November 12, 1990

TO THE SPEAKER AND MEMBERS OF
THE TEXAS HOUSE OF REPRESENTATIVES
72ND LEGISLATURE

REPORT OF THE
COMMITTEE ON AGRICULTURE AND LIVESTOCK

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November 12, 1990

The Honorable Gib Lewis, Speaker
Members of the House of Representatives
Texas State Capitol
Austin, Texas

Dear Mr. Speaker and Members:

The Committee on Agriculture and Livestock of the 71st Legislature hereby adopts the interim reports and recommendations contained herein and submits them for consideration by the 72nd Legislature.

Respectfully submitted,

Dudley Harrison, Chairman

L.P. (Pete) Patterson, Vice Chairman

Layton Black

Renato Cuellar

Eldon Edge

Jerry Johnson

L. B. Kubiak

Phyllis Robinson

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INTERIM REPORT
SUBCOMMITTEE ON AGRICULTURAL ECONOMIC
DIVERSIFICATION
AND RURAL DEVELOPMENT

Members:
Richard Waterfield, Chairman
Jerry Johnson
Layton Black
INTERIM REPORT ON
AGRICULTURAL ECONOMIC DIVERSIFICATION
AND RURAL DEVELOPMENT

Introduction

Agriculture plays a vital role in Texas' economy. The comptroller estimates agriculture spending pumped about $32.2 billion, directly and indirectly into Texas' economy in 1988. "Manufacturers, food processors, trucking companies, railroads, wholesalers, and retailers all rely on the raw materials produced by Texas farmers and ranchers," said state comptroller Bob Bullock in the May 1990 issue of Fiscal Note. With this in mind, many Texas legislators are and have been concerned with having a healthy agriculture sector in Texas. Prior to the 70th and 71st Legislatures, reports and statistics were published that indicated the agriculture sector was facing a credit shortage, farm income was declining and rural areas were suffering economically. In addition there were reports that the state was losing out economically by shipping most of its food out of state for processing instead of processing more in state. With this backdrop, legislators emerged from the 70th and 71st Legislature with a number of bills related to agriculture and rural revitalization, commercialization of Texas products, and food processing.

As a result of this legislation, the following obligation bonds can be issued: $25 million for the Texas Agricultural Finance Authority; $25 million for the Texas Product Development Fund; $5 million for the Rural Microenterprise Development Program; and $20 million for the Small Business Incubator Fund. In addition, general revenue appropriations of $1.5 million have been made to fund the Rural Economic Development Fund; $500,000 has been made to fund the Product Commercialization Fund; and $600,000 has been awarded through the Agricultural Diversification Grant Program. Finally, other sources include $1.5 million transferred from a phased out program to the Rural Economic Development Fund; $2 million from the U.S. Oil Overcharge Fund to finance the Product Commercialization Fund; and $500 million in revenue bonds is authorized for the Texas Agricultural Finance Authority. The Texas Department of Agriculture estimates that the $25 million for the Texas Agriculture Finance Authority alone could in turn create approximately 400 new businesses and 7500 new jobs in both rural and urban areas.

The Committee on Agriculture and Livestock was charged by the Speaker to study agricultural economic diversification and development in rural areas. The committee chairman, Dudley Harrison appointed a Subcommittee on Agricultural Economic Diversification chaired by Repre-
sentative Dick Waterfield. This subcommittee held a public hearing in Austin, Texas on September 27, 1990. Following is a legislative history of the programs currently operating which deal with this issue and a description and report on each one. This is followed by committee recommendations concerning the programs and agricultural and rural development in general.

**RURAL ECONOMIC DEVELOPMENT COMMISSION**

*HB 438 By Waterfield*

A study by the 1988 Governor's Task Force on Agricultural Development reported that farm income had greatly declined in Texas during the 1980's. Therefore, this bill was created in the 71st regular session to establish the Rural Economic Development Commission. The purpose of the Rural Economic Commission is to conduct studies on the current status of rural Texas. After the studies have been completed the commission is charged with making recommendations to the 72nd Legislature for revitalizing rural areas and increasing agribusiness in Texas. The commission will expire on January 31, 1991, but the Texas Department of Commerce (TDOC) which is working with the commission will carry out any programs that may be implemented.

As of June 5, 1990 the Rural Economic Development Commission had completed all of their scheduled hearings where residents of rural areas testified on the problems facing their area. The consensus from the rural areas was that rural health care, education, equity capital, and small business development are issues in need of attention from the state. As of August 23, 1990 the committee reviewed the findings of technical committees which studied these issues. From that point up until January 1990 the Commission will develop recommendations and legislation. The Rural Economic Development Commission does not have any funding allotted to put its recommendations into place. If the commission develops programs that need funding, they will ask the legislature for assistance in the 72nd Legislative session.

The commission consists of nine members:

- Dr. Zerle Carpenter
- Rep. Dick Waterfield
- Marjorie Kastman
- Carlos Barrera
- Maxie Davis
- Mike Harrison
- Brad Helbert
- Robert Parker
- Joe Cook

**RURAL ECONOMIC DEVELOPMENT FUND**

*HB 613 By Waterfield*

This bill, created in the 71st regular session, replaced the Texas Rural Industrial Development Fund with the Rural Economic Development Fund. The Texas Rural Industrial Fund, established in 1971 and administered by TDOC, was primarily involved with making loans to industrial development corporations for promoting new manufacturing enterprises in rural Texas. With the restructuring, this bill gives priority to food and fiber processing industries and guarantees loans instead of making direct loans. At present, $1.5 million has been appropriated to this fund in
addition to the transferred balance of $1.5 million from the Industrial Fund. As of September 27, 1990 The Texas Department of Commerce had taken twenty four applications for loans and made a commitment to three projects for a total of $862,500.

TDOC reported to this committee that the program would be enhanced if the following ideas were implemented through legislation: increase the amount of a loan guaranteed from 85% to 90%; permit guaranty fund to be leveraged whereby for every dollar in fund, two times that amount could be guaranteed; and expand businesses which are eligible to include those which can demonstrate job retention instead of new job creation only. The key to the programs continuation beyond 1991, TDOC reported, is an appropriation increase of $3 million to the program which is needed because of the long term nature of the loans.

TDA DEVELOPMENT AND DIVERSIFICATION PROGRAMS

HB 49 By Harrison

This piece of legislation passed during the 2nd called session of the 70th Legislature established four programs being carried out by TDA to stimulate and diversify agricultural business development. These four programs are the Linked Deposit Loan Program, Texas Agricultural Diversification Grant Program, Rural Microenterprise Loan Fund, and the Texas Agricultural Finance Authority. The Agricultural Diversification Board oversees the Agricultural Diversification Grant program, the Rural Microenterprise Fund, and the Link Deposit Program. The Texas Agriculture Finance Authority Board oversees the program by the same name as well as issues bonds for it and the Rural Microenterprise Fund.

The legislation describes the Link Deposit Program as a time deposit between the state and an eligible lending institution governed by a written agreement that would allow the lending institution to review and approve loans to eligible borrowers. The state treasury deposits some of its funds into participating banks which in turn lend these funds to borrowers. An eligible borrower would be a person involved or getting involved in the processing, marketing, or producing of customary or alternative crops in Texas.

TDA reported to this committee that in the three years the program has been in place, thirty-eight projects have been funded through $4.4 million in linked deposits creating jobs for over three hundred people. None of the loans have defaulted and the total cost to the state has been less than $80,000 a year. TDA recommends that the program authorization be increased to $50 million because the "...demand for Linked Deposit loans is now much larger than can be satisfied at current levels of authorization." Second, TDA recommends that loan limits for food and fiber processing and marketing projects be increased to $500,000 and that the loan limit for crop diversification projects be increased to $200,000. The current loan limits do not meet the credit needs of most applicants. Third, they recommend that the program be expanded to include rural economic revitalization projects because "In order to develop to their full potential, the rural communities of Texas will also need to diversify their economies beyond agriculture, as well as within it." Fourth, TDA recommends that the program be expanded to include resource conservation projects. TDA further explained that loans for such projects as drip irrigation often carry a "...high interest penalty because of its perceived risk."

The Agricultural Diversification Grant provides for grants in research and innovation of new
products and procedures in the agricultural industry. Grants will not exceed $30,000 and a one to one ratio match is required. The program is funded through general revenue appropriation to TDA. TDA reported to this committee that forty-eight grant awards totalling $600,000 have been made since 1988 and generated more than $1.75 million in new economic growth. Based on this success, TDA recommends that the program be expanded by $500,000 per year. This would bring the total to $750,000 per year. Second, TDA recommends that the authorizing language for the program be expanded to permit grants to agriculture incubators involved in rural resource conservation projects. Third, TDA recommends that the program be expanded to “...fund demonstration projects in sustainable agriculture, including resource conservation, recycling, training and technical assistance for sustainable businesses and innovative, integrated agriculture research.

The Microenterprise Fund finances family owned and operated rural businesses with loans up to $30,000 for business expansion and $15,000 for business start-ups. The fund is designed to help finance small businesses in depressed rural areas and to capitalize community-owned and operated loan funds. Furthermore, the fund is to be self sustaining. This program will not begin making loans until its bonds are issued by the TFAA Board. $5,000,000 is allotted for this fund.

TDA reported to the committee that many of the local lending programs which may apply to the Microenterprise Fund “...do not have sufficient administrative resources or training...” to effectively use their funds. TDA recommends that a $300,000 per biennium appropriation be made so that the TDA staff could provide training and support to the local entities which receive funds from the Microenterprise Fund. They also recommend that a one time $750,000 appropriation be made to form a twenty percent loan-loss reserve. Participating local lending programs will contribute $250,000. “This amount will serve not only to secure losses and protect the overall fund, but it will also provide equity for low-equity rural communities lacking adequate fund raising capacity.”

The Texas Agriculture Finance Authority (TFAA) is designed to be a self-supporting program to provide financial assistance for the production, processing, marketing, and export of agricultural products. The TFAA Board has the authority to issue $25 million in state general obligation bonds and $500 million in revenue bonds. As of July 9, 1990 a bond council and financial advisor were chosen by the board. TDA reported to this committee that bonds could be issued as early as January 1991. TDA also advised that TFAA is expected to become self-supporting over a five to ten year period but during the first few years it will need $750,000 each year of the upcoming biennium for debt service. TDA expects this appropriation to be paid back beginning during the third year of the program’s operation. TDA also requests legislation to provide around $100,000 a year for TFAA’s administrative costs. Otherwise, these costs will be passed on to the borrowers.

TDA DEVELOPMENT AND DIVERSIFICATION PROGRAMS

HB 1111 By Harrison

In the 70th Legislature, HB49 was passed with a contingency to give TFAA authority to issue bonds if HJR 4 was approved by Texas voters. HJR 4, a resolution passed by the 70th Legislature, proposed a constitutional amendment authorizing the State of Texas to incur debt for the purpose of TFAA and the Rural Microenterprise Fund. HJR 4 failed at the polls. Therefore during the 71st regular session, HB1111 was proposed to once again authorize the TFAA Board to issue bonds contingent upon the approval of HJR 51. The constitutional amendment proposed by HJR 51 was approved by voters.
FUNDING

HJR 51  By Harrison

This resolution proposed a constitutional amendment authorizing the state to issue obligation bonds to assist agribusinesses. HJR 51 also limits the amount of bonds outstanding at one time to $25 million for the Texas Agricultural Fund, also known as the Texas Agricultural Finance Authority, $5 million for the Rural Microenterprise Development Fund, $25 million for the Texas Product Development Fund, and $20 million for the Small Business Incubator program. This resolution passed in the 71st regular session and was approved by voters in the November 1989 general election.

PRODUCT COMMERCIALIZATION FUND

HB 362  By Williamson

This bill was established in the 71st regular session to aid in the commercialization of new and improved products in Texas with agriculture being one of the targeted sectors. This was done by amending the Texas Department of Commerce Act to authorize a Product Commercialization Fund, an Office of Advanced Technology, and an advisory council to approve loans. The Product Commercialization Fund Advisory Board consists of a seven member board, with six members appointed by the governor and one by the Texas Higher Education Coordinating Board. Administrative guidelines for the Product Commercialization Fund are currently under development. Applications will not be accepted until these administrative guidelines are completed and approved. Administrative support for these funds is provided by the Office of Advanced Technology within the TDOC.

