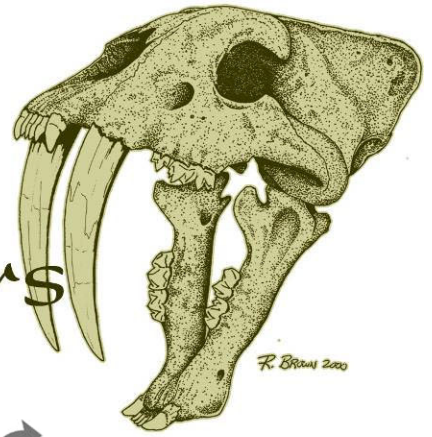


NEWS

Florida Fossil Hunters



Florida Prehistorical Museum, Inc.
dba/ Florida Fossil Hunters
Volume 34, Number 2

MAR/APR 2024

From Ye Olde President

Hello and welcome all FFH Members,

It's March and the spring time weather is here for fossil hunting. FFH is trying to setup field trips to Vulcan Mine and Peace River. Currently working on scheduling fossil hunting trip to a mine called CEMEX lime rock pits. I will send out emails about updates on the field trips schedule. We please ask all FFH members to support your club by buying fossil tee shirts. Every meeting I will have different shirts available for adults and kids. Cost of shirts for kids are \$20 and adults are \$25. FFH will have at all meeting "fossil swap" to encourage more interactions among the members. Every member brings in fossils to talk about and swap with other members. Paleontology for Kids has been successful and will be held before the general meetings.

MOSA Museum of Arts and Science in Daytona Beach Florida Shark Week Festival Saturday Day Saturday March 30th

Date March 30th | Time: 10am-5pm

Address: 352 South Nova Road, Daytona Beach FL 32114

FFH will be participating with fossil exhibiting and Kids shark tooth digs. All FFH members are invited and to help with fossil exhibits. Setup: is as early as 8:30am

April's Meeting: Fossil swap and show and tell. All members bring in fossils to swap, trade or sell to fellow members. (See pg 2)

April's FFH field trip will be visiting The Dinosaur Store and museum on April 13 and we meet at 9:45am, located at 250 West Cocoa Beach Causeway, Cocoa Beach, Florida. Phone: (321) 783-7300. (See pg 2)

Salvatore Sansone
FFH President

MEETING
SCHEDULE

2024
On Page 8

2024
FOSSIL FAIR

Save the Date
October 19 & 20

RENEW
TODAY

2024 Membership
Online/Mail/Mtg Pg 2

Coming Events

UPCOMING MEETINGS at the Orlando Science Center

FFH Field Trip
Saturday, April 13th
The Dinosaur Store and Museum

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

FFH meeting at OSC
Saturday, May 18th
2pm Paleontology for Kids
3pm Meeting

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www.floridafossilhunters.com

Florida Fossil Hunters News

MEETINGS & MORE

Our Upcoming Meetings

April 20th Meeting: Fossil swap and show and tell. All members bring in fossils to swap, trade or sell to fellow members. Check out page 2 for more information.

April's FFH field trip will be visiting The Dinosaur Store and museum on April 13 and we meet at 9:45am. The Museum of Dinosaurs and Ancient Cultures is located at 250 West Cocoa Beach Causeway, Cocoa Beach, Florida. The 26,000 square-foot privately owned museum contains two floors of exhibits on dinosaurs and ancient human cultures. Phone: (321) 783-7300.

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.

Central Florida Mineral & Gem Society, Inc., a non-profit 501(C)3 educational organization is hosting a

Rock, Mineral, Gem, Jewelry & Fossil Show

on April 27th and 28th, 2024
at the City of Sanford Civic Center,
401 E. Seminole Blvd., Sanford, FL 32771.
Saturday 9am to 5pm and Sunday 9am to 4pm

Vendors offering rocks, minerals, gemstones, fossils, beads, jewelry, artifacts, metaphysical stones, handcrafted cabochons, etc. Silent auction, door prizes, demonstrations and family activities.

Admission: Adults \$6, Kids \$3 / Scouts in uniform free.
www.cfmgs.org.

Questions, Contact:

Salvatore Sansone, President
321-278-9294 | ssfossilhunter@aol.com

Betty Sumner, Secretary
407-761-0622 | betty97415@yahoo.com

REGISTER/RENEW

RENEW NOW ONLINE!

