# Contributions from the Wally's Beach Site, Alberta

Brian Kooyman
Department of Archaeology, University of Calgary, Calgary, Alberta, Canada
bkooyman@ucalgary.ca

## Introduction

The Wally's Beach site (DhPg-8) is located in the St. Mary Reservoir in southwestern Alberta, about 180 km south of Calgary and 10 km northeast of Cardston. Leonard (Len) Hills is one of the principle investigators at the site, along with Paul McNeil, Shayne Tolman, and Brian Kooyman, and has been instrumental in bringing the site's unique record to the attention of the broader scientific community. The discoveries at Wally's Beach are a tribute to Len's unwavering pursuit of myriad leads in geology, archaeology, botany, zoology, and paleontology that have made our knowledge of western Canada so much richer.

## Results

The Wally's Beach site material is exposed over roughly a two square kilometre area. Erosion in the reservoir basin has uncovered large quantities of palaeontological and archaeological remains. Archaeological material, discovered as artifacts exposed on the surface due to erosion, spans the entire archaeological sequence in Alberta, including temporally diagnostic artifacts ranging from historic period metal trade arrow points through to 11,000 year old Clovis spear points. AMS radiocarbon dates on extinct bison, horse, and musk ox and extant caribou place the earliest finds between 11,000 and 11,300 radiocarbon years ago. Particularly prominent features of this early portion of the site are hundreds of individual footprints, numerous trackways, and extensive trample grounds of extinct mammals such as mammoth (probably *Mammuthus primigenius*), camel (*Camelops hesternus*), and horse (*Equus conversidens*). Co-mingled tracks provide exceptional evidence of species contemporaneity at a geological instant in time, as well as aspects of animal behaviour such as young animals walking alongside older animals. The mammoth population, based on footprint size distributions, shows a relative absence of young animals suggesting a population in decline. Animal bones recovered include a wide variety of species such as extinct horse, extinct helmeted musk ox (*Bootherium bombifrons*), extinct bison (*Bison antiquus*), modern bison (*Bison bison bison*), and caribou (*Rangifer tarandus tarandus*). These remains provide data on paleoenvironmental conditions at this time, as do phytolith remains from a 10,000 year old paleosol that caps the earliest deposits. Artifacts recovered in direct association with the extinct animal bones are rare, but indicate that the musk ox and some of the horses were exploited by people. Evidence of human use of other late Pleistocene species is also present. Locations and associations of faunal remains provide evidence of some aspects of the hunting strategy employed by these early people, in particular that hunting probably involved ambushing of individual animals near easy access points to the St. Mary River valley. Species represented in the early site remains include only animals present south of the ice sheets during the Wisconsin glacial maximum. The absence of post-glacial southwards moving species suggests that the fauna at the site, including the humans, arrived here prior to the opening of a biologically usable ice free corridor along the eastern Rocky Mountains. This has significant implications for the initial migration of humans to the Americas.