



FOSSIL CLUB OF LEE COUNTY

AUGUST 2012



Message from the President

Greeting to all members and friends,

This is the time of year when we get some heavy rains. The end result is swollen rivers and fossiling grinds to a halt. So we adjust and do other things like making presentations to schools, summer camps, and civic organizations. We also display some of our fossil collections at the local libraries. Thanks to all of Club members who do these fine things for our community.

Another wonderful thing our Club does for our community is to put on a Fossil Show annually and let all children in for free with a modest admission cost for adults. We then use much of the money we raise for donations and funds for scholarships at the University of Florida for deserving students pursuing advance degrees in paleontology.

We want to thank Dr. Rick Batt again for his comprehensive presentation on fossil ammonites at our last meeting.

We are pleased to have one of our long time members as our speaker for August. Ian Bartoszak is a biological scientist with the Conservancy of Southwest Florida's environmental department. His topic is fossil turtles and tortoises of Florida.

The theme appropriately for our August meeting is turtles and tortoises. We have some very good articles in this newsletter about tortoises and turtles. Everyone is encouraged to bring in

their turtle fossils for "Show and Tell" and identification if needed. Also, we expect to have some turtle fossils on the raffle table.

Our monthly raffle, even with lower than usual summer attendance, has been well supported. Thanks to all of our wonderful members for supporting the raffle by buying chances and for making some fine donations.

I look forward to seeing everyone at the Iona House on Thursday, August 16th, 2012.

Best regards, Bill

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## **Next Meeting**

FCOLC next meeting is on Thursday August 16<sup>th</sup> at the Iona House, Calusa Nature Center. Meeting starts at 7 PM.

**\* HOG Hunting Florida Style \***  
Hog hunting photo taken on N. River Road,  
Next to I-75 & U.S. 41, just south of Venice, FL.  
and a little north of Englewood, FL.



**The trick is teaching your retriever to  
let go of the Hog once they've caught it !**



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Dean Hart, Refreshments co-chairman  
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Michael Siciliano, Raffle and Dive Trips  
Coby Pawlowski, Youth Activities Director  
Hollie Tiner, Club Photographer  
Gunther Lobish, Invertebrate Education  
Louis Stieffel, Vertebrate Education



Al Govin's Fossils on display at the Pineland Library.



Al Govin and friends.

## GOPHER TORTOISE

Florida chose the Gopher Tortoise (*gopherus polyphemus*) as the State Tortoise in 1958.

According to one internet site, the *gopherus polyphemus* tortoise belongs to a group of land tortoises that originated in North America 60 million years ago---making it one of the oldest living species.

## MINUTES OF JULY MEETING THE FOSSIL CLUB OF LEE COUNTY

Date: July 19, 2012  
Place: Calusa Nature, Calusa Nature Center  
Attendance: 32  
Presided by: Bill Shaver, Club President

Bill opened the meeting and announced that our Club has received letters of appreciation from the Calusa Nature Center, USF, UF Scholarship Fund, and the UF Invertebrate Lab thanking the Club for their generous support.

Our Club voted to participate in the UFMNH Fossil Club Network.

Everyone was thanked for their support of the monthly raffle.

Dr. Rick Batt was the speaker. He gave an in-depth presentation on fossil ammonites.

Leslie and Louis Steiffel provided the refreshments.

Secretary Kathy Pawlowski unable to attend July meeting. Minutes submitted by Bill Shaver.

