



THE BOOMER

Quarterly Newsletter of the Friends of Attwater Prairie Chicken Refuge



Volume 2 issue 2

Message From The President

This month I am happy to use this space to make some announcements.

MEMBERSHIP MEETING: September 28, 2013 at 10 am, the Friends group will hold our annual membership meeting at the Refuge. An election of board members and officers will be held. All current members attending the meeting, who have not previously submitted a ballot, will be eligible to vote. Ballots were sent out electronically or via U.S. Postal Service on August 28, 2013.

Refuge staff will make short a presentation and light refreshments will be provided.

If you plan to attend the meeting, please RSVP to Gary Woods at garykwoods@sbcglobal.net with your expected

number of attendees. We expect that the meeting will conclude by noon. Please take this opportunity to enjoy the refuge either before or after the meeting.

BOARD EXPANSION: Our new fiscal year that will start next month will see some new faces on the board. With this annual meeting and election, mentioned above, the Friends board will grow from four members to eight. I look forward to the addition, their expertise and enthusiasm....not to mention their help.

PARTNERSHIP AGREEMENT: Last month, Refuge Manager Terry Rosignol and I signed the Partnership Agreement between the Friends and the U.S. Fish and Wildlife Service. The purpose of the Agreement is to facili-

tate and to formalize the cooperation of the Service and the Friends in supporting the purpose and objectives of Attwater Prairie Chicken NWR. It is the last piece of the necessary legal puzzle that we have been working to assemble over the past two years.

COOPERATIVE AGREEMENT: Work has begun, on the Refuge, with the funding we secured under a cooperative agreement with the USFWS Texas Coastal Program. Everyone has looked forward to this. Please read the article in this issue of the first of these important efforts.

I continue to appreciate your support and hope to see you at the meeting this month.

Ron Jones, President



APC young under brood lamp

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Did you know?

- A recent USGS study discovered amphibians in the U.S. are vanishing at the rate of 3.7% a year. This includes protected areas.
- Today, 80 percent of residents live in big and little cities, far removed from the rural communities that brought close connections to wildlife.
- White nose syndrome is responsible for a 75-90% decline in little brown bat populations since 2007.

Recovery Partners: The Houston Zoo

The recovery of the Attwaters Prairie Chicken is dependent on a partnership of organizations and individuals whose ongoing teamwork is vital to any past, present or future successes. This is the first in a series of articles that will highlight the zoos and wildlife parks in Texas that fulfill a crucial role in “captive propagation.”

The Houston Zoo received its first eggs for incubation in 1994 and has since been a very active partner. Hannah Bailey heads up the zoo's bird department with a staff of seventeen, all of whom are involved one way or another in the prairie chicken program. During the breeding season, there are typically one or two main “keepers,” who take care of the APC flock. About six-staff members are dedicated to monitoring egg incubation. Several seasonal workers are hired during the summer to assist with chick rearing. For the APC program, Hannah and her staff are funded with less than \$100K a year, which includes staff salaries. The majority of funding comes from the zoo's operating budget.

At the zoo, the staff utilizes six-dedicated incubators and maintains a flock of twenty-two brood hens. The staff also maintains several additional areas to raise chicks and house juvenile birds prior to release. Twenty-four (20' x 40') breeding pens are located on the grounds of the Johnson Space Center. This secure location lessens disturbance during the breeding process. Hannah hopes to eventually have thirty-six breeding pens and to add an incubation facility at the Space Center.

If you asked about the difficulty of the work Hannah says, "Grouse husbandry is not at all easy. While the adults are generally healthy and can easily live up to nine years in captivity, providing the right setting and nutritional needs to have the birds produce has been challenging. Over the years of the program, we have really worked to refine our techniques (propagation and chick rearing) and have used this information to create an APC Animal Care Manual that we hope will help with other grouse species as needed."

There have been good years and bad years in APC husbandry. During the past five years the zoo has produced between seventy-five and one-hundred chicks each year. This past season the breeding flock was increased, and one-hundred and fifty chicks were produced. Over the past two to three years, synergy,

shared experiences and resources, determination, commitment and teamwork have resulted in an overall increase in the number of chicks available for release each year.

Cont. on P.4

At left: Houston Zoo vet, Maud Marin, and APC intern, Sheree Dedrick, prepare an APC for release.

