

# HUI PŌHAKU 'O HAWAI'I

## Rock & Mineral Society of Hawai'i, Inc.



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MARCH 2009

### LEE CREEK MINE

BY DEAN DASKABE

Do not miss this month's meeting! Keith Robertson (1) will be giving a talk on the Lee Creek Phosphate Mine. It's not the phosphate that is interesting; this mine happens to be situated over a treasure trove of fossils. Located near Aurora, NC, which is about 125 miles east of Raleigh, NC. The Potash Corporation of Saskatchewan (PCS) operates a large phosphate mine. In the process of prospecting for phosphate, the mine digs through several fertile fossil-bearing formations.

First, a short Geologic lesson on this area. The Albemarle Embayment (or North Carolina coastal plain), was one of the large embayments (bay areas) of the Atlantic Coastal Plain. The other was the Salisbury Embayment (presently the Chesapeake Bay area). These two embayments are collectively called the SAE (Salisbury and Albemarle Embayment). This embayment may have acted as a calving ground for whales. Additionally, it housed a large diversity of life including reptiles, all kinds of fish, and sharks such as *C. megalodon*. It also housed numerous marine mammals, such as large baleen whales, porpoises, seals, and sea cows. Sea-going birds also thrived in this embayment.

Throughout this area, sediments and animal remains were deposited into formations. The two most popular formations are the Pungo River (Miocene) and Yorktown (Pliocene) formations. Granted, there are other formations in this area ranging from the Eocene formations to Pleistocene formations (James City Formation). The thickness of the formation ranges from a thin edge in the western part of Beaufort County to more than 120 feet in eastern Beaufort County.

The PCS Phosphate mine happens to dig through these two formations in search of phosphate that has accumulated in this ancient embayment. The fossil bearing layers that reside up to 130 feet beneath the surface are represented by the Pungo River Formation (Miocene – 15 million years ago) and the Yorktown Formation (Pliocene – 4.5 million years ago). The fossil teeth are found in huge spoil heaps inside the mining area.

The PCS Phosphate mine is private. However, they welcome fossil hunters. Each year, the mine allows clubs and individuals to apply for collecting slots to enter the mine. The mine asks that hunters only come once a season, in order to give others a fair chance to obtain slots. To obtain a slot, you must have made prior arrangements and be on the collecting list before the collecting season in order to gain access into the mine. For more information, you can contact the PCS Public Affairs Dept.



Keith screens for shark's teeth

### MEETING

Wednesday

March 25

7:00—9:00 pm

Makiki District

Park

Administration

Building

### NEXT MONTH

Zinc minerals

### LAPIDARY

Every Thursday

7pm-9pm

Second-floor Arts

and Crafts Bldg

Makiki District

Park

### MEMBERSHIP

COSTS

2008

Single: \$10.00

Family: \$15.00

## SMITHSONIAN INSTITUTION PAYS HOMAGE TO LEE CREEK MINE

By GREG KATSKI

From The Washington Post, March 10, 2009

AURORA- It was a busy weekend in Aurora for fossil enthusiasts of all ages. With the 15th annual Aurora Fossil Festival came the influx of paleontologists from across the state, region and country. The most prestigious of these fossil hunters was David Bohaska, a collections manager with the Department of Paleobiology at the Museum of Natural History.

Bohaska and his team of volunteer paleontologists, including Fred Grady and Margaret and Steve Noel, spent Saturday helping collectors identify fossils at the festival and Sunday traversing nearby Lee Creek mine. Paleontologists with the Smithsonian Institution have made appearances at the festival for the past 10 years, according to Bohaska. Bohaska's colleague in the Department of Paleobiology, Robert Purdy, was the original organizer of the yearly appearances.

"The real organization was done by Bob Purdy, but he couldn't make it (to the festival) this year," Bohaska said. Bohaska, an expert in marine mammals, and Purdy, an expert in sharks, teamed up to start a fossil identifying exhibit at the yearly festival. Each year, the team prints out hundreds of prehistoric fossil diagrams and tries to identify fossils brought from collectors by matching them with the diagrams. The exhibit was set up at the Aurora Community Center from 10 a.m. to 3 p.m. on Saturday.

