NEWS
Florida Fossil Hunters

Florida Prehistorical Museum, Inc.
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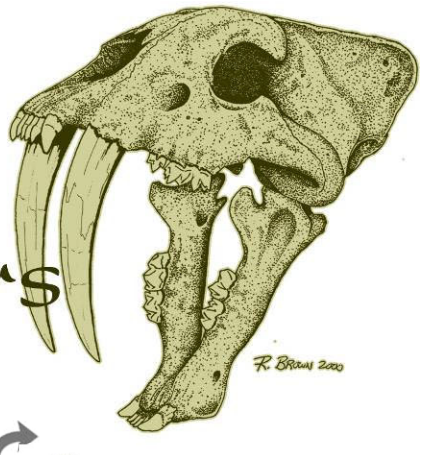
MAR/APR 2022



From the President's Desk...

I want to give a big thank you to Kayla Warner for volunteering for the position of education duties and Kids Blast for the club.

FFH Field trip to Yankeetown was a success and lots of good specimens of Echinoids were found. We had 15 members show up some with their kids. Everyone enjoyed the Club fossil picnic with lots of food and cold drinks. FFH will try to setup another Field trip to Yankeetown.

At the Hale Pit fossil dig, our First Vice President, Steve Sharpe was awarded the Howard Converse Award. Over the years he has donated many fossils to the museum in Gainesville. *Congratulations, my friend!*

The topic of March Meeting will be Pleistocene Fossil mammals (no guest speaker). Working on a guest speaker for April's meeting.

I would like to see FFH members bring in there Pleistocene Fossil mammals and interact with a show and tell meeting.

I will keep FFH members posted about upcoming fossil field trips and guest speakers.

Thank You, Salvatore Sansone
FFH President

In this issue we celebrate Earth Day!

Earth Day is April 22nd, learn more about how we make a difference and how Paleontology contributes to our understanding of climate change.

MEETING SCHEDULE
FULL 2022
Schedule Pg 8

RENEW TODAY
'22 Membership
Online/Mail/Mtg Pg 2

VENDORS REGISTER
2022 Fossil Fair
OPEN NOW Pg 2

Coming Events

UPCOMING MEETINGS
at the Orlando Science Center

FFH meeting at OSC
Saturday, March 19th
3pm Club Meeting

FFH meeting at OSC
Saturday, April 16th
2pm Kids' Blast
3pm Club Meeting

2022 Fossil Fair
October 22 & 23

Full 2022 Mtg Schedule on pg 8

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www.floridafossilhunters.com

MEETINGS & MORE

2022 FFH Elections Results

- President: Salvatore Sansone
- Vice President: Steve Sharpe
- Secretary: Melissa Cole
- Treasurer: David Dunaway

Upcoming Meetings

- March 19th Meeting, FFH members bring in your Pleistocene Fossil mammals for a show and tell meeting, (no guest speaker).
- **April 16th Meeting** will include a Kid's Fossil Blast at 2pm. Working on a guest speaker.

Regular Meetings are 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. Please consult the State of Florida and OSC sites for Health and Safety policies.*

Kids' Fossil Blast

April 16th 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 TO RENEW

AND KEEP RECEIVING THIS NEWSLETTER

RENEW NOW ONLINE! MAIL in the form *on page 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.

