

NEWSLETTER

of the

NATIVE PLANT SOCIETY OF NEW MEXICO

JULY, AUGUST, SEPTEMBER 2012

VOL. XXXVII No. 3



Participants in the Gila chapter's Spring 2012 workshop on mosses, enjoying a trip out of the classroom and into the field.

Left to right: Richard Felger, Allison Boyd, Jeff Boyd, Lori Skinner, Kelly Allred, Angela Flanders, and John Dunne-Brady. Read more about it, page 2.

Photo by Russ Kleinman

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Inside This Issue

2 From the President
2 Moss-Identification Workshop a 100× Success
3 Notes from Cindy (Your Administrative Coordinator)
3 Colorado Rocky Mountain Wildflower App Available
4 Who's Who at NPSNM
5 Conservation Corner: The North Star
6 In Memoriam: Gene Simon
7 In Memoriam: Nancy Hutto
8–9 Chapter Activities & Events
10 Contributions to the Jack
8 Martha Carter Conservation Fund
11–12 New and Recent Books [Trees and Shrubs of New Mexico by Jack L. Carter;
New Mexico's Living Landscapes: A Roadside View by William W. Dunmire; A Guide to Plants of the Northern Chihuahuan Desert
by Carolyn Dodson]
12 Population, Conservation, Climate, and Survival
15 Membership

From the President

by Tom Antonio

I would like to urge all Society members to please turn in their ballots for the election of officers for the Society. Despite the fact that all the candidates are running unopposed, I believe it is important to show your support by voting. All our officers are volunteers, and the nominating committee of the board of directors worked very hard putting this slate of candidates together. The results will be announced at the annual state meeting.

Judging from the program guide, the 2012 annual meeting in Alamogordo, "100 Years of Landscape Change," looks to be wonderful. From Thursday to Sunday, August 9–12, you will have the opportunity to hear excellent presentations, attend interesting workshops, and travel with experts to unique habitats to view incredible native plants. There is still time to register for the conference and the cost is extremely reasonable, especially when you consider the many activities being offered. I attended my first conference in Los Alamos in 2002 and have thoroughly enjoyed every meet-



ing. In addition to always offering amazing new information about New Mexico's diverse flora, these meetings are a wonderful place to reconnect and to meet new people from around the state, all of whom share a love of native plants.

The Society now has a stand-alone website, www. npsnm.org, and our thanks go to our administrative coordinator Cindy Roper for all her hard work on this site. Please remember that if you want to receive a hard copy of the newsletter instead of an electronic copy, you must contact Cindy at nativeplantsnm@gmail.com.

August 18 will be designated Native Plant Day in New Mexico by Governor Susana Martinez. I extend my thanks to Carol Johnson, who works closely with the New Mexico legislature to make this day possible. Many chapters plan activities around this day and I encourage each chapter to explore new ways to celebrate the diverse flora of New Mexico.

Hope to see you all in Alamogordo! ❖

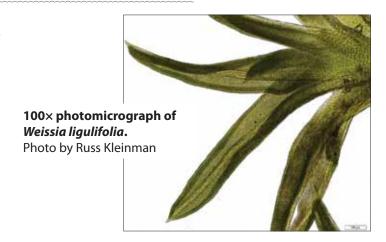
If you've received this newsletter via email, and would prefer a hard-copy, please notify Cindy Roper at nativeplantsnm@gmail.com.

Moss-Identification Workshop a 100× Success

by Russ Kleinman, Gila Chapter

There are more than 100 moss species in the Gila, many of which can be identified using a handlens alone. The Gila chapter of the NPSNM sponsored a beginning-level moss ID workshop this spring. The group met in Silver City each Wednesday for five weeks. Karen Blisard led a session during which we studied the liverworts, as a bonus. With seven participants and three instructors, there was lots of time for personalized attention. We are very grateful to Kelly Allred, who was also able to come to most of the meetings and share his expertise. At the conclusion of the workshop, the group put their knowledge to work during a fun field trip to the Black Range. We saw many of the mosses that we had studied in class and found new ones to test our skills. With so much more to be known about mosses in New Mexico, it is great to have seven more people out there looking for them!

For a beginner's primer on how to identify mosses, check out *The First Year: A Beginner's Guide to the Most Common*



Mosses of the Gila by Russ Kleinman and Karen Blisard. It covers the basics of moss identification in addition to being a guide to the mosses of the Gila National Forest. This downloadable document can be found at www.wnmu.edu/academic/nspages/gilaflora/The First Year.pdf. �

Notes from Cindy (Your Administrative Coordinator)

- NPSNM's new website is now up and running. Please check us out at www.npsnm.org and be sure to bookmark us
- Do you facebook? If you're a dedicated facebooker,

please "like" NPSNM's page at www.facebook.com/ NPSNM. I'm happy to report that we just hit our 200th "like." And don't forget to suggest our Facebook page to your friends. *

Colorado Rocky Mountain Wildflower App Available

by Al Schneider, San Juan/Four Corners Chapter

A new Colorado Rocky Mountain Wildflower app is now available for all smart devices. The app is intended for nature lovers of all kinds: those who love details, those who are casual observers, and those who want lovely photographs to enjoy on the comfort of their couch. To cover all interests, the app has been made to be very flexible so you can, for instance, arrange it by common or scientific name; you can identify unknown plants with a key to visible characteristics; you can search; you can scroll quickly through thumbnail photos or browse leisurely through full-sized photos; you can enlarge photos, take a quiz, and delve into as much detail as satisfies you.

