

Southwest Section Newsletter

Spring & Fall 2022 - Vol. 13 Issues #1 & #2



From the Board

Southwest Section

National News

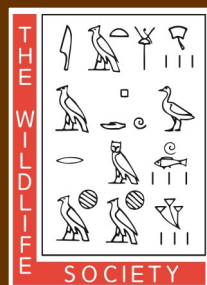
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Current Members

AZ	NM	TX	Int	Oth
58	78	113	2	52

President's Message

Whitney Gann - 2022 President SW Section of The Wildlife Society

Spring Message:

I am very excited to introduce myself and serve the Southwest Section of The Wildlife Society this year! We just held our return to in-person TWS chapter meeting in Texas and it was very well received. I, like many of you, enjoyed seeing and interacting with colleagues after the long break and left the meeting feeling rejuvenated.



I would like to thank Jimmy Cain for his service as president and to acknowledge and welcome our new president-elect, Kay Nicholson. Welcome to the team, Kay! Returning officers are Jimmy Cain (now Past president), Erika Nowak (Treasurer), and Masa Ohnishi (Secretary).

The recipient of the 2022 Wildlife Graduate Student Scholarship of the Southwest Section of The Wildlife Society was Olivia Gray. Olivia is a Masters Student at Sul Ross State University studying bighorn sheep, aoudad, and mule deer interactions. You can read more about Olivia and her research below. Congratulations to Olivia on her scholarship award. Graduate students who are interested in applying should keep an eye out for our scholarship announcement later this year.

Looking forward, don't forget that TWS is hosting the 29th Annual Conference in Spokane, Washington November 6-10, 2022. I plan on attending the meeting, if you will be there too, please don't hesitate to come say hello! Oral and poster presentations, symposia, workshop, and panel discussion submissions are all currently open. Hopefully we will have a large SW section presence at the meeting. Travel grants are available for students and professionals through TWS; check out their website for more information.

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State News

Submitted by Tyler Campbell Science Manager East Foundation

Importance of "Bull" Mesquite for Rangeland Birds

Faith O. Hardin, Samantha Leivers, Jacquelyn K. Grace, Zachary Hancock, **Tyler A. Campbell**, Brian Pierce, and **Michael L. Morrison**



Bull mesquite at dusk on East Foundation's San Antonio Viejo Ranch.

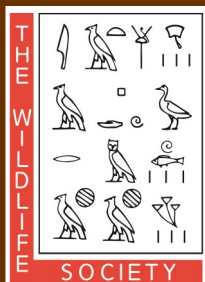
Photo courtesy Wyman Meinzer

Honey mesquite dominates many rangelands in the southwestern United States and northern Mexico. Mesquite is a member of the legume family of plants which includes peanuts, alfalfa, clover, and other beans. The growth form of mesquite varies from shrub to small tree (to 25 ft tall); with single or multiple trunks, much-branched, crown rounded; and growth beginning in late spring, flowering from March to May, and with fruits maturing from June to August. Mesquite reproduces from seeds and basal shoots. **"Bull" mesquite are single trunked, crown rounded,**

mature mesquite with a tree growth form and with a trunk that is a foot or more in diameter.

Most of the areas where mesquite occurs have low annual rainfall. Bull mesquites have a long taproot that they use to locate enough moisture to keep them alive. This feature allows them to survive through droughts. The roots of mesquite can regenerate if the aboveground portions of the tree are removed through mechanical treatments (e.g., roller chopping and shredding). As such, mesquite is difficult to control through mechanical means.

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Bull mesquites are valuable to livestock and wildlife, providing shade within semi-arid rangelands. Additionally, mesquite seed pods are an important food for many wildlife species, including white-tailed deer, collared peccary, and coyotes and as an emergency feed for livestock.

On South Texas rangelands, mesquite provides essential nesting habitat for many bird species. The importance of bull mesquite to woodpeckers and secondary cavity, ash-throated flycatcher, brown-crested flycatcher, and Bewick's wren) on the ranch (Hardin et al. 2021).

Our monitoring approach included 1) point count surveys during the spring and summer months, with points visited six times per month from 2014–2020; 2) nest searches and monitoring with cameras; and 3) sampling insects (as a prey item of birds) along transects (Hardin et al. 2021).

First, we found 55 woodpecker nests, of which 40 successfully fledged young (73%). Across all cavities found, abandoned woodpecker cavities ($n = 526$) were built with smaller cavity entrances, and in less decayed trees with larger diameters than cavities formed naturally by decay ($n = 847$; Figure 1). The height and depth of the cavity were not different between cavity types.

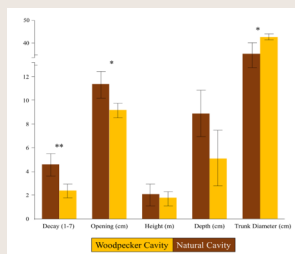
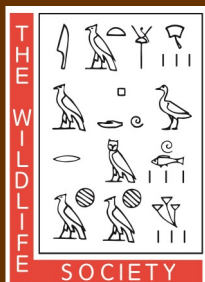


Figure 1: Characteristics of woodpecker and natural cavities. Results of Welch's t test comparing differences between woodpecker and decay-formed cavities. Natural decay-formed cavities $n = 847$, Woodpecker cavities $n = 526$. Error bars represent standard error. Abandoned woodpecker cavities were built in bull mesquite trees with significantly less decay, with smaller openings, and in trees with larger diameters, compared with decay-formed cavities. Note the break in the y-axis. Data were collected on East Foundation's San Antonio Viejo Ranch during 2019.

