



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



HOUSE COMMITTEE ON AGRICULTURE  
AND LIVESTOCK

*January 2019*

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**HOUSE COMMITTEE ON AGRICULTURE AND LIVESTOCK  
TEXAS HOUSE OF REPRESENTATIVES  
INTERIM REPORT 2018**

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

**TRACY O. KING  
CHAIRMAN**

**COMMITTEE CLERK  
SAM BACARISSE**

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Committee On  
Agriculture and Livestock

January 7, 2019

Tracy O. King  
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P.O. Box 2910  
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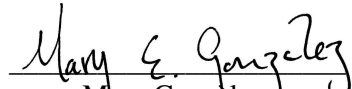
The Honorable Joe Straus  
Speaker, Texas House of Representatives  
Members of the Texas House of Representatives  
Texas State Capitol, Rm. 2W.13  
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:


The Committee on Agriculture and Livestock of the Eighty-fifth Legislature hereby submits its interim report including recommendations and drafted legislation for consideration by the Eighty-sixth Legislature.

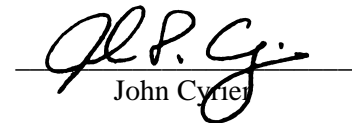
Respectfully submitted,

  
Tracy O. King

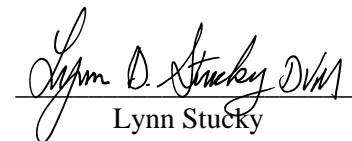
  
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Vice-Chairman

Members: Charles "Doc" Anderson, Dustin Burrows, John Cyrier, Matt Rinaldi, Lynn Stucky

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## TABLE OF CONTENTS

HURRICANE HARVEY .....	7
TEXAS OLIVE AND OLIVE OIL INDUSTRY .....	14
SEED CERTIFICATION .....	15
POLLINATOR CONSERVATION IN TEXAS .....	17
INVASIVE ORGANISMS .....	25
CENTRAL FILING .....	28
INDUSTRIAL HEMP .....	31
STRUCTURAL PEST CONTROL .....	40
ENDNOTES .....	43

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# **AGRICULTURE AND LIVESTOCK**

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## HURRICANE HARVEY

*Review the Texas Department of Agriculture's and the Texas Animal Health Commission's role in the response to Hurricane Harvey. Examine the short-term and long-term economic and agricultural impacts to producers in the agriculture and livestock industries in Texas as a result of Harvey. Identify ways to mitigate the impact and prevent substantial losses from Harvey and future natural disasters.*

Hurricane Harvey made landfall in Texas on August 25th, 2017. This was a Category 4 Hurricane -- the first major Category 3 or higher -- hurricane since Wilma hit Florida in 2005 and the first major hurricane to strike southern Texas since 1970. As the second most costly hurricane to hit the U.S. mainland since 1900, the damage and impact caused by Harvey was simply devastating, and its aftermath will forever be felt. As such, it is in the interest of the State to examine the impact Harvey had on Texas agriculture and the mitigation and response efforts led by the relevant agencies.

The House Agriculture and Livestock Committee was tasked with examining the Texas Department of Agriculture's and the Texas Animal Health Commission's role in responding to Hurricane Harvey. Because of their broad and vital work, the Committee also decided to include a review of the Texas A&M AgriLife Extension Service.

The Committee would like to begin by commending the remarkable work done by Texas A&M AgriLife Extension Service, the Texas Animal Health Commission, and the Texas Department of Agriculture for their hard work in the face of Hurricane Harvey.

### **Texas A&M AgriLife Extension Service**

Hurricane Harvey's high winds and heavy rain brought destruction across 67,000 square miles and some 42 million acres — an area larger than the State of Oklahoma. In response, the Texas A&M AgriLife Extension Service:

- activated 13 animal supply points,
- distributed hay and feed,
- hosted thousands of displaced animals,
- supported thousands of displaced families and individuals,
- responded to agricultural losses,
- helped resolve local issues,
- tested water wells for contamination, and
- disseminated accurate information to the public.

### **Supplying Hay and Feed**

In the days and weeks following Harvey's landfall, AgriLife Extension staff opened 13 animal supply points (ASPs) to provide access to fresh feed and hay to livestock producers and 4-H and

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FFA members impacted by Hurricane Harvey. AgriLife Extension also managed a donations hotline to coordinate \$1.3 million's worth of hay and feed donations that poured in from Texas and the United States.

Some 120 AgriLife Extension personnel from across Texas were activated to provide support to the ASPs. These employees worked with volunteers as well as staff from the Texas Animal Health Commission, Texas Department of Agriculture, United States Department of Agriculture, and Texas military forces to distribute 5,100 tons of hay, 530 tons of cattle cubes, 432 tons of horse feed, 451 tons of all stock feed, and 235 tons of pet food.

### **Responding to Agricultural Losses**

Extension agents and specialists led efforts to determine the impact of Hurricane Harvey on Texas agriculture producers. Cotton losses were estimated at \$100 million and rice and soybean losses estimated at \$8 million. Total livestock losses were estimated at \$93 million.

Extension agents in the Texas Gulf Coast coordinated with the USDA-Natural Resource Conservation Service and USDA-Farm Services Administration to host a series of meetings to inform local agricultural producers of emergency funding available to offset losses from Harvey.

### **Supporting Displaced Families and Individuals**

Working with our Texas A&M Healthy Texas agents and specialists, local AgriLife Extension Family and Community Health agents prepared and distributed 3,500 personal hygiene kits to individuals and families impacted by the storm. These kits included insect repellent; hand sanitizer; and information on following food safety, caring for one's family after a disaster, and protecting oneself and one's family from mosquito-transmitted diseases.

Family and Community Health specialists also responded to the immediate need to replace car seats from flooded vehicles. Extension agents held special events in impacted counties to provide families with new car seats for children.

### **Housing Displaced Animals**

Texas A&M AgriLife staff, working in concert with the Texas Animal Health Commission, supported displaced citizens by housing and caring for thousands of livestock animals and pets. This support allowed Texans to evacuate flooded regions with the knowledge that their animals had a safe place to weather the storm.

Texas A&M AgriLife Extension's 13 Animal Supply Points distributed:

- 5,100 tons of hay
- 530 tons of cattle cubes
- 432 tons of horse feed
- 451 tons of all-stock feed
- 235 tons of pet food

### **Testing Water Wells for Contamination**

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To help private well owners determine the quality of their drinking water post–Hurricane Harvey, AgriLife Extension Texas Well Owner Network specialists developed a water testing program, funded by FEMA. Working with our local county Extension agents, they tested more than 1,500 private water wells for total coliform and fecal coliform bacteria. Wells testing positive for these bacteria were flagged for treatment and the well owner was provided with treatment options. The well owner was also given a second testing opportunity to ensure the well was no longer contaminated by gastrointestinal disease–causing bacteria.

### **Serving as Liaisons to Resolve Local Issues**

With AgriLife Extension having been tasked to play a key role in the Governor’s Commission to Rebuild Texas, Extension agents in 42 counties have stepped in as liaisons between local jurisdictions and state and federal agencies.

These Extension agents make regular contact with county judges, mayors, and school superintendents, determine any unresolved issues associated with Harvey recovery efforts, then report issues to the Commission, daily.

Staffers with AgriLife Extension and Texas Engineering Extension Service (TEEX) work with Texas Division of Emergency Management (TDEM) and Federal Emergency Management Agency (FEMA) along with other state and federal agencies to provide swift resolution to any locally identified issues. Resolutions are developed and provided to the county Extension agent liaison who, in turn, provides the resolution to the local jurisdiction. This process delivered a structured way to interact with the FEMA Joint Field Office in Austin to resolve issues across all seven of the FEMA public assistance disaster recovery categories. To date, over 6,600 records have been submitted from the field.

### **Assisting with Reimbursements**

To aid local jurisdictions with completing and filing the required paperwork to secure reimbursement from FEMA through the public assistance program, AgriLife Extension and TEEX recruited employees to receive training in all aspects of Public Assistance reimbursement of FEMA. Teams of agents were then deployed across the Harvey impact zone to assist with completion of forms and data entry to expedite reimbursements for local jurisdictions.

### **Supporting Temporary Housing**

Texas A&M AgriLife Extension Service has been supporting the General Land Office of Texas to provide temporary housing solutions for residents whose homes were severely damaged or lost due to Hurricane Harvey. AgriLife Extension agents have completed on-site inspections in many of the counties impacted by the storm to determine the suitability of locations for a mobile housing unit or recreational vehicle. AgriLife agents have also been involved in validating the placement of mobile housing units and the supporting infrastructure in Jefferson, Hardin, and Orange counties.

### **Providing Recovery Information**

As we look to the future long-term recovery from Hurricane Harvey, AgriLife Extension agents will continue to serve as liaisons between local jurisdictions and state and federal agencies. The agency will also provide recovery information and services through face-to-face seminars and



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workshops as well as maintain and distribute timely information through *TexasHelp.tamu.edu* and other electronic avenues.

