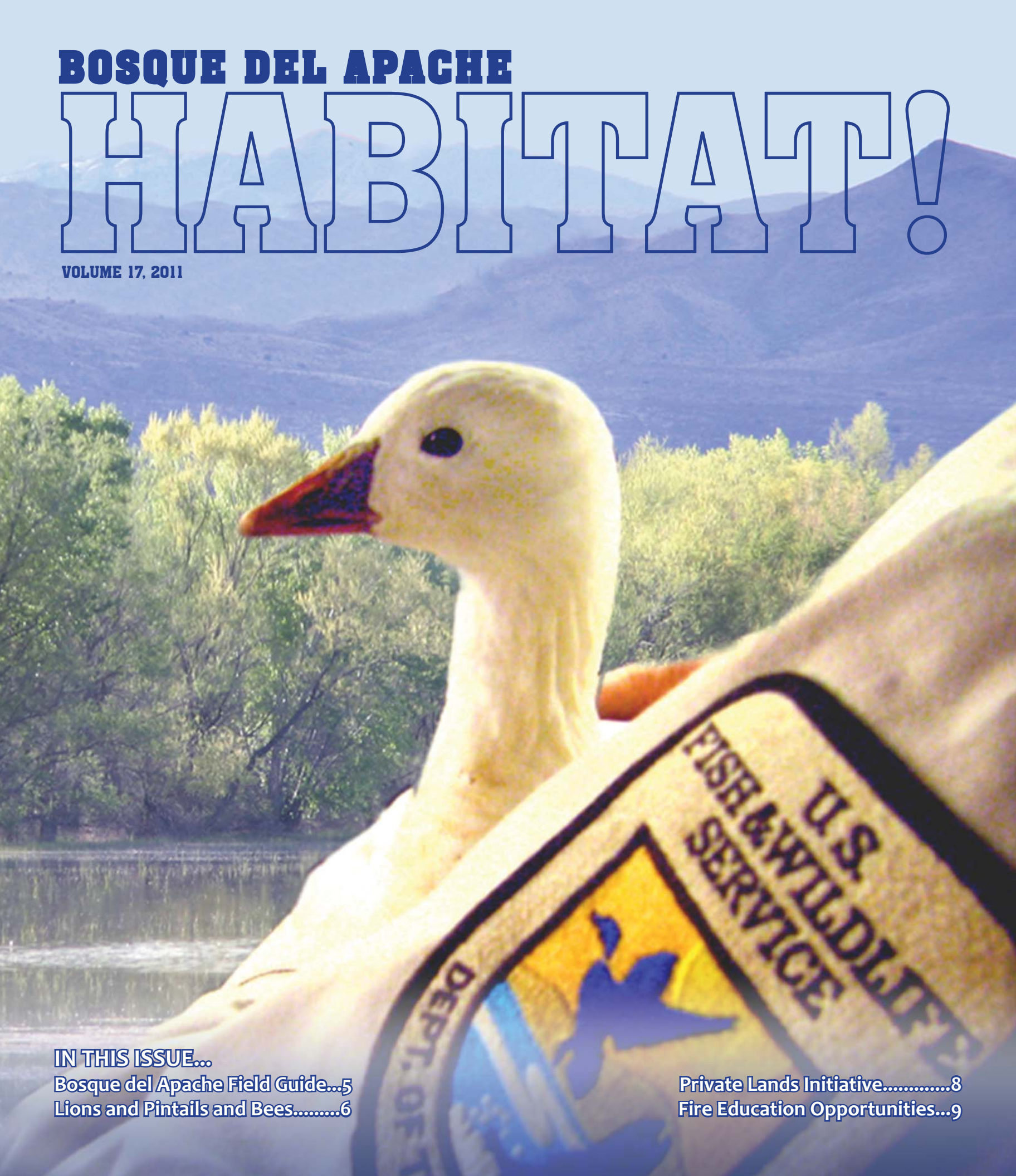


BOSQUE DEL APACHE

HABITAT!

VOLUME 17, 2011



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Welcome to the Bosque del Apache National Wildlife Refuge: a wildlife oasis in the Middle Rio Grande Valley!

The first thing to know about Bosque is that it isn't a natural landscape, which is a mistake many visitors make when coming here. Bosque del Apache NWR is a managed landscape, managed in the sense that we mimic the natural processes and regimes that once occurred here naturally, and which are as vital today in terms of sustaining resident and migratory wildlife species as they were hundreds of years before man's presence in the valley was even established.

In our never-ending quest to provide high quality habitat for wildlife, we are constantly re-evaluating the way we do business, tinkering here, modifying there, all in the name of successfully carrying out our Congressional mandate and serving as good stewards of public resources. Take for instance our ongoing efforts to create quality habitat for wildlife through the use of seasonal wetland impoundments. Here, water is intensively manipulated throughout the refuge on a yearly basis in order to produce wildlife food resources, in a process known as Moist Soil Management. Some refuge lands not used for Moist Soil Management are used for farming. This year our contract farmers successfully managed a total of 1,040 acres of agricultural products, including 268 acres of corn.



Mary Frantz

Another way in which we try to better our environment is through our use of energy. One of our refuge goals is to decrease our reliance on traditional energy sources and wherever possible cultivate the use of more "green" technologies. This year we added two new solar panel power generating arrays to the administrative compound, capable of generating up to 16 kilowatts of electricity. In addition, we are making strides in preparations to install a ground source heat pump in the administrative/visitor center complex. These improvements will reduce the refuge's overall carbon footprint.

