NEWS
Florida Fossil Hunters

Florida Prehistorical Museum, Inc.
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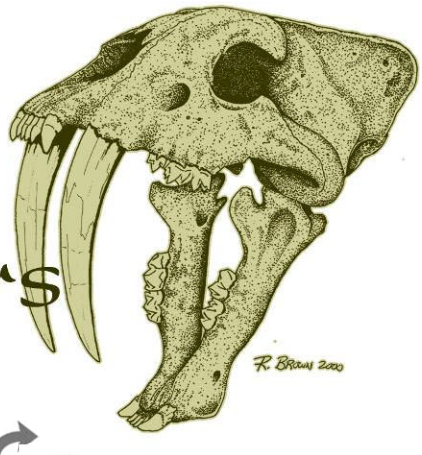

From Ye Olde President

Hello and welcome all FFH Members,

Happy holiday and New Years 2024.
It's time again to renew your membership for 2024.
See page 2 for more information on how renew.

We had 21 members attend FFH Annual Christmas party. Lots of fun and food and want to thank Dave Dunaway for hosting the Christmas party at his house. The auction was fun and every member won great auction items. The auction raised 80,000 fossil bucks.

The **FFH 2024 OSC schedule** is confirmed. FFH will have 9 meeting at the OSC for 2024 and the 2024 Fossil Fair has been scheduled. *See the last page for the full schedule.*

Paleontology for Kids programs will be active at all meetings from 2pm to 3pm. I would like to thank Laurie and Francesca for their hard work and dedication with making Paleontology for Kids a success.

January Meeting: Our guest speaker for January meeting will be Bill Heim. Topic of discussion will be about Geologic Time Periods and Punctuated Equilibrium"

February Meeting: Fossil swap and show and tell.
All members bring in fossils to swap, trade or sell to fellow members.

Learn more on page 2 about the upcoming meetings!

Salvatore Sansone
FFH President

Coming Events

UPCOMING MEETINGS
at the Orlando Science Center

FFH meeting at OSC
Saturday, January 20th
2pm Paleontology for Kids
3pm Meeting

FFH meeting at OSC
Saturday, February 17th
2pm Paleontology for Kids
3pm Meeting

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www.floridafossilhunters.com

MEETING SCHEDULE
2024
On Page 8

2024 FOSSIL FAIR
Save the Date
October 19 & 20

RENEW TODAY
2024 Membership
Online/Mail/Mtg Pg 2

MEETINGS & MORE

Our Upcoming Meetings

January 20th Meeting: Our guest speaker for January meeting will be Bill Heim. Topic of discussion will be about Geologic Time Periods and Punctuated Equilibrium"

"Punctuated equilibrium is the idea that evolution occurs in spurts instead of following the slow, but steady path that Darwin suggested. Long periods of stasis with little activity in terms of extinctions or emergence of new species are interrupted by intermittent bursts of activity."

February 17th Meeting: Fossil swap and show and tell. All members bring in fossils to swap, trade or sell to fellow members. Members bring their favorite fossils and share their stories with all members. Something new to have more interaction among the members.

Regular Meetings held at the Orlando Science Center. *Unless otherwise noted. Admission and parking is FREE to attending members. At the garage & ticket counter inform them you are there for the meeting.*

PALEONTOLOGY FOR KIDS
Every OSC Meeting; 2:00-3:00pm

Kids' Fossil Blast is an informal, hands-on experience aimed at kids ages 5 to 14.

REGISTER/RENEW

Membership options

- Family memberships cost $25
- Individual membership will cost $20

3 OPTIONS

RENEW NOW ONLINE!