The funds allocated for these programs are as follows:

Product Commercialization - $500,000 provided from general revenue
Energy Related Product Commercialization, $2,000,000 from the Department of Energy (oil overcharge settlement funds)

SMALL BUSINESS INCUBATOR FUND AND PRODUCT DEVELOPMENT FUND

HB 1860  By Colbert

The Small Business Incubator Fund and the Texas Product Development Fund were initially established by HB 4 in the 70th Legislature. The issuance of bonds for these programs was contingent on HJR 4 which failed at the polls in 1987. Therefore, in the next session, HB1860 and HJR51 were passed in place of these bills and authority was given to the TDOC Board to issue general obligation bonds for these funds. The TDOC Board will approve all loans based on recommendations from advisory boards and committees.

The purpose of the Small Business Incubator Fund is to stimulate the development of new small businesses (including agribusinesses) by providing low interest loans and grants to local sponsors for incubators. TDOC describes incubators as multi-tenant buildings that provide small businesses with affordable space, shared services, and development services that play a nurtur-
ing role in assisting businesses through the start-up period, which can be the most financially vulnerable. Administrative guidelines for this fund are currently under development by TDOC and applications will not be accepted until these guidelines are completed and approved. TDOC reported to the committee that the program will need an appropriation to "...service the deficit which will result from the higher cost of borrowed funds versus the income derived from the low interest loans and grants provided to the incubators."

The purpose of the Product Development Fund is to provide capital to businesses which cannot obtain funding from traditional sources for the development and commercialization of new or improved products. Administrative guidelines for this fund are currently under development by TDOC and applications will not be accepted until these guidelines are completed and approved. TDOC reported to this committee that according to a financial model run on this program, "...the State must expect to cover a debt service shortfall during the active life of the fund as the types of the investments targeted cannot be expected to provide the rapid returns necessary to cover the bond payments." During the next Legislative session TDOC will request an appropriation for this. TDOC also reported to the committee that the procedural requirements for the Product Development Fund and Product Commercialization Fund are similar. "Commerce will merge the administrative responsibilities of the two funds where possible to avoid duplication of effort and simplify public access to the programs."

RECOMMENDATIONS

Rural Economic Development Commission

The Committee supports the Rural Economic Development Commission's efforts and dedication toward helping rural Texas.

The Committee supports the Commission's recommendation to provide loan packaging services to rural Texas counties.

The Committee supports the Commission's recommendation to establish a Rural Economic Assistance Clearinghouse that will provide rural Texans with a single point of access to economic development-related information. The committee suggests that the Commission consider the Texas Agricultural Extension Service as a possible clearinghouse.

The Committee supports the Commission's recommendation to allow the use of non-Emergency Medical Technicians as ambulance drivers in targeted rural areas.

The Committee supports the Commission's recommendation to provide more support for programs aimed at drug abuse in rural areas.

The Committee supports the Commission's recommendation to assist rural communities in addressing natural resource development, tourism, economic development and other
related issues. The committee suggests that the current tourism department within the Texas Department of Commerce be given additional funds to handle rural tourism promotion.

**Rural Economic Development Fund**

The Committee supports TDOC's recommendations to:

- increase the amount of a loan guaranteed from 85% to 90%;
- permit guaranty fund to be leveraged whereby for every dollar in fund, two times that amount could be guaranteed;
- expand businesses which are eligible to include those which can demonstrate job retention instead of new job creation only; and
- add a $3 million dollar appropriation to the fund.

**Linked Deposit Loan Program**

The Committee supports TDA's recommendation to increase program authorization to $50 million.

The Committee supports TDA's recommendation that loan limits for food and fiber processing and marketing projects be increased to $500,000 and that the loan limit for crop diversification projects be increased to $200,000.

The Committee supports TDA's recommendation that the program be expanded to include rural economic revitalization projects.

The Committee supports TDA's recommendation that the program be expanded to include resource conservation projects.

**Texas Agricultural Diversification Grant Program**

The Committee supports TDA's recommendation to expand the program by $500,000 per year.

The Committee supports TDA's recommendation that authorizing language for the program be expanded to permit grants to agriculture incubators involved in rural resource conservation projects.

The Committee supports TDA's recommendation that the program be expanded to fund demonstration projects in sustainable agriculture, including resource conservation, recy-
clinging, training and technical assistance for sustainable businesses and innovative, integrated agriculture research.

Rural Microenterprise Loan Fund

The Committee supports TDA’s recommendation that a $300,000 per biennium appropriation be made so that training and support could be provided to the local entities which receive funds from the Microenterprise Fund.

The Committee supports TDA’s recommendation that a one time $750,000 appropriation be made to form a twenty percent loan-loss reserve.

Texas Agricultural Finance Authority

The Committee supports TDA’s recommendation to provide $750,000 each year of the upcoming biennium for debt service.

The Committee supports TDA’s recommendation that an appropriation be made for TAFA’s administrative costs.

Small Business Incubator Fund

The Committee supports TDOC’s recommendation that an appropriation be made to service a debt service shortfall during the active life of the fund.

Product Development Fund

The Committee supports TDOC’s recommendation that an appropriation be made to cover a debt service shortfall during the active life of the fund.

General Recommendations

The committee does not recommend creating new agricultural economic diversification and rural development programs through legislation. The foundations already begun should be built upon, improved and expanded where necessary.

The committee encourages the governing boards and agencies to have all of their agricultural economic diversification and rural development programs fully operational as soon as possible.
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Ware, Keren K., Program Manager, Texas Department of Commerce, testimony regarding Product Commercialization and Development Funds. 25 September 1990.
INTERIM REPORT
JOINT SUBCOMMITTEE ON TEXAS-MEXICO BORDER ISSUES

Members:

Renato Cuellar, Chairman
Agriculture and Livestock Committee
State, Federal and International Relations Committee

Agriculture and Livestock Committee
Dudley Harrison
Jerry Johnson
Layton Black

State, Federal and International Relations Committee
Alvin Granoff
Henry Cuellar
Bob Hunter
November 12, 1990

The Honorable Alvin Granoff
Chairman, State, Federal & International
Relations Committee
Texas State Capitol
Austin, Texas

and

The Honorable Dudley Harrison
Chairman, Agriculture and Livestock Committee
Texas State Capitol
Austin, Texas

Dear Chairmen:

The Subcommittee on Texas-Mexico Border Issues of the 71st Legislature hereby adopts the report and recommendations contained herein and submits this interim report and recommendations for consideration to the State, Federal & International Relations Committee and the Agriculture and Livestock Committee.

Respectfully submitted,

Renato Cuellar, Chairman
State, Fed Committee
Agriculture Committee

Alvin Granoff
State, Fed Committee

Henry Cuellar
State, Fed Committee

Bob Hunter
State, Fed Committee

Dudley Harrison
Agriculture Committee

Jerry Johnson
Agriculture Committee

Layton Black
Agriculture Committee
INTERIM REPORT ON TEXAS-MEXICO BORDER ISSUES

House Speaker Gib Lewis, charged both the House Agriculture and Livestock Committee and the State, Federal and International Relations Committee to study international agriculture. In addition, the State, Federal and International Relations Committee was charged to study health, environment, immigration, infrastructure, and maquiladoras along the border. Representative Renato Cuellar, being on both committees, was appointed chairman over these charges in each respective committee. Rep. Cuellar appointed members from each of the full committees to jointly consider these often interrelated issues. This joint subcommittee held a public hearing on August 23, 1990 in Weslaco, Texas to hear the concerns of the people along the border. Following is a report on health, environment, and infrastructure as contributed by the State, Federal and International Relations Committee and a report on agriculture along the border as contributed by the Agriculture and Livestock Committee.
REPORT ON HEALTH, ENVIRONMENT AND INFRASTRUCTURE

Introduction

The Texas-Mexico Border region is characterized by a diversified economy which is linked by geographical, social and infrastructure ties to Mexico. Retail trade, agriculture, and the maquiladora industry are the primary sectors of employment in the area.

Even though the border has shown positive signs of growth, there are problems which have accompanied this growth and warrant attention.

The Committee on State, Federal, & International Relations and the Committee on Agriculture and Livestock were given the charge to explore the array of problems specific to the Texas-Mexico border. A joint subcommittee held a public hearing in Weslaco, Texas to address these concerns.

The burgeoning population has precipitated problems which have greatly impacted the quality of life there. The issues to be addressed in this report prepared by the Committee on State, Federal & International Relations are specific to health, environment, and infrastructure strain along the border.

Health

The border region has had to struggle to keep up with ever increasing infrastructure needs as its population grows. Public health problems unique to the Border are all that much harder to solve because public health officials cannot travel between the two countries as easily as disease can.

The dramatic increase in the population along the border has overcome the infrastructure of the Mexican cities which are unable to provide adequately for potable water, sewage treatment, solid waste disposal, and paved streets. The inability of these communities to provide for basic human needs results in significant public health problems that include surface and ground water pollution, air and solid waste pollution, a high incidence of communicable disease, and inadequate prenatal and maternal care for much of the population. All of these problems adversely impact the Texas side of the border as people and problems move freely back and forth.

On the Texas side, large populations are concentrated in colonias. These are developments which have emerged along the border with virtually no regulatory oversight by the counties, and which consequently do not have adequate water or sewage service available. It is estimated that there are about 750 colonias, concentrated primarily in the lower Rio Grande Valley and around El Paso, although, colonias occur all along the border.

Almost 140,000 people live in the colonias in El Paso, Willacy, Hidalgo and Cameron Counties. In some cases, wells and septic tanks are adjacent to each other, possibly resulting in people consuming water contaminated with their own wastes. This too results in a high rate of enteric illnesses among colonias residents and their families. Since the level of poverty is so high, most colonia residents and many other residents of the border counties are unable to access necessary preventative health and medical services. In addition, the presence of many Mexican citizens, contributes to the demand for health and human services.

During the 71st regular session, the Texas Legislature provided $100,000,000 to be used in
providing water and sewer service for the colonias. These funds are to be used for loans to municipalities to extend their services out to the colonias.

MEDICAL CONCERNS

On both sides of the border, polluted water is a major cause of intestinal disease. According to Richard Bath of H.A.R.C., intestinal diseases constitutes the leading cause of death on the Mexican side of the border. The group most susceptible to the harmful effects of polluted water are children.

On the U.S. side of the border, there is a high incidence of communicable diseases. Dr. Laurence Nickey, Director of the El Paso City/County Health District, stated that this constitutes a problem for the rest of the state and beyond the borders of Texas. People who are infected act as carriers of disease which, in turn, can potentially affect other communities that they move to.

Some border residents store their water in recycled chemical drums, dip their water from agricultural canals, and have their wells within 500 feet of their septic tanks. In one El Paso colonia, children spend an average of only nine years in school. Many of these children may be dropping out of school because they are too sick from drinking contaminated water to keep up with their work.

In many border areas, rainfall typically occurs all at once causing continual problems with flooding. Inadequate flood control measures create special problems when flood waters bring sewage to the surface from pit toilets or badly designed septic systems.

Continued efforts should be made to improve the availability of safe water along the border. Dr. Charles Wilson, Director of the Hidalgo County Health Department, testified at the public meeting held by the Interagency Advisory Council for the Office of Texas-Mexico Health and Environmental Issues that the $100 million colonia water bill will not be enough to complete the job. Two cities, Pharr and Edinburg, received funding and annexed nearby colonias. A problem still exists after the construction of sewage and water facilities in the colonias as the residents must still bear the cost of preparing their own plumbing and pay any tie on fees assessed.