Improvements of public infrastructure include the rehabilitation of the 77,000 sq. ft. parking lot for the visitor center and the newly established Point of Lands Scenic Overlook, which is a new facility that provides basic refuge information to the public and offers a spectacular panoramic view of the Rio Grande floodplain and the south boundary of the refuge. Throughout 2011, look for new interpretive wayside panels that will be installed throughout the Wildlife Drive and beyond as we seek to better educate the public about the mission of this refuge and its importance to wildlife.

Whether you're a first time visitor or one who has come many times before, Bosque del Apache NWR offers many opportunities to learn about the outdoors and enjoy it as well. I invite you to go out and experience the wonder and beauty of this National Wildlife Refuge and see for yourself why it is such a special place.

--Tom Melanson, Manager

Pets on the Refuge



To ensure that you and your pet enjoy a safe visit, follow all pet regulations while inside the refuge. Wildlife may be drawn to pets and their owners; pets can wander away and may never be found – the refuge is a wild place!

Pets are allowed on the Bosque del Apache NWR under the following conditions:

From October 1 thru March 31:

- ✓ Pets must be inside the vehicle at all times while on the Wildlife Drive.
- ✓ Pets are not allowed on any trails adjacent to the Wildlife Drive (this includes: Marsh Boardwalk, Taylor Memorial Trail/Overlook, Rio Viejo Trail, Phil Norton Observation Blind/Trail)
- ✓ Pets are not permitted on observation decks, or inside the visitor center.
- ✓ Pets are permitted on all hiking trails west of Highway 1 (this includes: Chupadera Trail and Canyon Trail) though they must be physically restrained at all times on a leash no longer than six feet in length.

From April 1 thru September 30:

- ✓ Pets are permitted on all hiking trails though they must be physically restrained on a leash no longer than six feet in length.
- ✓ Pets are not permitted on observation decks, or inside the visitor center.
- ✓ Pets are permitted out of vehicles along the Wildlife Drive though they must be physically restrained at all times on a leash no longer than six feet in length.

On the Cover

Thanks to a call from a visitor, Refuge staff rescued this Ross goose that had a treble hook plug and fishing line attached to both feet. It couldn't walk or swim. After the hook and line were removed, the lucky goose was released to the wild.

--Photo by Erv Nichols

You Are In Mountain Lion Country

Mountain lions have been observed inside Bosque del Apache NWR. Mountain lions can be dangerous; being smart, cautious, and aware may prevent incidents or attacks.

DID YOU KNOW:

- Attacks are extremely rare
- Running and unleashed pets can trigger an attack
- Individuals are more vulnerable than groups
- Lions are most active at dusk and dawn, so be aware

DON'T RUN:

- If you see a lion, face the lion and slowly back away
- DO NOT run or play dead
- Pick up small children immediately and calm them
- Leave room for the lion to escape, do not approach
- Make noise, make yourself look larger
- Lift arms and shout loudly
- If the lion attacks – FIGHT BACK HARD
- Use rocks, sticks, backpacks, anything to beat it off

BE ALERT:

- Do not approach dead animals, lions defend their prey
- Hike in groups and make noise to prevent surprising a lion
- Carry a walking stick and bear/pepper spray if you have it
- Keep pets leashed at all times

PARENTS:

- Keep children close at hand when hiking
- Don't let children run ahead or fall behind

Sign, Sign, Everywhere a Sign -- Except at Bosque!

Bosque del Apache NWR is composed of 57,331 acres, of which 8,000 acres are the managed floodplain. It is within this managed floodplain, that the main work of the refuge – moist soil management and farming – takes place, and it is also here that visitors come every year to observe and photograph wildlife. Here is also where the refuge experiences one of its more pressing management concerns – unauthorized access into closed areas.

Many visitors are conditioned to think if they do not see a sign, they can walk into any area on the refuge, when in fact many of the non-signed areas within Bosque del Apache NWR are closed. Often the typical response of a visitor encountered in a closed area is: "I didn't see a sign." This is the crux of the problem. As members of the public, we are accustomed to seeing regulatory signs that direct our behavior and/or actions. It is natural to expect to see similar signs in Bosque, and, indeed, there are some closed signs, but the vast majority of the refuge is not signed.