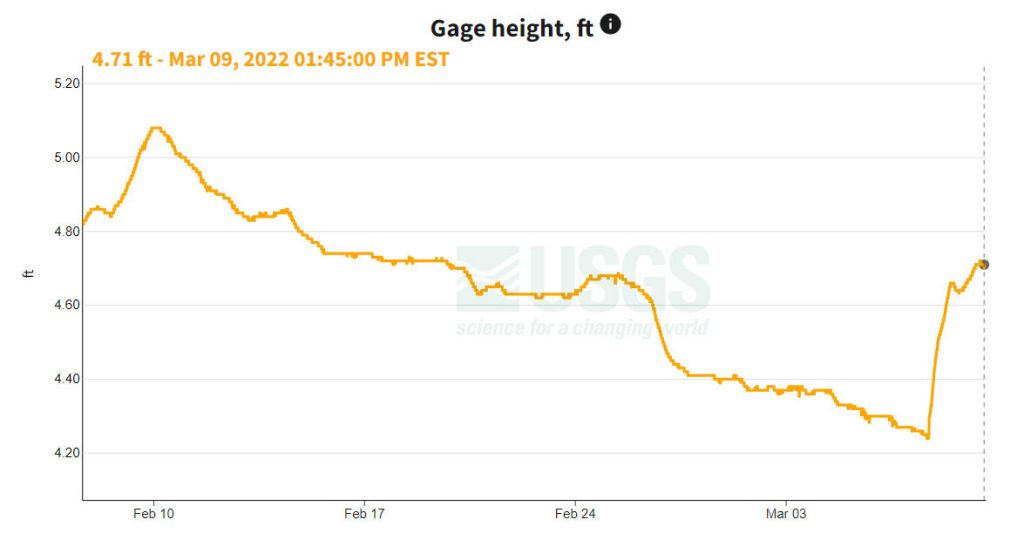
VENDOR REGISTRATION

For Fossil Fair 2022, Now open. Visit www.floridafossilhunters.com/fossil-fair/. Scroll down for links to both the mail-in-form or online registration.

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



Florida Fossil Hunters News

EARTH DAY CELEBRATIONS IN FLORIDA

Twenty million people took part in the first ever Earth Day Celebration on April 22, 1970. It had such an impact that important federal environmental laws emerged, including the Clean Air, Clean Water and Endangered Species Acts.

In 2022, there are now so many ways to celebrate this annual event all over the state of Florida and around the United States. How will you show your support to the Earth this year? There was a plethora of opportunities for children, adults and the whole family. Most events are free and have entertainment and little something for everyone. My favorite event is the Central Florida Earth Day event since it's been around for 17 years, not a far ride from home and I get to support my local businesses and vendors.

- Central Florida Earth Day: Orlando, FL April 23rd, Click on link for event details. www.cfearthday.org
- West Central Florida: Ecofest Earth Day Tampa Bay, April 23rd, 2022
- Click link for details, mosi.org/events-calendar/
- Conservancy of SW Florida, Nature Center, April 23rd, 2022. Click link for details. Website: conservancy.org/events/
- City of Sebastian, April 23rd, Click on link for details www.cityofsebastian.org/412/Annual-Earth-Day-Arbor-Day-Celebration
- Earth Day Pensacola, April 23rd, Click link for event details. allevents.in/pensacola/earth-day-pensacola-festival-2022-save-the-date/200021957629810

Get Out There! How some of our FFH officers got started in outreach

Melissa

Education through Fossils

Twenty-seven years ago, I began my teaching career. As a young teacher, I was sent on a teacher work-shop by the Florida Museum of Natural History to Thomas Farms to participate in a paleontological dig. It was the first time I had ever dug for fossils, and I fell in love with it! I met a mentor and great friend Jewel Karpal at Thomas Farms. She invited me to join the Florida Fossil Hunters and my hobby of fossil hunting began. I found that fossils brought a unique and interesting way to show my students the history of the Earth and the wonderful diversity of life over the Eons.

Joining the Florida Fossil Hunters, I have found ways to share my enthusiasm of collecting fossils through various outreach activities. Teaching members about fossils by guest speaking, Kids blast, a study group made up members, Paleoquest, was a way to help learn and share what I know with other mem-bers. I also participated in special events with the Daytona Beach museum of natural history, the bear festival and other Earth day events that show the beautiful diversity of past life through fossils. I am always finding ways to share my love of fossils and showing people that the Earth is a wonderous place and we need to take care of it.

Happy Earth Day, Melissa Cole

Valerie First

From sharing at your kid's school to a passion

My daughter asked me to come to her middle school class and talk about fossils. Then I wrote an article in the fossil club paper about how much I loved doing it. A person from Seminole County Board of Ed asked if I would like to present to more schools. That was almost 30 years ago. Besides schools, I shared my fossils at the Central Florida Zoo and Orlando Science Center (OSC). Currently I have a table at OSC on weekends. Recently they started to let me keep my bones there so I don't have to carry them out of my house, into my car, and then back again.

