NATURE JOURNAL 250

Late Fall 2018/Winter 2019 • Vol.1 No.3

UPWARD AND ONWARD!

By Patty Kester, Interim Executive Director



his inspiring photo of some of our Earthkeeper Nature Preschool students captures the essence of Nature and Wildlife Discovery Center. Short of a few formal details, the merger of Mountain Park Environmental Center and Nature & Raptor Center of Pueblo is complete. We are facing our challenges; we are stronger; and we are hiking upward and onward. A few highlights:

- Over 400 people attended Eye of Survival in September, a play
 produced and performed by *I Will Projects* to benefit the Nature
 and Wildlife Discovery Center's Raptor Center. We extend our
 appreciation to Alice Hill and Marlene Stiles for their tireless
 work on this project. The performance was exquisite!
- Heat and drought conditions of spring and early summer, combined with the severity of summer storms in Pueblo County and surrounding areas, brought many broken and battered raptors to our doors. By mid-October, we had already provided care for over 320 of these magnificent birds of prey, which exceeds our usual total for a full year.

Continued on 2

"Autumn arrives in early morning, but spring at the close of a winter day." ~ Elizabeth Bowen



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NWDC mission is to promote environmental stewardship and population health through Nature education, wildlife rehabilitation and outdoor recreation



- We are in awe of our Earthkeeper Nature Pre-school participants and teachers. They are discovering and learning so much. They've explored everything from owls to tadpoles and butterflies to apple trees, all while learning letters, sounds, shapes and numbers. Almost makes me wish I was four years-old again. Thank you, Ranger Tami and Ranger Gia for your creativity and energy.
- Pueblo City Schools (District 60) has stepped-up to help us keep the Earth Studies 5th grade program alive, if at a more modest level. Although details have not yet been finalized, we project that students will spend a full-day at each campus, immersed in environmental education. They will have the opportunity to explore, compare and learn about short grass prairie and riparian habitats, plains, foothills and montane life zones, as well as how raptors are a part of each of these natural communities. Our Program

Director, Ranger Ash (Ashley Nestman) and Ranger Pine (David Martin) have exciting adventures planned and ready to go.

We so appreciate the involvement and generosity of our members and donors for standing by us and hiking onward and upward with us! Each of you is so valuable to this organization.

Remember to step outside and enjoy the outdoors this winter. Your membership is good all year long. Nature is just as therapeutic and healthy for us in the winter as it is in the summer. Watch your e-mail - we'll be sending info on our winter activities. Winter Solstice Walk and the Raptor Resolution Run are coming up at the River Campus; Beulah's Annual Yule Log Festival will be at the Mountain Campus. Winter can be so magical in the outdoors. The crowds are smaller; the air is a bit crisper. It can be so tranquil. Please come enjoy a peaceful winter night with us at Horseshoe Lodge.

MEET PATTY!

Patty Kester, NWDC's Interim Executive Director, is a fourth generation Pueblo County native. She is one of the fortunate ones who got to grow up in the great Colorado outdoors. Pueblo Mountain Park, Lazy Acres Girl Scout Camp, and the Blanco Basin near Pagosa Springs figured prominently through her childhood. USC Outdoor Program (now CSU-Pueblo Outdoor Pursuits) and Pueblo Greenway and Nature Center (now the River Campus and Raptor Center of Nature and Wildlife Discovery Center) had a huge influence on her during her college years.

Patty, who holds a bachelor's degree in Recreation with a Biology minor, stepped up to serve as NWDC's Interim Executive Director in early July. She states that if could have figured out how to build a sustainable livelihood from camp counseling, she would have made it a career. Fortunately, there are more opportunities now than when she entered the workforce.

Patty has one daughter, Morgan, who is a student at CSU-Pueblo pursuing a Biology/Chemistry Bachelor's degree with aspirations for a veterinary career. Patty's love of the outdoors and her extensive nonprofit experience make her a great fit for Nature and Wildlife Discovery Center.