### **Texas Department of Agriculture**

While not the primary agriculture emergency management agency, the Texas Department of Agriculture was engaged in several vital response areas:

- TDA operates the Hay Hotline. This hotline helps producers locate forage and hay. Hurricane Harvey destroyed extensive supplies of hay for winter feeding, and according to AgriLife, hay donations were valued at more than \$1.3 Million.
- TDA was involved with Mosquito control and abatement. TDA ensured that aerial applicators were properly licensed, observed conditions and mixing and loading sites, and worked with USDA National Organic Program to establish an exemption for certified organic producers in the counties where aerial mosquito spraying occurred.
- Aided in animal evacuation and transportation.
- TDA administers 12 Federal Nutrition Programs and several related program pilots and initiatives, including the National School Lunch and Breakfast Programs, Child and Adult Care Food Program and USDA Food Distribution Program. Due to the number of people who rely on these programs, their importance cannot be overstated. Before, during and after disasters, TDA evaluates and communicates to USDA and other relevant governmental partners the circumstances impacting program needs and ensures programs are appropriately and effectively utilized. This includes requesting waivers for regulations and implementing disaster specific program models and coordinating with USDA and other first responder organizations to increase access to USDA Commodities and meals for disaster survivors.
- Hurricane Harvey affected partners in all TDA's largest nutrition programs. Accordingly, TDA coordinated with 1,545 schools and 329 child or adult care centers to streamline operations and feed Texans impacted by the storm. Furthermore, they provided technical assistance for partners working to resume operations as quickly as possible.
- Working with the Texas Department of Health and Human Services, the USDA, and the nonprofit Feeding Texas, TDA launched an interactive online map people could use to find distribution sites. Over 8,000 cases of food were utilized.

### **Texas Animal Health Commission**

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The Texas Animal Health Commission played an extremely important role in responding to Hurricane Harvey. The following information, provided by the agency, details the crucial work they did.

### **Agency Mission**

The mission of the Texas Animal Health Commission (TAHC) is to protect the health and marketability of Texas' livestock, which includes cattle, swine, poultry, sheep, goats, equine, exotic fowl, and exotic livestock. The livestock and poultry industry generates more than 18 billion dollars each year in sales. TAHC's field staff and support team are strategically located across the state and work daily to detect and keep contagious, infectious, foreign, and emerging animal diseases from impacting Texas agriculture, thereby also protecting human health from diseases and conditions that are transmissible to people.

### **Role in Emergency Management**

TAHC prepares and plans for, responds to, and aids in the recovery from disaster events that affect livestock, exotic livestock, domestic fowl, or exotic fowl, including disease outbreaks, hurricanes, floods, tornadoes, wildfires, and acts of terrorism. TAHC is the primary coordinating agency for animal response operations related to non-disease animal-related incidents and the Emergency Support Function (ESF)-11 animal related actions.

To help in carrying out its mission, TAHC establishes working relationships with livestock producers and private veterinarians who are the state's first line of defense in detecting and reporting diseases of consequence. TAHC also assists in response and recovery during natural or man-made catastrophes, including fires, floods, and hurricanes, in accordance with the State of Texas Emergency Management Plan in the following areas: animal ownership identification, livestock restraint/capture, carcass disposal, and coordinating livestock evacuation.

In advance of Hurricane Harvey, TAHC routinely worked to identify temporary livestock sheltering and holding facilities to receive animals evacuated from harm's way. As Hurricane Harvey approached and heavy rains began to fall, TAHC updated this information daily and provided an animal shelter/large animal holding facility status report to the Health and Human Services Commission (HHSC) for distribution to HHSC emergency 2-1-1 call centers.

During Hurricane Harvey, TAHC conducted operations based on the size, scope, and complexity of the emergency event; the number and type of animals affected by the emergency; and the type of tasks needed to support local and state jurisdictions. All requests came through the Texas Division of Emergency Management (TDEM).

TAHC activated 119 staff members to assist and support animal related emergencies. Staff filled positions within the State Operations Center (SOC), on Disaster District Committees (DDCs), and in field operations. TAHC activated its Animal Response Operations Coordination Center

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(AROCC) which coordinated all animal field response, prioritized needs requests, assisted in donations management coordination, activated a call center, and worked with 36 different response agencies and organizations across the state.

Governor Abbott granted TAHC's request to suspend Title 4, Part 2, Subsections 49.1(n)-(p) of the Texas Administrative Code, relating to Equine Infectious Anemia testing requirements for animals in stables or congregation points to facilitate the timely evacuation of equine and equine owners in affected areas.

TAHC coordinated 59 animal-related State of Texas Assistance Requests (STARs). Of these requests, 37 requests were filled. Of these requests, 21 were filled by TAHC response, 16 were filled by partnering agencies or organizations, 18 requests were cancelled after they were received, and 4 requests were not filled.

TAHC assessed approximately 37,855 head of livestock and assisted approximately 16,202 head. Through coordination with Texas A&M AgriLife Extension, Texas Department of Agriculture, Texas Military Department, United States Department of Agriculture (USDA) Wildlife Services, and industry partners, 105 tons of hay and over 2,000 pounds of livestock cubes were distributed.

TAHC deployed assets from the USDA, Texas A&M AgriLife Extension, Texas and Southwestern Cattle Raisers Association, and Emergency Management Assistance Compact (EMAC) partners.

Through the partnership with Texas A&M University College of Veterinary Medicine, the A&M Veterinary Emergency Team (VET) was deployed to several missions along the coastal regions of the state. VET responded to animal issues where animals received physical evaluations, stabilization, and transferred to shelters where further care was provided as needed.

Of TAHC's Hurricane Harvey related expenditures, \$330,352.15 was eligible and submitted to FEMA for reimbursement on February 14, 2018.

### **Economic Impacts:**

Initial impact to production agriculture included: damage to buildings, equipment and infrastructure, death and injury losses to animals, and the impeded ability of industry to continue operating in affected areas due to flood damage, power loss, and obstructed roadways. Long-term economic impacts are still being calculated as loss and indemnity claims are filed and local producers continue to restock and rebuild.

### **Mitigation of Impacts:**

The TAHC continues to conduct outreach to local jurisdictions, industry, and non-government organization partners to prepare and plan for animal issues as part of the Agency's mission to

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mitigate the consequences of natural disasters. To accomplish these mitigation goals, the TAHC aims to:

- Increase cooperation between production agriculture industries and government emergency management organizations in preparing and planning for, responding to, and recovering from disasters.
- Promote the resiliency of production agriculture by encouraging Continuity of Business planning by individual producers.
- Seek opportunities to increase temporary livestock sheltering and holding capabilities.
- Develop and promote ranch preparedness programs to producers of all sizes and socio-economic backgrounds across the state.

### **Recommendations**

Texas A&M AgriLife Extension Service has been, and continues to be, critically important to disaster response and recovery. As such, the Committee fully endorses their Exceptional Item request for funding to create a disaster readiness and recovery program. The proposed program will create six regional teams of AgriLife Extension professionals to provide rapid, precise assessments in case of disaster and implement critical recovery protocols. These Disaster Assessment and Recovery Teams (DARTs) will aid communities with resiliency planning, emergency preparedness, hazard mitigation, and long-term recovery. AgriLife will seek to utilize military veterans with appropriate skill sets and background in staffing the DARTs. Many more details regarding this, and other important recommendations, can be found in the Governor's Commission to Rebuild Texas report.

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## TEXAS OLIVE AND OLIVE OIL INDUSTRY

*Study the Texas olive and olive oil industry. Provide suggestions to improve, promote, and standardize the industry. Examine current policy related to the industry and examine factors such as research, marketing, labeling, standards, data collection, and the necessity of creating a commodity board or similar type of organization.*

The Texas olive industry, which began as a viable crop in the late 1990's, has developed into the fifth highest acreage fruit crop in Texas. With over 150 growers with 2 million olive trees planted on 3,100 acres, the foundation of the Texas olive industry is solid. Growth rates of 20% per year for new orchards are estimated based on olive tree nursery orders. In addition to new orchard growth, the projections for the number of productive olive trees could double every year for the next ten years.

As the Texas olive industry has matured, infrastructure necessities such as a mechanical harvester, brick and mortar mills and even a mobile olive mill have been established and are operating steadily. Additionally, a united association, the Texas Association of Olive Oil (TXAOO), continues to make progress by working with the Texas Department of Agriculture, Texas A&M AgriLife, Sam Houston State University and the American Olive Oil Producers Association to combine all segments of the olive industry to effectively promote and develop the Texas olive oil industry.

In the United States, 95% of olives and olive products are imported. Climate requirements to grow olives are extremely restrictive, allowing only a few states the ability to produce market-quality olives at a commercial level. Texas is currently the 2<sup>nd</sup> largest olive producer in the United States, behind California.

### **Recommendation:**

The Committee recommends that the legislature form a Texas Olive Advisory Council to develop a long-term vision and marketable identity for the olive industry in the Texas. This council should take into consideration future industry development, funding, research, educational programming, risk management, and marketing. The Texas Wine Council is a good example from which to draw.

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## **SEED CERTIFICATION**

*Review the Texas Department of Agriculture's Seed Certification Program and related areas. Consider any benefits or drawbacks to privatizing the program through a nonprofit crop improvement association.*

The Committee met to consider seed certification due to disagreements between industry and agency regarding management practices and what many feel were excessive fee increases.

Every state has one, designated, state seed certifying authority, recognized by the Association of Official Seed Certifying Agencies (AOSCA). AOSCA serves to maintain federal seed certification standards with state seed and plant certifying agencies through a memorandum of understanding with the United States Department of Agriculture. In Texas the designated seed and plant certifying authority is the Texas Department of Agriculture. Thirty-six states vest this authority in non-profit crop improvement associations, most of which are 80 to 100 years old.

