

# NATURE'S

## Grapevine

WASHINGTON CROSSING STATE PARK, NJ

Winter 2016

### The Ice Age in Central New Jersey (Part 1)

By  
Jim Wade

I'd like to take you on a journey today, back in time to the end of the last Ice Age, 10,000 - 12,000 years ago, when the earliest Native American peoples entered what is now New Jersey. I want you to try and imagine what it was like, right here at the WCSP Nature Center, at the end of the last ice age. If you were to walk outside the doors here; you wouldn't see the parking lot or the open pavilion with tables where people go to sit and have their lunch, or the surrounding forest of mixed canopy deciduous and evergreen trees, with its many hiking trails and nature walks. What you would observe is an incredibly cold, barren, wind-swept landscape of snow and ice with scattered isolated open stands of spruce and pine trees. The landscape would be intermittently covered with park tundra vegetation such as lichens, mosses, low growing sedges, and grasses spread out in an irregular dispersed fashion. Here and there, dotted along the shallow south-facing slopes and rising hillocks the ground would be sporadically exposed from the rare, warming rays of the sun. These spots would occasionally harbor other cold-enduring trees, such as dwarf birch and arctic willow.



American Mastodon



Musk-Oxen

This exposed harsh wintry landscape stretched year-round across most of the Middle Atlantic continental shelf and much of the Northeast. In fact, the coast-line of present-day New Jersey, New York, New England, and the Delaware extended much farther east, up to 60 to 80 miles, 10,000 - 12,000 years ago, as much of the planet's water was trapped on continental landmasses in the form of glacial ice. The broad and slightly undulating exposed continental shelf was contiguous with the coastal plain, and was interrupted by deep river canyons. The largest of these were created by the Hudson and Delaware Rivers, which extended much further south and east than they do today.

In front of us, where the Nature Center's open-air pavilion will one day stand, are a group of four to five mastodons. They have separated from the larger mastodon herd which is peacefully grazing on the tundra vegetation further to the west, down the irregular slope near a frozen river, which in the future, will be known as the Delaware. This small group of mastodons has wandered closer to the future location of the Nature Center enticed by the occasional stands of spruce, pine and birch trees, nibbling and foraging on evergreen branches, twigs of spruce, pine needles, shoots of birch leaves, ground brush, and tundra shrubs. These large, densely fur-covered mastodons stand eight to ten feet high, having straight backs and weighing up to for to five tons. They have low, single dome heads, their ear's are probably small and up-right, and not having the wide folding flaps of skin like those of modern-day elephants. They had medium size



tails, and sometimes two pair of ivory tusks, probably used for defense from other mastodons and predators. They could also use their tusks to move snow and ice and dig in the frozen ground for succulent tasting roots. These tusks are also used for displays of prowess and strength, during the mating season.

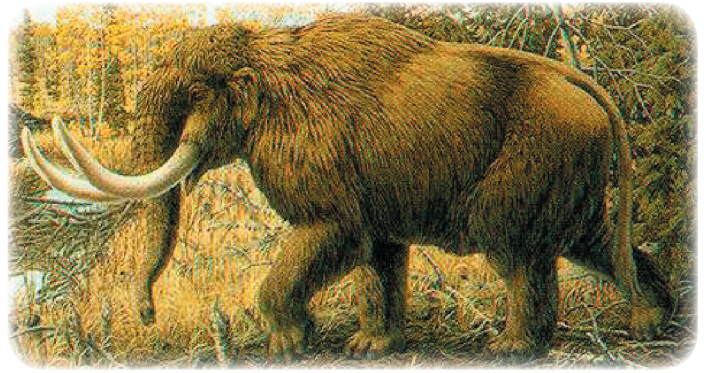
If we were to venture forth, and forge our way north, through the wind-swept snow, traveling down the shallow slopes and up the rising ground toward what will be known one day, as Baldpate Mountain, our attention is drawn to the right. We take notice in the bottom slope declivity, the future Fiddlers Creek stream ravine, of some dark brown, long-haired, hoofed creatures, 20 to 30 herding musk-oxen. They have taken momentary refuge here from the periodic punishing arctic-like winds, to re-group. The musk-oxen averages about eight feet in length, and stands five feet at the shoulders, having downward curving horns, with upturned tips. A light snow covers their backs, as steam of condensation rises from their snouts in the brisk, wintry air.



