



VOLUNTEERS' ASSOCIATION NEWSLETTER



NEW MEXICO MUSEUM OF NATURAL HISTORY & SCIENCE

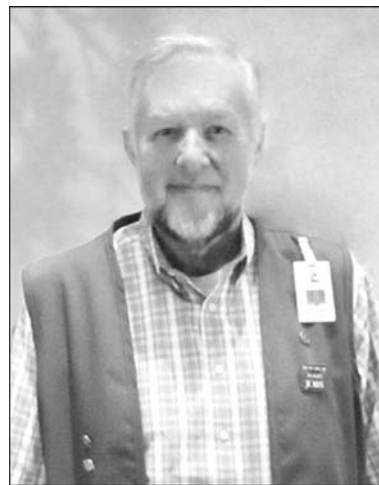
April - May 2011

VOLUNTEER SPOTLIGHT

Dwight Jennison

As a visitor leans toward the star of the atrium, Stan the T. Rex, a volunteer from a couple steps away discreetly joins him. Both the visitor and volunteer are listening to stories from Museum Docent Dwight Jennison as he points out skeletal injuries, describes how hollow vertebrae link the respiration of dinosaurs to birds, and relates recent research on amino acid sequences from T-rex collagen. All the while showing the similarity between T-rex and chickens. The stories are supplemented by pages of images and graphs that Dwight carries with him for sharing with his enthralled visitors. Not everyone gets the same story; Dwight adjusts for age and he

reads faces to determine level of interest in the topic. Some visitors remark to Dwight, "You aren't an ordinary volunteer, are you?" The cadre of volunteers and Museum employees are in agreement; Dwight is not an ordinary volunteer!



Dwight came to the Museum four years ago after retiring from Sandia Labs. He stayed current on numerous science topics and enjoyed sharing his knowledge and enthusiasm with

his three children who explored the Museum in their years growing up in Albuquerque.

Dwight worked as a research scientist for 35 years and knew that he had a background that would be beneficial to the Museum's role in science education. However, when he took the Docent Training class led by Tish Morris, he felt humbled realizing how much he didn't know. He was pretty up-to-date on paleontology, astronomy and cosmology, and learned a great deal in the class about geology and biology, along with the pre-Cambrian earth and periods of the Cenozoic Era. Knowing which topics were his weakest piqued his interest and gave him reason to read and study. Dwight takes great pleasure in learning things that expand his

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knowledge of the world. When reaching into earth's distant past, he senses that his own lifetime has been extended by those years.

As a Volunteer Tour Guide for the Museum, Dwight developed a mini-tour for each of the exhibit halls and the astronomy center. He spends the most time with the T. rex replica and the "Dinosaur to Birds" exhibit in the Jurassic Hall because he has the greatest amount of supplementary information on those topics.

He also often speaks to visitors about the geology explained by the atrium exhibits and the meaning of the murals in the Cenozoic. Dwight has given lectures to the Friends of Paleontology (FOP) and other volunteer meetings on such topics as *Origins: The First Ten Billion Years of the Universe* and *Archosaur Emergence*. He was a bit nervous giving his first talk, entitled *Archosaur Respiration*. Although he had devoured information on the subject, paleontology was not his original area of training and he knew there were experts in the audience. These days, as he develops a complete picture on paleo topics, Dwight uses Museum professionals as a sounding board to verify that he is on the right track.

Dwight believes that hosts and docents should actively engage visitors by approaching them in a friendly, non-challenging way. Easy openings could be to ask where they are from or whether this is their first visit to the Museum. Every visitor can be viewed as an opportunity for a teaching experience or an exchange of ideas. Dwight is thrilled to interact with visitors who are excited about learning. It is important to him not only to explain the exhibits but also to give additional information to make it a richer experience for the visitor.

Dwight says that the permanent exhibits are wonderful, but he feels that there is a need for creating methods of dispensing news about the latest discoveries on various natural history and science topics. He proposes that one or more kiosks with monitors and computers be developed to present new research and updates to information currently

presented in the permanent exhibits.

Such new developments aren't possible in these economic times, but, in the meantime, Dwight uses a low-tech approach of carrying around a folder with Ron Blakey maps of the world through time; diagrams of the respiratory systems of birds, dinosaurs, and archosaurs; collagen amino acid sequences; drawings of feathered dinosaurs; Coelophysis and T-rex growth curves; and many other items that aid in telling stories of the latest findings in paleo research.

Dwight learned to love science when, as a lad in the suburbs of New York City, his dad took



Dwight and Phytosaur he helped paint

him to the Planetarium and the American Museum. He earned a PhD in Theoretical Physics with additional training in Solid State Physics.

Professional meetings and invitations to lecture have taken him all across the United States and to Europe, Japan, Morocco and South America. Besides being an illustrious scientist, Dwight has served as a missile launch commander for the Strategic Air Command in North Dakota, Commander of the Albuquerque Senior Squadron of Civil Air Patrol performing search and rescue operations, zookeeper at Wildlife West in Edgewood and, surprisingly, as a juvenile probation officer for Los Angeles County for 18 months.

