

ROYAL SASKATCHEWAN MUSEUM



Saskatchewan
Ministry of
Parks, Culture
and Sport

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Background Information Stone Tool Manufacture

Acquiring the right kind of stone was the first step in manufacturing stone tools and weapons. The best rocks have few flaws, so that they break cleanly and evenly. Stone suitable for working into tools occurs throughout most of Saskatchewan – in river beds, glacial till deposits, or in localized quarries. The map below shows the major source areas of siltstone, fused shale, and quartzite in Saskatchewan.



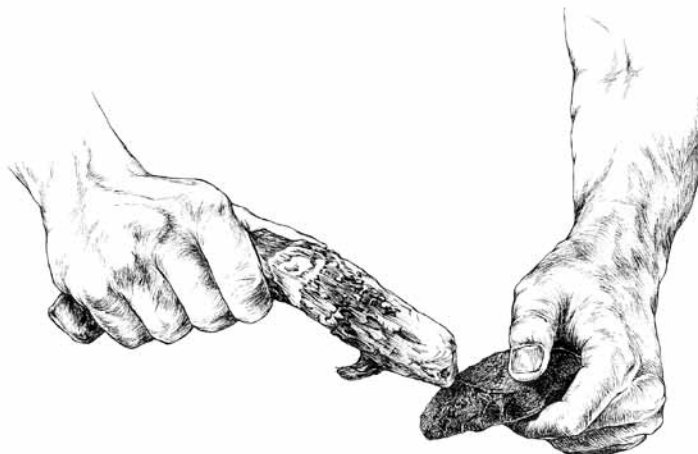
Some tools found in Saskatchewan are made of stone types which do not occur naturally in the province. These materials were highly valued because they were especially easy to make into sharp tools and weapons as a result of their high silica content. As the map above shows, Knife River flint was found mostly in North Dakota and the source of obsidian was in Wyoming. First Nations people from Saskatchewan usually obtained these kinds of stones through trade. They developed extensive trade networks that allowed them to barter for many different commodities from distant places.

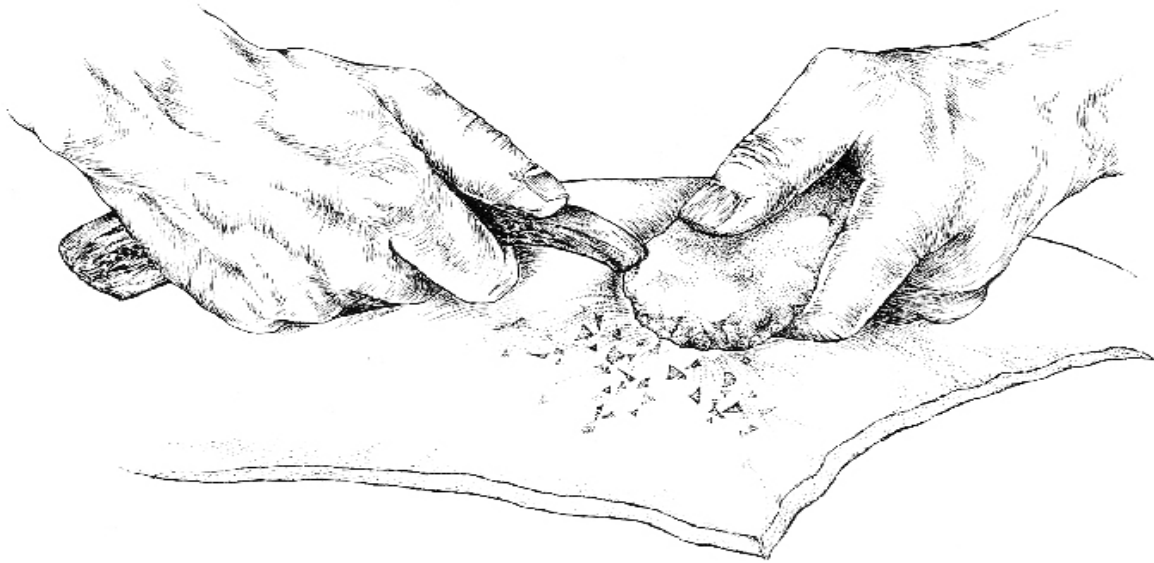
Besides knowing which rocks to use and where to find them, *flintknappers* also had to know how to strike (or *knap*) the rock to make the tool. Often the flintknapper used three different methods of stone knapping to make one tool or weapon. The three methods of stone knapping are described below:

Step One: Hard Hammer Percussion Using another stone, the flintknapper struck large flakes from a rock. These flakes could sometimes be used as simple tools without any further work. More complicated objects needed more refinement.



