

DINOSAUR RIDGE



Ridge Report – Fall 2011

Friends of Dinosaur Ridge
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The mission of the Friends of Dinosaur Ridge is to preserve the paleontologic, geologic and historic resources on Dinosaur Ridge, Triceratops Trail and the outlier sites in the Morrison-Golden Fossil Area National Natural Landmark and to educate the public about these resources.

Major Contributors:

- * Rocky Mountain Association of Geologists (RMAG)
- * Greater Denver Area Gem & Mineral Council
- * Jeffco Conservation Trust Funds
- * Scientific & Cultural Facilities District (SCFD)
- * Golden Civic Foundation
- * Dan & Mac Turner Estates
- * Xcel Energy Foundation
- *Western Interior Paleontological Society (WIPS)



**Scientific & Cultural
 Facilities District**

Making It Possible.

Cover Photo: A happy visitor at Dinosaur Ridge.
 Photo by Clare Marshall

FRIENDS OF DINOSAUR RIDGE 2010

Executive Committee:

President	Sam Bartlett	Bureau of Recl. (Ret.)
Vice-President	Kathleen McCoy	Lawyer
Secretary	Beth Simmons	MSCD Geo. Instructor
Treasurer	Keith Meakins	Accountant
Norb Cygan	Geologist (Ret.)	
Pete Martin	U.S. Bureau of Reclamation	

Board of Directors:

Marsha Barber	Science Coordinator Jeffco Schools (Ret.)
Chris Carroll	Colorado Geological Survey
Tim Connors	National Park Service
Harald Drewes	Geologist (Ret.)
DuWayne Ebertowski	Trans. Planner (Ret.)
John Ghist	High School Earth Science Teacher
Jonna Gentry	High School Earth Science Teacher
Martin Lockley	University of Colorado, Denver (Ret.)
Marj MacLachlan	Geologist (Ret.)
Judy Peterson	Paleo Artist
Betty Rall	Geologist (Ret.)
Robert Reynolds	Denver Museum of Nature & Science
Kermit Shields	Geologist (Ret.)
Lou Taylor	Denver Museum of Nature & Science

Committee Chairs:

Sub Committee Chairs:

Beth Simmons

- Martin Lockley
- Lou Taylor
- Clare Marshall
- Tom Moklestad
- Marsha Barber

Kermit Shields

- Tom Moklestad

Clare Marshall

Vacant

- Pete Martin
- Robert Reynolds
- Keith Meakins

Sam Bartlett

Tom Moklestad

Joe Tempel

Committees:

Sub Committees:

Education

- Publications
- Curation/Ridge Report Editor
- Exhibits
- Tours, Events, Brochures, Posters, Signs
- K-12 Education

Volunteers

- Community Outreach

Membership

Finance

- Budget
- Investments
- Accounting

Preservation & Long Range Planning

Marketing

Development

Staff - Friends of Dinosaur Ridge:

Executive Director	Joe Tempel
Programs & Operations Director	Tom Moklestad
Education Programs Assistant	Erin Fair
Visitor Center Manager	Roger Bennett
Visitor Center Assistant	Barbara Davidson
VC Assistant and Computer Tech	Brian Davidson
Driver/Birthdays/Visitors Center	Bobbi Kilgore
Membership/Exhibits	Clare Marshall
Driver/Tour Guide	Morgan Gray
Driver/Tour Guide	Amber Cain
Driver	Sue Kaberline
Driver	Dan Fanelli
Driver	Thornton Geise
Docent (Sat/Sun)	Merlin Barnes
Docent (Sat/Sun)	Jamie Paul
Docent (Sat/Sun)	Linda Evans
Maintenance	Bob Medine
Maintenance	Jack Evans

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Dan Fanelli, a Friends of Dinosaur Ridge bus driver and tour guide, has been accepted into a Masters Program at the University of Denver. He not only will receive teacher certification but also a Masters Degree in Education in one year. His education and a one-year stipend are fully funded by the Boettcher Foundation. Dan will not only attend classes at DU but will also be teaching under the supervision of a mentor for a full year. After completion of the first year, he will be hired full time by the Adams County School District for four years. Dan wants to give a special thanks to Beth Simmons and Clare Marshall for supporting his efforts to get into the program. We will see him back next summer. Congratulations to Dan! Photo by Clare Marshall.

MANAGEMENT REPORTS

PRESIDENT'S MESSAGE

Within the past quarter, the FODR has been part of three major accomplishments: completion of the palm frond protective structure at Triceratops Trail; designation of the Morrison-Golden Fossil Areas National Natural Landmark; and completion of state-of-the-art mapping programs at the tracksite.

On June 4th we held a dedication at Triceratops Trail for the palm frond protective structure. This completed a several year project that began with the recognition that this paleontological treasure was deteriorating rapidly.

Under **Joe Tempel's** leadership and hard work we have increased the awareness of the deteriorating conditions at the palm frond wall, raised the necessary funds, and successfully erected a sturdy, aesthetically pleasing structure. The palm frond wall will be protected from severe weather for many years, so that future generations can be as awed by these paleontological treasures as we are. Completion of this significant structure will convince future supporters that FODR can, even in difficult environments and with exacting requirements, successfully complete large projects on time. This will bode well when FODR takes on even larger projects such as the tracksite cover.

Also in June, the U.S. Secretary of the Interior Ken Salazar notified us that the Morrison Fossil Area National Natural Landmark had been re-designated to include sites in Golden, and is now officially named the Morrison-Golden Fossil Areas National Natural Landmark. This expanded designation was due mainly to the hard work and perseverance of **Dr. Martin Lockley** and our **National Park Service** supporters. In addition to Dinosaur Ridge, the new areas include Triceratops Trail, paleontological resources on the Colorado School of Mines campus, and the famous bird, crocodile and dinosaur tracks at the north end of Golden. The Hawk Nest and Lena Gulch sites are missing from the re-designation; they were not discovered until after the process was well underway. The importance of this designation is that it gives FODR national stature and recognition for its accomplishments in

preserving and protecting local paleontological treasures. This will become more important as we move toward permanently protecting our endangered tracksite.

In mid-May, FODR hosted several organizations that performed detailed mapping programs at the tracksite. The U.S. Bureau of Land Management and U.S. Bureau of Reclamation teamed up under the leadership of our own **Neffra Matthews** to photogrammetrically map the tracksite in order to produce detailed paleontological maps for analysis of the deteriorating track conditions. Just prior to this exercise, **Harold Schuch** of GeoCounsel, Inc. volunteered to photogrammetrically map the tracksite with the emphasis on engineering parameters. Immediately following these two programs, **David Phillips** of the University of Colorado at Boulder came onsite to laser/lidar map the tracksite.