According to Mike Loving, from the Office of Texas-Mexico Health and Environmental Issues, who testified before the Joint Subcommittee, there are other significant medical concerns that specifically pertain to the border area. These include a high rate of adolescent pregnancy, a lack of adequate dental care, the risk of AIDS and other sexually transmitted diseases, and a high incidence of drug abuse. Even though these problems are not unique to the border, they are exacerbated by the circumstances indigenous to the area.

INSTITUTIONAL CONCERNS

There is difficulty in obtaining and keeping trained health professionals on the border. Language, culture and the poverty of the area constitute barriers to recruitment of health professionals from outside the area. Local people, who are bilingual, bicultural and familiar with the area, often leave after becoming trained as health professionals due to salary and career advancement opportunities elsewhere in the state or out-of-state.

Enhancing the training and continuing education of health professionals and allied health workers is necessary. Local colleges and universities might be encouraged to develop curriculums specifically addressing health problems indigenous to the border region. Incentives to
encourage health professionals and workers to remain in the area might be considered, as well.

There are a number of other institutional concerns that affect the public health system on the border. The existing public health infrastructure and the public and private health care delivery system is overburdened as a result of both legal and illegal immigration. The burden of cost for providing health care to illegal immigrants is a direct strain on the State and localities due to restrictive federal regulation which prohibits compensation or reimbursement for such care. Dr. Charles Wilson reported to the Joint Subcommittee that, in Hidalgo county, there are three federally funded community health centers but they are not sufficient to meet local health care needs. There is no public hospital and the local physicians are providing much free care.

The increasing number of hospital closures is shifting the indigent patient loads to a smaller number of institutions and providers. In addition, variation in eligibility requirements for local, state, and federal programs is confusing to the target population and appears to limit their use.

Environmental health problems which affect the border are generated in both the United States and Mexico, and the coordination for addressing the problems is less than effective. The Texas Legislature might consider supporting a proposed resolution to the U.S. Congress and the Federal Government of Mexico to create a Binational Environmental Health Council.

During the 71st Legislature, the Office of Texas-Mexico Health and Environmental Issues was established by House Bill 2972 without appropriation. The office was charged to identify border health and environmental problems and to coordinate activities among various agencies responsible for service delivery and problem solving on both sides of the border. The bill also created an inter-agency advisory council comprised of various state and federal agencies to assist the office in discharging its duties. Consideration might be given to appropriating funds for the office to increase coordination and cooperation, to develop a better communication network, and to strengthen working relationships among various groups involved in border health issues.

**Environment**

The environmental problems along the Texas-Mexico border are varied yet unique to the area. Water quality and availability are serious concerns. Also, the treatment of wastewater and disposal of waste pose serious problems both in Texas and Mexico. The transportation of toxic waste and hazardous and nonhazardous materials, as well as increased air pollution caused by population growth and development, all deserve considerable attention.

A promising example of cooperation was spawned by the unsafe dumping of raw sewage into the Rio Grande by the City of Nuevo Laredo. The federal governments of the U.S. and Mexico and the State of Texas are collectively constructing a sewage plant. It will be administered by the International Boundary and Water Commission. This effort should be a model for other projects along the border.

Regulating waste management is a bilateral problem. Juarez treats its sewage in ponds and then uses it for agricultural purposes. This poses a risk from bacterial contaminants for the workers in the fields and consumers in both Texas and Mexico, according to Dr. Nickey.

According to the Texas Department of Agriculture, it is difficult to separate the environmental effects of pesticides from health effects. Intensive use of pesticides in agriculture on both sides of the border increases environmental hazards such as groundwater pollution. Direct and indirect exposures to pesticides is one of the most serious health problems facing farm families, and border residents.
Coordination and comprehensive planning is critically important in order to continually address environmental problems. Even though efforts are being exerted, timely action and enforcement is imperative. Attention might be given to the large quantities of hazardous and nonhazardous materials and toxic waste moving along the border and into the State. Regulations differ in the U.S. and Mexico concerning the tracking, listing and transportation of such materials.

Manuel Aquirre, of the Texas Air Control Board, who testified before the Joint Subcommittee, states that with the increasing population and industrialization, air pollution has become a growing problem in the border region. Three major sources of air pollution are vehicle emissions, industry, and outdoor burning.

The border area with the most severe air pollution problem is El Paso-Cuidad Juarez. The city of El Paso exceeds federal air quality standards in the summer as well as during the winter. The standards being exceeded are for inhalable particulates, carbon monoxide, and ozone. There is a growing incidence of the same type of photochemical smog found in Los Angeles.

The most significant contributor to the pollution problem in El Paso-Cuidad Juarez is vehicular emissions. Air pollution is caused, in part, by the time that it takes to clear U.S. Customs. The number of cars has increased with the population, and in Mexico these vehicles tend to be older. Older vehicles are more likely to contribute heavier amounts of pollutants. Although the County of El Paso maintains a Vehicle Inspection and Maintenance Program, Cuidad Juarez does not. Recently, the problem of vehicle emissions has been exacerbated by the increase in truck traffic associated with the maquiladora industry.

The maquiladora industry has added an unknown dimension to the air quality problems along the border. SEDUE, Mexico's counterpart to the EPA, has projected a ten percent growth of the maquiladora industry in the next two years. There are approximately fifty-two new maquilas proposed for development. As the maquiladora industry grows so could the impact of air pollution on the border region.

Outdoor burning in Cuidad Juarez in unrestricted, however, in Texas, it is permitted by the Texas Air Control Board in limited circumstances. In Texas, outdoor burning is practiced in the colonias since domestic waste collection is not provided by the local governmental entity. This problem creates considerable air pollution but requires further study.

Texas must continue to work with the federal governments of the U.S. and Mexico to improve the collection of data and oversight of environmental regulations. The State must be an active partner in addressing all of the problems which affect the Texas-Mexico border. For example, Texas has 800,000 acres of protected land in Big Bend National Park. Directly across the border there are a million acres of unprotected land in Mexico. In order to prevent environmental degradation of the areas on both sides of the border, the State might consider supporting the federal governments of the U.S. and Mexico in their efforts to establish an international park that spans land in both Texas and Mexico.

**Infrastructure**

The Border's infrastructure is being stretched to its limits. The surge in manufacturing related transportation, the increased need for affordable housing, and the need for financing mechanisms to support both industrial and agricultural development are issues of concern that impact the infrastructure of the border region.
TRANSPORTATION

The vast majority of maquiladora products, raw materials and machinery cross the border between the U.S. and Mexico by truck. However, economical and efficient truck transportation is hindered by several problems both in Texas as well as in Mexico.

In general, maquilas are required as a practical matter to use Mexican registered tractors or Mexican tractor-trailers for most of their cross-border shipments. If maquilas are permitted to use their own equipment, it must usually be operated by Mexicans. According to a report by the Texas Center for Border Economic and Enterprise Development, in addition to highly specific and promulgated trucking regulations, it appears that these regulations are marked by inconsistency in enforcement and compliance.

Prior to the passage of House Bill 2968 in the 71st Legislative session, Texas did not enforce operational restrictions on Mexican motor carriers, enabling them to operate throughout the state. This lack of enforcement violated federal law, compromised public safety, and lessened Texas trucking industry revenues and Texas citizens’ jobs. Bill 2968, was intended to ensure a reciprocal arrangement in the Mexican-American trucking industry, whereby Mexican trucks that unloaded goods in the U.S. had to return to Mexico empty so as not to compete with American truckers. According to the bill, Mexican motor carriers are now restricted to operation within U.S. defined border commercial zones. The Texas Department of Public Safety has requested that the bill be clarified; amendments will be presented in the upcoming legislative session.

The Texas Attorney General’s Office has recently issued an opinion on the 1949 Convention on the Regulation of Inter-American Automotive Traffic which holds that all for-profit truck drivers must have a Texas driver’s license. If this opinion is enforced, most Mexican truckers will have to be stopped at the border as most are not licensed to drive in Texas.

Another pervasive problem of truck transportation out of Mexico is that the limited bridge crossings are slow and U.S. Customs clearances are time consuming due, in part, to the extensive inspections required by the war on drugs.

Reliable truck transportation is dependent on safe and efficient highways. It is imperative that the entire stretch of Highway 281 between Pharr and San Antonio be converted to a four lane highway in order to accommodate increased traffic. The completion of this project is very important to sustained economic development of the Rio Grande Valley and Mexico as they build a new road from Monterey to McAllen.

According to written testimony provided to the Joint-Subcommittee by the Texas Department of Commerce, cross-border truck transportation costs constitute a major operating cost for the maquiladoras. The freight rates charged for cross-border maquila shipments by Mexican shuttle carriers, some of which are owned by the Mexican chauffeurs’ unions, tend to be very high at all border locations. The highest rates are charged at Mexican border crossings that are served by the fewest shuttle carriers and are most restrictive of U.S. for hire motor carriers. Maquilas in those communities with such a border crossing pay higher crossborder freight rates both because of Mexican trucking company monopolies and because of the high fixed rates charged by them. Freight crossing rates are the highest in Matamoros, Reynosa and Nogales.

Another problem which hinders business development efforts in the border region and throughout the state is the current intrastate trucking rate structure and intrastate trucking regulations.
There is free exchange of rail equipment between Mexico and the U.S. and uniform track gauge. The principal Mexican railway line receives an average of 250 loaded railroad cars a day from Texas at its five border crossing points. Unfortunately, rail deliveries are often unpunctual, and thus do not accommodate the just-in-time concept in manufacturing.

While, the Texas Department of Air Transportation has allocated grants for new airports in the valley, the ever increasing development along the border has caused growing demands on the air transportation infrastructure. Consideration should be given to the impact of growing commercial air traffic in the region.

HOUSING

Problems in meeting basic housing needs have multiplied. Greater demands for available and affordable housing and urban service for workers and their families is of serious concern. A key aspect of the maquila industry work force is its high percentage of female workers and female heads of household. Female workers migrate to the border with their families, hence the need for family housing has increased greatly compared to the earlier periods, when the migrant flow towards the U.S. consisted primarily of men.

FINANCE

Even though the infusion of foreign investment in Mexico has increased over the last few decades, there are some restrictions which do inhibit foreign investment there. Positive actions are being taken by both the U.S. and Mexico, for example the enactment by Congress of the U.S.-Mexico Debt Exchange Border Development Act of 1989. It is anticipated that the free trade agreement will greatly impact investment and consequent development along the border. Some business people are encouraged by the possibility of enhanced trade opportunities.

Evidence supports the increase of public and private partnerships which are supporting infrastructure improvements along the border. An example of this is the construction of the Los Indios Bridge near Harlingen. Consideration should be given to exploring alternative finance mechanisms to support agricultural and industrial development along the border.

Texas must continue to participate in and encourage the partnership between the U.S. and Mexico to restructure Mexico's foreign debt. Initiatives and mutually beneficial programs that improve trade opportunities, strengthen infrastructure and economies along the border, and address health and environmental problems are imperative.
Conclusion

The Texas-Mexico border region is rich in resources and the areas has many unique qualities. It provides potential for the creating new jobs, attracting new industry, and increasing agricultural production. This valuable asset for the State must not be ignored and the health, environmental, and infrastructure problems specific to this area must be seriously addressed. The well-being of this region will have an impact on the entire state. Cooperation among federal governments of the U. S. and Mexico, other adjoining states, and localities along the border is imperative.

With the anticipation of a free trade agreement being enacted within the next few years, much attention will be given to trade between Texas and Mexico. Some expect more trade opportunities and stronger economic ties, while others remain uncertain. The Joint Subcommittee recognizes this and encourages cooperative efforts among public and private organizations, involved in international trade and relations, to study this important issue.

The State of Texas foreign trade offices in Mexico City and Monterrey will continue to be a viable tool for promoting trade and business opportunities between Texas and Mexico. These offices also served the agriculture industry and should be utilized to keep officials and businesses apprized of opportunities, regulations, and new trade developments as they occur.
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REPORT ON INTERNATIONAL AGRICULTURE

Introduction

The Texas-Mexico border area is an important contributor to Texas agriculture. This area also has problems specific to that area which warrant attention from the Legislature. The Committee on Agriculture and Livestock, acting upon the Speaker's charge "to study international agriculture" jointly held a public hearing with the State, Federal and International Relations Committee to learn about the problems the agriculture community is facing in the border region. The main topics brought out by those testifying on agriculture were free trade between the United States and Mexico, availability and quality of irrigation water, and livestock export facilities. Following are overviews of these topics which bring to attention the main issues, needs and work being done by various entities.