Step Two: Soft Hammer Percussion Using the blunt thicker end of a piece of antler (the “soft” hammer), the flintknapper struck smaller flakes from the first flake, to give the stone tool a useful or efficient shape.





Step Three: Pressure Flaking The flintknapper finished the tool by pressing tiny flakes from it using the narrow end of a piece of antler. This final step produced even, sharp edges such as those on a projectile point.

The following stone tools and weapons are in the *Stone Tool Technology* display:

1. Projectile points
2. Knives
3. Scrapers
4. Flintknapping tools
5. Used flakes

They were used for the following activities:

1. Projectile points - hunting and warfare.
2. Knives - food preparation, making clothing, cutting a variety of things.
3. Scrapers - hide preparation and woodworking.

Other tools that were made and used are as follows:

1. Hammerstone - for making tools.
2. Mauls - for pounding meat, berries, etc. and breaking bones for marrow.
3. Axes - for cutting and shaping wood.

Using Stone Tools



Breaking bison bones with a maul

Cutting hide with a stone knife



Through Time

The three precontact weapons were used during the following time periods:

Spear	12,000 to 8,000 years ago
Atlatl and dart	8,000 to 2,000 years ago
Bow and arrow	2,000 years ago to historic times

Archaeologists named the earliest First Peoples from the only evidence available – stone weapons and tools left behind. For example, the Besant culture is named for a site not far from Moose Jaw. In general, only stone and bone artifacts are found. This gives archaeologists only a partial picture of the past.

The information available on precontact cultures is fragmentary. Archaeologists gather information used to develop theories from a variety of sources. This includes recovered artifacts, pollen and plant studies, studies of animal bones, and weather patterns. Even with all this information put together, the picture is still far from complete. We may never know how societies were structured, what clothing and decoration looked like, or how people accomplished the simple chores of day-to-day living.

The following is a brief three part overview of Saskatchewan's environment and the people who lived then:

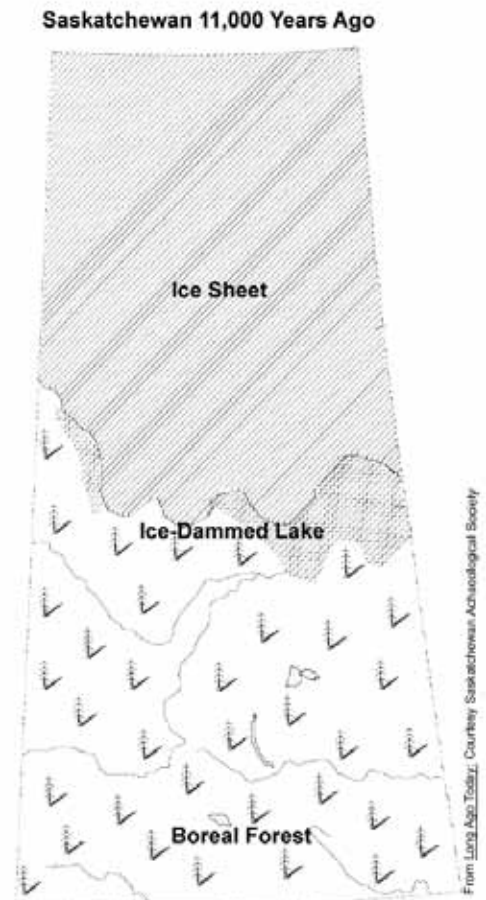
Part One: The Early Precontact Period (12,000-8,000 Years Ago)

First Evidence of Occupation - 12,000 years ago.

The only evidence of people from 12,000 years ago is surface finds of stone tools and weapons. We know very little about the people living in Saskatchewan from this date.

The Ice Age was ending. Glaciers were retreating, leaving the plains and parkland areas free of ice. Boreal forest covered most of southern Saskatchewan.

The climate was cooler and wetter. Animals such as mammoths, camels, muskox, elk, horses, and pronghorn lived in Saskatchewan. Although the giant bison (*Bison latifrons*) had become extinct before the end of the Ice Age, a smaller species (*Bison bison*) — the modern bison — did survive and was living in Saskatchewan at this time.