## SCHEDULE OF EVENTS AND SPEAKERS

|                |                                                    |
|----------------|----------------------------------------------------|
| August 16th    | FCOLC Monthly Meeting<br>@ Iona House              |
| August 16th    | Speaker: Ian Bartoszek,<br>Florida Tortoise/Turtle |
| September 20th | Speaker Dr. Brian Andres,<br>USF Professor         |

## VOLUNTEERS FOR REFRESHMENTS

The refreshment committee (Joshua Frank and Dean Hart) is pleased to announce that it has volunteers to bring in refreshments for the remainder of 2012. The schedule is as follows:

|           |                                                                         |
|-----------|-------------------------------------------------------------------------|
| August    | Gunther Lobish, Bill Shaver                                             |
| September | Anne and Emily McIltrout                                                |
| October   | Mark Cantos                                                             |
| November  | Marcia and Charles Simons                                               |
| December  | Pat and David Rosenquist<br>(beverages only) for Holiday Dinner Meeting |

Many thanks to all of you-your support is truly appreciated.

## ROCKS, MINERALS AND FOSSIL SPECIMENS

Tom Granata, one of our long time Fossil Show vendors, is having a garage sale at his home in Venice. He has extended an invitation to our Club Members and guests to participate. The dates are August 17th and 18th from 8AM to 2PM. Call Tom at 941-484-1533 for directions.



**Speaker for August**  
**Ian Bartoszek**  
**The title of his talk is**  
**"Fossil Turtles of Florida"**

Ian Bartoszek is a Biological Scientist within the Conservancy of Southwest Florida's environmental science department and has worked on a diverse assortment of research projects at the Conservancy for the past eleven years. During this time he has been the primary field biologist on a research project funded by the U.S. Fish and Wildlife Service studying the recovery of threatened and endangered species through aquatic refugia in the Picayune and Fakahatchee Strands of eastern Collier County. In addition he has been working extensively on biological monitoring for the Picayune Strand Restoration Project under the comprehensive Everglades Restoration plan since 2001. He has extensive experience in the collection and identification of freshwater fish, amphibians and invertebrates in southwest Florida's wetland systems. Recent projects have focused on a preliminary population study of the Everglades' mink and a long term mark-recapture study of the gopher tortoise. Mr. Bartoszek received his B.S. in Wildlife and Fisheries Science from the University of Arizona (2000).

Mr. Bartoszek has presented at the FCOLC on both fossil crocodilians and fossil snakes of Florida. A program on the fossil turtles of Florida will be presented to the club at the August meeting. There will be an emphasis on the natural history of the gopher tortoise in southern Florida. The gopher tortoise (*Gopherus polyphemus*) is one of four remaining species of tortoise native to North America and the only remaining tortoise found in the southeastern U.S.

Please bring specimens to the August meeting that will help the group better understand the fossil turtles of Florida.

## **TURTLES AND TORTOISES OF FLORIDA**

The speaker for the August meeting is Ian Bartoszek, a longtime member our club and a scientist actively working on projects for the Conservancy of Southwest Florida. He has asked for members to bring in their turtle fossils for discussion and identifications.

There are some good articles and reference materials available for those people who like to do a little homework before they hear the speaker. One good source is Dr. Robin C. Brown's book entitled Florida's Fossils. In Chapter 5, Identifying the Fossils You Find, he covers turtle fossils with some excellent pictures of the common turtle fossils we find in the Peace River. Another excellent source is The Fossil Vertebrates of Florida by Dr. Richard C. Hulburt Jr. He provides extensive coverage of turtles and tortoises in the Chapter titled Reptilia 1.

In his book, Dr. Hulburt writes that the oldest fossil turtles are Proganochelys and Proterochersis from the late Triassic of Germany and representatives of most of the modern groups of turtles appeared before the end of the Cretaceous Period.

Most interestingly, he talks about Florida's oldest vertebrate fossil, a small marine turtle of Cretaceous age. It was collected 9,210 feet below the surface of Okeechobee County in 1955 as a petroleum company was drilling a deep well!

As we know the Cretaceous Period was from 144 million years ago to 65 million years ago, therefore one can conclude that turtles are among the oldest vertebrates of Florida.