The app covers the Colorado Rocky Mountains from the foothills to the alpine zone, and although a few plants shown are found exclusively in Colorado, the vast majority of the plants shown can also be found through the Rockies of Montana, Wyoming, and New Mexico.

The app describes and shows multiple photographs of 600 wildflowers, ferns, shrubs, and trees. Many additional species are discussed in the text.

The app includes the most abundant and visible plants and also those less common and those found in unusual habitats, such as wetlands, ponds, and rocky slopes. Plants

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shown are from various altitudes, from 85 families and 200 genera, and from all geographic locations—East Slope, West Slope, and the mountains between.

The app is intended to increase your enthusiasm for the plants that give us all life and inspiration. It is available for all smart devices (phones and tablets, Apple and Android). Details about the app and links to markets for the app are at www.highcountryapps.com. A free demo is available. �

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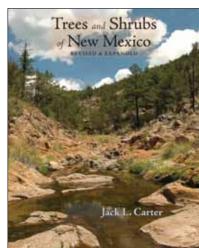
Trees and Shrubs of New Mexico

by Jack L. Carter

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The Newsletter of the NPSNM

July–September 2012. Vol. 37 No. 3. This newsletter is published quarterly by the Native Plant Society of New Mexico (PO Box 35388, Albuquerque, NM 87176) and is free to members. The NPSNM, a nonprofit organization, is composed of professional and amateur botanists and others with an interest in the flora of New Mexico. Original articles from the newsletter may be reprinted if attributed to the author and to this newsletter. Views expressed are the opinions of the individual authors and not necessarily those of NPSNM.

Next deadline is September 1, 2012. Articles and high-resolution artwork supporting the NPSNM's mission are welcomed and can be sent to the editor, Sarah Johnson, at *sarita@gilanet.com*, or PO Box 53, Gila, NM 88038.

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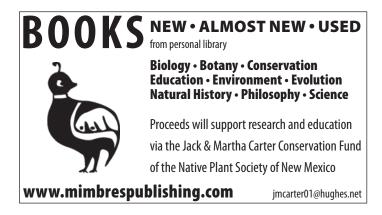
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Mission The Native Plant Society of New Mexico (NPSNM) is a non-profit organization that strives to educate the public about native plants by promoting knowledge of plant identification, ecology, and uses; fostering plant conservation and the preservation of natural habitats; supporting botanical research; and encouraging the appropriate use of native plants to conserve water, land, and wildlife.

CONSERVATION CORNER

The North Star

by Jim McGrath, NPSNM Conservation Committee Chair

Two years ago I taught chemistry, physics, and physical science at Moriarty High School on a short-term contract. When the contract was over, I contemplated the possibility of teaching similar subjects the following fall at the school. But my heart just wasn't into a life of atoms, electrons, and chemical bonding. The prospect of developing chemistry and physics labs during the summer was anathema to me. You see, I'm a naturalist. I'm sorry, but I'd rather botanize and learn and teach about the ecology and plant and animal life around me. I followed my heart, but the financial rewards of an infrequent botanical consultant pale in contrast to that full-time teaching job I might have gotten. Everyone needs to follow their own dream and I am following mine.

But there is another aspect to my decision to reject teaching the physical sciences. My years as a docent at the New Mexico Museum of Natural History, as well as the education courses I took at the University of New Mexico, left me with a profound belief in the importance of hands-on learning. Children need to touch, feel, see, hear, and taste things. That's how they learn. But my observations of the K-12 school system over the past 25 years have revealed an endless stream of obstacles to the hands-on teaching of the natural world that surrounds us. I found teachers to be extremely hard-working people, but trying to incorporate field trips into the curriculum was just about impossible due to various time-consuming obstacles such as liability issues, obtaining permission slips from parents, funding, slow administrative action, and gathering chaperones or otherwise accounting for the security of the children during the trip.

And it was very disappointing that I could not organize a field trip for my physical science students during a unit I taught on astronomy. One fall evening, following the end of my short-term contract, I met Chelsea, one of my former physical science students, in the KFC restaurant in Moriarty. Chelsea wanted to know why I did not come back to the high school that fall. I said, "Do you remember when Bianca wanted to know how to find the north star? I could not go outside and say" (as I gestured toward the sky) "'That's the north star and here is how you find it.' That's why." Even the ceiling in the restaurant was symbolic of all the obstacles to teaching children about natural history.

The north star in this story is really a metaphor for a new direction in the teaching of the natural sciences to children. The new direction in the teaching of natural history, nature appreciation, and ecology lies outside the K–12 education system. The new direction is already evident here in New Mexico. For example:

- The Sandia Mountain Natural History Center strives to serve all fifth graders in the Albuquerque public schools with its Ecology Field Program, which involves a daylong field trip to the Center. The program includes an introduction to ecosystems, a nature hike, and sometimes ecology and conservation activities. The center teaches 12,000 students per year in this manner.
- The Friends of the Bosque del Apache National Wildlife Refuge, working in cooperation with the Refuge, provide extensive environmental education for a neighboring elementary school.
- The Asombro Institute for Science Education in Las Cruces provides field trips focusing on the Chihuahuan Desert as well as in-class instruction on specific topics at the request of teachers within Las Cruces schools.

These efforts are only examples. But there needs to be more of these kinds of programs with a focus on a higher-quality environmental education experience. In other words, there needs to more than just a single field trip during a child's school year.