The importance of these various mapping programs is threefold. First, it signals that Dinosaur Ridge is still recognized as being in the forefront of science and technology. Secondly, these mapping projects will allow us to directly compare current track maps with the original tracksite map produced by Dr. Lockley to determine exactly how many tracks we have lost and gained over the past decades. Thirdly, these mapping programs are exactly reproducible, giving us a repeatable means of tracking the changes in conditions on the tracksite surface over time.

The one common and essential thread running through these three accomplishments is the outstanding dedication and foresight of the FODR volunteers and staff. Without their dedication, foresight, and their always looking to improve FODR and protect our paleontological treasures, these and all of our past accomplishments would not have been possible. As we look to the future, our volunteers and staff will become ever more important to our growth and increased stature as a truly world class organization. **Thank you, staff and volunteers for your many efforts to continually improve the FODR.**

— SAM BARTLETT

MANAGEMENT REPORTS

EXECUTIVE DIRECTOR'S REPORT

Memorandum of Understanding (MOU) with Jefferson County, Lakewood, State Historical Society and the Friends of Dinosaur Ridge regarding the opening of the Alameda/C470 interchange and the restriction of traffic over Dinosaur Ridge

After many meetings and drafts of the MOU we finally signed one that was acceptable to the Friends and the other parties subject to the agreement. We feel we have protected the resources on the Ridge and the safety of the public viewing the resources on the Ridge.

Amended Lease Agreement with Jefferson County

Little work has transpired in the last six months on the lease to incorporate our programs and responsibilities on the Ridge with our current lease at the Visitor Center. This is primarily because we were focusing on the MOU described above. We look forward to completing this agreement in the next six months.

— JOE TEMPEL

PROGRAM DIRECTOR'S REPORT

FIRST HALF, 2011

Program	2010	2011	Change
Visitors to Visitor Center	23,148	26,507	+15%
Tours (Total Attendance)*	16,501	16,923	+ 3%
<i>Trek Through Time</i>	8,995	10,887	+21%
Dino Discovery Days-May/June	1,950	3,150	+62%
Birthday Parties	252	292	+16%
Fireside Chats, Field Trips	157	97	-38%
Teacher Classes (3)	14	35	+150%
Traveling Exhibit Visitors	1,000	1,000	-----
Off Season Exhibits/Events (2)	NA	342	---
Sales (\$) **	\$117,650	\$143,705	+22%

* includes attendance for guided school tours, shuttle bus tours, school outreach and "Walk with a Geologist."

** includes receipts from Gift Shop, Shuttle Bus, Trek Through Time, School Tours, Birthday Parties, Walk with a Geologist, Teacher Classes, and Facilities Rental.

Attendance is up about 20% in general. The exceptions are the flat attendance at school tours, a dip in school outreach, and a 12% increase in shuttle ridership. These provided for a marginal 3% increase for "Tours". Dinosaur Discovery Days spiked partly because of the rainout for the June 2010 event. Teacher Class enrollment is up. Average class size increased from 7 to 12, in part due to stepped up marketing and the addition of a third class in the second quarter.

Sales are up 22%, led by the Gift Shop (+ \$15,519) and the Shuttle Bus Tours (+ \$9,197). Birthday Parties, Exhibit Hall Tickets, and Teacher Classes helped.

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MANAGEMENT REPORTS

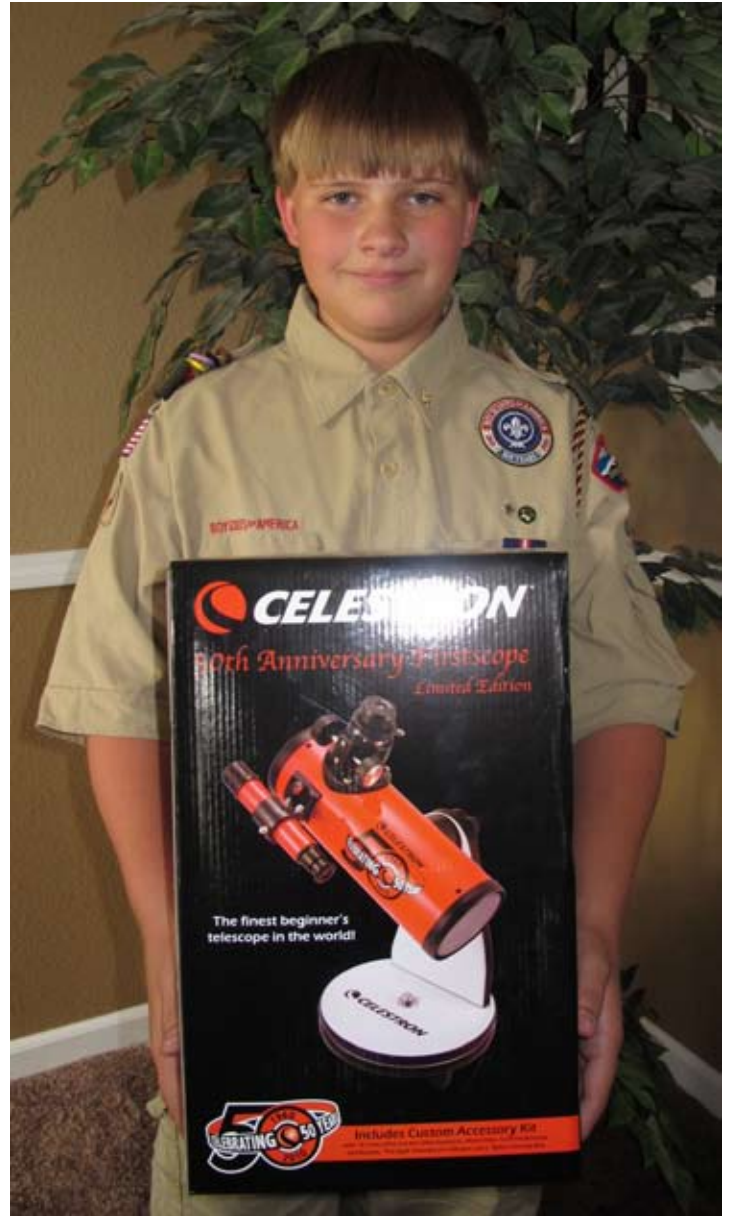
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DDD – Boy Scout Day, May 7, 2011

Nice weather contributed to an all time record attendance for a Dinosaur Discovery Day—2500 visitors. The breakdown: pre-registered scouts with family members and leaders, 1450; walk-up scouts with family members, 250; and the general public, 800. Thanks to **Thunder Valley Moto-Cross** for providing off-site parking. Visitors parked 500 vehicles there and were shuttled by two school buses to the visitor center. Visitors were later shuttled to the east gate on FODR's electric cart and the other two FODR passenger vans transported visitors to the west side of the Ridge, from where they could walk back. Thanks to the **Rocky Mountain Association of Geologists** for sponsoring the event and to the **Boy Scouts of America** for helping us promote the event throughout the scouting community. Thanks to **Celestron Telescopes** and to the **Brighton Astronomy Group** for donating door prizes.