Pleistocene Hunters - Spears

Clovis points are the oldest projectile points found in North America. Because many Clovis points are big, archaeologists think they were used with spears. Spears were either thrown or thrust, depending on the animal being hunted and the circumstances.

Archaeologists think that some spears may have been made in two parts. A foreshaft with the point attached might have been fitted into a longer shaft. This type of spear would have worked something like a harpoon, in which the long shaft could be recovered and fitted with another foreshaft and point.

Using this weapon system, hunters could carry many foreshafts and only one long spear pole. That would have been easier than carrying many spears. Also, it took less wood to make a few small foreshafts and only one pole than it would to make many long spears.

No kill sites or living sites have been found in Saskatchewan but Paleo Indians in other parts of western North America hunted mammoth and smaller game animals. Paleo Indians would likely have made shelters of wood, bone, and leather and used a variety of plant materials, as well as animal products. They probably had domesticated dogs.

A Changing Landscape

Beginning about 10,000 years ago, the climate started to become warmer and drier. Grassland began to appear as forests receded to the north.

Many animals living in Saskatchewan changed. Some, like the mammoths, camels, and horses, died out. Others, like the caribou and muskox, moved north where their habitat still existed. Bison were becoming smaller and were beginning to live in larger herds.

Early Precontact People - Spears

The Folsom point is the next type of projectile point recognized by archaeologists. It looks different from the Clovis point in that the fluting extends all the way up the middle of the point.

Clovis and later points such as Alberta, Scottsbluff, Eden, and Agate Basin were still being used with spears.

Clovis Point



Courtesy Saskatchewan Archaeological Society

Early Precontact Points



Folsom



Hell Gap



Agate Basin



Alberta



Scottsbluff



Eden

From Long, Age, Tobias, Courtesy Saskatchewan Archaeological Society

Sites in Saskatchewan from this early period show that people were hunting and eating bison. Some archaeologists believe communal hunting began during the early precontact period. The Fletcher Site in Alberta is one example. Hunters surrounded a small herd of bison at a slough; the water and mud slowed the bison's escape long enough for the hunters to spear them.

Bison Hunt at the Fletcher Site



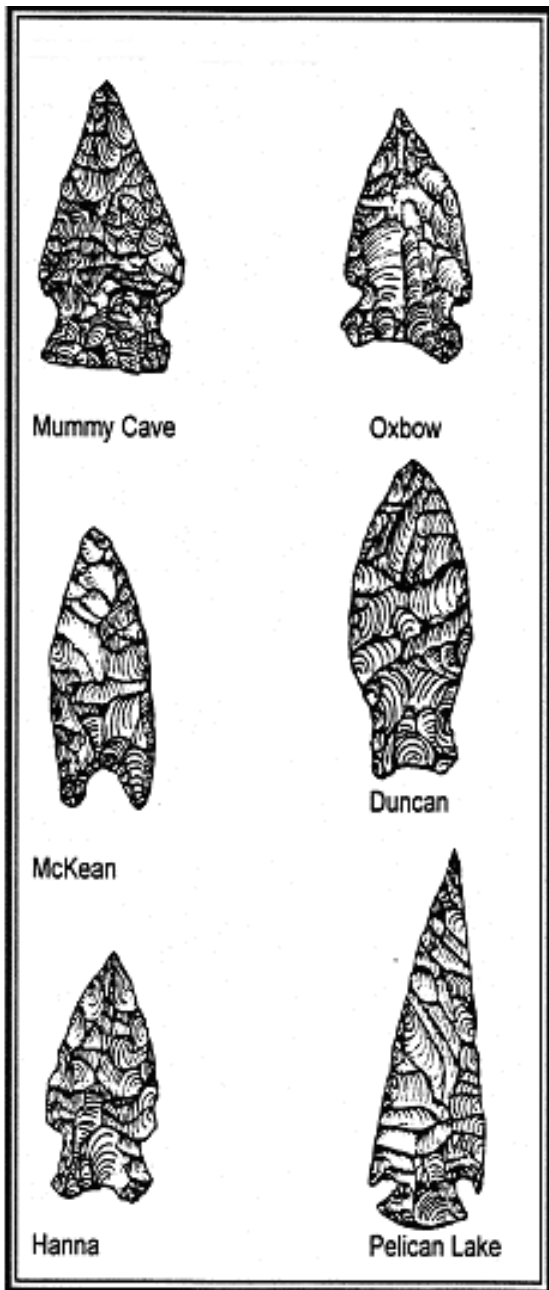
Part Two: The Middle Precontact Period (8,000-2,000 Years Ago)

The climate continued to become warmer and drier. This trend lasted about 2,000 years. By 3,000 years ago, Saskatchewan looked much as it does today.

