



Archaeological Discoveries in Finlay Reach, Williston Reservoir

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In 1968, the W.A.C. Bennett Dam was completed, blocking the Peace River and creating Williston Reservoir, bigger than any natural lake in BC. The reservoir inundated the lands of the northern Rocky Mountain Trench, and has three arms, or "reaches": Finlay Reach, Parsnip Reach and Peace Reach. The Finlay Reach is located 250 km north of Prince George and 225 km northwest of Fort St. John, and is 116 km long. Today, the Tsay Keh Dene First Nation community of Tsay Keh, located at the head of Williston Reservoir, is the only permanent habitation on Finlay Reach.

Prior to the inundation of Williston Reservoir, Finlay Forks was the point where the Finlay and Parsnip Rivers joined in the Rocky Mountain Trench to form the Peace River, the only BC river that flows across the Continental Divide. The Rocky Mountain Trench is a remarkable landform that extends 1400 km from the Liard Plain on the BC-Yukon border to Flathead Lake in Montana. In our project area, the Trench is a broad, flat-bottomed valley ranging from 7 to 25 km wide, with its widest point being

at Finlay Forks (Bostock 1948).

Williston Reservoir affects the lands it has inundated in ways common to other hydroelectric reservoirs in BC, but today, one of the most pervasive environmental effects is dust, raised by winds blowing over the draw-down zone (reservoir lands that are alternately exposed and re-inundated by seasonal fluctuations of pool-elevations). To address the recurrent nuisance and potential health risks by long-term exposure to dust, BC Hydro has begun a program of dust-control in the draw-down zone. Prior to these actions, Arcas Consulting Archeologists was asked to assess the archaeological resources of six dust-control localities in Finlay Reach (Arcas Consulting Archeologists 2007).

Previous archaeological studies in Williston Reservoir have been few and far between. Between 1962 and 1964, as the dam was being built, Charles Borden, Robert McGhee, and Donald Figure 1. Remnant tree stumps like these indicate the extent of sediment deflation in the draw-down zone.

Mitchell conducted boat-based site surveys along the Finlay, Parsnip, and Peace Rivers. McGhee's survey in 1963 covered the Finlay River and some of its tributaries, and he found ten sites. Emphasizing the hazards of archaeological research in such a remote location, McGhee lost all of the expedition's artifacts when his boat capsized in the Ne Parle Pas Rapids on the Peace River, downstream from Finlay Forks (McGhee 1963). After 1964, no further archaeological research is recorded from the Williston region until the 1990s, when Charles Ramsay and Terry Gibson conducted localized surveys in the Finlay draw-down zone, resulting in the discovery of 25 sites between 1996 and 1999 (Western Heritage Services 1996, 1998, 2000). After another pause, Arcas carried out an archaeological reconnaissance of several Finlay Reach localities for BC Hydro and the Tsay Keh Dene First Nation in 2003. Sixty-six archaeological sites were observed during this study (Arcas Consulting Archeologists 2004).

Results

A total of 97 archaeological sites were identified and recorded in the Finlay Reach project localities during the 2007 field survey. The survey was carried out in May and June 2007, to take advantage of springtime low-pool conditions. Work began as soon as residual snow cover and ice blocks disappeared from the draw-down zone, and ended when only a small fraction of these lands were still exposed. Table 1 shows the Williston pool elevations between 10 May and 16 June 2007, to give an impression of how fast the reservoir can rise when spring runoff begins.

The results of the 2007 survey in the Finlay draw-down zone can be summarized as follows (from south to north):

The W.A.C. Bennett Dam & Williston Reservoir

The Dam straddles the Peace River Canyon at Portage Mountain

Construction took 5 years (1963 - 1968)

The dam is 2 km long; 183 m high; base width of 88 m & top width of 8 m

Combined with the Peace Canyon Dam, produces 30% of all electricity for BC Hydro

Williston Reservoir covers 1773 km²; 300 km in total length; maximum depth of 175 m

Reservoir operating elevations between 642 m and 672 m above sea level

Total area of Williston Reservoir draw-down lands = 9400 hectares



Figure 2. Shaded digital relief map of the northern Rocky Mountain Trench, showing the location of Finlay Reach (1:4,500,000; Geological Survey of Canada).

