

# INTERIM REPORT *to the 86<sup>th</sup> Texas Legislature*



**HOUSE COMMITTEE ON  
CULTURE, RECREATION & TOURISM**

*November 2018*

---

**HOUSE COMMITTEE ON CULTURE, RECREATION & TOURISM  
TEXAS HOUSE OF REPRESENTATIVES  
INTERIM REPORT 2018**

**A REPORT TO THE  
HOUSE OF REPRESENTATIVES  
86TH TEXAS LEGISLATURE**

**JOHN FRULLO  
CHAIRMAN**

**COMMITTEE CLERK  
TAYLOR CALVIN**

---



Committee On  
Culture, Recreation & Tourism

November 27, 2018

John Frullo  
Chairman

P.O. Box 2910  
Austin, Texas 78768-2910

The Honorable Joe Straus  
Speaker, Texas House of Representatives  
Members of the Texas House of Representatives  
Texas State Capitol, Rm. 2W.13  
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on Culture, Recreation & Tourism of the Eighty-fifth Legislature hereby submits its interim report including recommendations and drafted legislation for consideration by the Eighty-sixth Legislature.

Respectfully submitted,

John Frullo

Wayne Faircloth

Dennis Bonnen

Armando "Mando" Martinez

Matt Krause

Pat Fallon

Barbara Gervin-Hawkins

Wayne Faircloth  
Vice-Chairman

Members: Dennis Bonnen, Armando "Mando" Martinez, Matt Krause, Pat Fallon, Barbara Gervin-Hawkins

---

## TABLE OF CONTENTS

INTRODUCTION .....	4
INTERIM STUDY CHARGES .....	6
INTERIM CHARGE #1 - HARVEY IMPACT .....	8
State Parks .....	9
Wildlife and fish .....	14
Historic Sites and buildings .....	24
Art and cultural resources .....	30
Travel and tourism .....	33
INTERIM CHARGE #2 - VOLUNTEER CONTINGENCY OF PRIVATE BOAT OWNERS	38
Background .....	39
Texas Parks and Wildlife Department .....	40
Texas Division of Emergency Management .....	41
Harris County .....	42
Neighboring States .....	43
INTERIM CHARGE #3 - POLLINATOR CONSERVATION IN TEXAS .....	44
Monarch Butterfly Populations .....	45
Native and Domesticated Bee Populations .....	48
Pollinator Conservation Efforts .....	50
Texas Historical Commission Programs .....	55
Texas Parks and Wildlife Border Operations .....	57
APPENDIX .....	60
ENDNOTES .....	61

---

---

## **INTRODUCTION**

In the 85th Legislative Session, Speaker Joe Straus of the Texas House of Representatives appointed seven members to the House Committee on Culture, Recreation & Tourism. The Committee's membership is comprised of Representatives John Frullo (Chairman), Wayne Faircloth (Vice-Chairman), Dennis Bonnen, Armando "Mando" Martinez, Matt Krause, Pat Fallon, and Barbara Gervin-Hawkins.

During the interim, the Committee was assigned four interim charges listed on the following page. The Committee conducted 2 public hearings in Austin, Texas and 1 public hearing in Brownsville, Texas to consider the charges.

The Committee wishes to express appreciation to the state agencies, local governments, associations, and individuals who testified at the public hearings for their time and efforts on behalf of the Committee.

---

## INTERIM STUDY CHARGES

1. Review the Texas Parks and Wildlife Department's and the Texas Historical Commission's roles in the response to Hurricane Harvey. Evaluate the economic, recreational, and biological impacts and needed repairs from Harvey as they relate to applicable state agencies and the following areas and industries under the purview of the Committee:
  - a. State parks
  - b. Wildlife and fish
  - c. Historic sites and buildings
  - d. Art and cultural resources
  - e. Travel and tourism
  - f. In addition, provide recommendations on how to allow for a timely recovery of these areas from Harvey, and how to mitigate the impact of, and adequately prepare for, future natural disasters.
2. Study the feasibility of establishing and mobilizing a volunteer contingency of private boat owners through the boat registration and license database administered by the Texas Parks and Wildlife Department to assist first responders in search and rescue efforts in natural disasters like Hurricane Harvey.
3. Study the effects of declining migratory species, such as the monarch butterfly, as well as native and domesticated bee populations on agricultural production and its economic impact on the state. Identify possible causes of the population changes and monitor national trends. Make recommendations on how to improve and promote monarch butterfly and bee populations and habitats in the state. (Joint charge with the House Committee on Agriculture & Livestock)
4. Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 85th Legislature.

---

## **INTERIM CHARGE #1 - HARVEY IMPACT**

The Texas House Committee on Culture, Recreation & Tourism held public hearings on Interim Charge #1 on June 5, 2018 in Brownsville, TX and July 18, 2018 in Austin, TX. The following witnesses testified on the charge:

### **June 5, 2018**

- 1) Mariano Ayala (Self)
- 2) Dr. Jude Benavides (Self)
- 3) Susan Guthrie (City of South Padre Island)
- 4) David Teel (Texas Travel Industry Association and the Texas Commercial Airports Association)
- 5) Bryant Walker (City of Brownsville)

### **July 18, 2018**

- 1) Bryan Daniel (Office of the Governor)
- 2) Dr. Gary Gibbs (TCA)
- 3) Jeffrey Hentz (Port Aransas Tourism Bureau/Chamber of Commerce)
- 4) Gloria Meraz (Texas State Library and Archives Commission)
- 5) Carter Smith (Texas Parks and Wildlife)
- 6) Patrick Tarlton (Texas Deer Association)
- 7) Mark Wolfe (Texas Historical Commission)
- 8) David Yeates (Texas Wildlife Association)

A large portion of this section is based upon the oral and written testimony of the individuals listed above.



---

## State Parks

### **Texas Parks and Wildlife Department<sup>1</sup>**

When Hurricane Harvey hit the Texas coast in August 2017, it left damages to both the physical and natural environment. With a significant presence in some of the hardest hit areas, the Texas Parks and Wildlife Department (TPWD) suffered damages from the storm, but is also playing a significant role in the recovery of the local communities. TPWD's response to Hurricane Harvey actually began before the Hurricane even made landfall. Early emergency measures included a massive relocation of hundreds of pieces of equipment to safer inland locations, effectively saving pickups, dump trucks, tractors, mowers, skid steers, back-hoes, trailers and more from damage. These early efforts also included evacuation of hundreds of visitors from coastal area State Parks. Once the storm made landfall, TPWD Game Wardens, State Park Police, Fish and Wildlife Technicians, and other agency responders provided emergency response services throughout the impact area. In addition to the thousands of water related rescues provided by TPWD emergency personnel, shelter was provided to more than 8,000 evacuees in unaffected State Parks for weeks following the storm.

Overall, 30 TPWD facilities and work units were damaged by the Hurricane to include 16 State Parks, 5 Wildlife Management Areas, 8 Coastal Fisheries offices, labs, field stations, and 1 cross-divisional office. Total cost in damages totaled approximately \$22 million.

State Parks arguably received the greatest impact on TPWD facilities. Of the 16 State Parks impacted by the storm, all have reopened, but several sites are still limited by Hurricane Harvey damage. Mustang Island State Park is closed to overnight use, while at Goose Island State Park, the fishing pier, all Bayfront Area campsites, and the Group Recreation Hall are closed. Stephen F. Austin is open but saw major damages to its Group Recreational Hall and the Bullinger Creek Lodge, which remain closed. Village Creek is partially open, with only one camping area available for use.

The current estimate of repair costs at state park facilities due to Harvey is more than \$20 million, including \$7.1 million in damage to roads, while the overall impact to TPWD facilities is estimated to be \$22.3 million. TPWD also estimates that approximately \$5.9 million of park revenue was lost due to weather related closures and site capacity diverted to housing refugees.

Included in these damage figures are the losses suffered by several historic structures in the park system. The Goose Island Group Hall, constructed by the Civilian Conservation Corps in the 1930s, had significant damage to its roof, but the agency was able to utilize in-house resources to quickly mitigate any further losses to the historic structure. At Goliad, work was in progress to repair the historic Keeper's cottage, improve access to Mission Rosario and make repairs and improve exhibits at Zaragoza's Birthplace when the storm arrived. The Department's project team allowed for the scope of these projects to be expanded to include repairs to hurricane damage. The Battleship Texas weathered the storm without significant impact, although additional silt deposits did occur in the ships berth and the storm surge from Hurricane Harvey did lead to stress on the monopile berthing system.



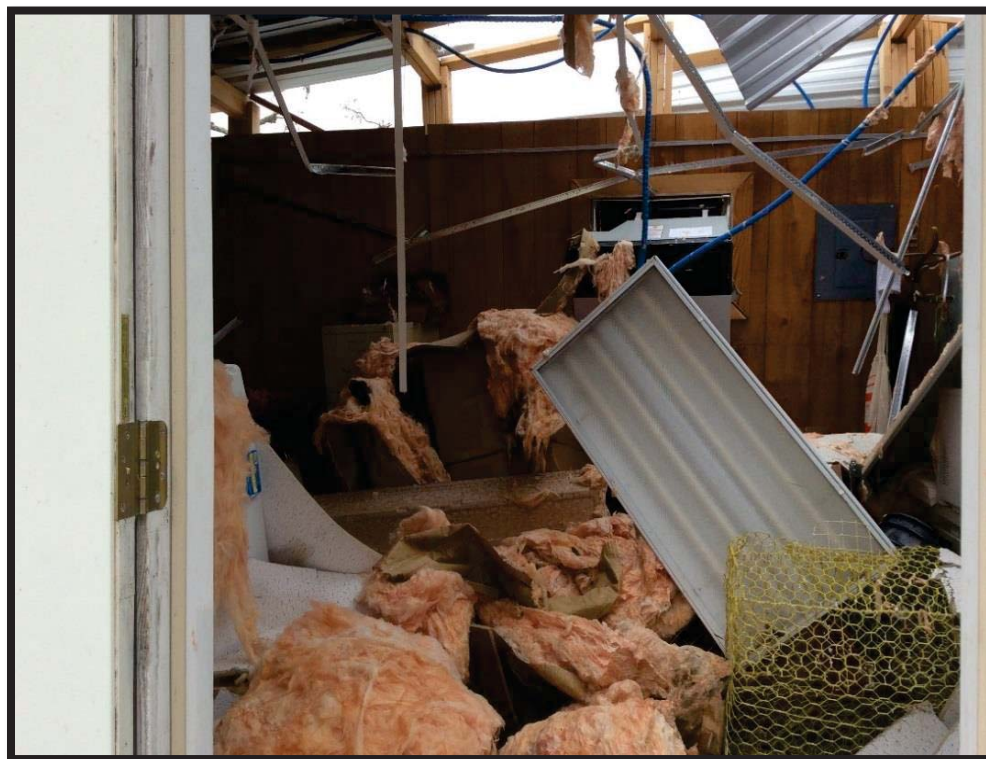
---

Mustang Island State Park took a direct hit from the storm, resulting in significant damage to park buildings, including the headquarters, restrooms and park residences. Estimated repair and mold remediation costs for the site are \$1.1 million. Brazos Bend suffered sustained flooding, with 5 feet of water throughout much of the park. The site suffered damage to its cabins and screened shelters, wastewater lift stations and pavilion. These repairs were made by staff. Additionally, damage occurred to levees at Brazos Bend with repair costs estimated to be \$2 million.

Goose Island State Park, located near Rockport, was the most heavily damaged park, with damage to roofs on the park residences, headquarters, maintenance facility and restrooms in addition to the CCC Group Hall damages noted above. Utilities, lift stations, camping loops, boat ramp, fishing pier, and roads within the park were also damaged. In addition to damages to the built environment, the landscape at Goose Island State Park was significantly altered due to the loss of hundreds of the coastal live oaks at the popular park, although the famed Big Tree survived the Hurricane's force with minimal damage.

Buescher State Park was hit by heavy rains causing significant erosion to the spillway of the park's lake, with short term repair needs estimated at \$1.25 million, and a longer term fix estimated at \$6 million. Village Creek had embankment erosion resulting in structural damage and concerns to the park's cabin, pavilion, and pedestrian bridge, as well as road and bridge damage with repair costs estimated to be \$680,000. Other parks, as well as the regional administrative office in Rockport had damage to roofs, with resulting mold remediation needs and other repairs.

**Example damages:**



**State Parks Regional Office in Rockport**



**Mustang Island State Park**



**Goose Island State Park**

As the local communities began their recovery process, TPWD worked to restore services at these



---

important economic engines. According to a 2014 report by Dr. John Crompton of Texas A&M University, the 16 State Parks effected by Hurricane Harvey have an annual economic impact of more than \$31 million, are responsible for the creation of 390 jobs and generate more than \$1.2 million in sales tax receipts.<sup>2</sup> This data is brought to life by the example of the boat ramp at Goose Island State Park which was closed after the storm, making it difficult for fishing guides to access their workplace and resulting in lost revenue for guides and fewer sales for other businesses that depend on recreational fishermen visiting the area. Recognizing the needs of the tourism based economy of the community, TPWD expedited cleanup of the ramp area and adjusted the park closure in order to accommodate the needs of the private sector that is dependent on the site, while expediting efforts to reopen the park for public use.

Fiscal Year 2018-2019 state park related appropriations included \$48.5 million for emergency weather related repairs, namely flooding damage from 2015 and 2016, and \$8.8 million for general state park deferred maintenance related needs. As discussed above, TPWD suffered over \$22 million in damages from Hurricane Harvey, further compounding the many maintenance challenges in State Parks. As a result, TPWD began to reprioritize repair needs immediately after Harvey to determine the critical efforts such as roof repairs, necessary to prevent further losses or building deteriorations. The agency redirected \$11.3 million in Fiscal Year 2018-2019 capital construction funds to address facility repairs and used TxDOT MOU funds to address road repairs. Of the \$22 million in damages to facilities, TPWD believes \$6.8 million is feasible for FEMA reimbursement. TPWD will also seek reimbursement for costs incurred in the emergency response for personnel, equipment, and emergency repair expenses.

TPWD is working closely with the Joint Oversight Committee on Government Facilities to ensure that capital funds appropriated in Fiscal Year 2018-2019 are allocated towards the system's absolute highest and most critical needs. Any shifts in project specific funding are reported and discussed with the Joint Oversight Committee.

### *Preparing for Future Disasters*

Staff is examining the locations of damaged structures to determine where it may be feasible to relocate facilities outside of flood-prone areas. These include parks impacted by Hurricane Harvey as well as other flood prone parks on reservoirs and streams across the state such as Lake Whitney, Lake Somerville, Cedar Hill, and Ray Roberts Lake State Parks. The Department's Infrastructure Division is also focusing on incorporating resilient design measures into projects to make facilities more resistant to extreme weather events. Examples of resilient design measures include: buildings set on piers to heighten first floor elevations; impervious foam insulation; concrete block construction (CMU); galvanized metal studs; cement-based siding (Hardi-Plank); marine grade plywood and aluminum; fiberglass doors and windows; tile or concrete surface flooring; weep holes; limiting metal in coastal environments; mechanical and technology systems above storm surge height; slope grading to mitigate runoff; and no-mow zones to reduce erosion and runoff. These advanced design technologies come with a higher cost; however, adequate funding to incorporate these features into design will yield substantial savings when the inevitable weather events take place at these sites. Some of these measures had been implemented at sites such as Stephen F. Austin and Brazos Bend after Hurricane Ike, lessening impacts from Harvey flooding at these locations.

---

As Hurricane Harvey approached the Texas coastline, the importance of having emergency plans in place prior to disaster events was illustrated as staff from inland locations was mobilized to move vehicles, computers and other high value items to safe havens inland. As a result, vehicle and equipment losses at coastal parks were kept to a minimum.

A recent analysis conducted by TPWD found that the agency has incurred on average over the last decade, approximately \$9 million annually in natural disaster related damage to its facilities, largely from flooding related events.