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

<https://floridafossilhunters.com/membership>

PIECE ON THE PEACE

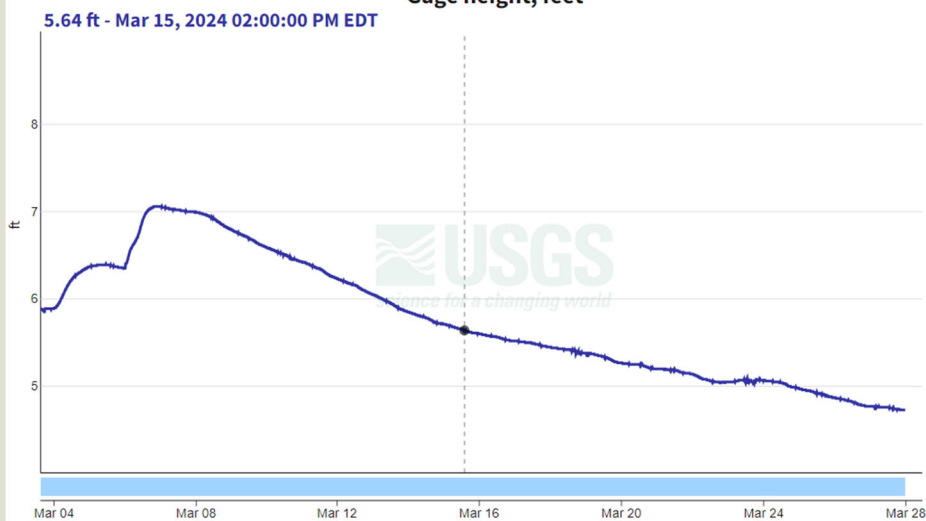
Want the most current height?

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](https://www.usgs.gov) directly.

PEACE RIVER AT
US 17 AT ZOLFO
SPRINGS, FL

Peace River at US 17 at Zolfo Springs, FL - 02295637

February 1, 2024 - March 28, 2024
Gage height, feet



Florida Fossil Hunters News

Species occurrences of Mio-Pliocene horses (Equidae) from Florida: sampling, ecology, or both?

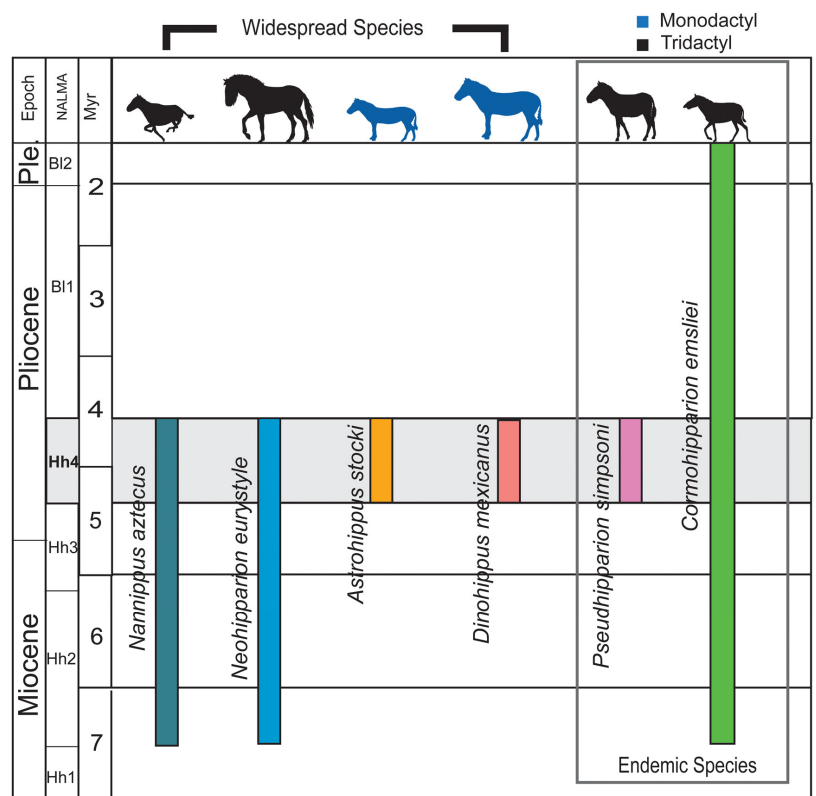
EXCERPT, STEPHANIE KILLINGSWORTH FROM UF | CAMBRIDGE UNIVERSITY PRESS: 24 JANUARY 2024