The new direction in natural history education is not limited to children. Our own Jack Carter laments the gradual reduction in botany and other natural history courses at the university level (see the Jan.–March 2011 NPSNM newsletter). The universities seem to focus more and more on molecular biology and those aspects of biology that apply to medicine. So an external entity needs to supply botany and natural history courses. To that end the NPSNM, through the initiative of botanist Bob Sivinski, has initiated this year a series of workshops pertaining to "botany, local flora, and regional plant ecology."

(To learn more about the workshops, visit www.npsnm. org/education/workshops.) This year the workshops focus primarily on plant identification and to date have been well received. Hopefully, the future will include in-depth, multiday workshops on specific genera and other plant groups, the flora of specific habitat types, plant ecology, soil-plant interactions, climate change effects, and more. This year there are four workshops. It is my fondest hope that in five years there will be twenty to choose from.

Other sources of natural history education are books and some of the new applications of computer technology.

Continued page 14

In Memoriam: Gene Simon

by Jack Carter, Gila Chapter

With the death of Gene Simon on May 8, 2012, we lost a gentle intellectual giant of a man. Hard working, energetic, thoughtful, and kind, he spoke and wrote from the bottom of his heart in a language we all could understand. In this election year I will sorely miss his leadership, as through his editorials he described the kind of nation he wanted us to become.

Gene was one of those people for whom I had great respect, and when we were together I listened, and when he placed words on the printed page, I carefully studied his messages for the larger society. One of Gene's most thoughtful published articles, appearing on July 1, 2001, and selected by Larry Godfrey for reprinting in a collection of Gene's editorials titled *Cows and Columns: Gene Simon's "Think About It,*" is a warning that encourages us to demand five things this republic must protect:

- 1. We need a fair and accurate voting system that we can trust beyond the shadow of a doubt.
- 2. We need a free press that takes as a sacred trust its duty to inform the citizenry on the great and small issues of the day, regardless of popular appeal and regardless of profitability of providing that coverage.
- 3. We need worthy candidates who represent our interests and values, and who are free from entangling financial obligations to special friends.
- 4. We must be an unhurried society, with each of us given the time and resources to be active citizens, not mere mice on corporate treadmills.
- 5. We must be an educated people, forever students of the vital issues before us and also of the history, art, and literature that shape our human sensibilities and our civic and cultural values so that, as self-governing people, we produce citizens. Our immigrants must be made into citizens as well.

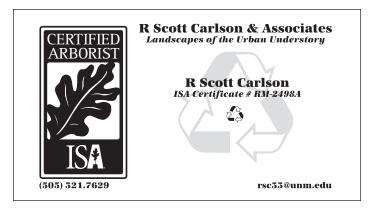
He and his wife Elisabeth worked together to maintain and improve the quality and beauty of the land on their Mimbres River Ranch that they loved. They always made clear it was soil and water first that must be protected, and that native and nonnative plants and animals must be conserved. Gene's model for ranching was that of Theodore Roosevelt, whose wisdom dictated that any good rancher also be an environmentalist.

The Simons have always been generous people, making major contributions to organizations whose objectives included the protection of Planet Earth. Earth Day has always been important to them and they wanted to join with others in giving back to the Earth, rather than taking from the Earth. This belief system was exemplified in the protection they provided for the plants that covered their land and the care they have given to the large stands of timber on their ranch. The photo below is just one example of the large beautiful velvet ash trees they have protected for future generations to enjoy.

At age 96 Gene died at his home, with Elisabeth at his side as she has been for so many years. Two days before his death Martha and I had an opportunity to visit them at their River Ranch and see just how happy they were in those final days. Libby too is a powerful person who will rise above the sadness, as Gene would want her to do. We join in Libby's sorrow and wish her the very best. *







In Memoriam: Nancy Daniel

by Thomas Antonio and Mimi Hubby, Santa Fe Chapter

The Native Plant Society of New Mexico lost a great friend in March when Nancy Daniel died. Nancy was a member of the Santa Fe chapter and also a life member of the NPSNM. Nancy had a varied background that included music education and photography, and for many years she ran a business inn Santa Fe called Native Landscapes.

She helped plan and lead many native plant meetings and outings over the years. She single-handedly organized the field trips for the 2011 annual meeting in Santa Fe. Some of her recent volunteer work included working as a guide at Big Bend National Park in Texas, and in New Mexico at Bosque del Apache National Wildlife Refuge, where she led trips covering birds as well as plants and ethnobotany. She helped with butterfly counts and planning butterfly gardens and she led regular nature walks for the Santa Fe Botanical Garden at their Leonora Curtin Wetland Preserve.

She was full of curiosity and loved learning about new

areas in which to find native plants, and helping people with plans to use native plants in their landscapes. She was also a great cook and used native plants in her recipes. Delightful on walks and plant trips, she never missing an opportunity to question the placement or selection of a non-native. Nancy did many wonderful things for our community and we will miss her greatly.



The Santa Fe chapter is creating a Nancy Daniel Lecture Series. Please make your checks out to SF-NPSNM, and mail to Thomas Antonio, P.O. Box 782, Cerrillos, NM 87010.

In Memoriam: Nancy Hutto

by Helgi Osterreich, Otero Chapter

It is with great sorrow that the Otero chapter of the Native Plant Society of New Mexico announces the passing of one of its longtime members.