### **Crop improvement association**

The Committee heard testimony from industry advocates who would like to see, due to fee increases and disagreements with TDA, the seed certification program be administered by a crop improvement association rather than TDA. The association would license certified growers, register plant breeders, conduct field inspections on certified seed production, inspect conditioning plants, monitor variety purity by testing certified hybrid production samples through grow-outs in Puerto Rico and Costa Rica, and print and issue certification labels. This would be funded by up-front charges to certified growers, registered breeders, and for all other certification services.

### **Texas Department of Agriculture**

The Texas Department of Agriculture (TDA) operates the Texas Seed Certification Program under authority granted in Chapter 62 of the Texas Agriculture Code, and is the official seed certifying agency in Texas. Through the Seed Certification Program, seeds of superior varieties are grown, processed, and distributed under close surveillance and supervision. Certified seed is an official designation of genetic purity and identity earned by meeting specific requirements for production, storage, and distribution. TDA certifies agricultural seed, vegetable seed, and turfgrass.

For seed companies to participate in the Seed Certification Program, they must have their facilities inspected by TDA and be approved by the State Seed and Plant Board as a “certified seed grower.” Once a seed variety is approved, approved seed companies may submit an application to TDA for field inspection based on plant variety. Upon confirmation by TDA that

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the variety is eligible for certification, TDA conducts a field inspection during a period when distinct crop morphological characteristics, diseases and other important criteria are most noticeable.

Grow-Out Tests are performed to determine the genetic purity status of a given seed lot of the notified cultivar/hybrid and the extent to which the sample in question conforms to the prescribed standards. TDA performs grow-out inspections in Costa Rica and Puerto Rico on sorghum, sunflowers, millet, and rice.

- FY18 – 549 samples
- FY17 – 577 samples planted for winter grow-outs
- Historically, 700-900 samples a year are inspected, but numbers have dropped due to hybrid sunflower production moving out of Texas; additionally, Mexico no longer requires imported sorghum seed to be certified.

### **Recommendations**

While the Committee understands that a major wedge between TDA and the industry is the belief that the program has become cost prohibitive, we are hesitant to recommend TDA lose the program just yet. In fact, we recognize that the agency/industry relationship rapidly deteriorated after TDA became cost recovery and especially when they lost their unexpended balance authority and their ability to transfer funds between programs within the same strategy. That loss led to across-the-board fee increases. We would like to see the return of these tools to the agency with the belief that fees will become more manageable and amenable to industry partners while simultaneously allowing the program to function efficiently. Of course, we will monitor the program from there and if problems persist, the committee will revisit the issue. We further urge TDA to adopt cutting-edge technology and work with their industry partners to find solutions to their differences, or, if necessary, compromise legislation. If TDA is unable to regain unexpended balance authority and intra-strategy, a crop improvement association would have to be considered.

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## POLLINATOR CONSERVATION IN TEXAS

*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.*

### **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 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 their 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 generation female monarchs plant their eggs on milkweed plants along the way. This is called the Spring Range. As 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 face harsh conditions in the summer months, with threats including insects and birds, bad weather, and habitat destruction. Afterwards, the final generation of monarchs will fly south to Mexico in August or September, beginning the cycle once again.

The monarch butterfly has significantly declined in population since the 1990s when overwintering numbers topped 1 billion in the Oyamel forests in Mexico. The overwintering numbers hit an all time low of 35 million in the winter of 2013-2014. 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 review, the USFWS will conduct a Species Status Assessment (SSA) to evaluate the status of monarch populations globally. The recent overwintering estimates confirm a significant increase since the winter of 2013-2014, however the species continues to experience a downward trend.



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The latest estimates from Texas A&M University show that the overwintering numbers totaled 124 million monarchs in the winter of 2017-2018.

The decline of the monarch population is due to multiple factors including:

- 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. 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. 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.

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. 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.

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On July 18, 2018, the Texas Parks and Wildlife Department put forth that there is much uncertainty as to what will happen in Texas if the Monarch butterfly is to be listed. They suggested that a 4(d) 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. 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.

### **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. 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. 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. The Texas Parks & Wildlife Department estimates that native bees are responsible for \$3 billion a year in U.S. agriculture. 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.

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.

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. The apiary industry of Texas is largely comprised of migratory operations that provide honey production and pollination services. According to the United States Department of Agriculture National Agricultural Statistics Service (USDA NASS) there were 120,000 honey producing

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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.

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. 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%. TAIS tests for American Foulbrood, Nosema (*Nosema spp.*), and Varroa mite to mitigate the presence of pests and diseases in the Texas apiary industry.

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. Nosema is a gut microsporidian that can cause honey bee digestive issues and weaken the worker force of a colony.

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.

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

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. Texas lays claim to 9 different species of Bumblebees, the most recognized and familiar native bee in Texas. 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. 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.

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. Native insects can be the primary pollinator of some crops, and nearly 80% of native plants require insect pollination. 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.

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.

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

## **Pollinator Conservation Efforts**

### **Texas Parks and Wildlife Department**

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. 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. 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

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or species that are already listed under law. 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.

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**

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**

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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**

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.

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 immediately agreed to the idea. 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 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

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community programs and projects will positively impact the community and has sparked interest with other industry partners.

### **Texas Native Seeds**

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. This work has resulted in 30 new native seed mix varieties and significant advancements in seeding methodology. 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**

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.

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## INVASIVE ORGANISMS

*Identify methods for the early detection of exotic invasive organisms that could threaten the production of agricultural crops, such as cotton, in Texas.*

The Committee met in El Paso, Texas on February 21st, 2017 to hear testimony regarding invasive organisms that could threaten the production of agricultural crops. The hearing focused primarily on a new and growing race fusarium wilt impacting Pima cotton, and the pecan weevil, which 249 of Texas' 254 counties are currently under quarantine for. If not contained, both organisms have the potential to severely damage agricultural economies that rely on the two crops.

### **Pecan Weevil**

Found in the vast majority of Texas counties, pecan weevil (*Curculio caryae* [Horn]) is a key pest of pecan in the United States and portions of Texas. Pecan weevils are obligatory nut feeders and will feed on all species of North American hickory and *Juglans regia* (English walnut). Distribution can be found from New York to Iowa, south to Oklahoma, and across the southeastern states from Florida to west Texas, and now in some eastern New Mexico counties.

Adult weevils, both males and females, damage pecans by feeding on and/or laying eggs in nuts. Even though damage can occur from the time of adult emergence to shuck split, the key to weevil control is to prevent egg lay or oviposition.

Pecan weevil activity starts in early August. Adults emerge from the soil where they have spent 2 or 3 years in soil cells located 4 to 12 inches beneath the soil surface, however, when adult pecan weevils emerge is directly related to the type of soil and soil moisture conditions. Drought conditions and clay soils can delay emergence of adults by a month or more.

Under normal soil moisture conditions, approximately 80 percent of adult weevils emerge between August 20 and September 10. This emergence pattern is typical across the pecan belt. However, soils hardened by drought delay adult emergence. Drought-delayed emergence can only be broken when the soil is softened by moisture, either from irrigation or rainfall.

Upon emergence from the soil, adult pecan weevils move to the nearest tree. Research indicates that 77 percent of adults fly to the tree trunk at a height of 6 to 8 feet, 5 percent walk to the tree trunk and 15 percent fly directly to the canopy. Once in the canopy, weevils feed and mate.

Feeding activity of adult weevils, both males and females, before nuts enter the gel stage can cause nut drop. After shell hardening, males only feed on the shuck and this will not cause nut drop. A close inspection of damaged pecans will reveal a puncture the size of a straight pin that



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can be traced through shuck and shell to the liquid endosperm area of the nut. Often this feeding puncture or egg-laying site will be surrounded by a circle of tracks created by the adult. The presence of punctures and tracking confirm weevil presence.

### **Integrated Pest Management Practices**

The objective in a pecan weevil integrated pest management (IPM) program is to prevent female weevils from laying eggs in nuts. Because the larvae, pupae and adults are covered with 4 to 12 inches of soil and pesticides cannot reach larvae inside the nuts, management of these life stages is not practical. The only possible time to manage infestations is after adults have emerged from the soil and before egg laying starts. To prevent weevils from laying eggs, pecan producers must do the following:

- monitor kernel development to determine when the earliest maturing cultivars reach a stage susceptible to oviposition;
- monitor adult emergence from the soil; and
- apply an effective insecticide at the proper time to prevent emerging weevils from laying eggs in susceptible nuts

### **Pecan weevil quarantine**

In Texas, pecan weevil is a Texas Department of Agriculture quarantined pest and all counties in Texas, regardless of known infestations are quarantined except El Paso, Hudspeth, Culberson, Presidio and Jeff Davis counties. Quarantine restrictions mean that any in-shell pecan or pecans packaged with shell pieces that are being moved to New Mexico, Arizona and California and internationally need to meet a quarantine treatment of: 0 degrees F for 168 hours. There are no quarantine requirements of movement of in-shell pecans or pecan equipment between counties in the quarantine area regardless of known infestations. Additional information on the pecan weevil code can be found in the Texas Administrative Code (February 25, 2017) TITLE 4.