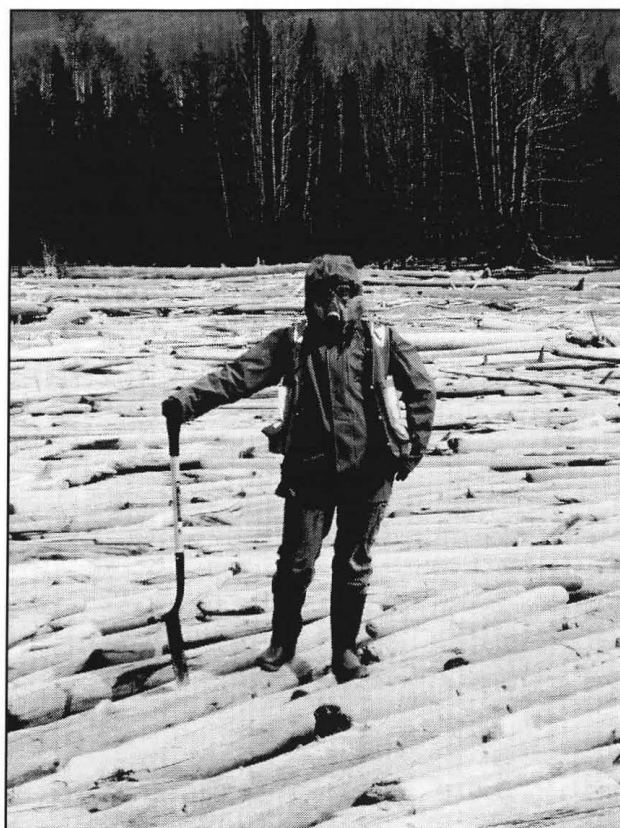


Figure 3. Dust-storms in the draw-down zone create hazardous working conditions, requiring protective clothing as seen here.

Table 1. Williston Reservoir pool elevations, May - June 2007.

Project Phase	Date	Pool Elevation*	Elevation Increase**
May Field Cycle	10 May 2007	658.665 m asl	+ 0.52 m (1.71 ft.)
	19 May 2007	659.185 m asl	
Non-Field Interval	20 May 2007	659.275 m asl	+ 3.92 m (12.86 ft.)
	6 June 2007	663.195 m asl	
June Field Cycle	7 June 2007	663.766 m asl	+ 3.40 m (11.15 ft.)
	16 June 2007	667.162 m asl	

* Measurements (in meters) recorded for W.A.C. Bennett Dam forebay at 6:00 AM of each day.
 ** Rise in pool elevation separated by project phase; total rise = 7.84 m/25.72 ft..

Table 2. Inventory of sites in the 2007 Finlay Reach survey localities by site type

Locality	# of Sites	Site Category		
		Isolated Find	Small Scatter	Complex Site
Tsay Keh Beach	0*	0	0	0
Van Somer Point	5	3	2	0
Davis Flats	27	15	7	5
Middle Creek South	34	7	21	6
Middle Creek North	16	5	2	9
Shovel Creek	15	5	6	4
Totals	97	35	39	23

* Several artifacts in a redeposited context were observed in this locality

Table 3. Summary of artifacts collected from Finlay Reach draw-down zone in 2007*

Type	Van Somer Point	Davis Flats	Middle Creek South	Middle Creek North	Shovel Creek	Total
Projectile points/fragments	--	7	8	23	5	43
Bifacial knives/preforms	--	3	3	3	1	10
Formed unifaces/scrapers	--	1	4	12	2	19
Microblade/macrobldes	--	8	3	--	1	12
Expedient flake tools	--	3	8	7	--	18
Cobble spall tool	--	--	--	4	--	4
Debitage & cores	10	6	9	2	2	29
Groundstone objects	--	--	1	--	1	2
Historic materials	--	--	2	1	--	3
Total	10	28	38	52	12	140

