Lithics and climate change: technological responses to landscape change in Upper Palaeolithic northern Japan

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Table 1. Detailed data of archaeological sites analysed in this paper

	Site	Distribution area	Latitude/ longitude	River basin	Period	Tephra related	Dates	Lithic concentration	Number of lithics	Type of lithic industry	Tool assemblage	Reduction strategies	Major lithic raw materials	Reference
1	Sokol	Paleo-SHK	47°14’29’’N, 142°48’21’’E	Bolishoi Takoi R.	LUP	none	–	4?	>203	microblade	MC (Yubetsu, Horoka, Togeshita) MB, BI, ES, SS, BR, BL, SP, FL	microblade, blade, flake	non-local obsidian debris	Zaitsev *et al.* 2002; Vasilevsky 2006
2	Momijiyama	Paleo-SHK	43°47’16’’N, 143°37’49’’E	Muka R.	LUP	none	–	≧1	2185	microblade	MC (Momijiyama, Hirosato), MB, BL, ES, SS, BR	microblade, blade	non-local obsidian debris and local obsidan gravels	Fujimoto & Yamada 1964; Oda 2009
3	Shimaki	Paleo-SHK	43°14’04’’N, 143°18’07’’E	Otofuke R.	MUP	blw Shipfa-1 abv Sipfa-2	21 700±1800 (FT)	>2	6566	flake	‘MC’, ES, SS, CO, PB, OC	flake	local obsidian gravels	Kato *et al.* 1988; Buvit *et al.* 2011; Izuho *et al.* 2012
4	Ozora	Paleo-SHK	43°47’16’’N, 143°37’52’’E	Satsunai R.	LUP	blw Ta-d abv En-a	*c.*10–23 ka cal BP (tephra)	6	8674	microblade	MC (Oshorokko), SP, BR, ES, SS	microblade, blade	local obsidian gravels	Obihiro Board of Education 1993; Izuho *et al.* 2012
5	Wakabanomori	Paleo-SHK	42°53’55’’N, 143°10’30’’E	Satsunai R.	EUP	blw En-a abv Spfa-1	>26–30 ka cal BP (AMS)	4	9701	small flake	TR, BT, CO, PE	small flake	local obsidian gravels	Obihiro Board of Education 2004; Izuho *et al.* 2012
6	Kiusu 7	Paleo-SHK	43°47’16’’N, 143°37’54’’E	Chitose R.	LUP	blw Ta-d abv En-a	*c.*10–23 ka cal BP (tephra)	1	396	microblade	MC (Togeshita), MB, SP, BL, BR, SS, ES, FL	microblade	non-local obsidian and hard-shale	Hokkaido Center for Buried Cultural Property 1998
7	Oruika 2	Paleo-SHK	42°51’43’’N, 141°42’40’’E	Chitose R.	LUP	blw Ta-d abv En-a	*c.*16 ka cal BP (AMS)	2	784	microblade	MC (Yubetsu), MB, BI, BR, ES, SS, BL,	microblade, blade	non-local obsidian and hard-shale	Hokkaido Center for Buried Cultural Property 2002
8	Shukubai-Sankakuyama	Paleo-SHK	42°49’38’’N, 141°40’44’’E	Chitose R.	EUP	blw En-a abv Spfa-1	*c.* 22–25 ka cal BP (radio)	2	211	small flake	TR, BT, RF, UF, CO	small flake	non-local obsidian and hard-shale	Chitose Board of Education 1974; Izuho *et al.* 2012
9	Kashiwadai 1 (Block Ex 2)	Paleo-SHK	42°48’58’’N, 141°41’6’’E	Chitose R.	MUP	blw En-a abv Spfa-1	*c.* 21–25 ka cal BP (AMS)	14	32 822	microblade, flake	MC (Rankoshi), MB, BR, ES, BL, ES	microblade, flake	non-local obsidian and hard-shale, and local agate, andesite, chert	Hokkaido Center for Buried Cultural Property 2002; Izuho *et al.* 2012
10	Obarubetsu 2	Paleo-SHK	42°30’49’’N, 140°21’44’’E	Oshamanbe R.	EUP-MUP	blw Ng	>*c.* 16–17 ka cal BP (tephra)	5	1500	blade point	BP, PR, RF, FL, BL, BC	blade	siliceous shale	Hokkaido Association of Cultural Resource Management 2000; Izuho *et al.* 2012
11	Serikawa- tateato	Paleo-Honshu	40°12’06’’N, 140°09’32’’E	Yoneshiro R.	LUP	none	–	3	44	blade point	BP	blade, flake	siliceous shale	Akita Prefectural Center for Buried Cultural Property 2006a
12	Nawateshita	Paleo-Honshu	40°11’19’’N, 140°06’09’’E	Yoneshiro R.	EUP	none	–	1	2039	trapezoid	BP, TR, ES, SS, PE,	Blade, flake	siliceous shale	Akita Prefectural Center for Buried Cultural Property 2006b
13	Konokakezawa II	Paleo-Honshu	40°09’44’’N, 140°01’37’’E	Yoneshiro R.	EUP	none	–	1	1750	small flake	BP, TR, BR, AX	blade, flake	siliceous shale	Akita Prefectural Center for Buried Cultural Property 1984
14	Kamonokodai	Paleo-Honshu	40°07’03’’N, 140°00’55’’E	Yoneshiro R.	LUP	none	–	4	965	blade point	BP, BR, ES, SS, DR	blade	siliceous shale	Akita Prefectural Center for Buried Cultural Property 1992
15	Kazenashidai II	Paleo-Honshu	39°38’28’’N, 140°13’03’’E	Iwami R.	EUP	none	–	≧1	5064	trapezoid	TR, ES	flake	siliceous shale	Akita Prefectural Center for Buried Cultural Property 1985
16	Mujinazaki B	Paleo-Honshu	39°39’27’’N, 140°09’03’’E	Iwami R.	LUP	none	–	14	1774	microblade	MC (Yubetsu), MB, BR, SS, ES, TR, SS	flake	siliceous shale	Akita City Board of Education 1993
17	Jizoden	Paleo-Honshu	39°39’29’’N, 140°09’29’’E	Iwami R.	EUP	none	*c.* 29–33 ka cal BP (AMS)	14	4447	trapezoid	BP, TR, SS, ES, NO, DE, AX	flake	siliceous shale	Akita City Board of Education 2011

