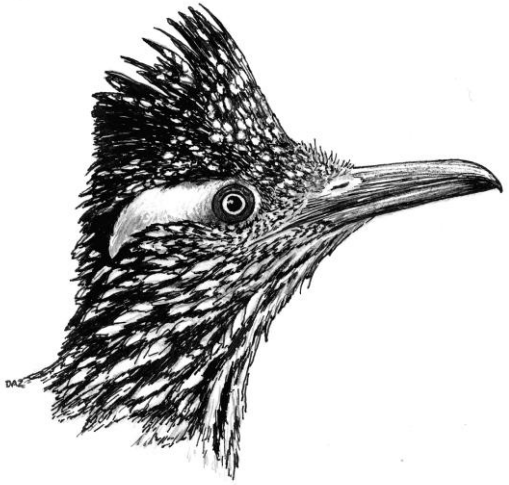
# NMOS BULLETIN



**New Mexico Ornithological Society**

**Vol. 37, No. 4** **2009**

## CONTENTS

### Articles



### Announcements and Information

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# ON THE WINTER DIET OF THE MOUNTAIN BLUEBIRD (*SIALIA CURRUCOIDES*) IN SOUTHWESTERN NEW MEXICO

DALE A. ZIMMERMAN

1011 West Florence Street, Silver City, NM 88061

The recent paper by K. Burnett and J. M. Fair (2008), on foods used by wintering Mountain Bluebirds in northern New Mexico, has prompted the following comments on this species' winter diet in the southwestern part of the state. These reflect several hundred observations of this species in Grant (primarily), southern Catron, Hidalgo, and Luna counties, spanning a half-century (1957-2008). They are based on no quantitative data such as those presented by Burnett and Fair. However, as those authors (citing appropriate references) acknowledge the paucity of information on this subject, even general observations may be worthy of record.

Considerable land in southwestern New Mexico supports open juniper and pinyon pine/juniper woodland, juniper savanna, and associated grassland (including desert-grassland) favored by Mountain Bluebirds during their winter sojourns to the region. The birds also frequent river valleys, clearings in moderately dense woodland, and to a lesser extent other habitats, including suburban sites with varied combinations of native and introduced plant species. Mountain Bluebirds typically are present in these counties from October through March, occasionally earlier or later, with maximum numbers from December through February. These numbers vary greatly, and in some years the species appears to be nearly absent from the Silver City area of Grant County, where I have made a majority of my observations, many of them with Marian Zimmerman. During the 1970s and 1980s, hundreds of Mountain Bluebirds wintered locally, and flocks of 50 to 100 birds were frequent. Some years, (e.g. 1977), we estimated that over 1000 wintered around Silver City.

As Burnett and Fair found in Santa Fe County, the berry-like cones of junipers constitute a major food source for Mountain Bluebirds during winter. Following current accepted taxonomic treatment

(Adams, 2008), four species of *Juniperus* grow naturally in southwestern New Mexico: *J. deppeana* (Alligator Juniper), *J. monosperma* (One-seed Juniper), *J. scopulorum* (Rocky Mountain Juniper), and "red-berried" *J. arizonica* (Arizona Juniper, formerly considered a variety of *J. coahuilensis*). An additional two or three non-native *Juniperus* species are sparingly cultivated in the region.

Alligator Juniper is common in the southwestern counties. Its large (8-15 mm), fibrous, pithy, almost woody cones often are abundant, and can carpet the ground after falling from the trees. They serve as food for some wildlife, but tend to be ignored by most small passerines. Perhaps they are eaten on occasion by Mountain Bluebirds, but I have never observed this. *Juniperus scopulorum* is local in this region, typically scattered and most numerous in montane or sub-montane canyons and forests not often visited by Mountain Bluebirds. Although its glaucous, dark blue cones are rather juicy and certainly palatable to birds, in southwestern New Mexico the tree is not a significant food of this bluebird.