He is also putting the finishing touches on a novel about our Ice Age European ancestors as they struggled in a changing environment. Some Volunteers don't know Dwight's name but recognize him when they see him--the very tall Docent who smiles all the time. Dwight's explanation for the grin is that he is very happy with his life and his new bride,

Leah. They were married on Valentine's Day this year, just proving that Dwight is both romantic and practical.

INSPIRATION FROM YOUR PRES

This is mainly for those of us whose attention to the serious is in various stages of wane. Aren't we here to encourage the seeking of truth and reason as opposed to dispensing facts?



What's in a name? As Robert (Bob) Bakker of *Dinosaur Heresies* pointed out, "Not everything named something-suchus is a crocodile." Does this

mean not everything called a fish has to be a gill breathing, aquatic, finned, back-boner? Of course, scientific accuracy precludes such nonsense. Does letting pentagonal eleutherozoans be called stelleroid piscines really perpetuate a mental discombobulation in our visitors (not to mention ourselves) or impair the learning development of young, budding biologists?

Of course you may ask, "Which of the five arms is used for swimming?" if you've ever seen one swim. Or you may ask, "Which way is front, and where's its head?" All are reasons to spend time at the tank.

Thinking of sea stars reminds me of something else. In the row over our wuz-a-ninth planet, it was apparently determined that planets have to orbit the sun. So, what about Jupiter-sized objects floating freely in space, unattached to any star? Taking a clue from Pluto, which now obviously isn't a planet (or is it?) but a dwarf-planet, perhaps we should call

these independent bits of substellar creation 'not-planets'. Fits the scheme.

Just some passing thoughts.

A REMINDER...

Remember that the sea tank in Cretaceous needs constant coverage whenever the Museum is open for visitors. Regardless of what some of us may think of it, it is an integral part of the Museum exhibits and of the visitors' experience. So, let's put our opinions aside and share the load. It's a good place to sit and relax and to have pleasant and interesting conversations with visitors. Besides, kids, especially, love it and relate to it.



APPRECIATING OUR OWN

Peggy Owen continues to do a bang up job, as she's always done, in keeping track of our hours, not only for the benefit of the Museum, but for our benefit as well. Let's try and make life in the office a bit easier for her. Please make your entries simple, clear, and timely.

John McDonnell

LIBRARY LINE: “THE GREATEST DINOSAUR HUNTER OF ALL TIME”

Barnum Brown: The Man Who Discovered *Tyrannosaurus Rex*, by Lowell Dingus and Mark A. Norell, 2010, 368 pages (302 pages of text). Call number: QE707.B77D56.

Barnum Brown lived fast and worked hard. He was a wilderness gourmand, a natty dresser, a drinker, gambler, and smoker... He was sex, dinosaurs, and science all wrapped around an enigmatic private life, and we have just begun brushing the loose sediment off the surface to reveal what lies buried beneath.

From Epilogue of *Barnum Brown*

Yes, he was named after P.T. Barnum, but that was all he had to do with the circus! Nevertheless, this remarkable man (1873-1963), a collector and field man for the American Museum of Natural History (AMNH) for nearly 50 years, had an extraordinary impact on promoting public interest in dinosaurs and other prehistoric beasts, by collecting hundreds of remarkable specimens from all over the world. The story of his career in many ways is a good part of the story of dinosaur collecting. He began shortly after the era of the bitter Cope/Marsh feud, was a contemporary of Roy Chapman Andrews, and was succeeded when he retired by Ned Colbert, famous for his discovery of *Coelophysis* in New Mexico.

This biography traces Brown’s life from early childhood on a farm in post-Civil-War Kansas to his death in New York in 1963. His background gave him a good start: he picked up fossil shells and corals around the farm, developing an early interest in collecting. He traveled with his father around the West on a “freighting trip” with a horse-drawn wagon, moving loads and camping out. He also helped his mother cook for a large crew

Brown’s field experience started early. While he was still a student at the University of Kansas, he decided to be a paleontologist. Even as a student, his abilities in the field quickly became apparent, and, after several successful field seasons, his advisor recommended him for a position at AMNH. His first assignment, looking for fossil

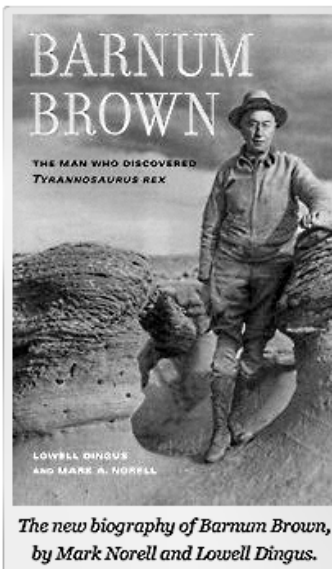
mammals in the San Juan Basin of New Mexico and the Big Horn Basin of Wyoming, was a success, and his career with AMNH was on its way.