# **Websites & Locations of Interest**

Fossil Club of Lee County: [www.fcolc.com](http://www.fcolc.com)

Museum of Natural History @ Gainesville  
[www.flmnh.ufl.edu/](http://www.flmnh.ufl.edu/)

Florida Vertebrate Fossil Permit  
<http://flmnh.ufl.edu/natsci/vertpaleo/vppermit.htm>

Southwest Florida Fossil Club  
[www.southwestfloridafossilclub.com](http://www.southwestfloridafossilclub.com)

Orlando Fossil Club [www.floridafossilhunters.com](http://www.floridafossilhunters.com)

PEACE RIVER Water Levels [www.canoepost.com](http://www.canoepost.com)

Mark Renz's Fossil Expeditions  
[www.fossilx@earthlink.net](http://www.fossilx@earthlink.net)

Smithsonian Natural History Museum  
[www.mnh.si.edu](http://www.mnh.si.edu)

Florida Fossil Clubs  
[www.fossil-treasures-of-florida.com](http://www.fossil-treasures-of-florida.com)

Cape Coral Friends of Wildlife Burrowing Owls  
[www.ccfriendsofwildlife.org](http://www.ccfriendsofwildlife.org)

Calusa Nature Center and Planetarium  
 3450 Ortiz Av, Fort Myers Tel 239-275-3435  
[www.calusanature.com](http://www.calusanature.com)

Imaginarium 2000 Cranford Ave, Fort Myers  
[www.i-sci.org](http://www.i-sci.org)

Southwest Florida Museum of History  
 2031 Jackson St., Fort Myers  
[www.MUSEUMofHISTORY.org](http://www.MUSEUMofHISTORY.org)

The Bailey-Matthews Shell Museum, 3075 Sanibel-Captiva Rd, Sanibel, FL [www.shellmuseum.org](http://www.shellmuseum.org)

Randell Research Center PO Box 608, Pineland, FL  
[www.flmnh.ufl.edu/RRC/](http://www.flmnh.ufl.edu/RRC/)

Cracker Museum at Pioneer Park in Zolfo Springs, FL Tel 863.735.0119

Lost in Time, 4719 69th Street, N. St Petersburg, FL 33709, Tel. 727-541-2567 Owner Brian Evensen

Tampa Bay Fossil Club  
[www.tampabayfossilclub.com](http://www.tampabayfossilclub.com)

Picking Up Isolated Native American Artifacts  
<http://dhr.dos.state.fl.us/archaeology/underwater/finds>



## Gopher Tortoise Facts

The gopher tortoise (***Gopherus polyphemus***) belongs to a group of land tortoises that originated in North America 60 million years ago, thus making it one of the oldest living species.



The gopher tortoises can be found throughout the state of Florida and southern areas of Georgia, South Carolina, Mississippi, Alabama and the tip of Eastern Louisiana. They dig their burrows in dry habitats. The gopher tortoise grows on average to be about slightly less than one foot long and weighs about 29 pounds, though they have been found to be as big as 16 inches.

The gopher tortoise is unique in that it is one of the few tortoises to actually make large burrows. Many tortoises hide under vegetations or use very shallow burrows.

The gopher tortoise is a turtle as all tortoises are turtles, but not all turtles are tortoises. Ray Ashton states in his literature for the GTCI, think of them as a cow with a shell. They graze on vegetation just like cows, and therefore, are important players in spreading seeds. Gopher tortoises also have chiseled looking front feet (flippers) and elephant like hind legs.

The gopher tortoise is a rather plain looking turtle as far as colors go. They are either a dark tan, or gray. Their front legs are broad and flat, almost like a shovel. Their back legs look just like an elephant's legs. The top part of their shell is fairly flat. The adult gopher tortoise is a rather drab looking animal, which is in stark contrast for the brightly colored hatchlings.

The gopher tortoise reaches sexual maturity between 12 and 15 years of age, when their shells are about 9 inches long.



Male



Female

When determining the sex of a tortoise, the most noticeable difference is that the male's plastron is concave (above left), whereas, the female's is perfectly flat (above right).