AGRICULTURE; PART 1. TEXAS DEPARTMENT OF AGRICULTURE CHAPTER 19.  
QUARANTINES AND NOXIOUS AND INVASIVE PLANTS; SUBCHAPTER L. PECAN  
WEEVIL QUARANTINE

### **Fusarium Wilt**

The cotton industry has consistently worked through public and private research and development to combat invasive organisms and species that hinder the productivity of a cotton plant, ultimately impacting a producer's bottom line. Of late, especially in the Upper Rio Grande Valley of Texas, a new race of fusarium wilt is an invasive organism currently having an impact on extra-long staple (ELS) cotton also known as Pima cotton.

Fusarium wilt is a cotton disease caused by the soilborne fungus *Fusarium oxysporum* f. sp. *vasinfectum* (FOV). FOV is genetically diverse with numerous described races and genotypes

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(Cianchetta et al. 2015), most of which cause disease only in the presence of plant-pathogenic nematodes; however, FOV race 4 is extremely virulent and can cause severe, early-season damage in the absence of nematodes. Race 4 was first described in India (Armstrong and Armstrong 1960) and has likely spread to other cotton-producing regions through cotton seed. FOV race 4 was first detected in California in 2001 (Kim et al. 2005) and had not been confirmed elsewhere in the United States (Cianchetta et al. 2015) until recently. In June of 2016 and 2017, severe Fusarium wilt symptoms including wilting, root rot, and stem discoloration that were consistent with FOV race 4 were observed on seedlings of Pima cotton (*Gossypium barbadense*) in the Upper Rio Grande Valley of Texas in El Paso and Hudspeth Counties.

From a statewide perspective, early detection of FOV4 and other invasive organisms or species is extremely important in order to contain or identify better management practices to reduce the issue before it becomes more widespread. Basic symptoms of fusarium wilt are areas of reduced or patchy plant stands that can be seen in affected fields. Plant death, wilting, yellowing and defoliated plants are typical symptoms of fusarium wilt. The vascular tissue of affected plants exhibits a brown discoloration through the entire main stem. Some plants affected with the disease can show some regrowth. FOV4 is particularly of concern because, compared to other strains of fusarium, FOV4 can infect cotton plants without the presence of root knot nematodes and cause damage in a wider range of soil types when root knot nematodes are not an issue.

As mentioned, currently, FOV4 has been identified in the Upper Rio Grande Valley area in Pima cotton. Texas producers on average have planted 14,700 acres of Pima cotton annually, most of which is grown in the Upper Rio Grande Valley area in Texas. In 2009, according to USDA certified acreage data, El Paso and Hudspeth Counties, were the only two counties to grow Pima cotton in Texas. Since 2009, more counties throughout the Southern High Plains, Lower Rio Grande Valley and the South Texas-Winter Garden area have planted limited to moderate acres of Pima cotton.

## **Recommendations**

The Committee feels Texas lacks a unified strategy to combat serious crop disease and pest outbreaks and should take more responsibility in protecting our farmers. We recommend that the legislature first address AgriLife Extension agent shortages and retention issues by reviewing their compensation. It has come to our attention that this has not been done in many years. As the first line of defense in identifying and managing disease and pest outbreaks, these agents are vitally important to the health of our farming economy and should be treated accordingly. Texas also lacks a cohesive crop disease and pest response and management plan. Therefore we further recommend that AgriLife and TDA work together to develop such a plan, task force, or working group. TAHC's response to livestock disease is a great model from which to draw.

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## CENTRAL FILING

*Consider the feasibility of developing and implementing a central filing system to be used for the filing of all financing statements that cover farm products being sold and purchased in this state that are subject to an agricultural lien.*

### FOOD SECURITY ACT: CENTRAL FILING V. DIRECT NOTICE OF AG LIENS

**History of secured ag lending.** Typically, producers (farmers and ranchers) obtain an operating loan from a creditor (bank, PCA, etc.). The loan is secured by the crop being produced or by livestock and the proceeds from sale. When the crop or livestock are sold, the creditor expects that the loan will be paid.

Alternatively, ranchers may obtain a purchase money loan to acquire livestock. The creditor may take a lien on the specific livestock being purchased. (This type of lien has a priority over a general lien on livestock.) If the creditor is not concerned with the need to preserve the “purchase money” characterization, he may take a lien on “all cattle now owned or hereafter acquired, including the offspring and replacements.”

**Buyer in the ordinary course of business.** The original version of the Uniform Commercial Code (UCC) provided that a “buyer in ordinary course of business” other than a buyer of farm products would acquire the goods free of any security interest. The purpose of this section is to facilitate the sale of inventory to good faith consumer purchasers. So, when a person buys clothing or a new car, they can do so without worrying that a creditor will make a claim on it.

A transfer of goods in bulk has never been treated as a sale “in the ordinary course of business.”

Until enactment of the Food Security Act of 1985, a sale of farm products would not permit the buyer to acquire the products free of the security interest.

**Who are typical ag product “buyers”?** These include sale barns, cattle feeders, cotton gins, grain dealers/warehouses, among others. The term is defined in the Food Security Act as “a person who, in the ordinary course of business, buys farm products from a person engaged in farming operations who is in the business of selling farm products.” There is no definition or regulation that provides additional clarity as to the meaning of “ordinary course of business.” This lack of clarity has created confusion as to who should and should not be considered a “buyer.”

**Food Security Act.** In 1985, Congressman Charlie Stenholm got the Food Security Act passed into federal law. In particular, Texas buyer groups complained that the UCC was unfair to them and that they were having to pay twice for the same cattle or crop. The Food Security Act overrode the UCC and established two alternative methods by which creditors could assure that they got paid when products sold while at the same time providing protection to the buyers. If the buyer

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does not get notice of the lien through either a central filing system or direct notice, then he acquires the product free and clear of liens.

**Central Filing System.** Extremely prescriptive requirements for this are laid out in the Food Security Act and in regulations adopted by USDA. The state must establish a system (typically through the Secretary of State or similar entity) that receives “effective financing statements” (EFS). These are similar to the UCC-1 filings that creditors have used for decades to perfect a lien. However, they have significantly different information. More critically, this system must have a process for registering buyers and then providing them with master lists, organized by type of product, name and ID number of the debtor, by county, and by crop year. These must be provided in “written or printed form” to the buyers.

**Certification.** USDA must certify the central filing system as being compliant with the Food Security Act in order for it to be effective. According to the USDA’s web site, there are 19 states with certified systems: <https://www.gipsa.usda.gov/laws/cleartitle.aspx> These include our neighboring states of Louisiana, New Mexico, and Oklahoma. This is important since the creditor must comply with the law of the state where the producer is located.

**Direct Notice.** Under this approach, the creditor must provide notice to potential buyers of its security interest in the farm products for sale. That notice should also specify whether the creditor is requesting that the proceeds be paid jointly to the producer and the creditor. As part of the lending process, the creditor asks the producer for a list of the potential buyers. In fact, loan software programs generate this request as a part of the loan package.

**Consequences of Ignoring the Notice.** If the producer sells to someone not on that list, he commits a crime unless he notifies the creditor of the identity of the buyer at least seven days prior to the sale or accounts for the proceeds of the sale not later than ten days after the sale. Also, if the buyer who received the notice does not comply with the payment obligations described in the notice, it will be subject to the creditor’s lien and may have to pay twice.

**Receipt.** The Food Security Act makes the concept of “receipt” a matter of state law. Under the “mailbox rule” used in Texas, the notice is presumed received three days after it is put in the US Mail, properly addressed with the right amount of postage. The Act does not require the notice to be sent by certified or registered mail. However, many bankers use one of those methods in order to establish receipt.

### **Recommendations.**

The Committee appreciates the work that Representative Ken King along with groups from both the financial and agricultural sectors have done in trying to find a compromise to this issue. That being said, we are unable to recommend either a direct notice or a central filing system at this time. Nevertheless, the current direct notice system is, at the very least, outdated. Accordingly, we urge the adoption of technology suitable for conducting business in the 21st century, a move seemingly supported by all parties. Amending Texas law to clarify that electronic delivery of notices, including delivery through access to a secure website, would be "receipt" for purpose of the FSA would be a good start in this direction.

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Alternatively, the Committee is also interested in supporting changes to the FSA that would loosen its limitations and allow industry partners more freedom in crafting a system that works for everyone.