His adventures are remarkable not only for the quantity and diversity of what he found, but also for the variety of places he worked and the field challenges he confronted. He worked extensively in New Mexico, Wyoming, Utah, Montana, Arizona, and Alberta (the area now famous for the Royal Tyrrell Museum). He also talked his boss into sending him on an expedition to Patagonia (Argentina/Chile), where he was unfazed by difficulties of communicating in Spanish, finding horses and supplies, and travelling cross-country.

Brown was indefatigable in covering a great number of sites in one field season—for instance, in 1904, while on a “honeymoon” with his wife, he travelled to Indiana to check a mammoth skeleton, then on to South Dakota to look for plesiosaurs, off to Montana for Cretaceous dinosaurs, to Colorado to see Pikes Pike, on to New Mexico to look for duckbills, to Arizona to assess some Pleistocene fossils, and eastward to the Ozarks (Arkansas) to investigate Pleistocene

fossils of animals trapped in a cave. The trip ended with a return to the west to see the Petrified Forest and the Grand Canyon, and a final return to New York by train.

Many of the specimens that Brown collected are still on display at AMNH (a complete list is provided in an



appendix), and, after reading about how some of them were collected, you may want to go there and see them for yourself. This is a story of an amazing person in an era when few rules and little infrastructure made collecting a whole different game than it is today.

Laurel Babcock, Librarian

FIELD TRIP REVIEW

University of New Mexico

Department of Earth and Planetary
Sciences

On February, September 24, 2011, a group of museum volunteers traveled east to Northrop Hall on the University of New Mexico campus, the home of the Department of Earth and Planetary Sciences. Our goal was to experience advanced geological research and to discuss some of the vicissitudes of scientific investigations. (A secondary goal was overcoming the “parking Mafia” at the university.)

The itineraries for the day were first to tour the nationally-recognized Meteorite Museum and then visit the Microprobe/SEM laboratory to experience an analytical procedure on a number of



UNM's famous Navajo Meteor-found in 1922

geological samples. Our tour guide for the museum was Laura Burkemper, a graduate student whose research interest is high temperature petrology. The museum itself shows the full range of meteorites from stony to iron including many famous individual meteorites.

For the next stage of the tour, Mike Spilde chose samples for analysis that are representative of his research interests. The first sample was the biogenetic (actinomycetes) creation of iron oxide on selenite crystals (the mother of these crystals was seen in two recent issues of National Geographic Magazine). The microprobe analysis of the second sample, a rare element pegmatite proximal to Petaca, NM, illustrated an array of complex rare-elements.

An example of the richness of a primary accessory pair was the solid solution polycrase-euxenite (a partial list of elements:

Y, Ca, Ce, U, Th, Nb, Ta, Ti, and O). This analysis was accompanied by a discussion about the availability to our economy of rare earth elements. The third example was data about a hydroxide mineral (hydroxylapatite) within moon rocks that were being analyzed for the probability of available water. The data seemed to support such availability for future moon missions.

In the afternoon we toured the Geology Museum with Dr. Barry Kues as our tour guide. Particular attention was paid to a “Paleocene” age Hadrosaur femur. Of course, as we all know, this data cannot be so! (Right?) The ensuing discussion on this issue delved into the exigencies of scientific pursuits. Dr. Kues believes that evidence supports the Cretaceous-Paleocene Contact as the time of the Dinosaur Extinction. For those wishing to understand the contrary view, see the article, *The San Juan River Dinosaur-bone Site*, by James E. Fassett in the NMGS 61st Annual Fall Field Conference Guidebook, page 62. This publication can be found in the volunteer library.

The Geology Museum is small but action-packed. Some highlights are a remarkable orbicular granite sample (rock source: the granitic Sandia pluton) and a Harding Pegmatite suite of rare and exotic minerals. Available to a future geo-tourist are displays of geological samples, more sophisticated research equipment/ instrumentation and posted current publications. These are scattered throughout the department. Bon appetite!

John Throne

TOUR GUIDES NEEDED

If you are a Museum Docent and you are interested in becoming a tour guide, please contact me at 243 6220 or bird57bugs@aol.com. We are in need of at least ten more guides to fully supply the museum with a service that is essential for an institution of our size and reputation. Contact me and let's talk.

Bud Hodgkin, Tour Guide Coordinator

FIELD TRIPS FOR VOLUNTEERS

FIELD TRIP NOTES

You will notice that we have several field trip opportunities offered within a short period of time this spring. A number of factors are involved including weather and availability of staff and vans.