The general theme for the event was Earth Science, which according to some authorities now includes astronomy. Three sections included a hike of the Trail with guides facilitating the sites, and a tent city, the northern part of which included rock and fossil activities such as fossil identification and gold panning. The southern part had astronomy activities, including solar observing. Thanks to the **Planetary Society**, the **Brighton Astronomy Group**, and the **Lookout Mountain Nature Center** for providing excellent educational booths in the astronomy section. Thanks also to the **National Park Service** and the **U.S. Geological Survey** for their popular educational booths in the rock and fossil section.

Seven consecutive popular Boy Scout Days have been made possible by the tremendous support from FODR and community volunteers. This year 12 staff members and 97 volunteers worked the event. Fifty-eight of the volunteers were from outside FODR. **Thanks to all for a job well done.**



Colton Buckingham, a 12-year old Star Scout from Parker Troop 88, holding the Celestron telescope he won on Boy Scout Day. Colton reported that he watched the moon the first night he had a telescope.

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MANAGEMENT REPORTS

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DDD - National Get Outdoors Day, June 11, 2011

Despite a forecast for storms in the afternoon, the weather held with only a ten minute shower at about 1pm. Threatening skies from about 11am to 1pm may have kept a few people away, but the attendance of about 650 visitors beat last year's rainout of 150 and put us 1300 visitors ahead of last year for the first two DDDs.

In addition to the usual Gold Panning and Metal Detecting, we introduced Geode Cracking. In this activity, for a nominal fee and following proper safety precautions, a visitor can break open a geode resting on an anvil. Both the Ridge and the Visitor Center were well manned with volunteers. Floaters, **Kermit Shields** and **Sam Bartlett**, did a good job of distributing food prepared by **Boy Scout Troop 537**. Thanks to the **National Park Service** for their participation with a booth about fossil footprints and to the hard-working volunteers and staff for making the event a success. There was plenty of parking for a crowd this size – the new parking stalls on the grounds worked well.

DDD – Reptile Day, July 9, 2011

Strong attendance (850 visitors), despite high temperatures, contributed to record receipts for the Shuttle Bus. Thanks to the guests who brought reptiles or birds: **Wild Wings**, **Denver Zoo**, **Reptile Rescue**, and **Morrison Natural History Museum**. Thanks also to the **National Park Service** and **Lookout Mountain Nature Center** for bringing educational booths. And thanks to **Rocky Mountain Dinosaur Resource Center**, which loaned us a cast of a Late Cretaceous crocodile-like reptile *Champsosaurus* skeleton for a booth facilitated by **John Townrow**. Track painting set up next to John and gave out casts of champsosaur tracks based on the Golden specimen.

Although the event was similar in size to the June DDD, visits to the info booth and especially the Gift Shop were up significantly. This probably was because the staff placed activities outside the Gift Shop door to stimulate visitation. Staff also directed visitors to park diagonally on both sides of Alameda Parkway, providing plenty of room for parking. Eastgate volunteers reported a large number of bicyclists, a number of whom stopped on the Ridge and at the Visitor Center. Again **Boy Scout Troop 537** prepared food for visitors and our volunteers. Thanks to all the volunteers and staff for enduring the heat and making this a very successful event.

New Programs: Small but Effective

Two new weekend programs were put in place for the summer. **Merlin Barnes** and **Jamie Paul** were hired as educators to perform a function similar to that of park rangers. They present activities that change every hour. A dinosaur dig, a seaway dig, story time, dinosaur track painting, and the Mangrove Swamp on the Ridge are part of the lineup. Merlin works on Saturdays and Jamie on Sundays. They draw crowds totaling from about 100 to 150 visitors per day.

A small group of volunteers, **Bill Danley**, **Kermit Shields**, **Terry Kirkpatrick** and **Brad Morrison** put together a short program called “**Walk with a Geologist**,” that meets on the first and third Saturdays of June, July and August. Several posters were made for the program, a 2-hour hike across the Ridge led by one of the aforementioned volunteers. The talks during the hikes are moderately technical and attendance by children is discouraged. So far visitors learn of the hikes on www.dinoridge.org and make reservations. The fee is \$10.

—TOM MOKLESTAD

CALENDAR OF EVENTS

Saturday, September 3, 2011

Walk with a Geologist: A two-hour hike across Dinosaur Ridge led by a volunteer geologist. Provides details of the geology and paleontology of the Ridge. Fee is \$10.00.

Saturday, September 10, 2011

Dinosaur Discovery Day: *Reading Really Rocks*. Festivities will include a story time for kids. Hands-on activities include gold panning and exploring for fossils. Expert guides stationed along the Ridge trail. Hike free or take the optional shuttle bus (\$3, 4 & 5 yrs. half price, 3 & under ride free). 10 a.m. – 2:30 p.m. Free (except for optional shuttle).

Saturday, September 24, 2011

Volunteer Training: Cretaceous-focused fall training for tour guides and docents. Other members are invited to attend and learn about the east side of the Ridge. Contact Volunteer Committee Chair Kermit Shields (kermit_shields at yahoo.com).

Saturday, October 8, 2011

Dinosaur Discovery Day: *Girl Scout Day and National Fossil Day* as part of Earth Science Week. Geology and hands-on fossil activities suitable for scouts to earn patches and awards. Expert guides stationed along the Ridge trail. Hike free or take the optional shuttle bus (\$3, 4 & 5 yrs. half price, 3 & under ride free). Small astronomy section as part of International Astronomy Day. 10 am – 3 pm. Scouts must register. Free admission to general public.

Friday, November 11, 2011

Annual FODR Fundraiser: *Rock Out for the Ridge*. Includes dinner, a silent auction, live auction, and a program. Red Rocks Visitor Center (at the top of the amphitheater).

Saturday, November 19, 2011

Dinosaur Detectives: *Backyard Bones*, short course on dinosaur bones at the Visitor Center includes a dig. For 6 to 9 year olds, with all ages welcome. 10 a.m. – 11:30 a.m.

RECENT ACTIVITIES



Left: Volunteers enjoying dinner under the arbor.