Non-technical Summary

During the late Miocene and early Pliocene about 5.7 to 4.75 million years ago, a distinctive suite of four species of extinct horses (Family Equidae) were widespread in North America. This includes *Nannippus aztecus*, *Neohipparion eurystyle*, *Astrohippus stocki*, and *Dinohippus mexicanus*. In Florida, two additional horse species, *Pseudhipparion simpsoni* and *Cormohipparion emsliei*, are also typically found. Here we compare horses from four Florida fossil sites of this age, including three from the Bone Valley mines and a fourth from the recently discovered Montbrook site. Two of these sites have all six predicted species, one has five species, and one has only four species present. To explain these differences, we used species occurrences from research databases to better understand the relative abundances, species richness, and occurrences of these horses from these four sites. One site (Palmetto Mine Agrico), with five equid species, appears to lack the sixth species owing to ecological reasons. This is different from Montbrook, the site with only four of the six species. Results indicate that Montbrook is likely missing the two horse species for a couple of reasons: sampling bias and biological/ecological causes. Our results demonstrate that fossil sampling biases can account for observed horse species occurrences when the overall abundance of certain species is low. Nevertheless, other factors, including ecology and with sufficient resolution, perhaps also time, may also explain the distribution and occurrences of individual horse species at these and other fossil sites.

Significance and Conclusions

The results of our study emphasize the complexity of Hh4 equid diversity in Florida. Rarefaction provides a mechanism for understanding the relative abundances and presence and/or absence of equid species in Florida during the latest Hemphillian. These outcomes corroborate previous studies described earlier that analyze stable isotopes and tooth microwear of the horses in this area. The paucity of the monodactyl horses *Astrohippus stocki* and *Dinohippus mexicanus* in the Hh4 faunas from Florida is potentially interesting for understanding the differences in paleoenvironments and equid species richness of Florida relative to other North American Hh4 sites (MacFadden Reference



MacFadden2008). While high abundances are well documented at other North American sites for both *D. mexicanus* and *A. stocki*, most notably from Yepómera, Mexico (Lance Reference Lance1950), Florida's environment at this same time seems to have provided a less hospitable habitat for these monodactyl horses.

The results of this study open up new possibilities for future research. Given the large number (>85) of Hh4 sites from the Bone Valley region, in addition to the three studied here (Kingsford Mine, Fort Green Mine South, and Palmetto Mine [Agrico]), detailed studies and subsampling of the other sites, combined with ecological data such as stable isotopes and microwear, could potentially elucidate ancient ecosystem dynamics, such as the continuity or patchiness of habitats.

Other future extensions of this study might include a more comprehensive simulation that compares the broader key Hh4 sites across North America. Analyzing the horse biodiversity at other North American Hh4 sites and their respective abundance and species richness data might add to our understanding of equid ecogeography across the continent. Taking into account the Yepómera site in Chihuahua, Mexico, for example, might provide greater context for understanding the differences in horse species abundance across North America during this pivotal time.

After the latest Hemphillian, the equid genera *Neohipparion*, *Pseudhipparion*, *Astrohippus*, and *Dinohippus* became extinct, although the latter is the closest sister taxon of the genus *Equus* (Bennett Reference Bennett1980; Cirilli et al. Reference Cirilli, Pandolfi, Rook and Bernor2021). Likewise, the species *Nannippus aztecus* became extinct, but the genus is represented in the Blancan by *Nannippus peninsulatus*. The sixth equid taxon discussed, *Cormohipparion emsliei*, has a relictual biochron and endemic range that extend into the late Blancan, that is, the early Pleistocene until about 1.8 Ma (Fig. 2) in southern North America. Future studies that explore our understanding of the adaptations and ecology of this species and why it persisted for almost 3 Myr longer than the other five species studied here are of

potential interest in further refining our understanding of the rich record of fossil horses in North America.