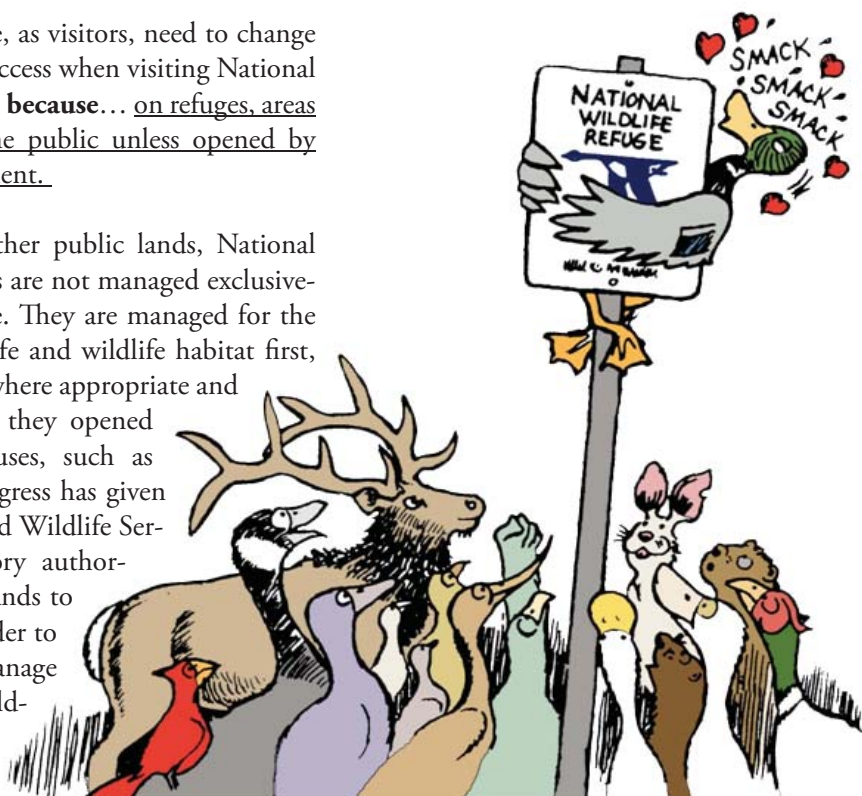
This is where we, as visitors, need to change our concept of access when visiting National Wildlife Refuges **because... on refuges, areas are closed to the public unless opened by refuge management.**

Unlike many other public lands, National Wildlife Refuges are not managed exclusively for public use. They are managed for the benefit of wildlife and wildlife habitat first, and then, only where appropriate and compatible, are they opened for secondary uses, such as public use. Congress has given the U.S. Fish and Wildlife Service the statutory authority to close its lands to public use in order to protect and manage wildlife and wildlife habitat. The Service has, in

turn, given refuge managers the regulatory authority to carry out this mandate in regard to the lands they manage on behalf of the American people. Refuge Managers have delegated the enforcement of this mandate to the refuge Law Enforcement Officer.

How Do I Know What is Closed? A good rule of thumb to apply is if it has a parking lot, a boardwalk, an observation deck, or a trailhead, then it is safe to enter. If an area has none of these structures, then chances are it is closed and you should avoid going into it. The refuge has signed some areas, where we have seen recurring violations, but by and large, most of the refuge has very little signage, and this is not necessarily a bad thing – who wants to see a CLOSED sign every ten feet? Remember, when in doubt about whether or not an area on the refuge is open, always check first before entering – the critters will appreciate their privacy and you will avoid having an embarrassing encounter with law enforcement.

--Shawn Gillette, Supervisory Outdoor Recreation Planner



Volunteers



Volunteers: Behind the Scenes

You may have noticed volunteers working the front desk and fee booth, answering the phones and leading tours. They are the most obvious. What you may not have noticed are the volunteers with other skills that are helpful to the refuge: the ones who can drive the water truck, check water levels, conduct wildlife surveys, help capture rattlesnakes, check the bee traps, construct a water line, clean the port-a-potties, install electrical pumps, repair picnic tables, program the phone system and many other jobs too numerous to mention. Many of them have had careers in technical fields and can offer expertise far above the staff level.

We received 30,485 hours of volunteer help from May 2009 through April 2010. The value of this work in dollars was \$708,130. This is work that the refuge staff would not have time or money to do. The Bosque would be a very different place to manage if not for the many hours volunteers have donated to the refuge.

The next time you are at the refuge and see a volunteer, please take a moment to ask them about their job and thank them for the service and time they are donating. We could not do it without them!

--Daniel Perry, Volunteer Coordinator



Friends of the Bosque del Apache Membership Application

Name _____

Family Members (for Family Membership) _____

Street _____ City _____ State _____ Zip _____

Phone _____ Email _____

Membership Level:

- Individual \$20
- Family \$25
- Student \$15
- Senior \$15
- Special Friend \$60 or more
- Best Friend \$100 or more
- Lifetime \$1000 or more
- Business Sponsor \$200

Interests:

- Help with Friends activities
- Help with the Festival
- Serve on a Friends Committee

- Check to receive Newsletter electronically

Please mail with your check to:
Friends of the Bosque del Apache
PO Box 340
San Antonio, NM 87832

Bosque del Apache National Wildlife Refuge

Refuge Manager - Tom Melanson
PO Box 280, San Antonio, NM 87832
www.FriendsoftheBosque.org, Phone 575-835-1828

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Bosque del Apache NWR Through the Eyes of Children: A Field Guide

In the fall of 2009 Cynthia Romero's fourth and fifth grade class of thirteen students jumped on board to become the "Field Guide Kids". They worked with Alexis Rykken, Director of the Friends of the Bosque's Mapping the Rio Watershed Education Program, on a project to create a field guide to the Bosque del Apache NWR.

Students visited a specific site at the refuge each week to learn about the site, make observations, and take photographs. The following week, before their next outing, they met in the Lannan classroom to review photographs and field notes. They discussed composition and other aspects of photography, and attended to details in their field notes. The completed field guide features photos and observations from the children, along with site descriptions and plants, animals, and other interesting things that you might see on the refuge.

The Field Guide will be used as an educational tool for the program and the refuge, and is offered for sale in the Nature Store.