BUSY TIMES AT THE RAPTOR CENTER

By Diana Miller

he combination of a hot, dry spring and severe summer storms, along with the usual collisions with autos, power lines and barbed-wire fences saw near record numbers of raptor admissions in 2018. Although the extreme hail storms brought many birds in with fatal traumatic injuries, there have been many successes. Over 50 young birds of prey recovered in our care and were successfully returned to the wild over the last few months.

The arrival of fall brought with it the hazards and challenges of migration, as well as young birds trying to survive without the support of mom and dad. Our ICU has been filled to the brim with fractures, starving teenagers, and respiratory infections. Fortunately, all are well on their way to recovery. Recent releases back to the wild include two great-horned owls, a red-tail hawk, and a Cooper's hawk.

We send many thanks to our many volunteers, and to all who have donated. Thanks to all of you, through the middle of October, a total of 321 birds have received our care in 2018 – 302 admitted this year, 19 admitted prior to the first of the year.

Photo 1: A ferruginous hawk being released after a successful recovery.



Volunteer Pat McCracken with an armful of bald eagle.



Diana Miller assists a student release a hawk at Buelah School.



Longtime program bird Lurch the Turkey Vulture with volunteer Kate McCracken.

"They who sing through the summer must dance in the winter." ~ Italian Proverb

EARTH STUDIES

By Warren Nolan, NWDC Board Member

eadachy after spending too much time inside the loud shroud of the digital L cloud? Are you malwared to desperation, depressed by 24/7 cable news? Do you need an infusion of hope and optimism?

There is no better antidote for doom and gloom than seeing and hearing a crooked line of clamorous children follow their teacher up the Tower Trail. Some years ago, on a hike in Pueblo Mountain Park, I encountered a class of boisterous 5th graders from a Pueblo elementary since merged with the Nature and Raptor Center to become the Nature & Wildlife Discovery

Over the years, many Puebloans, including members of City Council, have dreamed of a day when children from all of Pueblo's diverse neighborhoods would get to utilize Pueblo Mountain Park. That same dream was also shared by an audacious group of visionaries, who, nearly twenty years ago, had the crazy idea to buy

> curriculum and to bring every 5th grader from Pueblo City Schools to Pueblo Mountain Park. That crazy idea was called Earth Studies. Since 2008, the award-winning Earth Studies Program at Pueblo Mountain Park has served nearly every 5th grade student in Pueblo City Schools -- averaging 1,250 students per year.

> I suspect that when most Puebloans think of the Nature & Wildlife Discovery Center, they don't think of educational programs like Earth Studies. Instead they think of places, places like Pueblo Mountain Park or the River Trail, places to: hike, snowshoe, ride a bike, picnic, get married, have a reunion, and/or bird watch. These same Puebloans might also suggest that while these are beautiful places and the Nature & Wildlife Discovery Center is

> > But, Earth studies needs your help. This year, due to financial constraints, the Earth Studies program will be scaled back from four

academic growth. According to a recent GOCO

presentation, out of the 50 United States, Colorado

ranks number 1 in seniors participating in outdoor

activities, but ranked number 24 in children under

resources getting outdoors. Being able to teach

a natural environment is an amazing opportunity

Earth Studies gets kids hiking, exploring, and

using their bodies as well as their minds. It is

an outdoor-based Nature education program that

takes place among the ponderosa pines of Pueblo

Mountain Park, and consists of up to four days

of experiential education spread over the school

year. Yes, it covers state and district educational

standards, but most importantly it unplugs children

and helps them build healthy physical, spiritual and

neurological connections from the raw materials of

children that promote both personal and Discovery Center, are hoping to maintain a toehold for Earth Studies by bringing every 5th

grader from Pueblo City Schools to either our River or Mountain Park Campus 12 participating in outdoor activities, and number at least one time this year. 36 for children from families with limited financial It would seem that we, as a community, could find a way kids the foundations of science and exploration in to fully fund Earth Studies and to guarantee its future survival.

> Help how? Bring children to Pueblo Mountain Park the Nature/Raptor Center. Of course, bring your own children, but you can also help bring many other children to the park by giving the gift of your time, making a donation, writing letters of support, and/or becoming a member of the Nature & Wildlife

~ Lewis Carroll

summer comes again."

