



REFUGE UPDATE

September 2021

Geology / Natural Features of Sevilleta

Published bi-monthly by the Amigos de la Sevilleta

Calendar

Due to the COVID-19 pandemic there are no events currently planned at the Refuge. If the situation changes, Amigos members will be notified.

Refuge Manager Notes

Submitted by Kathy Granillo, Refuge Manager (ret.)

Fellow Amigos – by the time you read this newsletter I will be retired and starting the next phase of my life. I have almost 38 years of Federal service, and I have been the Refuge Manager at Sevilleta for about the last 12 ½ years. This is a truly special place and I've felt privileged to be working here every single day. I've also felt privileged to work with the Amigos de la Sevilleta and appreciate the time and effort that the Board and the members give to assisting the FWS with conserving this unique landscape. The refuge could not do what we do without the support of our Friends group – so a big thank you to all of you! I plan to stay in New Mexico and hope to see you at future events at the refuge.

There will most likely be a series of people acting as Refuge Manager until they fill behind me – please be patient and kind to all of them

New Amigos Member

Submitted by Jennifer Keyser

(Note: In last month's newsletter, Jennifer was incorrectly identified as the Refuge Biologist.)

My name is Jennifer Keyser. Many of you may not know me as I only recently became an "Amigos" member. I'm originally from Columbus, Ohio but my husband John and I currently live in Arlington, Virginia.

Prior to living in Virginia, we resided in the Denver area where I was a volunteer with the Rocky Mountain Arsenal National Wildlife Refuge. My volunteer duties included writing articles for the Refuge newsletter and also leading or participating in nature and outdoors education activities.

Over the last several years, we've made frequent trips to the Southwest. They have always included a visit to Sevilleta. We enjoy Sevilleta's distinctive landscape as well as its wildlife.

Our favorite local activity is to take nature walks at our local refuge, the Occoquan Bay National Wildlife Refuge in Woodbridge, Virginia. We are lucky to regularly see Bald Eagles along the Potomac River as well as migrating waterfowl and warblers. We also like to travel and hope to take several trips in the coming months including a visit to Hawk Mountain, in Pennsylvania and the Ottawa National Wildlife Refuge on Lake Erie. No matter the region or the season, our wildlife is a great national treasure

Sandy & Colin Barnett September Volunteers

Submitted by Rex Myers

Sandy and Colin joined Amigos four years ago and jumped right in volunteering as members of the Board. Sandy is currently Amigos Vice President and Colin manages the membership program.

Before retiring to New Mexico, Sandy was a zookeeper at the National Aquarium in Baltimore. Colin had two careers—a zoology professor at Illinois State University and an engineering manager at a company that made robotic vehicles. Both have been active in helping rejuvenate the Pollinator Garden at Sevilleta’s Visitors Center and assisting with the butterfly survey.

Asked to identify a favorite animal at Sevilleta, Colin opts for those that visit refuge drinkers and Sandy names the Desert Box Turtle. She is president of the Rio Grande Turtle & Tortoise Club and belongs to the North American Box Turtle Conservation Committee as well as the New Mexico Herpetological Society. She also volunteers at Albuquerque’s Botanic Garden and the Museum of Natural History. Colin serves on the Board of the Albuquerque BioPark and is a member of the Enchanted Lens Camera Club.



Sandy & Colin



**Annual meeting Sept 2018 promoting the
Prairie Dog program**



Colin and Sandy working on new Pollinator Garden



Geology of Sevilleta

Submitted by Dr. Dave Love

Sevilleta National Wildlife Refuge (“refuge”) spans diverse landscapes that help determine the major ecological zones found on the refuge, which in turn influence the diverse plants and animals inhabiting the areas. The landscapes are underlain by many types of rocks and are molded by geologic processes through long episodes of time. The rocks and processes have created a range in elevations from 4,660 feet at San Acacia to 9,209 feet at the top of Ladron Peak, although much of the refuge stretches across low-relief plains between about 4,990 and 5,580 feet.

The geologic history of Sevilleta is recorded by rocks and loose sediments ranging in age from last months’ floods and dust storms to crustal igneous and metamorphic rocks at least 1.66 billion years old. Like a mega stack of tortillas, more than seven miles of sedimentary and volcanic rocks form a huge pile stacked on top of ancient crustal rocks that lie below as part of the North American tectonic plate. This stack of rocks records events during the past 325 million years, although many gaps indicate long episodes of erosion and non-deposition (Figure 1). Many of the rocks in the stack are exposed in fault-bounded, uplifted and rotated blocks because the refuge straddles the Rio Grande rift, where the Earth’s crust is thinned by east-west stretching, intruded by bodies of molten rock (magma), and broken by many faults (Figure 2). Between the uplifted Ladron Mountains on the west and the Los Pinos Mountains on the east, most of these fault blocks are buried by sediments eroded from uplifts and accumulated in low areas in the rift. As a result, landforms and surficial deposits across much of the refuge consist of gently sloping alluvial plains developing various stages of semiarid soils. These surfaces are cut by long-existing, rift-related, north-trending faults with relatively recent movements. Through the center of the refuge the Rio Grande first deposited a broad, braided, riverine plain before eroding its valley in a series of ice-age episodes of down-cutting and partial backfilling, resulting in stepped and sloping valley border surfaces and tributary canyons and gullies. The range in elevations, exposed rock and alluvial types, surface-groundwater exchanges, and sunny-versus-shady aspects of slopes yield many micro-environments to create uncommon soils and ecological niches. Acidic mountain-forest soils, gypsum-encrusted semiarid soils, and recent, somewhat saline riparian soils contrast with the more common caliche-engulfed soils across most of the refuge.

