



Refuge Junior Naturalist Off to a Great Start

In June, the Complex established a new Youth initiative titled Refuge Junior Naturalist. The program, initially funded by a small grant from the National Conservation Training Center (NCTC) as part of the Department of Interiors Youth Initiative, provides an opportunity for children grades 5-6 to work with refuge staff and other biologists on projects designed to introduce them to natural resource careers. The pilot program will run from June to December 2011. Fifteen applicants and two Junior mentors were selected among the 25 applications.

Participants learn basic naturalist skills such as nature journaling and photography, GPS, field sketching, and plant and animal identification and then apply these skills on real projects. Examples of field sessions include sea turtle patrol and nest excavation, geo-caching, bird banding, tree planting, and insect collection. The Junior Naturalist will mark



RJN Logo created by local artist Cherie McBride.

and GPS the third trail at Dow Woods.

The young Naturalist are provided both still and video cameras to help them create a short video or power point presentation which they will present to their families and staff at the graduation banquet.

They must participate in eight out of the 13 scheduled activities.

The next scheduled session is July 12. The Junior Naturalist will join TPWD Biologist David Butler at the Justin Hurst Wildlife Management Area and learn about capturing and banding birds.

A second program is scheduled to begin in January. If you are interested in assisting with the program or know of a student who would like to apply, please contact the Complex Office.



Junior Refuge Naturalist during Nature Journaling Activity at Hudson Woods. Photo by Denis Mudderman

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Dates of Interest

- Dow Woods—Grand Opening, October 15
- Friends Meeting—October 9, 2:30—4:00 @ Discovery Center
- Christmas Bird Counts-San Bernard Dec. 16, Brazoria Dec. 18
- Migration Celebration— Kickoff Dinner-April 13 with full day events at San Bernard April 21 & 22

Reaching New Heights—MC Photography Contest

By Denis Mudderman

The 2011 Migration Celebration Nature Photography Contest had a record 193 entries plus an additional 49 entries in the new Youth Division. Again this year, judges were professional photographers Kathy Adams Clark and Larry Ditto. Both Kathy and Larry commented that the overall quality of the photos were the best ever which made the selection all the more challenging. Following the judging, Kathy and Larry graciously spent the evening critiquing the photographs for the participating photographers. Winning photos rival winners in national nature photo contests and is a tribute to the expertise that local nature photographers have achieved.

Ninety-one photos were selected for exhibit at the Art League Gallery and the Center for Arts and Sciences in Clute from June 1 to July 10. The photo contest has always been a major attraction at the Migration Celebration showcasing outstanding nature photography mostly of the local area. With the art gallery exhibit we have been able to reach out to a new segment of the community. We hope that the art gallery exhibit will be an annual event. A selection of 40 photos will also be on display at the Complex office for the next year.

Next year's contest categories include three categories without geographic restriction: wildlife, birds, and nature photography as art and four categories re-

stricted to the local six Texas Mid-coast counties: wildlife, birds, plant life, and habitats/ecosystems. The deadline for next years contest is March 21, 2012. See migrationcelebration.org for more information.



Photography Contest judges, Larry Ditto and Kathy Adams Clark.

Photo by Neal McLain

On Assignment—West Texas Wildfires

Ryan Vice is the Prescribed Fire Specialist at Mid-coast. Like all of our fire fighters, he participates in wildfire suppression across the country. Below, he describes his recent 30-day assignment out in West Texas.

By Ryan Vice

Having not been out on a fire assignment in a while, I was looking forward to this opportunity for a several reasons; including helping our state partners (Texas Forest Service, TFS), traveling across the state, meeting new people, and working on my Division Supervisor taskbook. All of this was accomplished and much more.

On April 1, 2011 I arrived at ICP (incident command post) in Merkel, TX and was sent to Midland. In Midland, I was tasked to lead Taskforce 7 which included two dozers and two engines and 15 firefighters. One dozer and both engines were from Arizona and the other

dozer was from Arkansas. When I arrived, they had not been on a fire in six days. The first and second day I was there was a little slow. The third day we started running and never stopped after that.