***Financial Impact to State Parks***

The immediate impact to State Parks revenue was significant; September 2017 revenue was down about 30% (\$1.2 million) vs. FY 2017. Revenue losses continued to decline in subsequent months, with total cumulative revenue collections down 17% by the end of November, and 11% by the end of May. Ultimately, ending FY 2018, State Park revenues reflected a decline of 10.5% (\$5.9 million) compared to FY 2017. FY 2017 was also a record year for State Parks revenue.

---

## Wildlife and fish

### Texas Parks and Wildlife Department<sup>3</sup>

#### *Wildlife Management Area Facilities*

TPWD manages numerous Wildlife Management Areas (WMA) along the Gulf coast and these areas serve as highly-sought recreational areas for hunters and other wildlife enthusiasts from across the country. But more importantly, these WMAs function as outdoor classrooms and demonstration areas for wildlife research and education, and as critical conservation assets providing demonstration of proven successful habitat management techniques to private landowners throughout the region, who are interested in replicating those techniques for wildlife conservation on their own lands.

As mentioned earlier, 6 of the Wildlife Division's WMAs were impacted by the devastation of Hurricane Harvey. WMAs impacted were the J.D. Murphree, Candy Abshier, Justin Hurst, Mad Island, Matagorda Island, and Guadalupe Delta WMA. Not only was there structural damage to buildings and roads, there was also significant damage to wildlife habitat and habitat management infrastructure like levees and culverts.

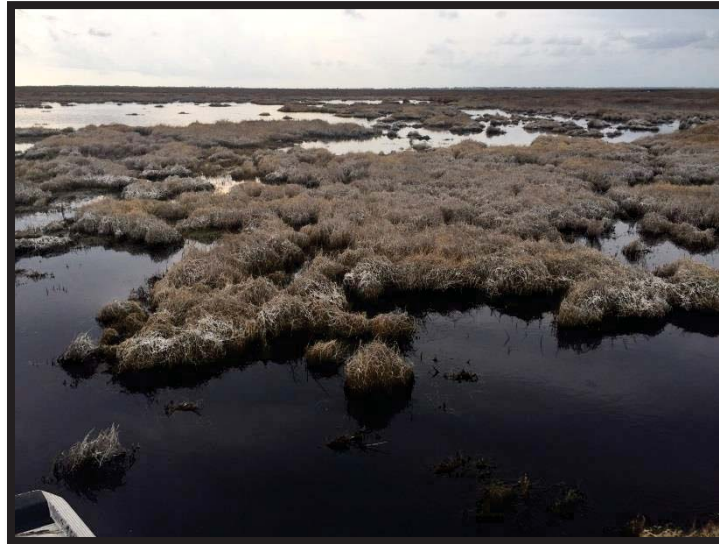
J. D. Murphree WMA experienced flooding within the main office building, biologist office building, bunkhouse, boat barn, check station, and shop building. The biologist office building has been completely repaired and the Infrastructure Division is soliciting bids for repairs to the bunkhouse. In addition to structural damage, exotic plants including water hyacinth, giant salvinia, and common salvinia were scattered throughout the leveed freshwater impoundments. Large mats of dead marsh vegetation floated up during the flood and settled within the interior ditches of some the impoundments impeding hunter access and hampering water management capabilities. A National Fish and Wildlife Foundation grant was utilized to remove the floating mats of vegetation during March 2018.



**J. D. Murphree Bunk House**

---

Candy Abshier WMA experienced minimal shoreline erosion from tidal action and high winds. At the Justin Hurst WMA, primary impacts were to infrastructure with approximately one mile of gravel road damaged by flood waters. In addition, almost 2 miles of freshwater impoundment levees required repairs after the storm. The road damage has been patched since the storm and repairs to the levees are nearly complete. A few trees were also uprooted and downed by the high winds associated with Hurricane Harvey. Approximately 2,000 acres of salt marsh were killed due to inundation of freshwater. This marsh is still slow to recover and is not receiving any use by nesting and brood rearing mottled ducks.



**Justin Hurst Salt Marsh**

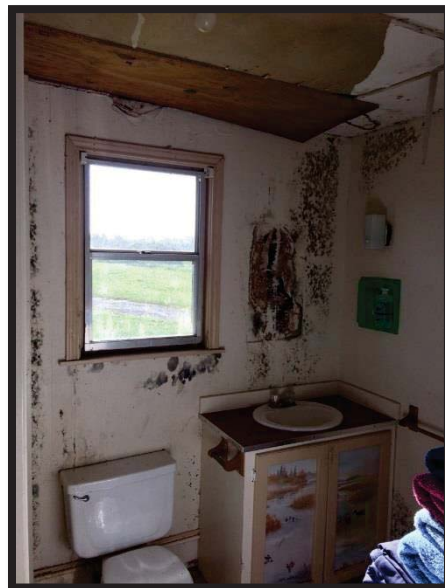
Mad Island WMA had damage similar to the Justin Hurst WMA with approximately 1 mile of gravel roads lost or degraded by flood waters and a quarter mile of levees damaged along TPWD freshwater impoundments. The gravel roads and levees have been temporarily patched.

Matagorda Island WMA received a direct hit with damage to vehicle storage barn and other outbuildings damaged by high winds. 2 garage doors and one wall were blown out. All picnic shelters for campers were destroyed and deer blinds were toppled by hurricane force winds. The vehicle storage barn has been braced to support the roof, but walls and garage doors are still in need of replacement. The deer blinds were up righted, but the shade shelters have not been repaired.



**Matagorda Island Facility**

At the Guadalupe Delta WMA, the office building had significant roof damage with resulting water damage and mold issues within the structure. Repairs to the office complex are nearly complete. Road damage resulting from flooding was experienced, as well. Additionally, habitat management practices were impacted because 3 solar wells that provide water for wildlife were damaged by high winds. The solar panels are currently being repaired. High winds also downed numerous trees on the WMA.



**Guadalupe Delta Office**

***Coastal Fisheries Facilities***

Hurricane Harvey impacts to Coastal Fisheries facilities were significant. Current estimates of



---

operational and repair costs at Coastal Fisheries facilities due to Hurricane Harvey are probably greater than \$2.0 million, with almost half of that occurring at the Dickinson Marine Laboratory. The facility is currently undergoing mold remediation and repairs and is not expected to be habitable until December 2018. It is estimated that those repairs of the facility alone will cost approximately \$880,000.



**Figure 1. Dickinson Marine Laboratory, Dickinson, TX.**

The Perry R. Bass Fisheries Research Station experienced minor damage to buildings but the jetty pump station was damaged significantly. There is an additional pump station on site that continues to be used to provide water to the hatchery ponds so that production of red drum, spotted seatrout and flounder can continue at the station.

The Rockport Marine Lab escaped significant damage but roofs to the boat storage building and net shop were lost at the Rockport Annex. Two research vessels were damaged by being blown off their jack stands at the boat yard. The RV Nueces was repaired fairly quickly and the 36-foot research vessel, RV St. Charles shown below, is now repaired. Total cost for both repairs was approximately \$220,000.



**Figure 2. Research Vessel St. Charles, Rockport, TX.**

---

The Marine Development Center in Corpus Christi lost the roof on several buildings as well as other damage to more minor things such as a generator, outside electrical panels, and awnings. The minor repairs were completed early on and the roof repairs have just recently been finished, but total costs at the facility were approximately \$200,000.

### ***Commercial Fisheries***

Bait shrimp are the most common bait landed and sold coast-wide by bait dealers. When comparing bait shrimp landings from 2016 to 2017 over the months impacted by Harvey (i.e. August –December), coast-wide landings decreased by 26%. Bait dealers in some bay systems were impacted more than others. Aransas Bay bait shrimp landings decreased by 80%, followed by Matagorda, Galveston, and Corpus Christi Bays, which declined by 39%, 20%, and 19%, respectively. Additionally, the number of Aransas Bay dealers reporting shrimp and croaker landings declined from 14 dealers in July 2017 to 3 in the months following Harvey. The same pattern in the number of fishermen landing shrimp and croaker was also evident, with 15 fishermen declining to 3 in the Aransas Bay area during the same period.

Bay shrimp landings also showed substantial changes when comparisons were made between 2016 and 2017 for August-December. Coast-wide, there was a 23% increase in brown shrimp landings; however, several bays showed significant declines in landings. Corpus Christi Bay brown shrimp landings declined by 99%, Aransas Bay declined by 77%, and Matagorda Bay declined by 45%. Coast-wide white shrimp landings declined by 13%, with several bays showing significant declines. Matagorda Bay white shrimp landings declined by 85%, followed by San Antonio Bay (82%), and Corpus Christi Bay (30%).

Crab landings (crab trap only) showed declines in each bay system. Again, comparing landings from 2016 to 2017 over the months of August-December, coast-wide declines in Blue Crab landings were 52%. These declines ranged from 23% (Aransas Bay) to 67% (San Antonio Bay). Oyster landings were affected by closures to areas under certificates of location following Hurricane Harvey. The private oyster locations in Galveston Bay were closed to fishing for the entire month of September due to runoff from the torrential rains from Harvey. This resulted in zero landings for September 2017. When comparing 2016 to 2017 for just August and September, there was a 34% decrease in landings. However, public season landings for Galveston Bay were relatively high in 2017, so overall comparisons coast-wide from August-December resulted in negligible declines. There were several bays that had significant declines over this same period, with Aransas Bay oyster landings (including Copano Bay) declining by 85%, followed by Matagorda Bay landings decreasing by 53%.

### ***Recreational Fishing***

Coast-wide private recreational fishing effort in bays decreased by 34%, in 2017 compared to the same time period in 2016 (August 24<sup>th</sup> – December 31<sup>st</sup>). Similarly, total landings (all species combined) declined by 32%. More specifically, red drum landings were down 27%, spotted seatrout landings declined 33%, black drum landings were down 19%, and southern flounder landings were 34% lower. Offshore, red snapper fishing efforts and landings declined 48% and 42% respectively.

---

The number of guided recreational fishing trips in the bays declined 28% coast-wide with the greatest declines seen in Corpus Christi Bay (56%), Aransas Bay (54%), Galveston Bay (50%) and Sabine Lake (60%).

### ***Marine Fishery Resources***

Red drum abundance increased 4% coast-wide, compared to the same time the year before (fall 2017 vs fall 2016). Also, spotted seatrout abundance increased 15% while black drum numbers were 32% higher. These higher numbers can be attributed to several factors, but the decrease in fishing pressure and landings are probably the most significant.

The massive influx of fresh water into the Galveston and Sabine Lake ecosystems affected the finfish species composition. More freshwater species were encountered in fall 2017 gill net samples, as a result of the lowered salinities, especially alligator gar, blue catfish, gizzard shad, and longnose gar. Many locations within Galveston Bay and Sabine Lake were completely fresh, with salinities at 0.0 ‰ for a short period of time, and took weeks to recover.

Galveston Bay experienced oyster mortalities from the fresh water influx, as oysters cannot tolerate exposure to fresh water for more than a few days. Abundance of live oysters declined 60% from August 2017 to October 2017, according to TPWD dredge samples. Very low salinities were recorded on reefs in September and freshly dead shells were observed in September and October dredge samples.

### ***Marine Fisheries Infrastructure***

Harvey damaged/destroyed much of the infrastructure that supports saltwater fishing activities in the Galveston and Coastal Bend areas. Most of this damage has been repaired or made functional, but there are still a few boat ramps that are closed and many still have damages from the storm even though they have been made operational. However, all of the larger, more frequently used ramps are operational. Several bait stands are still closed throughout the impacted area. Most of the hotels and gas stations have been repaired and are open for business.

In the Aransas and Corpus Christi Bay area, the seafood and bait dealers have rebounded and rebuilt. There were originally at least 30 businesses that were damaged to the point that they remained closed in September 2018. Many of these began to rebuild in spring, and by April 2018, of those damaged, only 11 remained closed. Presently, as of October 2018, 4 of those remain closed and will not reopen again for one reason or another.



### ***Rookery Islands***

While TPWD does not have any hard numbers to report as far as number of islands or acreage impacted, many islands between the north end of the Upper Laguna Madre up to San Antonio Bay were impacted from storm winds and surge from Hurricane Harvey, which resulted in some loss of acreage as well as damage to vegetation as a result of severe erosion. Man-made structures such as signage alerting boaters to keep a safe distance from the islands were also destroyed.

Aransas and San Antonio Bays had limited available nesting habitat pre-hurricane, and are now in even greater need of restoration attention. It is known that many birds died during the storm but there is no way to accurately quantify those losses. It is hoped that boosting productivity in the coming years will help somewhat in the recovery of some of the affected species.

Many of these islands are under management of Coastal Bend Bays & Estuaries Program, which was able to develop a plan to assess and address as much of the impacts as possible prior to the onset of the 2018 nesting season. With help of NFWF Gulf Environmental Benefit Fund, nearly all signage was replaced, major debris was removed, and revegetation efforts got underway in addition to creation of a native plant nursery to grow out hardy native plants that will be available for planting following this year's nesting and in subsequent years. While these efforts aim to make all available nesting habitat as productive as possible, the overall loss of acreage is still considered a serious impact that in most cases needs to be addressed by restoration/creation of new islands in bay systems where bird recovery is thought to be limited by nesting habitat. A project to restore several rookery islands in Nueces Bay was already in the works prior to the Hurricane and Gulf Environmental Benefit Funds were awarded for construction to begin on this project in fall 2018.





*Before*



*After*



*May 2017 - Point of Reference*



*August 2017 - Same Point of Reference*

Note: Much of this information was provided by Coastal Bend Bays and Estuaries Program Coastal Bird Program Director, David Newstead.

Coastal marsh plant and animal species are well adapted to tolerate short term changes to their environment, such as those caused by Hurricane Harvey, and few long-term, significant negative impacts to these resources are expected. Fortunately fish and wildlife species are quite mobile. Although short term impacts were noted, distribution and density patterns have returned to a more normal state since Hurricane Harvey made landfall.

Storm systems that dump large amounts of freshwater along the coast and into the watershed upstream typically impact coastal marshes by reducing salinities and covering plants to greater depths of fresh water in those areas for a time. Some salt water plant species have salinity requirements. While they may tolerate reduced salinity in the short term, the abundance of fresh water at greater depths over a protracted period of time is detrimental. Salinities in several coastal salt marshes were significantly reduced by the Hurricane, but through time have returned to more normal levels.