Mail in the form on pg 7 or renew at the meeting.

https://floridafossilhunters.com/membership

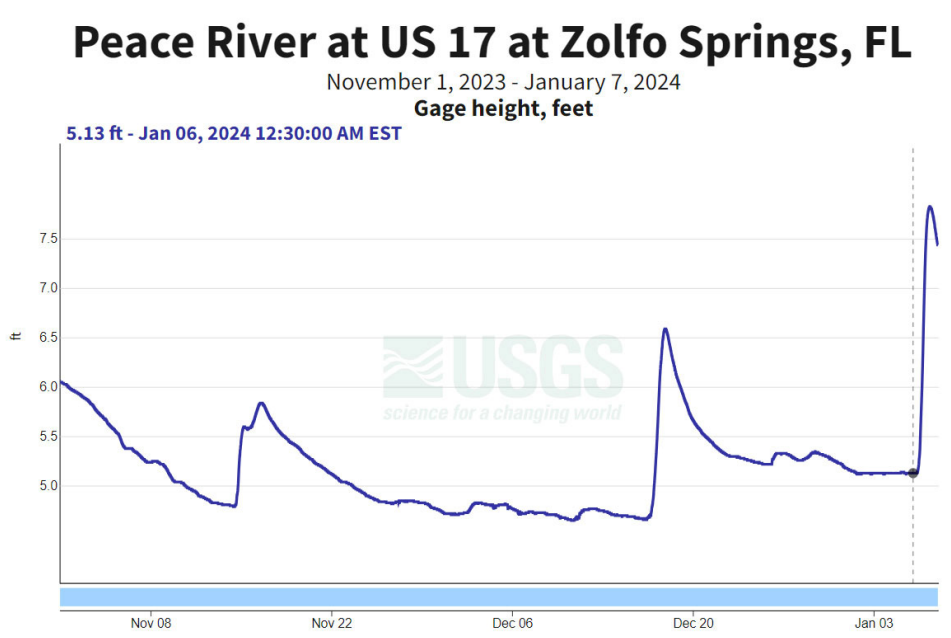
Florida Fossil Hunters Memberships supports

- Monthly Meetings with speakers, auctions, fossil sharing and a kid's program
- Field trips
- School and community outreach
- Organize Fossil Fair for 30 years
- Manage Florida Fossil Hunters Facebook group that boasts more than 20,000 enthusiasts.
- Newsletter and website communications
- A stellar reputation with Central Florida science centers and museums... with our support of their events, Fossil collections to display, and community engagement.

PIECE ON THE PEACE

Want the most current height?
Visit floridafossilhunters.com and click on the easy **Peace River Gauge** button in the sidebar or under the Resources tab for the latest water level data or visit the USGS website directly.

PEACE RIVER AT US 17 AT ZOLFO SPRINGS, FL



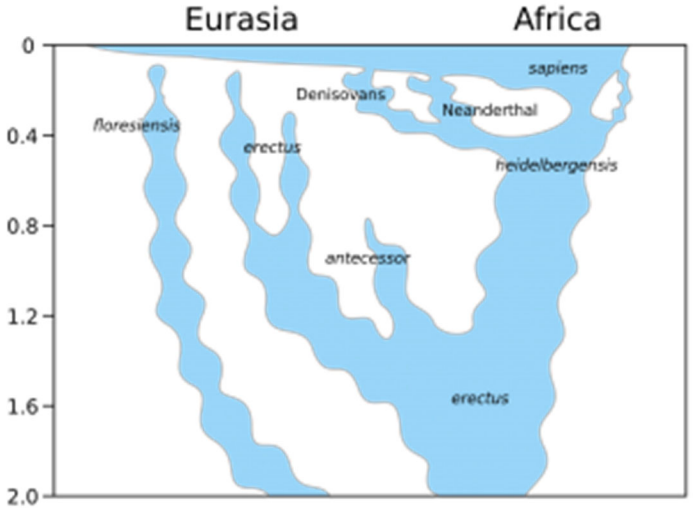
THE 2 MILLION YEAR MELEE: NEANDERTHALS VS. HUMANS

BY KYLE FRISCHKORN | MAY 8, 2016

Forget this image," says Dimitra Papagianni, pointing at the depiction of human evolution projected behind her: an ape crouched on all fours, followed by the early hominids carrying rock tools and spears, walking ultimately to the modern human form. While the image is iconic, Papagianni explains that the casual saunter from species to species doesn't do justice to the 2-million-year epic story of how modern humans beat out their Neanderthal cousins to survive and thrive in the bitterly cold lands of modern day Europe.