Burnett and Fair determined *J. monosperma* to be "the predominant food source for wintering Mountain Bluebirds" in their Santa Fe County study area. Based on my observations, it appears to be the most important single food source for that species in southwestern New Mexico as well, except within the main range of *J. arizonica*, the "berries" of which also are freely eaten. Roving flocks of Mountain Bluebirds range over the foothills, often descending directly into juniper stands where they may feed for extended periods. They frequently return to productive trees or groves on successive days, and at intervals over several weeks until the food supply is exhausted.

*Juniperus monosperma* is widespread and abundant in southwestern montane foothills, and it grows in and near the Gila River valley alongside *J. arizonica*. The latter tree is widespread on foothills in Hidalgo and Luna counties where its cones are fed upon by Mountain Bluebirds during their sporadic appearances. L. G. Malone has reported (pers. comm.) Mountain, Western (*Sialia mexicana*) and Eastern Bluebirds (*S. sialis*) feeding on *J. arizonica* in Spring Canyon in the Florida Mountains near Deming during March 2001. Excepting the Gila Valley, *J. arizonica* is rare in the Silver City region (though I have collected it at Fort Bayard where all three bluebird species feed among the junipers).

FIGURE 1. Male Mountain Bluebird feeding on the berry-like cones of *Juniperus monosperma*, Silver City, NM, 20 December 1980. A bird may devour 20 or more cones in rapid succession, if perched on an especially productive branch. This individual was part of a flock of 45 that daily visited a group of several large trees over a period of at least six days. (Photograph by D. and M. Zimmerman.)

FIGURE 2. Male Mountain Bluebird (part of the flock referred to in the caption to Fig. 1) foraging on fallen *Juniperus monosperma* "berries" under a particularly fecund tree, Silver City, NM, 19 December 1980. (Photograph by D. and M. Zimmerman.)

On our Silver City property, a Russian Olive (*Elaeagnus angustifolia*) grew for many years, more or less surrounded by junipers. Although this olive tree rarely fruited heavily, its drupes were conspicuous each winter, yet were almost entirely ignored by local frugivores. Bluebirds, both Mountain and the more regular Western, fed extensively some winters on nearby *J. monosperma* "berries," and they commonly perched in the Russian Olive's branches while digesting, or *en route* to and from a water source beneath the tree, but they almost invariably ignored the hard, scaly olives.

Burnett and Fair found that Russian Olive seeds constituted 8.3 % of the food items in Mountain Bluebird droppings they examined. I suspect that these may have been consumed late in the season, after most of the One-seed Juniper "berries" (whose seeds made up 91.2 % of their collected material) had been eaten. In Silver City, Russian Olive fruits remain on the trees well into spring, after Mountain Bluebirds have departed. I have noticed these drupes being eaten by other birds mainly after more edible fruits have disappeared.

In many southwestern New Mexico towns and villages, two or more species of *Pyracantha* are commonly planted, and these can be an important local food source for birds. The shrubs fruit heavily and can become quite large. The fruits rarely last into late winter, as they are promptly consumed by numerous species, including Western Bluebirds. I am not aware of Mountain Bluebirds feeding on *Pyracantha*, but probably they do so occasionally.

In a Silver City yard, Marian Zimmerman and I once watched Mountain Bluebirds eating the "berries" of a nearly prostrate, cultivated juniper (presumably *Juniperus horizontalis*), while others of the flock fed briefly on the red fruits of a nearby, low-growing *Cotoneaster*.

Wintering Western Bluebirds regularly eat the berries of mistletoes, including *Phoradendron juniperinum*, parasitic on juniper trees, and *P. coryae*, parasitic on oaks (especially *Quercus grisea*, a shrub or tree often associated with junipers). However, I recall seeing Mountain Bluebirds at *P. coryae* one time only; and although fruiting *P. juniperinum* may be present in trees attracting these birds, I more than once have noted little or no attention being paid to the small, pink mistletoe berries, the bluebirds concentrating instead on juniper cones. Whereas Western Bluebirds, Eastern Bluebirds, Cedar Waxwings (*Bombycilla cedrorum*),

American Robins (*Turdus migratorius*) and other birds regularly flock to *P. macrophyllum* clumps high in riparian cottonwoods, we have never observed Mountain Bluebirds doing so, perhaps a matter of chance. Yet, several times in the Gila Valley, we have seen these bluebirds assemble, sometimes 100 to 200 strong, to drink and loaf at the water's edge, in sight of mistletoe clumps, then fly some distance to adjacent hills and nearby ridges where they descend to feed among the juniper trees. Several birding friends have made similar observations.

