

Dart and Arrow Points On The Columbia Plateau

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Problem:

The timing of the introduction and spread of the bow and arrow and its replacing the atlatl are important research questions in North American prehistory. In the Northwest the accepted date is within the last 2000 years with the atlatl and bow being used together for several centuries. However Webster (198*) suggests a date in southwestern Idaho as early as 3500 b.p.

All dates are radiocarbon years ago.



Methods:

Investigating this requires distinguishing between archaeological dart and arrow points. To do this, we used discriminant functions developed first by Thomas (1978) and refined by Shott (1997). Shott found maximum width most effective. Hughes (1999) developed her own methods, including weight, tip sectional area and perimeter.

	1' throat 0.69"	High spear	Unfluted dart	Fluted dart	Bow & arrow
Weight (gms)	227	0 - 156	9 - 70	3 - 8	0 - 11
Tip section area	3.7	2.7	.67	.67	.67
Perimeter	19.48	8.2	4.8	4.8	4.8

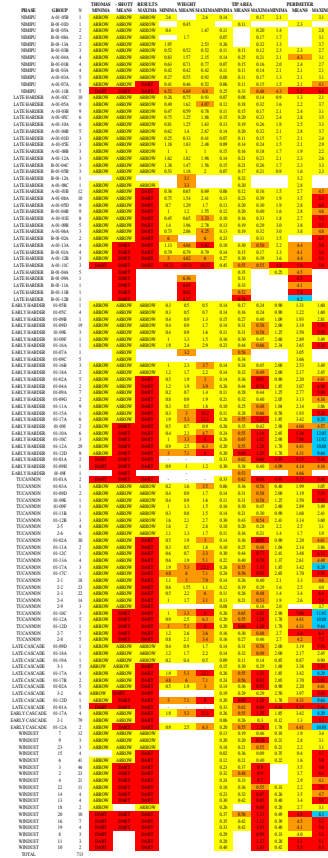
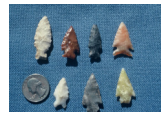
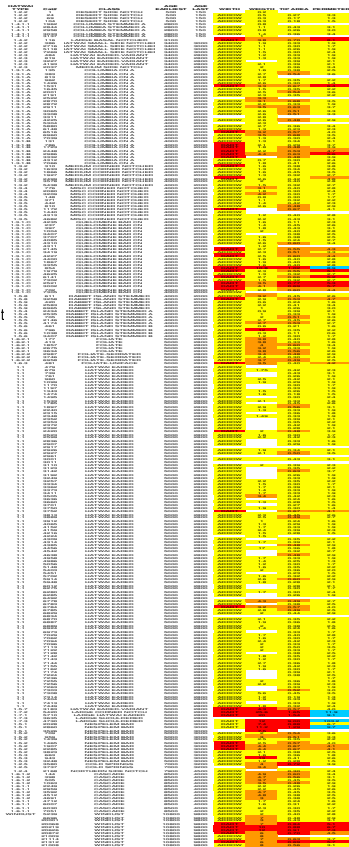
Materials:

We applied these methods to low, mean and high values from a sample (n = 274) of Early to Mid-Holocene projectile points from Hatwai (10NP143) in central Idaho and to reported projectile point assemblages (n = 713) from the Lower Snake River Region spanning the full Holocene.

Analysis	Transmittance	Weight	Tip section area	Perimeter
Arrow	Arrow	> 3 gm	> 0.67	> 4.8
Large Arrowhead	Arrow	3 - 8 gm	0.67 - 0.87	4.1 - 4.8
Dart	Dart	> 3 gm	0.67 - 0.87	4.1 - 4.8
Large Dart				> 4.1



Results: For ease of presentation results are color coded



Regional Chronology:

Regional Chronology, Sites and Sources used for this study.

Years BP	Regional Phase	Local Phase	Site	Source
1500	Windust	Windust	Windust	Yam 1976
1200	Windust	Windust	Windust	Yam 1976
1000	Windust	Windust	Windust	Yam 1976
7000	Windust	Windust	Windust	Yam 1976
2500	Windust	Windust	Windust	Yam 1976
2000	Windust	Windust	Windust	Yam 1976
1500	Windust	Windust	Windust	Yam 1976
1000	Windust	Windust	Windust	Yam 1976
5000	Windust	Windust	Windust	Yam 1976
3000	Windust	Windust	Windust	Yam 1976
2500	Windust	Windust	Windust	Yam 1976
2000	Windust	Windust	Windust	Yam 1976
1500	Windust	Windust	Windust	Yam 1976
1000	Windust	Windust	Windust	Yam 1976
500	Windust	Windust	Windust	Yam 1976

Conclusions:

- Windust points most likely arm fluted darts;
- Hatwai Cascade points are small dart/large arrow in size - probably small dart points;
- Hatwai eared points are consistently arrow points in size.
- Thus:
 - Bow and arrow was present on Plateau by the Middle Holocene, - or -
 - Plateau dart and arrow points consistently smaller than those in surrounding areas, - or -
 - The methods don't work.

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