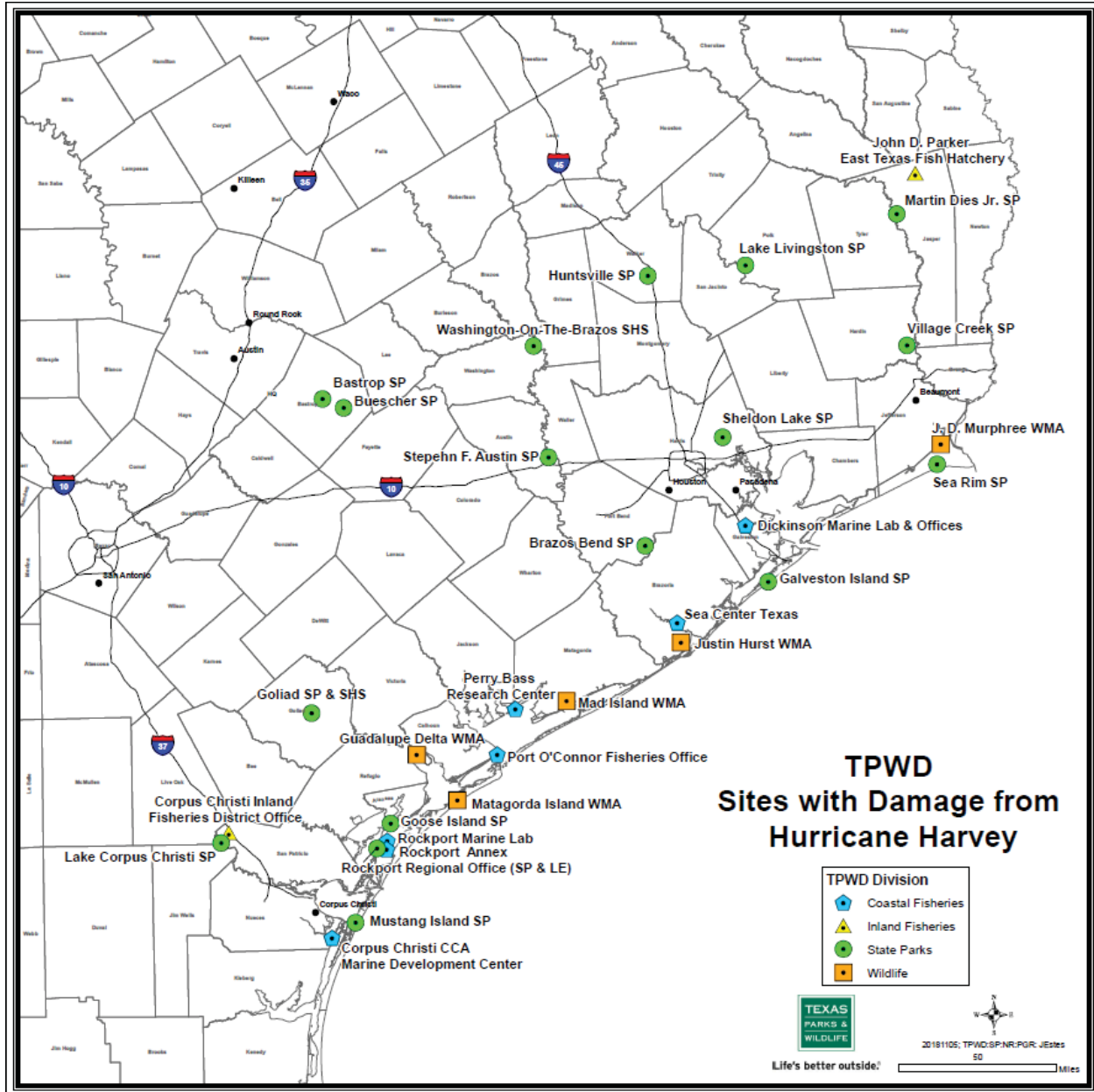
In addition to impacts to infrastructure and negative impacts to habitat and habitat management capabilities, the public was also impacted as a result of the Hurricane Harvey. Many of the public hunts on these WMAs were cancelled and included most of the early September 2017 Teal season as well as alligator hunts on select WMAs. Small game Harvest surveys indicate that when comparing the 2016-2017 hunt season to 2017-2018, the number of Bobwhite Quail hunters decreased from 83,000 to 45,000 and their harvest estimates for quail dropped from 1.48 million

---

to 523,000. Similarly, Mourning Dove hunters decreased from 463,000 to 310,000 in the same period along with harvest estimates from 10.3 million to 7.02 million in the same time period.

### ***Hunting/Fishing Financial Impact***

The immediate impact of hunting/fishing license revenue was significant; at the end of September 2017, hunting and fishing license revenue was down almost 19% (\$6.3 million) vs. FY 2017. By the end of November 2017, revenue had rebounded significantly and reflected an overall decline of only about 6% (\$3.2 million). TPWD believes this rebound was due in large part to the “delayed” purchase of licenses by hunters & anglers due to Harvey. The rebound continued throughout the year: by the end of May 2018, the revenue decline was 4.5% (\$3.8 million), and by the end of the fiscal year, total hunting and fishing license sales ended at only 2.9% behind (\$3.1 million) FY 2017 revenues. A specific geographical analysis showed that the coastal areas affected by Harvey had the largest decreases immediately after the storm compared to other areas statewide. By the end of May 2018, the coastal areas showed no material difference from the rest of the state.





---

## **Historic Sites and buildings**

### **Texas Historical Commission<sup>4</sup>**

#### ***Direct Costs for Damage to State-Owned Assets***

The Texas Historical Commission (THC) is a property holding agency that maintains, manages and operates 22 State Historic Sites across Texas, from the Magoffin Home in El Paso to the Sabine Pass Battleground on the Louisiana border. This includes 160 buildings, approximately 384,000 square feet of enclosed space, and 1,887 acres of land. As the only agency dedicated entirely to the preservation of the state's historical resources, the THC has a direct role in many aspects of disaster recovery. This includes activities mandated under both state and federal law. Hurricane Harvey damaged 5 THC-operated state historic sites: Fulton Mansion, Fannin Battleground, Levi Jordan Plantation, Varner-Hogg Plantation, and Sabine Pass Battleground. The below cost estimate table was provided by THC as of September 7, 2018, totaling \$5,045,890.50. To date, no funds have been received from FEMA to cover these repairs.

On the night of August 25, 2017, Hurricane Harvey made landfall at Rockport where it encountered the Fulton Mansion State Historic Site. Built in 1877, this 140-year-old house has survived every hurricane since its construction, and survived again. But the roof was damaged, chimneys were broken off, and water poured in. Repairs began immediately in an effort to prevent mold growth. The carpets were removed and have been dried out and cleaned, and selected collection items were removed and are being treated in the THC curatorial facility in Austin. There was interior plaster, paint and floor damage from moisture infiltration. The exterior had some damage due to airborne debris strikes. Several trees came down or lost limbs. The Visitor Center had minor damage but was operational. Historic Sites management utilized agency staff to help address mitigation work on-site. THC sees this building as a symbol of Texas resilience, and it will be restored and returned to service as quickly as possible. Cost of repairs is estimated to be more than \$800,000. There will also be lost revenue while the property remains closed to the public.

Fannin Battleground State Historic Site, between Victoria and Goliad, lost some trees and branches. The caretaker's house lost a portion of its roof, and there was minor roof damage to the bandstand.

Varner-Hogg and Levi-Jordan Plantation State Historic Sites in Brazoria County were surrounded by water, but the buildings themselves weren't damaged. There was, however, some site damage and damage to non-historic outbuildings.

The largest impact to a THC property was to the seawall at Sabine Pass Battleground State Historic Site. The below repair estimate in excess of \$2 million is being confirmed.

**Texas Historical Commission**  
**Hurricane Harvey FEMA Cost Summary**  
Public Assistance Event No. 4332DR-TX  
**Total Estimated Costs as of 9/7/2018**

State Historic Site	FEMA Project Category	FEMA Project #	Project Name	Estimated Costs	Estimated % FEMA Assistance	Estimated FEMA Assistance		
<b>Debris Removal</b> Multiple Sites	A	3319	Force Account Labor (Staff Time)	\$ 22,310.94	85%	\$ 18,964.30		
			Contract Work	\$ 9,830.00	90%	\$ 8,847.00		
				<b>\$ 32,140.94</b>		<b>\$ 27,811.30</b>		
<b>Emergency Work</b> Multiple Sites	B	40729	Force Account Labor (Staff Time)	\$ 8,000.00	100%	\$ 8,000.00		
			Supplies & Equipment	\$ 5,000.00	100%	\$ 5,000.00		
				<b>\$ 13,000.00</b>		<b>\$ 13,000.00</b>		
<b>Fulton Mansion</b> 317 S. Fulton Beach Rd. Rockport, TX	E	3787	House Mansion	\$ 623,008.00	90%	\$ 560,707.20		
			41549	Pump House	\$ 6,255.00	90%	\$ 5,629.50	
			4147	Visitor's Center Roof	\$ 22,874.00	90%	\$ 20,586.60	
			62262	Maintenance Building Roof	\$ 40,000.00	90%	\$ 36,000.00	
			62260	Perimeter Fencing	\$ 10,000.00	90%	\$ 9,000.00	
			40721	Collections	\$ 10,100.00	90%	\$ 9,090.00	
		<b>\$ 712,237.00</b>		<b>\$ 641,013.30</b>				
<b>Varner-Hogg Plantation</b> 1702 N. 13th St. W. Columbia, TX	E	41546	Cattle Barn	\$ 6,400.00	90%	\$ 5,760.00		
			15724	Ima's Cottage	\$ 4,000.00	90%	\$ 3,600.00	
			15699	Hal's House	\$ 4,000.00	90%	\$ 3,600.00	
			5179	Fencing	\$ 31,027.00	90%	\$ 27,924.30	
			-	Plantation House	\$ 2,000,000.00	90%	\$ 1,800,000.00	
		<b>\$ 2,045,427.00</b>		<b>\$ 1,840,884.30</b>				
<b>Levi Jordan Plantation</b> 7234 FM 521 Brazoria, TX	E	4413	Pump House	\$ 7,045.61	90%	\$ 6,341.05		
				<b>\$ 7,045.61</b>		<b>\$ 6,341.05</b>		
<b>Fannin Battleground</b> 734 FM 2506 Victoria, TX	E	4444	Site Manager Building Roof	\$ 7,340.62	90%	\$ 6,606.56		
			G	41550	Fencing, Gate, & Signage	\$ 8,609.33	90%	\$ 7,748.40
						<b>\$ 15,949.95</b>		<b>\$ 14,354.96</b>
<b>Sabine Pass Battleground</b> 6100 Dick Dowling Rd. Port Arthur, TX	D	3673	Seawall Reconstruction & Archeological Investigation	\$ 2,220,090.00	90%	\$ 1,998,081.00		
				<b>\$ 2,220,090.00</b>		<b>\$ 1,998,081.00</b>		
			<b>TOTAL</b>	<b>\$ 5,045,890.50</b>	<b>-</b>	<b>\$ 4,541,485.90</b>		

5

In exchange for providing grant funds, or as a function of the National Historic Preservation Act's (NHPA) requirements related to the federal government's disposal of historic properties, the THC holds covenants on more than 300 historic sites statewide, as well as several archeological sites. These constitute an ownership interest in real estate. Some are located in the Hurricane Harvey designated disaster area. Immediately after the storm THC checked on these properties and with few exceptions found that little damage was sustained. The terms of the covenants require that the actual titled owners make any necessary repairs, and although THC will review that work, they anticipate that there will be no additional cost to the state.

***Direct Costs for Regulatory Program Administration***

---

Under Section 106 of the NHPA, the THC is the designated State Historic Preservation Office (SHPO), and has responsibility for reviewing all federal actions in the State of Texas which might have an effect on historic or prehistoric resources. This includes the federal government's issuance of licenses and permits, direct expenditures of federal money, work being done on federally-owned property, and indirect expenditures of federal money through grant programs such as HUD and FEMA grants to individual property owners or to public entities.<sup>6</sup> To facilitate this responsibility, THC maintains close working relationships with federal agencies and in some instances has negotiated Programmatic Agreements (PA) more specifically outlining the respective responsibilities of participating agencies including timelines and project exclusions. THC has a PA with FEMA that provides for an accelerated review period on any FEMA-funded disaster-relief project within the first 30 days after a disaster occurs. The typical, federally-mandated 30-day review period was suspended in favor of a 7-day review period, and that suspension can be extended on the agreement of both parties. THC has a similar agreement with the General Land Office (GLO), created after that agency took over distribution of HUD funds following Hurricane Ike.

THC's PA with FEMA is an effective agreement, and both agencies have already consented to extend the 7-day review period for up to 120 days. THC remains willing to consider additional extensions as funds become available, assuming that adequate funds and FTEs are made available to enable THC to carry out its work.

On June 25, 2018, the General Land Office (GLO) announced that the U.S. Department of Housing and Urban Development (HUD) approved the Texas State Action Plan for \$5.024 billion in Community Development Block Grant - Disaster Recovery (CDBG-DR) funds to help Texans recover from Hurricane Harvey.<sup>7</sup> The approved plan delivers \$2.7 billion in recovery funds to areas impacted by Harvey outside of Houston and Harris County and a \$2.3 billion direct allocation to the City of Houston and Harris County.<sup>8</sup> THC has also expressed a willingness to either negotiate a new PA with GLO or to allow GLO to sign onto the existing PA with FEMA to cover distribution of HUD grants as part of what is known as Unified Federal Review. Other affected federal agencies might also choose to exercise this option.

It is very difficult to estimate what the THC's additional costs will be in attempting to carry out its responsibilities under the NHPA after Harvey because the vast majority of historical resources in Texas have not been surveyed adequately. This would typically fall to the federal agencies as a part of their due diligence under the NHPA, but those agencies are still hiring and training staff to be deployed for this purpose. In the interim, THC staff (with substantial assistance from the affected local governments and other interest groups) has conducted some preliminary surveys just to identify areas where more work should be done, and it is clear that there are thousands of historic properties in the many flooded neighborhoods in Houston alone. The current estimate of the amount necessary to support THC's work in this area exceeds \$4 million for up to 8 FTEs over the next 8 years, based on discussions with the SHPO offices in New Jersey (after Sandy) and Louisiana (after Katrina) and their experience with Hurricane Ike.

THC has similar duties under the State Antiquities Code relating to actions by state agencies and local governments. With certain exceptions provided in the Code, state and local government projects affecting prehistoric and historic archeological resources (and some projects affecting

---

historic architectural resources) require review by THC. In most instances such projects are already being reviewed under the NHPA, and reviews can be consolidated, so the costs outlined would also cover these expenses. THC also has a very active marine archeology program, and some of the Harvey-related regulatory reviews have involved underwater resources. In fall 2017, FEMA hired two former THC employees to assist in conducting necessary project reviews under the National Historic Preservation Act. However, they were given few assignments over the subsequent six months. This appears to be caused by FEMA's project review process, which requires detailed inspections, development of scopes of work, and extensive cost estimating prior to releasing the project for historical review. THC received a letter from the City of Houston informing that over 140,000 single family residences and over 17,000 multi-family residential complexes were damaged or destroyed. The City is creating a set of federally-funded programs to address these properties and their supporting infrastructure. Based on this letter alone, it is known that there are thousands of projects that will require review, but have no way of accelerating that process.

The United States Congress appropriated \$50 million last year to the National Historic Preservation Fund, specifically to create sub-grant programs in states and territories that went through Hurricanes Harvey, Irma, and Maria.<sup>9</sup> THC received an invitation to apply for \$12.3 million of those funds and they submitted their application on August 15, 2018. The National Park Service will get back to THC by the end of 2018 and let them know if their application was successful. If it is, the THC will have \$12.3 million available primarily for use in rewarding grants for storm-damaged historic properties within the federally-declared disaster area. Of the \$12.3 million requested, around \$600,000 was proposed for use in covering the THC's costs to perform hurricane-related regulatory review over the next three years. Hurricane Ike projects, however, continued to require THC's review for a decade after that storm. So there are likely to be continuing expenses for regulatory efforts beyond the initial three-year period.

### ***Grant Programs Affected***

Texas Historic County Courthouse Preservation Program – This THC program distributes competitive grants for the restoration of historic county courthouses. To date, 65 courthouses have been restored and many others have received grants for emergency work or development of project plans and specifications. Several county courthouses in the declared disaster area received relatively minor storm damage and are being repaired. Two, Refugio and Aransas County courthouses, were extensively damaged. Aransas County Courthouse was damaged beyond repair, and has been demolished. The Refugio County Courthouse was heavily damaged, but THC assisted in funding a full assessment, and they are optimistic that the building can and will be saved. If that is the selected alternative, they anticipate receiving an application from the county for any funds THC might have available to distribute through this program. In the meantime, THC has announced the availability of \$20 million in grant funds through this program, and some requests for emergency assistance are anticipated.

Texas Preservation Trust Fund Grant Program – THC maintains funds in the Safekeeping Trust earning interest that is then granted to qualifying historic preservation projects. The current

---

authorized appropriation \$248,625 per year to the Texas Preservation Trust Fund Account No. 664 for historic preservation projects.<sup>10</sup> In response to Hurricane Harvey, the 2017 Fiscal Year's portion of that appropriation was set aside for disaster recovery projects at historic resources in the disaster-declared area. Grants for this program were awarded in January 2018.