Free Trade Between the U.S. and Mexico

The Bush Administration has long been an advocate of free trade with Mexico but had been unable to spur on negotiations with the Mexican government. However, in February of 1990 the Mexican President Carlos Salinas de Gortari proposed that free trade talks begin between the two countries. Many see Salinas' change of heart toward free trade as a response to the demand on developed countries to invest in new Eastern Europe democracies. Salinas may fear that would mean less investments would be made in Mexico. Since in office, Salinas has been working to revitalize the shambled Mexican economy and he may also foresee that a less protectionist economy would invigorate business.

As of this writing, fall 1990, a formal free trade proposal has not been published. However, it is likely that a free trade agreement between Mexico and the U.S. would be similar to the recent free trade agreement with Canada which became effective January 1, 1989. This agreement included lessened tariff and non tariff restrictions to trade, investment incentives and other factors to increase trade.

This type of agreement has caused many producers in the border region to worry about the possible effects. Those testifying on free trade expressed concern over food safety. Unless Mexico's standards for pesticides and food additives are brought up to U.S. standards, unsafe food could be brought into the U.S. A second concern is water availability which was aptly expressed by Kathy Reavis of Texas Agri-Women. "During drought periods or peak production times, irrigation water is in short supply. With more farming on the Mexico side, which we presume will
happen with the free trade agreement, there might not be enough water to accommodate everyone. Also, with a low water supply, the salinity of the river water rises. High salt levels in irrigation water has an adverse effect on crops and can kill them." A third concern is the potential spread of insects and diseases across the border. As expressed in The Grower, the July 1990 newsletter by the Texas Citrus Mutual Association, "...closer cooperation with Mexico may open new opportunities to eradicate the Mex Fly but... Valley citrus growers have reason to be concerned that (the U.S.) may relax some of its insect and disease quarantines." A fourth concern is the impact on workers and farmers in the Rio Grande Valley. Farmers do not believe that they will be able to compete with Mexico's lower wage and benefits, fewer restrictions, and cheaper insurance costs. Therefore, the farmers who can afford to may opt to move their operations across the border. This could result in less jobs available for farm workers. The farmers who cannot afford to move may face financial difficulties stated many of those testifying.

**Water Rights**

Water availability has become of great concern to Texans. If Texas' population and industry continues to grow, more and more pressure will be put upon this limited resource. Texas simply does not have the water resources to support high population density and industry use without limit and this leads to some disagreements over the use of surface and groundwater. The contention over groundwater is strong in the Edwards Aquifer region of Texas. The sides seem to be drawn between urban users and agriculture users. In the South Texas border region there is a strong contention over surface water, particularly the Rio Grande River water. Likewise, the sides on this issue seem to be drawn between urban and agriculture users.

The history over surface water rights in South Texas is long and complicated and the current situation remains to be very complicated. The disagreements over water rights became pronounced during the 1950's drought and a lawsuit representing more than 3000 parties was brought to court in Hidalgo County. Finally in 1971 the Lower Rio Grande Water Suit judgement was rendered which distributed water rights along the Rio Grande River and appointed a court ordered watermaster to oversee allocation of water. In the meantime, in 1967 the State adopted the Water Rights Adjudication Act which allowed what is today the Texas Water Commission to adjudicate water rights for every water basin in the State. The Commission finished this in 1988 and is beginning implementation of the next step of the 1967 Act, which allows the agency to appoint a Watermaster for each river basin in the state to enforce water rights. Since 1967 and 1971 many events have taken place that have a bearing on the issue. For example, the Valley has become more populated and in response to that the Texas Legislature in 1983 adopted Article 973c to provide for transition of water rights from agricultural use to municipal use. In the 71st Legislature additional legislation was proposed but failed to pass. This in no way gives one a complete picture of the history but it does point to the fact that the issue is very complicated and of great importance to the Valley.

So far, despite the court cases decided, laws passed, and water districts formed, the water rights disagreement continues. Municipalities claim that they do not have enough water and that agriculture has more than its fair share. The agriculture sector claims that it does not waste water but uses it efficiently to run an industry that supports the Valley economy. That sector also resents water rights being converted to municipal use before the municipality has proof of need. The sentiments of many producers in the Valley were expressed by Donald Thompson of Texas Citrus Mutual in his testimony before the committee "...we believe priority should continue to be given
to water users vital to the economy of the Rio Grande Valley. There is a considerable amount of non essential use of water that needs to be reduced before farmers have the source of their livelihood cut off." This of course does not present all the arguments for each side but they are ones often heard.

The transfer of water rights will probably be brought up once again during the 72nd session. The House Committee on Natural Resources held a hearing on the Transfer of Water Rights on September 6, 1990 in McAllen, Texas. This committee oversees water issues and may be looked toward to provide information and leadership on this issue.

Livestock Export Facilities

Livestock Export Facilities are run in coordination with the Texas Department of Agriculture (TDA) and the United States Department of Agriculture (USDA) to provide an important service to the border economy. Before livestock can be exported to Mexico, it has to clear an inspection at one of the five export facilities along the Texas-Mexico border. Mike Moeller, Deputy Commissioner of TDA, reported that during 1989 and through May 1990, the facility in Del Rio handled seventy percent of the exported livestock with Eagle Pass a distant second handling approximately twenty-one percent.

Commissioner Moeller also relayed to the committee a request that Starr County Cattle Raisers have expressed for an export pen in their county. He reported that TDA does not have the funds in their current budget to build and staff another facility. However, TDA would do so if the Legislature made the request and funded the project. Subsequently, the USDA office in Austin has provided to the committee a copy of the USDA response regarding this issue. In a letter to Senator Lloyd Bentsen from Jo Ann R. Smith, Assistant Secretary for Marketing and Inspection Service of the USDA, she wrote: "Under current conditions we believe that the capacity of our facilities is sufficient to handle cattle imports and exports in this area and that opening an additional port would not be an efficient use of our resources."

Conclusion

The free trade proposal between the U.S. and Mexico is occupying the thoughts of many people along the border. This is understandable since these people, being so close to Mexico, are likely to be personally affected. Their concerns do not go without notice by the members of this committee and this committee will advocate their concerns to the 72nd Legislature. In addition to personally affecting the people along the border, a free trade agreement will affect the Texas and U.S. economies. Many speculate that the nation as a whole will benefit economically as more jobs are created by increased exports. Among the likely losers are the low wage earners whose jobs may be taken over by their Mexican counterparts. It should be noted that the effects of this proposal on the border region and particularly agriculture have not gone without notice in our state agencies and in Washington. The Texas Department of Commerce, Texas Department of Agriculture and the Lyndon B. Johnson School of Public Affairs are working in coordination on an impact study. In Washington, a request has been made to the International Trade Commission to study the macro and microeconomic impacts a free trade agreement would have on agriculture and the border area. The General Accounting Office issued a preliminary report in February 1990 on the U.S. Trade
Impediments in Agriculture; the final report is due out in December 1990. Finally Chairman E. (Kika) de la Garza has requested that the farm bill include a provision directing the Secretary of Agriculture to study the effects such a proposal would have on agriculture. The joint committee wishes to participate in these and other studies that may be necessary.

Water availability and the corresponding issue of water rights is one of great importance to agriculture, particularly agriculture along the Texas-Mexico border. This committee understands that the agriculture sector does not wish to put hardships upon those in urban areas who need water but as well understands agriculture’s need for water to sustain a vital part of the economy. This committee is willing to participate in talks to arrive at a fair and viable solution.

Livestock export facilities serve a necessary role in the livestock export market. It is important that a sufficient number of facilities be available so that livestock export is not impeded. Without the support of the USDA, TDA cannot run a facility in Starr County. However, the joint committee wishes to continue dialogue with the USDA concerning this. As an alternative this committee may entertain proposals to enhance the utilization and accessibility of the Laredo and Brownsville facilities which are the closest to Starr County. The committee might also support efforts to increase the use of the Eagle Pass facility to take pressure off the Del Rio facility if indeed this is an impediment to exports. The committee also suggests that study be done to determine if new facilities will be needed in the future.

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INTERIM REPORT
SUBCOMMITTEE ON THE AQUACULTURE INDUSTRY

Members:

Jerry Johnson, Chairman
Renato Cuellar
Layton Black
L.P. (Pete) Patterson
L.B. Kubiak
INTERIM REPORT ON THE TEXAS AQUACULTURE INDUSTRY

Introduction

An increasing world population that is increasingly health conscience is combining to increase the demand for fish and other aquatic species. From 1980 to 1988, the United States per capita consumption of edible fishery products rose from 12.8 pounds to 15 pounds. However, because of “habitat degradation and overfishing”, as testified by Dr. David Schmidly of Texas A&M University, wild fish harvest alone will not meet this demand. Aquaculture, defined by the Texas Aquaculture Association (TAA) as the business of producing, propagating, transporting, possessing and selling cultured aquatic species raised in private facilities is a viable answer to this increasing demand.

Texas aquaculturist have a competitive advantage in this growing agriculture sector. Of 50,000 coastal acres in the United States ideally suited to the culture of marine species, 30,000 are in Texas per Dr. George Chamberlain of The Texas Agricultural Extension Service. Historically however, Texas has not been a leader in aquaculture. The report, Texas Aquaculture - Status of the Industry shows that neighboring southern states lead the nation in catfish, crawfish, baitfish and tropical fish production. Despite the past, it appears that as Texas aquaculturists become more sophisticated they will be making the moves necessary to capture new and expanding markets in the future.

The Committee on Agriculture and Livestock was charged by the Speaker to study the economic development opportunities of the aquaculture industry and the regulatory responsibilities of the State. The committee chairman, Dudley Harrison appointed a Subcommittee on Aquaculture chaired by Representative Jerry Johnson. This subcommittee held two public hearings, one in Corpus Christi, Texas on January 29, 1990 and the other in Austin, Texas on April 23, 1990. Following is a report on various issues associated with aquaculture followed by conclusions and recommendations.

Regulation

The Fish Farming Act, (Texas Senate Bill 1507, 71st Legislature), transferred much of the authority the Texas Parks and Wildlife Department (TPWD) had to the Texas Department of Agriculture (TDA), thus making TDA the lead agency over day to day aquaculture activities. Effective September 1, 1989, the act created the Aquaculture Executive Committee composed of the TPWD
chairman, TDA commissioner and the General Land Office (GLO) commissioner. Per the V.T.C.A., Parks and Wildlife Code chapter 1, subchapter D, this committee is to adopt rules to ensure that fish-farming operations do not have a negative impact on the existing marine or biological ecosystem. Furthermore, the committee shall employ an aquaculture liaison officer to coordinate aquaculture activities between the state agencies and to report to the committee and the legislature on the status of aquaculture. This position has not been filled because of lack of funding.

Numerous state, federal and local agencies play a role in the regulation of aquaculture. Under the Fish Farming Act, V.T.C.A., Agriculture Code section 134, TDA is responsible for promoting fish farm products, licensing and regulating fish-farming operations and cultured fish-processing plants, and providing technical assistance to fish farmers among other responsibilities.

According to the V.T.C.A., Parks and Wildlife Code section 1.011, TPWD regulates the taking and conservation of the state’s fish, oysters, shrimp, crabs, turtles, terrapins, mussels, lobsters, and all other kinds and forms of marine life. All fish and other aquatic animal life contained in the freshwater rivers, creeks, and streams and in lakes or sloughs subject to overflow from rivers or other streams within the borders of this state are the property of the people of Texas. Per V.T.C.A., Agriculture Code section 134.020, TPWD shall adopt rules regulating the importation, possession, propagation, and sale of harmful or potentially harmful exotic fish species by a fish farmer. TPWD has the authority to regulate exotic shellfish and aquatic plants (V.T.C.A., Parks and Wildlife Code section 66.007(a)).