"I wonder if the snow

fields that it kisses them

so gently? And then it

covers them up snug, you

know, with a white quilt;

and perhaps it says, 'Go

to sleep, darlings, till the

loves the trees and

Discovery Center. Go to www.hikeandlearn.org for more information. Please help bring the joyous cacophony of happy, noisy children to Pueblo Mountain Park and the Nature/Raptor Center.



school who were accompanied by their teacher, a park ranger, and a mix of parents, grandparents, aunts, uncles, and siblings. This raucous, noisy squall of adults and children was my first flesh and blood encounter with something called Earth Studies. From that moment, I wanted to be part of whatever organization was bringing children to the Mountain Park. That organization was the Mountain Park Environmental Center, which has

buses, hire teachers, develop

a wonderful organization, they are also superfluous amenities disconnected from the gritty realities and problems facing Pueblo.

But, Earth Studies confronts what many consider our community's biggest challenge -the education of our children. There is certainly nothing superfluous about Earth Studies, a program that provides experiences for Pueblo's



to one or two days. We, the Nature & Wildlife

nature.

for these students.

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NATURE PRESCHOOL IS UP AND RUNNING!

By Dave Van Manen

've written in earlier newsletters about how the Nature (or Forest) Preschool movement, which began in Europe several decades ago, is spreading across the US. And how there are pockets of these outdoor-based preschools in various places throughout the country, with the Seattle area being a hotbed of Nature Preschools. I am happy to now write that NWDC's Earthkeeper Nature Preschool (ENP), one of Colorado's first Nature Preschools, is very much up and running.



Starting a Nature Preschool has been a dream of mine for many years. It also was a dream of Tami Montoya. Tami's many years of teaching preschool at Districts 60 and 70 led her to the belief that the outdoors is the best classroom for preschoolers. Starting late in 2017, Tami and I worked for months to jump through the many licensing hoops required by the State. Currently, Colorado, unlike states such as Washington, does not license outdoor-based preschools. So, although ENP is an outdoor-based preschool, we had to fulfill all the requirements for a standard preschool to become licensed. Since ENP operates in both the Mountain Park and the River Campus locations, we had to apply for, and have received, two separate licenses, one for each location.

With Tami as Director and Lead Teacher, ENP started classes in mid-August with about 18 students. As of this writing in late October, we are now up to 25+ students. Students, ages upper 3-7, attend two morning or two afternoon classes per week, with one class taking place at the Mountain Park in Beulah, and the other at the River Campus in Pueblo. This way, students get to experience a variety of natural environments among the pines in the mountains and under the cottonwoods near the Arkansas River. Although outdoors nearly all of the time, we do have indoor classrooms at both locations when the weather warrants being indoors.

The preschoolers are receiving an amazing early childhood education. With Nature and the outdoors as the focus of the program, our young students are experiencing first-hand the many moods and wonders of the natural world, while immersed in a vibrant curriculum that includes science, music, arts, mathematics, language arts, reading, and skill work.

Just today, with Halloween a couple days away, Tami excitedly told me about the morning's theme of spiders. I asked her to summarize:

"One of the most gratifying things I see happening in our Nature School is witnessing a topic of discussion turn into an experiential learning opportunity. During our recent spiders focus, we started by learning some facts about spiders. After reading Eric Carle's book, The Very Busy Spider, we sang the Itsty Bitsy Spider song, we created a spider web obstacle course, and we even acted out the nursery rhyme, 'Little Miss Muffet'.