Nancy Allen Hutto, 81, of Tularosa, NM, passed away Friday, May 25, 2012, at her home. Nancy was born April 17, 1931, in Merkel, TX, to Pickens and Dorothy Allen.

She attended and graduated from UTEP, formerly Texas Western. She was a third grade teacher for many years and retired from the Tularosa public schools having touched the lives of many children.

Nancy was very active in the Native Plant Society. She was a charter member of the NPSNM Otero chapter, being one of a small group that attended a class about native plants offered in June 1980. She became the "book person" and continued hauling boxes of books to every field trip, presentation, potluck, and meeting until about 2000. From the beginning, she helped to promote native plants at more County Fair booths, elementary classroom demonstrations, adult education classes, plant sales, and local presentations

than anyone could keep track of. She helped to make our beautiful native flower display that has become a tradition to exhibit at the Otero County Fair each year.

Nancy was a charter member of the Cooking Wild group in 1995, helping to present the first of many workshops on the use of native edibles at the joint Texas–New Mexico State Meeting. In addition to her talk on the variety of uses of cactus and cactus tunas, she helped to prepare a sampling of dishes from the recipes developed or adapted by the group and served at each workshop. This group was featured in *New Mexico Magazine* in February 1998. They prepared the reception refreshments at the 2004 State Meeting in Alamogordo. Nancy was recognized at the banquet that year for volunteering time and talents above and beyond expectations for the betterment and advancement of New Mexico's native plant heritage.

Nancy was also an avid bird watcher and an active member of the Tularosa Senior Center. All who knew Nancy will miss her tremendously. ❖

Chapter Activities & Events

For further information on the following events, notify the contact person listed, or visit the chapter's web page: First go to www.npsnm.org; click on Local Chapters; then

select the chapter. **Hikers** should always bring plenty of water, hat, sun protection, lunch and/or snacks, field guides, and wear sturdy shoes, suitable for rough, uneven ground.

Albuquerque

All scheduled monthly meetings are first Wednesday of the month at 7 p.m. in the NM Museum of Natural History, 1801 Mountain Rd. NW. For more info on programs contact Jim McGrath, 505/286-8745, sedges@swcp.com. For more info on field trips and forums contact Dana Price, dana_price@gmx.com, 505/872-2646 or (cell) 512/417-9787. For meeting places indicated A through H see website.

July No monthly meeting.

Jul 7-8 Overnight Field Trip. Early Summer Flora of the Pecos Canyon. Don Heinze, leader. Meet Sat. afternoon at Jack's Creek Campground in Santa Fe Nat'l Forest. Or join trip 10:00 a.m. Sun. at Terrero General Store in Pecos Canyon (5 mi S of Cowles on Hwy 63). Contact Don, 505/565-1441 or dhhbotany@gmail.com.

Jul 14 Field Trip. Fire ecology in the Valles Caldera. Bob Parmenter, leader. Meet 7:00 a.m. at D. Bring rain gear, lunch, water.

August No monthly meeting.

Aug 24–26 Rare Plant Field Trip: A Search for the Cloudcroft *Phacelia*. Sacramento Mtns. Contact Jim McGrath, sedges@swcp.com or 505/286-8745 to sign up. Details TBA.

Sep 5 Meeting. Traditional Knowledge of Native Plants. Donna Thatcher, education specialist with Farmington Museum. Plant dyes, Navajo tea, baskets and other household items, etc.

Sep 15 Field Trip. Pecos Sunflower and Wright's Thistle at Blue Hole Cienega. Jim McGrath, leader. Meet 8:00 a.m. at **G** to carpool. Meet Jim approx. 8:45 a.m. at SW corner of Dairy Queen parking lot in Edgewood (I-40 exit 187). All-day field trip.

Sep 29 Field Forum. Bear Canyon, with forum emphasis on grasses. Don Heinze, leader. Meet 9:00 a.m. at F. Bring water and hat.

El Paso

All programs are second Thursdays at 7 p.m. (coffee social at 6:30) at El Paso Garden Center, 3105 Grant Ave. unless otherwise noted. All events free unless a fee is specified. Nonmembers always welcome. Info: Jim Hastings, 915/240-7414.

Jul 12 Meeting. Earthkind Landscaping. Sarah Wood, El Paso Master Gardener, Certified Earthkind Specialist.

August No meeting. Members will attend NPSNM 2012 Conference in Alamogordo August 9–12.

Sep 13 Meeting. Transmountain Road Openspace Update. Jim Tolbert, Master Naturalist and openspace advocate.

Gila (Silver City)

All programs are free and open to the public. Meetings are third Fridays at 7 p.m. at WNMU's Harlan Hall, with refreshments following the program. Hikers meet at 8 a.m. in south parking lot of WNMU Fine Arts Theatre the morning of the hike to arrange carpooling. Participants must sign a release-of-liability form at that time, and will receive a list of native plants in the hiking area. For more info, call Deming Gustafson, 575/388-5192. Destinations may be changed due to weather. Activity updates posted on www.gilanps.org.

Jul 15 Walk. Lake Roberts.

Aug 19 Walk. Pancho Canyon and Gila Bird Area.

Sep 16 Walk. Cherry Creek campground area.

Sep 21 Talk. Desert Trees of the World. Richard Felger, research associate in the Dept. of Soil, Water, and Environmental Science at the University of Arizona.