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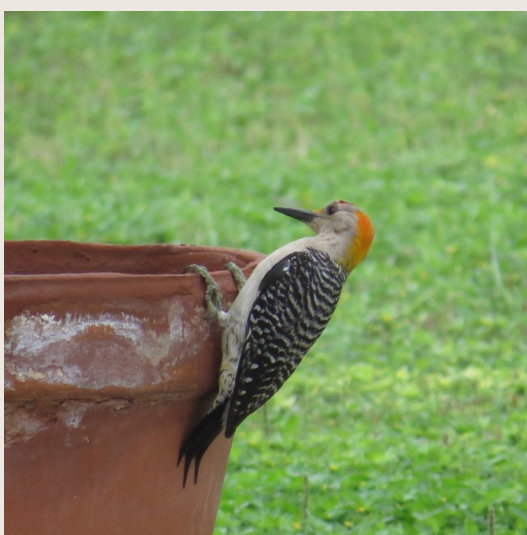
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Second, we found 79 wren nests, 102 flycatcher nests, and 39 tit-mouse nests. All species other than wrens preferred to nest in trees with lower decay, even though fully live trees were less common (<20%) than those with decay.

Lastly, we found secondary cavity nesting birds had higher than expected success when nesting within an area commonly foraged in by woodpeckers. Additionally, within foraging sites, the nesting success of all birds was correlated with the biomass of beetles, grasshoppers, and termites but were unrelated to the biomass of mantises, true bugs, walking sticks, and flies.

In summary, we found that 1) similar cavity metrics predicted daily survival rates of woodpeckers and secondary cavity nesters; 2) all secondary cavity nesters had high nest survival rates when in an abandoned woodpecker cavity versus a cavity formed by decay; and 3) average woodpecker foraging distances were correlated with the biomasses of beetles, grasshoppers, and termites.



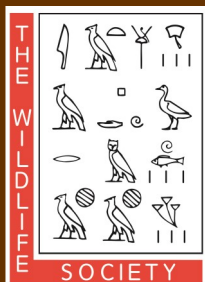
Male golden-fronted woodpecker on East Foundation's San Antonio Viejo Ranch.

Photo courtesy Christopher Huff

So, what does this mean?

First, golden-fronted woodpeckers prefer to create cavities and nests in bull mesquite, where nesting attempts were more successful. Additionally, secondary cavity nesting birds (i.e., black-crowned titmouse, ash-throated flycatcher, brown-crowned flycatcher, and Bewick's wren) have greater reproductive success when nesting in abandoned woodpecker cavities in bull mesquite.

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Bull mesquite is extremely important to rangeland bird reproductive success and the causative mechanism may be related to prey abundance (i.e., availability of beetles, grasshopper, and termites) or predator avoidance behavior.

Second, land managers in the southwestern United States and northern Mexico interested in conducting brush control to promote cattle forage production or as a habitat management tool for white-tailed deer, northern bobwhite, and other game, should **take measures to retain bull mesquite** to promote breeding bird communities, rangeland health and productivity.

Literature Cited

Hardin, F.O., S. Leivers, J.K. Grace, Z. Hancock, T.A. Campbell, B. Pierce, and M.L. Morrison. 2021. Secondhand homes: the multilayered influence of woodpeckers as ecosystem engineers. *Ecology and Evolution*, 11, 11425–11439. <https://doi.org/10.1002/ece3.7932>



Mesquite flowering on East Foundation's San Antonio Viejo Ranch.

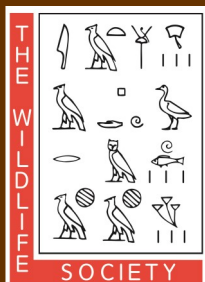
Photo Courtesy Wyman Meinzer



Mesquite seed pods on East Foundation's San Antonio Viejo Ranch.

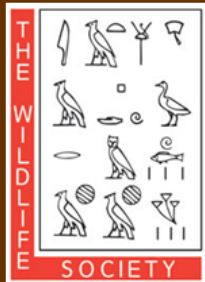
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Membership Application

Membership Fee \$5.00

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Suffix

Middle Name

Last Name

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City

State

Zip Code

Country

E-mail address

Phone

Member Type (Please circle one): Student Regular Retired

Please include this form with your payment and mail to:

**Erika Nowak, Treasurer, Southwest Section of TWS, USGS
Southwest Biol Ctr Box 5614 Flagstaff AZ 86011**

Membership benefits for the Southwest Section TWS

- SWS TWS Newsletter
- Scholarship opportunities
- Section-level meetings and conferences
- Strengthen your connections to national TWS
- Peer connections through Listserv and [Facebook](https://www.facebook.com/wildlife.org)
- Website information at <http://wildlife.org/sw-section/about/>