Last Wednesday, Papagianni, a researcher from the Centre for Archaeology of Human Origins at the University of Southampton, gave the inaugural seminar for the newly minted Center for Climate and Life at Columbia University and the Lamont-Doherty Earth Observatory. In her talk, titled "The Neanderthal Paradox," she explained the differences between the Neanderthals, a species that went extinct, and the ancient humans, our tropical-adapted forebears that would defy all odds and usurp Neanderthals as they migrated from Africa and into the chilly north. It was a talk that wove together culture, climate change, genetics and evolution. Overall, it was an apt introduction to usher in this new division of Climate and Life.

Though they were closely related, Neanderthals and ancient humans were different species. Papagianni compared the skull of a Neanderthal to that of a human. The difference is clear. "Think of the skull of a human as a soccer ball, and the skull of a Neanderthal as a football," she says. This sports analogy goes a step further. Like a soccer player, humans are lean and well-suited to running.



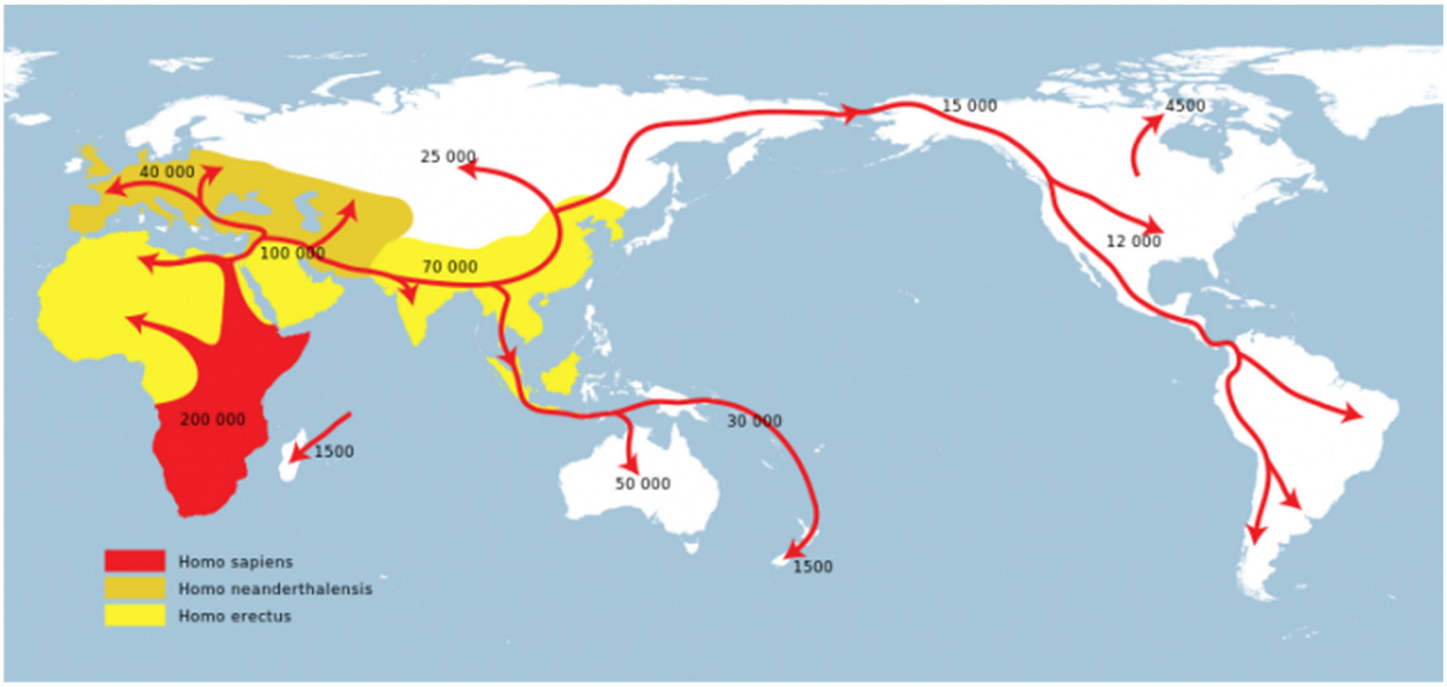
The family tree model showing evolution of the *Homo* genus over 2 million years. The genus *Homo sapiens*, modern humans, branched into Eurasia, yet the nitty gritty of their evolution remains a mystery, depicted by the intersections with Neanderthals, Denisovans and other ancient hominids. Photo: Wikipedia

