFU 766	102" below datum	3280 $\pm$ 70	Borden collected charcoal
Beta 70602	Layer 7	2460 $\pm$ 80	Arcas excavation, EU1/RC-1
Beta 71115	Layer 11	2730 $\pm$ 90	Arcas excavation, EU4/RC-2
Beta 71116	Layer 11	3120 $\pm$ 90	Arcas excavation, EU7/RC-11
Beta 67252	Layer 12	3160 $\pm$ 90	Arcas excavation, RC-NE4
Beta 70604	Layer 9	2290 $\pm$ 90	Arcas excavation, EU9/RC-1
Beta 69094	Layer 12	2000 $\pm$ 80	Arcas excavation, RC-NE1
Beta 70603	Layer 8	1630 $\pm$ 80	Arcas excavation, EU3/RC-2

We submitted to the Simon Fraser Radiocarbon Laboratory two charcoal samples collected in situ from two of the lower layers present at Locarno Beach. We received dates (Table X-1) of 2840  $\pm$  80 RCYBP (SFU 767) from the upper sample and 3280  $\pm$  70 RCYBP (SFU 766) from the lower sample. The charcoal used for SFU 766 was associated with what Borden described in his field notes as an ashy layer encircled by fire cracked rock but that for SFU 767 was not associated with any particular feature. These two dates are in accord with other Locarno Beach dates indicating a beginning by 3300 RCYBP of this culture.

The original early solid carbon dates run by the Saskatchewan lab (Wilmeth 1978:71,83) indicating a period of 2800-2200 RCYBP for the Locarno Beach phase should now be rejected. The sample from Locarno Beach was from charcoal 95 inches below surface (2430  $\pm$  160 RCYBP) and, according to our dates, should be around 3000 RCYBP. Note that it is S-3, the third date run by Saskatchewan, and is a credible date considering this and the problems now known to exist with the solid carbon method. The solid carbon method was replaced by gas counting methods by the late 1950s (Taylor 1987:82). Other laboratories by then were finding it difficult to reproduce Libby's results using the solid carbon method with one major problem being "contamination of sample preparations with fission products from the detonation of thermonuclear devices in the atmosphere" (Taylor 1987:82). If this problem was occurring at Saskatchewan, that would mean the assays would date too recent, as in this case. Gas counting and liquid scintillation methods not only avoided this contamination problem but were also able to use smaller samples and generally gave greater precision (Taylor 1987:83).

Both of the samples we submitted were large and we have retained half of the samples submitted for future dating clarification (if needed). The two new dates place the bulk of type site collection clearly in the now expected 2500 to 3300 RCYBP period. Excavations in 1993 on the lot next to Borden's original excavations (Arcas 1993) produced seven new dates (Table X-1). It is difficult to correlate these with Borden's original excavation, as a Marpole phase component exists on this part of the site, but four of the seven dates date to the Locarno component, ranging from 2460  $\pm$  80 RCYBP (Beta 70602) and 3160  $\pm$  90 RCYBP (Beta 67252) in general supporting Mitchell's dates (1971) and our dating of this site. The richest Locarno Layer (11) has dates of 2730  $\pm$  90 (Beta 71115) and 3120  $\pm$  90 (Beta 71116) RCYBP. The sole

anomaly is the Beta 69094 date for Layer 12 of  $2000 \pm 80$  RCYBP which cannot be regarded as a correct date for this phase. Our re-dating of Borden's original material, supported by the Arcas excavations, helps to answer questions concerning the age of the Locarno type site component. Now we turn to the less easily resolved issue pertaining to the nature of this assemblage.

### Component Summaries

The following two tables (X-2 and 3) present the artifacts grouped into the artifact types as described in Chapter V. Table X-1 lists the artifacts excavated from Trenches 1 and 4, while Table X-2 lists the artifacts retrieved from the on site cave ins.

From these tables we can see that while chipped stone is still present at Locarno Beach, its numbers as a whole are not as large when compared to St. Mungo components. The Table X-2 artifact counts include those artifacts gathered from Borden's "AssMat" bags. Almost all of these artifacts were chipped stone expedient tools such as Utilized Flakes, Narrow-angled Retouched Slakes, and Steep-angled Retouched Flakes, which were not reported in the early, preliminary reports. It is also interesting to note that the number of Quartz Crystal Microliths (QCML) present is one, which in comparison to the number of QCML's found at Crescent Beach is surprising low. This may be an artifact of field procedures because although only QCML's were found at Crescent Beach, at Locarno, quartz crystal was used for other tools including a steep-angled formed uniface and a very large core, indicating that quartz was present. Furthermore, the relatively small 1993 Arcas excavation in the adjacent lot (Arcas 1993) recovered eight Quartz Crystal Microliths through 6 mm (1/4") mesh screens. Similarly, their richest Locarno Layer (11) has a much higher percentage of retouched flakes than we recorded for Borden's collection (Arcas 1993:32-40).