Taskforce 7 was sent to 13 different fires ranging in size 550 to 156,000 acres. The northern most fire, the Sand Ranch Fire, was near the town of Andrews. The Oasis Pipeline fire was 260 miles southeast in Junction TX. These fires were all fast moving, wind driven fires with 30 to 40mph winds. There were several instances where the winds started blowing at 0800 in the morning and didn't stop until 0300 the next day. A couple nights the winds never stopped. Temperatures out in West Texas were unseasonably high ranging 90 to 100 degrees. These conditions along with the worst drought in recorded history set the stage for extreme fire behavior.

Many of the fires we went on were very

large and destructive. The Sand Ranch Fire was around 5000 acres and several miles of fence were destroyed. The fire burned hundreds of power poles that supplied several oil wells in the area. A few of the oil field tank batteries caught on fire and sent thick black columns of smoke into the air. At one time the fire was running parallel to the highway. I was driving alongside at 35mph and the fire was out running me. I had one close call on this fire. I was driving to the other side of the fire and the wind was blowing the dust and smoke limiting my visibility. I was coming up to a cattle guard and was focused on crossing it when at the last second I noticed power lines down across the guard. They were right at eye level. The truck stopped about a foot short of hitting the lines. Later I found out they were live wires.

The Hickman Fire started just south of the town of Midland. This fire had three different head fires moving in different directions. Two of the head fires made

Open Season on Tallow Trees

By Thomas Adams

The Chinese tallow tree was introduced into the United States on the east coast to use its waxy seed coating to make candles and later as an ornamental. Lacking insect and animal predators, it spread over the course of two centuries throughout the southeast and into Texas. For years this movement was aided by the nursery industry but five years ago Texas banned its sale. Too little too late. At present, the tallow tree is the number one invasive plant on the Texas Mid-coast Complex; crowding out native flora over hundreds of acres of habitat.

By the time summer begins, the Texas Mid-coast



NWRC is well into eradicating the non-native and highly invasive Chinese tallow trees on the upland prairies and bottomland forests. Tens of millions of tallow trees inhabit the Texas Gulf Coast and the refuge contains more tallow than will ever be eliminated therefore eradication operations require a strategic approach utilizing available funding and labor. From spring to mid-summer, the method of eradication is the “cut and spray”. It entails using a brush axe to notch the bark and spray an herbicide into it. Another approach is to chainsaw the tree to a stump and spray herbicide on it.

Working in conjunction with the refuge fire crew, I can treat over 300 trees in less than 3 hours in important wetlands such as sloughs. On the coastal prairies, tallow prefer upland habitats that are prone to pooling water. Their numbers are far beyond the capability to eradicate by a crew. To eliminate tallow on this large scale requires the use of aerial herbicide application by a fixed wing aircraft.

When visiting the Brazoria NWR field HQ you will notice thousands of standing dead trees. These tallow trees were treated with herbicide last summer. Late summer is the optimal time to aerially spray because trees are stressed from high temperatures and trees are taking in nutrients at a high rate to their roots in anticipation winter dormancy therefore they readily take in the herbicide that is sprayed on their leaves.



Feeling the Drought

By Shane Kasson

If you hadn't noticed, summer came a little early along the mid-coast of Texas this year. An unusually dry winter and spring left us with little fresh water on the landscape to prepare for hotter and drier conditions on the Refuges. As land managers, we are caught between proving artificial water, such as irrigation water, and letting “natural” processes occur.

Droughts are a natural occurrence. They happen in every habitat and have occurred throughout history. Native plants and animals have survived and evolved

with varying weather cycles for generations. While certainly some individuals will suffer, the species as a whole would survive, finding areas of refuge or altering behavior to deal with the lack of freshwater. Some plants simply enter a state of dormancy and wait it out. Animals too will search out alternate sources of water or simply change feeding behavior to conserve resources.