Las Cruces

Meetings and workshops are second Wednesdays (unless otherwise noted) at 7 p.m. in the conference room of the Social Center at the University Terrace Good SamaritanVillage, 3011 Buena Vida Circle, Las Cruces. Field trips are Saturdays; most last into the afternoon. Participants must sign a release-of-liability form. Children must be accompanied by their parents. Programs and field trips are free; nonmembers always welcome. Contacts: Carolyn Gressitt, 575/523-8413; Al Krueger, 575/532-1036.



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Jul 14 Field Trip. Rio Grande Winery—viticulture process. Bernd Maier, leader. Meet 8:00 a.m. at east end of Rio Grande Bank parking lot at the corner of University/Telshor.

Aug 15 Planning Meeting for 2013. Members to elect officers and help pick speakers and field trips.

Aug 25 Field Trip. Oscura Mtns. Dave Anderson, leader. All-day trip with long drive, little hiking. Meet 8:00 a.m. at east parking lot of K-Mart on Hwy 70.

Sep 12 Meeting. Trees for the Las Cruces Area. Oscar Mestas, Texas Forest Service with Texas A&M.

Sep 15 Field Trip. Summerford Mtns. Kelly Allred, leader. Meet 8:00 a.m. at east parking lot of K-Mart on Hwy 70.

Otero (Alamogordo)

For field trip information, contact Eric Metzler, metzlere@msu.edu, 575/443-6250; or Helgi Osterreich, hkasak@netmdc.com, 575/585-3315 or 575/443-3928. More info should be available by the beginning of each month.

Jul 14 Walk. Cathey Canyon Trail, Sacramento Mtns. Meet 8:00 a.m. at corner Hwy 82/N. Florida Ave. Bring water and lunch. Moderate difficulty, 1.7 miles long.

Aug 9–12 NPSNM State Conference in Alamogordo. If you are an Otero member and have not signed up to help (or any other chapter member who would like to help), please contact Helgi ASAP! 575/443-3928.

Aug 15–18 Otero County Fair. We will have our usual booth. We would appreciate any help you can give. Contact Helgi (info above) or Elva, echoofthedesert@yahoo.com, 575/443-4408.

Sep 15 Field Trip. Dripping Springs, east of Las Cruces. Bring water and lunch. Meet 8:00 a.m. at old Wal-Mart on Hwy 54 to carpool.

San Juan (Farmington)

Meetings are third Thursdays at 7 p.m. at San Juan Community College. For more info, contact Donna Thatcher, dthatcher@fmtn.org or 505/325-5811.

San Juan (Southwest Colorado)

The San Juan/Four Corners Native Plant Society has many field trips for 2012. They are all free and open to everyone. See http://www.swcoloradowildflowers.com/San%20 Juan%20Four%20Corners%20Native%20Plant%20Society. htm. For more information feel free to call Al Schneider, 970/882-4647.

Santa Fe

Meetings are third Wednesdays at 6:30 p.m. at Morgan Hall—New Mexico State Land Office, 310 Old Santa Fe Trail, Santa Fe. Free parking available adjacent to the building. For more information, contact Tom Antonio, tom@thomasantonio.org, 505/690-5105; or visit npsnm.unm.edu. Jul 21–22 Workshop. Trees and Shrubs of New Mex-

Jul 21–22 Workshop. Trees and Shrubs of New Mexico with Jack Carter and Bob Sivinski. Held at Institute of American Indian Arts. *Currently full; waiting list only.*

Jul 28 Field Trip. Pajarito Ski Hill and Cañada Bonito. Chick Keller, leader. Meet 8:30 a.m. at K-Mart parking lot, 1712 St. Michael's Dr. Hike elevation 9,000 ft.

Aug 18 Field Trip (New Mexico Native Plant Day). Holy Ghost Canyon, Pecos Wilderness. Bob Sivinski, leader. Meet 8:30 a.m. at K-Mart parking lot, 1712 St. Michael's Dr. Hike elevation 8,400 ft. Parking fee.

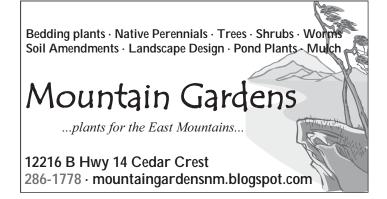
Sep 19 Meeting. Speaker TBA.

Taos

Meetings are third Wednesdays at 7 p.m. in Coronado Hall at the Taos Convention Center. Please check the NPSNM website for updates and additional information on activities, or contact Sallie at taos800@aol.com or 575/776-0860.

Jul 14 Field Trip. Santa Barbara Canyon, exploring coniferous ecosystems. Easy to moderate hike.

Jul 28 Field Trip. Pedernal, Georgia O'Keeffe's favorite place. Moderate to challenging all-day hike.





CONTRACTOR'S LIC. #59714

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Hunter Ten Broeck

Contributions to the Jack & Martha Carter Conservation Fund

Our sincere apologies to the contributors who responded to the year-end appeal for contributions to the Jack and Martha Carter Conservation Fund and were omitted from the 2012 January–March NPSNM newsletter. By now, contributors should have received an acknowledgement. We are sending a copy of our *Common Southwestern Native Plants* book to those giving \$100 or more.

~Jack & Martha Carter

Carter Fund Contributors January 5, 2012 to April 16, 2012

Elisa Marina Alvarado Kym & Wynn Anderson Thomas Antonio

Richard Ballew & Iris Ruiz

Jack Banovic Conor Black Jeff & Allison Boyd Mitzi Brownfield Craig Campbell Jack & Martha Carter,

in memory of Gene Simon and

Marian Zimmerman Chamisa Landscaping Yvonne Chauvin

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New and Recent Books

Trees and Shrubs of New Mexico (Revised and Expanded)
By Jack L. Carter

Mimbres Publishing, Silver City, NM, 2012. 524 pages.