(1) Davis Flats (750 ha): The highest, eastern part of the Davis Flats locality was surveyed in 1996 and 1999, when 16 archaeological sites were recorded (Western Heritage Services 1996, 2000). Twelve more sites were observed at this locality in 2003 (Arcas Consulting Archeologists 2004). The 2007 survey covered 176 ha, focussing on lands west of those seen in 2000 and 2003. Twenty-seven sites were recorded, including extensions to one site recorded in 1996, and two others observed in 2003. Based on the presence of diagnostic artifact types, three of the Davis Flats sites appear to have Early Prehistoric components. There are four sites with Middle Prehistoric components and two sites have Late Prehistoric components. Of these nine sites, three represent multicomponent occupations.

(2) Shovel Creek (825 ha): Approximately 42 ha were inspected at Shovel Creek, on the last two days of the 2007 fieldwork, resulting in the discovery of 15 sites. Two sites have Early Prehistoric components, three have Middle Prehistoric components, and one has a Late Prehistoric component; three of the six sites are multicomponent.

(3) Middle Creek South (518 ha): The permanently submerged site of Fort Grahame is situated on the east side of the Finlay River about 3 km (by river) below the mouth of Middle Creek, at an elevation 30 m lower and 2 km west of the higher lands inspected this season. The 2007 survey covered 282 ha of the Middle Creek South locality, and 34 sites were recorded. Five of these sites have Early Prehistoric components, six have Middle Prehistoric components, two have Late Prehistoric components, and two sites have a Historic component. Five of the 13 sites are multicomponent.

(4) Middle Creek North (165 ha): The north aspect of the Middle Creek localities is separated from Middle Creek South by Middle Creek itself. Most (157 ha) of this locality was covered by the 2007 survey, and 16 sites were recorded. The most interesting artifact found this season came from Middle Creek North—the base of a fluted projectile point, similar to the specimen found at Charlie Lake Cave near Fort St. John (Fladmark et al. 1988; Gryba