18	Togeyama-Bokujo I-A	Paleo-Honshu	39°17’43’’N, 140°50’50’’E	Waga R.	LUP, EUP	abv AT	(BP)>/(MB)<c. 30 ka cal BP (tephra)	Microblade 1/ Backed point 3	Micro 5/ BP 4465	microblade, blade point	MC (Horoka), BP, BR, ES, SS	blade, flake	siliceous shale	Iwate Prefectural Center for Buried Cultural Property 1996a
19	Owatari II	Paleo-Honshu	39°18’40’’N, 140°45’10’’E	Onigase R.	EUP	blw AT	>c. 30 ka cal BP (tephra)	4	>500	blade point	BP, BR, ES	blade	siliceous shale	Iwate Prefectural Center for Buried Cultural Property 1996b
20	Kamihagimori	Paleo-Honshu	39°06’13’’N, 140°57’53’’E	Isawa R.	EUP	none	c. 34–35 ka cal BP (AMS)	≧2	1,639	trapezoid	TR, AX	flake	siliceous shale	Isawa Town Board of Education 1988; Kanomata 2005

1) Site numbers correspond to Figure 2.

2) Radio = radioactivity determination; FT = fission track.

3) MB/MC = microblade/core; BP = backed/base-retouched points; SP = stemmed points; TR = trapezoids; ES = endscraper; SS = sidescraper; BR = burin; PE = pieces esquilles; NO = notchs; DR = drill; BT = beak-shaped tools; PR = perforators; DE: denticulate; BI = biface; BC = blade core; BL = blade; FL = flake; CO = core; PB = pebble; OC = ochers.

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