There is more diversity in projectile point styles recovered by Borden at Locarno, but most are of styles also found in St. Mungo components. The larger number of chipped slate artifacts, although not necessarily statistically significant, suggests the growing importance of slate as a raw material. One general comment concerning the chipped stone assemblage is that on whole it consists of expedient items.

Diversity within the Locarno ground stone tool assemblage is much greater than that found in St. Mungo components. Abrasive stones are plentiful and far more are shaped, although no decorated abraders were discovered at the Locarno Beach site. Ground Slate Knives suddenly appear and are plentiful. They come in many sizes and thicknesses, although not as thick and as unfinished as one might be lead to believed from previous publications. The numbers of ground stone projectile points is slightly higher than chipped stone (42 versus 37), but the diversity in styles is quite interesting. We have defined two general categories for ground stone points. One group of points is similar to their chipped stone cousins except for their smooth abraded surfaces. The most common styles are leaf-shape and contracting stem. Among the other group of ground stone points, the surfaces have been faceted indicating a significant difference in time and effort to make the faceted points. The faceted points are slightly less common. Gulf Island Complex artifacts are not common and only one small stone Labret was discovered in situ. It is unfortunate that small screen mesh was not used to screen some of the midden material, because both ground stone disc beads and quartz microliths near absences in the assemblage are likely the result of excavation techniques. Although Quartz Crystal Microliths were recovered by Arcas (1993), small beads were not, leaving the question of their possible presence at the Locarno Beach type site still open since the Arcas excavations used 6 mm (1/4") screens. (1/4) screens, making their absence at the Locarno Beach site still in question. Fine-grained field techniques were not introduced until after 1948 on the Northwest Coast (and as the 1993 excavations indicate, are not universal at this time), and the techniques used at Locarno Beach in the late 1940s, which included screening, were good for their time.

Table X-2.

## Locarno Beach (DhRt 6) Artifacts

Artifact Type	Trench One	Trench Four
<i>CHIPPED STONE IMPLEMENTS</i>		
Core (CORE)	8	-
Hammerstone (HAM)	14	1
Battered Flake (BF)	1	-
Utilized Flake (UF)	52	-
Quartz Crystal Microlith (QCML)	1	-
Unifacially > Angled Ret. Flake (SRF)	13	-
Unifacially < Angled Ret. Flake (NRF)	11	-
Bifacially Retouched Flake (BRF)	6	-
Steep-Angled Formed Uniface (SFU)	1	-
Steep-Angled Formed Biface (SFB)	3	-
Leaf-Shaped Biface (LBF)	9	6
Contracting Stem Biface No Should. (CSTB)	5	-
Contracting Stem Biface With Should. (CSBS)	4	4
Corner Notched Biface (CNBF)	1	-
Excurvate Biface (EB)	1	-
Biface Proximal Fragment (BPF)	2	1
Biface Medial Fragment (BMF)	2	-
Unidentified Biface Fragment (UNBF)	2	-
Chipped Slate <-Angled Spherical Biface (CSSB)	8	3
Chipped Slate Diamond Shaped Biface (CSDB)	1	-
Chipped Slate Fragment (CSF)	2	-
Chipped and Ground Stone <-Angled Retouched Implement (CGSK)	1	2
<b>Subtotal Chipped Stone Implements</b>	<b>148</b>	<b>17</b>
<i>GROUND STONE IMPLEMENTS</i>		
Abrasive Stone (AS)	19	6
Formed Abrasive Stone (FAS)	8	3
Ground Stone Knife (GSK)	14	9
Leaf-Shaped Ground Stone Point (LSGP)	2	1
Contracting Stem Lanceolate-shaped Ground Stone Point (CSLG)	4	3
Lanceolate-shaped Concave Base Ground Stone Point (LCBG)	1	-
Straight-Stem Ground Stone Point (SSGP)	1	2
Ground Stone Point Proximal Frag. (GPPF)	5	2
Ground Stone Point Medial Fragment (GPMF)	1	1
Ground Stone Point Distal Fragment (GPDF)	1	1
Leaf Shaped Facet. Ground Stone Pt. (LSFP)	9	1
Parallel Sided Facetted Ground Stone Point (PSFP)	3	4
Ground Stone Disc Bead (GSDB)	2	-
Adze (ADZ)	1	1
Gulf Island Complex (GIC)	3	-
Labret (LAB)	1	-
Miscellaneous Ground Stone (MGS)	22	4
<b>Subtotal Ground Stone Implements</b>	<b>97</b>	<b>38</b>

Table X-2 Locarno Beach (DhRt 6) Artifacts (Cont.)