Two additional agencies that play a role in the regulation of aquaculture are the GLO and the Texas Department of Health (TDH). The GLO is a part of the Executive Committee because of the role it plays in leasing out state owned public lands, much of which is submerged coastal lands. TDH enforces various regulations to protect the public health. Among their duties related to aquaculture is the issuance of yearly permits for the processing of finfish. The processors must comply with minimum standards to register.

The three other state agencies that play a role in aquaculture are Texas Water Commission, Texas Animal Health Commission, and Texas Antiquities Committee. In addition to these state agencies five federal agencies have authority over aquaculture operations and local entities may also impose regulations.

Among the regulations imposed by these agencies, the industry has expressed the most concern over the restriction of several exotic fish and many sport fish. TPWD restricts exotics if there is a possibility that the exotic could harm the native environment, humans, introduce diseases, or impede water-based activities (TPWD testimony at a TPWD public hearing, Regulation of Exotic Fish, Shellfish and Aquatic Plants, November 1989). Grass carp and all tilapia except the mosambicus and aureus species are the most often mentioned fish that are restricted in some form. The use of several sport fish is restricted to protect the wildstock in Texas streams and lakes. Per V.T.C.A., Agriculture Code section 134.018, and Parks and Wildlife Code sec. 66.111 freshwater crappie, bass of the genus Micropterus, striped bass and hybrids of striped bass, white bass, walleye, sauger, northern pike, muskellunge, trout of the family Salmonidae, or flathead catfish cannot be sold from a fish farm for consumption or for resale. Wildstock cannot be taken from Texas waters for use as broodstock. This law is based upon the notion that sport fish sold from Texas fish farmers may have originated from public waters. The fish in public water belong to the public and are not to be depleted for private profit. However, out-of-state fish farmers may sell sport fish in Texas for consumption.
The industry's exasperation at these regulations is understandable. Tim Moore representing TAA, stated before the Subcommittee on Aquaculture that doors to market opportunities are being closed because certain species of the tilapia fish and their hybrids which produce higher yields of edible meat and have shorter growing seasons are prohibited. Jim Ekstrom, also representing TAA, testified of the need for changes in regulation of sport fish. For instance he stated, "a controlled program whereby Texas hatcheries can obtain broodstock from the wild is imperative to the industry's growth."

Inconsistencies in the law and regulation is another area of concern for aquaculturists. Per section 134.001 of the V.T.C.A., Texas Agriculture Code, fish farming is defined as the "business of producing, propagating, transporting, possessing, and selling cultured fish raised in a private pond, but does not include the business of producing, propagating, transporting, possessing, and selling cultured fish propagated for bait purposes." This definition excludes bait dealers whom aquaculturist believe should be a part of "fish farming." Instead bait farmers are regulated under the V.T.C.A., Parks and Wildlife Code section 47.014. Being under that code excludes bait farmers from the benefits of TDA's promotion activities. Instances like this are why Jim Ekstrom testified that "Current definitions are not inclusive of all aquaculture activities, with the result that segments of the law are not consolidated and portions of our industry are excluded from both the regulation and benefits of the new laws." A second legal concern is that aquaculturists unlike any other agriculturists are required to have a license to produce. If this practice must be continued then Mr. Ekstrom recommends that initial fees be nominal and that renewal fees be flat instead of being based on gross income (see V.T.C.A., Agriculture Code section 134.014 and 4 TAC section 27.5). Thirdly, Mr. Ekstrom pointed at some technicalities in the Agriculture Code that should be changed. The Code requires processing plants to annually apply for a new license (sec. 134.032) whereas the regulations specify renewal (4 TAC sec. 27.14). If the Code was followed and plants were required to apply and wait for acceptance every year this would make their business very unstable for planning, financing and forward contracting. Fourth, the agriculture regulations (4 TAC sec. 27.6) stipulate that records of sales, purchases, acquisitions, and shipments of cultured fish be kept for three years whereas the Code places no limitations on record retention (V.T.C.A., Agriculture Code sec. 134.016).

Finally in the area of industry regulation, the committee is concerned over the lack of fish and seafood inspection. Per the National Food Review, October-December 1989 issue, no single, mandatory program exists for the inspection of seafood. State and federal agencies inspect processing plants and random samples of seafood but in a haphazard fashion. Some seafood businesses pay for inspection on their own. However, fish and seafood inspection laws similar to beef and poultry inspection laws, where the meat is routinely inspected at various stages of production, may be passed by Congress this year. (Note: Proposed federal fish and seafood inspection laws were not passed by Congress.)

Richard Thompson, Director of Division of Shellfish Sanitation Control of the Texas Department of Health testified that Texas does have fish and seafood inspection laws but because of lack of funding they "...don't have the staff to do it as it needs to be done." The Texas Department of Health is ultimately responsible for the safety of all Texas food. As a part of this, it inspects food manufacturers including fish processors and it regulates mollusks and shellfish from the beginning to end of production. Per Mr. Thompson, they only do "...30 to 40 percent of the necessary (processing plant) inspections." The Galveston Daily News reported on June 21, 1990 that TDH
collects only about 4000 water samples in a two year period from growing areas for mollusks and shellfish. Whereas "Florida, which has about the same amount of growing areas, collects about 40,000 samples." These instances are attributed to lack of funds.

**Support Structure**

The availability of feed mills, processing plants, and marketing outlets is important to the success of the aquaculture industry. Feed is the single largest cost in most aquaculture operations. This expense is inflated for Texas producers since there are not any feed mills in Texas that are dedicated to the production of aquaculture feed. Most feed used in Texas aquaculture operations is imported from other states such as Arkansas, Mississippi, and Idaho which have an established aquaculture industry. Thus the cost to Texas producers is higher because of the transportation expense.

In the past the quantity of crawfish and finfish has not been sufficient to attract processing plants. Most producers have had to find fresh markets, such as local restaurants and grocery stores, to deliver their products. Clearly, processing plants will not establish in Texas until they can be assured of sufficient fish to run their plant profitably. In the meantime, production in Texas is increasing to the point where it is saturating local fresh markets but it is still not large enough to command a processing plant in some areas. The fact that the production of finfish is increasing, is shown by the opening of the first finfish processing plant in Texas in February 1990. This plant, owned by the Naid Corporation and located near Liverpool, will have the capacity to process 150,000 pounds of fish per day.

There are few marketing options for aquaculturists but as more processing plants locate in Texas this will lessen because producers will be able to contract with the processors. In the meantime, producers must secure a market for their products with such outlets as restaurants and grocery stores.

**Education and Research**

Although aquaculture is an area needing considerably more research, substantial research has already been conducted and a broad foundation has been laid for continued research.

Aquaculture education is available to producers through the Texas Agriculture Extension Service and formal degrees are offered at Texas A&M University, University of Texas, and Corpus Christi State University. Per a survey by Dr. William Neill of the Texas A&M University System and Dr. Connie Arnold of the University of Texas System, research in Texas is occurring at the following places: Texas A&M University System (TAMUS) headquarters at College Station, University of Texas' Marine Science Institute, TAMUS' Corpus Christi Research and Extension Center, John Wilson Marine Fish Hatchery operated by Texas Parks and Wildlife Department, Texas A&M University at Galveston, University of Houston's Clear Lake campus, University of Texas' Medical Branch, and the National Marine Fisheries Service's Galveston Laboratory.

In addition to the current work, many projects are being planned. The GLO is developing several aquaculture demonstration farms on Permanent School Fund lands to demonstrate the economic viability of aquaculture. GLO is also developing the concept of an aquaculture park which would operate similarly to an industrial park so that operators could share some facilities and reduce permitting per operator among other advantages. The GLO is cooperating with Texas A&M, and Texas A&M Sea Grant College to develop a Texas Aquaculture Facility for demonstration and research on disease, nutrition, and environmental consequences.
Through the testimony of Bill Yeager, the Texas Aquaculture Association pinpointed some areas in education and research where further work needs to be done. Aquaculturists want to know more about the nutritional requirements for different species and the ration that will contribute to the greatest gain in the shortest period. They would also benefit from genetics and reproduction research that would enable a species to mature faster and reproduce more times per year. Another concern is that as producers are raising more fish in a smaller space, the threat of a disease killing a large number of fish is greater. For this and other reasons, they would like more research in therapeutics. Finally, they would like a centrally located aquaculture center with regional centers to be established for research and education. The use and expansion of existing research and hatchery facilities across the state could be utilized for this.

From the standpoint of the educational establishment, Dr. David Schmidly, Head of the Department of Wildlife and Fisheries Sciences at Texas A&M University, testified that “...lack of Texas-appropriate technology for aquaculture owes both to past insufficiency in the volume of targeted basic research and to a present lack of production-scale facilities for validating the implications and demonstrating the conclusions that come from basic research.” However, this does not appear to be the problem in the future. Dr. Schmidly and others list the many and varied education and research activities that are on going or being planned. He concluded by saying that “Scientists associated with the TAMUS and other state institutions, have produced students and technical information that have proven of great benefit to the development of aquaculture industries in Texas and other states.” Though the industry could benefit from additional work, the past and future efforts of the educational community must not be discounted.

Natural Resources

Water, land and climate are the three natural resources that must be available to support aquacultural production. Texas Aquaculture - Status of the Industry included a section on natural resources which stated that “The most crucial of the natural resources for aquaculture is the water supply.” There are parts of Texas that do not have the underground water reserves to support additional water users. However, to Texas’ advantage is the 30,000 coastal acres ideally suited to aquaculture where it is feasible to pump and use seawater. In addition, low value acres in West Texas lying over saline groundwater could be utilized for salt-water aquaculture. In light of the fact that fresh water will be the most limiting resource for aquaculture, the report pointed out that an economic analysis of aquaculture verses irrigated agriculture and computer mapping of potential aquaculture sites needs to be done to determine where aquaculture operations should be located. These results could be taken into account by the Texas Water Development Board and the Texas Water Commission in the next Texas Water Plan. In the meantime, “...when selecting potential areas for aquaculture...” caution should be used in locating where “...ground water is being utilized more rapidly than the natural recharge rate” the report suggests. The report projected that the availability of land and proper climate will not be limiting factors on the industry’s development.

Funding

The immediate funding need of the industry is for S.B. 1507 passed during the 71st regular session. This bill titled “The Fish Farming Act” provides for the establishment of an Aquaculture
Executive Committee, an Aquaculture Liaison officer and promotion of aquaculture by TDA. The
funding for this bill was vetoed and subsequently a liaison officer has not been hired and TDA
has not had extra funds to use in promoting aquaculture.

As heard in both public hearings, aquaculturists want to see S.B. 1507 funded. In written testi-
mony submitted for the April 23 hearing, Garry Mauro wrote that "The most important step the
State of Texas must take to encourage the development of aquaculture is to fund all the activities
authorized in S.B. 1507."

Other funding requests of the Texas Aquaculture Association were expressed by Brian Brawner
at the April 23, 1990 hearing. After funding S.B. 1507, their second priority is for an aquaculture
research facility. Thirdly, they support an increase in funding for the link-deposit and diversifica-
tion grant programs administered by TDA. These programs are intended to diversify agriculture
therefore aquaculture operations often qualify for loans or grants. In addition, this new industry
often has a difficult time securing loans from traditional sources.

Conclusions

Regulation

First, many federal, state, and local agencies regulate aquaculture making entrance and staying
in the business a regulatory burden. This may discourage some from entering and staying in the
business. Second, the restrictions on exotic aquatic life and sport fish are impeding the industry's
growth. However, if the restrictions are loosened there may be increased threat of an accidental
release of harmful exotics into public waters. Third, the restrictions on sport fish are outdated and
unnecessary. Fourth, bait dealers who raise their fish in private facilities and who do not obtain
their bait from public waters should be regulated by TDA and not by TPWD. Fifth, licensing fees
should be nominal because aquaculture is an emerging industry. As the industry becomes stronger,
may be appropriate to set fees at a level where some aquaculture programs are industry sup-
ported. Sixth, processing plants should not have to apply for a license annually. Seventh, aquac-
ulturists should not have to keep their business records indefinitely. Eighth, frequent and com-
prehensive inspection of fish and shellfish should be conducted.