Over the last 20 years, I have a theme of showing the evolution from Synapsids/ Diapsids to humans. I am combining Paleontology and anthropology, showing that we are related to all life and to each other. I think what I talk about is important and, even more, it seems to be much appreciated and needed. It is a mutual learning experience in many ways. It sometimes gets philosophi-cal and I meet people from so many backgrounds that it puts more angles on thoughts and understanding. I have built up a portfolio of answers to questions. I also looked up four other languages so I can say some words in other languages, such as the name of various fossil animals. I constantly read and keep up on information. I have a use for all my reading and for my fossils and fossil experiences. I like that I found my niche, my topic, my themes, my purposes. I think that however one does their outreach, it is good to develop some sort of theme. It might evolve over time.

What Fossil Plants Reveal About Climate Change

Paleobiologists use fossil plants to reconstruct Earth's past climate and inform climate change research today.

EMILY LECLERC | APRIL 29TH, 2021

Fossil plants reveal information about the temperature and precipitation of past climates. Scientists use what they learn from fossil plants to inform their research on modern climate change.

Using part of the museum's collection of 7.2 million plant fossils, Barclay and Scott Wing, a research geologist and curator of paleobotany, are uncovering clues about periods of past climate change. What they're finding will help scientists grasp the full scale of today's shifting climate.

"If we can interpret plants' changes over time, we can get a sense of what past climates were like and how they changed," said Barclay.

Fossil leaves as climate keys

Many types of warm-climate plants, including palms, grew in places too cold for them now. Scientists found this sixty million-year-old fossil palm leaf in Petersburg Borough, Alaska (Lucia RM Martino, Smithsonian)

By comparing fossil plants with their modern-day relatives, Wing and Barclay can deduce what type of climate the plants were living in. For example, palm trees today are exclusively tropical or subtropical plants. So, the duo can infer that a fossilized palm likely grew in a warm climate.

Imprints of ancient ecosystems

During the Paleocene Eocene Thermal Maximum (PETM), Earth's average temperature rose 4 to 8 degrees Celsius in less than 10,000 years. The cause was geologic processes releasing trillions of tons of carbon dioxide into the atmosphere. The dramatic shift in global climate forced massive upheaval in ecosystems around the world.

Fossil plants and their leaves from the PETM show that ecosystems shifted massively because of the rapid increase in global temperature. But global warming during the PETM did not come from humans. So, scientists today are working on ways to extrapolate information from that period and apply it to the even faster and more drastic events of today.

Old plants, new ideas

"We use the fossils to tell us what climate was like a long time ago. Then climatologists run computer simulations of past climate. We can then compare the simulation results against the reconstructed climate to see if they agree," said Wing.

If a modern climate model can forecast extreme past events like the PETM successfully, then it is more likely to give accurate predictions on how the planet will respond to climate change today.

"Paleobotanists are citizens of the world," said Barclay. "We are worried about what's going on."

Read the full article at: https://www.smithsonianmag.com/blogs/national-museum-of-natural-history/2021/04/29/what-fossil-plants-reveal-about-climate-change/

Fossil leaves suggest global warming will be harder to fight than scientists thought

Relics warn that climate may be more sensitive to rising atmospheric CO2 than models predict

BY ERIC HAND | 4 JAN 2017

When it comes to carbon dioxide (CO_2) and climate, the past is prologue. Barring radical change to humanity's voracious consumption of fossil fuels, atmospheric CO_2 is bound to go up, driving global warming. But it won't be the first time that CO_2 has surged. "Each little slice in Earth's past is a replicated experiment," says Dana Royer, a paleoclimatologist at Wesleyan University. "It helps us think about where we may be headed in the near future."

Now, scientists have developed a new method for wringing CO_2 estimates from fossilized leaves—one that can go deeper into the past, and with more certainty. "At the moment, it's very promising and it's probably the best tool that we've got," says David Beerling, a biogeochemist at the University of Sheffield in the UK who helped develop the so-called fossil leaf gas exchange technique. Already, it is solving ancient climate puzzles and delivering some unsettling news about the future.

