

The Bush School of Government & Public Service

FUNDING WILDLIFE CONSERVATION IN TEXAS

PRESENTED TO

THE BOONE & CROCKETT CLUB

BY CAPSTONE CONSULTING GROUP

DEPARTMENT OF PUBLIC SERVICE &
ADMINISTRATION

THE BUSH SCHOOL OF GOVERNMENT & PUBLIC
SERVICE

PROJECT OVERVIEW

About The Project

We studied options for expanding wildlife funding in the state of Texas by surveying chambers of commerce and environmental organizations (n=35). We asked stakeholders to rank wildlife funding methods on the basis of fairness, practicality, and long-term viability. Initial analysis shows that there is consensus among stakeholders for voluntary and familiar funding methods such as stamps, license plate fees, outdoor recreation fees, and a tax on plastic. These findings imply that some voluntary methods of funding (eg. license plate fees) could be modified to expand support for long-term viability.

The Mission

To identify funding methods that are considered fair, practical and viable for raising \$20 million a year in Texas.

The Client

Dr. Perry Barboza – Boone & Crockett Club Chair -- The Boone & Crockett Wildlife James H. “Red” Duke Wildlife Conservation and Policy Program at Texas A&M University is part of the University Programs conducted by the Boone & Crockett Club. The Club was established in 1887 with the mission to conserve wildlife and their habitats. Dr. Barboza is a professional member of the Boone & Crockett Club and the leader of their endowed program at Texas A&M. Dr. Barboza will provide guidance to the capstone group in framing the research questions, analyses and reports for stakeholders. Dr. Barboza also assisted the group in preparing an executive summary for the Boone & Crockett University Programs.

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This project has been a year in the making and would not have been possible without the leadership of some incredibly talented individuals.

First, we would like to thank the two faculty members who made this capstone project possible: Dr. Graham and Dr. Barboza. They were the advisors behind this project and are responsible for creating this capstone opportunity for the Bush School. They have been with us every step of the way, guiding us, mentoring us, and providing us with intellectual insight. They always provided their professional knowledge but left space for us to voice our ideas and run with it. It was through these weekly conversations that we produced the product within this book that serves as the capstone project for our master's degrees in Public Service and Administration.

Second, we would like to thank all of those who participated in our survey. While we have chosen to keep all the survey participants anonymous, we would like to acknowledge that their responses have helped provide information about what funding methods Texans think are appropriate ways to conserve our unique ecosystems. These data will help provide some of the best options to consider while moving forward to fund Texas wildlife conservation for the generations to come.

Third, we would like to acknowledge the individual who started it all. Thank you 41 for having a vision to create a school for public servants. This vision has helped create your "thousand points of light" and has helped hundreds understand that public service is a noble calling. We are saddened by your passing but are proud to carry on your legacy.

Lastly, we would like to acknowledge the work that each group member contributed to this project. Everyone was a team player who was passionate and dedicated to the task at hand. We are all proud of the amazing experience that we had together. Here's to graduating, finding jobs, and making names for ourselves.