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# INDUSTRIAL HEMP

*Evaluate the uses of industrial hemp and the economic feasibility of developing an industrial hemp market under existing or future state and federal regulations. Examine the processing and manufacturing process requirements of multiple bi-products, including feed, food, fiber, cosmetics, supplements, and building materials*

## Introduction

Texas agriculture's total economic impact reaches \$100 billion annually, and one out of every seven Texans works in an agriculture-related job.<sup>1</sup> A robust industrial hemp program allowing cultivation and processing of industrial hemp could be beneficial for Texas farmers, the state economy, and the environment. This report is drafted to assist the reader in evaluating the uses of industrial hemp and the economic feasibility of developing an industrial hemp market under existing or future state and federal regulations. This report also examines the processing and manufacturing process requirements of multiple bi-products, including feed, food, fiber, cosmetics, supplements, and building materials. "Hemp" or "industrial hemp" will be used interchangeably herein to refer to non-intoxicating *Cannabis Sativa* L.<sup>2</sup>

## What is Hemp?

Hemp is a variety of the plant species *Cannabis sativa* L., (the "**cannabis plant**").<sup>3</sup> A plant variety is defined as a naturally occurring plant form, which is different from the species, and is used to distinguish plants with one or more defining characteristics that are grown under natural circumstances.<sup>4</sup> Within each cannabis plant, there are numerous cannabinoids. Cannabinoids are the naturally-occurring, biologically active, chemical constituents of the cannabis plant.<sup>5</sup> Delta-9 tetrahydrocannabinol ("**THC**"), cannabidiol ("**CBD**"), cannabitol ("**CBN**") and cannabigerol ("**CBG**"), are just four of many naturally occurring cannabinoids found in the cannabis plant.<sup>6</sup> THC, the most well-known and researched of these cannabinoids, is the substance primarily responsible for the psychoactive effects of cannabis.<sup>7</sup>

Although hemp and marijuana are both varieties of the plant species *Cannabis sativa* L., the two varieties are genetically distinct and are bred for different uses.<sup>8</sup> Hemp is primarily grown for industrial uses and contains only trace (if any) amounts of THC, whereas marijuana is considered a horticultural crop and is specifically grown for its psychoactive properties or THC content.<sup>9</sup> Hemp is grown as a fiber, seed, or other dual-purpose crop, and is cultivated as an agricultural commodity in more than 30 nations around the world. While marijuana typically contains anywhere from 5%-25% THC content, industrial hemp, by definition, contains 0.3% THC content, or less.<sup>10</sup> As a result, smoking or ingesting hemp will not produce an intoxicating effect or get the consumer "high."<sup>11</sup> This explains why the two varieties are treated differently under United States federal law. Federal law differentiates "hemp" and "marijuana" by defining industrial hemp as "the plant *Cannabis Sativa* L. and any part of such plant, whether growing or not, with a delta-9 [THC] concentration of not more than 0.3 percent on a dry weight basis,"<sup>12</sup> and preempts such industrial hemp from regulation under the *Controlled Substances Act of 1970* ("**CSA**"), provided it is cultivated in accordance with Section 7606 of the *Agricultural Act of 2014* (the "**2014 Farm Bill**"). Rather than distinguishing between "hemp" and "Marijuana" based on the CSA analysis

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of the part of the plant from which a product is derived, the 2014 Farm Bill definition of industrial hemp includes all parts of the cannabis plant and distinguishes “industrial hemp” from “marijuana” based on the concentration of THC found within the plant.

Nonintoxicating hemp has many uses that stem from four basic plant traits. Hemp grown for fiber is planted close together, with smaller diameter stalks reaching heights of 10 to 12 feet tall.<sup>13</sup> The outer fibers are used as insulation, door panels for automobile parts, and as a substitute for fiberglass that is stronger, lighter, and more desirable for the aerospace industry.<sup>14</sup> Seed variety hemp plants are planted further apart to accommodate large seed heads, grow 6 to 8 feet tall,<sup>15</sup> and are used as food, animal feed, and in seed oil production.<sup>16</sup> Hemp plants used for essential oil production are small and shrub-like. These varieties are used for oil extraction for use in the nutraceutical and supplement industry. Lastly, hemp plants cultivated for biomass can have stalk diameters reaching 1 to 3 inches,<sup>17</sup> and are used for pulp material applications such as building materials, soft paper, and biocarbon, etc.<sup>18</sup>

Hemp plants are naturally dioecious with male and female reproductive parts on separate plants.<sup>19</sup> If a male hemp variety plant were to pollinate a marijuana variety plant it would significantly reduce the THC content found within the marijuana plant and cause the plant to become non-intoxicating. This is because the hemp pollen would cause the marijuana bud to produce seed and the marijuana plant’s THC would go into seed production.<sup>20</sup> In addition, in states that allow hemp cultivation, hemp fields are tested by state department of agriculture to ensure that the hemp crop complies with the 0.3% or less THC concentration level requirement.

### **Uses of Industrial Hemp**

Industrial hemp has been cultivated worldwide for centuries and is used in the production of a diverse range of commodities, including animal feed, paper, construction materials, insulation, fabrics, plastics, foods, beverages, soap, nutritional supplements, yarns, fibers, and many other manufactured goods. Hemp and hemp derivatives are used in products sold in many U.S. and international markets, with over 25,000 documented uses.<sup>21</sup> Hemp can be cultivated in a variety of climates and soil types, is naturally resistant to many pests, grows tightly spaced allowing it to outcompete most weeds, and is easy to recycle.<sup>22</sup>

### **Industrial Hemp Facts:<sup>23</sup>**

- According to Alberta Agriculture and Rural Development, average yields for hemp grain are between 600 to 800 lbs. per acre in Canada. The highest seed yield has topped 2,000 lbs. per acre.<sup>24</sup>
- Manitoba Agriculture, Food and Rural Initiatives reports an average from yields grown and managed for fiber, ranging from 1 to 6 tons per acre.<sup>25</sup>
- According to Agriculture and Agri-Food Canada production statistics, one acre of hemp yields an average of about 700 pounds of grain, which equals about 50 gallons of oil, and 530 pounds of meal. That same acre could also yield an average of 5,300 pounds of straw, which could be processed into about 1,300 pounds of fiber (~ 20-30% long fiber / ~ 70 – 80% short fiber).<sup>26</sup>

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- Hemp can be grown as a single end use, or as a dual-purpose crop for both hemp grain and fiber.
  - Hemp's growth period is ~ 100+ days for grain cultivars and ~ 120+ days for dual purpose cultivars.
  - Hemp naturally suppresses weeds and returns nitrogen back to the soil.<sup>27</sup>

### **Industrial Hemp Market Statistics:**

- The global market for hemp consists of more than 25,000 products in nine submarkets: agriculture, textiles, recycling, automotive, furniture, food and beverages, paper, construction materials, and personal care.<sup>28</sup>
- Approximately 30 countries in Europe, Asia, and North and South America currently permit farmers to grow hemp.<sup>29</sup>
- At least 41 U.S. states and territories have either enacted agricultural pilot programs under the 2014 Farm Bill or other legislation favorable to hemp production.<sup>30</sup>
- The U.S. hemp industry grew 16% in 2017 amidst continued domestic legal and regulatory challenges, and the Hemp Business Journal estimates that the U.S. hemp industry is poised to reach a \$1 billion market in 2018.<sup>31</sup>
- U.S. sales of hemp products (inclusive of industrial applications, food, supplements, textiles, personal care products, and others) are estimated to have exceeded \$815 million in 2017 alone,<sup>32</sup> and consumer demand for hemp products is projected to continue to increase.
- Hemp produces environmentally-friendly manufactured products, as well as beneficial products for wildlife.<sup>33</sup>

Hemp is a seed, fiber and biomass crop that can serve as a valuable rotation crop for farmers. Hemp is fast-growing, low-cost, and high biomass producing. It has been traditionally grown as a multiple-use crop and has recently been considered for use as an energy crop.<sup>34</sup> Hemp is also known to have production advantages, including low input and management requirements.<sup>35</sup> Studies have also found that hemp has good phytoremediator potential for heavy metals (zinc, lead, etc.) and radioactive cesium,<sup>36</sup> and preliminary evidence indicates that hemp may be a very significant rotation crop with an ability to reduce pests and weed growth and to boost yields of the primary crop.<sup>37</sup>

### **Federal Regulation of Industrial Hemp in the U.S.**

#### **History of Hemp Regulation**

Hemp was widely grown in the United States as an agricultural commodity from the colonial period into the early 1900s and was commonly used in the manufacture of paper, fabrics, and other products. Two drafts of the Declaration of Independence were written on hemp paper and the woody core fibers of hemp stalks were used for construction and fuel.<sup>38</sup> However, as a result of



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the passage of the *Marihuana Tax Act of 1937* (requiring a tax stamp and federal registration to cultivate or sell hemp) and increased (although misplaced) public anti-drug sentiment associating hemp with marijuana, hemp cultivation severely declined and domestic production ultimately ceased entirely. The last recorded crop was grown in Wisconsin in 1958, and by 1970, the CSA explicitly prohibited the cultivation of any variety of cannabis without a DEA permit. As a result, for decades, importation served as the only viable legal means for sourcing hemp materials and products, as hemp products could be legally sold in the U.S., but not grown here. This legal structure forced Americans to rely entirely on imports instead of allowing active participation in a billion-dollar global industry.

In the meantime, most other industrialized countries grow hemp, with large producers including Canada, members of the European Union, China, South Korea, and Russia. Hemp imports to the United States, consisting of hemp seeds and fibers which are often purchased for use as inputs for further manufacturing, totaled approximately \$67.3 million in 2017.<sup>39</sup> Although the passage of the 2014 Farm Bill reopened the opportunity for domestic hemp cultivation, the U.S. continues to import most of its hemp from Canada, and a significant portion from China.<sup>40</sup> As explained below, this is likely because cultivation under the 2014 Farm Bill is nascent, limited in scope, and impacted by a patchwork of varying state laws and industrial hemp programs. Further, as hemp is a new U.S. industry, the U.S. still lacks established agricultural supply chains, commercial cultivation capacity, and manufacturing infrastructure.