Continued sampling at Montbrook as well as potential new Hh4 site discoveries will advance our understanding of horse species richness and abundance in Florida. As with any fossil locality, greater sampling efforts can build upon what we know. For example, it will be interesting to confirm whether the occurrence predictions for the two species from Montbrook validate the rarefaction simulations presented.

Our study also has broad significance as an example of a model for predicting occurrences of extinct taxa with continued sampling at a particular locality. Like some previous studies (e.g., Nowak et al. Reference Nowak, Nowak and Tausch2000; Burnham Reference Burnham2008), this method addresses the challenge of how we interpret absences of taxa in the fossil record. Because this is fundamental to the conceptual framework driving our interpretation of paleobiogeography and macroevolution, similar studies of sampling (bias) and occurrence data (presence–absence) will remain important considerations in future studies in paleobiology.

Likewise in paleontology, we oftentimes try to find a simple solution for complex systems. One of the points made by this paper is there is not always a simple explanation for whether sampling or ecology results in the pattern of equid species occurrences observed from the Mio-Pliocene of Florida. Instead, our study predicts that both of these factors come into play to explain the presence or absence of these horses at particular localities.

Fossil horses (Family Equidae) are a classic textbook example of macroevolution interpreted from the fossil record. This study uses modern analytical techniques to better understand sampling, which is a persistent challenge in the fossil record, and the nuances of positing simple explanations for complex systems. The results presented here also serve as a model for similar studies of other groups in the future.

For the complete article, visit:
<https://doi.org/10.1017/pab.2023.35>

Florida Fossil Hunters News

Two more articles to check out

Fossils of giant sea lizard with dagger-like teeth show how our oceans have fundamentally changed since the dinosaur era

The oceans were full of large apex predators 66 million years ago, in contrast to modern times

Date: March 5, 2024
Source: University of Bath

Summary: Fossils of a strange new species of marine lizard with dagger-like teeth that lived 66 million years ago, show a dramatically more bio-diverse ocean ecosystem to what we see today.

Paleontologists have discovered a strange new species of marine lizard with dagger-like teeth that lived near the end of the age of dinosaurs. Their findings, published in *Cretaceous Research*, show a dramatically different ocean ecosystem to what we see today, with numerous giant top predators eating large prey, unlike modern ecosystems where a few apex predators -- such as great white sharks, orca and leopard seals -- dominate.

Khinjaria had powerful jaws and long, dagger-like teeth to seize prey, giving it a nightmarish appearance. It was part of an extraordinarily diverse fauna of predators that inhabited the Atlantic Ocean off the coast of Morocco, just before the dinosaurs went extinct.

"The phosphates of Morocco immerse us in the Upper Cretaceous seas during the latest geological times of the dinosaurs' age. No deposit has provided so many fossils and so many species from this period," said Professor NE. Jalil of NMNH. "After the 'titan of the seas', *Thalassotitan*, the 'saw-toothed' mosasaur *Xenodens*, the 'star-toothed' mosasaur, *Stelladens* and many others, now there is *Khinjaria*, a new mosasaur with dagger-like teeth.

"The elongation of the posterior part of the skull which accommodated the jaw musculature suggests a terrible biting force."

For the full article, visit: <https://www.sciencedaily.com/releases/2024/03/240305134258.htm>

Rare 3D fossils show that some early trees had forms unlike any you've ever seen

Date: February 2, 2024
Source: Cell Press

Summary: In the fossil record, trees typically are preserved with only their trunks. They don't usually include any leaves to show what their canopies and overall forms may have looked like. In a new study, researchers describe fossilized trees from New Brunswick, Canada with a surprising and unique three-dimensional crown shape.

In the fossil record, trees typically are preserved with only their trunks. They don't usually include any leaves to show what their canopies and overall forms may have looked like. But now, researchers reporting in the journal *Current Biology* on February 2 describe fossilized trees from New Brunswick, Canada with a surprising and unique three-dimensional crown shape.

One of the specimens revealed how the leaves departed from the top of the tree, which makes it "absolutely unique." It's one of only a few in a fossil record spanning more than 400 million years in which a trunk is preserved around which the crown leaves are still attached, the researchers say.

"Any fossil tree with an intact crown is a rarity in the history of life," Gastaldo says. "Having the crown leaves attached to a trunk, by itself, begs the questions what kind of plant is it, how is that plant organized, and is it some form that continues to the present, or is it outside of the 'normal' concept of a tree? All of these questions, and more, led to this multi-year endeavor."