Sincerely,

The Boone and Crockett Capstone Team

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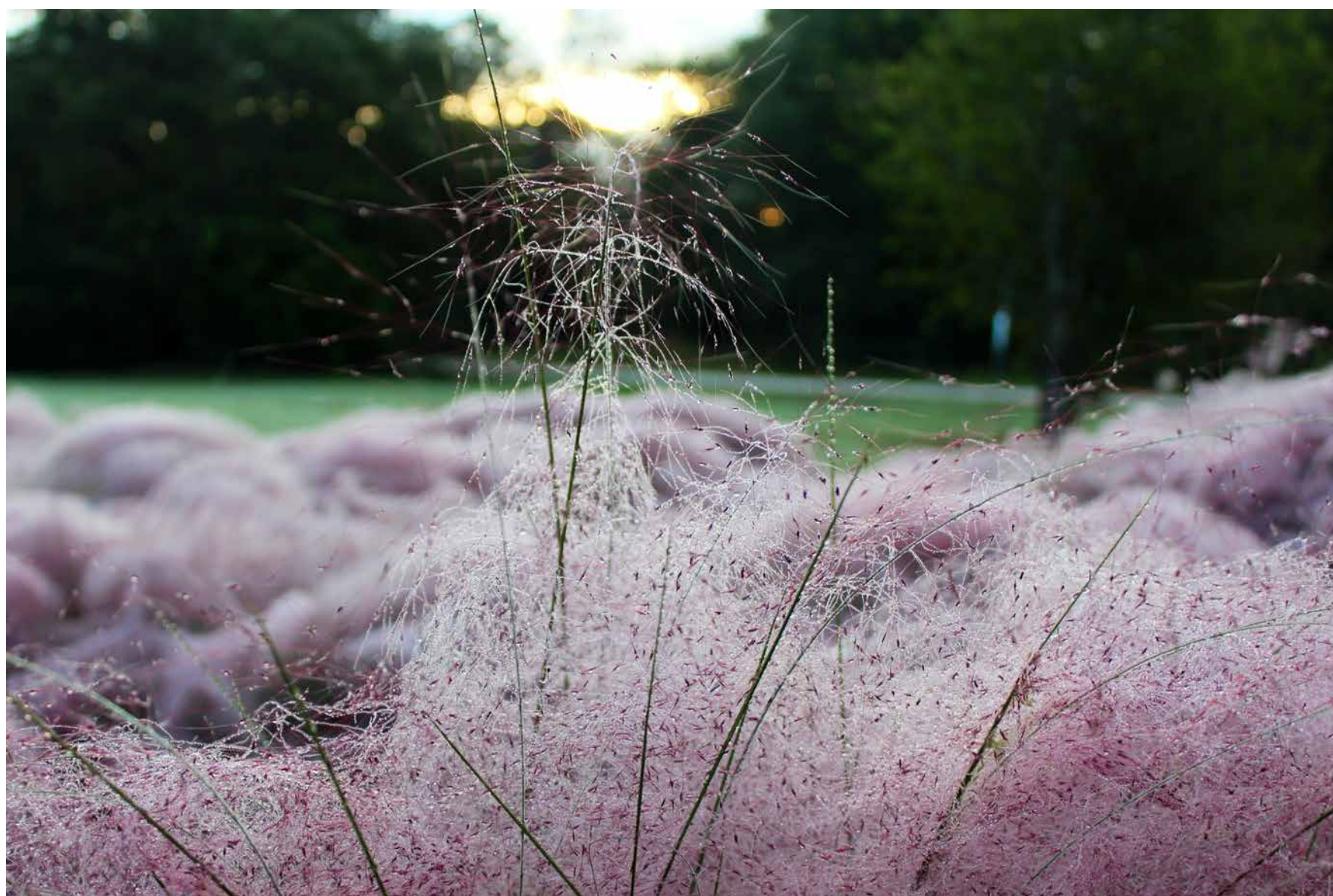


Photo taken at Lick Creek Park in College Station, Texas by Adria Escobedo



FOREWORD

For most, the Texas horned lizard conjures up images of the deserts, the wild west, and cowboys riding across the rugged Texas landscape. The horned lizard is an icon of Texas. Once an abundant specimen in Texas, the population dwindled almost to extinction from land development, predators, and the pet trade (TPWD, 2009). However, thanks to conservation funding, the Texas horned lizard population has seen a resurgence (TPWD, 2009). Adequate conservation funding provided the resources to local zoos and nonprofit organizations to save the Texas horned lizard. This is why conservation funding is so important.

EXECUTIVE SUMMARY

The enactment of the Pittman-Robertson Act of 1937 and the Dingell-Johnson Act of 1950 ushered in a new era of wildlife conservation (Puchy, 2017). Since their acceptance, the legislation has successfully funded wildlife conservation in all fifty states by placing an excise tax on equipment used for hunting and fishing (Mosby, 1951; Puchy, 2017). However, the percentage of the population participating in hunting and fishing activities has recently declined, reducing the amount of conservation funds available to each state (Puchy, 2017).