**Giant Ground Sloth**

As we continue to trudge our way north and northeast, we come to a long, low ridge of hills, stretching in roughly a northeasterly and southwesterly line, known today, as the Sourland Mountains. We come to stand on the highest point of the hills, at 568 feet, in the vicinity of today's Long Hill and Zion Road. There, spread before us, is a grand view of the western edge of the East Amwell Valley, and the expanse of the future Raritan River, rolling eastward toward the sea. The valley is home to a variety of different groups of animals, such as elk, ground sloth, mastodon, prehistoric horses, caribou, peccary, giant beaver, and whitetail deer. Other animals are also abundant, such as wolves, bears, mountain lions, fox and rabbits.

Looking to the north, on the far side of the valley, and gazing across the frozen future Raritan River, we see a sizable herd of woolly mammoth congregated along a sheer, irregular wall of pack ice, all of two miles thick in height. This is the terminal morrain, the leading edge of the ice age glaciers, its most southerly extent being near Rahway, N.J. These uneven, protru-



**Woolly Mammoth**

sions and receding walls of ice, extended westward, to the vicinity of today's Delaware Water Gap, in Warren County, N.J. The Woolly Mammoths have been drawn here, favoring the sedges, grasses, and other low-lying plants that cling to the sparsely exposed ground, at the base of the glacial ice. These creatures stand nine to eleven feet tall, sometimes reaching twelve feet in height. They can extend up to sixteen feet long, and weigh between four and six tons. They have sloping backs, high single dome heads, very small ears, and short tails. Their bodies are covered in thick, dense, dark brown, sometimes reddish hair and fur. They display long extended ivory tusks, sometimes curved and twisted in length. Little do these peacefully grazing, mammoths know, that their world was about to be disrupted forever by a new, and fierce two-legged predator, called man. This formidable, ice-covered landscape, to be known one day, as New Jersey, sets the stage onto which humanity first enters.

(Part 2 of this story, will be continued in the 2017 Winter issue of Nature's Grapevine)

#### References:

Dickey, Norma H. (Ed.). (1992). *Funk & Wagnalls New Encyclopedia*, (vols. 16 - 17). Funk & Wagnalls L.P.

Kraft, Herbert C. (2001). *The Lenape-Delaware Indian Heritage: 10,000 B.C. - A.D. 2000*. Lenape Books.

Lister, Adrian and Bahn, Paul (1994). *Mammoths*. New York, NY: Prentice Hall.

Jim Wade worked as a field archaeologist and archaeological field assistant at several Indian sites throughout Central New Jersey. Mr. Wade also worked as an archivist with the N.J. State Museum documenting Native American land holdings in New Jersey from the 17th & 18th centuries. He is a frequent volunteer at WCSP where he assists with our Native American and primitive technology events. Mr. Wade is available for talks and demonstrations to groups. His e-mail address is: red9hawk@aol.com.

## Volunteer Notes

**Jim Wade**, Princeton, delivered two great Native American presentations at the WCSP Nature Center this past autumn. "In Search of Shale" described the stone quarrying practices of the local Native Peoples with respect to primitive stone tool making industries. "Native Americans of the Area of the Park" detailed the autumn activities of the Lenape People as they related to the harvest season and the people's preparations for winter. Mr Wade will return on Sunday February 7, at 1:30 to discuss the local Paleo Indians. Also, please note that Mr. Wade authored the feature article enclosed in this current edition of our newsletter.

**Bill Murray** of the **Amateur Astronomers Assn. of Princeton** delivered a very informative four-session seminar in astronomy last September and October.

**John Waltz**, Belle Mead, did a great job organizing and managing our annual Primitive Technologies Weekend event in October. We also would like to thank all of the dedicated volunteer demonstrators that participated in that event.

**Nettie Rekowski**, Ewing, and **Barbara Henderek**, Titusville, came out to staff the Nature Center during programs and to assist with housekeeping chores.