Figures are on the following pages.

Rock Column for Sevilleta National Wildlife Refuge

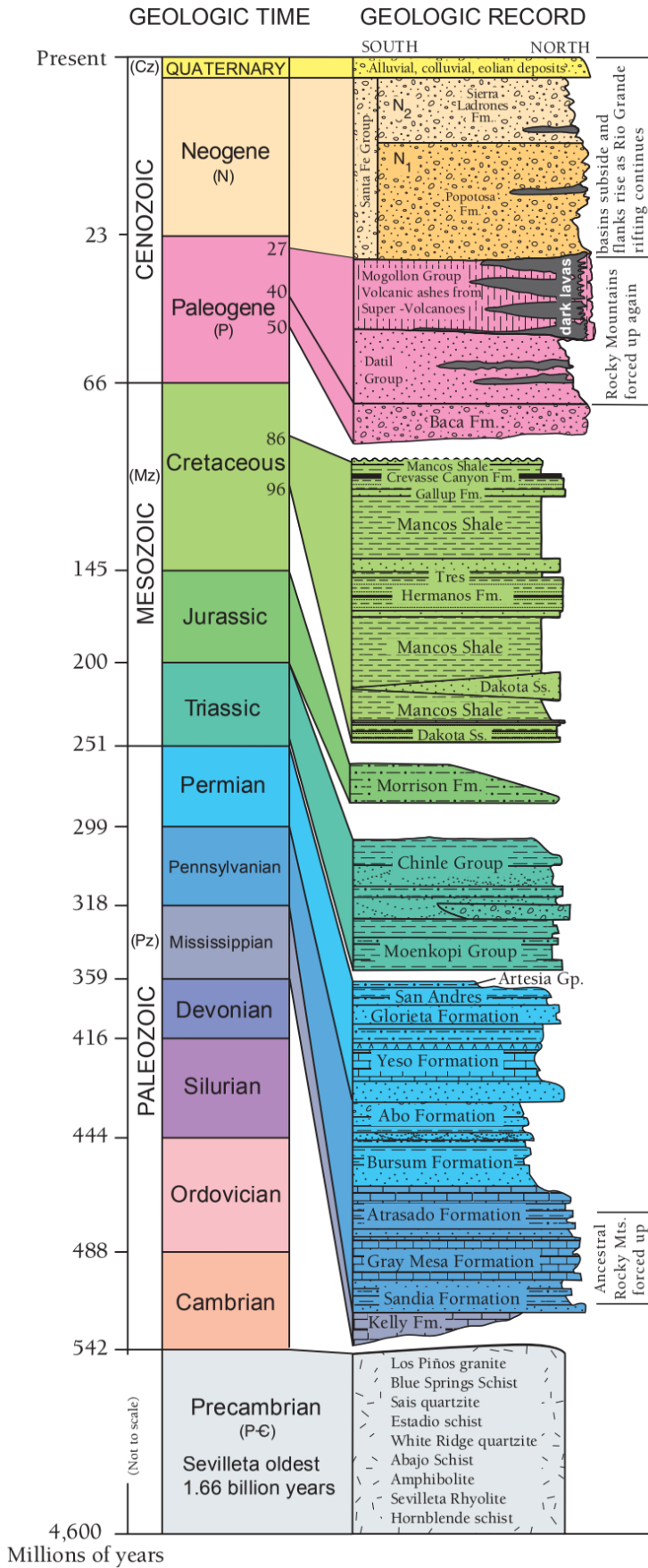


Figure 1. Sequential stack of rocks underlying parts of Sevilleta National Wildlife Refuge. The generalized ages of rocks are color-coded. There are many and substantial gaps in the rock record beneath the refuge.

Structural Diagram Across the Sevilleta National Wildlife Refuge
 Perspective View of surface (vertically exaggerated)