The state of Texas has estimated a need of \$20 million in non-federal funding in order to receive a match of \$60 million in federal funding from a proposed expansion of the Pittman-Robertson Act in H.R. 4647 and Senate Bill 3223 to the 115th Congress (2017-2018). The purpose of the theoretical approach of this report is to analyze and present potential methods for funding wildlife conservation in Texas while consideration funding feasibility based on the history and political culture of Texas, and the strategies used by other states to fund conservation.



Photo taken at South Padre Island Birding and Nature Center by Adria Escobedo

PART ONE: THEORETICAL RESEARCH

BACKGROUND AND HISTORY

LEGISLATIVE HISTORY

Ducks started it all. The decline in ducks and other migratory birds due to overhunting and habitat destruction led to the creation of a special Senate committee on wildlife and the creation of a migratory bird conservation commission (Cart, 1972). These commissions, combined with Mr. J.N. “Ding” Darling and President Franklin Delano Roosevelt efforts, led to two of the most significant acts in wildlife conservation: the Pittman-Robertson Act and the Dingell-Johnson Act (Cart, 1972). In 1937, Senator Key Pittman from Nevada and Representative Absalom Willis Robertson from Virginia sponsored the Federal Aid in Wildlife Restoration Act of September 2, 1937, endorsed by President Franklin D. Roosevelt. The Act is commonly referred to as the Pittman-Robertson Act and mandates an excise tax on guns, ammunition, and hunting equipment to be used for funding the conservation of wildlife and their habitats (16 U.S.C. 669-669i; 50 Stat. 917).

The success of the Pittman-Robertson Act spurred the creation of another bill, the Dingell-Johnson Act of August 9, 1950 (16 U.S.C. § 777), which placed a tax on fishing equipment, motorboats, and small engine fuel (Mosby, 1951 & U.S. Fish and Wildlife Service, 2018). Both the Pittman-Robertson Act (PR) and the Dingell-Johnson Act (DJ) are essential to conserving America's wild game such as elk, deer, turkey, waterfowl and sport fish such as wild trout and bass (King, 2018; Organ, 2012). The keys to their success in funding wildlife conservation have been threefold: 1) The revenue from the tax is secure and earmarked specifically for conservational use only and cannot be

reallocated, 2) The excise tax is welcomed by the hunters and anglers who support it, and 3) The tax is on perishable goods that are regularly purchased. The success of both the Pittman-Robertson Act and the Dingell-Johnson Act illustrate how legislation can be effective by utilizing the involved parties' willingness to pay for conservation.

H.R. 4647 AND S. 3223

Recovering America's Wildlife Act, H.R. 4647 and S. 3223, were introduced on December 14, 2017 and July 17, 2018, respectively, during the 115th congressional session to the Committee on Natural Resources and the Committee on Environment and Public Works. The purpose of the Act is "to amend the Pittman-Robertson Wildlife Restoration Act to make supplemental funds available for management of fish and wildlife species of greatest conservation need as determined by State fish and wildlife agencies, and for other purposes." (2017 & 2018). H.R. 4647 and S. 3223 intend to recover endangered species and prevent other species from needing federal protection for the "aesthetic, ecological, education, cultural, recreational, economic, and scientific" value of wildlife (2017 & 2018). The new bills acknowledge the success of the system provided by the Pittman- Robertson and Dingell- Johnson Acts for game species, while addressing the growing need of the State agencies to increase funds for non-game species that are not directly used and not directly funded by licenses. If passed, H.R. 4647 and S. 3223 will match federal funds with state funds at a rate of three to one. This funding will come from off-shore, federally-owned oil wells in the Gulf of Mexico. The States' matching funds must be secured from sources other than from federal funding or from state hunting and fishing licenses—indicating the need for each state to obtain new sources for wildlife conservation funding. Likewise, over 200 different Texas organizations have pledged their support for each bill (Texas Alliance for America's Fish and Wildlife, 2018).