Federal Grants – As noted above, THC was invited to apply for \$12.3 million in federal funds and is currently awaiting a decision from the National Park Service. If Texas receives these funds, the grant program will have to be developed and applications processed before the end of this calendar year. THC could use some of the \$12.3 million funds for administrative overhead to get these monies out as quickly as possible. THC has already begun notifying cities and counties in the disaster areas that these funds may be made available. They have asked them to begin putting together information on the damaged historical properties in their area.<sup>11</sup>

### *Community Based and Other Affected Programs*

Museum Assistance Program – The THC provides advice and guidance to the more than 900 history museums across the state. Workshop topics often include responding to disasters. THC staff have consulted with a number of affected museum facilities in the disaster-declared area.

County Historical Commission Program – Almost every county in Texas has a County Historical Commission. THC provides advice and guidance to this network of more than 5,000 volunteers, including counties in the disaster-designated area.

Main Street Program - There are approximately 90 communities currently participating in the Main Street program for downtown revitalization, administered by THC. Approximately 20% of the participants are located in the Hurricane Harvey-affected area. THC provides advice and guidance in such areas as architectural design, economic development, organizational techniques and marketing.

Certified Local Governments (CLGs) – Approximately 65 communities (both cities and counties) have their own historic preservation ordinances and have qualified to participate in the CLG program under the NHPA, another program assigned by law to THC. Some of these communities were affected by Hurricane Harvey. THC continues to work with them in their efforts toward recovery. This program also has a grant component, and approximately \$135,000 is distributed competitively each year.

Curatorial Facilities Certification – THC certifies curatorial facilities holding state-owned collections to ensure that the collections are preserved and made available to qualified researchers. Several of these facilities are located along the Texas coast, and participate in a program involving the display of artifacts related to LaSalle's voyage of discovery including artifacts related to the wreck of the Ship LaBelle (pursuant to a treaty between Texas and the government of France). Although several of the LaSalle Odyssey museums were affected by Hurricane Harvey, the artifacts remained safe and secure, and the French government has been so notified. Some items are in temporary storage as the facilities make necessary repairs.

---

Heritage Tourism – The state’s heritage tourism programs are operated through a statewide coalition of independent boards known as the Texas Heritage Trails Program, administered by THC. Each board maintains a full-time executive director. THC provides advice and guidance, and some legislatively-appropriated financial support. The regional boards also depend on private fundraising and in-kind donations from within their assigned regions. Three Trail Regions were significantly impacted by Hurricane Harvey: Tropical, Independence, and Forest.



---

## **Art and cultural resources**

### **Texas Commission on the Arts<sup>12</sup>**

When Hurricane Harvey made landfall in late August 2017, the Texas Commission on the Arts (TCA) immediately began to reach out to the arts community in impacted areas to determine the level of disaster that occurred there. The amount of damage they surveyed varied from total disaster, such as the destroyed Rockport Center for the Arts, to minor disaster damage. With this information, TCA began looking to their federal partners and determining how they could help. TCA first established a web page on their site that provided the most up to date resources and information about disaster recovery and Hurricane Harvey for individual artists and artist organizations.

TCA Executive Director, Dr. Gary Gibbs, then quickly set about to raise funding to provide grants to organizations and artists impacted by Hurricane Harvey. In total, TCA approved 69 grants, totaling \$446,500.<sup>13</sup> The grants were awarded to 52 arts organizations and 17 artists in 15 Texas cities: Beaumont, Clute, Corpus Christi, Elgin, Friendswood, Galveston, Gonzales, Hallettsville, Houston, Orange, Port Aransas, Port Arthur, Rockport, Round Top, and Spring.<sup>14</sup> Funding for the Hurricane Harvey Relief grants included \$192,520 received from the National Endowment for the Arts; \$150,000 provided by the Andrew W. Mellon Foundation; and \$103,980 from the Texas Commission on the Arts' budget.<sup>15</sup>

TCA was one of the first funding agencies to get these relief dollars out the door. By December 2017, they had established this program and awarded the grants. The largest grants awarded were \$40,000 to the Houston Grand Opera and the Houston Ballet Foundation.<sup>16</sup> To determine the grant recipients, TCA used a disaster rating system and asked artist organizations to tell them what the level of damage they incurred (catastrophic to minimal) based on the number of months they would be impacted. TCA then utilized the applicants self-evaluation along with their budget size to determine the awards. By the end of FY 2018, TCA will have reports on how they spent those dollars and how successful they were.

Going forward, TCA sits on the local action group of the Harvey Arts Recovery Fund to provide resources and outreach to local artists in a 10-county region in Greater Houston.<sup>17</sup> They are working to develop some disaster preparedness documents to help artist organizations and artists to be able to better prepare for these types of natural disasters in the future.

### **Texas State Library and Archives Commission<sup>18</sup>**

The Texas State Library and Archives Commission (TSLAC) only suffered minor damage to their facilities in Liberty, TX during Hurricane Harvey, however they were heavily invested in maintaining working informational infrastructure in our state throughout the response and recovery periods. Since 2011, FEMA has recognized libraries as essential community organizations.<sup>19</sup> This allows libraries to be eligible for temporary relocation funding during major disasters through FEMA's Public Assistance Program. Since libraries are often the first point of contact for community members, FEMA now pays special attention to the condition of local libraries. With this in mind, TSLAC carefully monitored the progress of Hurricane Harvey



---

before it made landfall.

Based on TSLAC's contacts and research, they estimate that approximately 80 libraries (including school, public, and academic libraries) were impacted by Hurricane Harvey. Damage ranged from minor leaks to complete loss of collections and substantial damage to buildings and physical infrastructure. Working in partnership with the Texas Library Association, TSLAC collected and shared information, including an online list of needs libraries reported and donors (with specific items), that could be sent immediately to libraries.

One of the earliest actions TSLAC took was to start working with the Institute of Museum and Library Services (IMLS), their federal funding agency, to make sure that they could secure money to help those libraries impacted by Harvey. They were able to get permission quickly from IMLS to extend the federal deadline for expenditure and reporting on FY 2017 funds to allow expenditure for this purpose.

Acting under emergency procedures issued by the Governor's Office, TSLAC released the Rebuilding Texas Libraries Grant Program on September 18, 2017. The Rebuilding Texas Libraries Grant was designed to aid libraries that sustained damage during the Hurricane and its aftermath. The goal was to assist Texas libraries in restoring services and programs to their patrons and to enable libraries to respond directly to the disaster. This program funds operating expenditures such as library supplies and materials, technology, furniture, and contractual services.

Public, school, and academic libraries located in the counties declared disaster areas by the Governor and counties that provided assistance to displaced persons were eligible to apply for grants. The maximum grant award was \$5,000 for a single location. If there were multiple locations affected, libraries were eligible to apply for up to \$5,000 per location for a maximum award of \$25,000. TSLAC closed the grant applications in October 2017 so they could give libraries as much money as they could, as quickly as possible. TSLAC was able to award over \$192,000 within a few months to get these libraries working. In some cases, TSLAC found out that the money they were able to make available was the only money that these libraries were able to use to get books and materials for students. A complete list of grantees is available on [tsl.texas.gov/rebuildinglibraries](http://tsl.texas.gov/rebuildinglibraries).

During this process, TSLAC was in constant communication with their state partners, FEMA, and private cultural organizations. In the early days around Harvey's landfall, they were in contact with FEMA's Heritage Emergency National Task Force (HENTF), who included them in a series of calls and group e-mails with other organizations responding to recovery for cultural heritage organizations. This partnership led TSLAC to a network called Texas Cultural Emergency Response Alliance (TX-CERA), that is comprised of special collections and museums who promulgate information on responding to disasters and saving collections. These partnerships allowed TSLAC to share information and resources with impacted libraries and FEMA.

TSLAC also participated in efforts organized by Humanities Texas, the state affiliate of the National Endowment for the Humanities, which convened a group of agencies and organizations

---

that were impacted by the storm to talk about response and future preparation. Representatives included the Texas Library Association, Texas Historical Commission, Texas Commission on the Arts, Houston Fine Arts Museum, U.S. Interior Dept., NEH, FEMA, TX-CERA, and others.

---

## **Travel and tourism**

Hurricane Harvey impacted virtually every area of the travel and tourism industry in many areas of Texas. However, businesses, communities, and industry workers in the Gulf Coast were most directly and profoundly impacted.<sup>20</sup> The State of Texas is fortunate to have the Economic Development & Tourism Division (Travel Texas) within the Office of the Governor that assisted and continues to assist these communities in the wake of Hurricane Harvey. While the Economic Development & Tourism Division (EDT) primarily focuses on out-of-state tourism marketing campaigns, the Texas Historical Commission (THC), Texas Parks and Wildlife Department (TPWD), the Texas Commission on the Arts (TCA), and the Texas Department of Transportation (TxDOT) each conduct marketing activities within the state, focusing on stimulating tourism within Texas by Texans.<sup>21</sup> Together, these 5 entities formalized a Memorandum of Understanding (MOU) in December 2003 to improve coordination of statewide tourism marketing efforts.<sup>22</sup>

There is no doubt that each of these agencies participated in restoring the nature, cultural, and heritage tourism that Texas prides itself on. After Hurricane Harvey, EDT worked with the Texas travel industry and coastal destinations to help get coastal digital advertising in places like Lubbock, San Antonio, and Amarillo to help everyone in Texas understand that the Texas Coast is ready and open for business.<sup>23</sup>

On July 18, 2018, EDT Director Bryan Daniel informed that there are counties in the Hurricane Harvey affected regions where greater than 10% of their workforce is dedicated to the tourism industry. The number one thing they have been doing in this area is working with them to ensure that groups of employees and businesses can get back to success as soon as they are able.

A running theme heard in testimony was the misinformation about Hurricane Harvey's impact in the regular media and social media channels that people were following during and after the storm. The Texas Travel Industry Association informed that some tourism communities such as Galveston, Corpus Christi, and South Padre Island were relatively or totally unscathed, yet the impacts of Harvey were felt because of the perceptions that the entire Texas Gulf Coast was devastated.

Travel Texas is responsible for managing information like this in their overall advertising campaign and making sure that travelers understand that the Texas Coast is open for business.<sup>24</sup> In March 2018, the EDT Division began to see substantial improvements in that area and the ability of most affected communities in the tourism sector. Beginning in early 2018, Travel Texas ran specific beach and coastal ads throughout the U.S. as part of the state's ongoing advertising campaign. At a time they believe travelers were making their summer and spring traveling plans, Travel Texas was able to generate 279 million impressions through television, digital display ads and paid social media across the nation.<sup>25</sup>

Travel Texas funded a satellite media tour (SMT) focused on the Gulf Coast as a “hot place to travel this winter” in mid-February 2018.<sup>26</sup> The final numbers show that the segment, focusing on Galveston, Port Aransas, Corpus Christi and South Padre Island, was placed 1,182 times on TV, garnering over 19 million impressions (inclusive of syndicated shows) with nearly \$500,000

---

in ad value.<sup>27</sup> That is in addition to over 84 million online audience reach. Local markets reached included top out-of-state source markets for Texas, as well as Texas markets including San Antonio and Amarillo.<sup>28</sup>

Throughout the year, Travel Texas does a number of trade missions. These are opportunities for local tourism officials to go to places where decision makers, publications, and other interested parties convene. Typically, EDT does a cost share with communities. However, this year, Travel Texas has waived domestic media mission co-op participation fees for all Harvey-affected area partners for FY 18, thus securing participation from Port Aransas, Galveston, Port Royal Ocean Resort & Conference Center, Corpus Christi, Beaumont and The Woodlands in domestic media activities which provided them meetings with top tier national and local media in New York, Los Angeles, San Francisco and Chicago.<sup>29</sup>

Travel Texas coordinated a Gulf Coast “Explorer” social media promotion in April 2018.<sup>30</sup> This PR activity included social media travel influencers and videographers and was designed to generate greater awareness that the Texas coast was open for business leading up to the summer travel season.<sup>31</sup> The trip highlighted Rockport-Fulton, Port Aransas, Mustang Island, Padre Island and Corpus Christi.<sup>32</sup> The activity served to highlight areas affected by Hurricane Harvey and tell the story of the region recovery and being open for business.

This activity generated 328 pieces of content (Travel Texas and influencer content combined), leading to over 37,000 consumer engagements with the content across multiple social media channels, 447 uses of #Explorer and over 3.1 million impressions.<sup>33</sup> Travel Texas also published 34 Instagram stories resulting in over 166,000 story views.<sup>34</sup>

Travel Texas communicates monthly via newsletters to consumers interested in travel and tourism. Since September 2017, multiple coastal destinations were given a call-out space for a total in-kind value of \$79,500 to date.<sup>35</sup> Additionally, a dedicated email was sent out to over 112,000 subscribers in March 2018 with messaging around the coast being open, encouraging consumers to plan a trip soon.<sup>36</sup> All email newsletters with coastal messaging were sent out to Texan, Domestic and International subscriber lists.

Additionally, Travel Texas continues to curate ongoing social content highlighting the Texas Gulf Coast along with the rest of the state on Travel Texas Facebook, Twitter and Instagram channels.<sup>37</sup> To date Travel Texas has shared posted a combined 233 post across Facebook, Twitter and Instagram.<sup>38</sup> The content has received 100,996 engagements and 6.8 million impressions.<sup>39</sup>

### ***Coastal Communities***

The Committee heard first-hand accounts from the Texas Travel Industry Association, the City of South Padre Island, the Port Aransas/Mustang Island Chamber & Tourism Bureau, the Texas Commercial Airports Association, and the City of Brownsville. Together, the witnesses that testified on this charge painted a picture of resilient citizens and communities working together to get back on their feet and spread the word that the Texas Coast is indeed open for business. After Hurricane Harvey, the general belief of folks traveling to Texas was that all of the coastal

---

areas sustained damage. Additionally, there was the misconception that the hotel rooms in these areas were full. There was a time period where hotels were housing displaced persons and construction crews to work on damage. The hotel rate collections for that time period were up in 2017, as compared to the same 2016 time period. However, this was an artificial boost to the economy.

Many visitors cancelled their plans to travel to South Padre Island during Labor Day 2017 because of these misperceptions, even though they were unscathed and the Hurricane hit 200 miles away. The City of South Padre Island was made aware of the misconceptions that the impact on the North end of Padre Island (Rockport-Fulton and Port Aransas) was the same as the impact on the South end of Padre Island.<sup>40</sup>

The City of South Padre estimated a loss of prospective lodging revenues of \$36,035,719 in August to October 2017 alone. The City of South Padre Island infused \$400,000 from their marketing budget reserves and a budget enhancement request to primarily market to Texas that South Padre was open for business. Without this infusion of funds, it is difficult to determine how much more financial loss the island would have incurred.<sup>41</sup>

On August 25, 2017, 95% of the Port Aransas community services were shut down in the wake of Hurricane Harvey. It took almost 2.5 months to get basic services back up.<sup>42</sup> The City of Port Aransas is a community of 3,500 citizens that receives over 5 million tourists a year. Prior to Hurricane Harvey, they were experiencing a record year of 40% more than any year in the history of Port Aransas and approaching the \$500 million level in terms of economic impact.<sup>43</sup> As of July 18, 2018, the City of Port Aransas was almost 50% back with their lodging numbers.<sup>44</sup> Over the past year, Travel Texas has helped them get into some markets they normally try to participate in with their budget. However, their budget has been slashed by 70% to \$500,000 as a result of Hurricane Harvey.<sup>45</sup>

Port Aransas joined Travel Texas in New York in October 2017 and April 2018. They met key national publications including Fodor's Travel, the largest travel publication in the country. Due to this relationship that EDT helped cultivate, in July 2018 the City of Port Aransas was listed as #7 on the Top 25 list of Best Beaches in the Country.<sup>46</sup>

Communities in the Coastal Bend have formed a coalition between the Rockport Chamber, Corpus Chamber, and the Port Aransas & Mustang Island Chamber and Tourism Bureau called Coastal Bend United for the purpose of advocacy and generating grants.<sup>47</sup> Additionally, the Port Aransas Chamber Foundation has raised almost \$2.5 million through grants and fundraising.<sup>48</sup> They have given a quarter million in grants to small businesses and through their coalition, and they are only looking to distribute more.