Support Structure

The industry is experiencing growing pains that are most apparent in the industry's support
structure. The volume of production has grown beyond the capacity of existing feed mills, pro-
cessing plants, and marketing networks. Yet, in many cases the volume is not large enough to bring
about the creation of the support structure. Financing is difficult to obtain due in part to Texas
banking industry's lack of information on aquaculture. These problems will best be solved with
time and continued growth of the industry. An example to support this is the shrimp industry
which has become well established in Texas and has attracted sufficient processing plants.

Education and Research

Substantial research is being conducted and more research and educational programs are being
planned to aid aquaculture. Since the industry is relatively new, there are still areas that need
additional work such as genetics, disease, and production. The area that appears to be most
neglected is the education of producers in product marketing and economics. For instance, many
producers need guidance in developing business plans, financial statements, and record keeping.
Natural Resources
Texas is in a very good position to support the natural resource needs of an aquaculture industry. The state has adequate water, land, and proper climate for the industry. Texas does however, have a strained supply of fresh water in some parts of the state.

Funding
Aquaculture would benefit from state funding especially from the funding of S.B. 1507 for an aquaculture liaison officer and industry promotion.

Recommendations
Regulation
To reduce the burden aquaculturists face because of having to comply with numerous federal, state and local authorities, the Aquaculture Liaison Office should provide aquaculturists with a list of applicable regulatory entities, advise them on procedures to follow to expedite the process, and if possible provide a packet containing all necessary applications and instructions. These actions comply with the legislative intent underlying V.T.C.A. Parks and Wildlife Code section 1.206(a)(1).

TPWD and the aquaculture industry are encouraged to work together on research to develop a type of facility or system that would meet TPWD's approval for raising certain exotic fish. In addition, TPWD should develop clear guidelines for handling these exotics when they are outside the holding facility.

Aquaculturists should be allowed to raise and sell the sports fish listed in V.T.C.A. “Agriculture Code section 134.018 and Parks and Wildlife Code sec. 66.111. It is important that regulations be established that would allow aquaculturists to remove some of these fish from public waters for use as broodstock. The aquaculture industry and TPWD are encouraged to work together to establish a broodstock removal system that would meet TPWD approval.

The definition of fish farming per Agriculture Code sec. 134.001 should be changed to Aquaculture” - “the business of producing, propagating, transporting, possessing and selling cultured aquatic species raised in private facilities” as defined by the TAA before this committee. This would include bait farmers in the definition.

Licensing fees should be a flat nominal fee rather than being based on the producer's income. Even though a tax based upon income would be a progressive tax, a flat fee is preferable because it is administratively less expensive.

Agriculture Code section 134.032 should be changed to specify that after a fish processing plant’s initial application is approved, its license will be renewed annually thereafter unless the plant is in violation of set standards. These specifications are currently stated in 4 TAC sec. 27.14.

Agriculture Code section 134.016 should be changed to specify that business records must be retained for three years. These specifications are currently stated in 4 TAC sec. 27.6.

The state must allocate additional funds for fish and seafood inspection unless a federal law is passed and funded which would ensure the wholesomeness of our fish and seafood.
Support Structure

To fill in the gaps not filled by private processing plants and other support structure, the industry may consider establishing cooperatives or pooling their output.

To enhance marketing, the industry or one such as the Aquaculture Liaison Officer could compile a list of producers for potential buyers.

The industry in coordination with the Liaison Officer should consider holding seminars to educate potential lenders and investors.

The inadequacies in the support structure will lessen as the industry grows. In the meantime, bodies with the authority to regulate aquaculture are encouraged not to unnecessarily hamper the industry’s growth.

Education and Research

For the sake of efficiency, the various entities conducting research should cooperate as much as possible. The Aquaculture Liaison Officer could be included in each entity’s efforts and thus could prevent unnecessary duplication of effort.

The state entities are encouraged to also include industry representatives in their planning so the industry’s most urgent educational and research needs are met.

The producers’ need for economic and product marketing instruction could be met through classes offered at local colleges. However, this is not always a feasible option for producers, therefore producers organizations are encouraged to organize special seminars. TDA also is involved in educational efforts.

Natural Resources

Fresh water is the most limiting resource, therefore aquaculturists are encouraged to locate in areas that are not facing water shortages.

Aquaculturists are encouraged to recycle fresh water and seawater.

The use of saline groundwater is especially encouraged since it has few other uses.

Aquaculture should be included in the next Texas Water Plan.

Funding

The State should make every effort to fund S.B. 1507. Funding should also be considered for research projects and finance programs such as the Linked Deposit loan Program. The State should consider funding research and finance programs.
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INTERIM REPORT
SUBCOMMITTEE ON THE EXOTIC LIVESTOCK INDUSTRY

Members:

Layton Black, Chairman
Dudley Harrison
Eldon Edge
INTERIM REPORT ON THE EXOTIC LIVESTOCK INDUSTRY

Introduction

The exotic livestock industry, which includes hoofstock and ratites, has shown great potential for economic growth in the past few years. For hoofstock this is due mostly to the fact that the venison market is one of the few industries where demand currently exceeds supply. Approximately 90% of the U.S. venison market is supplied by countries such as New Zealand, Australia, and the United Kingdom. Texas’ industry started around the 1930’s, but only started to flourish within the past decade. Currently in Texas there are fifty-nine different species of exotics, but six species make up 88% of the states game population. These species are the axis, fallow, and sika deer, the Nilgai and Blackbuck antelope, and the Auodad sheep. These species are generally found on ranches located in Central and South Texas. The other niche market that also shows great potential for growth is ratite production. Ratites are defined as a class of birds having a keelless sternum and includes ostrich, emu, and rheas. Because of the recent imposed embargo on ostrich products from South Africa, the breeding of ostrich has become the most rapidly growing ratite game industry in Texas. The number of birds being raised has increased from 50 in 1984 to 2,000 in 1989 in Texas and of the 5,000 to 6,000 in the U.S. 75% are located in Texas and Oklahoma. If present growth continues as it has the last five years, experts estimate the Texas ostrich industry could create over $170 million in new business by the year 2000.

The Committee on Agriculture and Livestock was charged by the Speaker to study the promotion of the exotic livestock industry and potential public necessity of governmental regulation. The committee chairman, Dudley Harrison appointed a Subcommittee on the Exotic Livestock Industry chaired by Representative Layton Black. This subcommittee held a public hearing on August 27, 1990 in Austin, Texas. Following is a report on the various issues associated with the exotic livestock industry and recommendations by the committee.

Exotic Hoofstock and Ratites

In today’s society the average American is much more concerned with the amount of fats and cholesterol in their diet. So the venison market shows great potential since it contains thirty-three percent fewer calories and seventy-five percent less fat than chicken with the skins left on. “Venison also has a distinct advantage over fish and chicken in that it has a taste similar to beef, which consumers have stated they prefer” (Texas Department of Agriculture 1989). But to actively promote exotic livestock, several problems must be addressed. The consuming public needs to be
informed of the nutritional benefits of venison as compared to other meat products. The funding sources are also not very favorable due to the fact the industry is new and uncertain. Finally, further development of a domestic market is being hindered by a lack of domestic deer ranching experience and a lack of well defined markets.

There are several advantages of exotic deer farming as opposed to sheep and cattle raising. Research obtained from New Zealand and other established industries has shown that exotic deer may convert forage to meat more efficiently than domesticics. Deer mature much faster than cattle and continue reproducing longer. Also deer can survive and produce better quality and quantity of meat on land that may not be suitable for domestic crops or livestock. In addition, venison yields a higher proportion of meat per animal unit.

The ratite industry also has several advantages; for instance there are no parts of a ratite that are not used. The hides are used in the manufacturing of boots, wallets, purses, belts, etc. and command substantial prices. The meat is often compared to the taste of veal. Not only are the meat and hides a cherished commodity, but ratite breeders can also harvest feathers from their birds twice yearly. Fred Thornberry with the Texas Agricultural Extension Service states that ratites can yield approximately 1 1/2 pounds of feathers annually, which demand a price between $10 and $125 per pound depending on the variety and quality of plumage. Ratite breeders have also been able to make a profit from infertile eggs. When the yokes have been removed from the shells, craft stores often pay as much as fifty dollars a piece for them. Female ratites are able to lay between thirty and sixty eggs during a laying season, March through October, and begin breeding at the age of two or three until they are thirty to forty years of age.

Definitions

As Texas Laws have been written over the past years, livestock were often mentioned in the laws. There is not a definition of livestock that applies to every instance where the word is used; in most cases, livestock is defined within each chapter where it is used. Since lawmakers years ago did not foresee the use of exotic animals as raised livestock on our farms and ranches, they did not include these animals in the definition of livestock. However, in the 70th and 71st Legislative sessions, some laws were amended to include a definition of exotic livestock. Although lawmakers at that time may have intended that all exotic animals raised as livestock should be treated the same as other livestock, their changes to the definition only apply to the specific chapters within the Texas codes that they amended.

The laws that were amended in the 70th and 71st Legislature are V.T.C.A., Agriculture Code section 161.001 and V.T.C.A., Tax Code section 23.51. In the Agriculture Code section 161.001(a), these definitions were added:

"Exotic livestock" means grass-eating or plant eating, single-hooved or cloven-hooved mammals that are not indigenous to this state and are known as ungulates, including animals from the swine, horse, tapir, rhinoceros, elephant, deer, and antelope families.

"Exotic fowl" means any avian species that is not indigenous to this state. The term includes ostriches.
In the Property Tax Code section 23.51 this definition was added:

"Exotic animal" means a species of game not indigenous to this state, including axis deer, nilgai antelope, red sheep, or other cloven-hoofed ruminant mammals.

The most encompassing of these definitions is from the Agriculture Code section 161.001. However, the definition of "exotic fowl" should be expanded to include all ratites, not just the ostrich which is a ratite.

The definition of exotic livestock and exotic fowl in the Agriculture Code section 161.001 applies only to Chapter 161. The definition of "exotic livestock" in the Tax Code section 23.51(6) applies only to Subchapter D of Chapter 23. Therefore, these definitions do not lend themselves to other parts of Texas law where the term "livestock" is used. The parts of the law where it would be appropriate for the definition of livestock to include raised exotic animals, must be changed through legislation.

The estray laws (V.T.C.A., Agriculture Code section 142) are a prime example where it would be appropriate to include exotic animals among the list of other more traditional livestock. Currently it is unclear whether a strayd exotic animal has the same protection under the law as a stray cow. Section 142.002 states:

In this chapter, "estray" means a stray horse, stallion, mare, gelding, filly, colt, mule, hinny, jack, jennet, hog, sheep, goat, or head of any species of cattle.

This definition should be expanded to include exotic animals and fowls.

The theft laws (V.T.C.A., Penal Codes section 31.03) cover traditional livestock but do not explicitly cover exotic livestock. Therefore it is unclear whether stolen exotic livestock receive the same treatment as stolen, traditional livestock. Section 31.03(e)(4)(A) states that an offense under section 31.03 is:

a felony of the third degree if: the value of the property stolen is $750 or more but less than $20,000, or the property is one or more head of cattle, horses, sheep, swine or goats any part thereof under the value of $20,000.

This section would be clearer if exotic animals and fowls were included with the traditional livestock.

There are other parts of Texas law where it may be appropriate to expand the definition of livestock to include raised, exotic animals and fowls or to expand a list of traditional livestock to include exotics. Legislation addressing this could be considered either on a chapter by chapter basis, code by code basis, or Texas statutes as a whole.