### **Current Federal Regulation of Hemp**

The passage of the 2014 Farm Bill allows states to grow hemp through institutions of higher education or state departments of agriculture *notwithstanding the CSA or any other federal law*, provided certain conditions are met.<sup>41</sup> The scope of the 2014 Farm Bill is limited to cultivation that is: (i) for research purposes (inclusive of market research); (ii) part of an “agricultural pilot program” or other agricultural or academic research; and (iii) permitted by state law.<sup>42</sup> Under federal law and the laws of most states, hemp by definition is non-intoxicating. Industrial hemp is strictly defined under federal law as the plant *Cannabis Sativa L.*, and any part of such plant, whether growing or not, with a delta-9 THC concentration of not more than 0.3% on a dry weight basis.<sup>43</sup> Federal budgetary restrictions provide additional legal protection for the cultivation, interstate transfer, and sale of industrial hemp through the *Consolidated Appropriations Act, 2018*, (“**Appropriations Rider**”). The Appropriations Rider prohibits the federal government’s use of funds in contravention of the 2014 Farm Bill and specifically prohibits such federal interference with regard to the “transportation, processing, sale, or use of industrial hemp, or seeds of such plant, that is grown or cultivated in accordance with the [2014 Farm Bill], within or outside the State in which the industrial hemp is grown or cultivated.”<sup>44</sup>

The 2014 Farm Bill requires that all industrial hemp be cultivated for research purposes, but it expressly allows such research to include the study of the “marketing of [I]ndustrial [H]emp,” without further defining permissible activity.<sup>45</sup> Federal policy guidance (the “**Statement of Principles**”) issued by the United States Department of Agriculture (“**USDA**”), Drug Enforcement Administration (“**DEA**”), and Food and Drug Administration (“**FDA**”) in 2016 confirms that the 2014 Farm Bill, at a minimum, allows commercial activity in conjunction with research and permits industrial hemp-derived products to be transferred amongst states with state agricultural pilot programs authorizing such conduct.<sup>46</sup> Although the Statement of Principles provides a

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restrictive interpretation of the 2014 Farm Bill, it is not legally binding and is disputed by many, including dozens of members of Congress who took part in authoring the law and believe it contravenes congressional intent.<sup>47</sup> However, it does set forth the position of the above federal agencies, and thus should be taken into consideration.

**To date, at least 41 states and territories have either enacted agricultural pilot programs under the 2014 Farm Bill or other legislation removing barriers to hemp production.**<sup>48</sup> In 2017, there were a reported 1,420 registered or licensed growers and 32 universities conducting hemp research nationwide.<sup>49</sup> State programs vary significantly as to the scope of permitted activity. For example, Delaware limits participation in the program to institutions of higher education and prohibits commercial sales, while other state pilot programs, such as those implemented in Colorado and Kentucky, permit private parties to cultivate hemp for research and commercial purposes, provided all licensing and regulatory requirements are satisfied. While it is clear from the language of the 2014 Farm Bill that cultivation of industrial hemp is preempted from CSA control when it is cultivated in compliance with the 2014 Farm Bill, the scope of permitted commercial activity varies on a state-by-state basis.<sup>50</sup> Although certain provisions of the *Agricultural Act of 2014* expired in September, the industrial hemp cultivation and research provisions remain in effect and hemp businesses can still continue to operate pursuant to state agricultural pilot programs.

The laws governing hemp continue to shift towards regulation as an agricultural commodity at both the federal and state levels, and significant support for the legalization of cannabis is growing nationwide.<sup>51</sup> Proposed legislation such as Senate Majority Leader Mitch McConnell’s *Hemp Farming Act of 2018* (referred to herein as the “**2018 Farm Bill**” or the “**Bill**”), which has been incorporated into the Senate’s version of the *Agriculture Improvement Act*, would fully legalize hemp as an agricultural commodity by removing hemp (including any part of the cannabis plant which contains 0.3% or less THC on a dry weight basis, its derivatives, cannabinoids, and extracts) from the list of controlled substances in the CSA and moving it from the purview of the DEA to that of the USDA and state departments of agriculture.<sup>52</sup>

### **Potential Future Federal Regulation of Hemp**

The proposed 2018 Farm Bill would amend the *Agricultural Marketing Act of 1946* (“**AMA**”) to allow for federally sanctioned hemp production under the authority of the USDA.<sup>53</sup> In the event this law passes, Texas would have primary regulatory authority over the production of Texas-grown hemp after submitting a plan for the regulation to the USDA for approval.<sup>54</sup> If Texas’ initial plan is not approved by the USDA, it may be amended and resubmitted.<sup>55</sup> However, in states or territories that do not receive USDA approval, the production of hemp would be regulated by the USDA and be subject to a control plan established by the Secretary of Agriculture, who would also be responsible for issuing licenses for participation in the USDA program.<sup>56</sup>

The state plan for hemp regulation required to be submitted to the USDA must include:

- (i) a practice to maintain relevant information regarding the land on which hemp is produced in Texas, including a legal description of the land, for a period of not less than three (3) calendar years;

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- (ii) a procedure for testing, using post-decarboxylation or other similarly reliable methods, of THC concentration levels of hemp produced in Texas;
  - (iii) a procedure for the effective disposal of products that are produced in violation of the 2018 Farm Bill;
  - (iv) a procedure to comply with the 2018 Farm Bill enforcement procedures;
  - (v) a procedure for conducting annual inspections of a random sample of hemp producers to verify that hemp is not produced in violation of the 2018 Farm Bill, but that also ensures that a hemp producer is not subject to more than one (1) inspection each year; and
  - (vi) a certification that the state has the resources and personnel to carry out the practices and procedures described in (i)-(v) above.<sup>57</sup>

In jurisdictions with USDA-approved programs, it would be a violation of federal law to cultivate hemp without a registration in compliance with state law, or in the case of a state or territory without a USDA-approved program, it would be a violation of federal law to cultivate hemp without a federal license issued by the Secretary of Agriculture.

Importantly, the AMA would define “hemp” as any part of the cannabis plant, “including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not” with a THC concentration of not more than 0.3% on a dry weight basis.<sup>58</sup> The 2018 Farm Bill would completely remove such hemp, as defined in the AMA, from the CSA definition of “marihuana.”<sup>59</sup> This is a notable expansion from the limited definition of industrial hemp in the 2014 Farm Bill which only preempts from CSA control industrial hemp grown in accordance with state agricultural pilot programs. The 2018 Farm Bill would also create a specific exemption in the CSA for THC found in hemp.<sup>60</sup> These amended definitions and corresponding exemptions from the CSA could also apply to imported hemp if the definitional criteria are satisfied. Although the 2018 Farm Bill would exempt hemp from the purview of the CSA, a person convicted of a felony relating to a controlled substance under state or federal law would be ineligible to participate in any hemp program established under the Bill.<sup>61</sup>

As of January 7, 2019, the 2018 Farm Bill has passed in the Senate and a different version has passed in the House of Representatives. The two versions of the bill are currently under review in conference committee where both chambers will attempt to create a mutually acceptable iteration, known as a conference report. Although the industry-favorable hemp language is not included in the version of the bill passed by the House of Representatives,<sup>62</sup> the language is widely expected to find its way into the conference report. Legislators had hoped to pass the 2018 Farm Bill prior to close of session on September 30, 2018, but have been mired in debate and controversy on other aspects of the proposed legislation, particularly changes to the Supplemental Nutrition Assistance Program (“SNAP”). Consequently, efforts to pass the Bill are officially on hold until after the November elections; however, the Bill is still projected to pass before the end of 2018.

## **Texas Regulation of Industrial Hemp**

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Although both the Republican and Democratic Party State Conventions have made legalizing hemp a component of their party's platform, Texas currently prohibits the cultivation of industrial hemp for any purpose. There have been multiple widely-supported and bipartisan attempts to pass legislation in Texas that would create an industrial hemp state regulatory program, including House Bill 1322 (84(R), 2015) and House Bill 3587 (85(R), 2017); however, neither were passed out of the Calendars Committee. House Bill 3587 would have legalized and regulated the production of hemp in Texas, by requiring cultivators to obtain licensure to grow industrial hemp, setting potency standards consistent with federal law, and establishing a policy for the procurement and use of certified seeds, cultivars, and clones.<sup>63</sup> Like many other regulating states, House Bill 3587 would have removed industrial hemp from the definition of "marihuana" under the State's Controlled Substances Act, but still would have restricted cultivation and processing to authorized licensees under the program. The bill received broad support from the Texas farming industry<sup>64</sup> and passed unanimously out of the House Committee on Agriculture & Livestock; however, it was never scheduled for a vote on the House floor.<sup>65</sup>

### **Feasibility of Developing an Industrial Hemp Pilot Program Under Current or Future Federal and State Regulation**

Development of a state hemp industry within the confines of current state and federal law could be beneficial for Texas farmers, the Texas economy, the U.S. economy, and the environment.<sup>66</sup> The 2014 Farm Bill explicitly authorizes states to implement laws and regulations permitting the cultivation of industrial hemp, provided such laws and regulations:

1. Restrict the growing or cultivation of industrial hemp to institutions of higher education or state departments of agriculture (and their contractual designees) located within the state;
2. require industrial hemp to be grown or cultivated for research purposes (which may include market research) under an agricultural pilot program or as a component of other agricultural or academic research;
3. require sites which are used for growing or cultivating industrial hemp to be certified by and registered with the applicable state department of agriculture; and
4. authorize the state department of agriculture to promulgate regulations to carry out the pilot program in accordance with the stated purposes of the 2014 Farm Bill, above.