Man's impact on the landscape has exacerbated the effects of these natural weather cycles and made things tougher for many species in many areas. The number and distribution of refuge water

sources have changed as we drain lands for development. We use a lot of water for ourselves, for drinking water, to water lawns and golf courses, to grow crops. There's just not the same amount of freshwater in a given system as there used to be.

It's tough to watch a wetland dry up for many, me included. Things will die, and that's always hard to witness. In many cases, however, we view this as an opportunity. This gives us easier access to manipulate the vegetation and replace water control structures, to maintain our wetlands. In many of our habitats,

Feeling the Drought (continued)

disturbances, such as drought and fire are essential in maintaining productive plant communities and keeping a balance between plant communities.

So what do our National Wildlife Refuge's do to help buffer the effects of these droughts? The answer: As much as we can. We have focal species such as

the mottled duck that need freshwater wetlands during breeding and brood-rearing. We have a few artificial water sources to supplement rainfall during hard times. At Wolfweed Wetlands and the Sargent Pentagon marsh on San Bernard, this occurs by pumping groundwater to the surface via irrigation wells. By using these resources, we can maintain

some freshwater habitat. At Brazoria, we are able to utilize tail water from upstream agriculture and the agricultural fields on the refuge to provide us with some freshwater. Both Brazoria and Big Boggy, because of the nearby agricultural infrastructure can also purchase water at certain times of the year.

Friends Receive Dow Community Grant

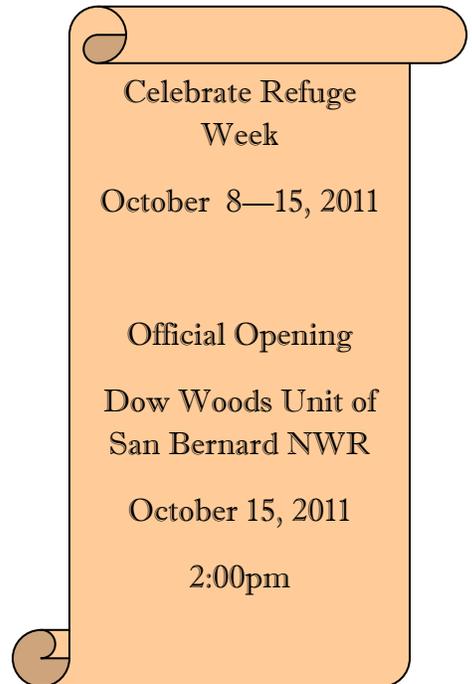
By Denis Mudderman

The Friends of Brazoria Wildlife Refuges has been awarded a \$25,000 Dow Community Heritage Grant that will fund most of the construction materials for a boardwalk on Otter Slough. The boardwalk is a key component to a new trail for visitors at Brazoria NWR. The 430 foot boardwalk is part of a 1.5 mile trail planned for Otter Slough across from the new Brazoria NWR field office off FM 2004.

Along a mowed trail beginning and ending at the parking lot of the field office, visitors will be taken through a variety of habitats from prairie (especially pimple

or prairie mounds), freshwater wetlands (slough and potholes) and wooded mottes of oak and yaupon. Great birding and wildlife observation can be expected at the new Otter Slough trail. Water control structures and recent restoration prairie restoration efforts have opened up the areas and enables the more permanent freshwater availability. The Refuge

The boardwalk will cross Otter Slough and will be constructed with an estimated 640 hours of volunteer time. A birding/photo blind is also planned near the boardwalk and the Friends have applied for another grant that would fund materials. Completion of the boardwalk and trail is expected by April 2012.



West Texas Wildfire (continued)

runs towards several communities. One small community along I-20 had a fire burn into the neighborhood and 36 homes were lost. Thankfully no lives were lost. With rapidly running headfires, there was nothing that could have prevented fire from entering into the community. While on a fire near Ozona, we were redirected to the Encino Fire up near San Angelo. The Encino Fire started around mid-day and we arrived around 2000. Our assignment was to burn out a road on the west side of the fire. The updated weather report was favorable and supported this operation. The winds would not switch until early morning. We had to complete

the dozer line ahead of the firing operation so I took the dozers ahead. I noticed that the wind started to shift and the fire to the east of us about 1.5 miles was becoming more active. The fire started to make a run towards us. The area we were in had heavy brush and trees all around. I told the dozers to stop and push a safety zone. Not more than five minutes after they stopped pushing the safety zone the fire was moving around us. The fire was not only unpredictable, the intensity was unimaginable.