--Alexis Rykken, Mapping the Rio Director



River site - The banks are crunchy with dried mud split into shards. It's great to be here. There are tracks, insects, and marks of the beaver on fallen logs. We are looking at a larger world.

--Tyler



River Site - The smell of the river is kind of like a herb smell. The river is very narrow now in the fall. I think when this site floods in the spring it will look very different than this.

--Brandon

On our hike so far I saw a skull that looked like a bird head. I saw a bee hive, and some snake



tracks. We are walking through huge cliffs. I can hardly wait till we go on. What more will there be on this trail? I feel excited. I feel we can make a difference. I feel peaceful. We are explorers.

--Jeremiah

Canyon Trail - Snakes are shy. They don't want to be seen. Snakes live in holes. Sometimes they live in the rocks. Don't put your hand in any old hole. You might get bit. The snake is not mean. He just wants to be left alone. The snake doesn't care that you are special.

--Shianne



Wetlands site - Today we spotted a sandhill crane with his parents. They protect him, but he had to fly south from the Arctic Circle when he was only 3 months old. Even if he was with his parents and his flock he had to do his own flying.

--Daniel

Lions and Pintails and Bees--oh my!

Research at the Bosque

Bosque del Apache National Wildlife Refuge has a rich history of research designed to help make informed land management decisions on the Refuge and throughout the Southwestern United States. Results from Refuge research projects have been used in riparian restoration projects, salt cedar removal, sandhill crane management plans, and wetland management programs on federal, state, and private lands. Refuge staff and numerous collaborators are continuing this tradition with the completion of several large projects and the initiation of new research efforts.

Floodplain Restoration

Refuge Ecologist Gina Dello Russo is wrapping up a collaborative research project with the US Geological Survey (USGS) **investigating restoration techniques on drier sites located on floodplains**. Data is being analyzed and soon the effort will provide information on appropriate seed mixtures, relationships with soil fungi, and the best times and techniques for planting. Initial results have already provided valuable information to restoration projects on lands south of the Refuge.

Rattlesnakes

University of New Mexico master's candidate Lorraine McInnes has been collecting data on **diamondback rattlesnakes** (*Crotalus atrox*) for the past two years. Using radio telemetry and Passive Integrated Transponder (PIT) tags Lorraine has been tracking movement, daily and seasonal habitat use, den site selection, and survival. Lorraine has captured over 200 snakes (new captures and recaptures) at the time of this article, and through these snakes has documented the use of interesting habitats including culverts placed for water conveyance. Through her research Lorraine has also documented active snakes during every month of the year. Using study data she will be able to provide management recommendations to the Refuge on how to protect wintering snakes, best management for snakes occurring near the

visitor center, and potential conflicts and the mitigation of conflicts with other Refuge activities.

New Mexico Jumping Mouse

Similarly, Greg Wright, a master's candidate at New Mexico State University, has been using extensive trapping and radio telemetry to gain insight into the presence and abundance of the **New Mexico jumping mouse** (*Zapus hudsonius luteus*), a state species of concern. Greg is revisiting historic trapping sites and determining current populations of the mouse. When mice are encountered he fits them with a temporary radio transmitter and tracks their movements to determine habitat use. Employing this technique Greg was able to utilize a remote camera to record their use of habitat, which may be the first video images captured of this species.

Pintail Disturbance

Student Career Experience Program (SCEP) student and Oklahoma State master's candidate Dustin Taylor has completed all of his field work and recently defended his thesis that looked at the behavioral and physiological response of **northern pintails** to non-consumptive disturbance. Through this effort Dustin will provide insight into the impact the public has on wintering waterfowl and the best techniques to limit negative impacts to birds while maximizing public viewing opportunities.



Floodplain Bees

Karen Wetherill, a University of New Mexico post doc, is inventorying **bee species** of the Rio Grande floodplain. Trapping efforts in different floodplain environments have produced insight into the abundance and diversity of bee species. Karen will continue this effort for at least one more season and hopefully publish her findings in the near future. In today's changing climate, pollinators like bees are indicators of shifts in temperature and growing conditions locally and regionally. Karen's work will provide valuable baseline information on floodplain bees, which will help track change in populations over time.

Mountain Lion Ecology

Several new research projects have been initiated this past year, bringing new collaborators to the Refuge and building on existing partnerships. In January the Refuge approached Furman University (Greenville SC) about conducting an initial investigation into **mountain lion ecology** on southwestern floodplains. Researchers from Furman University bring several years of experience to the project and a familiarity with the latest technologies available. Dr. Travis Perry and Dr. Kate Thibault are conducting this effort using several graduate students and conservation interns from the University, which provides a rich data set to the Refuge and a unique opportunity for students to work in western ecosystems. Although in its first year, this project is providing interesting results on prey selection, habitat use, and home range of these cats. Bosque del Apache NWR is located in the heart of southwestern mountain lion habitat, however little information is available on habitat use and prey selection in large floodplain habitats. The first phase of this research will be completed in April 2011 at which time results will be reviewed and the next steps will be planned.