CURRENT CHALLENGES IN FUNDING

Wildlife and Sport Fish Restoration programs are managed by the Texas Parks and Wildlife Department (TPWD), which is responsible for both terrestrial and aquatic wild animals in Texas (Legislative Budget Board, 2017). The budget for TPWD is based on obligated funds and discretionary funds. Federal support from the Wildlife and Sport Fish programs are obligated for conservation and account for 17.3% (\$72.7M) of the budget for TPWD (TPWD, 2019). Revenues from State licenses for hunting and fishing (Fund 009) are also allocated for conservation purposes and account for 31.8% of the budget (TPWD, 2019). However, 35.1% of the TPWD budget (Fund 001) is from discretionary funds that are mainly derived from an allocation of sales tax revenues attributed to sporting goods sales in Texas (TPWD, 2019). The issue with Fund 001 being considered general is that the source is neither dedicated nor specified, coming from unclaimed refunds of motor boat fuel taxes, and other specific general revenue streams (TPWD, 2019). Fortunately, the State has increased the allocation of this discretionary fund to TPWD over the last 10 year to match the growing need for conservation funding in the State.

There are two main problems with this current system, inadequate state funding for wildlife conservation, and the focus on game-specific restoration funding. To account for the 25% to 75% federal match, TPWD has a Game Fish and Water Safety Account (Account 009) where these federal funds accumulate and combine with current state funding tactics such as license, stamp, and boat registration/titling fees (Texas Parks and Wildlife Department, 2019). Account 009 is 31.8% of the annual TPWD budget, which includes matches from the Wildlife Restoration Program and Sport Fish Restoration (Texas Parks and Wildlife Department; Legislative Budget Board, 2017). For FY 2019, Account 009 totaled \$203.9 million and is allowable for fisheries and wildlife management and conservation activities with a particular focus on game and fish laws (Texas Parks and Wildlife Department). A non-game species conservation fund exists, as Account 506 of the TPWD annual budget, but is variable based on its primarily private,

grant and donation sources, with limited assistance from state allocations and negligent federal allocations (Texas Parks and Wildlife Department 2019).

Texas sells over 1.1 million hunting licenses and 1.8 million fishing licenses per year ("USFWS National Hunting License Data", 2018 & "USFWS National Fishing License Data", 2018). However, for years, the number of hunters has declined in the U.S causing funding shortages for conservation (Larson, et al., 2013; King, 2018). As revenue from hunting declines, it is necessary to consider other methods of funding wildlife conservation that take into account the funding needs of both game and non-game species as well as the public's perception of conservation and their willingness to pay (Crawford, 1976; Nie, 2004). Therefore, these restoration programs and respective funding allocations and distributions are insufficient for both game and non-game wildlife conservation.

SCOPE OF RESEARCH

RESEARCH QUESTION

Texas has over 1,300 "species of greatest conservation need" which are species of plants and animals that are at risk of becoming endangered in accordance with the federal Endangered Species Act (Connally, 2017). Once a species is listed as endangered, the species, as well as its critical habitat, is placed under the jurisdiction and protection of the federal government (Endangered Species Act of 1973).

The bills H.R. 4647 and S. 3223 propose to layaway federal funds to match state funds three to one for wildlife conservation. (Texas Alliance for America's Fish and Wildlife, 2018). There are over 200 different Texas organizations that pledged their support for the bill (Texas Alliance for America's Fish and Wildlife, 2018). Texas needs to at least match the current level of funding for non-game species as for game species. Texas Parks and Wildlife projects that Texas will need to raise \$20 million in non-federal funding to meet the 3-1 federal match. Our review will aid policymakers by identifying

sustainable and viable solutions to raise the \$20 million Texas Parks and Wildlife Department needs.

This paper will present potential methods for funding wildlife conservation in Texas based on Texas' conservation funding history and precedents set by other states. In addition to a review of the current literature, this project also considers the results of our survey of Texas stakeholders including both wildlife organizations and chambers of commerce in order to analyze stakeholders' perceptions of fair, practical and/or viable revenue-raising methods for Texas wildlife conservation. The results of this study will be analyzed based on fairness, practicality, and/or viability determined by respondents to determine the top potential funding options for the state of Texas.