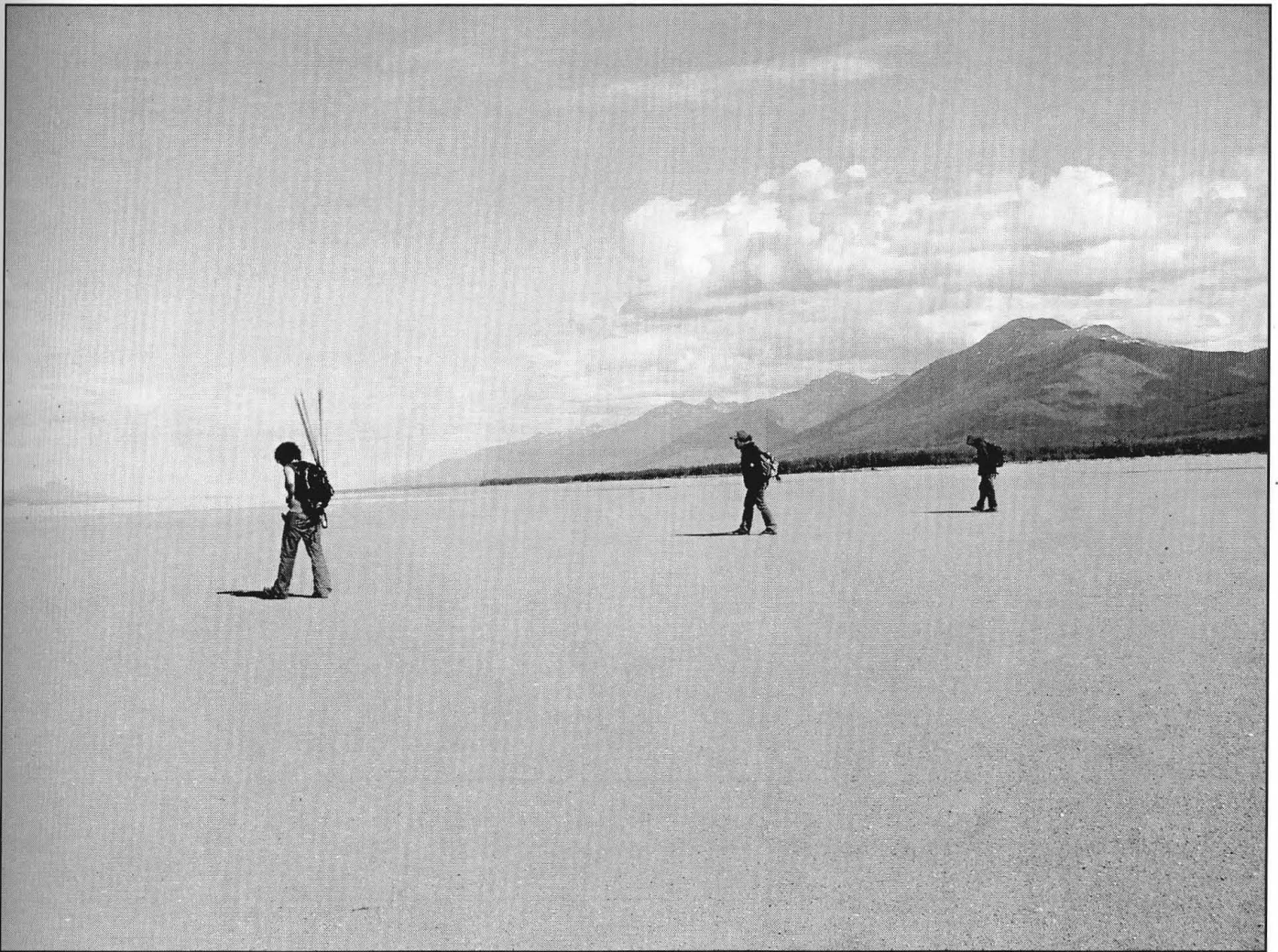


Figure 4. Survey crew working at the Middle Creek South locality.

2001). Including the site with the fluted point, Middle Creek North has two sites with Early Prehistoric components, four with Middle Prehistoric components, six Late Prehistoric components, and one site with an Historic component. Of these 12 sites, four are multicomponent occupations.

(5) Van Somer Point (182 ha): This locality had been visited in 2003, when four tiny sites were identified (Arcas Consulting Archeologists 2004). In 2007, 152 ha were covered at Van Somer Point and one new site was identified. No diagnostic artifacts were seen in 2007, but an Early or Middle Prehistoric lanceolate projectile point was observed in 2003. The 2003 and 2007 survey results suggest that this locality was not as intensively utilized as the localities further south in Finlay Reach.

(6) Tsay Keh Beach (154 ha): This locality is the draw-down zone beside the modern Tsay Keh village at the head of Finlay Reach. The 2007 survey covered 65 ha of Tsay Keh Beach. Eight artifacts were identified during the survey, but it was later found that these had been discarded from a private collection.

Discussion

The draw-down zone of a reservoir is an environment stripped of the usual impediments to finding archaeological sites – vegetation and soil. Sadly, their disappearance also affects the integrity of archaeological sites, leaving behind highly visible artifacts and other materials in the collapsed remnants of stratified sites dating to different time periods. Keeping this unpromising image in mind, the 2007 field survey identified three gross categories of sites in Finlay Reach: (1) isolated cultural materials (e.g., artifacts, faunal remains, fire-altered rocks); (2) small scatters of the same materials; and (3) large, complex sites with many types of artifacts and lithic raw materials, usually associated with faunal remains and fire-altered rocks. Table 2 summarizes the findings of the 2007 survey according to these site-classes.

Finlay Reach soils tend to be neutral or slightly alkaline, and bone preservation was observed at 36 sites. However, the only faunal remains found to date were unidentifiable small fragments of burned and calcined mammal bone.

