Dart and Arrow Points On The Columbia Plateau

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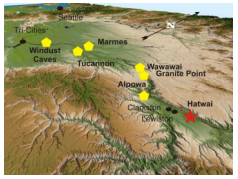
Problem:

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 atl-atl and bow being used together for several centuries. However Webster (198*) suggests a date in southwestern Idaho as early as 3500 b.p.[i]

[i] All dates are radiocarbon years ago.



Methods:

Investigating this requires distinguishing between archaeological dart and arrow points. To do this, we used discriminate 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.

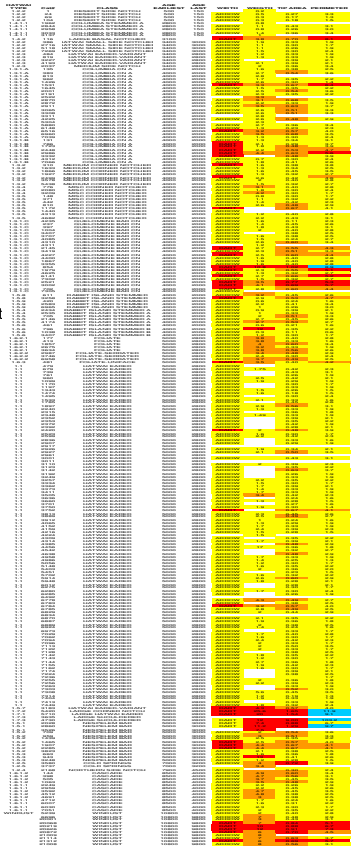
	Thrusting Spear	Hight spear	Unfletched dart	Fletched dart	Bow & arrow
Weight (gm)	227	0 – 156	9 – 70	3 - 8	0 – 11
Tip sectio solares	3.1	2.1	.67	.67	.47
Perimeter	10.48	8.2	4.8	4.8	4.0

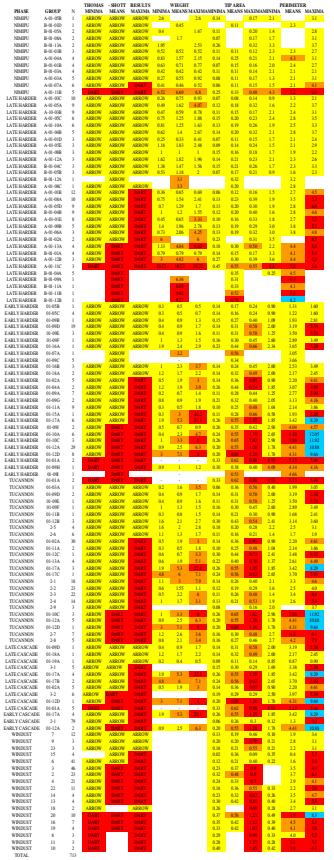
Materials:

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.

Assignment	Thomas/Shott	Weight	Tip sectio nal area	Perimeter
Arrow	Arrow	< 1 gm	< 0.47	<4.0
Large Arrow/Dart		1 –3 gm	0.48 –0.67	4.1 –4.8
Dart	Dart	> 3 gm	68 –2.10	4.81–6.9
Large Dart				>6.1

Results: For ease of presentation results are color coded





Regional Chronology:

Regional Chronology, Sites and Sources used for this study.

Years BP	Hatwai	Lower Snake River Phases	Sites	Sources
150		Rumsey	Wawawai	Yent 1976
500		Late Tucannon	Wawawai	Yent 1976
1000		Early Tucannon	Alpowa Locality	Brauner 1976
1500				
2000				
2500			Alpowa Locality	Brauner 1976
3000			Granite Point	Kennedy 1976
3500	Hatwai		Wawawai	
4000				
4500		Late Cascade	Granite Point	Leonhardy 1970
5000			Alpowa Locality	Brauner 1976
5500				
6000				
6500		Early Cascade	Granite Point	Leonhardy 1970
7000	Early Cascade		Alpowa Locality	Brauner 1976
7500				
8000				
8500				
9000		Windust	Granite Point Member	Rice 1972
9500			Windust Caves	
10000	Windust			
10500				
11000				

Conclusions:

- Windust points most likely arm fletched 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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