The gopher tortoise has an elaborate courtship that begins in the spring. They will nest between April and July. Typically, the nests are dug very close to their burrow openings, where a clutch of 4-7 eggs are laid. After about 80 - 90 days, the young hatch and will often spend the first winter in their mother's burrow.



The gopher tortoise egg's are round and about the size of a ping pong ball, they incubate for about 80 - 90 days. The sex of the offspring is determined by the temperature of the sand or dirt where the nest is incubating, if the temperature is

above 30° C (85° F), the tortoises hatchling will be females. Temperatures below 30° C produce males.

Hatchlings are 1 - 2 inches long and grow about 3/4 inch a year. Adults range in length from about 10 - 15 or 16 inches and can weigh about 30 pounds. Gopher tortoises live upwards of 100 years (tortoise pictured on right is about 2 years old).



The gopher tortoise is a very important part of the local ecology. As in any food web, if you start taking certain flora or fauna out of the equation, then you can adversely affect the survival of that ecosystem. The gopher tortoise is especially important because the burrows, which are dug by the tortoises, also provide homes for other animals, such as indigo snakes, gopher frogs, mice, foxes, skunks, opossums, rabbits, quail, armadillos, burrowing owls, snakes, lizards, frogs, toads and other invertebrates, gopher tortoise burrows are home to about 250 species of animals at one time or another. Some species share the burrows with the tortoises and others utilize abandoned burrows. Since the burrows are used by so many species, it does not take a rocket scientist to see that removing the tortoises from the local habitat would leave many animals without homes. True, some of these animals will be able to relocate, but there are a few species that are found only in these burrows.

The gopher tortoise digs and lives in burrows. The burrows are their homes. The burrow provides protection from predators and the elements, and also during extreme conditions on the surface such as drought, freezing weather, and fires. The burrows can vary in length and depth. These variables are usually determined by the level of the water table. Burrows can be as short as about 6 - 10 feet long, but they average around 30 feet with a record of approximately 50 ft. (Ashton 2001). Depths vary from around 3 - 20 feet deep. The burrows vary in shape, with most being straight or with only slight curves.

Gopher tortoises are primarily herbivores and feed on many species of low-growing plants. The largest part of their diet consists of grasses and legumes. They also eat gopher apple, pawpaw, blackberries, saw palmetto berries, and other fruits. Gopher tortoises will also scavenge and are opportunistic feeders, occasionally feeding on dead animals or excrement.

Gopher tortoises rarely drink (or are rarely seen drinking) from standing water. They can use their front flipper like legs to dam-up water as it runs down their burrow during a