**Paul Moran**, Allentown, NJ, **Brad Koller**, Belvidere, and **Kevin Kavanaugh**, Ewing, all came out to assist with various grounds and trails projects. Mr. Koller and Mr. Kavanaugh also conducted our kayaking workshop last August.

**The Washington Crossing Park Assn. of NJ** has been assisting with grounds and trails work.

**Ben and Jean Strauss**, Titusville, **Ellen Coleman**, Ewing, **Paul Moran**, Allentown, NJ, and **Al Fittipaldi**, Titusville all helped out with our Holiday Wreath Making program.

### AROUND THE PARK

☼ WCSP was the recipient of a Native American artifact collection from the estate of Mr. Louis Belli (late) of Titusville. The collection consists of over 100 stone projectile points, two full-grooved stone axes and a portrait of a Lenape man. The collection includes a fairly rare and ancient fluted Hardaway Dalton projectile point. The Belli collection will be housed at the Nature Center. The portrait has been installed with the facility's "Changing Landscape" exhibit.

☼ We will be repeating our Cross-country ski workshops from last winter on this coming January 17 and February 21 at 1:30 at the WCSP Nature Center. The programs will cover the fundamentals of cross-country skiing including equipment, clothing and where to ski. The 60-90 minute indoor presentations will be followed by a basic ski lesson if the ground is snow covered. The presentations will be conducted by state park seasonal employee Kevin Kavanaugh, Ewing, and Daniel Nurmi McAuliffe, Langhorne. The workshops are free and advanced registration is required. See the enclosed program schedule for further information.

☼ Scouts, school groups, home school groups and community groups from the Bucks County area, Lawrenceville, Hamilton, Princeton, Jackson Twp. and Hopewell Twp. visited the WCSP Nature Center this past autumn. The variety of programs provided to these folks included Natural Dyes, Growth of a Tree, Trail Hike, Wildlife of NJ, Lore of the Lenape, Rocks in the Making and Compass Basics. Teachers, scout leaders and other group leaders should contact us if they are interested in a winter or spring visit for their classes and groups.

This newsletter is available free of charge electronically . It can be downloaded at the web address below. Requests to be included on the emailing list may be made by contacting the Nature Center.



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Titusville, New Jersey 08560-1617

**Phone**.....(609) 737-0609

**Fax**.....(609) 737-0627

**Email**.....wcpcsr@comcast.net

**Hours**..... Wed - Sat 9:00 a.m. - 4:00 p.m.  
Sun 12:00 p.m. - 4:00 p.m.  
Closed Mon and Tues

**Website**.....[www.state.nj.us/dep/parksandforests/parks/washcros.html](http://www.state.nj.us/dep/parksandforests/parks/washcros.html)

**Park Naturalist  
& Newsletter Editor**.....Wayne Henderek



## Winter Programs at the Nature Center

The following is a list of activities being offered through the Nature Center at Washington Crossing State Park in Titusville, New Jersey. Some programs will require advanced registration as indicated below. Attendance is always limited and is available on a first-come, first-served basis. Programs will commence at the Nature Center unless otherwise indicated. An adult must accompany all children. In the event of inclement weather some programs might be canceled. It is always advisable to call ahead before coming out. These events are intended for families and individuals only. Programs for scouts, schools and other groups are scheduled separately by special arrangement. **Phone : (609) 737-0609**

**NATURE VIDEO** Saturday January 2, 12:45 p.m. *Living with New Jersey Black Bears* This intriguing video provides an inside look at one of the state's most interesting wildlife species and gives some clues on how to safely share the landscape with these animals.

**NATURE VIDEOS** Saturday January 9, 12:45 p.m. *The Highlands Rediscovered* focuses on the rich natural history and the water resources in northern New Jersey. *Turning the Tide*. This half-hour documentary showcases the hidden beauty of the tidal areas in and around the Hackensack Meadowlands of northern New Jersey and the Hamilton-Trenton Marsh just south of the state capital of Trenton.

**BALDPATE MOUNTAIN HIKE** (pre-teen – adult) Sunday January 10, 1:30 – 4:00 p.m. We will take a county park trail from its trailhead near Church Rd. to the top of the hill. Meet at the parking lot by Niederer's Pond (Church Rd). Advanced registration required. Bring a water bottle and wear hiking shoes.