Right: Volunteers learning about ripple marks and dinosaur tracks at the Hawk Nest locality. Photos by Clare Marshall

VOLUNTEER DINNER

Volunteers, their friends, and staff members got together on July 21, 2011, for a fun-filled evening. Fifty or 60 people enjoyed the beauty of the Visitor Center and being together. The weather was perfect and a rainbow graced our event. While over half of the attendees hiked and admired fossils, others witnessed spectacular colors splashed across the sky at the Visitor Center.

Before the 5pm dinner, **Sue Kaberline** and **Bobbi Kilgore**, FODR bus drivers, drove people to and from the trailhead to one of our most recent fossil footprints sites, Hawk Nest. **Tim Sandmark** from Jefferson County Open Space provided bus access to an old bike trail, cutting the hiking time in half. FODR board member **Kermit Shields** talked to the hikers about the giant ripple-marked wall

they passed before reaching the footprints. **George Daggett**, FODR volunteer and member, spoke about the thrill of discovery at the tracks. The volunteers were awed by the size and preservation of the footprints they saw. The hike itself was christened “not too bad”; no snakes, but we saw a hawk at the nest, and a velvet-antlered deer on the trail.

Dinner under the grape arbor was arranged by **Elnore Grow**, who made delicious stew, coleslaw and desserts. **Karen Eberhardt** also prepared desserts. These delicacies were supplemented by pizza and salad from Guidos and beer donated by the **Golden Brewery**, the second largest brewery in Golden. We chatted and enjoyed each other’s company until almost 9pm.

Thank you, all the volunteers of the Friends of Dinosaur Ridge.

—CLARE MARSHALL

IGUANODON RESCUE OPERATION, JUNE 2011

A giant crane was needed, as were several volunteers and lots of cement. All were put to work moving and repairing the *Iguanodon* specimen that high winds blew over last spring. As the photo shows, the crane supported the dinosaur, and volunteers guided it into place and stabilized it with rebar braces and cement poured into the leg.



TRICERATOPS TRAIL COVERS DEDICATION

Several FODR members, staff members, and donors attended the dedication of the new protective cover over the trace fossils at Triceratops Trail. Included in the group were three “Volunteers of the Year”: Sam Bartlett, Kermit Shields, and Sue Jenne. Donor organizations were represented by Hugh Harvey and Peter Konrad of the Harven Foundation and Lynda Flys and Ted Kendall of the MDU Foundation. Also included in the photo below are Joe Tempel, Dr. Beth Simmons, Dr. Bob Weimer, and Clare Marshall. See more details about this project in the President’s Message and the Preservation Committee Report in this issue. The covers were constructed by The Yenter Co.



The group at the dedication of the new Triceratops Trail covers. Not pictured but attending the dedication were Tom Mokolstad and Dave Jenne. Photo by Mrs. Kendall.

CORVETTE TOUR

Thirty-five Corvettes visited Dinosaur ridge on June 4, 2011. They were part of the Corvette tour 2011. The white 1955 Corvette pictured below was one of the special visitors.



COMMITTEE REPORTS

LONG RANGE PLANNING COMMITTEE

It has been over a year since we received the unwelcome news that FODR would not be able to build a cover over the tracksite. Although we have not held direct discussions with the commissioners, we have made progress toward resolving this issue.

In January, **Joe Tempel** met new commissioner **Don Rozier** at a luncheon event and invited him to the Ridge for a tour. Ron said that he would like a tour of the Ridge and also reported that **T Caneer** had spoken twice about the tracksite cover before the commissioner -- with positive effect.

On February 22nd, Joe Tempel, **Chris Carroll**, and **Sam Bartlett** met with **Congressman Ed Perlmutter** to discuss the issues with the tracksite cover. **Gwyn Green** was also kind enough to attend and introduce the FODR to our Congressman. Joe explained the problem of the deteriorating tracks and the position of the County Commissioners to the Congressman, who asked how he could help us. He is aware of the situation and will see what he can do to support us. He said that he would urge **Greg Stevinson's** support in the near future. Regarding the possibility of creating a National Monument along Dinosaur Ridge, Congressman Perlmutter said that we would still need to get the commissioners' blessing before such a process could move forward, and it would take approximately ten years to accomplish after the commissioners gave their blessing. When the congressman asked how many members FODR had, we told him around 200. He told us that we need many more members to make an impact. He further iterated that FODR should have an instant response capability of more than 1,000 emails to any one issue.

Also on February 22nd, Joe and Sam had another meeting with **Tom Hoby**, Director of JEFFCO Open Space, to discuss updates on the tracksite cover issue. Tom was honest and slightly upbeat about the potential for solving the impasse concerning the cover. He said that having two new commissioners could only help. The newly elected commissioner toured County open-space sites on February 23rd, and **Tom Mokolstad** was able to give him a five-minute tracksite tour. Joe also met him at the tracksite and gave a very quick overview of the issues. The commissioner seemed open and was interested in further discussions.

The next day we met with **Dr. Richard Wilshusen**, the new Colorado State Archeologist. After telling him the history of Dinosaur Ridge, the current issues with the track degradation, the immediate need for a tracksite cover, and the issues with the County Commissioners, we asked for his support, especially with the sealant issue presented by the County Commissioners. He offered support and agreed to write a letter in support of preserving the tracks, but re-

quested more information before writing the letter. One of the items he requested was a history of our efforts to stabilize the tracksite. We gave him our one-page position paper on the factors affecting the stability of the tracks. Dr. Wilshusen and his masonry expert wanted to do more research before giving a letter opposing the use of the sealants.

One critical part of resolving the track cover issue is the revision of the MOU regarding ownership and operation of Alameda Parkway and a lease/maintenance agreement between FODR and the County for operations on the Ridge and at the visitor center.

In May and early June we completed the MOU between Jefferson County and various entities, including the Friends of Dinosaur Ridge, concerning ownership and access to the stretch of Alameda Parkway between the Lakewood city limits and the intersection of State Highway 26. Representatives of Jefferson County Department of Highways, Jefferson County Open Space, the Colorado Historical Society and the Friends of Dinosaur Ridge met on May 17th. We discussed changes to the MOU involving restrictions to Alameda Parkway over Dinosaur Ridge. The County agreed to include the clause "To protect the paleontological resources on Dinosaur Ridge, Jefferson County shall control vehicular access on the public roadway" in the MOU. We also discussed including safety of visitors in the MOU. However, it took one more round of emails to get this concern into the MOU as: "and public safety." The Friends of Dinosaur Ridge has signed the MOU and it is now in the final signing process.

On January 29th the FODR Board of Directors held a retreat, lead by **Dr. Didi Fahey** of the Daniels Fund, to look at governance structures for our "Organizing for Success" initiative. We spent the day looking at a future Board structure for the FODR. Normally non-profit structures are reviewed and revised every 15 years; we are overdue.