Photographs for this article were provided by the Houston Zoo



EVIDENCE CONTINUES TO MOUNT LINKING RED IMPORTED FIRE ANTS TO ATTWATER'S STRUGGLES

Dr. Mike Morrow, Wildlife Biologist

In previous issues of the *The Boomer*, I have discussed evidence linking red imported fire ants as a major limiting factor for Attwater's prairie-chicken populations (APC), primarily by reducing invertebrates numbers and biomass critical to APC chicks. Summarizing the research to date:

- Extremely poor brood survival has been identified as "...the single-most important factor limiting significant progress toward recovery." (APC Recovery Plan, p. 40). Further, we have observed that most of the chick/brood mortality occurs during the first 2 weeks posthatch.
- APC brood survival is strongly correlated with invertebrate abundance.
- Red imported fire ants adversely impact invertebrate abundance. While this was demonstrated by research almost 25 years ago (see Porter and Savignano 1990, Porter, S. D., and D. A. Savignano. 1990. Invasion of polygyne fire ants decimates native ants and disrupts arthropod community. *Ecology* 71:2095-2106), the cooperative research that I discussed in the last issue confirmed that finding. We found that invertebrate biomass and numbers were 1.4 and 1.6X higher, respectively, for areas treated to suppress fire ants (see the full report of this research at www.attwater.org and at www.prairiegrouse.org)

Results of this year's nesting and brood survival provide more evidence for this connection. We were able to treat approximately 1,200 acres of the APC's core habitat on the refuge in September 2012 to suppress fire ants for the 2013 nesting/brood rearing season. A total of 16 hens incubated nests at APCNWR this year – 10 in untreated locations, and 6 in fire ant suppressed pastures. All of these nests were surrounded by predator-deterrent fences (primarily for mammalian and snake predators) to boost nest success. Two hens were killed during incubation by avian predators, and the remaining 14 (87.5%) hatched. Egg hatchability within these nests was 92%. Both of these parameters were quite good compared to historic averages for wild APC populations reported in the literature of 32.2% and 87.3%, respectively for nesting and egg hatchability (Peterson and Silvy 1996, Reproductive stages limiting productivity of the endangered Attwater's prairie chicken, *Conservation Biology* 10:1264-1276).

Now is where it gets interesting. Of the 14 nests that hatched, 8 were in untreated pastures, and 6 were in fire ant suppressed areas. All were allowed to fend for themselves from hatch (i.e., we did not use intensive head-start measures like we have in the past). One hen from each group was killed by predators before their broods reached 2 weeks of age. Of the remaining 12 (7 untreated, 5 fire ant suppressed), **none** of the broods in untreated areas survived to 2 weeks posthatch, but 3 (60%) of broods in fire ant suppressed pastures survived to the critical 2-week point. Indeed, all 3 of these broods still had chicks at 6 weeks, the point where chicks are considered capable of independent survival. The 60% brood survival to 2 weeks we observed for broods in the fire ant suppression area is not far from the 69% observed by Dr. John Toepfer, Society of Tympanuchus Cupido Pinnatus, Ltd. for 83 wild greater prairie-chickens broods in Minnesota. Therefore, all the evidence to date continues to point squarely at one issue – fire ants.

Thanks to a grant obtained by the Friends of Attwater Prairie Chicken Refuge, we plan to approximately triple the size of the fire ant suppression area on the refuge for next year. The treatment should be applied within the next few weeks. Hopefully, we can continue to build on this treatment program, and expand even more in the years ahead.

You can help with this vital RIFA suppression by supporting the *Brood Fund*

Recovery Partner Cont. from P.2

Hannah believes that the work of the breeding institutions has rightfully kept the species from becoming extinct. When I asked Hannah, what she would like the public to know, she responded, "I think I would like the public to be more aware of the APC, as well as the importance of prairie habitat. I think, we still need to work on getting the information about APCs out to the greater Houston area -- so few seem to understand that endangered species are right in their back yard."

"Additionally, I think I would like the public to know that the program has made GREAT strides over the years. Released birds nest in the wild, and (the fact) that they are able to raise and fledge chicks is something that is very unique in a pen-reared, galliforme (ground-nesting bird) -release program. While fledging success has not been constant, I think that the recent information regarding the impact of red imported fire ants (RIFA) can help us address this."

If you would like to help the zoo's APC program, restricted financial donations are always appreciated. Each year around Easter, naming rights to chicks are sold to the public and that money goes directly to funding the zoo's APC program.

For more info on the zoo's APC program visit: <http://www.houstonzoo.org/protect-animals/texas-conservation/attwaters-prairie-chicken/>



Photo above: Dr. Morrow and Bird Supervisor Mollie Coym prepare a bird for release.

INVASIVE BRUSH COMES UNDER ATTACK

On Monday August 19, 2013 a crew from Northstar Helicopter began work funded under the cooperative agreement secured by the Friends from the USFWS Coastal program. They aerial applied herbicide to 33 acres along a 1 mile stretch of creek in the center of the Refuge

It was treated to get rid of the numerous non-native species including tallow, chinaberry, Macartney rose, and the encroaching species like yaupon, willow and some oaks. The hope is to return it to a grassy, open prairie creek rather than a downcut, non-native seed source. Also, the tall, thick vegetation could be acting as somewhat of a barrier to much prairie chicken movement south of the creek. The thicket habitat along the creek also acts as a haven for invading prairie predators such as coyote, raccoon, possum, skunk and gives avian predators unnatural perches in the prairie. The plan is to work pretty intensely on this section for at least several years to come, by cleaning up snags mechanically, clearing downed trees, respraying regrowth as necessary and perhaps even restoring some native grass vegetation, if necessary.