Elk

A long time conservation partner, the New Mexico Department of Game and Fish (NMDGF), has again partnered with the Refuge to conduct a study on the **Refuge's elk herd**. Elk are relative newcomers to the

Refuge and there is an urgency to collect better information on their population dynamics. Increasing numbers appear to be having a detrimental effect on corn production, but we have not yet been able to quantify the impact. Without information on population size, sex ratios, and annual reproductive rates, Refuge management cannot make decisions regarding if, how, and when the herd needs to be managed. This project has proved serendipitous because the NMDGF is interested in determining the presence or absence of Chronic Wasting Disease (CWD) in elk populations throughout New Mexico, and the Refuge provides a good sampling opportunity. Through this effort both parties benefit; NMDGF will get valuable disease information and the Refuge will receive assistance and experience to complete a much-needed population inventory.

Agricultural Productivity Decline

Currently one of the more difficult management issues facing the Refuge is the **decline in agricultural productivity** experienced over the past 4 years. Crop declines have compromised the ability to feed birds throughout the wintering period, resulting in disease, localized population reductions, and declines in visitor viewing opportunities. Increasing restrictions on Refuge farming

operations limit opportunities to use many common treatments including new crop varieties, a diversity of herbicides or pesticides, and soil amendments. Refuge staff feels the grip of this challenge and have been testing some new cropping ideas, but this is an issue that all National Wildlife Refuges will need to address. To begin developing baseline information on cropping alternatives in arid regions, Bosque del Apache NWR is partnering with Louisiana State University (LSU), USGS, National Resources Conservation Service (NRCS), Seed Savers, the Intermountain West Joint Venture, and the local organic farming community. This broad partnership will evaluate alternative cropping practices ranging from rotations of nutrient rich pasture blends or fallow fields, no-till farming techniques, heirloom crop varieties, and rotations of non-agricultural practices including wetlands and uplands. It is hoped that through this effort the Refuge can determine what techniques will con-

serve farming as an integral component of the floodplain, how to build organic material in the soils, ways to reduce crop damaging worms without herbicide, how much corn is in the best interest of the birds, and how to sustain production in a more organic way.

As the Land Management Research and Demonstration site for managed arid wetlands and riparian areas, Bosque del Apache NWR is fulfilling its mission to conduct research that is applicable across the southwestern United States. Through the Refuge's research efforts we are providing opportunities for students to gain valuable experience on Refuges, which can turn into careers with the USFWS or other land management agencies. Research is the foundation for making decisions on aspects of Refuge management, and as we move ahead we will use information from previous research to guide our programs; however there will always be new questions that will need to be answered with new research.

--John Vradenburg, Land Management Research and Demonstration Biologist



Greg Wright



Robyn Harrison



Greg Wright

Middle Rio Grande Private Lands Initiative

Building on efforts by many individuals, groups and agencies and recognizing that there is a need for more wildlife habitat protection and enhancement projects in the Middle Rio Grande of New Mexico (from Cochiti Reservoir downstream to Elephant Butte Reservoir), the Refuge is starting a new venture called the Middle Rio Grande Private Lands Initiative. The United States Fish and Wildlife Service Bosque del Apache National Wildlife Refuge and Region 2 Partners for Fish and Wildlife Program, the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) and the New Mexico Department of Game and Fish are teaming up to build this exciting new program. It is to serve as a pilot project for future private lands efforts elsewhere in the state. These three agencies are combining funds to hire and support a Private Lands Biologist stationed at the NRCS office in Socorro, NM.

What is a Private Lands Biologist? For this effort, it is a biologist who will travel along the Middle Rio Grande corridor, speaking with private landowners about possible wildlife habitat improvement projects on their lands and the funding available to implement those projects. If they are interested, the biologist will work with the private landowner, biologists from the three partner agencies, and interested stakeholders in designing projects for success and getting them on the ground.

The program goal is to protect the Middle Rio Grande corridor to provide for wildlife benefits. Development pressures in the state are greatest along this corridor and drought and invasive species have added to the threats to the river ecosystem and the wildlife that depend on it.

There are similar successful programs underway throughout the U.S. Many states have agency partnerships designed to bring

federal and non-federal dollars to private lands projects. Most projects in these states combine conservation easements and wildlife habitat improvement. The conservation easements are negotiated between the landowner and NRCS, FWS or a local land trust partner. These easements limit uses of the lands that would be detrimental to wildlife, such as development or mineral extraction. The easement also provides the federal and non-federal funding sources with assurance that wildlife habitat improvements will not be impacted by other land uses.

Landowners involved in programs like these share a common vision of open space, natural beauty, and wildlife stewardship. We are excited to be a part of this program in New Mexico and look forward to sharing with you our progress in the next few years. The Refuge thanks the Intermountain West Joint Venture (www.iwjk.org) for funding to support this work.

--Gina Dello Russo, Ecologist

The Dynamic Rio Grande on Bosque del Apache NWR

The Rio Grande is the fourth longest river in the continental United States; 1,885 miles (3,034 km) long. It flows from the mountains of Colorado to the Gulf of Mexico, passing through three states and forming the border between the U.S. and Mexico for almost a half of its length (1,254 miles (2,018 km)). The Rio Grande has what is called a "sand bed channel" as opposed to the cobbles and boulders you see in other streams and rivers. Sand bed channels scour and fill depending on the supply of sands, silts, and clays (sediment) carried along with the river flows and the volume of those flows going downstream. Sediment moves along the channel during floods and is deposited on the floodplain--that portion of the river valley that is flooded during high flows, is unprotected by levees, and supports the riparian ecosystem. Riparian ecosystems of the Southwestern United States, adapted to these sediment laden floods, are among the most productive ecosystems of North America in terms of wildlife and plant diversity, food resources and nutrient supply.