In Port Aransas, full business recovery is not expected until 2020 and in Rockport-Fulton full business recovery is not expected to occur until March 2019.<sup>49</sup>

Comments from the Corpus Christi Convention and Visitors Bureau (CVB) indicate that while the State of Texas's EDT Division and individual tourism communities have invested significant funding on advertising the Texas Gulf Coast after Hurricane Harvey, the work and messaging



---

must continue. Several popular state attractions like the Texas State Aquarium and USS Lexington Museum on the Bay in Corpus Christi have reported lower numbers of visitors since Hurricane Harvey hit the area. The Corpus Christi CVB recommends that additional advertising be continuous and repetitive, and it is just as integral to recovery a year later as it was immediately after the Hurricane. The message that the Coastal Bend is open for business needs to be heard and more financial resources are needed so that these coastal communities can continue to advertise themselves. Tourism is the livelihood for many people in the Coastal Bend accounting for \$1.3 billion in economic impact, according to the Texas Destinations report prepared for the Office of the Governor, Economic Development and Tourism Division. The Corpus Christi Convention and Visitors Bureau's \$3 million advertising budget for both digital and traditional advertising allows the city to market to approximately 4.6 million people.<sup>50</sup>

### *Airport Travel*

Airport travel was significantly impacted by Hurricane Harvey. The Houston Airport System, including Bush and Hobby Airports closed for about a week due to extreme flooding. The airports suffered some physical damage to landing areas, runways, and taxi ways, as well as damage to instrument landing systems. Officials estimate the amount to be between \$10-\$15 million for the damage and business interruption.<sup>51</sup> 11,000 commercial flights were cancelled that week at the Houston airports. Since Houston serves as a hub airport system directing flights to smaller airports across the state, the impacts of interrupted and cancelled flights significantly impacted smaller Texas airports.<sup>52</sup>

The Corpus Christi Airport could have opened the day after Hurricane Harvey hit but because Houston was closed, and so much of the inbound traffic into Corpus comes through Houston, the Corpus Christi Airport lost a week's worth of flights.<sup>53</sup> Mr. Bryant Walker, Director of the Brownsville South Padre Island International Airport (BRO), informed that they lost all air service, as well, due to the closure of Houston's airports. The financial impact to BRO was all of the fees, fuel sales, and concessions due to their lost connectivity. American Airlines reconnected within two days and United took a week. This cost BRO almost \$40,000 in airport revenue itself. However, BRO is used to hurricanes and they expended \$30,000 to prepare before Hurricane Harvey hit. BRO spends around \$80,000 per year on air service and they have to continue that effort so they can rebuild service for any that is lost in events like this.<sup>54</sup>

---

## **INTERIM CHARGE #2 - VOLUNTEER CONTINGENCY OF PRIVATE BOAT OWNERS**

The Texas House Committee on Culture, Recreation & Tourism held a public hearing on Interim Charge #2 on July 18, 2018 in Austin, TX. The following witnesses testified on the charge:

- 1) Cody Jones, Texas Parks and Wildlife
- 2) Chief Nim Kidd, Texas Division of Emergency Management

Written testimony was submitted by Assistant Chief Rodney Reed with the Harris County Fire Marshall's Office.

A large portion of this section is based upon the oral and written testimony of the individuals listed above.

---

## Background

Hurricane Harvey wreaked havoc on Southeast Texas, leading to the largest disaster response in Texas history. According to the Federal Emergency Management Agency (FEMA), nearly 80,000 homes had at least 18 inches of floodwater, 23,000 of those with more than 5 feet. Additionally, of the communities in Harvey's wake, 781 roads were impassible. These statistics, along with others, led local, state, and federal first responders to rescue a combined 122,331 people and 5,234 pets.<sup>55</sup> If you take the entire State of Alabama, Hurricane Harvey would cover it with more than 19 inches of rain, Maryland would be covered with 34 inches, and Rhode Island would be covered with over 45 inches of rain.<sup>56</sup>

In Texas, in accordance with Chapter 418 of the Texas Government Code and Title 37, Part 1, Chapter 7 of the Texas Administrative Code, mayors and county judges serve as emergency management directors, bearing the responsibility for maintaining an emergency management program within their respective jurisdictions.<sup>57</sup> Additionally, in responding to emergencies and disasters, a local government is expected to use its own resources and the resources available to it through mutual aid agreements before requesting assistance from the state.<sup>58</sup>

After exhausting their existing local and state resources, the magnitude of Hurricane Harvey caused local public entities put out calls for volunteers with boats on various media outlets and social media platforms. One such volunteer flotilla called the "Cajun Navy" is credited with bringing hundreds of boats to assist in search and rescue from Louisiana. There are no concrete rescue numbers available, but the "Cajun Navy" and the numerous other selfless volunteers and volunteer groups could have potentially rescued thousands more than the above FEMA statistic. There is no doubt that the citizens of the Gulf Coast know how to take care of their own in their darkest hour.

FEMA does not provide public assistance (PA) funding for donated resources, such as volunteer labor. However, FEMA has the authority to apply the value of volunteer labor related to eligible *Emergency Work* to offset the eligible non-Federal cost share or local match.<sup>59</sup> On June 25, 2018, FEMA expanded this policy to allow for donated resources to apply towards *Permanent Work* repairs retroactive to August 23, 2017, two days before Hurricane Harvey made landfall. Applicants may apply to FEMA for this offset if all of the following conditions are met:

- The donated resource is from a third-party (a private entity or individual that is not a paid employee of the Applicant or Federal, State, Territorial, or Tribal government);
- The donated resource is necessary and reasonable for accomplishment of the project;
- The Applicant uses the resource in the performance of eligible work and within the respective project's period of performance; and
- The Applicant or volunteer organization tracks the resources and work performed, including description, specific locations, and hours.
- Donated resources for Permanent Work must be tracked to the specific PW for which it is associated.<sup>60</sup>

The State of Texas negotiated a \$20 per hour rate with FEMA for volunteer labor provided during Hurricane Harvey, which will go towards local match funds.<sup>61</sup> This reimbursement is an

---

important avenue for offsetting the local match required by FEMA's public assistance program and all volunteer hours should be properly logged to ensure the maximum offset.

Interim Charge #2 considers the possibility of creating a volunteer contingency of private boat owners through the Texas Parks and Wildlife's boat registration and license database to be called upon to assist first responders in search and rescue efforts in natural disasters like Hurricane Harvey. The state agencies that would be play a role in this effort are the Texas Division of Emergency Management and Texas Parks and Wildlife. Since all disasters are local, there would need to be coordination and collaboration with counties and municipalities.

### **Texas Parks and Wildlife Department<sup>62</sup>**

Current Texas law requires the following vessels/boats (when on Texas public water, including when docked, moored, or stored) to have a current registration with the Texas Parks and Wildlife Department:

- All motorized boats, regardless of length (motorized boats include boats propelled by a trolling motor); and
- All sailboats 14 feet in length or longer or any sailboat with an auxiliary engine(s); and
- United States Coast Guard (USCG) Documented vessels.<sup>63</sup>

Exempted vessels include all (non-motorized) canoes, kayaks, punts, rowboats, or rubber rafts (regardless of length) when paddled, poled, or oared; sailboats under 14 feet in length when windblown; USCG documented commercial vessels used in coastal shipping; and USCG documented vessels exceeding 115 feet in length.<sup>64</sup>

As it relates to the release of current boat registration data, in 2011 Senate Bill 701 passed during the 82<sup>nd</sup> Regular Legislative Session which encourages Texas state agencies to post high-value data on the internet. In accordance with the bills requirements, the Texas Parks and Wildlife Department posts a full list of boat owners' current registration data on the State of Texas Open Data Portal. This portal fulfills requests from individuals and companies that seek boat ownership and registration data. The data is fully searchable, nearly real-time, and available at no cost to the public.

On July 18, 2018, Asst. Commander Cody Jones stated that a registry of this nature needs to be focused at the local level where local officials can have these resources available to them. During Hurricane Harvey, 300 Game Wardens from around the state were deployed to affected areas and conducted over 12,000 successful rescues. The Texas Game Wardens are trained as swift water technicians and, therefore, know how to effect rescues in swift flooded waters that occur during these types of natural disasters. He stated that the general boating public, however, does not often come with knowledge of safe swift water operations being that much of their boating experience comes in the form of still water lakes or bays.

The State of Louisiana has focused their efforts in this area at a local level and allows local sheriffs to manage a registry of boat owners. They work closely with volunteers not maintained at the state level.

---

There are two methods of registration for U.S. recreational vehicles:

- Vessel Registration: state-issued Certificate of Number; and
- Vessel Documentation: federally documented with the U.S. Coast Guard.<sup>65</sup>

All undocumented vessels equipped with propulsion machinery must be registered in the state of principal use.<sup>66</sup> The other 49 states and 6 territories have boat registration requirements similar to the Texas Parks and Wildlife Department. Additionally, the United States Coast Guard has minimum equipment requirements for recreational vessels in all 50 states.<sup>67</sup> Texas maintains reciprocity on border education requirements for visiting boaters with all 4 of our neighboring states (Louisiana, Arkansas, Oklahoma, and New Mexico), as well as 45 remaining states and 6 territories when the boater takes a National Association of State Boating Law Administrators (NASBLA) approved course in another state.<sup>68</sup>

Currently, Texas Parks and Wildlife requires the title and/or registration of a recently-purchased vessel within 20 business days of the sale date (before late fees apply).<sup>69</sup> There are several forms and supporting document requirements for specific vessel transactions in Texas. These specific transactions include:

- New from Dealer/Manufacturer or New Homemade;
- Not Currently Titled and/or Registered Through TPWD;
- Transfer of Boat/Outboard Motor with Existing Title and Registration Through TPWD;
- Maintenance of Boat/Outboard Motor with Existing Title and/or Registration Through TPWD;
- Registration of USCG Documented Vessels; and
- Sold Under Statutory Lien Foreclosure.<sup>70</sup>

A common theme amongst the different specific vessel transactions is Form PWD 143 that is required in all instances to register a vessel. On July 18, Asst. Commander Cody Jones informed that it would be a nominal cost to add a line of coding on Form PWD 143 that would allow registrants to permissively check a box indicating their willingness to volunteer in the event of a natural disaster.

When asked if the cost incurred could pay for itself with FEMA volunteer reimbursement offsets, Chief Nim Kidd of the Texas Division of Emergency Management (TDEM) indicated that they can work with local governments to figure out how the state can cost share that split. Primarily, the state passes that savings on to local government partners for that cost share. It does not mean they cannot work on that where a portion comes back to the state.

### **Texas Division of Emergency Management<sup>71</sup>**

The Texas Division of Emergency Management (TDEM) is charged with carrying out a comprehensive all-hazard emergency management program for the State and for assisting cities, counties, and state agencies in planning and implementing their emergency management programs.<sup>72</sup> TDEM and the Office of the Governor coordinate the Texas Emergency



---

Management Council, which is composed of 30 state agencies, including Texas Parks and Wildlife, and 2 volunteer organizations. During major emergencies, council representatives convene at the Jack Colley State Operations Center to provide advice on and assistance with response operations and to coordinate the activation and deployment of state resources to respond to the emergency.<sup>73</sup>

TDEM does not compile the registration or intake for the volunteer hour reimbursement with FEMA, and it is instead coordinated with local jurisdictions. From their perspective, a volunteer database of this type would be another ready reserve of resources that local jurisdictions could utilize. Chapter 418 of the Texas Government Code puts local mayors and county judges on the front lines during natural disasters. The state only comes in if the mayors and judges ask for assistance after local resources are exhausted. This database could be utilized as the third tier layer after state resources are exhausted. They believe a database of this sort has to be coordinated with local governments, as TDEM does not want to send in too many resources and inundate certain areas.

Today, local officials use a statewide system called Web EOC, that is the state's virtual incident management software. This is how cities and counties order state resources from TDEM and how they communicate back to them. Local jurisdictions may submit State of Texas Assistance Requests (STAR) through this system for assistance to include personnel, supplies, and equipment.<sup>74</sup> TDEM has developed mobile applications that they can put on anyone's phone to request resources.

Chief Nim Kidd of TDEM stated that a database of this type becomes a tool to registration. For those volunteers that have not registered, they will come on game day but they will not be utilized first because they are not in the system. Regarding the timeliness of registration, Chief Kidd believes this is something that can be done relatively quickly. TDEM has developed a mobile in-house application that they are rolling out in consultation with local partners. This application allows better tracking of volunteer hours on their smart phones that will allow local jurisdictions to become reimbursement eligible from FEMA.

### **Harris County<sup>75</sup>**

During Hurricane Harvey, the Harris County Fire Marshal's office requested the Harris County Judge to consider the coordination of volunteers to assist First Responders operating throughout Harris County. This request was due to requests for service that were overwhelming First Responders. Through messages broadcasted on local media, local volunteers were able to call in to the Harris County Office of Homeland Security and Emergency Management phone bank to roster their availability, providing the following information:

1. Name & 24-hr contact number
2. Type of resource
3. Area they were and could operate in

That information was then broken down at the Fire Desk. In the event a Public Safety Agency needed resources, it was asked if they were for an emergency or evacuations. If for evacuations,

---

civilian volunteer resources were dispatched to the requesting agency's staging location. There, they could be rostered, equipment checked, and brought into the Command system.

### **Neighboring States**

During their 2018 Regular Session, the State of Louisiana passed legislation that provides a framework for local parishes and the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) to coordinate volunteer efforts during disasters in their state. It authorizes GOHSEP to credential certain volunteer groups that meet certain standards. GOHSEP or a parish office of homeland security and emergency preparedness may then deploy them and share government assets in times of need. If a particular parish requests a volunteer group to provide assistance, they would establish those terms in a Memorandum of Understanding (MOU) between the two parties.<sup>76</sup> The framework is completely voluntary on both sides and does not prohibit any volunteer groups doing volunteer efforts that they currently do.<sup>77</sup>

To be credentialed, volunteer groups must be of 501(c) status and, at minimum, have passed a check on the state sex offender and child predator registry. Depending on the mission, the volunteer may be required to submit a copy of the results of a federal and state background check. Whether or not a federal and state background check is required will be expressly identified in the Memorandum of Understanding between the volunteer agency and the deploying office of homeland security and determined on the basis of public safety. The cost of the federal and state background check will be borne by the volunteer organization or individual volunteer.<sup>78</sup>

The legislation expands the limitation of immunity applied to National Voluntary Organizations Active in Disasters (VOADs) to all "other volunteers". It authorizes credentialed volunteers to take FEMA training courses through GOHSEP, as the state agency can provide these courses at no cost. HB 388 was signed by the Louisiana Governor on May 28, 2018 and had an effective date of August 1, 2018. Louisiana hopes that this law will help boost their volunteer hours that are counted in their FEMA local match dollars.<sup>79</sup>

---

## **INTERIM CHARGE #3 - POLLINATOR CONSERVATION IN TEXAS**

The Texas House Committees on Culture, Recreation & Tourism and Agriculture & Livestock held a joint public hearing on Interim Charge #3 on July 18, 2018 in Austin, TX. The following invited witnesses testified on the charge:

- 1) Dr. Ben Hutchins, Texas Parks and Wildlife Department
- 2) Megan Hope, Texas Comptroller of Public Accounts
- 3) Amy Snelgrove, Texas by Nature
- 4) Iliana Peña, Texas Wildlife Association
- 5) Mary Reed, Texas A&M AgriLife Research
- 6) Gene Richardson, Texas Farm Bureau
- 7) Clint Walker, Texas Bee Keepers Association
- 8) Dan Stacks, Texas Department of Transportation
- 9) Devin Hotzel, Enbridge/Valley Crossing Pipeline
- 10) Forrest Smith, Texas A&M University Kingsville/Texas Native Seeds
- 11) Dr. Shalene Jha, Self

A large portion of this section is based upon the oral and written testimony of the individuals listed above.