Compared to other Pacific Northwest reservoirs where draw-down zone archaeology has been done, a striking feature of Finlay Reach is the rarity of fire-altered rocks. For example, along the Pend Oreille River in Washington are many sites comprised principally

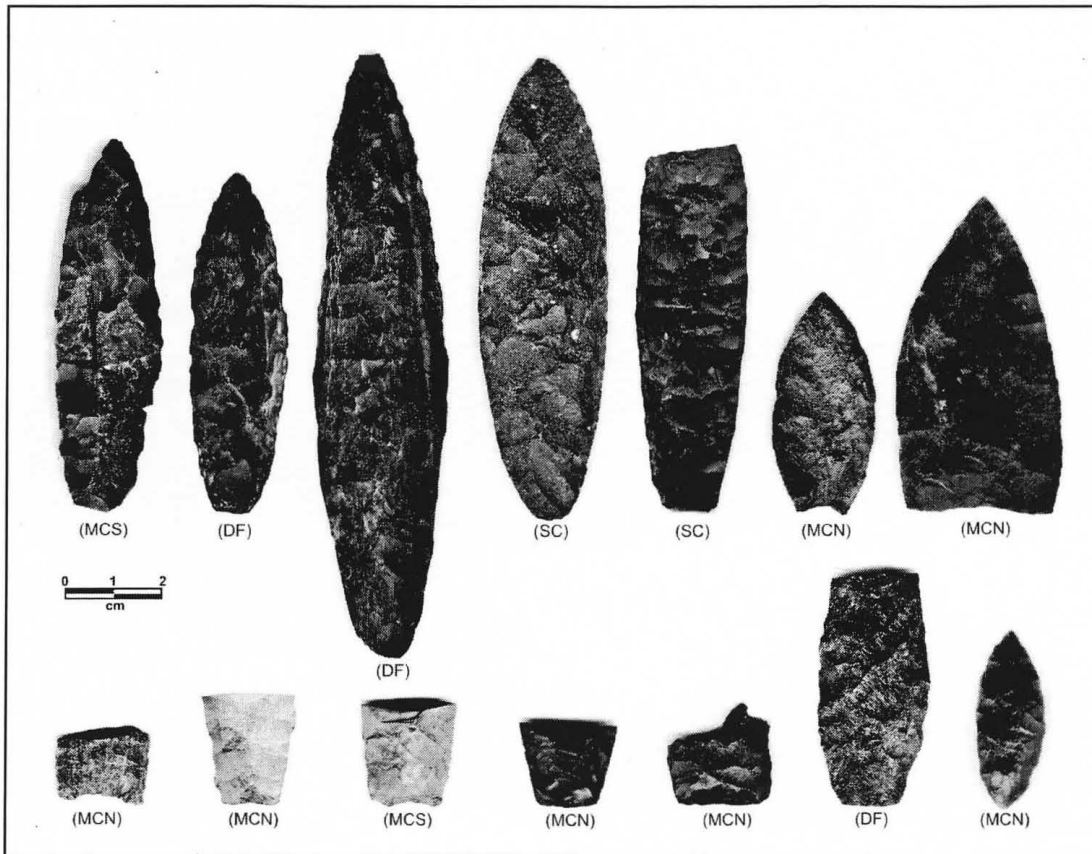


Figure 5. Leaf-shaped and lanceolate projectile points collected from Finlay Reach in 2007: DF = Davis Flats; MCN = Middle Creek North; MCS = Middle Creek South; SC = Shovel Creek.