Research

Currently there is no evidence of foreign disease being spread by exotics. However, in their
written testimony, Texas Animal Health Commission (TAHC) stated that “there have been instances in which the bont tick or other exotic ticks have been imported into the state on ostriches and rhinos.” The presence of these ticks and the susceptibility of sika or red deer to brucellosis or tuberculosis causes concern because of the possibility of these diseases spreading. Therefore, there should be increased research done on diagnostic tests and improved vaccines to keep the exotic livestock industry disease free. There are several drugs and vaccines that are not approved by the Food and Drug Administration that could be used in the prevention of diseases. Research needs to be conducted to prove that these drugs are safe, efficient and residue free in order to provide proper medical care to these animals without violating drug laws.

There are several studies being conducted by various universities and state agencies on exotic livestock. One topic studied that has been receiving a relatively large amount of attention is the competition between exotic and native deer. A study was done by biologists at Kerr Wildlife Management Area to determine the degree of competition between various exotics and native wildlife. The study was done on a ninety-six acre plot of land enclosed with a deer proof fence. Equal numbers of each species were placed in the enclosure for nine years without outside interference by humans, except for periodical counting. After nine years of coexisting behind the deer proof fence in the white-tailed/axis deer enclosure there were fifteen axis deer and two white-tailed deer. In the sika/white-tailed deer enclosure after nine years there were sixty-two sika deer and zero white-tailed deer. The findings from this study under unregulated, resource limited conditions show that axis and sika deer outcompeted white-tailed deer. This competition between niches is known as dietary overlap, meaning two or more species competing for resources will result in harm to one or both species. Therefore, uncontrolled spread of exotic deer may pose a threat to the native deer population. Currently one third of exotic deer in Texas are not behind a game fence. An uncontrolled spread in turn could cause disease complications between interacting native and exotic game, along with the domestic livestock. Although there has not been any reports of exotics interbreeding with native deer there have been reports of interspecific breeding between members of the deer family.

Another study on dietary overlap was conducted by James J. Jackley and Stephen Demarais at Texas Tech University. This study showed that overlap of food habits and potential competition to some degree exists between all pairs of deer species (exotics vs. exotic, domestic vs. exotic). However, the type and degree of overlap varies between species. “Therefore, generalizations concerning dietary overlap among white-tailed deer and exotic deer are probably inappropriate. Therefore, species with differing food habits can be stocked to more fully utilize the available forages” (Jackley, Demarais 1989).

The first study does not condemn the production of exotic and native wildlife it only shows the need for research on management practices of native and exotic species in a competitive environment. The second study mentioned shows that in fact, proper management could bring about better utilization of available forages. Dr. Bill Morrill stated when competition for a resource that is being over used exists, you have bad management, not bad animals. Therefore, individuals need to be responsible in basic management practices such as monitoring population so that an optimum mix between natives and exotics can be found to maximize economic returns and conserve native wildlife and habitat for landowners.
Regulatory Issues

“Current statutes (Section 62.015, Texas Parks & Wildlife Laws) present an enforcement problem that a person may only possess the carcass of an exotic animal with the knowledge and consent of the owner, but does not require the owners consent be in writing” (TPWD, written testimony). This causes problems when a game warden comes in contact with hunters who have possession of a carcass only under verbal consent by the landowner. If the carcass has been removed of the hide the warden is unable to identify if the animal is an indigenous species. Therefore, the warden has to call the landowner and verify consent. This problem could be rectified simply by changing the statutes to require written consent by a landowner. However, should owned and raised exotic animals be considered livestock, the game warden would not be involved with these owned animals.

Authority over the exotic livestock industry will need to be addressed in the 72nd legislature. Currently jurisdiction has been issued to the Texas Animal Health Commission on health issues related to exotic livestock. However, authority should be delegated to other agencies to regulate the other aspects of the exotic livestock industry. The input from various industry members is that TPWD should enhance and regulate native or publicly owned wildlife, but should not be involved in the regulation of privately owned animals. This regulation conflict could be rectified by coming up with a clear and concise definition of exotic livestock and fowl. Animals classified as livestock are regulated by the Texas Department of Agriculture (TDA). Publicly owned animals such as native game are regulated by TPWD. Therefore, a definition would specify whether the animals were livestock or native game thereby determining who had authority.

Health Issues

The health issues brought to the attention of this committee were foreign diseases brought into the United States by exotic animals, common diseases brought in by exotic animals, availability of veterinarians to handle problems specific to exotic animals and the inspection of exotic meat sold to the public. There have been instances where ostriches and rhinos imported into the states have brought botulism and other exotic ticks. However, testimony submitted to this committee indicates that there is not reason for panic but that current federal quarantines and state precautions on importation of exotics should be strictly enforced to guard against foreign diseases. Texas’ precautions include a Certificate of Veterinary Inspection which is required before livestock may be brought into Texas (V.T.C.A., Agriculture Code Section 161.081). The contents of this particular certificate states that the animals listed were: inspected by an accredited veterinarian within 10 days before entry, subjected to tests, immunizations, and treatments that are required by the TAHC, and free of symptoms or evidence of communicable diseases, that TAHC determines dangerous to Texas. Along with the inspection certificate, a waybill and entry permit are also required before the animal is approved for entry. These requirements were made applicable to exotic livestock and fowl effective September 28, 1990 (4 TAC 36.1 and 36.2).

Exotic livestock are susceptible to brucellosis and tuberculosis and other diseases common to our traditional livestock. If unchecked these diseases could be brought in by exotics or exotics could contract them from domestic livestock. However, if the safeguards in place continue to be enforced this should not become a major problem. The Texas Veterinary Medical Diagnostic Laboratory System did however state in their testimony that “Testing for the common diseases in
domestic livestock is already in place, and the addition of exotics to the practice should be considered wherever they are sold at public auction."

In light of the fact that exotics can carry diseases and probably will have health problems specific to exotics, the Texas Veterinary Medical Center, representing various segments of the Texas A&M University System, recommends that veterinarians who have training in the health of exotic animals be assigned to TAHC and TPWD staff, since the exotic livestock industry is growing at such a rapid pace. Veterinarians familiar with exotics could combat known diseases before they became epidemics and could also identify new diseases before they had a chance to hinder such a promising new industry.

A final health concern is inspection of exotic meat. During the 70th regular session HB 2122 the 1987 Venison Meat Inspection Act was passed. HB 2122 amended the Meat and Poultry Inspection Act by defining and including exotic animals. This amendment to the inspection act was intended to assure Texas consumers of a safe, wholesome product. Furthermore, there are statutes which allow for protection against uninspected venison entering Texas from other states (V.T.C.A., Health and Safety, Code section 433). For example, section 433.055 states:

"The prohibitions of Sections 433.051-433.054 that apply to intrastate commerce also apply to exotic animals in interstate commerce."

Dr. James Weedon, Director of Cooperative Meat Inspection, Texas Department of Health, indicates that he is not aware of uninspected venison entering Texas. However, if industry representatives know of uninspected venison entering Texas and feel this is a recurring problem they need to contact the Cooperative Meat Inspection Division at (512)835-8101 so they can combat the problem.

Marketing and Promotion

Deputy Commissioner Mike Moeller of TDA testified about the importance of marketing and promotion of exotics. In the case of most ratites there seems to still be a collectors market. It is evident that the market will eventually reach a point where the increasing supply of birds will outpace the demand for live animals. This will make it cost effective for the development of a slaughter market in Texas. Experts have estimated that it will take approximately 75,000 birds annually before it makes economic sense to have a slaughter facility. Researchers envision this goal to be reached in seven to eight years. The net result of this new stage of development, as stated by TDA, is approximately 4,875 new jobs in various areas of the ratite industry (i.e. processing, feeding, veterinary, transportation, manufacturing, etc.). When this occurs prices will not be quite as high, but there will still be great potential for profit if there are adequate processing facilities located in the state for producers, stated Commissioner Moeller. Texas Agricultural Finance Authority (TAFA) and the Texas Agricultural Diversification Authority (TADA) are offering over $25 million in obligation bonds to promote agricultural ventures. Promotion is imperative in establishing processing facilities. Therefore, TDA suggests that the Legislature encourage TAFA and TADA to place priority on exotic projects, because of the economic potential they bring to Texas, or designate a percentage of the funds in TAFA and TADA for exotic livestock ventures.
Recommendations

Legislation should be passed to amend the parts of Texas law where it would be appropriate for the definition of livestock to include certain privately owned and raised exotic animals.

Research should be continued on improved diagnostic tests and vaccines for exotic animals commonly raised in Texas.

The question over whether TDA or TPWD has regulatory authority over exotic animals could be cleared up by defining these privately owned and raised exotic animals as livestock.

The TAHC should have on staff a veterinarian who has training in the health and care of exotic animals.

The Texas Agricultural Finance Authority and the Texas Agricultural Diversification Authority should place a priority on projects involving exotic animals.
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INTERIM REPORT
ON EXOTIC PESTS
INTERIM REPORT ON EXOTIC PESTS

Introduction
Exotic pests have become an ongoing problem for many Texas rural and urban residents. In the rural areas the economic impact exotic pests are having on crops and livestock is astounding. In the urban areas the effects that exotic pests are having on lawns, gardens, and playgrounds are costing residents millions of dollars in damage and control costs. In this report exotic pests will include Fire Ants, Africanized Honey Bees, Hessian Flies, Russian Wheat Aphid, and Turkey Gnats. Since it is unfeasible in many cases to eradicate the pests, management practices become necessary. In the case of the Africanized Honey Bees (AHB) “A&M is taking the lead in developing a Texas State Plan for Management of AHB which involves regulatory, educational, and research components” (TAES, TAEX, written testimony). Texas Agricultural Experiment Station (TAES) and Texas Agricultural Extension Service (TAEX) is requesting $800,000 for each agency for each of the next two fiscal years, to address the problems of all of the exotic pests listed within this report. These funds will be used for research and educational efforts, control and management demonstrations, and utilizing the best methods of cultural, biological, and chemical control on these pests.

Hessian Fly
The Hessian fly which originated from central and eastern Europe is a major pest of wheat in the U.S. It migrated from Oklahoma to Texas in 1984 and currently has infested 1.5 million acres in 45 northern and central counties in Texas. However, research has shown that the Hessian fly is moving south causing more economic problems to Texas' wheat industry. As to date the Hessian fly has caused approximately $20 million in damage to wheat grain and grazing operations in Texas. 1990 losses are estimated to be as high as $9.6 million.

This widespread problem has farmers and ranchers asking themselves what can be done to stop this disastrous pest. Chemicals have been used to no avail, because of high treatment costs and low levels of control. In other states farmers and ranchers are using resistant varieties to control the flies. Texas, however, has not been able to grow any varieties that are not susceptible to the pests. The only method that has shown to have worked is integrated pest management. However, more research is still needed on resistant varieties, cultures, and biological control methods since millions of dollars of damage continues to be done by the Hessian fly.
**Russian Wheat Aphid**

The Russian Wheat Aphid first made its appearance in the U.S. in 1986 near Muleshoe, Texas. The aphids' original home is south Russia, but it came to Texas from Africa and Mexico. The Russian Wheat Aphid is a pest that damages barley, oats, rye, and wheat. This pest is usually known to attack a stressed plant. Therefore, if conditions are good and the plant stays healthy the aphid is usually not a problem, but during drought conditions the plants are very susceptible. The aphid has infested almost all of the state's irrigated acreage and seventy percent of the dryland acreage. Over the past few years the state has spent almost $11 million battling the yield reducing bug. In 1989 Texas spent $1.7 million to control the aphid and still lost 4.6 million bushels of wheat. Therefore, the total yield losses and treatment costs for that year were $19.4 million, as stated by TAEX.

Currently, the only method of control that has been working is pesticide applications. However, research is needed to establish other methods of control such as resistant varieties, or biological control through parasites. Since this is a national problem and involves 15 other states Texas may be able to work in conjunction with them.

**Turkey Gnats**

The Turkey Gnat, a member of the black fly family, has poultry producers very concerned about their $375 million industry. This pest, which is slightly larger than a fruitfly, generally preys on poultry in open areas. The pest bites and sucks blood from its victims, both human and animal. Large swarms of gnats have been known to cause death in poultry. TAEX received a unconfirmed report from Henderson County in 1990 that 1,000 head of poultry had been killed by this infestation. “Infestations have been documented from the Red River south to the Trinity River” (TAEX News, 5/23/90).