## ACKNOWLEDGEMENTS

I thank Larry Malone for sharing with me his observations of bluebirds in the Deming area, and Eugene Jercinovic for visiting the Spring Canyon site to confirm identification of the local junipers.

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BURNETT, K.S., AND J.M. FAIR. 2008. Winter diet of the Mountain Bluebird (*Sialia currucoides*) in northern New Mexico. New Mexico Ornithological Society Bulletin 36(4):66-69.

* * *

# BIRD CONSERVATION IS PUBLIC HEALTH INTERVENTION

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It is believed that in 1920, Charles Edward Winslow defined public health as the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities and individuals. Examples of public health interventions include one of the earliest public health inventions, the flush toilet, and one of the most recent, the vaccine. Most states have a department of public health with a goal of promoting preventive programs and responding to disease outbreaks. Many times the disease outbreak to which the public health department may be responding, is newly emerged or previously unseen, such as Hanta virus in New Mexico in the 1990s or West Nile virus in the early 2000s. Both of these are zoonotic diseases in that they affect both animals and humans. It is clear to see the relationship between wildlife and public health as the majority of newly emerging infectious diseases are zoonotic (Wolfe et al. 2007, Richt and Feldmann 2009, Wolfe 2009). But how does bird conservation play a role in public health?

Wild birds and public health have been in the news together over the last few years, primarily because of West Nile virus (Anderson et al. 1999, Lanciotti et al. 1999, Artsob et al. 2009) and avian influenza or "bird flu" (Muzaffar et al. 2006, Olsen et al. 2006, Webster et al. 2006, Peiris et al. 2007). Birds are migratory, covering vast areas of the globe and provide one of the only "links" between the Eastern and Western hemispheres, outside of human airplane travelers. Birds have the capacity to spread a disease far and wide, once the factors align for its emergence. Stressed birds or birds that carry a heavy load of contaminants may be even more susceptible to diseases, making them more infectious and likely to spread diseases (Friend and Trainer 1970,

Acevedo-Whitehouse and Duffus 2009). So, bird conservation efforts that can improve public health include things like reducing contaminants in the environment, and reducing stresses on populations by halting habitat destruction and fragmentation or making travel corridors. Birds that live healthy lives carry fewer diseases.

There are numerous examples of improved public health from the conservation of habitat for birds. Several researchers have recently shown that biodiversity is linked to controlling disease both in plants and animals due to reduced key host abundance and increased ecosystem function (Daszak et al. 2000, Hooper et al. 2005). We have long known that pathogens are ubiquitous and many diseases are transmitted by vectors such as mosquitoes or ticks. Understanding the dynamics of any particular disease involves the understanding of a complex system of interactions between the host, vector, pathogen, and the environment. Lyme disease illustrates this idea nicely: reduced numbers of mouse and deer predators in fragmented habitats leads to an abundance of deer and mice that can serve as hosts for the tick that carries the bacteria that causes Lyme disease in people (LoGiudice et al. 2003, Keesing et al. 2009). Scientists are actively asking if related mechanisms occur in West Nile virus or parasitic diseases like schistosomiasis. It has also been suggested that invasive species (those with less specific habitat needs like House Sparrows [*Passer domesticus*]) seem to be better carriers of diseases than specialist species (those that require a narrow range of habitat characteristics like the Greater Sage-Grouse [*Centrocercus urophasianus*]) (Lee and Klasing 2004, Fenton and Brockhurst 2008). We are not entirely sure why this may be, but it may have something to do with invasive species being more adaptable than specialists in novel environments, which in turn may make them more flexible with food sources or diseases. Because of this, they end up carrying and spreading diseases rather than quickly fighting the infection or dying from it. Thus, it is in our interest to maintain ecosystems with high biodiversity that are replete with specialists rather than invasive species. While ecologists have intuitively understood the potential for such links, they have not traditionally studied infectious diseases, as they have considered them disturbances rather than inherent parts of the ecosystem.