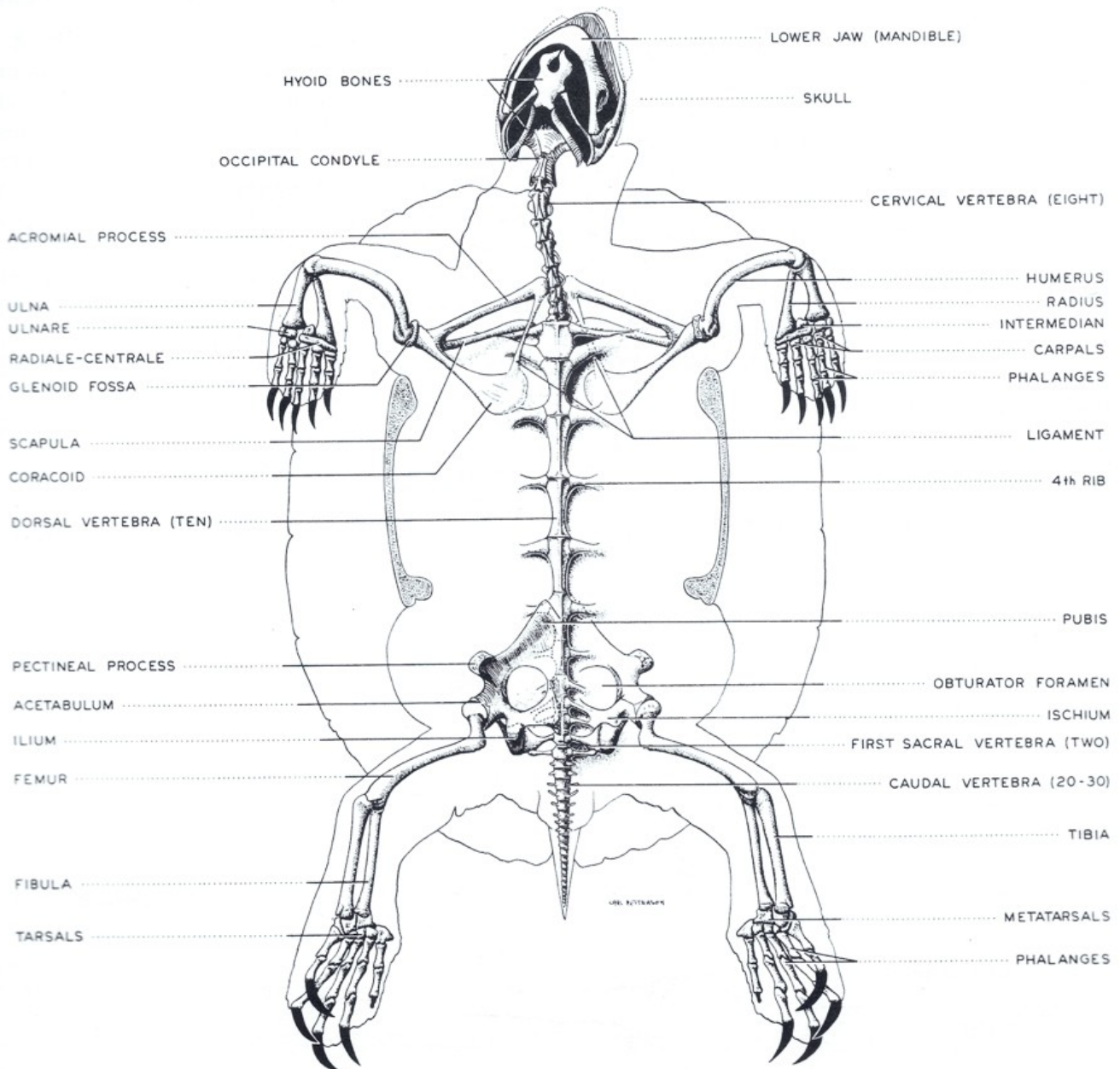
## Gopher Tortoise Facts (con't)

rain. Most of the water they get comes from the food they eat. During periods of extreme drought they have been seen drinking standing water on the side of the road.

In Florida gopher tortoises are on the Endangered Species List, categorized as a Threatened Species. This means that their current numbers are dropping but we are not sure exactly how much, several studies presently being conducted on the tortoises are tiring to more accurately answer this question. Their primary reason for being endangered is a loss of habitat. In the past many tortoises were killed either for food, or by people who were trying to kill the rattlesnakes that often share their burrows.

We can all help gopher tortoises in the wild by preserving their upland habitats. Or, if you happen to see a tortoise, or turtle for that matter, trying to cross a road, please help them safely across the street without changing the direction in which they were traveling. Also, it is very important to never transport tortoises out of their habitat. It only takes one sick tortoise to infect an entire population of healthy tortoises.