Last month, another pioneer of the technique, plant physiologist Peter Franks of the University of Sydney in Australia, trained it on one of those puzzles: the time shortly after an asteroid impact killed off the dinosaurs 66 mil years ago. Based on a gas exchange analysis of fossil leaves in what was once a tropical forest at Castle Rock, near Denver, Franks and his colleagues now conclude that the atmosphere 1.5 mil years after the impact contained CO_2 at about 650 ppm—a far more plausible level.

By rewinding the motions of plate tectonics and tracking broad areas of volcanism, vegetation, and weathering, scientists were able to chart rising and falling CO_2 over hundreds of millions of years. But their curves had huge margins of error.

Atmospheric carbon dioxide (CO_2) has swung dramati-

cally in the distant past, according to indicators based on fossils (gas exchange, phytoplankton, liverworts, and stomata) and minerals (boron, paleosols). The ancient record suggests the recent jump from preindustrial levels (far right) could have an outsized effect on climate.

In the 1980s came the first method based on plant stomata little openings that allow CO2 into the leaf, where it is fixed into sugars through photosynthesis. Plants tend to have fewer stomata when CO2 is plentiful, because water also escapes through these pores and plants must guard against losing too much. But the number of stomata in each species responds to rising or falling CO2 in its own way. Scientists can estimate ancient CO2 levels based on studies of close contemporary relatives. But for extinct species, they have to take a best guess. And in contrast to paleosols, the stomatal technique is insensitive to high CO2.

Franks and his colleagues set out to improve it. Their leaf gas exchange technique relies on two key inputs. One is a calculation of stomatal density—not only the number, but also the size and depth of the stomata in a fossil leaf—which indicates the rate at which gas could pass in or out of the plant. The other is an analysis of organic residue in the fossil, inside the leaf to that in the atmosphere. Together, those factors can be parlayed into a reading of the atmospheric CO2 concentration.

By revealing lower CO2 levels during ancient warmings the gas exchange technique suggests a climate sensitivity closer to 4°C, not 3°C. History suggests that it is built into the climate system. “I do find it worrying,” McElwain says. “Within 50–100 years the Earth’s surface temperature could rise much higher than we currently anticipate.”

Read the full article at: https://www.science.org/content/article/fossil-leaves-suggest-global-warming-will-be-harder-fight-scientists-thought

Fossils may hold clues to climate change

BOWLING GREEN STATE UNIVERSITY | FEB 24, 2021

Newswise — A Bowling Green State University paleobiologist‘s research into the life and death of an ancient mollusk might uncover clues about the next global warming event on Earth.

Dr. Margaret “Peg” Yacobucci, a BGSU geology professor in the School of Earth, Environment and Society, studies the evolution and extinction of marine life, specifically a class of cephalopods known as ammonites.

Her research of the ammonites’ evolution and extinction, captured in the fossils that can still be found today, is especially timely . She is focused on past global warming events and what they might tell us about what’s going to happen over the next couple hundred years to life on Earth.

Digging into her research

Her big-picture research looks at where species come from, how do evolution and extinction happen. She looks for answers to why some groups are more prone to extinction and die out while other groups can resist extinction and not die out for millions and millions of years.

Because the ammonites showed a high rate of evolution and extinction, Yacobucci explained they provide a lot of examples of possible drivers for evolution and extinction.

“The rapid warming event that occurred 94 million years ago had to do with a big eruption of molten material on the surface of the Earth, which put a lot of carbon dioxide in the atmosphere and caused greenhouse warming like we’re doing today by burning fossil fuels.”

Many ammonites died out during this major extinction event, and by tracking how their anatomy, diversity and geographic distributions changed over time, Yacobucci gains clues on how groups diversify and make new species, and why some groups were dying out during this time of major environmental changes.

Ammonites’ extinction was not necessarily due exclusively to temperature. Their responses to this global environmental upheaval 94 million years ago seemed to vary regionally, with lower oxygen levels and changes in nutrient influxes into the ocean basins, in addition to temperature, being important drivers of diversity change, Yacobucci explained.

“I think that’s what we can expect to see happen over the next few hundred years. In different places, we’re going to see temperatures be the main driver or a decrease in oxygen,” she said.