We have known for some time that our domestic animals are closely linked to public health. For example, outbreaks of the feared antibiotic resistant *Staphylococcus* bacteria can be now found in agricultural animals in the U.S. Two aspects are important in this example. First, maintenance of robust immune systems is needed to fight infection and limit their infectiousness. For example, birds not kept in cramped and in poor conditions are less susceptible to diseases. Second, spatial separation of wild birds and domestic birds appears to be important in reducing the spread of avian influenza. Birds that have ample suitable habitat such as at wildlife refuges, national parks, and migration corridors are less likely to become adapted to the human-urban landscape and interact with domestic birds. Sometimes adapting to this human-urban landscape can lead to increased disease in birds (see Muzaffar et al. 2006 for a review). Mycoplasma, which is transmitted at congested feeders between House Finches (*Caprodacus mexicanus*), has increased dramatically (Altizer et al. 2004). Population congestion in both humans and animals leads to increased transmission of infectious diseases. For example, seasonal influenza has a higher transmission rate in schools or public events.

Sometimes public health interventions do the opposite of the intended purpose. To help stop the spread of West Nile virus, thousands of acres of urban landscape are sprayed with insecticides to kill the vector mosquitoes (Boyce et al. 2007, Valcke et al. 2008). However, many times these insecticides are not only lethal to mosquitoes, but also to birds. And if the toxicant did not kill the birds, their immune functions could be compromised causing them to be more infectious to mosquitoes by shedding more virus into the blood stream (Jankowski, *in press*). While controlling mosquitoes through integrated pest management is a recommended thing to do in this circumstance, including a plan to reduce bird exposure may help provide an even better public health benefit in the future.

Maintaining suitable habitat and assisting in conservation of wild birds is a non-traditional but direct way to limit infectious disease outbreaks. Maintaining healthy bird populations will help to ensure that new pathogens do not adapt and evolve to become the next pandemic. Many people may suggest that we control or cull wild bird populations, but birds are a critical part of every healthy ecosystem. Humans rely on

healthy ecosystems to provide food, clean air, and drinking water for all organisms. Land use and development have altered natural ecosystems greatly in the last 50 years, leading to a decline in biodiversity. At the same time, there has been a rise in new infectious diseases as well as infectious diseases previously thought to be under control. Once we include birds entirely as part of our public health interventions, we will be able to see more win-win situations for decreasing infectious diseases and increasing quality of life for all creatures great and small (Costello et al. 2009).

A version of this article was published in the Earth Day tabloid of the Pajarito Environmental Education Center (www.PajaritoEEC.org) on 19 April 2009 with the *Los Alamos Monitor*.

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# VOLUNTEERS AND LOCAL COORDINATORS NEEDED FOR IMPLEMENTATION OF THE WESTERN COLONIAL WATERBIRD SURVEY IN NEW MEXICO

The U.S. Fish and Wildlife Service and eleven western states are collaborating on a west-wide inventory of colonial waterbird colonies, for the purposes of mapping breeding colonies, determining population status, identifying conservation and management issues for various species, and developing or refining conservation actions. Implementation of this survey began in 2009 and will continue through 2011. The survey covers 17 species of colonial breeders across the west; species targeted for New Mexico are Eared, Western, and Clark's grebes; Neotropic and Double-crested cormorants; Great Blue Heron, Black-crowned Night-Heron; Great, Snowy, and Cattle egrets; and White-faced Ibis. Peripheral breeders including Little Blue and Tricolored herons, and Yellow-crowned Night-Heron will also be tracked but are not included in the west-wide survey species list. Details for the survey can be found at http://www.fws.gov/mountain-prairie/species/birds/western_colonial/index.html#surveyprotocols.