In 2008, here at Bosque del Apache NWR, sediment in the Rio Grande formed what is called a sediment plug. During high spring flows, sediment filled the entire river channel and forced all flows onto the east and west floodplain. Historically this would have happened on the river every once in a while, forcing the river channel to change location of the floodplain. Now, with levees narrowing the floodplain and with vegetation lining the banks, the options for where the river will move are limited.

The FWS, working with other federal agencies, decided that the sediment plug would be excavated in the fall of 2008. This would allow water delivery downstream and would give the Refuge and others time to evaluate longer term options that did not

require digging a river channel and possibly impacting east side wetlands, endangered species, and the adjacent riparian forests.

This study is underway and we look forward to finding solutions that ensure sustainability of our healthy riparian ecosystem while protecting levees and providing water delivery to downstream users. Ah, the dynamic Rio Grande, there is always something to learn from a river.

--Gina Dello Russo, Ecologist



Bosque Sediment Plug area after removal, 2008.

C.Rolland

Refuge Offers Unique Fire Education Opportunities

November is a busy month for fire personnel at the U.S. Fish and Wildlife Service's New Mexico Fire District. It means the sandhill cranes have begun to return to Bosque del Apache National Wildlife Refuge for the winter and refuge employees will soon host the annual Festival of the Cranes community event. Each year thousands of people come to the festival to tour the refuge and take part in the many events that showcase the wildlife and habitat the refuge offers. Bosque del Apache was founded for the protection of migrating and wintering birds such as the sandhill crane; however it is also refuge for other migratory birds and multiple resident species. During the festival many tours, workshops, and lectures are offered to the public that highlight these species and the unique habitat the refuge provides. One of the tours offered is focused on the fire program at the refuge.

During the fire management program tour, participants are offered the opportunity to spend time with the District Fire Management Officer discussing how fire is used on the refuge for habitat management and to reduce the risk of fire spreading off of the 57,331-acre refuge onto neighboring private lands. The tour includes watching firefighters conduct a habitat improvement burn.

This was the third year that the refuge offered the fire portion of the festival. Fire and refuge management believe it gives the public a comprehensive look at fire and its role in habitat improvement from the perspective of the practitioners. Visitors have

a rare chance to ask questions and acquire a real understanding of not only the hazards, but also the benefits associated with the use of fire. Participants comment on the professionalism of fire personnel and leave with not only a better understanding of fire management, but also a sense of confidence that fire personnel with our land management agencies are well trained, competent and professional.

The New Mexico Fire District staff works hard on public education, such as the habitat burn during the festival, because they believe it is the key to successfully manag-

ing refuge lands. One of the district's recent projects involved building a fire prevention and education trailer. The trailer is devoted to reaching children and adults in a fun way. Smokey Bear's friendly face draws people to the trailer where they can watch videos and talk to Service personnel about conservation and fire management. Not only does the effort help the district with educational outreach and spreading the fire prevention message, it is being used to reach out and recruit people who may be interested in a career with the Service or other land management agencies.

--Julian Affuso, District Fire Management Officer



Smokey Bear's friendly face draws people to the new trailer where they can visit with fire personnel about fire management.



Fire is one of many tools used on the refuge for habitat management.

Bosque Search

All of the items in the following list can be found at Bosque del Apache sometime during the year.

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> Bosque | <input type="checkbox"/> Frog | <input type="checkbox"/> Rabbit |
| <input type="checkbox"/> Cottonwood | <input type="checkbox"/> Javelina | <input type="checkbox"/> Rattlesnakes |
| <input type="checkbox"/> Coyote | <input type="checkbox"/> Mesquite | <input type="checkbox"/> Roadrunner |
| <input type="checkbox"/> Duck | <input type="checkbox"/> Mountain lion | <input type="checkbox"/> Sandhill crane |
| <input type="checkbox"/> Eagle | <input type="checkbox"/> Owl | <input type="checkbox"/> Scorpion |
| <input type="checkbox"/> Egret | <input type="checkbox"/> Prairie dog | <input type="checkbox"/> Snowgoose |
| <input type="checkbox"/> Elk | <input type="checkbox"/> Quail | <input type="checkbox"/> Toad |

Check off each item in the list as you see it on your drive around the refuge. Also try to find each item in the word search below.

L F I W H Q M N I S S U T C A
 K U M O U N T A I N L I O N X
 Y C E Y X O H U P A D E K L E
 D A U N A C K P R A B B I T J
 O P M D A P R A I R I E D O G
 O V E N N R E N N U R D A O R
 W T E N F D C Q E T O Y O C E
 N E T R A T T L E S N A K E S
 O R O I B G I B L E L M E R O
 T G C K O V S B V I K B Z Y O
 T E M E S Q U I T E H F U L G
 O T L B Q U A I L S W D W O W
 C C A T U S C O R P I O N Q O
 E L G A E Q J A V E L I N A N
 V E E L A E W G S Z N R A P S

What You Need To Know While at the Bosque...

Hours The Wildlife Drive is open from 1 hour before sunrise to 1 hour after sunset every day of the year.

The Visitor Center is open from 7:30 - 4:00 on weekdays and 8:00 to 4:30 on weekends, except Christmas Day, New Year's Day, Thanksgiving Day, and July 4.