---

## **Monarch Butterfly Populations**

Each fall, monarchs that breed east of the Rocky Mountains in the northern United States and southern Canada undertake a vast migration to the Oyamel fir forests in the mountains of central Mexico. Due to its strategic placement on the migratory path, Texas serves as a crucial component in the eastern North American Migrating Monarch's life cycle. Texas is key to providing monarchs with much needed nectar and lipids as fuel for the species' to complete their journey to Mexico and enter a hibernating condition called "diapause" during the winter months. Those monarchs that survive the winter months begin their journey back north through Texas around late February of the following year. These monarchs are known as the first generation. Due to the monarchs' short life spans, it takes up to 4 generations to complete a full year of their migration. As they travel back up through Texas, the first generation female monarchs plant their eggs on milkweed plants along the way. This is called the Spring Range. As the first generation monarchs die off, the second generation emerges and continues the journey north. This is called the Summer Breeding Range.

During the Summer Breeding Range, monarchs reside throughout the northern United States and southern Canada in most places where milkweeds, their sole host plants, are available for the females to lay their eggs. 2 or 3 more generations of monarchs will emerge during this range. Those generations of monarchs and their larvae must face harsh conditions in the summer months including insects and birds, bad weather, and habitat destruction. Of those that survive the conditions in the Summer Breeding Range, the final generation of monarch will fly south to Mexico in August or September, and begin the full cycle again.

The monarch butterfly has significantly declined in population since the 1990s when overwintering numbers topped 1 billion in the Oyamel forests in Mexico.<sup>80</sup> The overwintering numbers hit an all time low of 35 million in the winter of 2013-2014.<sup>81</sup> These declines were so severe that a group of biologists petitioned the U.S. Fish and Wildlife Service to list the North American monarch as a threatened species under the U.S. Endangered Species Act (ESA) in August 2014, triggering the mandatory 90-day finding. The U.S. Fish and Wildlife Service then determined that the petition held sufficient merit for a 12-month review of the species. As part of the 12-month review (which may take longer than 12 months), the USFWS will conduct a Species Status Assessment (SSA) of the species to evaluate the status of monarch populations globally.<sup>82</sup> The recent overwintering estimates confirm a significant increase since the winter of 2013-2014, however the species continues to experience a downward trend.<sup>83</sup> The latest estimates from Texas A&M University show that the overwintering numbers totaled 124 million monarchs in the winter of 2017-2018.<sup>84</sup>

The decline of the monarch population is due to multiple factors including:<sup>85</sup>

- Illegal logging in the Oyamel fir forests in Mexico;
- Extreme weather conditions in overwintering and breeding grounds;
- Decline in milkweed and nectar-producing plant availability in the Midwestern breeding grounds;
- Habitat Loss and Fragmentation;

- 
- Disease; and
  - Herbicide and Insecticide Use.

After the 2014 petition to list the monarch as a threatened species, stakeholder groups, state agencies, academics, private industry, and citizen activists have come together to implement several studies and programs to keep the monarch off this list. Since the monarch is a migratory species and covers up to 2,500 miles a year, there is not one state or country that can take ownership of this species' sole habitat.

The Midwest Association of Fish and Wildlife Agencies (MAFWA) is made up of state fish and wildlife agencies, other conservation organizations and stakeholders from Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, and Wisconsin.<sup>86</sup> In June 2018, MAFWA included the states of Arkansas, Oklahoma, Texas and member states of the Northeast Association of Fish and Wildlife Agencies in their final Mid-America Monarch Conservation Strategy for 2018-2038.<sup>87</sup> This Strategy is a collaborative effort to reverse monarch population decline through their entire migratory route within the United States.

As a result of discussions and conversations over the past year, a group of stakeholders formed the Texas Monarch Consortium to develop the Texas Monarch Conservation Plan. This working group is made up of professionals from federal and state agencies, non-profit organizations, and the private sector. Due to the tight deadlines of the U.S. Fish and Wildlife Service's status review and associated Species Status Assessment (SSA), the Consortium's executive committee plans to complete a draft in fall 2018. The Plan will build upon the Mid-America Strategy, while tailoring their actions to specific monarch conservation issues unique to Texas.<sup>88</sup>

Federally, the U.S. Fish and Wildlife Service released their Monarch Conservation Database on June 13, 2018, where stakeholder groups (such as MAFWA and the Texas Monarch Consortium) across the United States can submit detailed reports on their Monarch conservation efforts. The Service will review all of these reports in accordance with the *Policy for Evaluation of Conservation Efforts when Making Listing Decisions* (PECE) Guidelines in the Federal Register and utilize them in their final listing decision.<sup>89</sup> The Service is legally required to submit to the Federal Register a 12-month finding on the ESA status for the monarch butterfly by **June 30, 2019.**<sup>90</sup>

On July 18, 2018, the Texas Parks and Wildlife Department informed that there is much uncertainty as to what will happen in Texas if the Monarch butterfly is to be listed.<sup>91</sup> They suggested that a 4(d)<sup>92</sup> type rule may be implemented in that situation to allow for involuntary take of that species for some activities, such as a car driving down the highway and hitting a monarch.<sup>93</sup> However, there is no concrete answer as to the ruling and impact of a potential listing on the State of Texas.

Due to the uncertainty of the decision and overall concerns of population declines, several government, non-profit, and private sector organizations have taken on various conservation efforts to preserve and promote monarch butterfly populations within Texas.



---

Economic impact from the monarch butterfly on crops in the United States is difficult to determine, but when combined with other pollinator species, is significant. In Mexico, economic impact from the monarch comes in the form of tourism dollars during the winter months. JM Butterfly B&B in Macheros, Mexico is one example of a family owned hotel and ecotourism service that is benefitting from the monarch's migration.<sup>94</sup>

---

## **Native and Domesticated Bee Populations**

Native and domesticated insect pollinators including monarch butterflies, Western honey bees, and other native species of bees, butterflies, moths, beetles, wasps, and flies provide an important service pollinating native plants and agricultural crops.<sup>95</sup> In 2016, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimated that animal pollinators enhance global crop output by an additional \$577 billion annually.<sup>96</sup> In a letter dated August 1, 2013, the United States Department of Agriculture estimates that insect-pollinated agricultural commodities result in significant income for agricultural producers and account for over \$20 billion in annual U.S. agricultural production.<sup>97</sup> The Texas Parks & Wildlife Department estimates that native bees are responsible for \$3 billion a year in U.S. agriculture.<sup>98</sup> Finally, native bees and other insect pollinators are critical to our native ecosystems that in turn support major outdoor and nature-based economies like hunting and wildlife viewing. In 2016, the United States Fish and Wildlife Service published their National Survey of Fishing, Hunting, and Wildlife-Associated Recreation estimating that hunters and wildlife watchers in this country spend upwards of \$102 billion annually.<sup>99</sup>

In Texas, both domesticated and native bee populations have been declining over the last decade. Disease, parasitism, and interactions between threats have also been cited as major factors leading to bee declines.<sup>100</sup>

The Texas Apiary Inspection Service of Texas A&M AgriLife Research (TAIS) conducts routine inspections of migratory bee keeping operations to mitigate the presence of honey bee pests and diseases, as well as permits the movement of hives within the state and across state lines.<sup>101</sup> The apiary industry of Texas is largely comprised of migratory operations that provide honey production and pollination services.<sup>102</sup> According to the United States Department of Agriculture National Agricultural Statistics Service (USDA NASS) there were 120,000 honey producing colonies in Texas over the course of 2017. These colonies produced 7,920,000 pounds of honey with a production value of \$16,711,000.<sup>103</sup>

Since the 1950s, there has been a steep decline in the number of managed honey bee colonies in the U.S. from 5.9 million colonies in 1947 to 2.3 million in 2013.<sup>104</sup> According to the Bee Informed Partnership's national survey, Texas experienced a total honey bee colony loss of 34.5%, which is slightly less than the national loss of 40.1%.<sup>105</sup> TAIS tests for American Foulbrood, *Nosema* (*Nosema spp.*), and Varroa mite to mitigate the presence of pests and diseases in the Texas apiary industry.<sup>106</sup>

Varroa mites, indigenous to Asia, were accidentally introduced into the United States in the 1980s and have since spread across the country. They are an ectoparasite that live on and interact with the environment via their host. While they do not kill adult honey bees, they can weaken the host lifespans and will ultimately kill the colony by outcompeting their host.<sup>107</sup> *Nosema* is a gut microsporidian that can cause honey bee digestive issues and weaken the worker force of a colony.<sup>108</sup>

Another cause of honey bee decline is Colony Collapse Disorder (CCD), which was first reported in 2006. It is a phenomenon that occurs when a majority of worker bees in a colony

---

disappear, leaving behind the queen, nurse bees, and baby bees. Without the worker bees to bring back nectar and pollen, the colony collapses. Scientists have been studying CCD since its inception and believe that a combination of factors including pollution, Varroa mites, and pests contribute to this phenomenon.<sup>109</sup>

Pesticide exposure to pollinators continues to be an area of research and concern, particularly the systemic pesticides such as neonicotinoids.<sup>110</sup>

Over 700 native species of bees call Texas home, and 17 are listed as Species of Greatest Conservation Need (SGCN) by the Texas Parks & Wildlife Department.<sup>111</sup> Texas lays claim to 9 different species of Bumblebees, the most recognized and familiar native bee in Texas.<sup>112</sup> A 2015 [study](#) from the USDA funded Integrated Crop Pollination Project suggests that there is growing evidence that wild, unmanaged bees can provide effective pollination services where sufficient habitat exists to support their populations.<sup>113</sup> They can also contribute to the long-term stability of crop pollination, thereby reducing the risk of pollination deficits from variable supply or activity of honey bees.<sup>114</sup>

Along the Texas Gulf Coast, cotton fields were shown to be pollinator-limited, and researchers estimated potential gains of \$108 per acre per crop with increased native pollinator populations.<sup>115</sup> Native insects can be the primary pollinator of some crops<sup>116</sup>, and nearly 80% of native plants require insect pollination.<sup>117</sup> When the importance of native plants in rangelands and for nature-based economies (e.g. hunting and nature tourism) are considered, the services provided by native insect pollinators rises to over \$71 billion / year.<sup>118</sup>

Reasons for native bee decline include competition with domesticated honey bees and habitat destruction. Native bees are the primary pollinators of native plants in Texas and more effective and efficient at pollinating certain crops, such as blueberries, melons, squashes, and tomatoes.<sup>119</sup> An accurate tally of the total native bee population that occurs in Texas is not yet available and little data exists on the factors that affect their population. In Texas, however, some pollinator populations may be stable relative to other parts of the country. In northeast Texas, for example, researchers have recently documented persistent populations of several species of bumble bees.<sup>120</sup> This could be due to the prevalence of native and semi-natural range lands in the state that, when managed correctly, can provide high-quality pollinator habitat.<sup>121</sup>

Honey bee monopolization of food resources can displace native bees to less preferred plant species, suppress reproductive success, and reduce abundance.<sup>122</sup> Additionally, in contrast to above-ground colonies, 70% of native bees are ground-nesting bees.<sup>123</sup> When the soil is disturbed through aggressive mowing, construction, or any other activity involving their nests, their habitat is lost.<sup>124</sup>

---

## **Pollinator Conservation Efforts**

### **Texas Parks and Wildlife Department<sup>125</sup>**

To promote conservation and management actions that benefit monarchs and other native insect pollinators, the Texas Parks and Wildlife Department (TPWD) has produced a statewide monarch and native pollinator conservation plan and management recommendations for native insect pollinators. The management recommendations document is specifically produced for the benefit of landowners seeking agricultural tax valuation for wildlife management and discusses how the seven qualifying wildlife management practices utilized in wildlife management plans can be geared specifically for native insect pollinators. As of 2016, over 5 million acres were enrolled in wildlife management plans for agricultural tax valuation.<sup>126</sup> TPWD has been actively engaged in additional state and regional monarch conservation efforts including the Texas Monarch Consortium and the Midwest Association of Fish and Wildlife Agencies' Mid-America Monarch Conservation Strategy.

Finally, TPWD staff works on both private and public lands, to restore habitat that benefits monarchs and native pollinators. Since 2014, TPWD's technical guidance program has been used to enroll over 7 million acres of private lands in wildlife management practices that can benefit monarchs and native insect pollinators (Table 1). Additionally, management activities that benefit native pollinators have been conducted on nearly 300,000 acres of state lands (Table 2), and 2000 acres of high-quality habitat for upland birds, which is also habitat for native pollinators, has been created through their private lands program. Finally, several State Parks have interpretive programs that include information and activities related to monarchs and native insect pollinators.

### **Office of the Comptroller of Public Accounts**

In 2011, the Texas Legislature authorized the Office of the Comptroller of Public Accounts to promote compliance with federal law protecting endangered species and candidate species in a manner consistent with his state's economic development and fiscal stability.<sup>127</sup> Since then, the Legislature has appropriated \$15 million to fund research through the agency on species of concern, such as those petitioned for listing under the Endangered Species Act like the monarch or species that are already listed under law.<sup>128</sup> The Comptroller's Office identified the monarch butterfly as one of the priority species for research based on the data gaps for the species in Texas, as well as the potential economic impacts if the species is listed.<sup>129</sup>

Given the importance of this species, they developed a comprehensive monarch research program that is designed to specifically inform the U.S. Fish & Wildlife Service during the Species Status Assessment (SSA) process. The Office of the Comptroller has tasked and funded Sam Houston University, Texas A&M University, Texas A&M University Commerce, and the University of Texas at San Antonio with this research. Final research reports were produced in July 2016 and September 2018, and additional final reports are expected by the end of 2018. All final reports and data are sent directly to the U.S. Fish & Wildlife Service and made available to the public. In addition, in 2015, the Comptroller's Office established a monarch butterfly working group to engage interested stakeholders and provide information about monarch

---

research, conservation efforts and the SSA process.

### **Texas Department of Transportation<sup>130</sup>**

Since 1932, the Texas Department of Transportation (TxDOT) has used native wildflowers and grasses to line the more than 800,000 acres of right of ways in Texas. Their main point of focus is to control erosion issues in the right of ways, but the side benefit allows them to provide food and habitat for pollinators as well. To protect and preserve these investments, TxDOT practices integrated vegetation management. HB 3302 in the 84th Texas Legislature required TxDOT to use regionally appropriate plants in its rights of way. Each of the 25 regional TxDOT districts has a vegetation manager who oversees proper application of techniques, which vary by region, road type and function. By establishing sustainable vegetation management programs that specifically address wildflower preservation and protection, TxDOT has maintained biodiversity while reducing mowing and maintenance costs.

Passed in 2015, the Fixing America's Surface Transportation (FAST) Act, the current federal transportation reauthorization bill, contains provisions to encourage pollinator habitat and forage on transportation rights of way. As a result, TxDOT entered into the Monarch Highway Memorandum of Understanding with five states (Oklahoma, Missouri, Minnesota, Kansas, & Iowa) to promote pollinator-friendly maintenance practices on roadsides along the IH-35 migration route.

In 2015, TxDOT facilitated a cooperative agreement between the United States Fish and Wildlife Service (USFWS) and the Native Plant Society of Texas (NPSOT) to allow for those entities to plan, establish and maintain monarch gardens at TxDOT Safety Rest Areas. Four such installations are currently operational:

- north and southbound Hill County Safety Rest Areas on IH-35 near Hillsboro; and
- north and southbound Bell County Safety Rest Areas on IH-35 near Salado.

### **Texan by Nature<sup>131</sup>**

Texan by Nature is a non-profit organization founded by former First Lady Laura Bush. They bring business and conservation together for positive impact for our natural resources, people, and economy.

In June 2017, Texan by Nature hosted the South-Central Monarch Symposium--as part of a project funded by the National Fish and Wildlife Foundation. This working symposium brought together 200 conservationists, landowners, and researchers throughout Texas and Oklahoma representing over 80 organizations to discuss the status of efforts underway for recovery of the monarch.