Review by Thomas Antonio



Compared to Jack Carter's 1997 edition, his second edition of the *Trees and Shrubs of New Mexico* certainly feels like an entirely new work rather than a revision. If you own the first edition and are wondering about whether or not to purchase this volume, rest assured it is well

worth the price. Weighing in at over three pounds and 524 pages long, it is certainly an expanded volume. As Dr. Carter states in his introduction, the book is basically an "illustrated dichotomous key," with the emphasis on illustrated, for the book contains 450 illustrations and over 500 photographs. Divided into nine different dichotomous keys, it is quite easy to use. If the botanical terms used to distinguish the species are not clear, an illustrated glossary and a glossary of terms are provided. Those not interested in working

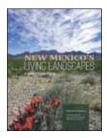
through the dichotomous keys can simply scan through the book to find and correctly identify the trees and shrubs of New Mexico.

Many plant-identification books provide either photographs or illustrations, but this beautifully crafted volume gives both. Marvelously detailed and botanically accurate, each black-and-white line drawing is paired with clear, colorful photographs; the effect is stunning. The volume has 496 species descriptions, each with a distribution map and ecological and/or cultural information. Personally, I love the accuracy that line drawings provide, and the illustrators of this book have done a marvelous job of capturing the intricacy of each plant. Praise must also go to the book's designer, Sarah Johnson, for a thoughtful layout that makes the book a delight for the eyes.

Even though I own many plant-identification books, I am pleased to add this incredible volume to my collection. Jack Carter is a botanical treasure to the state of New Mexico; he should be proud and the state's flora honored by this wonderful tribute to the amazing trees and shrubs found in the Land of Enchantment. ❖

New Mexico's Living Landscapes: A Roadside View By William W. Dunmire Museum of New Mexico Press, 2012. 135 pages.

Review by Carolyn Dodson



The snow-covered mountains, arid deserts, colorful badlands, and extensive grasslands that characterize our state are interpreted here by a professional naturalist who has extensively traveled in all parts of New Mexico. For six years the author was a field biologist for The Nature Con-

servancy in New Mexico. Before that his career was with the U.S. National Park Service as superintendent of Carlsbad Caverns National Park, as well as park naturalist in other national parks. The text of this beautiful book is illustrated on every page with Christine Bauman's stunning photographs.

New Mexico's extensive diversity in elevation, climate, and geology creates a marvelous variety of landscapes that the author has classified into six ecoregions: Chihuahuan and Great Basin Deserts, Great Basin and Great Plains Grasslands, Pinon Juniper Woodlands, and Montane Forests.

Dunmire guides the reader through each region, beginning with the overall appearance of the geology and vegetation, followed by detailed descriptions of flora, fauna, geol-

ogy, and use of local plants by past and present indigenous people. He also describes the rivers running through the regions, with their riparian vegetation and their function as meccas for migrating birds.

Changes in the landscape are also mentioned. For example, overgrazing of the grasslands, beginning with the Spaniards' introduction of livestock, caused an increase of shrubs where the nonnative animals damaged the soil. The presence of creosote bush, which reaches to within a few miles of Albuquerque, defines the range of the Chihuahuan Desert. The recent northern expansion of this shrub is probably a sign of global warming.

The informal style of the commentaries reads as if the author were explaining the passing scenery to you while touring along the scenic highways. For those new to the state, either as tourists or here to settle, there is no better introduction to our natural history, landforms, and human history. Those of us who live here will find in this book new ways to look at our surroundings. You will want to keep a copy in your car for reference whenever you are on the road.

This beautifully illustrated, high-quality publication, with brilliant color photos on every page, is much more than a coffeetable book. William W. Dunmire and Christine Bauman have created an authorative guide to New Mexico's landscapes. I strongly recommend this book. *

A Guide to Plants of the Northern Chihuahuan Desert By Carolyn Dodson University of New Mexico Press, 2012. 208 pages.

Review by Jim McGrath



Five years after her first book (with William Dunmire as co-author) on the natural history of New Mexico native plants, Carolyn Dodson has produced a companion book. Her first book, *Mountain Wildflowers of the Southern Rockies: Revealing Their Natural History* (see review, April–June 2008 NPSNM Newsletter),

focused on plants of the mountains. This new book emphasizes plants found in the Chihuahuan Desert of southern New Mexico.

The book's layout is similar to the first publication. A total of 75 different species are described and accompanied by one of Carolyn's photos and a drawing by Robert DeWitt Ivey. The plants are laid out in color-coded sections according to whether they are trees or shrubs, succulents, cacti, wildflowers, or non-flowering plants. The wildflower section is coded according to flower color. Often the selected plant is an example of a particular family (rattlesnake weed, velvet field mustard, for example) and Carolyn then describes floral and other features characteristic of that family.

Perhaps Carolyn's greatest strength is her understand-

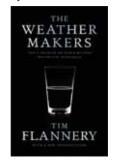
ing of pollination biology. She repeatedly describes how pollinators are attracted to some reward in the flower. In the process of seeking that reward the pollinators acquire pollen from the stamens and then transfer that pollen to the stigma of a different flower. There are different kinds of pollinators and each flower type has evolved in a different way to accomplish the pollination process. Carolyn often describes other interesting facts that pertain to adaptations for survival or medicinal and cultural use. You learn about cacti-feeding cochineal insects that produce a deep maroon dye that was used historically by the Aztecs and Europeans. Often a brief biography is given for a particular historically important botanist (e.g., John Torrey, Paul Standley) whose name appears in the scientific name of the described species.