The influence might also be ocean acidification, where carbon dioxide in the atmosphere dissolves in the water and makes the water more acid. Because shells require non-acidic environments, a more acidic ocean would affect the ability to grow shells for some marine life.

“We’re seeing that in the past, and I think that’s what we’re going to see in the future,” she said. “We need to pay attention to all of these environmental factors and anticipate that the response of life to anthropogenic, human-made, warming is going to be different in different regions.”

The basic takeaway, at least from a paleontology perspective, is that “Earth is going to be fine. Life has always recovered from a mass extinction,” she said. “We as a species are the ones that are vulnerable. We might be the dinosaurs of the next extinction, but life will recover.”

Read the full article at: https://www.newswise.com/articles/fossils-may-hold-clues-to-climate-change-says-bgsu-paleobiologist

BE THE CHANGE!

Becoming a Garbage Picker

BY AMANDA MASTERJOHN

According to the National Geographic's website, www.nationalgeographic.com, every year, about 8 million tons of plastic waste escapes into the oceans from coastal nations. That's the equivalent of setting five garbage bags full of trash on every foot of coastline around the world.

You're probably saying to yourself, I don't contribute to that waste. I'm a conscious fossil hunter and know how to dispose of my waste and I would never throw anything on the ground or in the river. But did you know, according to the Environmental Protection Agency's website, The EPA only began collecting and reporting data on the generation and disposition of waste in the United States just over 35 years ago. That's a tiny fraction of time since humans have inhabited the Earth and have been discarding their trash.

How many times have you been out fossil hunting only to come across garbage and other debris that shouldn't be there? What did you do? Did you leave it there thinking someone else will pick it up? Did you even notice the waste? I can assure you this isn't an article to cast blame about how garbage gets to be where it is. It's my opportunity to share with you what I know and hopefully share the message about cleaning up the Earth and hopefully with my fossil hunting friends who also care about the Earth.

The EPA also reports that most of the deaths to animals are caused by entanglement or starvation. Seals, whales, turtles, and other animals are strangled by abandoned fishing gear or discarded six-pack rings. Microplastics have been found in more than 100 aquatic species, including fish, shrimp, and mussels destined for our dinner plates. It's time to make a change and help wherever we can.

You may think, "I want to help but what can I do, I'm only one person and I can't save the Earth by myself" Well here are some small things you can do to make a big difference in the long run.

- Bring a garbage bag or some other way to contain any garbage you see while fossil hunting and discard in a proper location.
- Bring scissors and cut out any plastic fishing line or other entrapment potentials.
- Reduce your consumption of single use plastics by using refillable water bottles.
- Dispose of toxic chemicals and liquids appropriately.
- Tell your friends, neighbors, and children about your interest in cleaning up waste from our oceans and rivers and how they can help get involved too.

We may be small in numbers, but together we can make a big difference.

References:

National Geographic Website: https://www.nationalgeographic.com/environment/article/plastic-pollution

Environmental Protection Agency Website: https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials

MEMBERSHIP MATTERS: CLICK TO RENEW TODAY

ATTEND MEETINGS
Learn more & Get involved!
Monthly Meetings have guest speakers & time to share finds.

GET OUT ON A FIELD TRIP
Join the trip to Yankeetown
more info pg 2

VOLUNTEER & MAKE AN IMPACT
Help plan club events or inspire others about fossils at the science centers & schools.

JOIN THE FACEBOOK GROUP
Share your finds and help others identify.
Facebook Group

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		
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.

Membership year runs from January to December.

Newsletter Policy

Articles must be submitted by the first of the month to be included in that month's newsletter. These can be mailed to the above Post Office Box or e-mailed to: info@floridafossilhunters.com. Articles can be sent as text in the e-mail or in Microsoft Word files (.docx).

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

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

Florida Fossil Hunters Mark Your Calendar

2022 Calendar

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

See inside for more information

Saturday, March 19th

Saturday April 16th
Meeting & Kid's Blast 2pm

Saturday, May 28th

Saturday, June 25th

Saturday, July 23rd

Saturday, August 13th

Saturday, September 24th

Saturday, November 19th

December no meeting
Holidays Party, tba

2022 Fossil Fair
October 22nd & 23rd

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

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