While some people may have an aversion to using chemicals, they are just one tool in the tool box needed to manage habitat under current world conditions. Rigorous review of their use is made prior to any application. This project is being managed by refuge Biologist Rebecca Chester,

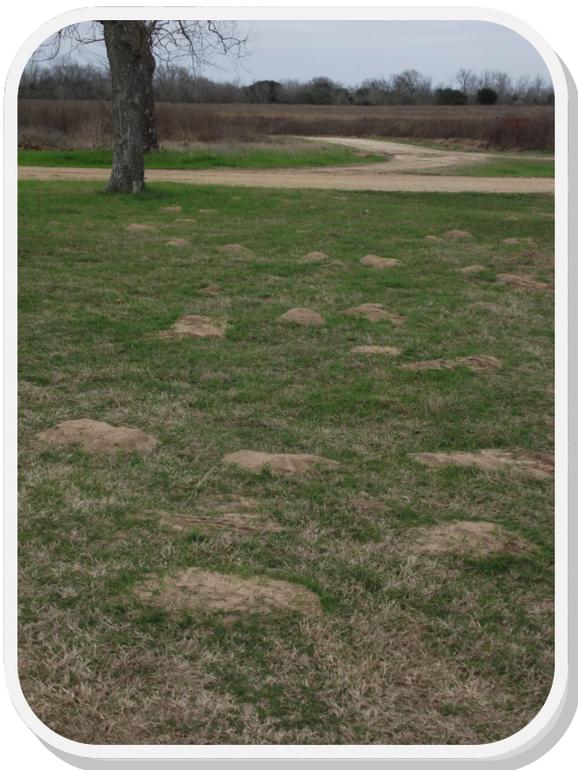
This same agreement is providing funding that will triple the RIFA suppression area as discussed by Dr. Morrow.

SPECIES HI-LITE: *THE OTHER MOUND BUILDER*

If you have lived in Texas long and spend much time outdoors, you have learned (maybe the hard way) to avoid soft mounds of soil that can dot the landscape. Experienced outdoorsmen know that the soft mounds mean fire ants and to "avoid at all costs". Many a victim has had to lay modesty aside in an attempt to get some relief from their vicious attack.

We know that fire ants occupy Refuge lands (for now) but another mound builder also lives on the Refuge and has the same namesake as our prairie chicken. Maybe you have noticed his handiwork and assumed it was fire ants. I speak of the Attwater's Pocket Gopher *Geomys attwateri*, the little rodent with the heart of a bulldozer. The spoils of his underground labor are deposited on the surface as he excavates a system of tunnels. In 1942 H. K. Buechanan, writing in the *Journal of Mammalogy*, estimated that pocket gophers brought as much as 35 cubic feet of soil per acre, to the surface, on ungrazed land and as much as 144 cubic feet per acre in overgrazed land. That is a lot of effort for a mammal that only averages 8.5 inches in length.

Pocket gophers spend nearly their entire lives underground in their tunnel system. They only come above ground to deposit their spoils, to disperse, or seek a mate. If conditions below ground are bad, they may come out to feed on the surface. Living below ground protects them from predators and provides a climate protected from extremes. As new tunnels are excavated, old ones are often plugged. The appearance of mounds may slow during the hotter dryer months as their tunneling activity moves to cooler more moist strata and the spoils are placed in existing tunnels near the surface. You won't see their activity throughout their range as they only live in suitable sandier soils that do not get too wet. *Cont. P. 6*



Above: Fire ant mounds in over grazed pasture, Colorado County

At left, Pocket gopher spoil mounds near the Refuge office



Above: Pocket gopher above ground

Other mound builder cont. from P. 5

Pocket gophers are solitary herbivores feeding on available food sources as they are encountered during tunnel construction. While pocket gophers are active day and night, nighttime is the period of highest activity. If you encounter a mound with an open tunnel, you may be able to observe this small prairie resident by quietly waiting with little movement. Your patience could be rewarded with a quick peek at a seldom seen APC neighbor

Membership

Interested in becoming a member or want to renew your annual membership ? It is now easy to do ,on-line at

www.attwater.org

We are happy to remind everyone that we are now a 501(c)3 nonprofit organization.

Any donations you may make are tax deductible to the extent allowed by law and tax code.

Donors should consult with their tax advisor.

Please consider Friends of Attwater Prairie Chicken Refuge in your charitable giving.



In the photo at left, contractor Northstar Helicopters sprays invasive brush species on the Creek Project funded through a grant secured by the Friends Group.

Refuge Biologist Rebecca Chester would welcome volunteers. If you would like to help please contact her at rebecca_chester@fws.gov, office: 979-234-3021 x230 cell: 979-472-0660

“We stand guard over works of art, but species representing the work of eons are stolen from under our noses” Aldo Leopold