On February 28th, Dr. Fahey gave Joe and Sam her recommended organization plan. We discussed plan details and planned to meet again after discussing her recommended structure and timetable with the FODR Board of Directors. Since then, the Executive Committee has held several meetings to flesh out the future Board organization and operations as proposed by Dr. Fahey. The executive Committee has made several presentations to the Board with recommendations. In looking at required by-law changes to implement the new Board structure we have found that the original by-laws were so well thought out that very few changes will be required.

— SAM BARTLETT

RECENT ACTIVITIES

PRESERVATION COMMITTEE

In addition to the normal preservation activities, there have been three significant preservation-related accomplishments so far this year. Most recently, the paleontological treasures in the Morrison-Golden area have been officially designated as the **Morrison-Golden Fossil Areas Natural National Landmark**. In June we held the official dedication for the recently completed **palm frond protective structure** at Triceratops Trail. In May we accomplished an extremely important **photogrammetric and lidar mapping program at the tracksite**.

Dr. Martin Lockley has been working for three years to expand the current Dinosaur Ridge National Natural Landmark to include the sites throughout Golden. Martin's efforts came to fruition in June when U. S. Secretary of the Interior Ken Salazar approved the Morrison-Golden Fossil Areas National Natural Landmark. The new designation includes the original Dinosaur Ridge area along with Triceratops Trail, the tracks at the Colorado School of Mines, and the bird, dinosaur, and crocodile tracks at the north end of Golden. Two new sites discovered within the last two years were not included, as the process had been formalized prior to their discovery. The Morrison-Golden Fossil Areas National Landmark is now one of 591 National Natural Landmarks throughout the United States. **Thank you Martin** for your hard work in putting us on the map; this is a major accomplishment.

Thanks to **Joe Tempel's** fundraising and perseverance, **Yenter Construction Co.** completed the design and construction of the Palm Frond Protective Structure this past spring. During this process, Yenter also became a corporate sponsor of the FODR. A dedication, along with an open house at the Triceratops Trail was held on June 4th. Several of the major donors and FODR contributors attended the dedication. The structure fits well into the landscape and is performing its intended purpose of keeping the majority of

rain and snow off the palm frond wall. The completion of this project demonstrates that the Friends of Dinosaur Ridge can take on and complete major projects that are both functional and aesthetically pleasing.

On May 18th, after much coordination and planning, two crews from the U.S. Bureau of Land Management and the U.S. Bureau of Reclamation, under the overall direction of our own **Neffra Matthews**, were on the Ridge to photogrammetrically map the tracksite. They almost completed the exercise before the rains came. The BLM crew plans to return to complete the data-gathering phase from locations above the tracks to fill in "shadows" in the data. Thanks to **Linda Vachalek** for guiding foot and vehicle traffic during the exercise.

On the next day, May 19th, the BLM, and USBR personnel along with **Harold Schuch** and FODR members sat down to discuss methods and to learn various approaches, equipment and processing from each other. There was a favorable write up of this exercise in *The Denver Post*, and in YourHub.com the following week by **Karen Groves**. (See the article in this issue of the *Ridge Report*.) Also, The BLM made a video of the photogrammetric mapping process with an introduction by Dr. Lockley.

As we were working through the advanced stages of planning for the photogrammetric mapping program, Harold Schuck, who is starting a photogrammetric mapping service (Geo-Counsel, Inc.), offered his services in mapping the tracksite. Harold was photographing the tracksite at that point and supplied us with the first set of photos. He plans also to provide us, free of charge, with the computer processed photomap of the site and any other services involved. Harold also offered to assist with long term monitoring and reduction of the photogrammetric data.

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COMMITTEE REPORTS

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When the BLM crew returns to complete their data gathering, we will come up with a plan to complete the processing and set up several areas for long-term monitoring at a greater resolution.



Neffra Mathews conducting photogrammetry. Photo by Kermit Shields

The Friends of Dinosaur Ridge hope to realize two goals with the photogrammetric mapping process. First, we hope to obtain a complete map of the tracksite to compare with Martin's original map and determine how many tracks we have lost or gained over the years. Secondly, we hope to set up a monitoring program to evaluate the long-term deterioration of the tracks and the track surface.

On May 27th, a group came to the Ridge from the University of Colorado, Boulder to laser/lidar survey the track site. This project was two-fold, first to teach a summer group of at-risk science students about laser/lidar surveying and secondly, to run a base-line mapping project in preparation for mapping a track site in Alaska, later this summer. We learned much from the exercise, which still had a number of “shadows” to be filled in. **David Phillips**, leader of the mapping exercise, hopes to return to fill in the shadows and complete the data acquisition. David was very interested to know that we could use the data and will try to complete the project and give us his results. He also hopes to make this a yearly exercise to teach students to use the equipment. **Valerie Sloan**, who led the student portion of the field trip was very appreciative of **Tom Moglestad's** tour presentation and also hopes to return yearly.

Within the span of less than one month we have had four separate close-range mapping exercises at the Ridge with the accompanying expertise to help evaluate our tracksite. All except the BLM/USBR group were totally independent and did not know that the others were doing a project. These photogrammetric/laser mapping programs are state-of-the-art science and also show that Dinosaur Ridge remains at the forefront of science and technology.

— SAM BARTLETT

COMMITTEE REPORTS

DEVELOPMENT COMMITTEE

Grants and Donations Received from Organizations for Specific projects

Protective Covers over the Trace Fossils at Triceratops Trail in Golden (completed in March)

- \$25,000 from the Harvey Family Foundation
- \$5,000 from the City of Golden

Automatic Gate Opener on the West Side of Dinosaur Ridge (completed in March)

- \$5,000 from the Jefferson County Conservation Trust Fund

Turner Field Experience Fund (subsidizes tours and transportation to Dinosaur Ridge and TT)

- \$3,000 from Chevron Mining Inc. Employee Contributions Committee
- \$400 from Colorado School of Mines for a class taught by Dr. Louis Taylor

Dinosaur Ridge Coloring Book

- \$2,000 from the Greater Denver Area Gem and Mineral Council

Dinosaur Discovery Day Sponsors

- \$500 from the Greater Denver Area Gem and Mineral Council
- \$2,000 from the Rocky Mountain Association of Geologists

John Kelly Memorial Fund: \$2,620

Subtotal: \$42,595

Undesignated Donations received on the Ridge, in the Gift Shop and individuals

- Donations: \$15,400
- 1772 Foundation: \$10,000
- Board Dues: \$1,100
- Exxon Mobil Employee Matching Funds: \$1,275
- Chevron Matching Gift Program: \$1,000
- Random donations that accompanied memberships: \$1,410

Subtotal: \$30,585

Grants requested, awarded but funds not received

- \$82,440 from SCFD for tours/operations
- \$2,375 from SCFD for the Arthur Lakes video
- \$1,000 from Colorado School of Mines for a class taught by Marsha Barber (for Turner Field Experience Fund)
- \$15,000 from Jefferson County Conservation Trust Fund for fencing and kiosks on Dinosaur Ridge

Subtotal: \$100,815

GRAND TOTAL: \$174,450

—JOE TEMPEL

COMMITTEE REPORTS

EDUCATION COMMITTEE, PUBLICATIONS SUBCOMMITTEE

Arthur Lakes: Discovering Colorado's Dinosaurs Production Continues – Shooting the Movie!