Neanderthals have stocky statures and barrel chests, more like the stereotypical football player. Because of this, Neanderthals were better adapted to colder weather than ancient humans who originated in the tropical climates of Africa.

"What you likely know about Neanderthals," Papagianni says, "it's that they're supposed to be stupid." This is a tough rap, but archaeological research suggests they were advanced enough to make clothes and build fires, which would have been critical to survive the cold weather. They also used stone tools. Additionally, based on the size of their skulls, the brains housed with them were likely large enough to warrant some form of language capability. This language hypothesis is supported by modern experiments that show learning how to make and wield stone tools required some form of verbal instruction.

Papagianni laughed as she described the experiment. Groups of graduate students attempted to learn how to make stone tools with and without verbal cues. Even after hours of work, fashioning a working Neanderthal-style tool from stone was near impossible without some form of verbal instruction.

Given their adaptation to cold climes and their



A map of ancient human migration. The black numbers indicate how many years ago the migrations took place. Photo: Wikipedia

advanced, albeit under-appreciated, skills, how were Neanderthals beaten out by their human counter-parts? The answer lies in a combination of culture and genetics that enabled the successful radiation of humans.

Humans had diets higher in energy-rich meat that could support smaller stomachs and bigger brains. They invented tools with multiple uses that could adapt to different circumstances. They had more advanced language capabilities to pass on these skills. So humans were better equipped than Neanderthals to handle the challenges of migrating around the planet.

So the humans migrated north. This is where the genetic factors come into play. Neanderthal communities became fractured. As they grew more and more isolated, their gene pool evaporated into a spattering of puddles. This so called genetic bottleneck can lead to the demise of a species when genetic diversity gets prohibitively low.

Papagianni explained the current theories for how humans were able to persist in the North at the expense of Neanderthals, but she ended on an ongoing research question: *Why* did humans leave Africa in the first place? Their migration could have been sparked by competition, climate change or simply a great hallmark of human nature, curiosity. Over the past 2 million years, humans have proven to be a remarkably successful species. In fact, humans are the only species on the planet with a global distribution. In order to figure out how we might fare in the future with a changing planet, it's critical to get insight from our past. The research of Papagianni, as well as the new Center for Climate and Life, will yield this essential insight into Earth's past and future, and our place within it.

To see the full article and images, visit:
https://news.climate.columbia.edu/2016/05/08/the-2-million-year-melee-neanderthals-vs-humans/

Mark your calendar for the
2024 Fossil Fair
October 19 & 20

A Mammoth Journey

Isotopes tell the epic tale of one ancient mammal's odyssey across Alaska

THE ARCTIC WOOLLY MAMMOTH named Kik, one of the only Ice Age mammals whose life story is known in detail, was born approximately 17,100 years ago in the Alaskan interior, a region bounded by the Brooks Range to the north and the Alaska Range to the south. Back then, the area was a cold, dry grassland that extended across the Bering land bridge into Siberia, and all the way to western Europe. Paleontologists call this vast region the "mammoth steppe" after the largest animals that traversed it.

Adult male woolly mammoths reached a height of 12 feet at the shoulder, with a thick hide, shaggy coat and tusks up to 12 feet long. No predator could bring down an adult, but young mammoths, likely standing about four feet tall, were prey to scimitar-toothed cats. Kik and his herd-mates would have kept a wary eye on these predators, which weighed more than 500 pounds, with serrated canines that could bite through mammoth hide. Beringian lions were another threat; also on the landscape were steppe bison, giant short-faced bears and the gray wolves and brown bears we see today.