Artifact Type	Trench One	Trench Four
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<i>BONE IMPLEMENTS</i>		
Worked Bone Medial Fragment (WBMF)	37	10
Worked Bone End Fragment (WBEF)	24	5
Net Gauge (NG)	1	1
Ground Molar (GM)	3	-
Tooth Pendant (TPND)	3	-
Whistle (WHST)	1	-
Splinter Awl (SAWL)	1	1
Formed Split Bone Awl (FAWL)	17	1
Metapodial Awl (MAWL)	2	-
Bird Bone Awl (BAWL)	15	-
Ulna Awl (ULNA)	9	-
Ulna Tool (ULTL)	1	-
Knife Slitting Implement (KSI)	2	-
Unipoint (UNPT)	5	-
Bipoint (BIPT)	2	-
Pointed Bone Object (PBOF)	1	-
Needle (NDL)	3	-
Bone Chisel With Unifacially Tapered Distal End (BCUT)	3	1
Bone Chisel With Bifacially Tapered Distal End (BCBT)	2	1
Bone Wedge (BWED)	1	-
Non-Facetted Bone Point Lanceolate-Shaped (NFPT)	3	2
Non-Facetted Bone Pt. With Central Cavity (NFPM)	3	3
Facetted Bone Point (FBPT)	3	1
Facetted Bone Pt. With Central Channel (FPTM)	17	1
Unidentified Bone Wedge, Chisel, or Point Fragment (UWCF)	6	2
Unilat. Barbed Fixed Bone Point (UBFP)	1	-
Unilat. Barbed Bone Harpoon (UBH)	1	-
Frag. Unilat. Barbed Point/Harpoon (FUB)	2	-
Bilaterally Barbed Fixed Bone Pt. (BBFP)	1	-
Toggled Harpoon Point (THPT)	1	-
Toggled Harpoon Head (THH)	1	-
Decorated Bone Object (DBON)	1	1
Anthropomorphic Object (ANTH)	1	-
Bone Labret (BLAB)	1	-
<b>Subtotal Bone Implements</b>	<b>175</b>	<b>29</b>

Table X-2 Locarno Beach (DhRt 6) Artifacts (Cont.)

Artifact Type	Trench One	Trench Four
<i>ANTLER IMPLEMENTS</i>		
Worked Antler End Fragment (WAEF)	2	-
Worked Antler Medial Fragment (WAMF)	1	-
Self-Armed Toggle Harpoon Valve (THAR)	1	-
Decorated Haft (DHFT)	3	-
Atlatl Hook (ATLT)	1	-
Subtotal Antler Implements	8	0
<i>SHELL IMPLEMENTS</i>		
Misc. Ground Shell Fragments (MGSF)	4	0
Total Number for each Trench	435	85

There is a wide variety of bone implements in this assemblage. Some of the more unusual artifact types include: two Net Gauges, a Whistle, and a Knife Slitting Instrument. Within the awl category, Formed Awls (FAWL) are more common than the more expedient Splinter Awls. Along with the large number of FAWL's there is also a large number of Bird Bone Awls present. The Bird Bone Awls are very small and delicate and their precise function is a mystery. Within the bone chisel class there are two styles present, one with a bilaterally tapering end bit, which looks very much like some ground stone adze blades. There are abundant bone points present. Once again, as with the ground stone points, there are two general categories, one for non-faceted points and one for faceted. There is overlap among the bone chisel, point, and wedges categories. Barbed points are also present. Although Locarno Beach as a cultural phase is famous for its Composite Toggle Harpoons, only one was recorded at the Locarno Beach type site, and it is a one piece bone toggle harpoon head with a closed socket and a slot to receive a cutting blade of bone. There is no hole or groove for the retrieving line. There is also one small Bone Labret present.

There is a paucity of complete antler artifacts from Locarno. The most common antler artifact type is the Decorated Haft, of which we found two complete examples and one fragment. Borden (1950:17) describes these objects as resembling dentalium purses. The second most interesting artifact type is an antler harpoon comprised of a small one-piece toggle with a closed socket and opposed bilateral spurs. There is a drilled line hole at right angles to the spurs. Unlike the bone one-piece toggle harpoon head, this one does not have a cutting blade. The third interesting antler artifact type is an atlatl hook shaped into a human form with a cone-shaped hood or hat. The absence of Antler Wedges is interesting. Ground shell fragments are not common at Locarno and none are complete enough to hazard guessing at possible functions.

The group of artifacts (Table X-3) from the cave-ins are of the same type as those from the excavated portion of the site. The only unique artifact is a Leaf-Shaped Chipped Slate Point.

In conclusion, our analysis of the Locarno Beach site tells us a great deal about the artifact assemblage excavated. Chipped stone artifacts are common (40% of the artifact assemblage), but are usually not as well made nor quite as common as in earlier artifact assemblages. Ground stone technology is replacing chipped stone as the preferred technology and within the ground stone tools we see some continuity in projectile point styles (leaf-shaped and contracting stem), but we also see some ground stone points requiring more time and effort in their manufacture (the faceted styles). Even with these more technologically demanding

Table X-3. Locarno Beach (DhRt 6) “Cave-In” Artifacts.