TEXAS CONTEXT

TEXAS HISTORICAL VALUES, BELIEFS, AND ATTITUDES

Daniel Elazar explores the concept of politics in American culture and how citizens view the role of government. There are two generally-held views of American politics: the government as a marketplace in which individuals bargain for their needs, and the government as a commonwealth promising a quality life for all (Elazar, 1972). Under these two perspectives, there are three schools of thought: individualistic culture, moralistic culture, and traditionalistic culture. Texas is a combination of individualistic and traditionalistic cultures. This means that, in general, Texans view the government as a business that provides agreed upon services, less government intervention is preferable, and placing trust in those with high status can help secure the status quo (Elazar, 1972). Understanding Texans' attitudes towards government is important to note when considering viable methods of funding for wildlife conservation.

Nationwide, the most successful types of taxes have been consumption taxes, income taxes, and taxes on wealth (Mangun, 1984). However, historically, Texans have consistently opposed any type of tax increase, resulting in the need for budget cuts to garner funding for other initiatives (Curtis & Burka, 1997). In order to be successful at

raising \$20 million each year, funding options will have to be considered as sustainable, fair and practical for Texas lawmakers and voters.

PROPOSED SOLUTIONS

This paper identifies three categories of possible solutions for funding Texas wildlife conservation: consumer-funded, industry-funded, and voluntarily-funded. These categories help to identify the burden of the tax. Our paper further divides these categories into user fees, sales taxes, green taxes, personalization fees, and sumptuary taxes, to better describe the mix of revenue sources. We have selected these revenue sources based on other states success and their historical use for conservation funding. Our selections follow the guidelines set forth by Mangun and Shaw (1984) in that they “affect most of the users” and “represent a large tax base”(Mangun, et al. 1984).

CONSUMER-FUNDED

Since the current state of wildlife conservation funding relies primarily on hunters and fishers, this section explores consumer-funded options that focus on gaining funding from individuals who benefit from wildlife in ways other than hunting and fishing. According to previous research, a successful wildlife tax will need to satisfy three main criteria: the tax should be paid by most of the consumers, have a large tax base, and target wildlife-specific products (Mangun, et al. 1984). Both the Pittman-Robertson and the Dingell-Johnson acts satisfy these needs, as they cover items used by all hunters and fishers, they apply to all producers and consumers of these items in the United States, and they pertain to wildlife-oriented use. In assessing alternative funding sources for Texas, it is valuable to look at what made these acts successful and replicate them to fit the needs of the state for conservation of non-game species. Funding options we explore in this section include user fees and sales taxes.

USER FEES

RAISING USER FEES FOR STATE PARKS AND WILDLIFE MANAGEMENT AREAS

Charging additional user fees to wildlife observers, campers, hikers and the like is one option for raising funds for wildlife conservation. Benson (1989) found hunters to be willing to pay for access to better hunting areas. Access to better land and more opportunities to see wildlife (because it has limited human access) may also incentivize other outdoor recreationists to pay higher user fees, which would expand the funding base beyond hunters and fishers. However, it is important that user fees are not so high that they disincentivize the public to participate in outdoor activities because of inability or unwillingness to pay. High user fees may prohibit low-income groups from participating in wildlife observation or outdoor activities (Taylor, et al., 1989).

WATER BILL SURCHARGE

Conservation funds can be raised by adding a fee for consumers of public water utilities. A water surcharge was implemented during Colorado's South Platte River revitalization project. A public contingent valuation method study assessed how much citizens of South Platte would be willing to increase their water bill surcharge (Loomis, 2000). The survey distributed to the residents explained how the added fee would benefit the environment and could lead to better water quality and more enjoyment in hiking and fishing (Loomis, 2000). A survey of 100 people in the area reported a 41% rate of willingness to pay for a monthly increase of \$20-\$21 on their water bill (Loomis, 2000). The estimated revenue exceeded the amount needed for the restoration project.