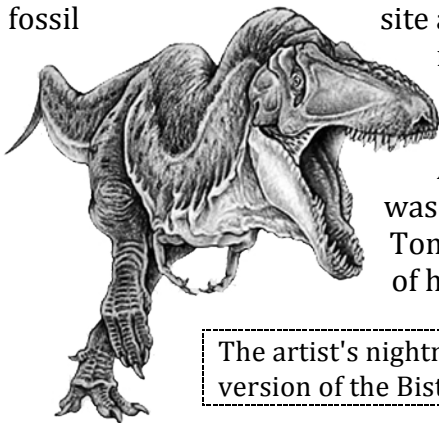
The Field Trip Committee really needs a couple more volunteer members to help plan trips. Committee members are asked to attend one planning meeting and to be in charge of one field trip each six months. We would like to continue to improve the quality and variety of the trips we offer, so, if you can help out, call **Pat Robinson 343-0526**.

BISTI FIELD TRIP

Dr. Tom Williamson

May 18, 2011

Background: Dr. Tom Williamson has been collecting Late Cretaceous dinosaurs from the Bisti area since 1997. In that year volunteer Paul Sealey found an interesting fossil site at Bisti and



The artist's nightmare version of the Bisti Beast.

realized that it had great importance. A large block was excavated by Tom and a crew of hard working

volunteers and airlifted out of the remote site by helicopter. Two years of hard work by volunteers preparing the specimen revealed a spectacular find. Careful analysis and scientific work revealed that the "Bisti Beast" was indeed a new genus and species of tyrannosaur.

Field Trip: We will be going out to the Bisti area again with Tom on May 18! Who knows what will be found? This is a strenuous trip,

however, so volunteers need to be able to walk 4-5 miles over uneven ground. There are several places where it is necessary to scramble in and out of 8-foot deep arroyos.



Our own Tom Williamson in the field where the Beast was found.

In addition, this is a long trip,

which will require an early start from the museum and a very late afternoon return. If you want to sign up for this trip, please be *sure* that you are prepared for a long day and are able to undertake a strenuous hike. This is a remote site with no help available, and fellow volunteers are probably unable to carry/drag anyone else!

See **Field Trip Book** for details

Pat Robinson 343-0526

EL MALPAIS: LAVA FLOWS TRIP

Thursday, May 12

8:30 am – 5 pm

How do lava flows actually erupt? Why is New Mexico important in this story? Recent research on one of the world's largest, young lava flows, here in New Mexico, has changed our ideas and assumptions about the way lava flows actually flow--and why they flow.

The McCartys flow in El Malpais is a world-class, long, young lava flow that is currently being studied to define lava flow textures and processes. Both Larry Crumpler and Jayne Aubele are part of a major research effort funded by the Smithsonian and NASA to understand long lava flows on Earth and the other planets, and transmit that information to the public.



El Malpais visitors find unusual rock formations at every turn.

the **Field Trip Book**.

Join them on this daylong field trip that will include a stop at the Sandstone Bluffs overlook and a hike on the flow at the Lava Falls Trail. Bring lunch, water, and a small daypack, and wear heavy shoes, long pants, hat, sunglasses, and whatever else is needed for the weather.

Full details will be in

Pat Robinson 343-0526

NATIVE PLANT FIELD TRIP

Our Own Gary Runyan



The beautiful claret cup cactus is often in bloom this time of year.

near the Albuquerque Volcanoes. Gary, as you know, spends countless hours maintaining the grounds around the museum.

Our trip will take us out into that local environment to see those plants in their native setting. This will be a short trip and should only require 1 to 2 miles of easy walking.

Please see the **Field Trip Book** for details.

Pat Robinson 343-0526

**April 29,
2011**

On Friday, April 29, our own native plant expert Gary Runyan will lead a local trip to

identify plants in the landscape

CONTINUING EDUCATION: Plants of the Southwest around our Natural History Museum

April 18, 2011, 9:30 pm, in the MPR

Join us for an outside tour around the museum with Gary Runyan, who is the Groundskeeper for the museum. Gary has a very interesting history with the museum. He has been a very able computer programmer, and you will find him in a StartUp Exhibit Hall video.

Moving on from his computer programming days, we find him in his present position. He has taken Master Gardener training as well as learning about our native plants through the Native Plant Society (for which he acts as treasurer). He will not only identify the plants around the museum, but he will also discuss why they were chosen for planting and placed where they are. There is a plan to it!

Donuts and coffee? Of course. Come join us. We will meet in the MPR for a brief overview and then venture outside.

Gerry Laidlaw

MEETINGS

TOUR GUIDES, DOCENTS, AND VOLUNTEERS MEETING

April 19, 2011, 10:30 -12:30, in the MPR

If you are interested in becoming a tour guide or want to update your museum knowledge, plan to attend this gathering. Speakers include Barry Granoff and Bud Hodgkin addressing the topic: ARE BIRDS DINOSAURS? There will be a full hour discussion of this topic relating to bird evolution and archaeopteryx.

Enjoy a light lunch and good conversation.

Bud Hodgkin, Tour Guide Coordinator

DON'T MISS THE EXHIBIT HALL

REFRESHERS: Notes on Atrium and Minerals, Presented by Jayne Aubele on February 15

Docents, have you bored yourself by telling visitors the same story over and over? Have you been at a loss for finding the best answer for questions posed to you? Would you like to learn new ways to interact with visitors as they tour the exhibit halls? These issues and more are addressed in the Exhibit Hall Refresher Series organized by Jane Aubele, Adult Programs Educator.