**At least 41 states have passed legislation related to industrial hemp**, such as defining hemp and removing barriers to production, and at least 39 states have authorized hemp cultivation and production programs.<sup>67</sup> In 2017, 15 states, including Arkansas, Colorado, Florida, Hawaii, North Dakota, Nevada, New York, Oregon, South Carolina, Tennessee, Virginia, Washington, West Virginia, Wisconsin, and Wyoming enacted legislation involving industrial hemp.<sup>68</sup> And Florida, Wisconsin, and Nevada authorized new research or pilot programs related to industrial hemp.<sup>69</sup> In 2018, at least 6 states – Alaska, Arizona, California, Kansas, Missouri, and Oklahoma – enacted legislation in establishing hemp research and industrial hemp pilot programs under the 2014 Farm Bill.<sup>70</sup>

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Texas can establish a state agricultural pilot program in compliance with federal law to permit the production of industrial hemp in order to study its economic viability and potential product uses, among other research. While hemp has the potential to be a major boon to the Texas economy, the window for maximum market capture is narrowing as more than half of the states have already enacted hemp legislation, at least 19 are actively cultivating,<sup>71</sup> and changes in federal law to allow for significant expansion of the industry appear imminent. It is federally legal for the Texas Department of Agriculture to develop an industrial program that will evaluate the potential uses and economic feasibility of cultivating and manufacturing hemp products. Officials can look to Kentucky, Colorado, South Carolina, and other states for guidance.

### **Processing and Manufacturing Requirements**

An increasing number of state legislatures are considering a variety of initiatives related to industrial hemp.<sup>72</sup> Most of these have been resolutions calling for scientific, economic, or environmental studies, with some laws authorizing the planting of experimental plots under state statutes. Requirements differ among regulating jurisdictions; however, common provisions across these state laws include:

- Defining industrial hemp (based on the percentage of THC it contains) and excluding industrial hemp from the definition of marijuana, THC, or other controlled substances under state law;
- Authorizing the cultivation and possession of industrial hemp and ensuring hemp research is conducted by creating an advisory board or commission;
- Establishing a state licensing or registration program for growers and/or seed breeders;
- Allowing state departments to collect funds for research programs;
- Requiring recordkeeping;
- Requiring inspections and testing to ensure lawful THC content is not exceeded; and
- Promoting research and development of industrial hemp products and new markets.<sup>73</sup>

Many states are engaged in research regarding the processing and manufacturing of various hemp products, in addition to researching other uses and benefits of industrial hemp. For example, in North Carolina, the state's Hemp Commission studies the best practices for soil conservation and restoration in collaboration with two state universities. Colorado created an Industrial Hemp Grant Research Program for state universities to research and develop hemp strains that are best suited for industrial applications. Kentucky's industrial hemp research program studies the environmental benefit or impact of hemp, the potential use of hemp as an energy source or biofuel, and agronomy research being conducted worldwide relating to hemp.<sup>74</sup> Similarly, Pennsylvania studies harvest equipment, the use of industrial hemp fiber and hemp seed oil to produce biofuels, the retail market for industrial hemp products, and feed derived from industrial hemp on the health and growth rate of various livestock animals. Numerous opportunities remain for hemp processing and manufacturing research as the industry continues to expand.

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## Recommendations

1. Define industrial hemp in accordance with the 2014 Farm Bill but leave the definition open to changes that may occur in future federal legislation.

*For example: “industrial hemp” means the plant Cannabis sativa L. and any part of such plant, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis, or as otherwise defined in federal law, whichever is more permissive.*

2. Amend the definition of “marihuana” and “tetrahydrocannabinols” in the Texas Controlled Substances Act (Health & Safety Code §481) to exclude industrial hemp and products derived therefrom.
3. Align legislation, registration, fees, cultivation, and processing requirements with the minimum standards for a state production control plan identified in the 2018 Farm Bill.
4. Grant authority to the Texas Department of Agriculture to establish rules and a regulatory framework for the cultivation, production, and sale of industrial hemp as food, supplements, ointments, feed, and fiber. These rules should, *inter alia*, establish minimum standards for cultivation and production, including Good Agricultural Practices (GAP), Good Handling Practices (GHP), and Good Manufacturing Practices (GMP). These rules should also establish research requirements and procedures for permitting, testing, inspection, reporting, and enforcement. Such requirements shall include destruction, and/or potential remediation and retesting for any plants exceeding 0.3% THC.
5. Require robust pre-harvest testing of industrial hemp plants to ensure compliance with federal mandates and allow private labs that satisfy state mandated criteria to conduct the testing so that no state funding will be required to facilitate such testing.
6. Establish a domestic seed certification program, including a state licensing and registration program for seed breeders through land grant universities, and pursuant to the certification program established by the Association of Official Seed Certifying Agencies (AOSCA).
7. Allow naturally derived cannabinoids to be extracted from industrial hemp pursuant to state-mandated manufacturing requirements to ensure such products are adequately tested and regulated.
8. Establish applications for institutes of higher education to obtain permits so they may grow hemp for research-related purposes on their property or the property of persons with whom they have a contract.
9. Provide legal protections for growers and processors from prosecution under state drug laws.

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## STRUCTURAL PEST CONTROL

*HR 2042 (85R) directed the Committee on Agriculture and Livestock to conduct and interim study reviewing the rules, regulations, and enforcement authority of the Texas Department of Agriculture's Structural Pest Control Service.*

The Structural Pest Control Act (Chapter 1951, Occupations Code) grants regulatory authority to the Texas Department of Agriculture, requiring licensing of business and individuals who perform structural pest control for hire, including services performed as part of a person's employment. TDA licenses and regulates businesses and individuals who use pest control products and devices to control pests that may infest structures, lawn and ornamental pests, as well as perform weed control. They conduct criminal background checks on all structural pest control service (SPCS) apprentices and licenses. They also conduct commercial business inspections, school IPM inspections, noncommercial establishment inspections, and pesticide use observations.

TDA issues two types of licenses:

- Commercial applicators -- business operators or employees of a business that offers pest control services for hire or compensation.
- Noncommercial applicators -- individuals employed by the state or a political subdivision of the state and engages in the business of structural pest control, or an employee who owns, operates, or maintains a building that is an apartment building, day-care center, hospital, nursing home, hotel, motel, lodge, warehouse, food-processing establishment (other than a restaurant, retail food, or food service establishment), or school.

TDA has the following number of active licenses:

- 3721 commercial businesses
- 8014 commercial, noncommercial, and noncommercial political certified applicators
- 5899 technicians
- 3862 registered apprentices
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The Committee was asked by the pest control industry consider this issue during the 85th interim due to a strained working relationship between them and the Texas Department of Agriculture. Since the time of filing HR 2042 requesting this study and the interim hearing, the agency and industry held a series of meetings to discuss and address their disagreements. As proven by the testimony given at the hearing on this subject, those talks were quite fruitful, and, for now, many of the problems were solved or are on the road to being solved.

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The Committee is pleased to see the industry and its regulatory agency working together without the need for legislative intervention and will monitor the progress of the relationship and program going forward.

Furthermore, the Committee believes that for TDA's programs, including this one, to function best, the agency should regain unexpended balance authority and intra-strategy transfer authority.