The rest of the fire assignment was spent on the Wildcat and the Oasis Pipeline

fires. These fires were destructive; loss of lives, homes, fences and other improvements was atrocious. Unfortunately we may be our worst enemies when it comes to fire. Honey mesquite and eastern red cedar has completely changed the vegetation communities creating a less diverse and productive landscape due to the lack of regular fire occurrence and invasive species. These species dominate the landscape, prevent groundwater from recharging the aquifers, and when conditions are at their worst, create large and very dangerous wildfires in the region.

Youth Conservation Corp—2011

By Lee Gaston

Each summer the Refuge Complex recruits and hires high school aged kids to participate in our eight week Youth Conservation Corp (YCC) summer work program. This year's program consist of 3 enrollees: Brittney Eggert, Danielle Brown, Coy Schuerg and a group leader; Mr. Kenneth Kizzar. For all of the enrollees, this is their first official job. The three enrollees were drawn from a pool of 34 applications from Angleton, Danbury, Lake Jackson and Freeport and even one applicant from Sugarland. We are happy to be able to extend this important opportunity to them.

The Youth Conservation Corp Program

has been instrumental in introducing young Americans to conservation opportunities in public lands since the program was created in 1970. Youth Conservation Corps members work, play, learn, and grow in public lands restoring, rehabilitating, and repairing the natural, cultural, and historical resources protected as federally preserved places.

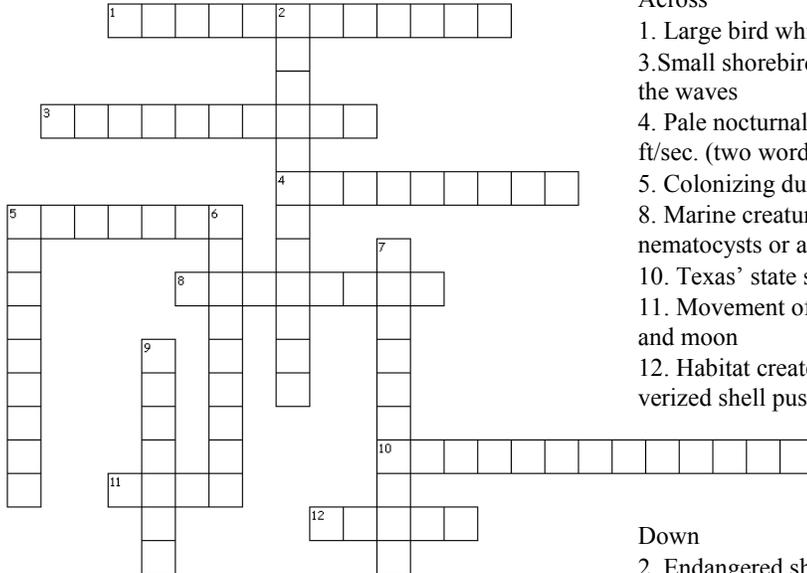
This summer the YCC will be focused on the completion of a new walking trail section in the Dow Woods unit, fence building in the Slop Bowl unit, manicuring our public use areas, and tackling any other maintenance task that may come up on the refuge complex. An important component of the annual program is environmental education. They have toured

Sea Center and Gulf Coast Wildlife Rescue and will get an opportunity to join other YCC crews from Aransas and Attwater Prairie Chicken NWR's on an overnight fieldtrip at Matagorda Island.