Jayne conducted the first in the series, Atrium/Minerals, on February 15. More than a dozen volunteers followed Jayne through the Museum and listened to her stories. She gave many ideas for openings with visitors:

- Do you know we have found T. Rex in New Mexico?
- Feel the T. Rex tooth.
- What do you think the layers in the rock wall represent?
- In the Atrium, we are walking on garnets.
- What conditions in New Mexico favor production of travertine as seen in the entryway flooring?
- Did you know that New Mexico has earthquakes too? In the past 100 years there have been 1,100 earthquakes in New Mexico.
- Did you know that a new Hawaiian island, Lo ihi, is forming on the east end of the Emperor Chain?
- In the mineral exhibit, can you tell how specimens are categorized?
- What is the difference between a mineral, a rock and a gem?
- Is mercury considered a mineral?
- Find the state gem for New Mexico.

Jayne gave the answers to all of these tantalizing questions during the Atrium and Minerals refresher. Almost all of the

information is in your Docent Handbook, some you can find in the Volunteer Lounge library resources, and for other questions, you will have to ask Jayne.

Three of the 12 Exhibit Hall refreshers have already been held. Don't miss the next three Exhibit Hall refreshers!

April 7 (Thursday)	2:00-3:30	Jurassic
May 9 (Monday)	9:00-10:30	Volcano
June 7 (Tuesday)	1:00-2:30	Cretaceous

There are always things to be learned and re-learned about the permanent exhibits of our Museum. Put these refresher trainings on your calendar for the coming year. They will be part refresher training and part discussions with fellow docents. No lecture... no PowerPoints! Open to all Docents. Meet in the hall at the specific day and time.

Submitted by Mary Moore

DOCENT SOCIALS

Museum Docents are invited to attend these relaxed get-togethers. They are an informal and fun way to interact with "fellow docents." Talk about the way you interpret a specific exhibit, discuss the answer to a visitor's strange question, or ask me a science content question. Light refreshments and occasionally a very short mini-lesson. Held in the MPR.

Tuesday	MAY 3	2-3 pm
Friday	JUNE 17	11 am-12 pm
Thursday	AUGUST 4	2-3 pm
Saturday	SEPT 17	11 am-12 pm
Tuesday	NOV. 1	9:30-10:30 am

OPEN SESAME BAT CART

Notes on the Bat Cart Refresher

Presented by Paul Mauermann on February 8

Do you know about the Exhibit Hall carts and how they magically draw in visitors for a learning experience? Eight of the Museum Halls have Exhibit Carts stuffed full of materials to be handled by our visitors. Of course, that means we get to touch the items, too. The carts also contain lots of written information for learning and sharing. After you learn about the contents of a cart, you will have more fun telling your science stories using the props they provide.

Jayne Aubele, Adult Programs Educator at NMMNHS, has organized eight training/retraining sessions for the Exhibit Carts.

Paul Mauermann, Site Manager for the Sandia Mountain Natural History Center, presented the first in the series: **Bat Cart Refresher**. Paul knows lots about bats of New Mexico, after working for 11 years as an interpretive park ranger at Carlsbad Caverns.



From the Bat Cart, located in the Cave Exhibit Hall (how appropriate), Paul extracted displays of stuffed bats, bat skeletons, recordings of echolocation, a man-made bat house and a loose-leaf binder full of fun bat facts. He shared many fascinating stories about bats, and, as one would expect, visitors stopped and listened in during his Bat Cart comments.



To use a cart, get the key from the Volunteer lounge and find the appropriate cart in its exhibit hall. Unlock the cart, read background information provided, share what you learned for whatever length of time you desire, return all items to the cart, lock it, and return the key to the Volunteer Lounge.

OPEN SESAME CART REFRESHERS

Don't miss the next three Refreshers.

April 28 (Thursday)	2:00-3:30	Rocks and Minerals Cart
May 19 (Thursday)	9:00-10:30	Skulls Cart
June 13 (Monday)	2:00-3:30	Solar Cart

"IT'S MY HAPPY PLACE"

I approached a college-aged fellow who was studying the wall-sized, 3D earthquake map in the atrium. After a pleasant greeting, I decided to begin an interaction by asking whether he had visited the Museum before. His response was, **"Oh yes, I come all the time. This is my happy place."**