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## ENDNOTES

- <sup>1</sup> Texas Dept. of Agric., *Texas Agriculture Facts*, (March 13, 2013), <http://www.texasagriculture.gov/Portals/0/DigArticle/1930/Ag%20Week%20Fact%20Sheet%203%2013%2013.pdf>.
- <sup>2</sup> Small, E. and Cherney, J., *Industrial Hemp In North America: Production, Politics, and Potential*, JOURNAL OF AGRONOMY (2016).
- <sup>3</sup> USDA.gov, Natural Resources Conservation Service, *Cannabis Sativa L. Plant Profile*, (last visited October 12, 2018) <https://plants.usda.gov/core/profile?symbol=CASA3>.
- <sup>4</sup> *Id.*
- <sup>5</sup> Meriam-Webster, definition of *cannabinoid*, <https://www.merriam-webster.com/dictionary/cannabinoid>.
- <sup>6</sup> Institute of Medicine Division of Neuroscience and Behavioral Health, *Marijuana and Medicine: Assessing the Science Base*, <http://www.nap.edu/catalog/6376.html>.
- <sup>7</sup> *Id.*
- <sup>8</sup> Small, E. *Cannabis: A Complete Guide*; CRC Press: Boca Raton, FL, USA, 2016; in press.
- <sup>9</sup> *Id.*
- <sup>10</sup> Vote Hemp, Inc., *Why Industrial Hemp?*, [https://www.votehemp.com/PDF/Why\\_Industrial\\_Hemp.pdf](https://www.votehemp.com/PDF/Why_Industrial_Hemp.pdf) (last visited Sept. 20 2018).
- <sup>11</sup> DAVID P. WEST, HEMP AND MARIJUANA: MYTHS & REALITIES 3 (North Am. Indus. Hemp Council 1998).
- <sup>12</sup> Agricultural Act of 2014, Pub. L. No. 113-79, §7606, 128 Stat. 649, 912 (2014); (Emphasis added to explain differences between federal definition of marijuana and hemp).
- <sup>13</sup> Small, E. and Cherney, J., *Industrial Hemp in North America: Production, Politics, and Potential*, JOURNAL OF AGRONOMY (2016).
- <sup>14</sup> *Id.*
- <sup>15</sup> Robert A. Nelson, *Hemp Husbandry*, Chapter 2, HEMP BASICS (2000).
- <sup>16</sup> CONGRESSIONAL RESEARCH SERVICE, HEMP AS AN AGRICULTURAL COMMODITY, RL32725 (June 22, 2018).
- <sup>17</sup> Robert A. Nelson, *Hemp Husbandry*, Chapter 4, HEMP BASICS (2000). (Both plant varieties – marijuana and industrial hemp – can be dioecious, which means they can be either exclusively male or exclusively female; and they can also be monoecious, which means they can have the staminate (i.e. the male pollen-producing part) and pistillate (i.e. the female ovum-producing part) on the same plant).
- <sup>18</sup> *Id.*
- <sup>19</sup> *Id.*
- <sup>20</sup> *Id.*
- <sup>21</sup> CONGRESSIONAL RESEARCH SERVICE, HEMP AS AN AGRICULTURAL COMMODITY, RL32725 (June 22, 2018).
- <sup>22</sup> *Id.*
- <sup>23</sup> Vote Hemp, *Farmers Introduction to Hemp Farming and Economics*, <https://www.votehemp.com/farmers-introduction-to-hemp-farming-economics/>.
- <sup>24</sup> Vote Hemp, citing: Alberta Agriculture and Rural Development, *Industrial Hemp Production in Canada*, June 2012, <http://bit.ly/AkYu3>.
- <sup>25</sup> Vote Hemp, citing: Manitoba Agriculture, Food and Rural Initiatives (MAFRI) – *Industrial Hemp Production / Production and Management / Yield Expectations*, (No Date), <http://bit.ly/11RP9KS>
- <sup>26</sup> Vote Hemp, citing: Agriculture and Agri-Food Canada – *Industrial Hemp: Profile, Statistics, Associations and Links*, March 22, 2007, <http://bit.ly/ppgyJS>.
- <sup>27</sup> Vote Hemp, citing: Hermann, Anndrea, 2008. *Canadian National Industrial Hemp Strategy (NIHS)*, Appendix D. pp. 284-344, – *Literature Review of the Agronomics of Industrial Hemp: Seeding and Harvesting Literature Review Agronomics: Industrial Hemp Seeding and Harvesting*, <https://www.votehemp.com/canada#Farming>.
- <sup>28</sup> CONGRESSIONAL RESEARCH SERVICE, HEMP AS AN AGRICULTURAL COMMODITY, RL32725 (June 22, 2018).
- <sup>29</sup> *Id.*
- <sup>30</sup> National Conference of State Legislatures (NCSL), *State Industrial Hemp Statutes*, (last accessed September 20, 2018), <http://www.ncsl.org/research/agriculture-and-rural-development/state-industrial-hemp-statutes.aspx>.
- <sup>31</sup> Hemp Business Journal, *The U.S. Hemp Industry grows to \$820mm in sales in 2017*, <https://www.hempbizjournal.com/size-of-us-hemp-industry-2017> (last visited Sep. 20, 2018).
- <sup>32</sup> *Id.*
- <sup>33</sup> Small, E. and Cherney, J., *Industrial Hemp In North America: Production, Politics, and Potential*, JOURNAL OF AGRONOMY (2016).

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34 G. Shi, C. Liu, et al., *Cadmium Tolerance and Bioaccumulation of 18 Hemp Accessions*, 168 APPLIED  
BIOCHEMISTRY AND BIOTECHNOLOGY 163 (Sep. 2012).

35 CONGRESSIONAL RESEARCH SERVICE, HEMP AS AN AGRICULTURAL COMMODITY, RL32725 (June 22, 2018).

36 Shi et al., *supra* note 11.

37 David P. West, *Hemp and Marijuana: Myths & Realities*, VOTE HEMP, [https://www.votehemp.com/PDF/myths\\_facts.pdf](https://www.votehemp.com/PDF/myths_facts.pdf).

38 ROBERT DEITCH, HEMP: AMERICAN HISTORY REVISITED, 33-36 (Algora Publ'g 2003).

39 CONGRESSIONAL RESEARCH SERVICE, HEMP AS AN AGRICULTURAL COMMODITY, RL32725 (June 22, 2018).

40 *Id.*

41 *See generally* Agricultural Act of 2014, Pub. L. No. 113-79, §7606, 128 Stat. 649, 912 (2014).

42 The 2014 Farm Bill defines 'agricultural pilot program' as a pilot program to study the growth, cultivation, or marketing of industrial hemp in a state where the growing or cultivating of industrial hemp is allowed and in a manner that ensures only departments of agriculture and institutions of higher education are used to grow or cultivate industrial hemp, requires the registration and certification of industrial hemp sites with the State department of agriculture, and authorizes State departments of agriculture to promulgate regulations to carry out the pilot program in accordance with the purposes of § 7606. *Id.*

43 *Id.*

44 Consolidated Appropriations Act of 2018, Pub. L. No. 115-141, §§ 537, 729, 132 Stat 348, 388, 444 (Mar. 23, 2018); (Although the Appropriations Rider was set to expire on September 30, 2018, Congress enacted Public Law Number 115-245 ("Continuing Appropriations Act") on September 28, 2018 continuing the applicability of, and the protections contained within, the original Appropriations Rider. The specific provisions of the Continuing Appropriations Act that extended the Appropriations Rider are now set to expire on December 7, 2018, unless reauthorized by Congress and the President).

45 Agricultural Act of 2014, Pub. L. No. 113-79, §7606, 128 Stat. 649, 912 (2014).

46 Office of the Secretary, USDA; DEA, DOJ; FDA, HHS, *Statement of Principles on Industrial Hemp*, 81 Fed. Reg. 53395-01 (Aug. 12, 2016), <http://federalregister.gov/a/2016-19146>.

47 In the Amicus Brief, certain members of Congress challenge the DEA's position that commercial hemp activity under the 2014 Farm Bill is limited to hemp states and that activity under the 2014 Farm Bill is limited to industrial purposes on the grounds that the 2014 Farm Bill was intentionally drafted to allow for "the study of a commercial market for industrial hemp and products derived therefrom;" *See*: Brief for the Petitioner as Amicus Curiae, p. 4, 18, Hemp Industries Association, et al., Petitioners, v. Drug Enforcement Administration, et al., Respondents., 2017 WL 10721879 (C.A.9).

48 National Conference of State Legislatures (NCSL), *State Industrial Hemp Statutes*, (last accessed September 20, 2018), <http://www.ncsl.org/research/agriculture-and-rural-development/state-industrial-hemp-statutes.aspx>.

49 CONGRESSIONAL RESEARCH SERVICE, HEMP AS AN AGRICULTURAL COMMODITY, RL32725 (June 22, 2018), <https://fas.org/sgp/crs/misc/RL32725.pdf>, (citing Vote Hemp, *Vote Hemp Releases 2017 U.S. Hemp Crop Report Documenting Industrial Hemp Cultivation and State Legislation in the U.S.*, (Oct. 31, 2017)).

50 Agricultural Act of 2014, Pub. L. No. 113-79, §7606, 128 Stat. 649, 912 (2014).

51 Pew Research Center, *Survey of U.S. Adults Conducted Oct. 25-30, 2017*.

52 S. 3042, 115th Cong. § 10111 (2018).

53 *Id.*

54 *Id.* (amending 7 U.S.C. 1621 by inserting § 297B(a)(1)).

55 *Id.* (inserting § 297B(b)(2)).

56 *Id.* (inserting § 297C).

57 *Id.* (inserting § 297B(a)(2)(A)).

58 *Id.* (inserting § 297A(1)).

59 *Id.* at § 12608.

60 *Id.*

61 *Id.* at §10111 (inserting § 297B(d)(3)(B)).

62 H.R. 2, 115th Cong. (2018).

63 Tex. H.B. 3587, 85<sup>th</sup> Legislature (2017).

64 Stephen Carter, *Hemp Texas Gets Hearing*, Texas Cannabis Report (April 12, 2017), <http://txcann.com/hemp-texas-gets-hearing/>.

65 *Id.*

66 Logan Yonavjak, *Industrial Hemp: A Win-Win for the Economy and the Environment*, FORBES (May 29, 2013, 2:54 PM), <https://www.forbes.com/sites/ashoka/2013/05/29/industrial-hemp-a-win-win-for-the-economy-and->

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the-environment/#4b83bf7f289b.

<sup>67</sup> National Conference of State Legislatures (NCSL), *State Industrial Hemp Statutes*, (last accessed September 13, 2018), <http://www.ncsl.org/research/agriculture-and-rural-development/state-industrial-hemp-statutes.aspx>.

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

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

<sup>71</sup> Alexander Nieves, *Agriculture Hopes Hemp Legislation Will Finally Go Through*, POLITICO (Aug.15, 2018, 1:45 PM) <https://www.politico.com/story/2018/08/15/agriculture-hopes-hemp-legislation-will-finally-go-through-778736>.

<sup>72</sup> In the first half of 2018 alone Alaska, Arizona, Kansas, Missouri, and Oklahoma enacted legislation which created industrial hemp pilot programs. National Conference of State Legislatures (NCSL), *State Industrial Hemp Statutes*, (last accessed September 20, 2018), <http://www.ncsl.org/research/agriculture-and-rural-development/state-industrial-hemp-statutes.aspx>.

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

<sup>74</sup> *Id.*