**NATURE VIDEO** Saturday January 16, 12:45 p.m. *From Poles to Tropics*. The Earth as a whole is considered with a view towards the main factors that have manipulated the planet's natural history.

**CROSS-COUNTRY SKI WORKSHOP** (pre-teen – adult) Sunday January 17, 1:30 p.m. In this workshop, the participants will learn about the different types of cross-country ski equipment that are available and what to look for in selecting your first pair of skis. Other topics will include: how to dress and where to go skiing in New Jersey. The indoor lesson will last 1 -1.5 hour. If the ground is snow covered, an additional 1+ hour outdoor ski lesson will be offered. Participants will have to provide their own ski equipment for the outdoor lesson. Call the Nature Center to obtain equipment rental information. Advanced registration required. The workshop will be co-taught by Kevin Kavanaugh, Ewing and Daniel Nurmi McAuliffe, Langhorne.

**NATURE VIDEO** Saturday January 23, 12:45 p.m. *Forests*. From the evergreen forests of the frozen North to the deciduous dry forests of the tropics, these woodlands illustrate the intense seasonality of the Earth. As the tallest, largest and oldest organisms on the planet, trees are home to a fascinating range of wildlife.

**NATURE VIDEOS** Saturday January 30, 12:45 p.m. *The Poles*. The advance and retreat of polar ice is the real challenge to life. In Antarctica all animals flee except the emperor penguin. Meanwhile, in the Arctic, the polar bear must swim long distances to obtain food. Learn how wildlife survives in some of the most challenging places on the planet.

**NATURE VIDEO** Saturday February 6, 12:45 p.m. *Mountains*. This tour of our mightiest mountain ranges will start with the birth of a mountain at one of the lowest places on earth and will end at the summit of Everest. Some of the most reclusive creatures on the planet will be discussed and their the secrets of survival will be revealed.

**THE PALEO AND ARCHAIC INDIANS OF NEW JERSEY** Sunday February 7, 1:30 p.m. **Jim Wade**, former archivist and researcher with the N.J. State Museum will take participants on a journey back to the time of the last ice age, when the earliest Native American peoples entered what is now New Jersey. Discover how these Paleo-Indians lived and survived in an arctic landscape filled with strange, prehistoric fur-covered animals like the woolly mammoth, great elk, and musk oxen. Learn how the earliest people adapted to their harsh environment and hunted with specialized Clovis spear points. See how these prehistoric hunters opened the way for new bands of Archaic peoples who followed, with new innovative stone tools and lifestyles. The program will include a slide presentation and Native American artifacts will be on display.

(more events, next page)

(Nature Center events continued)

**NATURE VIDEO** Saturday February 13, 12:45 p.m. *Fresh Water Environments*. Follow rivers as they drop from their highland sources. This video documents the unique wildlife found within the Earth's fresh water habitats.. The world's waterfalls, canyons, lakes, wetlands and rivers provide mystery, excitement and awe-inspiring sights.

**NATURE VIDEO** Saturday February 20, 12:45 p.m. *The Seas*. Follow a pair of humpback whales from coral reefs to storm-laden polar seas. Marine ecosystems of great contrast and surprise will be revealed.

**CROSS-COUNTRY SKI WORKSHOP** (pre-teen – adult) Sunday February 21, 1:30 p.m. In this workshop, the participants will learn about the different types of cross-country ski equipment that are available and what to look for in selecting your first pair of skis. Other topics will include: how to dress and where to go skiing in New Jersey. The indoor lesson will last 1 -1.5 hour. If the ground is snow covered, an additional 1+ hour outdoor ski lesson will be offered. Participants will have to provide their own ski equipment for the outdoor lesson. Call the Nature Center to obtain equipment rental information. Advanced registration required. The workshop will be co-taught by **Kevin Kavanaugh**, Ewing and **Daniel Nurmi McAuliffe**, Langhorne.

**NATURE VIDEO** Saturday February 27, 12:45 p.m. *Tropical Forests*. These forests are among the world's most productive ecosystems due to their long growing season and little seasonality. This video will explore the ecosystem's layers from forest floor through the canopy.