Submitted by Mary Moore

APRIL 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
3	4	5	6	7	8
		PUBLIC Class: Rocks and Minerals 1-3 pm Jayne Aubele	PUBLIC Tour: Exhibit Design and Fabrication 10-11 PUBLIC Curator's Coffee Wildlife of the Sandias 9:30-11 am Chris Modelski	Volunteer Docent Discussion: Jurassic Hall 2-3:30 Tish Morris	
10	11	12	13	14	15
PUBLIC Solar Sunday		PUBLIC Class: Rocks and Minerals 1-3pm Jayne Aubele Volunteer Board of Director Meeting 1:00 pm			
17	18	19	20	21	22
	FOP Meeting 7 pm Continuing Ed 9:30 am "Plants of the Southwest Around the Museum"	Volunteer Meeting for Tour Guides 10:30-12:30 am PUBLIC Field Trip ABQ Volcanoes 9-noon Larry Crumpler & Jayne Aubele	Tour Guide Training 9:30-1 pm	Tour Guide Training 9:30-1 pm	
24	25	26	27	28	29
				Volunteer Open Sesame: Rocks and Minerals Cart Jayne Aubele	Volunteer Native Plant Field Trip: Gary Runyan

MAY 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
		Volunteer Docent Social 2-3 pm	PUBLIC Tour	PUBLIC Curator's Coffee 9:30-11 Larry Crumpler		
8	9	10	11	12	13	14
PUBLIC Solar Sunday	Docent Discussion: Age of Volcanos Hall 9-9:30 Jayne Aubele		FOP Meeting 7 pm (note change of day)	Volunteer Field Trip: El Malpais		
15	16	17	18	19	20	21
		Volunteer Board of Director Meeting 1:00 pm	Volunteer Exhibit Hall Training: Degree of Change Volunteer Bisti Field Trip PUBLIC Class: ABQ Geology Jayne Aubele	Volunteer Skull Cart Training: 9-10:30 am Mike Sanchez		"Degrees of Change" Grand Opening Short talk at 3pm
22	23	24	25	26	27	28
			Volunteer Training on New Exhibit: Degrees of Change 9-11am			
29	30	31				
		Volunteer Exhibit Hall Training: "Emergence" 10-noon				



NEW FEDERAL FOSSIL COLLECTION RULES INCORPORATE ALL AGENCIES

Paleontology on Public Lands, presented by geologist Pat Hester from the Albuquerque District BLM office, was the topic at the February 21, 2011, FOP meeting. While no details of a specific fossil were mentioned, the talk was in effect about all fossils in terms of the changing laws at the Federal level governing paleontology management and protection.

Among the changes is the elimination of the word “fossil” in favor of “paleontological resource.” Under the umbrella of the Paleontological Resources Preservation Act of 2009, two laws were reviewed, which, for the first time, puts all land management organizations (Interior Department, Forest and Park Service, BLM, etc.) under one guideline that fosters interagency coordination.

A wide range of science issues geared for increased public awareness are addressed in these laws, such as protection of ancient plant, animal and trace evidence as well as economic issues regarding land values, uses, permits and licenses. Note that the exact location of a paleo site is exempt from the Freedom of Information Act. These laws also state that there is no commercial collecting for selling without a specific permit. They also state that criminal and civil penalties are applicable.

Three things became obvious. The first is the use of general terms in the guideline documents, such as “hobby or casual” collection, “reasonable” amounts, “common” invertebrates and “personal use”. The second is that it is the domain of the BLM at the state level to define these issues and promulgate local directives, which will take time. And the

third is how museums play key roles in the protection, documentation and preservation of paleo resources.

The federal guidelines state that the management of these resources must use scientific principles and expertise for preparation and educational use. NMMNHS paleontologists have forged excellent partnerships with BLM offices statewide and are relied upon heavily for paleo expertise, inventory and care of specimens collected on BLM lands, and also fostering public education. BLM in turn helps the museum to get Federal Grants for research and publications.

Docents and hosts should understand the basic tenants of these laws. Many visitors, after seeing the exhibits, have asked about private collecting of paleo resources. Two existing BLM brochures, *A New Paleontology Law* and *Fossils on America’s Public Lands* are available, providing overall guidance.

Dick Yeck, VP for Programs, FOP

FRIENDS OF PALEONTOLOGY MEETINGS

The next two meetings of the Friends of Paleontology will be held in the Museum Multipurpose Room at the following dates and times:

Date: April 18, 2011
Day: Monday
Time: 7:00 pm
Speaker: Justin Spielmann
Subject: TBD

Date: May 11, 2011
Day: Wednesday
Time: 7:00 pm
Speaker: Dr. Andy Heckert, Assistant Professor, Department of Geology Appalachian State University, NC
Subject: *Trekking Across the Triassic*

MEMBERSHIP REMINDER MEMO

**FROM: The Membership Chair,
Peggy Minich, 899-8590**
TO: All Volunteers
RE: Membership Dues

Just a reminder that in order to be considered an active volunteer in good standing, you must not only work a minimum of 30 hours every calendar year, but also pay/renew your volunteer membership dues every 12 months. Dues are \$16 per volunteer over 18 years of age. FOP members are not required to work the minimum volunteer hours but pay membership dues at a higher rate. You may pay/renew your membership at any level/category, but please denote the number of active volunteers included in the membership on both the check and membership form. You will receive a renewal form from the Foundation the month before your membership expires. Or, you may do this at the membership desk at the Museum entrance. Be sure to tell them you are a volunteer and request a receipt whatever your form of payment. If you have any questions . . . just call me!