SALES TAXES

INCREASE STATEWIDE SALES TAX

Currently, forty-five states and the District of Columbia charge a sales tax (State Sales Tax Rates, 2018). Sales taxes are easy to administer, cover a broad base of constituents, and have little to no opposition (Dye & McGuire, 1991) probably because

consumers become accustomed to the added cost. Missouri and Arkansas used a sales tax to raise funds for conservation. In 1976, Missouri first amended its constitution to raise the general sales tax by 1/8th of a percent (McKinney, 2005). The cumulative return from the Missouri sales tax exceeds \$2 billion and provides 63% of the annual budget for the Missouri Department of Conservation (McKinney, 2005). Arkansas implemented a 1/8th of a percent sales tax through a constitutional amendment which has raised \$17 million since its implementation in 1996 and provides 30% of the budget for the Arkansas Game and Fish Commission's budget (Griffiee, 2017).

A sales tax increase is an attractive method for funding wildlife conservation in Texas as it would provide a steady stream of revenue, will be paid for by many consumers, and would be easy to administer since Texas already has a sales tax.

ONLINE SALES TAX

During the summer of 2018, the U.S. Supreme Court overturned a twenty-year-old ruling that banned states from collecting sales tax for online purchases (585 U.S. Supreme Court (2018) & Farmer, 2018). The new ruling allows state governments to collect sales tax from online stores that service their area even if the stores do not have a physical presence. Due to an increase in online shopping over the past several years, there has been a decrease in the sales tax revenue in many states (Bruce & Fox, 2000). Texas has not yet implemented an online sales tax, however, it is estimated that an online sales tax at the same rate as Texas' current sales tax would lead to a \$1 billion increase in revenue for the state government while only decreasing online shopping by 0.5% (Alm & Melnik, 2005; Farmer, 2018). The target of \$20 million could be achieved with just 2% of the new online sales tax going to the Texas Parks and Wildlife Department.

CAMERA EQUIPMENT TAX

A tax on cameras and their equipment could be another option for funding conservation. A noted difficulty of this tax is where to start and stop the definition of

what can be classified as a camera or camera equipment because cameras are incorporated in a variety of devices. Nearly every phone on the market right now has a camera built into the system. Smartphones are nearly ubiquitous, by 2021 it is predicted that forty percent of the world's population will have a smartphone (Gordon, 2018). Even now, the industry is large with over a billion smartphones in existence, and over \$500 billion in sales (Gordon, 2018). Should the camera equipment tax include smartphones, even a small percentage of the tax on the phone cameras could help fund wildlife conservation efforts in Texas due to the large and growing market. Expanding the camera tax to include smartphones would be a good option as the tax base would be large and the market would have long-term sustainability.

OUTDOOR EQUIPMENT TAX

Targeting non-consumptive outdoor enthusiasts by taxing items such as hiking shoes, sporting, camping equipment could be a valuable source of revenue for wildlife conservation. It is possible that an excise tax on outdoor and camera equipment would generate significant revenue for conservation funding (Spidalieri, 2012). Selective care should be taken to ensure that this type of revenue source does not rely on “durable goods” which can be purchased once and last for years, such as binoculars or sleeping bags (McKinney, 2005 & Mangun, 1984). In 2016, the U.S. Fish and Wildlife Service produced a “National Survey of Fishing, Hunting, and Wildlife-Associated Recreation” estimating that \$156.9 billion was spent on outdoor pursuits such as trips, equipment, licenses, and fees—approximately one percent of the U.S. GDP- while hunting and fishing accounted for \$81.0 billion and wildlife watching accounted for \$75.9 billion (U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce. Census Bureau, 2016). In Texas, the sporting goods sales tax earned \$168.5 million in the fiscal year 2019 with TPWD receiving 89% of the tax for the years 2018 and 2019 (Texas Parks and Wildlife Department, 2019).

INDUSTRY-FUNDED

Community development projects are common culprits of wildlife habitat fragmentation. New developments can also increase water and noise pollution in surrounding areas. To counterbalance the negative externality produced by development, we are exploring the use of development taxes to fund conservation. These are categorized as Green taxes in our survey. Possible sources of funding include taxes on carbon emissions, real estate, and transportation projects.