Through the Symposium and subsequent stakeholder meetings, Texan by Nature has discovered the following:

1. Private lands are key to recovery efforts



- 
2. Industry right-of-ways can create corridors of habitat that align with the migratory path of the monarch, and
  3. Public and private partnerships are needed to create and implement practical solutions.

Over 95% of Texas lands are privately owned. Effective monarch and native pollinator conservation will require private landowner engagement and involvement. These lands will play a significant role in creating, conserving, and maintaining native pollinator habitat. Thousands of landowners on millions of acres are already engaged in wildlife management. They are key in supporting monarch conservation efforts.

Industry right-of-ways that include oil, gas, utility, rail, and roads create a network of corridors and patches along the migration route through Texas spanning hundreds of miles and thousands of acres. Restoring these lands to native pollinator friendly rangeland would produce hundreds of miles of connective habitat needed by all pollinators.

### **Enbridge/Valley Crossing Pipeline<sup>132</sup>**

Enbridge's Valley Crossing Pipeline is a natural gas pipeline that spans 168 miles beginning in Nueces County down to the City of Brownsville and goes 9 miles offshore in Texas waters. It connects Texas Gas producers with increasing demand markets in South Texas and Mexico for power generation and local distribution. Construction for the project started in April 2017 and it is on track for October 2018.<sup>133</sup>

The pipeline crosses the King Ranch property in Kenedy County. The King Ranch landowners approached Enbridge with an opportunity to utilize a Texas Native Seeds monarch friendly seed mix in their right of way. After speaking with Dr. Forrest Smith of Texas Native Seeds and the Texas A&M Kingsville Caesar Kleberg Institute, they were blown away by the idea and immediately agreed to it. They utilized contractor crews to receive the seed mix and deploy it on their right of way property.

They then began approaching other landowners to see if they might be interested in utilizing their seed mix. All of the landowners on their right of way in Kenedy County agreed and the result is an uninterrupted 46 mile monarch corridor on the Valley Crossing Pipeline in South Texas. Enbridge sees their role as industry is being able to provide a financial donation, as well as being able to promote the idea that this great resource exists in Texas. Enbridge's investment in community programs and projects will positively impact the community and has sparked interest with other industry partners.

### **Texas Native Seeds<sup>134</sup>**

The Texas Native Seeds Program's mission is to develop and commercialize native seed sources for large scale restoration in Texas, and to facilitate the conservation and restoration of native habitats through research and education. Their work began in 2001 as the South Texas Natives Project, and has since expanded throughout Texas as the Texas Native Seeds Program. Texas Native Seeds believes Texas must continue to support efforts to conserve native habitats in our state, on public, but especially on private lands. Additionally, they believe that the greatest

---

limitation to restoration of native habitats to benefit pollinators is the lack of supply of ecologically appropriate native seeds to use in restoration activities.

Texas Native Seeds worked together with Enbridge, the King Ranch, and private landowners in Kenedy County to reseed 46 miles of a new gas pipeline right of way with native plants, including beneficial nectar plants for monarchs and pollinators. This project was made possible because seed supplies of the appropriate plants were commercially available for this region. TxDOT has been part of the Texas Native Seeds Program for the past two decades. They partnered with Texas A&M University – Kingsville, Tarleton State University, Texas AgriLife Research and Sul Ross State University to develop regionally appropriate native plant seed sources for use by TxDOT and other entities.<sup>135</sup> This work has resulted in 30 new native seed mix varieties and significant advancements in seeding methodology.<sup>136</sup> As a result of this research, seeding specifications have changed for over half of TxDOT’s 25 regional districts. TxDOT’s actions beneficially impact native seed markets, adjacent lands, and restoration in all sectors, particularly for pollinators.

### **Texas Wildlife Association<sup>137</sup>**

The Texas Wildlife Association is an organization that serves Texas wildlife and its habitat, while protecting property rights, hunting heritage, and the conservation efforts of those who value and steward wildlife resources. TWA members are stalwart land stewards who rally around the importance of working together to improve and promote healthy ecosystems. They do this by collaborating closely with state, federal, and NGO partners to disseminate information to private landowners through field days, landowner workshops, online web, print, and social media. Additionally, in 2017, the Texas Wildlife Association hosted a Monarch Educator series for 1,035 educators. Those teachers, in turn, potentially reached 172,256 students collectively.

---

## **INTERIM CHARGE #4 - MONITORING CHARGE**

The Texas House Committee on Culture, Recreation & Tourism held a public hearing on Interim Charge #4 on June 5, 2018 in Brownsville, TX. The Committee heard invited testimony on the following areas under the Committee's jurisdiction:

- Texas Historical Commission Programs
- Texas Parks and Wildlife Border Operations

The following witnesses testified on the charge:

- 1) Col. Grahame Jones, Texas Parks and Wildlife Department
- 2) Trey Mendez, Brownsville Preservation Society
- 3) Gilberto Salinas, Greater Brownsville Incentives Corporation
- 4) Mark Wolfe, Texas Historical Commission

A large portion of this section is based upon the oral and written testimony of the individuals listed above.

---

## **Texas Historical Commission Programs**<sup>138</sup>

### ***Texas Heritage Trails Program***

In 2015, Rutgers University and UT Austin released a report on the Economic Impact of Historic Preservation in Texas. It found that business and leisure travelers to Texas who credit "visiting a historic site" as a primary activity spent close to \$7.3 billion in 2013, accounting for approximately 12.5% of total direct travel spending in Texas. These expenditures support hotels, motels, bed and breakfasts, food establishments, and other local retail and service businesses supporting over 50,000 jobs and contributing over \$2 billion to the state's labor income annually.

Since 1998, the Heritage Trails Program has been the primary source of heritage tourism information for the traveling public. It consists of 10 heritage regions covering every Texas county, each operated by its own nonprofit board of directors, coordinating their efforts through the Texas Historical Commission (THC). These board members and hundreds of other volunteers dedicate an enormous amount to this effort, providing more than 70,000 volunteer hours since 2006.

The heritage trail regions are mapped and referenced in all of the THC heritage tourism brochures and websites. In addition to guides to historic places in Texas, the THC has guides and online mobile tours to the Red River War of 1874-1875, African American and Hispanic historic sites, and places significant to the Texas Battle for Independence, World War I, and World War II. THC maintains TexasTimeTravel.com, a portal to heritage tourism information across the state, and a place to download travel guides and mobile tour applications.

THC has distributed more than 7.5 million print travel guides through sites across the state, including TxDOT travel centers. They will continue producing print guides because of demand but their focus in the future will be digital media, especially aimed at millennial travelers and young families. These efforts are critical to smaller and underserved communities in Texas. Before last session, the City Manager of Spearman, Texas testified that their hotel/motel tax collects roughly \$10,000 a year. The Heritage Trails program is important to these communities, which are rich in heritage and history but do not have a large amount of funds for tourism marketing and outreach.

In the 85th Legislative Session, the Heritage Trails Program received \$1.5 million over the biennium.

### ***Texas Historic Courthouse Program***

Iconic Texas Courthouses are the civic, cultural, and commercial heart of many of our communities. Courthouse preservation and restoration has a significant economic impact not only in terms of materials and labor related to the work itself, but for many years after the work is done in terms of heritage tourism and downtown redevelopment.

Since first established in 1999, the state has invested more than \$290 million in its historic county courthouses. That investment has been matched by the counties with more than \$240

---

million, resulting in support for almost 10,000 jobs and generating income exceeding \$270 million. The program has produced state and local taxes of more than \$43 million.

Since 1999, the THC has participated in 67 full courthouse restorations. THC has seen firsthand the economic development benefits that come with these restorations, including businesses that open in and around the courthouse square to the potential creative endeavors from film production companies. They regularly hear of towns with revitalized courthouse squares that credit the restoration as being the investment that tipped the scale towards economic vitality and private investment.

THC's Main Street Program is another example of an approach to economic revitalization. The Main Street Program in Texas celebrates its 37th anniversary this year. Since 1981, the THC has seen a \$5.2 billion reinvestment in Main Street communities, with \$215 million in FY 2015 alone. It is no doubt that the 90 Main Street communities in Texas represent the best of our state.

---

## **Texas Parks and Wildlife Border Operations**<sup>139</sup>

For over 120 years, the Texas Game Wardens have been committed to protecting Texas' valuable and fragile natural resources including:

- Recreational Fishing;
- Commercial Fishing including:
  - Oysters
  - Red Snapper
  - Shrimp
  - Crabs
- Birding and Wildlife Viewing;
- Nongame, protected, threatened species, invasive species, and illegal wildlife trafficking;
- Hunting; and
- Boating and water safety.

These activities are worth billions of dollars to the Texas economy. As the State's population nears 30 million, those resources are now faced with an ever increasing demand.

As fully commissioned State Peace Officers, Game Wardens also provide valuable public safety to the people of Texas. Game Wardens often lead in search-and-rescue operations across the State. For example, over 300 Texas Game Wardens responded to Hurricane Harvey and rescued over 12,000 Texans by boat, vessel, and aircraft in impacted areas.

Texas Game Wardens are responsible for enforcement of the Parks and Wildlife Code, all TPWD regulations, and the Texas Penal Code. Game Wardens fulfill these responsibilities through educating the public about various laws and regulations, preventing violations by conducting high visibility patrols, and apprehending and arresting violators. The Law Enforcement Division employs 551 Game Wardens and 125 non-commissioned support staff, maintains a fleet of over 350 vessels, and operates 28 field offices that sell licenses, register boats, and provide the public with local information across the state. Texas Game Wardens engage with and educate the public including tens of thousands of our youth through extensive outreach programs annually.

The Texas Parks and Wildlife Department's Law Enforcement border mission is to protect the State's diverse, valuable, and fragile natural resources, protect the citizens of Texas and others by providing water safety, search and rescue, general law enforcement, and public safety duties. They accomplish this mission by supporting and working with local, state, and federal law enforcement partner agencies, other TPWD Divisions, NGOs, landowners, and the public.

Texas Game Wardens have patrolled the border region for more than a century. Game Wardens currently patrol the Gulf of Mexico, Laguna Madre, Rio Grande, Falcon Lake, Amistad Reservoir, rural ranchlands in South and West Texas, and communities along the border protecting both our natural resources and citizens. On a daily basis, Texas Game Wardens assist their partner law enforcement agencies including the Texas Department of Public Safety, Sheriff



---

Departments, Police Departments, and U.S. Border Patrol. In many cases, Game Wardens are a critical force multiplier to numerous state and federal agencies as well as rural local law enforcement agencies.

Texas Game Wardens in the border region leverage maritime expertise, off-road capabilities, and relationships within the community – including landowners, and knowledge of waterways and rural areas to:

- Reduce the likelihood of water related fatalities by enforcing the Texas Water Safety Act; and
- Protect the natural resources of Texas which includes the enforcement of illegal commercial fishing by reducing gill-netting and long-lining from Mexican commercial fishing fleets.

Recently, Game Wardens have been observing an increase in numbers of incursions by commercial fishing vessels entering into Texas Waters from Mexico. The vessels from Mexico are taking a large and ever-increasing number of reef fish including red snapper, sharks (primarily for their fins), and red drum.

Gill nets and long-lines are illegal in both Texas and federal waters and indiscriminately kill marine life. TPWD has recently documented dead dolphins, sea turtles, Osprey, Pelicans and many fish species including sailfish, King Mackerel, sharks, red drum, spotted sea trout, snook and other fish in gill nets and on long-lines set by fishing fleets from Mexico. When abandoned, Gill nets and long-lines, continue to kill large volumes of marine life.

Game Wardens have also seized thousands of pounds of marijuana on Mexican fishing vessels as well as illegal fishing equipment and in some instances illegal fishing equipment and hundreds of pounds of marijuana on the same vessel. Once observed, these vessels attempt to evade capture and initiate a pursuit. Most of the time, the vessels outrun TPWD vessels and return to Mexico prior to capture. In the last four years, Game Wardens have seized over 140 miles of long lines and 20 miles of gill net containing thousands of fish and other marine life.

A recent Fishery Impact Estimate by the United States Coast Guard determined that there are an estimated 1,130 lancha incursions a year.<sup>140</sup> The optimal catch for one lancha is 800-1,500 lbs. per trip.<sup>141</sup> However, the larger lanchas are known to catch upwards of 3,000 lbs. per trip.<sup>142</sup> An estimated 1,525,715 lbs. of red snapper were poached from U.S. waters by Mexican lanchas in 2013-2015, alone.<sup>143</sup>

Additionally, TPWD's border mission includes supporting landowners by reducing poaching, trespass, illegal dumping, fence cutting, vandalism, theft, and other property related crime. They also routinely extend humanitarian support to persons including women and children needing immediate medical assistance and Search and Rescue and have provided lifesaving emergency medical treatment to UDAs including mouth-to-mouth resuscitation.

Texas Game Wardens have maintained on-going border surge operations since June 2014 in support of Operation Strong Safety and Operation Secure Texas. The Law Enforcement Division

---

was appropriated \$7 million in border funding during the 2018-2019 biennium. These funds are being utilized for equipment (including repair and maintenance), training, fuel, Game Warden and State Park Police overtime, travel, lodging, and Game Warden salaries relating to TPWD's border mission and border operations.

In addition to daily land and water patrols, Texas Game Wardens have organized and conducted 30 border operations in FY18 that have resulted in the following:

- 619 TPWD Citations and Warnings
- 519 Other Citations and Warnings
- 86 Oyster Related Citations
- 101 Arrests including Human Smuggling, Aggravated Assault, and Narcotics
- 18,479 Lbs. of marijuana seized
- 20,400 feet of illegal gill net and over 5,000 feet of illegal long-line seized and removed from Texas waters

## APPENDIX

**Table 1:** Conservation activities (acres) benefitting monarchs and native pollinators on private lands (Texas) since 2014 via the TPWD Technical Guidance Program.

<b>Activity</b>	<b>Acres since 2014</b>
Livestock rotation/ deferrment	1,094,171
Range reseeding/ other vegetation management*	23,306
Brush clearing	3,871,762
Disking	269,505
Prescribed fire	2,221,411
* Numbers do not include reseeding with grass-only mixes or mixes designed for game species.	

144

**Table 2:** Conservation activities (acres) benefitting monarchs and native pollinators on state lands (Texas) since 2014.

<b>Activity</b>	<b>Acres since 2014</b>
Chemical and mechanical invasive plant control	15,624
Brush clearing/ thinning	2,622
Mowing for forb diversity	5,176
Land aquisition	1,488
Cattle rotation	113,000
Prescribed fire	126,793
Reseeding with native forbs	102

145

---

## ENDNOTES

<sup>1</sup> Testimony Provided by Carter Smith, Texas Parks and Wildlife Department, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>2</sup> Crompton, John and Jeong, Ji Youn. "The Economic Contributions of Texas State Parks" Department of Recreation, Park, and Tourism Sciences, Texas A&M University; 2014.

<sup>3</sup> *Id at 1.*

<sup>4</sup> Testimony Provided by Mark Wolfe, Texas Historical Commission, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, June 5, 2018 and July 18, 2018.

<sup>5</sup> State Historic Sites - Hurricane Harvey Damage, Texas Historical Commission, May 30, 2018.

<sup>6</sup> 16 U.S.C. 470f.

<sup>7</sup> *CMR. GEORGE P. BUSH ANNOUNCES HUD APPROVAL OF \$5 BILLION STATE ACTION PLAN FOR HURRICANE HARVEY HOUSING RECOVERY*, Press Release - Texas General Land Office, June 25, 2018.

<http://www.glo.texas.gov/the-glo/news/press-releases/2018/june/cmr-george-p-bush-announces-hud-approval-of-5-billion-state-action-plan-for-hurricane-harvey-housing-recovery.html>

<sup>8</sup> *State of Texas Plan for Disaster Recovery: Hurricane Harvey - Round 1*, Texas General Land Office, April 6, 2018. <http://texasrebuilds.org/Documents/Action%20Plan%20-%205%20Billion%20Final%20Draft%205-8-2018.pdf>

<sup>9</sup> Public Law No: 115-123, United States Bipartisan Budget Act of 2018.