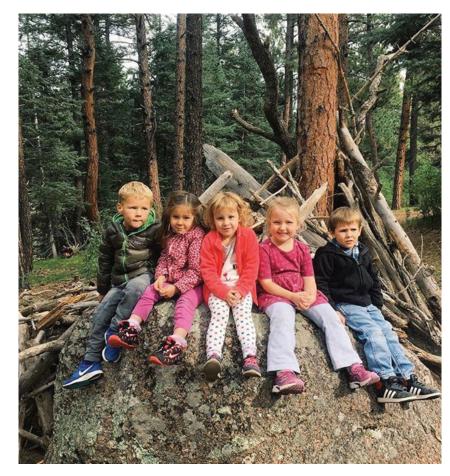
"But the best thing that we did was go on a Nature hike in search of spiders. Everyone was so excited when one of our students spotted a web, and shortly after another student was thrilled to discover an interesting looking Daddy Long Legs. The students (now all budding entomologists), had the unique and beneficial experience of observing this spider in its natural habitat. We counted its legs and discussed why it may have chosen to make its web in that particular location and what it might be having for lunch. Best of all, we got to watch it just being a spider."

Like any new start-up, it usually takes a bit of time - a year, maybe two or three years - before the revenues can readily support the expenses associated with that new endeavor. ENP has three long-time MPEC donors, Kathy Martinez, Anne Johnson and the Motherlove Herbal Company, to thank for providing the start-up funds to help get ENP off the ground. Recognizing the deep value of such a program to youngsters, they were pleased to provide us with funds to help with some of the initial costs. Their generosity has also allowed us to offer financial aid, which has made it possible for several families to enroll their children who otherwise would not have been able to afford the tuition. We also send a big thank you to those who helped support the purchase of several car/booster seats, and those who have recently donated snow pants and other winter clothing.

As word continues to spread, we are receiving many inquiries and are still taking enrollments. For more information, check out the webpage https://hikeandlearn.org/ education/preschool/ or email Tami Montoya at tami@hikeandlearn.org.



Nature Preschool





We send heartfelt thank you's to Elaine Sartoris, Anne Moulton, Katherine Singer, & Carol Kyte for processing the summer newsletter mailing; Dave Overlin and Steve Douglas

for continuing to help out with our healthy forests project, as well as helping us troubleshoot equipment and maintenance challenges; Tristen Faith, Susan Stiller, Tom Latka, Cyndi Hart, Warren Nolan, Lamar Trant, Kerry Kramer, Nora McAuliffe, Josh Wilcoxson, Heather Dewey & Shirly Haddan for donating towards the purchase of car/booster seats for the preschool; the Colorado College Priddy Group, YOS crews, Pueblo Central High School gymnastics team, and Craver Middle School Hot Shots all helped out with healthy forest project at the Mountain Park; and Alice Hill and Marlene Stiles for all the work and generosity associated with the Eye of Survival play.

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PROGRAMS & GUIDED HIKES

at the Nature & Wildlife Discovery Center

Mountain Park Campus Raptor Center

> River Campus

Out and About or all the details, pricing, and to register for these programs, go to www.hikeandlearn.org and click on PROGRAMS. If you need assistance with registering on-line, or if you do not have access to a computer, please call 719-485-4444. Also, note the different locations for each of the programs listed. Some are at the River Campus, some at the Raptor Center, and some at the Mountain Park. Note that there is a \$5 day pass fee required for all River Campus and Raptor Center programs. Donations are always appreciated.

Weekend Raptor Talks: Ongoing	Every Sat & Sun, 11:30am
Nature Toddlers with Ranger Dave	Mondays at 10am, dates TBA
Soulga Yoga	Sunday, Nov 18, 9-10am
AVAS 4th Saturday Bird Walk	Saturdays at 9am, Nov 24, Dec 22, Jan 26, Feb 23, Mar 23
Post-Thanksgiving Hike	Sunday, Nov 25, 1pm
Beulah Parade of Lights	Saturday, Dec 8, 5pm
Winter Snowshoe Hike	Sunday, Dec 9, 10am
Annual Yule Log Festival	Sunday, Dec 9, 1pm
Winter Solstice Walk	Saturday, Dec 15, 6-8pm
Raptor Resolution Run	Saturday, Dec 29, 10am
First Day Hike with Lake Pueblo	Monday, Jan 1, 11am-1pm
First Mountain Park Hike of 2019	Saturday, Jan 5, 1pm
Almost Full Moon Snowshoe Hike	Sunday, Jan 20, 6pm
SCAS Total Lunar Eclipse	Sunday, Jan 20, 7pm
Raptors on the Road: Birds of Prey at Fountain Creek Nature Center (Fountain, CO)	Saturday, Jan 26, 10am
Raptors on the Road: Birds of Prey at High Plains Snow Goose Festival (Lamar, CO)	Saturday, Feb 9, 1pm
Pueblo Eagle Day at the Raptor Center	Saturday, Feb 2, TBD
Winter Watercolor Saunter	Saturday, Feb 9, 1pm
An Afternoon Winter Hike	Sunday, Feb 17, 1pm
Winter Wildflower Hike	Saturday, Mar 2, 1pm
Spring Equinox Saunter	Sunday, Mar 24, 11am
SUMMER CAMP REGISTRATION OPENS UP MARCH 1, 2019!!	Please visit https://hikeandlearrorg/ for details.