"Evolutionary mechanisms operating in the deep past resulted in organisms that successfully lived over long periods of time, but their shapes, forms, growth architectures, and life histories undertook different trajectories and strategies." Gastaldo says. "Rare and unusual fossils, such as the New Brunswick tree, is but one example of what colonized our planet but was an unsuccessful experiment."

For the full article, visit: <https://www.sciencedaily.com/releases/2024/02/240202114758.htm>

Florida Fossil Hunters News



MEGALODON

Largest Shark that Ever Lived

IS ON DISPLAY
 FEBRUARY 3, 2024 THROUGH JULY 21, 2024
 AT THE MUSEUM OF ARTS & SCIENCES

The Megalodon exhibit was produced by the Florida Museum of Natural History with support from the National Science Foundation.

Be sure to also visit the
OCEAN OF AWESOMENESS



MARCH 23 - MARCH 30
 AT THE MUSEUM OF ARTS & SCIENCES

Spend your spring break at the Museum of Arts & Sciences for Shark Week, presented by Jeep Beach! Coinciding with our featured exhibit presented by The Lawyer Dude, *Megalodon: Largest Shark that Ever Lived*, the Museum's Shark Week will feature a variety of fun, crafts, and educational opportunities for children and their families. Please visit MOAS.org for more information on the Shark Week events including pricing and advanced purchase requirements.

SATURDAY
23 MAR. **10AM-3PM**
CRUISE TO THE SEVEN SEAS
 Entire Museum
 Cruise Passengers will dock at seven sea ports to complete a fun activity and collect a passport stamp. Don't forget to wear your cruise attire! This program is suitable for ages 5+.

WEDNESDAY
27 MAR. **11AM-12PM**
SHARK TEETH DIG & IDENTIFICATION
 Root Hall
2PM-3PM
JELLY FISH CRAFT
 Root Hall

SUNDAY
24 MAR. **12PM-2PM**
MOVIE IN THE PLANETARIUM
 FINDING NEMO
 Lohman Planetarium
3PM-5PM
MOVIE IN THE PLANETARIUM
 FINDING NEMO
 Lohman Planetarium

THURSDAY
28 MAR. **11AM-12PM**
OCEAN STAGE SHOW
 Root Family Auditorium
2PM-3PM
HANDS-ON OCEAN FOSSILS
 Gary R. Libby Entry Court

MONDAY
25 MAR. **11AM-12PM**
MOVING SHARK CRAFT
 Root Hall
2PM-3PM
OCEANIC LEGOS
 Root Hall

FRIDAY
29 MAR. **11AM-12PM**
CHILDREN'S SHARK BINGO!
 Root Hall
2PM-3PM
SHARK CRAFT
 Root Hall

TUESDAY
26 MAR. **11AM-12PM**
STORY TIME & OCEANIC COLORING
 Root Hall
1PM-2PM
MARINE DISCOVERY CENTER TALK
 Root Family Auditorium

SATURDAY
30 MAR. **10AM-5PM**
SHARK WEEK FESTIVAL
 Entire Museum
10:30AM Story Time with Jeep Beach Charlene
11:00AM Ocean Stage Show with Jeep Beach Charlene
2:00PM Ocean Stage Show with Jeep Beach Charlene

Florida Fossil Hunters News

Florida Fossil Hunters

Membership Application

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.

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

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.

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 #

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

Florida Fossil Hunters News

Florida Fossil Hunters Mark Your Calendar

2024 Calendar

Meetings 3pm at OSC | Paleontology for Kids at 2pm and alternative time and location noted when applicable.

SEE INSIDE
for more information on events.

Mark Your Calendar

April 20th

May 18th

June 15th

July no meeting

August 24th

September 21st

October no meeting

November 9th

December no meeting

Field Trip

April 13th

(See pg 2)

2024 Fossil Fair

October 19th & 20th

Join Our Facebook group:

www.facebook.com/groups/floridafossilhunters



Visit us online at www.floridafossilhunters.com

Email info@floridafossilhunters.com to share articles, questions & comments

Florida Fossil Hunters

Post Office Box 540404

Orlando, Florida 32854-0404



Florida Fossil Hunters News