**MAPLE SUGARING** (All Ages) Saturday March 5, 1:00 – 2:30 p.m. This event is a participatory demonstration in the procedures of home maple sugar production. Advanced registration required.

**MAPLE SUGARING** (All Ages) Sunday March 6, 1:30 – 3:00 p.m. This event is a participatory demonstration in the procedures of home maple sugar production. Advanced registration required.

**MAPLE SUGARING** (All Ages) Saturday March 12, 1:00 – 2:30 p.m. This event is a participatory demonstration in the procedures of home maple sugar production. Advanced registration required.

**MAPLE SUGARING** (All Ages) Sunday March 13, 1:30 – 3:00 p.m. This event is a participatory demonstration in the procedures of home maple sugar production. Advanced registration required.

**WINTER BIRDS OF THE PARK** (All Ages) Sunday March 20, 1:30 - 3:00 p.m. Come join veteran birder **Franta Broulik** of **Washington Crossing Audubon** as we walk the trails in search of a variety of winter bird species and perhaps some early spring migrants. Advanced registration required.

## Winter Programs at the Visitor Center Museum (609) 737-9303

**HISTORY VIDEO** Saturday January 2, 2:00 p.m. *New Jersey Legacy: Fortunes in Furs & The Two New Jerseys*. Parts 1 & 2 of this outstanding series of ten half-hour programs interpret the many layers of New Jersey history.

**HISTORY VIDEO** Saturday January 9, 2:00 p.m. *New Jersey Legacy: Royal Rule and Religious Revival & The Republican Rebellion*. Parts 3 & 4 of this outstanding series of ten half-hour programs interpret the many layers of New Jersey history.

**HISTORY VIDEO** Saturday January 16, 2:00 p.m. *New Jersey Legacy: Monopolies and Machines & Vistas of Democracy*. Parts 5 & 6 of this outstanding series of ten half-hour programs interpret the many layers of New Jersey history.

**HISTORY VIDEO** Saturday January 23, 2:00 p.m. *New Jersey Legacy: A State of Many Nations & Technology in the Garden*. Parts 7 & 8 of this outstanding series of ten half-hour programs interpret the many layers of New Jersey history.

**HISTORY VIDEO** Saturday January 30, 2:00 p.m. *New Jersey Legacy: The Progressive Banner & The Suburban State*. Parts 9 & 10 of this outstanding series of ten half-hour programs interpret the many layers of New Jersey history.

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(Visitor Center events continued)

**HISTORY VIDEO** Saturday February 6, 2:00 p.m. *The Revolutionary War: Birth of A Nation*. Volume I of the Discovery Channel's production of The Revolutionary War discusses the early battles and the Declaration of Independence.

**HISTORY VIDEO** Saturday February 13, 2:00 p.m. *The Revolutionary War: Victory or Death*. Volume II of the Discovery Channel's production of The Revolutionary War discusses the pivotal Christmas Night crossing of the Delaware, Benjamin Franklin, Baron Von Steuben and John Paul Jones.

**HISTORY VIDEO** Saturday February 20, 2:00 p.m. *The Revolutionary War: The Climactic Battle*. Volume III of the Discovery Channel's production of The Revolutionary War discusses Benedict Arnold, the war in the south and the Victory at Yorktown.

## Winter Programs at the Johnson Ferry House (609) 737-2515

**WINTER FOODWAYS CLASS** Saturday January 23, 10:00 a.m. - 4:00 p.m. Colonial cooking on the open hearth with Susan McLellan Plaisted of Heart to Hearth Cookery. This is a unique hands on all day class. Warm, educational, fun and a full meal that you prepare. It is a great way to spend a Saturday in January. Fee is \$70 which includes all equipment and the foods. Please call 215-219-9542 to register.

**GEORGE WASHINGTON'S BIRTHDAY CELEBRATION** Sunday February 21 from 1:00 p.m. – 4:00 pm. A host of activities including 18th century music in the parlor, FAQ's about our first president, history and baking of gingerbread, colonial education, toys and games, woodworking, etc. No fee. \$5 donation suggested. Refreshments of punch and gingerbread. Call 609-737-2515 for more information.