COME VISIT THE NATURE & WILDLIFE DISCOVERY CENTER MOUNTAIN CAMPUS NATURE STORE

t's never too early to start shopping for the holidays and NWDC's Nature Store at the Mountain Campus in Beulah has some great new items and more arriving all the time. Life is Good long sleeve t-shirts, hats, mugs and snuggly socks are a perfect gift with many nature themes and the optimistic message "Do What You Love, Love What You Do." Wooden puzzles, books and jewelry are also available.

FE S GOOD

A purchase from the Nature Store helps NWDC with their goal of connecting kids to Nature through outdoor education. The Life is Good company also donates a minimum of 10% of their profits to help kids overcome poverty, violence and severe medical challenges through outdoor experiences and play.

Yummy Gelato, as previously featured at Exquisite Taste on Union Ave, is also available for purchase in the Nature Store. Flavors vary and include Lemon Poppyseed, Blueberry Cheesecake, German Chocolate Cake, Lemon Raspberry and other favorites.

NWDC members continue to receive a 10% discount in the Nature Store and gift certificates are also available. Current Nature Store hours are 8am-4pm Monday – Friday.

This holiday season give the simple gift that affirms.... Life is good!

YES! I want to be a member of Nature & Wildlife Discovery Center and be a part of an organization that brings people to Nature for education and recreation, and cares for injured wildlife. Note that we are still in the process of developing our new membership package, but here's what a membership comes with for now: the perks listed at https://natureandraptor.org/become-a-member/, and you will receive free access to guided hikes at the Mountain Park, discounts on other educational programs, and discounts in the Mountain Park gift shop and on overnight stays in the Horseshoe Lodge. Plus the knowledge that you are supporting the great work that the NWDC does!

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ddress	City ST Zip Phone
Senior (over age 70) x \$10 = Handicapped / Student / Military (w/valid ID) x \$30 = Additional Pass, Limit 1 (w/current Membership) x \$10 = Sustaining Member (monthly recurring payment, \$15.00 mir Community Leader Membership Levels (please indicate the numberships of the community Leader Membership Levels)	# Family: \$55 = n)/month (provide credit card info below) er of passes needed):
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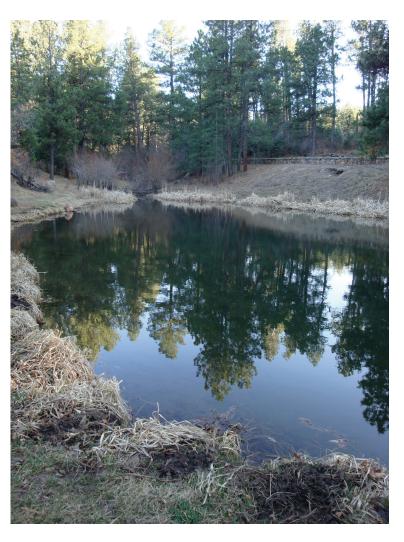


REINTRODUCING A KEYSTONE SPECIES TO THE MOUNTAIN PARK

by David Anthony Martin, AKA Ranger Pine

n a crisp October morning I met up with Neil Heredia, A Fish Culturist Technician from the Colorado Parks & Wildlife's Native Aquatic Species Facility. In the back of his truck were two large white tanks holding 4,000 young southern redbelly dace (Chrosomus erythrogaster).