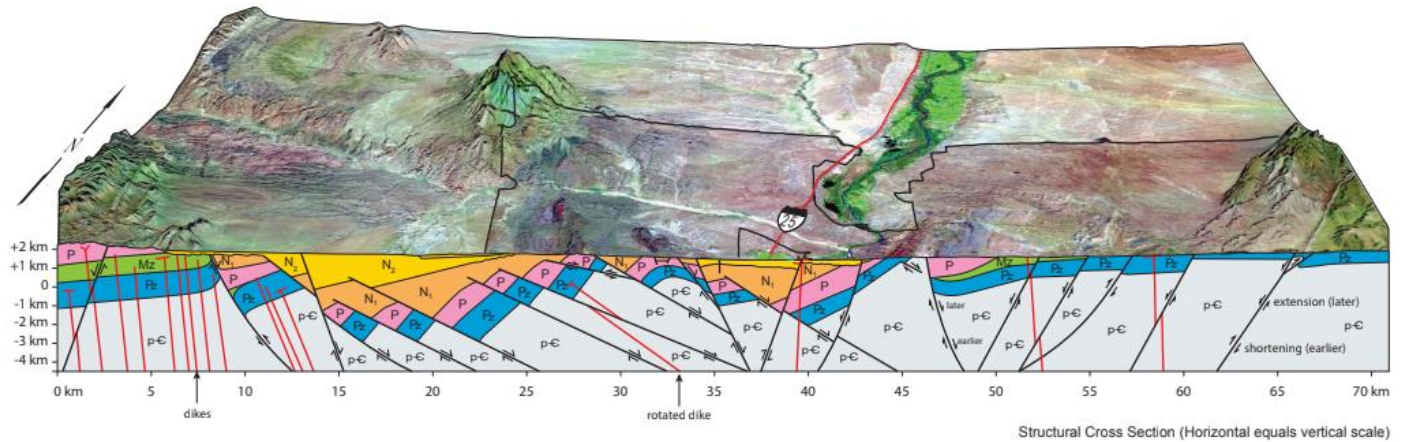


Figure 2. East-west cross section across the southern part of Sevilleta National Wildlife Refuge. The top oblique image of the greater Sevilleta area has four times vertical exaggeration. The below-surface cross section has no vertical exaggeration. The ages of the rocks have the same color coding as the stratigraphic column (Figure 1) so the gray color at the bottom represents the ancient crustal rocks, the blue color represents the Paleozoic rocks, the green color represents Mesozoic rocks, the deep pink represents Paleogene rocks, orange represents early Neogene rocks, and the yellowish-orange represents deposits related to the arrival of the ancestral Rio Grande in the past 5-6 million years. For more information please see Chamberlin and Love, 2016, <https://geoinfo.nmt.edu/publications/openfile/details.cfm?Volume=579>.

Figures 1 & 2 created by Stephanie Chavez, Bureau of Geology drafts person

The Empire State Building

Submitted by Penny Lommen

2021 is the 90th anniversary of the opening of New York City's famed Empire State Building. Long considered an engineering marvel the ESB was at one time the tallest building in the world! I'm sure you're wondering what the ESB has to do with Seville, we'll get to that in a few minutes.

During the 1920s several New York industrialists were in competition to build the first 100 story building. One group of 5 men called their organization Empire State, Inc after the nickname of the state of New York. They bought a piece of land on 5th Ave. between West 33rd and 34th streets. This land had been previously owned by John Jacob Astor and was the site of the first Waldorf Astoria Hotel.

Construction began on March 17, 1930. Just before construction started, the New York Stock Exchange crashed starting the decade-long Great Depression! Work went on however providing employment for some 3500 people. The ESB was finished in 410 days with framework rising four and a half stories per week. Cost of construction of the Art Deco style building was \$40,948,900 in 1930 which included the demolition of the hotel on site. In 2021 dollars the cost is equal to \$669,514,515! The ESB was officially opened on May 1, 1931 by President Hoover. He pushed a button in Washington, DC which turned the lights on in the new building.

The ESB was the first building to have more than 100 floors. It stands 1250 feet tall at the 102nd story. In 1950 a radio tower was added to the building making the spire top out at 1454 feet! There are more than 70 elevators in the building and over 6000 windows. The building is so large that in 1980 it was given its own zip code, 10118! There are observation areas on the 80th, 86th and 102nd floors. It lost its designation as the world's tallest building in 1970 when the then World Trade Towers were completed. It is listed as the 49th tallest building in the world as of February 2021.

Check out the building's website www.esbnyc.com for more facts and photos about this magnificent structure.

Oh yes, what is the tie in between Seville and the Empire State Building? One of the five men who formed Empire State, Inc. was John J. Raskob who was a partner of Thomas D. Campbell. They were the men who purchased the land that we now know as Seville NWR!

Prairie Dogs

Submitted by Nancy-Spencer Morris, Refuge Biologist



Carrot



Cool Dirt



Posing



Stuffed Cheeks

The next Amigos board meeting is September 15th at 4:30 By Zoom

All Amigos members are welcome and are encouraged to attend.

Contact Ann ann.d.adams@comcast.net, for access information if you would like to attend.

Amigos Contacts

Amigos web site

<https://www.amigosdelasevilleta.org/>

Amigos on Facebook

<https://www.facebook.com/amigossevilleta>

Refuge Web Site

<Http://www.fws.gov/refuge/sevilleta>

Jeannine Kimble

Visitor Services Manager

505-864-5021ex106

Past editions of this Newsletter are available at the Amigos website: <https://www.amigosdelasevilleta.org/contacts>

There are openings on the Amigos de la Sevilleta Board Of Directors.

Contact Steve Randall at 505-861-1088

Editor's Note

Januarys Refuge Update theme will be Mammals/ Ungulates/Young

Items for consideration in the Update are encouraged. Email your submission to sdrandl72@gmail.com in Word format.