Entry Fees The one-day entry fee is \$5.00 per passenger vehicle with all occupants or \$50 for a commercial tour bus. The fee can be paid at the Visitor Center during regular business hours, or at the seasonal fee booth at the entrance to the Wildlife Drive. If the fee booth is not open, a self-pay station is provided. Federal Passes are available for purchase at the Visitor Center and fee booth during business hours.

Restrooms The restrooms are in a separate building to the west of the Visitor Center, and are fully accessible. There are also permanent, accessible restrooms on the east side of the Wildlife Drive where the Marsh and Farm Loops come together. From November through February additional porta-potties are located around the tour loops.

Picnicking The refuge provides a picnic pavilion near the Visitor Center with trashcans. You may also eat at other locations of your choice, but be careful not to leave litter. If you packed it in, pack it out. No fires or grills are allowed anywhere on the refuge.

Vehicles and Parking The refuge lies along both sides of NM Highway 1, which connects to I-25 at exit 139 in the town of San Antonio and with I-25 exit 115 south of the refuge. NM Highway 1 is a 55 mph state highway. Stopping suddenly on the roadway to look at birds or other wildlife is dangerous, so please use the wide turnouts along both the north and south approaches.

The Visitor Center parking lot can accommodate motor homes as well as cars. You are welcome to unhitch and use your tow vehicle on the Wildlife Drive, but it is not required.

Please drive carefully on the gravel roads and stay on the designated roads and turnouts. The speed limit is 25 mph. There are both one-way and two-way sections so observe signs carefully.

You should expect vehicles ahead of you to stop - sometimes suddenly - as visitors spot interesting birds or other wildlife. Wildlife Drive roads are wide, so pull over to allow others to pass safely.

Camping There is no camping on the refuge for the public. This rule also applies to RVs; no overnight parking allowed. Staff at the Visitor Center can advise about camping and RV parks in the area. (The group camping signs refer to scout, school, or college groups who are carrying out work projects for the refuge.)

Hiking and Biking The refuge provides many opportunities for hiking and limited biking. Some routes are only for hikers, others permit either. There are kiosks, signs, and staff in the Visitor Center to provide further details about a particular route. For either activity, it is important that you stay on the designated trails and roads.

Photography Photography is welcome in areas to which public access is permitted. Signage restrictions apply to all visitors, including photographers. Normal courtesy with respect to viewing rights of others is expected. (See "Other Uses of the Refuge" section covering commercial photography workshops).

Hunting and Fishing Both hunting and fishing are allowed in designated areas during certain seasons, subject to New Mexico Game and Fish license and regulation requirements. Check with the staff in the Visitor Center for specific information on locations and regulations.

Swimming No wading, swimming, canoeing, boating, or floating is allowed in refuge waters, including the Rio Grande.

Horseback Riding Horses are not allowed on the refuge.

Signs Read the signs. Some prohibit all public access. Others prohibit vehicles but invite hiking and biking. Temporary barricades protect nesting, roosting and feeding areas and protect visitors from hazardous situations. Please respect them.

Animals All pets must be either confined or on a leash. Please do not bring your pet into the Visitor Center even if it is small. Only service animals are allowed in refuge buildings. Please clean up after your pet.

Releasing fish, other pets, or plants on the refuge is prohibited. They disrupt the biology by compromising the habitat and/or wildlife we are trying to preserve and are a source of disease. Do not attempt to feed birds or other wildlife - observe and enjoy them as they are.

Collecting Do not pick, disturb, or collect any plants, animals, rocks, or artifacts on the refuge. If you wish to study or research an item later, take photos or make sketches. Virtual geocaching is allowed in open areas, but no treasure items are permitted.

Climate The refuge is at the northern edge of the Chihuahuan Desert at about 4500' elevation. Days are usually sunny, and a temperature change of 30° and more between dawn and noon is common. Thus, a hat and other sun protection plus layers of clothing that can be added and removed are recommended.

Nature Store The Friends of Bosque del Apache NWR operates a nature store inside the Visitor Center with an excellent selection of books, water and snacks, clothing, and a broad selection of nature-related items from the southwest.

Other Uses of the Refuge Workshops, such as photography workshops, commercial tours, film crews, and other commercial uses of the refuge are allowed by special permit and upon payment of the appropriate fee. Such activities must not impede public use of the refuge. Specific information is available at the Visitor Center.

Wilderness Area Access The Indian Well, Chupadera, and Little San Pascual Wilderness Areas are accessible by hiking year round via designated access points only. You may hike off trail in these areas; travel is at your own risk. Be aware that these areas are also open to hunting during certain seasons. Horses, bikes, and overnight camping are not allowed in refuge Wilderness Areas.