For the first two years of his life, Kik mostly stayed in the lower Yukon River basin, almost certainly in a matriarchal herd. Over the next 14 years, the juvenile's range expanded dramatically. Still probably traveling with the herd, he made regular back-and-forth journeys across the 250-odd-mile stretch of steppe grassland between the Brooks Range and the Alaska Range. Sometimes he ventured to the eastern end of the Brooks Range. He also traveled to the Seward Peninsula on today's west coast, a journey of more than 700 miles. Although the data suggests that for much of his life, he seldom covered less than ten miles in a day, we now know that over the course of his lifetime, Kik walked roughly twice the circumference of the earth— much farther than mammoths were thought to travel.

To be able to track an Ice Age animal's movements in such detail is a stunning milestone in paleontology. It began with an isotope scientist at the University of Alaska Fairbanks. In 2015 Matthew Wooller was in his laboratory, watching one of his graduate students analyze fish otoliths-small ear bones that add a new layer every year. "What if we did the same thing with a mammoth tusk?" thought Wooller, He was already interested in mammoths from studying their extinction on St. Paul Island in the Bering Sea. He compares a mammoth tusk to a diary written in ivory. "It adds a new layer every day, and the layers stack up on each other like ice cream cones," he says. "The isotopes in those layers record where the animal was and what it ate that day."

"Think of isotopes as chemical signatures," Wooller says. "They're in the rocks, soil, vegetation and water, and creatures pick them up." These signatures-or "fingerprints," as they're sometimes known among researchers-are specific to particular locations. Wooller knew that isotopes in elephant tusks can reveal migration routes.

He began the project in 2016 by crossing campus to the University of Alaska Museum of the North, where 174 woolly mammoth tusks are stored on top of specimen cabinets. He selected one collected by researchers in 2010. The mammoth's jawbone, containing molars the size of a man's shoe, was collected at the same site. Radiocarbon dating showed that the animal died 17,100 years ago, and genetic testing revealed that it was male. "We nicknamed him Kik after the Kikiakrorak," says Wooller, who assembled a team of 16 scientists from 4 different countries to work on the study.

Wooller opens up a remarkable map on a screen. It shows the different regions of Alaska that Kik occupied during the different phases of his life, plus hundreds of his travel routes.

Laser Ablation Multi-Collector Inductively Coupled Plasma Mass Spectrometer's 80-micron laser slowly scrolled along each wedge of tusk, turning tiny portions into fine dust. The mass spectrometer then performed a rapid isotopic analysis on the particles. In all, the instrument produced more than 400,000 data points about where Kik was and what he was eating over his lifetime. "By matching the strontium values in the tusk to the strontium map of Alaska, we could see where he'd been, and then we basically connected the dots."

After age 16, Kik broadened his range yet further. The researchers think it likely that he left the matriarchal herd to wander alone or with a small group of other males, like a male elephant who has reached sexual maturity. He made many journeys between the Alaskan interior and the North Slope of the Brooks Range, a one-way trip of 700 miles, or closer to 1,000 while grazing. Wooller suspects Kik was responding to seasonal changes to eat.

The last year and a half of Kik's life is recorded in the four inches of ivory at the base of the tusk. The era of long-distance wandering, it appeared, had ended. His range was now restricted to the North Slope. In Kik's final summer, the nitrogen isotopes in his tusk started to increase. As Druckenmiller explains, "When an animal starts to starve, it essentially eats its own body, and you get a very distinctive nitrogen spike.

The average life span of an Arctic woolly mammoth has been estimated at 60. The evidence suggests Kik died of starvation around the age of 28, in the late winter or early spring, when resources were at their scarcest. He lay down for the last time in the Kikiakrorak River valley, where portions of his skeleton remained for approximately 17,100 years, on a piece of ground that is now part of the headwaters of the Kikiakrorak River.

Woolly mammoths went extinct in Alaska around 13,000 years ago; many scientists think human hunters were responsible. Others say climate change was the key. Wooller thinks it was a combination. "As the climate got warmer and wetter, the grasses were displaced by trees," he says. "Mammoths were losing their habitat and their ability to move around. At the same time there was a new and very dangerous predator on the landscape-us."