Southern redbelly dace, only known in five drainages in Colorado, federally endangered due to low population numbers, and have been listed as Tier 1 Species of Greatest Conservation Need



(CPW 2015). They occur in small, relatively clear-watered streams, habitats that often include permanent springs, seeps, and mats of vegetation. Being highly adapted to these special conditions, activities that increase siltation or cause long-term increases in turbidity would be very harmful. Road work, construction, forestry and agricultural activities must be managed so that they do not result in excessive erosion and siltation. Alterations to the natural flow of springs can lead to habitat degradation and stream fragmentation. This might also occur in flooding events, as well as from construction, groundwater pumping, stream diversions, culverts, and channelization all of which negatively affect this species.

A few years ago, a large number of these fish were released into the Mountain Park's two ponds. Recent spring flooding events, however, filled the ponds with silt, greatly increased their turbidity and, being a lot shallower than normal, subsequent heavy rains flushed the small fish far downstream and there have been none detected in the park's ponds for some time. To restore the integrity of its aquatic habitat, the pond was dredged of its accumulated silt and is now once again a suitable environment for these fish, a keystone species of small fishes forming a distinctive community on the Great Plains.

Before Heredia can release the fish into their new habitat, he must first check the temperature of the pond water. The water in the holding tank and the water in the pond must be quite close in temperature to each other. This morning, the water in the pond is quite cold, so we begin pulling 5 gallon buckets of cold pond water and adding them to the warmer holding tanks to slowly temper the tank to more closely match their new home. The temperatures must be within 5 degrees of each other so as not to shock or kill these tiny fish. This process takes time, and is not something that can be rushed, so it gives us time to chat and enjoy the autumn day.

Once the young fish have had a chance to adjust to the colder temperature, Heredia uses a large fish net to scoop out a large number of them and add them to one of the 5 gallon buckets of water. He observes their behavior, looking for any signs of stress or shock, then carries this bucket to the pond. He slowly immerses the bucket into the pond at an angle, allowing a small amounts of pond water in to mix with the water in the bucket, before slowly releasing a few dace into the pond. "If they swim down and into the pond," he says, "that's a good sign. If they swim up toward the surface, that's not good." The fish wriggle and swim down and begin exploring the pond's deeper areas. When he is positive that the fish can be released safely, he releases the rest of the 1,000 southern redbelly dace, each not much larger than an inch and a half, into the small upper pond. The same precautions are repeated, but with 3,000 fish, at the larger lower pond, as its water differs in temperature than the small upper pond. The fish population of the ponds will be monitored regularly as we begin using the story of their reintroduction for educational programming.

Citations and references:

Southern Redbelly Dace (Phoxinus erythrogaster): A Technical Conservation Assessment

Prepared for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project January 11, 2007 Richard H. Stasiak, Ph.D. Department of Biology University of Nebraska at Omaha

Two Endangered Species at the Pond by Dave Van Manen and Paul Foutz, Mountain Park News, Winter, 2016.

"I prefer winter and fall, when you feel the bone structure of the landscape — the loneliness of it; the dead feeling of winter. Something waits beneath it, the whole story doesn't show."

~ Andrew Wyeth

1ST ANNUAL NATURE PALOOZA

any Thanks to all the vendors, donors and guests who participated in Nature Palooza at the River Campus on October 13th. We could not have asked for a more perfect day; the universe was smiling upon us, as the weather, which turned cold and wet the following day, was warm and fair. We hope everybody had a GREAT time! It was such a success that we are making plans for Nature Palooza 2019!



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NATURE & WILDLIFE DISCOVERY CENTER

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Please remember NATURE & WILDLIFE DISCOVERY CENTER on Colorado Gives Day: Tuesday, December 4, 2018! https://www.coloradogives.org/MPEC/overview#

New Facebook address: www.facebook.com/nwdcco/

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