## Fossil Turtle Bone Identification Guide





## COBY'S COLUMN

### FLORIDA'S FOSSIL TURTLES AND TORTOISES

Florida has been home to a large variety of turtles and tortoises in its past. These reptiles ranged from the common soft shell turtle to the huge sea turtles. Some of the more common fossil finds are pieces of turtle shell. They were abundant in Florida's water areas (rivers, lakes and in sinkholes) where fossils formed more easily. Today we find pieces of the carapaces and plastrons, which are called scutes, as well as spurs and foot pads. The pieces of outer shell are called peripherals, and the elements of the carapace that covered the spine area are called neural scutes. The scute that is just over the turtle head is called the nuchal scute. Another scute that is a favorite to some fossil hunters is the entoplastron which exhibits the traditional "peace sign." Happy Hunting, Coby Pawlowski

### GIANT TORTOISE LEG SPURS

Reprint FCOLC NL May 2012

The rivers and creeks are still low and many of us are hunting weekly. Since a lot of material is being sifted, it is inevitable that some fossils will be found, and many will be discarded by lack of attention and/or knowledge. I continually preach to KEEP ANY THING THAT MAY BE A FOSSIL until you make sure of what it is. You can ALWAYS throw it away, but it is a sinking feeling if you realize, upon learning what it was, that you tossed it back too quickly. I have highlighted several of these easy to miss fossils in past newsletters this hunting season, so as to try and make you aware of what you are finding. This month, I will do it again, and I will focus on Giant Tortoise leg spurs.

Frequently we find these bony defensive armor leg spurs and many look like it is just a broken piece of bone. However, once you realize that the Giant Extinct Tortoise, ( usually *Hesperastudo* sp.), had many spurs and they are shaped in many different ways, you may understand that you have found a complete fossil and tossed it. A few years ago, in a pit I was working, along the bottom of a cut I spied a layer of black bone, about six feet long. Upon further investigation I realized it was a crushed Tortoise. As I dug some of this shell away, I reached a pocket that looked like muddy grapes, and upon washing a few in the puddle near me, I discovered it was leg spurs. It seems the animal had both legs together ( I don't know if it was front or rear, but both were from the same end). Once buried and the weight of the overlying material covered it, and the Tortoise fossilized, these leg spurs collected together in a group. I include a picture of one of the two cases I have of these spurs. It was well over 125 total and there was two of each, proving there was two legs, and one spur from each leg. (The bones were crushed and not repairable, so I still didn't know front from back.) Another picture is a group of leg spurs that I collected on the last four river trips. One is HUGE!! And many are flattened, as they were positioned on an area of the leg that didn't need a pointy one for defense. A third picture shows what is called a caudal buckler, or "hiney binder". This is a fused section of spurs which is attached to the tail flab so that it protects the tail. If you find a spur with square sides, it may be from this buckler. The last picture shows some Tortoise claw/hoof cores, which are rarer and often confused with spurs. I didn't show, ( but should have!) a foot pad. MANY club members and others think most of what they find are foot pads, but in reality, there are very few of these to be found. AND-they will be flat on BOTH sides, not just one side and a rounded part on the opposite side.

So, I hope this helps you add to your Giant Tortoise leg spur collection!! Remember, YOU CAN ALWAYS THROW IT AWAY!! (If you still have it!)

Louis Stieffel, Vertebrate Education

### LOGGERHEAD SEA TURTLE

The loggerhead sea turtle (*Caretta caretta*) is the salt-water reptile of the State of Florida.

According to an article in Wikipedia, it is stated that although evidence is lacking, modern sea turtles probably descended from a single common ancestor during the Cretaceous period. Like all other sea turtles except the leatherback, loggerheads are members of the ancient family Cheloniidae, and appeared about 40 million years ago.





## How Do You Know These Fossils are Real?

I hear this question a lot during fossil shows. On the face of it, it seems like a simple question, but I think the real question they're asking is "I don't know anything about fossils and I'm not sure you do either." "Prove to me that you know and based on your answer I might buy a fossil from you." Some people want to buy only from the person who found the fossil. This would verify the validity of the fossil. If you do enough shows or sell enough fossils, you know that you can't find it all yourself, because you don't have enough time to do so. If you have a working knowledge of fossils, you can tell what is real and what is not, for the most part. The easiest answer that I know is; "because I've worked with fossil materials for a couple of decades".