"We kept busy all day," Bohaska said. "(We helped) several hundred people." Bohaska identified several noteworthy fossils.

"There was a whale skull I'd really like to have," Bohaska said. "It was a beak whale. Someone also came to us with a bit of a porpoise skull." Although Bohaska would have loved to bring some of the fossils back to the museum, he tried to not be overbearing.

"We try not to be grabby," Bohaska said. "We want people to come and show stuff."

Bohaska and his team got started on a fossil collecting expedition of their own early Sunday morning. The hunters mined Lee Creek from 8 a.m. until about 2 p.m. Bohaska tries to mine the site at least twice a year.

The mine, which is privately owned by PCS Phosphate, welcomes fossil hunters, such as Bohaska, each season. Clubs and individuals are required to apply for time slots before digging. By policy, hunters can only dig once a season to allow other collectors a chance to reserve a slot. One of the most important things to bring is water, according to Margaret Noel because it can be very hot.

Bohaska enjoys digging the mine and remains astounded by the variety of fossils found at the site.

"The mine is so rich," Bohaska said. "It has possibly the largest number of species (in the world). We're still finding new stuff."

This assertion was backed up by Clayton Ray, curator emeritus for the Department of Paleobiology at the Museum of Natural History. In the publication "Geology and Paleontology of the Lee Creek Mine, North Carolina, Volume IV", Ray said the Lee Creek Mine is "probably the most prolific in the world" regarding fossils species collected. Ray is accredited with helping the Department of Paleobiology in its infancy.

"He really got the project going at the Smithsonian," Bohaska said.

"No paleontological site on the Atlantic Coastal Plain or east of the Mississippi has received as much study and attention as the Lee Creek Mine near Aurora, North Carolina," according to the Virginia Museum of Natural History's Website.

# Rock and Mineral Society of Hawai'i INC.

## News and Notes, page 3

### DOOR PRIZES

Please note that we have instituted door prize drawings at our monthly meetings. Because of Hawaii's gambling laws, these drawings cannot be conducted in the common "raffle" format where tickets are sold. Rather, each *paid* member attending the meeting will receive a drawing ticket upon request. A voluntary donation of \$1.00 is requested and encouraged. Drawings will be conducted at the end of the meeting with available prizes awarded in random order. You must be present to win. Please remember: if you win a prize, please bring one to the next meeting. This helps to keep our drawings going. Thank you.

### WE HAVE A WEBSITE!

[http://pohakugalore.net/Hui\\_pohaku/Hiu\\_pohaku\\_1.html](http://pohakugalore.net/Hui_pohaku/Hiu_pohaku_1.html)

**MAHALO TO MARKUS FOR HELPING US GET OUT OF THE ELECTRONIC STONE AGE!**



Opening day of spring season in Aurora. Found a ton of whale material. Every tooth I found before about 11am (and that was not many) was very dark colored because it was so waterlogged

### PARKING AT MAKIKI PARK

The main parking lot (along Keeamoku St) is closed for resurfacing .

The small parking lot off of Makiki St. is finally open.

Parking along Keeamoku St. starts at 5:30 .

### Rock & Mineral Society of Hawai'i, Inc.

#### 2008 Officers

##### *President*

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##### *Vice President/ Admin.*

Ed Sawada

##### *Vice President/ Lapidary*

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##### *Treasurer*

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##### *Newsletter Editor*

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The Rock & Mineral Society meets on the 4th Wednesday of each month (except for adjusted dates in November and December) at the Makiki District Park, 7:00 - 9:00 pm. Enter from Keeaumoku Street. Parking is free but limited.

The Newsletter is published monthly, some days prior to the meetings and is distributed in electronic format by email (Adobe Acrobat PDF file attachment). Printed copies are "snail" mailed to those who do not have email. The electronic format usually contains full-color images; the print version may be limited to B&W due to reproduction costs.

Any newsletter comments are appreciated, and can be sent to [elise.thomasson@gmail.com](mailto:elise.thomasson@gmail.com)

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