Due to the between-year shifting of colonies in arid states such as New Mexico in response to water levels and disturbance, we will try to implement this survey in New Mexico entirely in 2010. Colonies are to be visited one time in the period 10-30 May 2010 to determine numbers of breeding pairs of each species at each colony. We are seeking roughly ten volunteers to 'adopt' colonies and determine numbers of breeding pairs following the established protocols, plus three or four area coordinators to ensure that all colonies within different sub-regions of the state get visited, provide forms and instructions, compile data from the volunteers, and proofread and enter the data either on-line or into a pre-designed Excel spreadsheet. Volunteers will be doing so with the U.S. Fish and Wildlife Service (with mileage and lodging costs covered where needed); local coordinators will be funded under contract.

If you are interested in either of these roles, please contact Hira Walker, New Mexico Department of Game and Fish, P.O. Box 25112, Santa Fe, NM 87504; 505-476-8109; Hira.Walker@state.nm.us, or Bill Howe, U.S. Fish and Wildlife Service, P.O. Box 461, Albuquerque, NM 87103; 505-248-6875; Bill_Howe@fws.gov. Thanks for your help!

## NMOS 48th ANNUAL MEETING ANNOUNCEMENT AND JOINT NMOS/ NEW MEXICO DEPARTMENT OF GAME AND FISH YELLOW-BILLED CUCKOO SYMPOSIUM

10 April 2010
Best Western Rio Grande Inn
1015 Rio Grande Boulevard NW
Albuquerque, New Mexico
505-843-9500
www.riograndeinn.com

The New Mexico Ornithological Society will hold its Annual Meeting on Saturday, 10 April 2010 at the Best Western Rio Grande Inn, located just north of the Old Town historic district of Albuquerque. This meeting will include an NMOS business meeting, an NMOS general science session, and a Yellow-billed Cuckoo Symposium jointly sponsored by NMOS and the New Mexico Department of Game and Fish. The NMOS evening banquet will also be held at the Best Western Rio Grande Inn; the keynote banquet speaker will be Murrelet Halterman, Cuckoo Project Director, Southern Sierra Research Station, California. She will speak from her perspective on 20 years of study on Western Yellow-billed Cuckoos. Further details on the meeting will be posted on the NMOS website (www.nmbirds.org) and published in upcoming issues of the *NMOS Bulletin,* as they become available.

* * *

## NMOS 48TH ANNUAL MEETING

## CALL FOR PAPERS – GENERAL SCIENCE SESSION AND YELLOW-BILLED CUCKOO SYMPOSIUM

The New Mexico Ornithological Society will hold its 48th Annual Meeting on Saturday, 10 April 2010 at the Best Western Rio Grande Inn, located just north of the Old Town historic district of Albuquerque. This meeting will include an NMOS business meeting, an NMOS general science session, and a Yellow-billed Cuckoo Symposium jointly sponsored by NMOS and the New Mexico Department of Game and Fish (NMDGF).

Presentations for the Yellow-billed Cuckoo Symposium will be primarily by invitation, but all those interested in giving an oral presentation in the symposium are encouraged to submit an abstract for consideration (follow instructions below for formatting abstracts). Please e-mail abstracts for the Yellow-billed Cuckoo Symposium to Hira Walker with NMDGF (hira.walker@state.nm.us) on or before 1 March 2010.

Oral presentations for the NMOS General Science Session will be allotted 15 minutes, with an additional five- minute period for questions. Papers may range from technical reports of original research to general observations. Poster presentations are also encouraged; size should be no larger than 91 cm H X 122 cm W.

Please submit abstracts containing the following:

- TITLE (in all capital letters) of no more than 20 words
- Names and addresses of author(s) in the following form:

  Bear, V. L. and C. Finch
  Dept. of Ornithology
  University of Central New Mexico
  Birdsville, NM 88666

- Body of abstract as one single-spaced paragraph, not to exceed 250 words.
- Include e-mail address and/or phone number of presenting author.

Please submit your entire abstract in the body of the e-mail, not as an attachment. This will prevent any problems with incompatible word processing formats. Please e-mail your abstract to both Martha Desmond, session chair (mdesmond@nmsu.edu; 575-646-1217) and Roland Shook (shookr@wnmu.edu; 575-388-3441) on or before 1 March 2010.