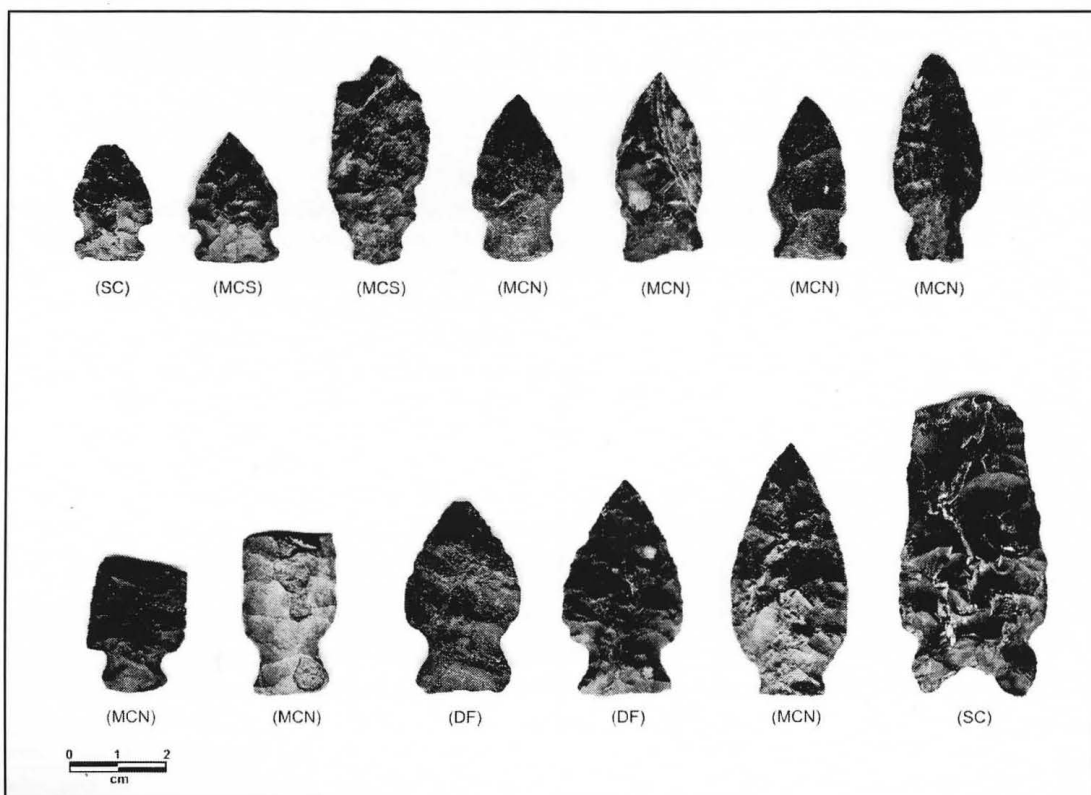


Figure 6. Stemmed and notched projectile points collected from Finlay Reach in 2007 (abbreviations as before).