Neither storm, rain, heat, hail, nor mosquitoes will deter the filming of the Arthur Lakes movie! About half the scenes that depict the first years of digging dinosaurs in Golden and Morrison have been completed. Thanks to a great props crew, enormous “bones”, a pleasant camp scene, and costumes for all have come together to create a very believable series of action scenes. We wish Mother Nature was as cooperative.

The movie stars George Daggett, playing the role of Arthur Lakes, Fred Olsen as Benjamin Mudge, Tyler Rockley as P. T. Dotson, and David Long as George Cannon. Another great character has been Beau the dog, played by Stanley Olsen, a highly trained obedience trial competitor.

A five-minute trailer for the movie was screened at Bug Theater in Denver by the Colorado Independent Women on July 21, 2011.

— BETH SIMMONS



Top left: Arthur Lakes (George Daggett) and students – (Bryce Primavera) with student P. T. Dotson (Tyler Rockley), and George Cannon (David Long).

Top right: Benjamin Mudge (Fred Olsen) telling about his trip to Morrison to Arthur Lakes (George Daggett) and George Cannon (David Long).

Bottom left: Benjamin Mudge (Fred Olsen) admiring the BIG BONES at “Quarry #8” with Mr. Shields (Sam Bartlett) manning the shovel, George Cannon (David Long) and Arthur Lakes (George Daggett) working “the face.”

Bottom right: Beau dog (Stanley Olsen) waiting for his turn in the camping scene.

COMMITTEE REPORTS

EDUCATION COMMITTEE, K-12 SUBCOMMITTEE

FODR Breaks Student Attendance Records!

As you've probably noticed, these days there are lots of budding paleontologists studying the exciting fossils found at Dinosaur Ridge. Since the road closure in 2008, the number of students in summer camps and in grades preschool through high school has risen from 9,200 students per year in 2008-2009 to 13,877 students in 2010-2011. These young people have the opportunity to apply their understanding of rocks and fossils to one of the premier geological sites in the United States.

Also, over 50 teachers have attended spring and summer training courses at Dinosaur Ridge during 2011. They learned about the geology and paleontology of the Ridge so they can help their students learn these important science concepts. The teachers are encouraged to bring their students to the Ridge during the academic year.



Volunteer Bill Danley talking to students at the tracksite. Photo by Marsha Barber.

A number of variables have contributed to the increased student attendance: the road closure made the site safer for walkers and observers; the Program staff of **Tom Mokolstad** and **Erin Fair** instituted more aggressive marketing to schools throughout the Front Range, and the dedicated FODR volunteers continue to excite students through their engaging presentations.

The **Turner Field Experience Fund**, which helps low income students pay for the tour and some of the school bus costs, has also helped increase student attendance during the past several years. These students in particular have fewer chances to apply what they are learning in school to the real world outside their classrooms.

Unfortunately, the dollars in the Turner Fund are rapidly being depleted. If you would like to make a restricted donation to help replenish these funds, send a check to Friends of Dinosaur Ridge and make a note that the funds are designated for the Turner Fund. You can mail your check to the address shown in the *Ridge Report* or drop it off at the office at the Visitor Center. These students will be the scientists, future leaders, and interested public of the future—help them get a great start!

— MARSHA BARBER

VOLUNTEER COMMITTEE

The first half of 2011 was an extremely active time for FODR and for you, the volunteers. You helped in many ways, including guiding tours, acting as *Trek Through Time* docents, making casts, helping with DDDs, and helping with maintenance and all sorts of other activities.

One volunteer activity that has created lots of interest is the cast making. The cast makers have created thousands of small 'fossils' that are buried in our sand pit for young paleontologists to discover. The sand pit has been a busy place this summer!

Another new activity for this summer has been the "**Walk With a Geologist**" tours being led on the first and third Saturday of each month. The two-hour tour of the Ridge gives guests a chance to get an in-depth look at our geologic and paleontological resources.

In March, we held an FODR Spring Training session for about 30 people. It focused on the Jurassic exposures on the

west side of Dinosaur Ridge. In the fall we plan to hold another training session, this one focused on the Cretaceous outcrops of the east side of the Ridge.

In July, we hosted a Volunteer Appreciation Night, with a short walk up to the Hawk Nest track site, followed by dinner at the Visitor Center. Over 50 people joined us for this event.

In the first half of 2011, Dinosaur Ridge Volunteers logged 5,700 hours. This is nearly equivalent to six full-time staff workers, so it is clear that the FODR volunteer force is a vital part of the organization.

Volunteers help to engage and educate our school visitors and public visitors on many levels and this is also a great way for us to learn a lot more about the great geological and paleontological resources available on the Ridge. **We always need new volunteers**, so if you want to help out or know someone who might want to help out, please let us know.

— KERMIT SHIELDS

COMMITTEE REPORTS

MARKETING COMMITTEE

A flyer mailed to more than 900 schools helped us attain a record total enrollment for four teacher classes. With one class to be held in August total enrollment for the four classes is projected to be 45-50 teachers.

On May 26, **John Splavins** of Wetubers.com filmed at the Visitor Center and on the Ridge for a one minute spot. He posted an excellent video on YouTube.com. Look for a link to this video at www.dinoridge.org.

Two volunteers are helping the Marketing Committee. **Cindy Barnes** and **Karen Eberhardt** are building a database of online event calendars. Karen has placed announcements for recent DDDs on TV Channel 8 Lakewood and TV Channel 8 Arvada.

A successful membership campaign was waged in partnership with groupon.com. Details are included in the Membership Committee report in this issue.

Erin Fair, FODR Facemaster, reports that it has been a year since Dinosaur Ridge jumped onto the social networking scene by starting a Facebook page. In that year our page has grown to include over 500 fans, and counting! Facebook allows FODR to announce events and post pictures from events and other special nights. It also allows visitors to comment about their visits!