<sup>10</sup> Texas General Appropriations Act 2018-2019.

<sup>11</sup> Testimony Provided by Mark Wolfe, Texas Historical Commission, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>12</sup> Testimony Provided by Dr. Gary Gibbs, Texas Commission on the Arts, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas July 18, 2018.

<sup>13</sup> *Hurricane Harvey Relief Grants Awarded to Arts Organizations and Artists*, Press Release - Texas Commission on the Arts, December 7, 2017.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> *Harvey Relief Grants - Fiscal Year 2018*, Texas Commission on the Arts.

<sup>17</sup> Harvey Arts Recovery. <http://www.harveyartsrecovery.org/>

<sup>18</sup> Testimony Provided by Gloria Meraz, Texas State Library and Archives Commission, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>19</sup> FEMA Recovery Policy, RP9523.3 - December 14, 2010.

[https://www.fema.gov/pdf/government/grant/pa/9253\\_3.pdf](https://www.fema.gov/pdf/government/grant/pa/9253_3.pdf)

<sup>20</sup> Testimony Provided by David Teel, Texas Travel Industry Association and Texas Commercial Airports Association, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism. Brownsville, Texas, June 5, 2018.

<sup>21</sup> *Strategic Tourism Plan, Fiscal Year 2018*, Office of the Governor, Economic Development & Tourism.

[https://travel.texas.gov/tti/media/PDFs/MOU-plan-2018\\_final\\_3.pdf](https://travel.texas.gov/tti/media/PDFs/MOU-plan-2018_final_3.pdf)

<sup>22</sup> *Id.*

<sup>23</sup> Testimony Provided by Bryan Daniel, Office of the Governor, Economic Development & Tourism, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

---

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> Testimony Provided by Susan Guthrie, City of South Padre Island, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Brownsville, Texas, June 5, 2018.

<sup>41</sup> *Id.*

<sup>42</sup> Testimony Provided by Jeffrey Hentz, Port Aransas Chamber of Commerce/Tourism Bureau, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *America's 25 Favorite Beach Towns*, Fodor's Travel, July 2018.

<sup>47</sup> *Id.* at 23.

<sup>48</sup> *Id.* at 23.

<sup>49</sup> *Id.* at 20.

<sup>50</sup> Written Testimony Provided by the Corpus Christi Convention and Visitors Bureau, October 23, 2018.

<sup>51</sup> *Id.* at 20.

<sup>52</sup> *Id.* at 20.

<sup>53</sup> *Id.* at 20.

<sup>54</sup> Testimony Provided by Bryant Walker, Brownsville South Padre Island International Airport, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Brownsville, Texas, June 5, 2018.

<sup>55</sup> FEMA News Release, *HQ-17-133*. <https://www.fema.gov/news-release/2017/09/22/historic-disaster-response-hurricane-harvey-texas>

<sup>56</sup> Testimony Provided by Chief Nim Kidd, Texas Division of Emergency Management, Public Hearing, Texas Senate State Affairs Committee, Austin, Texas, October 25, 2017.

<sup>57</sup> *Texas Emergency Management Executive Guide, FY 2017 Edition*, Texas Department of Public Safety/Texas Division of Emergency Management. <http://www.dps.texas.gov/dem/GrantsResources/execGuide.pdf>

<sup>58</sup> 37 T.A.C. §7.23.

<sup>59</sup> Public Assistance Donated Resources, FEMA Recovery Policy, June 25, 2018. [https://www.fema.gov/media-library-data/1530129122565-bbfdac5b88ffc3d7c59befce5593c993/Donated\\_Resources\\_Policy\\_2018\\_508.pdf](https://www.fema.gov/media-library-data/1530129122565-bbfdac5b88ffc3d7c59befce5593c993/Donated_Resources_Policy_2018_508.pdf)

<sup>60</sup> *Id.*

<sup>61</sup> Testimony Provided by Chief Nim Kidd, Texas Division of Emergency Management, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>62</sup> Testimony Provided by Cody Jones, Texas Parks & Wildlife Department, Public Hearing, Texas House Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

<sup>63</sup> Texas Parks & Wildlife Department, *Titles, Registration and Tax*. [https://tpwd.texas.gov/fishboat/boat/owner/titles\\_and\\_registration/](https://tpwd.texas.gov/fishboat/boat/owner/titles_and_registration/)

<sup>64</sup> *Id.*

<sup>65</sup> United States Coast Guard, *A Boater's Guide to the Federal Requirements for Recreational Boats*. <https://www.uscgboating.org/images/420.PDF>

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> Texas Parks & Wildlife Department, *Reciprocity Requirements for Visiting Boaters*. [https://tpwd.texas.gov/publications/nonpwdpubs/media/other\\_states\\_reciprocity.pdf](https://tpwd.texas.gov/publications/nonpwdpubs/media/other_states_reciprocity.pdf)

<sup>69</sup> Texas Department of Motor Vehicles, *Boat Registration and Licenses in Texas*. <https://www.dmv.org/texas/boat-registration.php>

<sup>70</sup> *Id.* at 64.

<sup>71</sup> *Id.* at 64.

<sup>72</sup> Texas Department of Public Safety, *TDEM Mission, Organization & Responsibilities*. <https://www.dps.texas.gov/dem/mission.htm>

<sup>73</sup> *Id.* at 58.

<sup>74</sup> Texas Department of Public Safety Division of Emergency Management, *TDEM Critical Information Systems*. [https://ticc.tamu.edu/Documents/IncidentResponse/AHIMT/2015Conference/CIS\\_Support\\_Presentation\\_2015.pdf](https://ticc.tamu.edu/Documents/IncidentResponse/AHIMT/2015Conference/CIS_Support_Presentation_2015.pdf)

<sup>75</sup> Written Testimony Submitted by Harris County Fire Marshall's Office, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Austin, Texas, July 18, 2018.

---

- 
- <sup>76</sup> Public Hearing, Louisiana House of Representatives Committee on the Judiciary, Baton Rouge, LA, April 6, 2018.
- <sup>77</sup> *Id.*
- <sup>78</sup> State of Louisiana Act No. 548, 2018.
- <sup>79</sup> Louisiana Senate Chamber, May 11, 2018.
- <sup>80</sup> Texas Parks & Wildlife Department, *Texas Monarch and Native Pollinator Conservation Plan*.  
[https://tpwd.texas.gov/publications/pwdpubs/media/pwd\\_rp\\_w7000\\_2070.pdf](https://tpwd.texas.gov/publications/pwdpubs/media/pwd_rp_w7000_2070.pdf)
- <sup>81</sup> *Id.*
- <sup>82</sup> Testimony Provided by Dr. Ben Hutchins, Texas Parks & Wildlife Department, Joint Public Hearing, Texas House Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.
- <sup>83</sup> *Id.*
- <sup>84</sup> Texas A&M University, *Monarch Butterfly Numbers Down Again, Says Texas A&M Expert*.  
<https://today.tamu.edu/2018/03/06/monarch-butterfly-numbers-down-again-says-texas-am-expert/>
- <sup>85</sup> *Id.* at 81.
- <sup>86</sup> Midwest Association of Fish and Wildlife Agencies, *Mid-America Monarch Conservation Strategy Governance Structure and Strategy Development Members*, May 2018.
- <sup>87</sup> Midwest Association of Fish and Wildlife Agencies, *Mid-America Monarch Conservation Strategy for 2018-2038*. [http://www.mafwa.org/wp-content/uploads/2018/07/MAMCS\\_June2018\\_Final.pdf](http://www.mafwa.org/wp-content/uploads/2018/07/MAMCS_June2018_Final.pdf)
- <sup>88</sup> Texas Monarch Consortium Preliminary Executive Committee Letter to Texas monarch conservation practitioners and researchers, 2018.
- <sup>89</sup> 68 FR 15100.
- <sup>90</sup> Center for Food Safety, et al., v S.M.R. Jewell in her official capacity as Secretary of the U.S. Department of the Interior, et al., No. 1:16-cv-01008-EGS.
- <sup>91</sup> *Id.* at 83.
- <sup>92</sup> U.S. Fish & Wildlife Service, *Endangered Species Act Special Rules, Questions and Answers*.  
[https://www.fws.gov/mountain-prairie/factsheets/ESA%20SpecialRules%20Factsheet\\_020714.pdf](https://www.fws.gov/mountain-prairie/factsheets/ESA%20SpecialRules%20Factsheet_020714.pdf)
- <sup>93</sup> *Id.*
- <sup>94</sup> Dr. Ellen Sharp, *ECONOMIC DEVELOPMENT FOR THE MONARCHS' MEXICAN NEIGHBORS*, Texan By Nature South-Central Monarch Symposium, 2017.
- <sup>95</sup> *Id.* at 83.
- <sup>96</sup> IPBES, *Safeguarding pollinators and their values to human well-being*. <https://www.ipbes.net/system/tdf/potts-et-al.-2016-safeguarding-pollinators.pdf?file=1&type=node&id=16796>
- <sup>97</sup> USDA Letter from the Farm Service Agency and National Resource Conservation Service to All FSA State Executive Directors and NRCS State Conservationists, August 1, 2013.
- <sup>98</sup> Texas Parks & Wildlife Department, *Management Recommendations for Native Insect Pollinators in Texas*,  
[https://tpwd.texas.gov/publications/pwdpubs/media/pwd\\_bk\\_w7000\\_1813.pdf](https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_1813.pdf).
- <sup>99</sup> U.S. Fish & Wildlife Service, *2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*.  
[https://wsfrprograms.fws.gov/subpages/nationalsurvey/nat\\_survey2016.pdf](https://wsfrprograms.fws.gov/subpages/nationalsurvey/nat_survey2016.pdf)
- <sup>100</sup> Sanchez-Bayo F., D. Goulson, F. Pennacchio, F. Nazzi, K. Goka, and N. Desneux. 2016. Are bee diseases linked to pesticides? – A brief review. *Environment International* 89-90: 7-11.
- <sup>101</sup> Testimony Provided by Ms. Mary Reed, Texas Apiary Inspection Service, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.
- <sup>102</sup> *Id.*
- <sup>103</sup> *Id.*
- <sup>104</sup> Texas Parks & Wildlife Department, *Western (European) Honey Bees on Texas Parks and Wildlife Department Lands Managed for Native Biodiversity Issue Brief*. <https://tpwd.texas.gov/publications/pwdpubs/media/Issue-Briefing-Paper-Honey-Bees-on-TPWD-Lands.pdf>
- <sup>105</sup> *Id.* at 102.
- <sup>106</sup> *Id.* at 102.
- <sup>107</sup> Texas Apiary Inspection Service, *Varroa Mites*. <https://txbeeinspection.tamu.edu/varroa-mites/>
- <sup>108</sup> *Id.* at 102.
- <sup>109</sup> National Geographic, *What We Now Know - and Don't Know - About Honeybees and Colony Collapse Disorder*.  
<https://blog.nationalgeographic.org/2016/09/27/what-we-now-know-and-dont-know-about-honeybees-and-colony-collapse-disorder/>
- <sup>110</sup> USDA, *Report on the National Stakeholders Conference on Honey Bee Health*.
-



---

<https://www.usda.gov/sites/default/files/documents/ReportHoneyBeeHealth.pdf>

<sup>111</sup> *Id.* at 81.

<sup>112</sup> Texas Parks & Wildlife Department, *Bumble Bee Identification*.

[https://tpwd.texas.gov/huntwild/wild/wildlife\\_diversity/nongame/native-pollinators/bumblebee-id.phtml](https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/native-pollinators/bumblebee-id.phtml)

<sup>113</sup> Proceedings of the National Academy of Sciences of the United States of America, *Modeling the status, trends, and impacts of wild bee abundance in the United States*. <http://www.pnas.org/content/pnas/113/1/140.full.pdf>

<sup>114</sup> *Id.*

<sup>115</sup> Cusser, S., J. L. Neff, and S. Jha. 2016. Natural land cover drives pollinator abundance and richness, leading to reductions in pollen limitation in cotton agroecosystems. *Agriculture, Ecosystems, and Environment* 226: 33-42.

<sup>116</sup> Garibaldi, L. A., et al., 2013. Wild pollinators enhance fruit set of crops regardless of honey bee abundance. *Science* 339: 1608-1611.

<sup>117</sup> Ollerton, J., R. Winfree, and S. Tarrant. 2011. How many flowering plants are pollinated by animals? *Oikos* 120: 321-326.

<sup>118</sup> Losey, J. E., and M. Vaughan. 2006. The economic value of ecological services provided by insects. *BioScience* 56: 311 – 323.

<sup>119</sup> *Id.* at 99.

<sup>120</sup> Beckham, J. L., M. D. Warriner, S. F. Atkinson, J. H. Kennedy. 2016. The persistence of bumble bees (Hymenoptera: Apidae) in Northeastern Texas. *Proceedings of the Entomological Society of Washington* 118: 481-497.

<sup>121</sup> *Id.* at 99.

<sup>122</sup> *Id.* at 105.

<sup>123</sup> The Jha Lab at the University of Texas, *Pollination Services*. <http://w3.biosci.utexas.edu/jha/about-native-bees>

<sup>124</sup> Xerces Society for Invertebrate Conservation, *Nests for Native Bees*. [http://www.xerces.org/wp-content/uploads/2008/11/nests\\_for\\_native\\_bees\\_fact\\_sheet\\_xerces\\_society.pdf](http://www.xerces.org/wp-content/uploads/2008/11/nests_for_native_bees_fact_sheet_xerces_society.pdf)

<sup>125</sup> *Id.* at 83.

<sup>126</sup> J. Holcomb, Personal Communication, April 11, 2018.

<sup>127</sup> SB 1, Sec 67.01, 1st Called Special Session of the 82nd Texas Legislature, Page 218.

<sup>128</sup> Testimony Provided by Megan Hope, Office of the Comptroller of Public Accounts, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.

<sup>129</sup> *Id.*

<sup>130</sup> Testimony Provided by Dan Stacks, Texas Department of Transportation, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.

<sup>131</sup> Testimony Provided by Texan by Nature, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.

<sup>132</sup> Testimony Provided by Devin Hotzel, Enbridge/Valley Crossing Pipeline, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.

<sup>133</sup> San Antonio Business Journal, *Rough seas delay work on final section of cross-border pipeline*, May 11, 2018. <https://www.bizjournals.com/sanantonio/news/2018/05/11/rough-seas-delay-work-on-final-section-of-cross.html>

<sup>134</sup> Testimony Provided by Dr. Forrest Smith, Texas Native Seeds/Caesar Kleberg Wildlife Research Institute, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.

<sup>135</sup> *Id.* at 131.

<sup>136</sup> *Id.* at 131.

<sup>137</sup> Testimony Provided by Iliana Pena, Texas Wildlife Association, Joint Public Hearing, Texas House of Representatives Committees on Culture, Recreation & Tourism and Agriculture & Livestock, Austin, Texas, July 18, 2018.

<sup>138</sup> *Id.* at 4.

<sup>139</sup> Testimony Provided by Colonel Grahame Jones, Texas Parks & Wildlife Department, Public Hearing, Texas House of Representatives Committee on Culture, Recreation & Tourism, Brownsville, Texas, June 5, 2018.

<sup>140</sup> United States Coast Guard Eighth District, *Mexican Lancha Threat Overview and Economic Impact Analysis Model Results*, May 19, 2015. <http://www.ccatexas.org/wp-content/uploads/2015/05/Lancha-Brief-TX-CCA-Version-19-May-2015.pdf>

<sup>141</sup> *Id.*

---

<sup>142</sup> *Id.*

<sup>143</sup> Gulf of Mexico Fishery Management Council Minutes, January 28, 2015. <https://gulfcouncil.org/wp-content/uploads/Full-Council-Minutes-01-15.pdf>

<sup>144</sup> *Id at 83.*

<sup>145</sup> *Id at 83.*