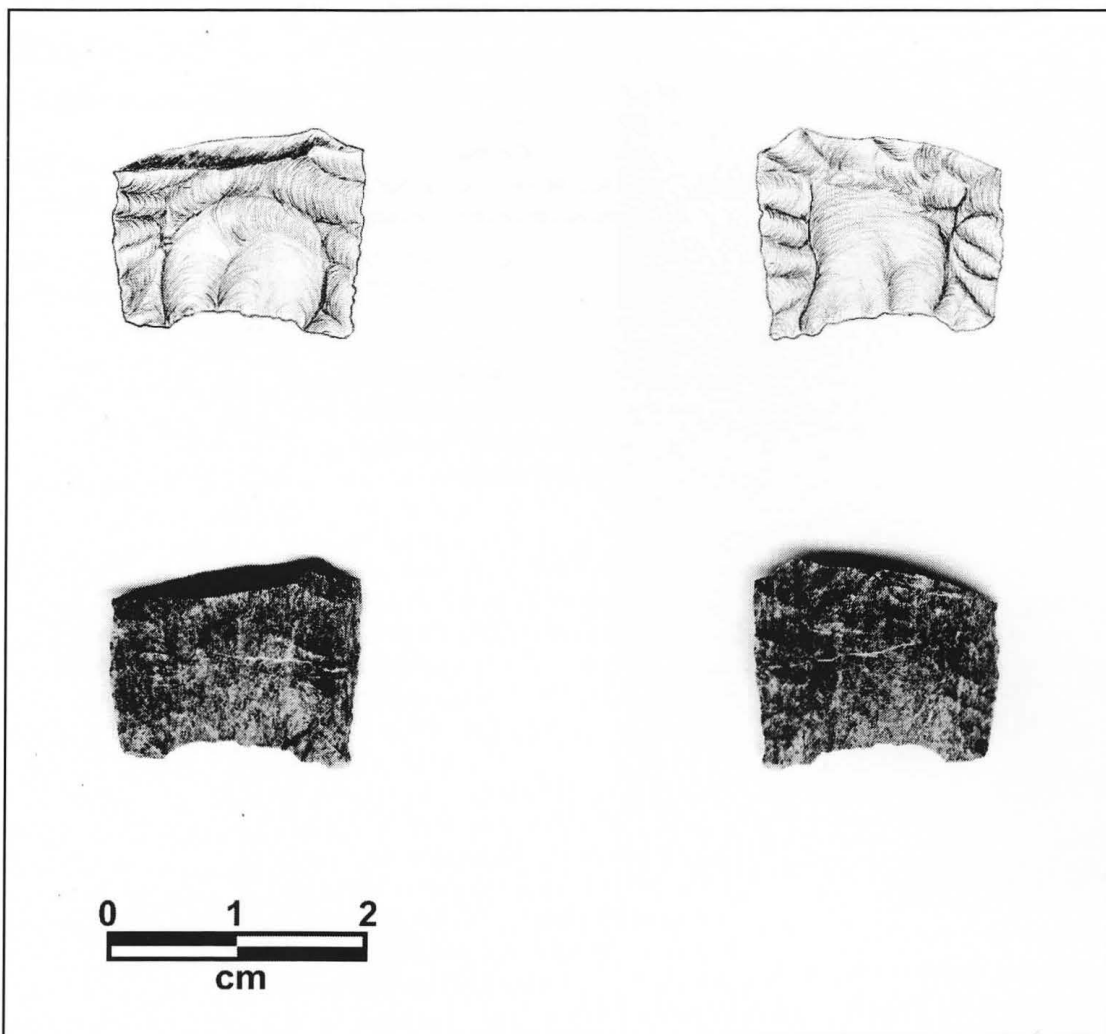


Figure 7. Scanned images and matching drawings of a fluted projectile point base from the Middle Creek North locality (drawings by Ginelle Taylor).

of “fire-altered rock middens” (Salo 1988). In Finlay Reach, small numbers of finely broken fire-altered rocks or obvious hearthstones were present at 19 of the sites recorded in 2007. The scarcity of this humble remnant of ancient human activity seems to denote a pattern of campsite organization and/or food preparation in the northern Rocky Mountain Trench that is very different than the Interior Plateau and Northern Plains Culture Areas.

Table 3 summarizes information about 140 artifacts collected during the 2007 survey. Diagnostic artifacts attributable to gross temporal categories (i.e., Early Prehistoric, Middle Prehistoric, Late Prehistoric, Historic) were observed at 25 of the 97 sites recorded in 2007. Accompanying figures (Figures 5 to 7) illustrate the projectile points collected in 2007, the largest single class of tools that were found, and also the items most vulnerable to unauthorized collecting.

Most recorded archaeological sites from northeastern BC are low-density scatters of artifacts, covering areas of variable size, usually small. Based on the site record, stratified cultural

deposits are rare, even in undisturbed settings. The presence of mixed artifact assemblages at 13% of the Finlay Reach sites shows that stratified sites were present in the lands inundated by Williston Reservoir, and it follows that undiscovered examples must still exist beyond the reservoir.

The obvious difference between Finlay Reach and pristine landscapes elsewhere in this region, is the effect of the inundation and operation of Williston Reservoir. The native vegetation and fine-textured sediments have been removed, leaving cultural materials exposed on a surface resistant to further erosion. The high frequency of sites seen in 2007 belies the fact that many, if not most, of these sites would have had low archaeological visibility in an intact, forested setting.

As expansive as they are, the lands of the Finlay draw-down zone represent a minute fraction of the Rocky Mountain Trench as a whole, and it must be remembered that the archaeological sites seen in 2007 and previous years are configured to the landscape of the Trench and not the artificial impoundment of Williston Reservoir. Inundation and ongoing reservoir operations have been the

means by which those archaeological sites were exposed to discovery, and provide a hint of what must be present elsewhere. From the head of Finlay Reach, the Rocky Mountain Trench extends over 300 km northwest to the BC-Yukon border, and we should expect that the distribution of archaeological resources along the Finlay River and its tributaries beyond the reservoir, do not differ from the pattern fortuitously exposed within Williston Reservoir.