Danielle mowing the entrance to Big Slough
Photo by Lee Gaston

Junior Naturalist—Found on the Beach



Across

1. Large bird which glides just above the wave crests (two words)
3. Small shorebird often seen in flocks running with the ebb and flow of the waves
4. Pale nocturnal inhabitant of the beach which can skitter sideways at 10 ft/sec. (two words)
5. Colonizing dune grass which may grow more than 4 ft. tall (two words)
8. Marine creature with a gas-filled bladder and stinging venom-filled nematocysts or a 16th century armed sailing ship (three words)
10. Texas' state shell (two words)
11. Movement of water driven by the relative position of the earth, sun and moon
12. Habitat created from a washed and sorted mix of sand grains and pulverized shell pushed up by waves

Down

2. Endangered short-billed shorebird found on Texas beaches July—May (two words)
5. Floating algae with leaf-like appearance which creates a thick mat at the rack line.
6. Marine reptile which lays a nest of 100+ eggs on the back beach (two words)
7. Internal skeleton of keyhole urchin or "beach money" (two words)
9. Small clam in a rainbow of colors





Friends Happenings



Texas Mid-coast National Wildlife Refuge Complex

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Preserving and protecting the wildlife and habitat within the Texas Mid-coast region and providing opportunities for visitors to enjoy these unique lands.

On the Web

<http://www.fws.gov/southwest/refuges/texas/texasmidcoast>

<http://www.refugefriends.org>

The Friends of Brazoria Wildlife Refuges supports the Mid-coast Refuges through partnering on public use, outreach, and habitat projects.

- The next general meeting of the Friends will be held on October 9 at 2:30 pm at the Discovery Center on Brazoria NWR.
- On May 14, the Friends hosted a successful workday with more than 30 volunteers installing 350' of edging on the Bayou Loop Trail at Dow Woods. Work continues during the summer months using youth, temporary and permanent staff. Another work day may be held in late September to finish the trail in anticipation of hosting a Grand Opening for Dow Woods and trail dedication, October 15.
- Contracted by the Friends, Rosene Creative Services (RCS) continues to work on the three interpretive panels for the Discovery Center. All artwork and text have been approved and we are awaiting production and installation. The Freshwater, Prairie and Saltwater habitat panels are scheduled for installation in September.
- On July 1 & 2, Friends combined displays with Texas Master Naturalist for Coastal Expo in Freeport for more than 750 people.
- Planning for the 2012 Migration Celebration has begun. This annual outreach event is scheduled for April 20 and 21 at the San Bernard NWR. The annual kick-off dinner is scheduled for April 13 at River Place in Freeport, Texas. Over 150 volunteers assisted with this event in 2011 as over 1000 visitors enjoyed numerous activities. For more information, contact David Plunkett, Migration Celebration Chairman, visit the website (www.migrationcelebration.org), or find us on Facebook.

Species Profile

Coquina Clams *Donax variabilis*

Well known inhabitant on Texas's sandy beaches, the 3/4 inch coquina clam is considered an indicator species for the sandy beach-Gulf front habitat. They are important links in the food web, feeding on algae and detritus and in turn, being consumed by fish and shorebirds.

The coquina is uniquely adapted to live and feed in the swash zone as the tides ebb and flow. Within this dynamic habitat, they move in and out with this tides and utilizing their spade-like foot adeptly rebury themselves into the sand when they are exposed by a retreating wave. They have twin siphons; one taking in water, food and oxygen and one expelling water and waste.

They are generally more common in the summer months but can be found



throughout the year. Their shells are quite variable with colors ranging from yellow and orange to pink, blues and purple. The shell may exhibit parallel bands of color or a pattern of rays radiating from the central attachment point, or both.

They are colonial in nature and can be found in patches while walking the area

beaches. The colorful shells are popular for collection or shell crafts. A tasty broth can be made by boiling live clams as well.

Although a variety of organisms can be found feeding in swash zone, because the Coquina's unique adaptations to this habitat, their presence indicates the health of a beach. Rising sea levels, sustained beach erosion due to a lack of sediments flowing into Gulf waters, or structures impeding movement of sand, as well as localized beach renourishment projects are the greatest threats to long-term sustainability of Coquina populations. Although beach renouishment projects restore sand to eroded beaches, Coquina populations may take several years to recover following a projects where existing populations are buried under tons of sediment.