So, what are some ways to tell if fossils are real? Shape? Color? Size? Weight? What?

It would help you to have some knowledge and get to know an area that you like. "I like fossil shark's teeth", "vertebrate fossils", "invertebrates", "insects in amber", "fossil shells", "fossil trilobites", "fossil ammonites", etc." Pick an area you like, read up and study that specific area.

When I look at a fossil bone and want to be sure it's real; I, in general, would look at its shape (does it look like a bone?). Does it have a color and weight to it that makes it appear that it has gone through a fossilization process? I would look closely at the detail on the bone. Does it have bone cells? Are these cells filled in or open? These questions would indicate if it is a real bone and/or fossil bone.

One test that is done with bones is to lightly tap the bone on your front teeth. If the sound is a "tink" (like bone china), you're in the "pink". If the sound it makes is a "thud", you may have a "dud". The sounds are based on mineralization levels and are a good rule of thumb.

A few things you do have to understand is what a replica or cast of a fossil looks like. I personally think replicas and casts are great to have, especially if you can't afford or find the real thing (they make great study aids). It is not so great if someone is trying to sell a replica or cast as a real fossil. In the past, casts were made from plaster or Hydrocal. Today, most are made from resins and have various weights and colors added to the resin. Casts and replica's can have good detail, but the surfaces usually do not look like real fossils upon closer inspection. They may contain air bubbles or blotched paints and pigments on the surface. Others are extremely good.



A lot of fossils come from poor countries where labor is cheap, but some great artisans exist there; perfecting their craft day in and day out for little financial reward. That is why someone would spend all day faking a \$5 fossil.

I will tell you that Morocco has some of the greatest fossil deposits and commercially available fossils in the world. They have the Great Sahara Sea Deposits and cheap labor to extract and export. It, also, produces a lot of fake and altered fossils. This is especially true of Moroccan Trilobites.



Repairs on fossils are "Ok" in my book as long as they are identified to the buyer at the time of purchase. You can determine what you think the value might be. I will say that 15-20% repair is alright (although, not as good as perfect), but the price should continue to adjust downward as the repair percentages go up. If it is 70-80% or more in repair, that's not a repair or much of a fossil; or even a cast/replica; it really just becomes a piece of artwork. Here again, you will have to decide if you want and how much you are willing to pay for artwork.

Location information is critical in determining if a fossil is real. No information? – not good, even if it is a real fossil. It would be extremely helpful to know and understand which fossils come out of which areas.

Another gray area is fossils that have been painted or color enhanced. An example is commercial fossil fish that are frequently color enhanced with paint to bring out the fish (almost an industry standard). Some fossils are enhanced by adding or setting them into or on to matrix; sometimes original matrix and a lot of the times, not. Some fake fossils are modern mammal bones soaked in dye, or coffee grounds, or walnut husks, etc., then sold as real fossils. If a fossil has been color enhanced, it needs to be disclosed as such at point of purchase. Of course, you can choose what you want and are willing to pay for.

Fossils that look too good to be true or in an unnatural state may be fake. An example of this would be if there were too many "perfect" fossils for sale at one table or several fossils "perfectly" arranged on one slab of matrix. Note: using a hand held optical piece or visor can show you some great detail on a fossil. Also, Blacklights or UV lights can help identify repairs and even complete fakes.

There are numerous ways to fake a fossil and those ways keep changing all the time. Some are easy to spot and others are not so easy. Over time, you may purchase a fossil that is not what you thought it was or not what you were told it was. You could try to only find your own fossils, but you still have to have some knowledge to find a real fossil. The simple answer is that fossil specific knowledge and dealing with good reputable fossil dealers will go along way in knowing if the fossils are real.

Source: Fossil-Treasures-of-Florida.com