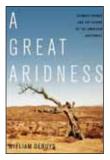
This book is a natural history book and is not intended to be an identification guide, as Carolyn indicates in the introduction. A special feature of the book is at the very end. New Mexico's resident botanical historian, Gene Jercinovic, provides a brief biography of the book's artist, Robert De-Witt Ivey. Nearly everyone interested in identification of New Mexico plants has a copy of Ivey's *Flowering Plants of New Mexico*. The biography reveals a remarkable man whose "mark on the natural history of New Mexico is indelible."

This book is suitable for all people with an interest in expanding their knowledge of the natural history of native plants. Secondary-level teachers would be especially wise to encourage their students to use it for that purpose. ❖

Population, Conservation, Climate, and Survival

by Jack Carter, Gila Chapter





In the early 1950s I first became aware of the rapidly growing human population over the earth, and the impact of this ever-increasing problem on the lives of all living things. The population of the United States was approximately 154 million at that time and the world population had just increased to 3.4 billion. About this same time, I recall, it was H. G. Wells who stated, "Human history more and more becomes a race between education and catastrophe." And this is still so true.

Today the human population in the United States is racing towards 320 million and the world population has reached 7 billion. The rate of increase has been somewhat reduced, but the total population is anticipated to reach 9 billion early in this century before estimates suggest it may start to level off. It appears to me we are losing the population race along with several additional major catastrophes that surround us today. These major worldwide disasters, all interrelated, are challenging many of the best minds in the world, while large segments of the world's human population fail to recognize the interrelated nature of these problems.

For 40 years, starting in the 1950s, Garrett Harden tried hard to help us better understand the ecological fact that "we never do one thing," as each problem confronts additional problems with multiple variables. As we struggle with human population problems, seek to conserve our small earth for future generations, and see major changes in the world's climate, we are faced with problems that challenge our economic systems, the earth's major ecosystems, reli-

Continued page 13

Population, Conservation, Climate (continued from p. 12)

gious beliefs, health systems, social systems, and the structure of education. One thing is certain, no matter how hard we might want to see our lives and our surroundings remain the same, we are being challenged to change many aspects of our lives in a relatively short time.

About the only process I have found that helps me to better understand all this is reading and studying the publications of the best minds I can locate, be they scientists, social scientists, or humanists. I would add that there are a few programs on public radio, public television, and C-Span that are excellent and worth my time. But I continue to find it difficult to address the multitude of variables in the problems we need to better understand and the relationships among those tip-of-the-nose issues, as well as those issues that will confront generations far into the future.

Here I wish to encourage everyone who struggles with these problems to read two books I have found most helpful. I read the first book several years ago, and since that time I have continued to see many issues that were so clearly described in it taking place and becoming a reality. *The Weather Makers*, by Tim Flannery, provides an approach that includes the historical, scientific, and political, and brings together many factors I have studied separately yet had never put together. Each chapter of the book deals with a separate global issue that in some way addresses climate change: changes in the past, what these changes mean to us today, and what these changes are going to mean throughout the rest of our lives and in the lives of future generations.

Each of the 35 short chapters provides a story describing how humankind is changing the climate and what this means for all living things on earth. Because we live such short lives, averaging less than one century, and often in one locality, we each have a very limited view of the comprehensive changes taking place on each and every continent. Flannery provides us with scientific information from practically every corner of the earth through a collection of examples that help us to better understand how fragile this planet actually is. Individually we fail to keep in mind that over the past decade the most powerful El Niño ever recorded took place in Europe, resulting in the deaths of thousands of people.

We appear to be unaware that we should alter our behaviors in spite of the hundreds of articles describing the deterioration of the earth's climate. A most telling story in the scientific literature, well summarized by Flannery, is that Antarctica is becoming a green continent. As recently as 2001, the rise in the earth's sea levels was never treated with serious concern. Over the previous 150 years the oceans had only risen by 4 to 8 inches. However, in the last decade of the

twentieth century the rate of sea level rise doubled, and as this rate continues to increase, there is little that people can do to slow it. Sea levels are expected to rise 20 to 80 inches over the next 500 years, spreading over millions of hectares and resulting in the removal of more than half a billion people from their homes.

At the same time the story of the biologic relationship among plankton populations, krill, the jelly-like salps, and whale populations, penguins, albatrosses, and seals helps to make clear what is taking place. More than a century of sound science showed that the sea ice boundaries and the krill populations were stable. But since 1950 the ice sheet and the krill populations have been greatly reduced. Without the krill this huge ecosystem is slipping away, and we are seeing how climate change is a threat to the world's most productive oceans, and to those animals that have lived there for thousands of years.

Each chapter of Flannery's well-written (though overwhelming) book takes the reader to a new point on planet earth where climate change is altering our planet's evolution. It provides examples of how increased CO_2 emissions over earth must be reduced, and offers suggestions for how to do this and how we all might do our part by altering our behaviors and helping to educate the larger community.