Some archaeologists believe this warmer drier climate affected the lifestyle of aboriginal people. They have found tools such as mortars that suggest the people might have been eating more plant material and smaller animals. However, no one is sure how the warmer drier climate affected the bison herds that were so important to these people. We do know their weapons changed a lot.

Middle Precontact Hunters - Atlatls and Darts

The atlatl (or throwing stick) and dart is the technology that archaeologists use to mark the beginning of the Middle Precontact Period.



Middle Precontact Points

Darts were smaller than spears. They also had feather fletching on the end to help them fly straighter. Hunters used the atlatl to throw the dart. The atlatl acted to lengthen the thrower's arm, enabling him to throw the dart farther and faster.

Because darts were smaller than spears, dart points also had to be smaller. This is one way archaeologists can differentiate between dart points and spear points.

The atlatl and dart weapon system had some important advantages over the spear. The hunter did not have to get as close to the animal being hunted, yet the weapon was powerful enough to kill large game. It was more efficient than a spear for killing animals such as deer, pronghorn, and bison. Atlatls and darts also used less wood. Some archaeologists think that as the climate became warmer and drier, wood suitable for manufacturing weapons became scarce.

Archaeologists don't know how atlatls were introduced. The Aztecs used them, so they may have spread from the south or they may have been invented elsewhere. Either way, the atlatl and dart became the weapon of choice.

The Besant people were the last dart-throwers on the Plains. They were excellent bison hunters and the first to use the *buffalo pound*.

Part Three: The Late Precontact Period (2,000-300 Years Ago)

Late Precontact Hunters – Bows and Arrows

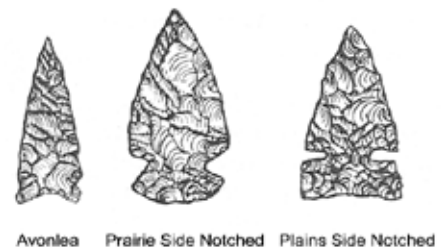
By the end of the Middle Precontact Period, Saskatchewan's natural environment looked much as it would when the fur traders arrived.

Even without changes to the environment, new tools and weapons appeared on the grasslands 1,500 years ago.

At this time, people began to make and use pottery. The first potters we know of in Saskatchewan were the Besant people, who were still using atlatls and darts.

While the Besant people were still living in Saskatchewan, a new culture appeared on the Plains. The Avonlea culture (named for a site close to the town of Avonlea, Saskatchewan) was the first to make the tiny points associated with bows and arrows. Archaeologists do not know if the Avonlea culture came from new people moving into the area, or if the Besant people adopted a new technology.

Late Precontact Points



Bows and arrows have advantages over atlatls and darts. They are smaller, use less wood, and are easier to carry. Expert hunters could load and shoot arrows faster than darts; they could also shoot prey with greater accuracy from greater distances than was possible using atlatls. Finally, arrows can be shot from a variety of positions – standing, kneeling, or crouching. Darts can only be thrown from a standing position.

When the Plains people started using the bow and arrow, the environment was not changing. They either invented this new technology or learned about it from other people. Either way, bows and arrows were such efficient weapons that they were used for certain types of hunting long after the Plains people had access to guns. One very good example of this is the use of the bow and arrow in both buffalo pounds and for the buffalo chase from horseback. Muzzle-loading guns took longer to load and shoot than bow and arrows. Guns were not very accurate and would often misfire. Only breech-loaded rifles were more deadly than bows and arrows.



Further Study:

1. Find other examples of cultural change for First Nations people in Canada. Examples might include the fur trade, epidemics, modern environmental changes, and political changes such as land settlements and self-government.
2. Search through newspapers and magazines for examples of changes that our culture might have to deal with or that are issues now. Examples might include climate change.
3. Research examples of inventions and innovations that have affected North American culture. Examples might include the Model T Ford, penicillin, atomic bomb, mass air travel, electric light bulb, and the computer. Put these on a scale to show how greatly they have changed our lives. Have these changes all been for the better?
4. The work of archaeologists can be studied. How do they carry out a dig? What do they do with the artifacts?