JAPANESE EARTHQUAKE AND TSUNAMI MAKE FOR 'TEACHABLE MOMENTS'

From: JOHN DERR, USGS, Albuquerque Seismic Lab and TISH MORRIS, Youth Programs Educator, NMMNHS



The IRIS Consortium (Incorporated Research Institutions for Seismology), the university group that sponsors the Global Seismographic Network along with the USGS, HAS put together "Teachable Moments" for great earthquakes.

Links for the IRIS site and other, similar sites are presented below. We hope they will be helpful to you.

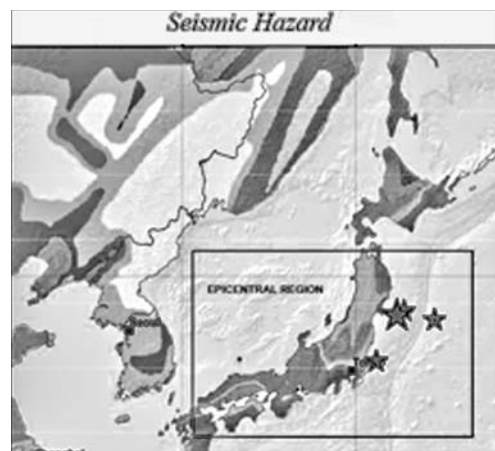
The following links are from the IRIS web site: <http://www.iris.edu/hq/retm>
From the IRIS site, you can access the following:

- ✓ A 30-second video explaining the dynamics of subduction:
http://www.youtube.com/watch?v=ep2_axAA9Mw
- ✓ Some of the essentials, updated March 13, 2011, include a 23 slide **PowerPoint presentation** (zipped ppt/animation 4.16 MB / pdf 2.88 MB)
- ✓ How did Japan move eight feet in the earthquake? Explanation / Animation. (**YouTube / QuickTime MB**)

The USGS site with all of our links, updates, maps, and technical information:



<http://earthquake.usgs.gov/eqcenter/receiveteqsw/Quakes/usc001xgp.php>





M9.0 Near the East Coast of Honshu, Japan

A magnitude 9.0 earthquake occurred near the east coast of Honshu, Japan, as a result of thrust faulting on or near the subduction zone interface plate boundary between the Pacific and North American plates. This earthquake generated a tsunami, and a tsunami warning was issued throughout the Pacific.

DEPTH

32 km (19.9 miles) set by location program

REGION

Near the east coast of Honshu, Japan

DISTANCES

80 miles E of *Sendai, Honshu, Japan*

109 miles E of *Yamagata, Honshu, Japan*

109 miles ENE of *Fukushima, Honshu, Japan*

231 miles NE of *TOKYO, Japan*



For an animation of what that tsunami looked like, see the Pacific Northwest Seismic Network:

<ftp://www.agu.org/apend/jb/2003JB002521/2003JB002521-animation.gif>

That's our Japan, waiting quietly for 300 years and ready to slip catastrophically as it last did between 9:00 pm and 10:00 pm, local time, on January 26, 1700.

How do we know so precisely? See:

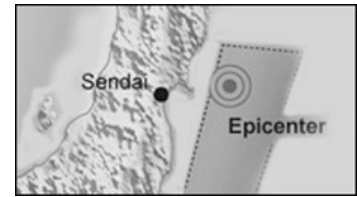
http://www.pnsn.org/HAZARDS/CASCADIA/cascadia_event.html

The life of a tsunami:

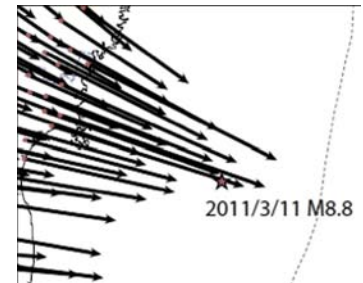
<http://walrus.wr.usgs.gov/tsunami/basics.html>

This NYT article is an excellent account of the earthquake's effects on the rotation

axis. <http://www.nytimes.com/2011/03/14/world/asia/14seismic.html>

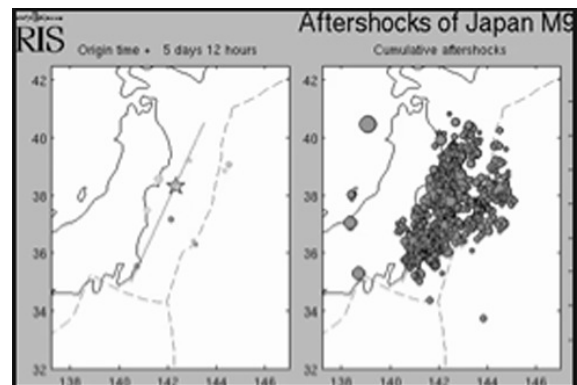


Another interesting graphic shows the displacement vectors from the elastic rebound. Note the vector scale in the lower right:



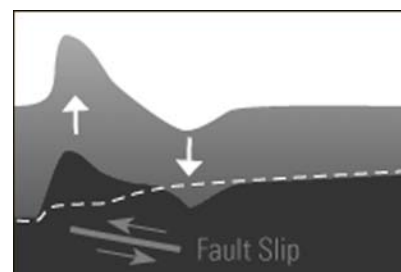
http://www.unavco.org/community_science/science_highlights/2011/M8.9-Japan-images/M8.9-Japan-Sendai_GPS_coseismic-large.gif

<http://nhbarcims.si.edu/ThisDynamicPlanet/index.html>



For an animation of how that tsunami looked:

<http://www.iris.edu/news/events/japan> 2011/



For plate tectonics and much more, there's a GIS-type interactive map at This Dynamic Planet: <http://nhbarcims.si.edu/ThisDynamicPlanet/index.html>

If you haven't used GIS before, it takes a lot of practice and can be frustrating. Click on the "Layers" tab at the top, check "Plate Tectonics" for the plate boundaries, zoom in or out using the scale at the upper left, click and hold on the map to move it out from under the menus. The legend on the right can be removed by clicking on "Legend" in the lower right; similarly, you can remove the "Layers" index.

Essentially, the Pacific plate is pushing under Japan--visualize the first YouTube link at the top of this message, mirror imaged so the plate is subducting to the left. This is a "Convergent" (subduction) boundary, indicated by the dark yellow line (zoom in). Now move the map over to the coast of Oregon/Washington and you'll see the same dark yellow line. The motion on the Pacific coast of the US is more complicated; essentially, the motion of the San Andreas fault is horizontal, with the Pacific plate moving NW with respect to the rest of the US. When it gets to the Mendocino fracture zone, it turns and moves W. North of Cape Mendocino, there's another subduction zone (Cascadia) pushing under Oregon and Washington.

It will happen again, possibly in our lifetimes, and some say that we really are not well prepared for it. What do you think?

TOUR GUIDE TRAINING Become a Museum Certified Docent Tour Guide! April 20 and 21, 9:30 am-1:00 pm, both days, MPR

For over 20 years we've had Tour Guides leading visitors through the Museum. Requests for tours by educational groups have increased in recent years and the Education Department is looking to grow the Museum's Tour Guide Program.

We are seeking Docents who are interested in joining the program, but the training serves as a professional continuing education opportunity for existing Tour Guides as well.

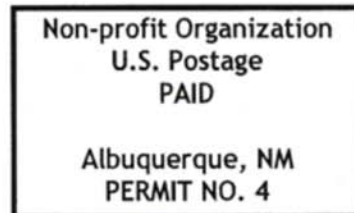
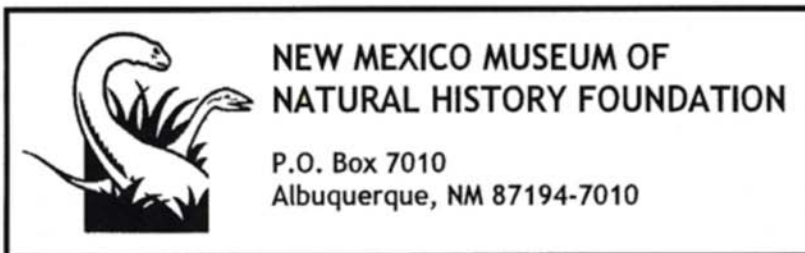
Join Director of Education, Jessica Sapunar-Jursich for an interactive and hands-on training covering: effective pedagogical and interpretive strategies, tour tips and tricks, and tour planning techniques for museum visitors of all ages. This training is for existing Docents only since it will not cover individual hall science content.

Please sign up for this training in the Volunteer Lounge. Contact Jessica at 505-841-2836 or jessica.sapunar-jursich@state.nm.us for more information.

'DEGREES OF CHANGE' GRAND OPENING!!!

May 21....1-3 pm...."Degrees of Change" grand opening... explore the new exhibit... meet climate-related New Mexico exhibitors in the Atrium... and attend a short talk at 3 pm by Dr. David Gutzler, Climate Scientist, University of New Mexico and technical advisor for the exhibit.

Jayne Aubele



NMMNHS VAN

April-May, 2011

ADDRESS SERVICE REQUESTED

VAN MISSION STATEMENT

To inform, engage, and enhance the experience of NMMNHS Volunteers by:

- Acting as a vehicle of “continuing education”
- Keeping volunteers informed about the Museum
- Relaying news of volunteers and their activities.

Editor: Louise Harris

June-July VAN Deadline is May 15, 2011.

Email articles to louise@goingourway.net *with* a copy to chris.sanchez@state.nm.us
Please limit each article to 800 words—less if you have an accompanying photo.

We welcome your articles pertaining to the Museum. We may edit for clarity and space limitations.