While Flannery presents accounts of how climate change is affecting the world as a whole, William deBuys, in his book A Great Aridness, describes current and anticipated changes in the American Southwest. Water shortages, wildfires, insect infestations, rising temperatures, and the continuous increases in the human population bring tremendous stress to practically all living things right here where we live. With sound science and personal knowledge, deBuys predicts that, although the Arctic and Antarctic tell important stories of the way conditions are shifting, we have even more serious problems right here in our own backyard. We saw the most powerful El Niño ever recorded in 1997-98, Hurricane Katrina left an indelible scar on North America, and the large cities in the North Temperate Zone have been faced with increased numbers of human deaths each summer. The Southwest, however, is predicted to outrun these other regions in the rate and amount of change in a much shorter period of time.

The message in each chapter is that unless we make changes in our lifestyles by utilizing the knowledge we have and conserving the available water, soil, and land, living conditions will continue to deteriorate rapidly in the not-too-distant future. Following an introductory chapter, which is worth the price of the book, deBuys warns us that "no big thing happens for just one reason," which supports

Continued page 14

Conservation Corner (continued from p. 5)

Several of our members have published such books recently and a few of them are reviewed in this edition of the newsletter. And Al Schneider has produced an "app" entitled Colorado Rocky Mountain Wildflowers, which contains thousands of photos of 600 plant species. These publications enhance and expand our knowledge of the New Mexico flora and its natural history as well as improve our ability to enjoy and identify our flora. I think that we sometimes forget how much time and effort goes into producing these

publications; these authors' passion for nature is revealed in them. We are all bound together by this common thread of passion for nature, and for that reason alone these authors deserve our support.

So that's the north star—the new direction for botanical and natural history education. It may be found in hands-on natural history institutions, workshops sponsored by organizations like the NPSNM, good-old-fashioned books, and the new computer-based technology. ❖

Population, Conservation, Climate (continued from p. 13)

Garrett Harden's point that within an ecosystem *Homo sapiens* never does one thing without affecting many parts of the system. The following ten chapters take us on a multifaceted voyage that brings together the history, science, environmental impacts, and depressing possible outcomes we face in the Southwest, unless we change our behaviors.

Chapters 1 and 10 were the most distressing for me because there are so many aspects of the included problems where people could have done much better had they recognized the place of sound scientific information in our future. In chapter 1, the major issue is that it is obvious—based on considerable scientific evidence—that we should be making every effort to reduce the atmospheric carbon from its current 400 ppm to at most 350 ppm. At the same time I can't see how we will possibly reach this objective when so many uneducated people refuse to carefully examine the scientific literature. DeBuys describes the hydrologic cycle that is today resulting in the warmer areas of the earth, which hold more moisture, becoming wetter, and consequently the associated drier regions becoming drier. Thus the Southwest is today losing the battle for water to the more moist areas. Even if an El Niño developed we would not receive the moisture we could have anticipated prior to global warming. The author's coverage of the best scientific research is straightforward and easy to understand, but I am afraid his message will fall on deaf ears.

In chapter 10, which you would not want to miss, deBuys tells a sad but important story of the march of the Spanish and Mexican Indians into what is now New Mexico. It was in the village of Hawikku, which today consists of only ruins, that Francisco Vásquez de Coronado started a war he could not finish, and almost met his demise. This becomes the setting for the slow destruction of the Zuni River region, with reduced supplies of water and destroyed agricultural lands. We are left with the question whether this is the future of much of New Mexico.

In the last few pages the author brings to our attention two approaches to dealing with climate change. He defines them as mitigation and adaptation. Following exhaustive research and study he arrives at the conclusion that through mitigation we might move the nation to reduce the carbon pollution in the atmosphere from 400 ppm to 350 ppm. With the government taking a leadership role by taxing those who pollute and returning the income generated to the consumers to whom the cost of the tax is passed, we might start to solve a portion of the long-term problem. He goes on to suggest that other nations might follow our lead.

With regard to adaptation, he brings to our attention the fact that we as individuals should have started making these changes some time ago, by better understanding and developing personal resilience. I love the word *resilience*; at one time I would have thought it described American society. But today I find it more difficult to locate evidence that even a simple majority of our population is devoted to the conservation of water, energy, soil, flora, and fauna. Perhaps with threats to our way of life and our livelihoods we may start to hear another drummer and move away from individual greed and self-aggrandizement. Time may be on our side. But only time will tell.

It seems to me that some people living in the Southwest do have a better understanding of the fragile beauty of this place and want to conserve some portion of what we have. Perhaps this sense simply reflects the fact that I spend so much time with members of the Native Plant Society of New Mexico who better understand the problems. ��

Books Discussed in This Article

deBuys, William. 2011. *A Great Aridness*. Oxford University Press. New York.

Flannery, Tim. 2005. *The Weather Makers*. Text Publishing Company. Melbourne, Australia.

Membership in the NPSNM is open to anyone supporting our goals of promoting a greater appreciation of native plants and their environment and the preservation of endangered species. We encourage the use of suitable native plants in landscaping to preserve our state's unique character and as a water conservation measure. Members benefit from chapter meetings, field trips, publications, plant and seed exchanges, and educational forums. Members also qualify for membership in New Mexico Educators Federal Credit Union. Books dealing with plants, landscaping, and environmental issues are available at discount prices. The Society has also produced two New Mexico wildflower posters by artist Niki Threlkeld and a cactus poster designed by Lisa Mandelkern. These can be ordered from our poster chair (contact information listed on page 4).







New Mexico wildflower posters: \$8 (nonmembers, \$10) Cactus poster: \$5 (nonmembers, \$8)





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