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(Photographs by authors)

References Cited

Arcas Consulting Archeologists

- 2004 *Finlay Reach Archaeological Study: Permit 2003-218 Final Report*. Consultants' report on file, Archaeology Branch, Ministry of Tourism, Sport and the Arts, Victoria.
- 2007 *BC Hydro Finlay Dust-Abatement Project: Archaeological Impact Assessment*. Consultants' report on file, Archaeology Branch, Ministry of Tourism, Sport and the Arts, Victoria.
- Bostock, H.S.
1948 *Physiography of the Canadian Cordillera, With Special Reference to the Area North of the Fifty-Fifth Parallel* (reprinted 1965). Geological Survey of Canada, Memoir 247. Ottawa.
- Fladmark, K.R., J. Driver,
and D. Alexander
1988 *The Paleoindian component at Charlie Lake Cave (HbRf-39), British Columbia*. *American Antiquity* 53(2): 371-84.

Gryba, E.M.

- 2001 Evidence of the Fluted Point Tradition in western Canada. In *On Being First: Cultural Innovation and Environmental Consequences of First Peopling*, edited by J. Gillespie, S. Tupakka and C. De Mille, pp. 251-284. Chac Mool, The Archaeological Association of the University of Calgary.

McGhee, R.

- 1963 *An archaeological survey in the area of the Portage Mountain Dam Reservoir*. Report on file, Archaeology Branch, Ministry of Tourism, Sport and the Arts, Victoria.

Salo, L.

- 1988 *Aquatic Plant Program Osoyoos Lake, Okanogan County, Washington Cultural Resources Reconnaissance*. U.S. Army Corps of Engineers, Seattle District, Technical Report CENPS-EP-ER. Seattle.

Western Heritage Services

- 1996 *A Preliminary Evaluation of Three Archaeological Localities in the Williston Lake Area, North-Central British Columbia*. Consultants' report on file, Archaeology Branch, Ministry of Tourism, Sport and the Arts, Victoria.
- 2000 An Archaeological Inventory of the Mackenzie Forest District, Northeastern British Columbia. Consultants' report on file, Archaeology Branch, Ministry of Tourism, Sport and the Arts, Victoria.

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UPDATE:

MOA to be CLOSED September 2008-March 2009

The UBC Museum of Anthropology is due to close its doors to the public from September 2, 2008 to March 3, 2009 to accommodate Phase II of the museum expansion project, which is increasing the museum's size by 50% by 2010, creating unprecedented opportunities for research, teaching, and public enjoyment.

To honor the support of its membership, the museum is offering an extension of benefits, and has partnered with a number of local attractions to offer MOA members special benefits from September to March (www.moa.ubc.ca/visitor/join.php).

The museum will continue to offer public programs offsite while closed, including a talk by Joshua Mostow, world-renowned expert in Japanese film, art, and literature, on the world's oldest novel, the "Tale of Genji," and the first bi-annual Michael Ames Memorial Lecture, to be delivered by Maori scholar Dr. Paul Tapsell. For details on these talks, visit www.moa.ubc.ca/programs.

These are exciting times for the Laboratory of Archaeology in particular, which will see a number of specialized laboratories in this new space, including a lithics lab, chemistry lab, and a faunal/ethnobotany lab. LOA and MOA are also jointly building a ceramics laboratory, and the object database for collections held in trust for the First Nations of British Columbia continues to expand, enabling LOA to be partner in the Reciprocal Research Network (<http://www.moa.ubc.ca/renewal/lab.php>).

MOA's grand re-launch of ALL new spaces is planned for January 2010, to coincide with the Cultural Olympiad. For updates on the Renewal Project, please visit MOA's website: <http://www.moa.ubc.ca/renewal/index.php>