The abstracts for both the NMOS General Science Session and the Yellow-billed Cuckoo Symposium will be distributed at the meeting and will be published in the *NMOS Bulletin*. In addition, expanded abstracts from the Yellow-billed Cuckoo Symposium will be published by NMDGF in a proceedings.

* * *

## NMOS RESEARCH GRANTS

The New Mexico Ornithological Society announces two $1000 grants to support research on New Mexico birds, available through the Ryan Beaulieu Research Grant Program.

The criteria for the grants are: 1) the grant money must be spent while conducting research on birds in New Mexico; 2) the recipient must either present a paper based on the research at an annual NMOS Meeting or submit an article based on the research to the *NMOS Bulletin*; and 3) preference will be given to student applicants.

A short research proposal (two pages maximum) must be submitted describing the nature of the project and how the funds would be spent (e.g., on fuel, audio recording, specific equipment, etc.). Each proposal should include two letters of reference, one of which should be from a graduate advisor if the applicant is a graduate student. References should comment on the applicant's commitment to New Mexico ornithology and ability to design and carry out creative, independent research. Please submit your electronic proposal, with "NMOS Grant" in the subject line, to:

Dr. Roland Shook
Western New Mexico University
Silver City, NM 88061
shookr@wnmu.edu

Research proposals must be received by 1 March 2010. All applications will be acknowledged upon receipt. If no acknowledgement is received, it is the applicant's responsibility to follow-up with their submission to ensure consideration. Grant awards will be announced at the NMOS Annual Meeting on 10 April 2009.

## REVIEWERS FOR VOLUME 37

The New Mexico Ornithological Society and the Editor of the *NMOS Bulletin* would like to thank the following individuals who served as reviewers for manuscripts that appeared in Volume 37 of the *Bulletin:*

Timothy Brush, Carol Campbell, Jean-Luc Cartron, Troy Corman, and David Krueper.

## NEW MEXICO ORNITHOLOGICAL SOCIETY – MEMBERSHIP APPLICATION

Membership in the New Mexico Ornithological Society is open to anyone with an interest in birds. Memberships are for a calendar year and annual dues are payable 1 January.

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

*Select membership category:*

| | | |
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| Regular | $20 | _____ |
| Family | $30 | _____ |
| Student | $10 | _____ |
| Supporting | $50 | _____ |
| Life | $500 | _____ |

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Albuquerque, NM 87190-3068

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## NEW MEXICO ORNITHOLOGICAL SOCIETY

*— Founded 1962 —*

The New Mexico Ornithological Society was organized to gather and disseminate accurate information concerning the bird life of New Mexico; to promote interest in and appreciation of the value of birds, both aesthetic and economic, to further effective conservation of the state's avifauna; to facilitate opportunity for acquaintance and fellowship among those interested in birds and nature; and to issue publications as a means of furthering these ends.

Membership and Subscriptions: Membership in the New Mexico Ornithological Society is open to anyone with an interest in birds. Memberships are for a calendar year and annual dues are payable 1 January. Dues are: Regular Membership $20; Family $30; Student $10; Supporting $50; Life $500. Address for the New Mexico Ornithological Society: Post Office Box 3068, Albuquerque, NM 87190-3068.

## *NMOS BULLETIN*

The *Bulletin* is published quarterly; subscription is by membership in NMOS. The *Bulletin* serves two primary purposes: (1) to publish articles of scientific merit concerning the distribution, abundance, status, behavior, and ecology of the avifauna of New Mexico and its contiguous regions; and (2) to publish news and announcements deemed of interest to the New Mexico ornithological community.

NMOS members are encouraged to submit articles and news. Articles received are subject to review and editing. Published articles are noted in major abstracting services. Please submit articles in double-spaced electronic format, such as a Microsoft Word document, by e-mail to the Editor (see inside front cover). Refer to recent issues of the *Bulletin* for examples of style. News items may be submitted to the Editor by way of e-mail.

**www.nmbirds.org**

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