“Turkey Gnats lay their eggs in running water where they hatch or lay dormant for years. Once the egg hatches, the larvae attaches itself to a submerged blade of grass or twig until it reaches the adult stage” (TAEX News, 5/23/90). Therefore, flooding often creates excellent breeding areas for the gnats. These infestations generally last between four to six weeks. Poultry producers are very concerned that with the right conditions the gnats could move into major poultry producing areas within four to five years.

Part of the appropriations requested by TAES and TAEX for exotic pests will be used to support research, educational efforts, and control demonstrations on the gnats. “Research would be concentrated on the biology and development of an integrated management program for the major river bottoms in East Texas that could be implemented through organized and locally funded control districts similar to the mosquito abatement districts along the coastal regions of Texas” (TAES, TAEX, written testimony).

**Imported Red Fire Ants**

Currently there are at least 136 counties in Texas infested by Imported Fire Ants (IFA). These counties cover approximately sixty million acres. IFA invaded the U.S. over fifty years ago, around the 1930's. It is believed that the IFA was introduced in Mobile, Alabama from Brazil on cargo ships. It is also believed that the IFA entered Texas in 1956. The spread in the south was due to the transport of root stock from Alabama to the other southern states that are now infested with
the IFA. There are twelve states and Puerto Rico that are currently infested with IFA including Texas, Louisiana, Oklahoma, Georgia, Arkansas, Mississippi, Alabama, Tennessee, Florida, South Carolina, and North Carolina. The ants have been moving west about twenty or thirty miles per year and are expected to eventually reach Arizona, California, and proceed up the West Coast. The monetary impact IFA is having on Texas is staggering. A rough estimate from figures supplied by Texas Tech University states that the total dollar amount was approximately $47,259,107 per year. This estimate included damages to crops, electrical equipment, chemicals used to combat IFA, and medical care costs to individuals and animals that had been attacked by the IFA.

IFA pose several problems in urban and rural areas. In the urban areas the IFA prevents people from enjoying their backyards, pose threats to pets, children and elders, and cause power outages since the IFA's have an attraction to electrical equipment. "The major problem with IFA is that the workers sting and inject venom that causes blisters or allergic reactions" (Imported Fire Ants: Life History and Impact, TDA). Sometimes stings can lead to anaphylactic shock, which requires medical attention. "In rural areas the domestic animals are threatened by IFA. Young animals which are unable to escape can be blinded or killed" (Imported Fire Ants: Life History and Impact, TDA). The IFA are also a problem to certain crops. The ants have been known to feed on germinating seeds, causing damage to corn and soybean crops. The only advantages known to the ant is that it kills boll weevils, sugar cane borers, and ticks.

Through recent research experts have found that the ant population is evolving from single queen colonies into multiple queen colonies. This means instead of one queen per colony there are several. This causes a control problem in managing the ants, since you cannot eradicate the mound unless you kill the queens. The IFA mound density increases from 40 to 60 mounds per acre with single queen colonies to 400 to 600 mounds per acre with multiple queen colonies. Due to this evolution, many believe it is impossible to eradicate the IFA. Individuals are now focusing on controlling the pest instead of eradicating it. Currently the two best methods of control is either with individual mound treatments or broadcast treatments. These two methods depend on the density of mounds per acre. The drench treatment is usually the best method on individual mounds and high density mounds use the broadcast method since it is more cost efficient. Currently there is no treatment that is effective and allowed for use on farm and ranch land. The growth regulator fenoxycarb which has been effective in state parks is not approved by the EPA for land on which food crops or grazing animals are grown.

Work is being done in Texas to bring about long term solutions to the fire ant problem. As TDA stated in a report Impact of Imported Fire Ants on Texas Agriculture:

In 1987 the legislature created but failed to fund, the Fire Ant Advisory Board.... The board members, at their own expense, have met a number of times and have adopted a plan that would determine if natural, biological control measures are feasible. Attempts to raise the money privately to fund the necessary research never took hold. The cost of the research effort is estimated at approximately $400,000 per year for ten years. One suggestion is to have the Texas Legislature "loan" $5 million to the board for the 10 year period, allowing the board to take the interest off the principal and fund the research. At the end of the ten year period, the full $5 million would be returned to the state treasury.
The board plans to do this research in cooperation with university research programs.

**Africanized Honey Bee**

The Africanized Honey Bee (AHB) poses a great economic threat to the beekeeping and honey industry in Texas. The AHB has the potential to cause between $68 and $130 million damage to the Texas beekeeping and honey industry, not to mention the effect it will have on tourism and recreation. The AHB originated in Africa, but in 1957 in Brazil twenty-six bees escaped from a breeding program and began migrating north. Presently the AHB are 150 miles south of Brownsville, Texas and are scheduled to arrive in Texas no later than spring 1991. It is estimated that the AHB moves between 200 and 300 miles annually. Since the bees usually cannot live in below 45 degree weather experts figure the northern climate will eventually stop them. AHB are described as being twice as aggressive as native bees and have been known to swarm when threatened. But the real threat the bees pose is to the $11.5 million a year beekeeping industry and the $800 million a year in value the bees bring through crop pollination in Texas. The AHB reproduces at twice the rate as domestic bees, thereby causing them to produce less honey. Due to the fact the bees are considered lazy and poor honey producers, causes a lack of pollination, promoting a negative effect on Texas' economy. It is estimated from information gathered from other countries that the economic impact will be between $50 and $90 million annually after infestation has taken place. The losses estimated include a decrease in honey and honey products, reduced pollination, costs of control in urban areas and the cost of medical attention to individuals who have been stung by the AHB. (Note: The first known swarm of AHB entered the United States from Mexico and were trapped east of Hidalgo, Texas on October 15, 1990.)

**Conclusion**

If exotic pests are not controlled and are allowed to infestate in great numbers, Texas' economy and agricultural production will be negatively effected. In order to make sure that does not happen TAEX plans to work in conjunction with TAES, TDA, and various commodity groups to establish safer methods of controlling undesirable insects. Their work will include field demonstrations to evaluate current control methods and research will be conducted on new and improved biological, cultural, environmental, and chemical control strategies. In addition, research is being planned by the Fire Ant Advisory Board to combat our most devastating exotic pest. This research will be conducted in South America, in cooperation with university research programs to find a natural enemy to the fire ant that could be safely used in Texas. Supporting these research ideas seems to be the most effective way of finding a method of controlling pests that are costing the state millions of dollars in damages and control measures each year.
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INTERIM REPORT
ON FOOD SAFETY
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The occurrence in recent years of alar treated apples, cyanide-tainted grapes and aflatoxin contaminated milk has caused many consumers to doubt the safety of the food supply. The emotional publicity given to these events by the media and Hollywood stars often without scientific basis, has added to the public's fear and confusion. In response, the public and various watch groups have called on the government to increase food inspections and improve testing techniques. These calls have taken attention away from the issue that scientists and agency officials say is the main problem in food safety. Experts say that no deaths have been caused by chemical contamination however thousands of people have become sick and some even died from food tainted by microorganisms. The majority of food poisoning cases are caused by food being mishandled in the home or food service establishments. These cases could be prevented by educating the public on how to handle food. Since the media plays a large role in influencing public opinion and in turn public policy, the public would benefit if the media were also educated on the best available food safety information.

Scientists rank food-borne diseases as the number one food safety concern whereas consumers are most concerned about pesticide residues, antibiotics and food additives. "Research studies show that an estimated 6.5 million to 33 million Americans — or 3 to 14 percent of the population — become ill each year from microorganisms in their food" (Mahoney 1989). Food-borne illnesses from microorganisms usually result from improper food handling in homes and food service establishments. Therefore consumers should be concerned with properly storing, cooking and serving their food. For example, "typical poultry processing systems cause a 95% reduction of naturally occurring bacteria on the carcass as a result of scalding and chilling procedures" (Denton, 1989). The bacteria will be completely destroyed if it is properly stored once it is in the home and then properly cooked. However, mishandling must be occurring once the chicken leaves the processor because the federal Centers for Disease Control estimate that 500 people die from salmonella poisoning each year in the United States. Dr. James Denton, chairperson for the new Texas Foodsafe Program says that illnesses from microorganisms can be "greatly reduced by informed consumers who practice food safety in their homes." Although the public's concern over pesticide residues, antibiotics and food additives should not be minimized, the impact on the public's health from these substances has not been as great as the impact of microorganisms. Dr. Sanford A. Miller, dean of the Graduate School of Biomedical Sciences at the University of Texas reports that no deaths have been traced to pesticide residues, antibiotics or food additives.

The three key federal agencies that are involved in food safety have not expressed any prob-
lems with the overall safety of the food supply, in fact, they say that the supply is safer than ever. For example, the United States Department of Agriculture 1988 report on their food sampling showed that less than one percent of samples tested had chemicals in excess of the Food and Drug Administration (FDA) guidelines. Furthermore, FDA guidelines on pesticide residue provide a one hundred fold margin of safety for humans. Although improvement can always be made in food testing techniques and in research on long term effects of chemicals, there are hundreds of deaths from microorganisms each year and this problem must not be overlooked.

Texas is already taking the lead in pro-actively addressing the food safety issue from an educational standpoint. Dr. James Denton of the Texas Agricultural Extension Service (TAEX) and The Texas A&M University System have led the development of a consumer-oriented program to address all aspects of food safety. According to the Texas Foodsafe Program proposal “The program will provide accurate information on food safety issues to urban consumers currently not receiving the scientific information needed to make informed food safety decisions. In addition this sound, unbiased information will be provided to media decision makers, elected officials and policy makers, governmental agencies, educational institutions, food related business and industry, health and food professionals, Texas youth and the consuming public.” Under the Texas Foodsafe Program food safety displays, teaching outlines, video tapes, reference materials, slide sets, printed publications, completion certificates, personnel directories and curriculum enrichment will be developed to educate Texas consumers. Beginning in November 1990, the six major urban areas in Texas will be targeted to help those consumers have a safe turkey dinner for Thanksgiving.

The Texas Foodsafe Program is provided through the TAEX which is a state agency designed to disseminate information and educate the public on issues related to agriculture and home economics. This agency already has at its disposal top scientists and educators and has made contacts with other universities, commodity groups, private industry and the United States Department of Agriculture to help with the program. There is no other food safety education program in the nation and the Texas plan could likely be used as a model for the nation.

The funding required for this three and one half year program is 4.5 million dollars most of which will come from private sources. Texas legislators will be asked in the 72nd Legislature to provide $650,000 during the 1992-1993 biennium as part of the funding for the TAEX. This program provides Texas legislators the opportunity to take a proactive stance on an issue of great importance to the public. In addition, this program will bring national recognition to Texas' efforts in food safety.

This committee has reviewed the Texas Foodsafe Program and found it to be a well developed plan to provide scientifically sound food safety information to the public. Its goal to answer the public's fears and to teach them how to evaluate food contamination reports is sorely needed. In addition, the program will help thousands of Texans avoid food poisoning. This committee urges the Legislature to support the Texas Foodsafe Program in response to the consumers' need for food safety education.

For more information on the Texas Foodsafe Program and the food safety issue, please contact Dr. James H. Denton, Foodsafe Program Coordinator, Associate Department Head and Extension Program Leader for Poultry Science, Room 107, Kleberg Animal Science Center, College Station, Texas 77843-2472. This committee may also be contacted for more information.
Bibliography


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PESTICIDE DISPOSAL

The Texas Water Commission (TWC), the Texas Department of Agriculture, and the Texas Agricultural Extension Service are collaborating on a report concerning the Senatorial District 25 Pesticide Disposal Project. The TWC is compiling the report and will publish it in December 1990. The House Committee on Agriculture and Livestock commends this project and recommends the report to the 72nd Legislature for its consideration. This report will be printed and distributed separately from the Agriculture Committee interim report package.