Hammerstone (HAM)	3
Steep-Angled Formed Uniface (SFU)	1
Leaf-Shaped Biface (LBF)	1
Contracting Stem Biface No Shoulders (CSTB)	6
Contracting Stem Biface With Shoulders (CSBS)	2
Chipped Slate Narrow-Angled Spherical Biface (CSSB)	1
Abrasive Stone (AS)	4
Formed Abrasive Stone (FAS)	3
Ground Stone Knife (GSK)	6
Leaf-Shaped Ground Stone Point (LSGP)	1
Contract. Stem Lanceolate Ground Stone Pt. (CSLG)	1
Triangular Shaped Ground Stone Point	1
Straight-Stem Ground Stone Point (SSGP)	1
Leaf-Shaped Facetted Ground Stone Point (LSFP)	3
Parallel Sided Facetted Ground Stone Pt. (PSFP)	1
Facetted Ground Stone Point Fragment (PSFP)	3
Adze (ADZ)	2
Miscellaneous Ground Stone (MGS)	5
Worked Bone Medial Fragment (WBMF)	9
Worked Bone End Fragment (WBEF)	9
Net Gauge (NG)	2
Splinter Awl (SAWL)	2
Bird Bone Awl (BAWL)	4
Knife Slitting Implement (KSI)	1
Unipoint (UNPT)	3
Bone Chisel, Unifac. Tapered Distal End (BCUT)	3
Facetted Bone Point (FBPT)	3
Unidentified Bone Wedge, Chisel, Pt. Frag. (UWCF)	5
Fixed Unilaterally Barbed Bone Point (FUB)	2
Worked Antler End Fragment (WAEF)	1
Total Number of Cave In Artifacts	91

points, we still see the ever-present leaf-shape form. Bone artifacts are abundant in numbers and kinds. Perhaps this is a great period of experimentation with raw materials for we see bone points mimicking the facetted ground stone points and bone points of many new styles. We also see more evidence of fishing technology although ‘goodies’ such as toggle harpoons are not common. There is not much evidence within the artifact assemblage for non-utilitarian goods. Some of this may be due to the excavation procedures used at the site (it was a salvage project excavated under tight time constraints), but in comparison with Marpole phase components, the variety of personal adornment and status markers such as beads and decorated objects are not common.

The Locarno assemblage from the Locarno Beach site is strikingly different from that recovered from the Crescent Beach site. For instance, no Ground Slate Knives were recovered from our excavations at Crescent Beach, nor from Percy’s, although Trace (1981) reports three from his. This difference can not be a result of different collection biases. Similarly, Ground Slate Points are much more frequent from Locarno Beach than from the same age deposits at Crescent Beach and this difference must be real. Similarly,

Facetted Ground Slate Points and fragments thereof, are common at Locarno Beach and absent in the Matson and Percy Crescent Beach Locarno component excavations. Both Ground Slate Knives and Facetted Ground Slate Points are also known from other Locarno Beach components, including Whalen Farm I (next section of this chapter), Montague Harbour I (Mitchell 1971), and Georgeson Bay (Haggarty and Sendey (1977). On the other hand, many other differences between Crescent Beach and DhRt 6 Locarno collections can not be so easily assigned to cultural differences, but instead are likely to be differences in collection and excavation procedures. The absence (or near absence, since the 1993 investigations recovered some) of Quartz Crystal Microliths at Locarno Beach is a least partially the result of collection procedures which is probably true for the absence of small beads of any type. The differences in chipped stone is likely partially the result of different emphases. That we were able to find a number of chipped stone tools in the “AssMat” bags indicates that these were not recognized as important and points to the inference that many other implements in this class were simply not collected. One wonders whether this is also true for other categories, such a pieces of modified bone, that appear to be under represented.

In sum, some differences between the Locarno Beach site assemblage and other Locarno component collections reflect real differences in material cultures. Other assemblage differences are undoubtedly heavily influenced by changes in field techniques and different collection biases. Still other differences might be one or the other. The result is a collection that is very difficult to compare with other collections. It is clear that large, complete “nice” artifacts can be compared with similar ones from other collections. One ought to be able to make certain quantitative comparisons such as the ratio of Ground Slate Points (complete) to Ground Slate Knives (fragments, large). One can also make certain inferences about items which are rare or missing at Locarno Beach, such as beads and Quartz Crystal Microliths, that they were present in much larger frequencies in the deposit then they are found in the catalogued collection. These problems do not mean that this collection has only a historic value but rather that any comparisons must be carefully made with these problems kept in mind.