If you haven't done it yet, become a fan of Dinosaur Ridge on Facebook and stay connected with us year round!

—TOM MOKLESTAD & ERIN FAIR

MEMBERSHIP COMMITTEE

2011 Goals of the Membership Committee:

1. Improve membership communication
2. Retain existing members at their current level or have them upgrade their levels
3. Double the regular membership
4. Encourage members to become volunteers and vice versa

Six months into the year we can look at where we are with respect to these goals.

Communication with members has improved. We produce *dinosaur tidbits*, simple casual e-mail announcements and updates of what is happening at the Dinosaur Ridge Visitor Center and on the Ridge itself. These proved intriguing in March when the life-sized Iguanodon model was knocked over by the wind and, later, as it was revived (or at least set back on its feet) in June. Members responded to request more of this type of communication. Currently, we are working on a new format for an e-mail news note; names have been suggested, but

it remains nameless at this point. They will remain short and entertaining, will be sent only to members, and will not replace the formal *Ridge Report*.

In May and June, Elnore /grow and Clare Marshall commenced a campaign to increase renewals. E-mail reminders brought back about 5%, mail notification yielded 68% renews, and a few more memberships were renewed through phone calls. In September, we plan to send a membership reminder to those members whose memberships have lapsed.

Interestingly, the renewal campaign resulted in a number of unsolicited upgrades in membership. This is due in part to the new "lifetime membership" category, but perhaps it is also due to some members getting to know FODR better. A few members lowered their membership level, but we trust that this was due to the current economic downturn.

In January, FODR paid memberships numbered 172; today they number 245. Most of this increase resulted from a campaign endorsed by the Marketing Committee to gain new members through an online half-price family level membership offer. It is possible

that FODR may gain as many as 296 new members through this web-drive, although only 61 families have redeemed their memberships to date. The committee will discuss the possibility of cards for all members, beginning in 2012.

Another increase in membership is through partnership with the Colorado Association of Science Teachers (CAST). The goal is have teacher members bring their students to Dinosaur Ridge once they know about it. The CAST membership doubled from 11 in 2010 to 22 in 2011.

We encourage members to become volunteers and volunteers to become members. Both members and volunteers are indispensable to the Friends of Dinosaur Ridge. Members, if you have some time and energy to spare, please talk to FODR Program Director Tom Moklestad to learn how your talents can benefit the Friends and visitors to the Ridge. Volunteers, if you have the means, please consider become a members to support the Friends financially as well as with your time.

Thank you all.

— CLARE MARSHALL

COMMITTEE REPORTS

DINOSAUR RIDGE GIFT SHOP

We are still continuing at an unreal pace. Customer volume has been very high. Those who work at the register ringing up sales can't get away for a moment to restock. The drivers who help us when things slow down haven't had a moment to help.

We continue to have new items and our PAPO dinos have been especially popular. They are very realistic and, even though they're a bit more expensive, they are selling very well. We continue to get new books appropriate for all ages, as well as many new mineral and fossil specimens. We offer specimens for everyone, from the beginner to the more advanced collector. We continue to hear from customers who feel our prices are the best they have ever seen. I

know from visiting other gift shops that this is true. I am always amazed at their high prices compared to ours.

We're looking for help. If anyone would like to float in the gift shop helping answer questions and restock from around 10 am to 2 pm, it would really be a big help. I can help you learn some about the different items so you can talk to guests more easily about them. Many times, as I pass through the gift shop, if I see someone paying extra attention to an item, I stop and tell them about it. As a result they usually end up buying it. I think you would find helping in the FODR Gift Shop quite fascinating, and you would meet people from all over the world. Check us out when you can, and if you would like to help, contact me at the Gift Shop.

—ROGER BENNETT

FODR FINANCIALS

PROFIT & LOSS, BUDGET VS. ACTUAL FIRST HALF, 2011

	<u>Jan -Jun 2011</u>	<u>Budget</u>	<u>\$ Over Budget</u>	<u>% of Budget</u>
Ordinary Income/Expenses				
Total Designated project Income	32,620.00	10,000.00	22,620.00	326.20%
Total Undesignated Funds	<u>15,414.43</u>	<u>12,000.00</u>	<u>3,414.43</u>	<u>128.50%</u>
TOTAL INCOME	210,286.60	161,126.00	49,160.60	130.50%
Total Cost of Goods Sold	<u>39,598.47</u>	<u>22,866.49</u>	<u>16,731.98</u>	<u>173.20%</u>
Expense				
Total Contract Services	5,387.90	6,560.00	-1,172.10	82.10%
Total Designated Project Expenses	1,650.00			
Total Facilities and Equipment	4,674.57	74.96	2,014.32	6236.10%
Total Fundraising Expenses	1,048.34	366.02	682.32	286.40%
Total General Operating Expenses	10,865.27	9,309.99	1,555.28	116.70%
Total Insurance	6,377.09			
Maintenance & Repairs	7,998.03	1,800.00	6,198.03	4447.30%
Total Payroll Expenses	125,322.06	122,472.16	2,849.90	102.30%
POS Inventory Adjustments	-5,349.00			
Total Publications				
Total Travel and Meetings	619.04			
Total Utilities	11,988.81	11,161.25	827.56	107.40%
Vehicle Expense	7,361.39	4,925.00	2,436.39	149.50%
TOTAL EXPENSE	193,500.84	168,768.38	24,731.46	114.70%
Net Ordinary Income	-22,812.71	-30,509.87	7,697.16	74.80%
Other Income/Expenses				
Ask My Accountants	3,855.77			
Balancing Adjustments	<u>-7,413.76</u>			
Total Other Expenses	<u>-3,557.99</u>			
Net Other Income	<u>3,557.99</u>			
NET INCOME	-19,254.72	-30,509.87	11,255.12	63.10%

ARTICLES

YOURHUB.COM

Morrison

KEEPING TABS ON DINOSAUR TRACKS

by Karen Groves, YourHub.com

Article Contributed on: 5/24/2011 5:32:37 PM

Dinosaur Ridge group enlists feds in measuring deterioration

The Friends of Dinosaur Ridge are putting modern technology to work documenting some prehistoric tracks in hopes of better preserving them.

A crew from the Bureau of Reclamation and Bureau of Land Management was assembled to bring in high-tech photogrammetry experts with unique cameras to document the status of the ancient tracks on the hillside west of C-470 near Alameda Parkway.

According to Sam Bartlett, president of the Friends (the nonprofit founded to maintain the visitor center at the historic site, educate the public and preserve the dinosaur footprints), a different group from the University of Colorado at Boulder will visit May 27 to map the tracks site with laser technology equipment, which Bartlett said is state-of-the-art in close-range mapping.