"When you're doing this science, it's incredibly exciting because it produces a narrative," says Wooller. "You're sticking the printouts on the wall, connecting the data points, seeing the story of the animal's life emerge before you in real time."

The tusks of Kik the mammoth offer a remarkably complete biography of the creature. Following a painstaking study of isotopes in the tusk, Matthew Wooller's team was able to identify the areas where Kik spent time during each stage of his life—traveling to some of the outer ranges of present-day Alaska before meeting his end just north of the Brooks Range. The Last Glacial Maximum refers to a period during the final phase of the Pleistocene, around 20,000 years ago, when glaciers covered 25 percent of the Earth's land area and the sea level worldwide was roughly 400 ft lower than it is today.

To view the full article and images, visit this link: https://www.smithsonianmag.com/science-nature/scientists-tracked-movements-17000-year-old-woolly-mammoth-180983064/

Florida Fossil Hunters

is a fun and educational group whose goal is to further our understanding of the prehistory of Florida. We encourage family participation and welcome explorers of all ages.

Membership options are listed to the right.

Meetings are usually held on the third Saturday of the month but may vary with club activities. Check the website for the date and location of the next meeting or call one of the officers.

Officers:

President	Salvatore Sansone	(321) 278-9294
Vice President 1	Steve Sharpe	(352) 552-2296
Vice President 2		
Secretary	Melissa Cole	(407) 461-8507
Treasurer	David Dunaway	(407) 786-8844

Chairs:

Field Trips	**OPEN**	
Fossil Fair	Valerie First	(407) 699-9274
Fossil Auctions	Dave Dunaway	(407) 786-8844
Fossil Bucks	Dave Dunaway	(407) 786-8844
Fossil Lotto	Ed Metrin	(407) 321-7462
Membership	Ken Sellers	
Newsletter		
	Elise Cronin-Hurley	info@elisech.com
Photography	John Heinsen	(407) 291-7672
Facebook	Salvatore Sansone	
	Ken Sellers	
Webmaster	Elise Cronin-Hurley	info@elisech.com

Board of Directors:

Joyce Bittle	(407) 341-6366
Melissa Cole	(407) 461-8507
Marge Fantozi	(407) 256-5566
Valerie First	(407) 699-9274
Ed Metrin	(407) 321-7462
Ken Sellers	(407) 457-4117

Membership Application

MAIL in this form or Register ONLINE at
www.floridafossilhunters.com/membership

Names: _____

Associate Members: _____

_____

_____

_____

Address: _____

City: _____

State: _____ Zip: _____ Phone: _____

e-mail: _____

____ New ____ Renewal

Please list any interests, experience, talents or just plain enthusiasm, which you would like to offer to the club:

_____

_____

Family membership: $25
Individual membership: $20

Please make your checks payable to:
Florida Fossil Hunters
Post Office Box 540404
Orlando, Florida 32854-0404

Associate members are people in the same household, included at no extra charge, 2 adult votes per household with Family Membership. Per our insurance policy, family membership covers married couples and children. All other individuals must have separate individual membership to be covered by our club insurance.

Membership year runs from January to December.

Newsletter Policy

Articles must be submitted two weeks before publication date. to be considered for an issue. Emailed to: info@floridafossilhunters.com. Articles can be sent either as text in the e-mail, in a google doc, or in Microsoft Word files (.docx).

Please note in subject of email 'FFH News: [article or info]#

Florida Prehistorical Museum, Inc.
dba/ Florida Fossil Hunters #

Florida Fossil Hunters Mark Your Calendar

2024 Calendar

Meetings 3pm at OSC | Kids' Fossil Blast and alternative time and location noted when applicable.

See inside for more information

Mark Your Calendar

January 20th
February 17th
March 16th
April 20th
May 18th
June 15th
July no meeting
August 24th
September 21st
October no meeting
November 9th
December no meeting

2024 Fossil Fair
October 19th & 20th

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Florida Fossil Hunters

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