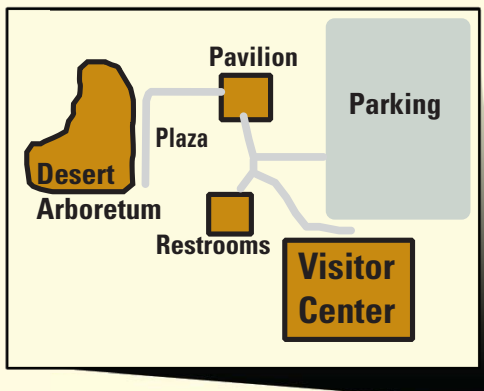
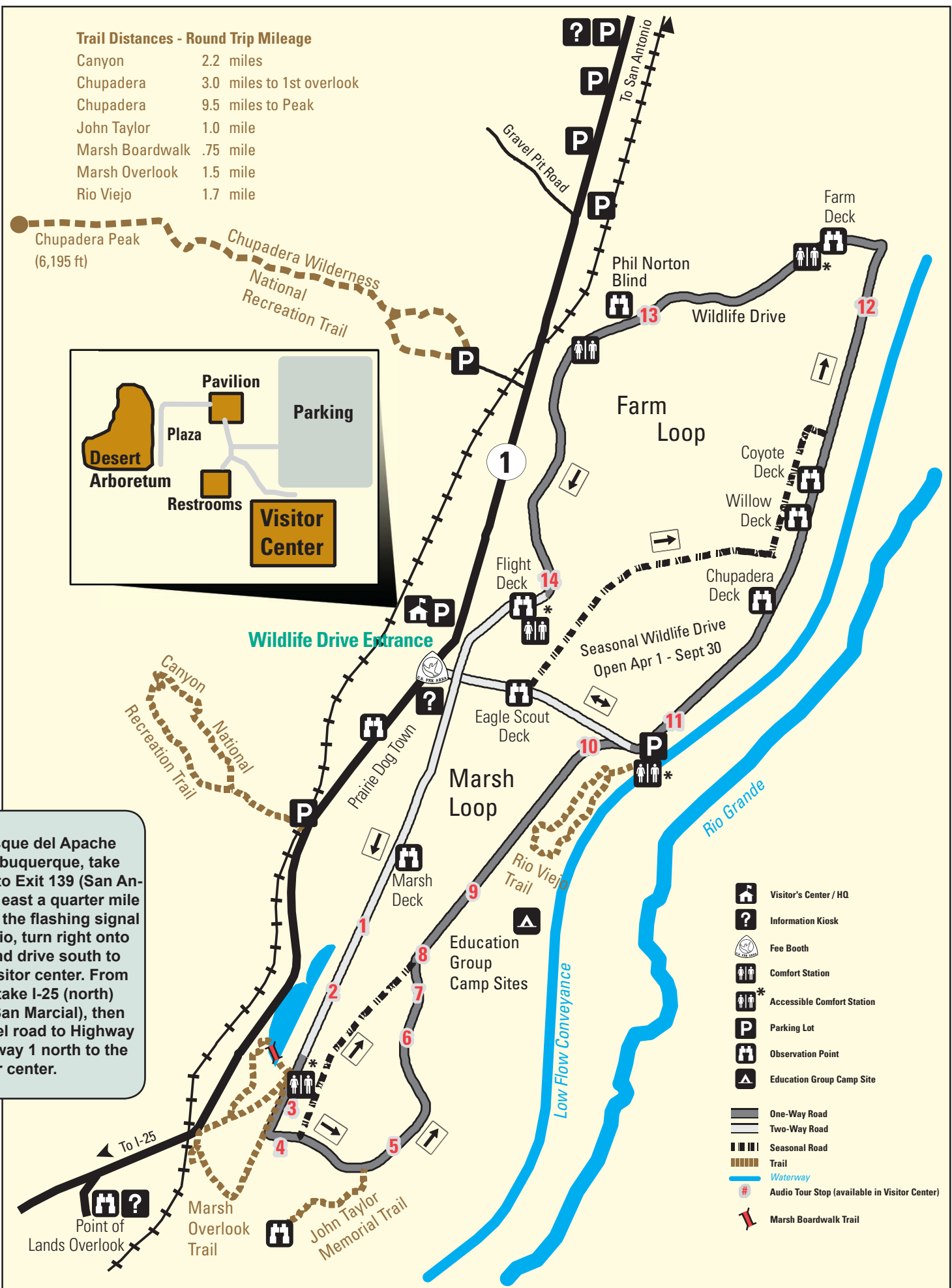
Shop on-line at our Bosque Nature Store!

Caps • T-shirts • Denim • Shirts • Mugs • Pins • Patches • Bags • Books • Kids' Stuff • Jewelry • Water Bottles

friendsofthebosque.org/store

Trail Distances - Round Trip Mileage

Canyon	2.2 miles
Chupadera	3.0 miles to 1st overlook
Chupadera	9.5 miles to Peak
John Taylor	1.0 mile
Marsh Boardwalk	.75 mile
Marsh Overlook	1.5 mile
Rio Viejo	1.7 mile



To reach Bosque del Apache NWR from Albuquerque, take I-25 (south), to Exit 139 (San Antonio), travel east a quarter mile on US 380 to the flashing signal at San Antonio, turn right onto Highway 1 and drive south to the refuge visitor center. From Las Cruces, take I-25 (north) to Exit 124 (San Marcial), then east on gravel road to Highway 1. Take Highway 1 north to the refuge visitor center.

- Visitor's Center / HQ
- Information Kiosk
- Fee Booth
- Comfort Station
- Accessible Comfort Station
- Parking Lot
- Observation Point
- Education Group Camp Site
- One-Way Road
- Two-Way Road
- Seasonal Road
- Trail
- Waterway
- Audio Tour Stop (available in Visitor Center)
- Marsh Boardwalk Trail