Last year the Friends' idea to construct a structure to prevent further erosion of the dinosaur tracks met with objection from Jefferson County Commissioners because it violated the Front Range Mountain Backdrop policy.

In the interim, Bartlett and the board decided to document the erosion and invited engineers, a photogrammetrist and paleontologists to photograph and document the tracks site. Despite a rainy morning on May 18, the crew showed up to take some special photos with equipment that will serve as a baseline of current data.

Bartlett said the tracks were originally mapped by Martin Lockley in 1993.

“This photogrammetric mapping program will allow us to repeat the process periodically and track the site for deterioration and restoration needs,” Bartlett said.

Education and Operations Director Tom Mokelstad said, “It will help us compare to the random photos taken in the past and provide a controlled way of monitoring the erosion of the tracks from here on. It's a very exact map.”

Photogrammetrist Neffra Matthews with the Bureau of Land Management said she and Tom Noble use the equipment to document other print sites maintained by the BLM.



*From left, Bureau of Reclamation engineers Brian Simpson and Joe Kottenstette set up a camera to document the dinosaur tracks at Dinosaur Ridge in Morrison last week. Rebecca Heisler sets up the markers for a close-range photogrammetric session. Courtesy Kermit Shields, Friends of Dinosaur Ridge
Provided by: Courtesy Kermit Shields*

—SUBMITTED BY JOE TEMPEL

ARTICLES

MORRISON MONITOR

May, 21, 1914

REMARKABLE FOSSILS

Prof. Schneider of the School of Mines with fifty students of the Freshman class, No. 17, came over from Golden Friday week on a geological field trip.

They made a special study of the rock and formation of the Hogback three miles south of Golden.

Formation names and their geological age, of the geologic age, 1 mile north of Morrison.

The mountains surrounding Morrison afford the richest field for study and investigation by the students of our best schools at home and colleges of other states have sent representatives here to examine them, particularly Dinosaur ridge immediately north of town where many remarkable fossils have been found. In 1878 fossil remains of an atlantosaur, or Great Lizard, were discovered in the shale beds of the Hogback by Prof. Arthur C. Lakes of the State School of Mines, assisted by Prof. Geo. L. Cannon now of the East Denver High School, and Messrs. Geo. Meyers and Shields of Morrison.

The vertebrae were about 26 in. in width, ribs about 4 in. in thickness, 6 to 8 in. in width, and something like 8 feet in length. Bones of limbs and feet were also found.

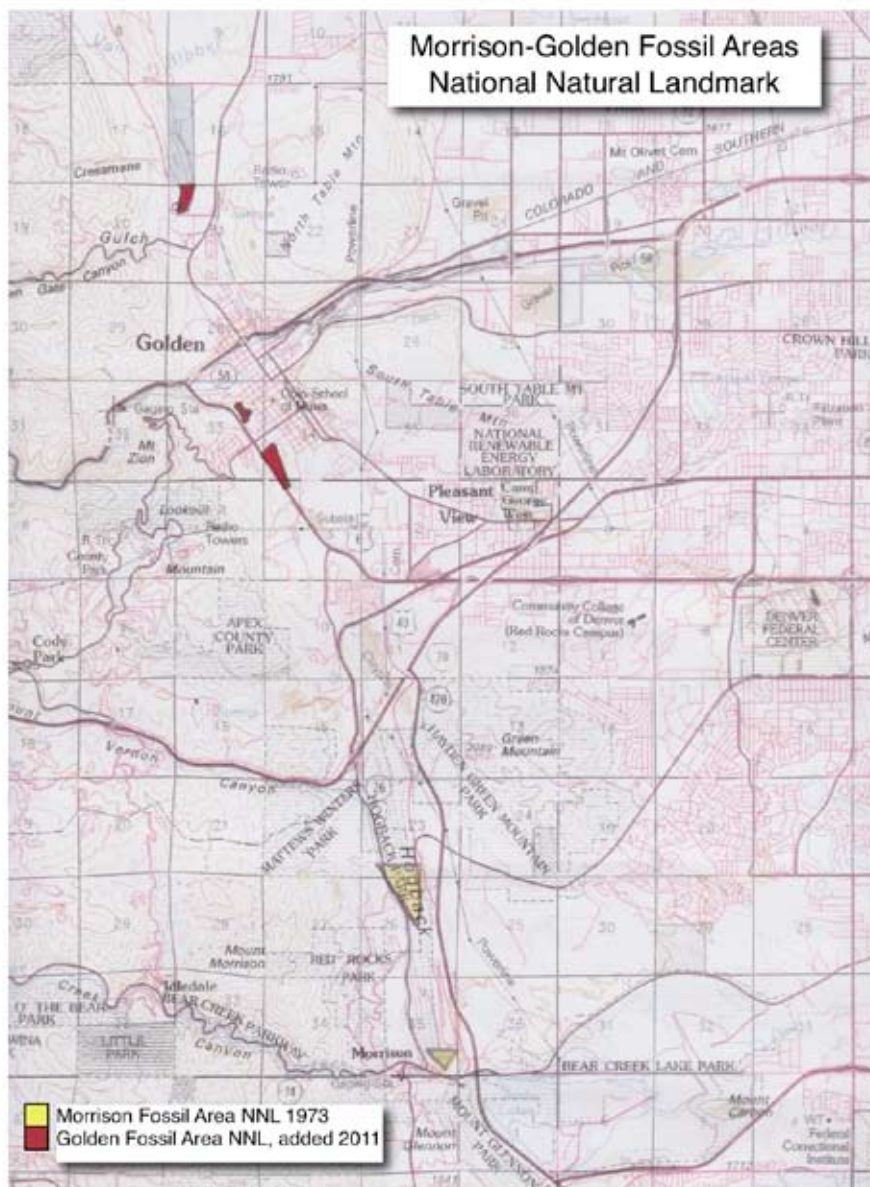
Prof. Lakes said in his lecture that the animal when alive was about 80 or 90 feet in length, was of an herbivorous nature and had a way of sitting upright upon its hind legs and tail, when feeding upon the luxuriant foliage then so abundant. In an upright position its head would be about 60 feet from the ground. It was 30 feet high in natural position. Prof. Lakes sent his discovery to Prof. O.C. Marsh

of Smithsonian Institute at Washington.

Otis Rooney also discovered and sent to Prof. Marsh some fossil bones of a reptile similar to the “horned toad” which was 12 to 16 ft. in width by about 30 ft. in length. It had three horns somewhat like those of the Rhinoceros upon its head.

Many interesting specimens are still hidden in Dinosaur mountain, is the belief of the geologists.

—SUBMITTED BY BETH SIMMONS



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