GREEN TAXES

CARBON EMISSIONS TAX

Despite being the third largest emitter of carbon in the world, the United States is one of the only large industrialized countries without a policy that puts a price on carbon emissions. Although the federal government has authority through the Clean Air Act to regulate carbon emissions, it has not implemented a federal tax (42 U.S.C. §§ 7401 et seq.). This leaves an opportunity for Texas to implement a carbon emissions tax as a means of raising revenue for state environmental conservation. In a national 2013 study, the Congressional Budget Office determined that a carbon tax of \$20 per metric ton on greenhouse gas emissions would raise \$1.2 trillion in revenues nationally over the 2012-2021 period with 96% of that revenue being derived solely from the price put on carbon emissions (Congressional Budget Office, 2013). Although more research would need to be done on Texas' carbon emissions, it is clear that taxing carbon emissions could be a profitable source of conservation revenue. However, in the past, taxes on greenhouse emissions and markets for trading emissions have not been supported in the United States.

PLASTIC TAX

Plastic taxes happen to be one of the more topical funding options this survey will ask respondents to consider. State legislatures considered 73 bills related to plastic pollutants in 2017-2018 (Schultz and Tyrrell, 2019) because communities are beginning

to reconsider their use of plastic items. New media have increased awareness of the adverse effects of plastics on marine ecosystems (Joyce, 2018). California and Hawaii are two states that have enacted legislation to control plastic pollution, whereas 11 states including Texas are considering bills to prevent or limit bans on plastics (Schultz and Tyrrell, 2019). Most of these bills just include restrictions on the types of plastics that would be prohibited from use in the states, but states like Missouri and Texas have legislation that would prevent municipalities from creating laws that would ban plastics (Schultz and Tyrrell, 2019).

Taxes and bans on plastics have been more effective at the local or municipal level of government. For example, in 2017, Chicago put a 7-cent tax on the use of paper or plastic check out bag in city-wide stores (Homonoff, et al. 2018). A joint study by the University of Chicago and New York University found that the tax reduced consumption of plastic and paper bags from 82% to 28% (Homonoff, et al. 2018). The study found that half of the consumers that decided to switch away from plastic or paper bags, would go on to use reusable bags, whereas the other half switched to using no bags at all (Homonoff, et al. 2018). The tax lead to a 16% increase in the likelihood that a consumer would switch to reusable bags (Homonoff, et al. 2018). The study, however, did not discuss the amount of revenue generated from the tax. For Texas, the likelihood of using a plastic tax may be very small. Austin, the state capital and the state's most progressive city, overturned a ban on plastic bags in the city limits (Pollock 2018). A sign that Texas' individualistic ideology might be too much to overcome on a funding method of this nature. The plastic tax is a sumptuary tax that is aimed at reducing the use of a good (see below). Once the tax has lowered the amount of consumption of the good, the revenue generated also declines to limit the long-term viability of such a tax.

REAL ESTATE TAXES

Real-estate transfer taxes (RETT), also known as real-estate conveyance taxes, have been implemented in thirteen states and three local governments specifically to fund parks and conservation (Walker & Crompton, 2005). These are taxes imposed

when the title is transferred to a new owner (National Conference of State Legislatures, 2017). The tax rates have varied from .10 percent to 2 percent. Walker and Crompton's study found that each of the states that successfully created a RETT invested in campaigns to convince the public and real estate lobbying groups of the value of conservation funding (Walker & Crompton, 2005). Some states used their campaigns to focus on the positive relationship between real-estate values and an appealing surrounding environment (amenity value), other states found realtors to publicly support the bills, and some states have partnered with nonprofits to promote their campaigns. Since Texas' rapid development along with ranching and farming is consistently reducing the number of natural lands, Walker and Crompton's assessment concluded that Texas would likely find a RETT to be a somewhat steady, fitting, and prosperous source of revenue (Walker & Crompton, 2005). However, it is important to note that public buy-in, as well as compromising with real estate lobbying groups, is a necessity for the success of this tax.

Similarly, Texas has already enacted a wildlife management property tax exemption. This exemption allows for a reduction in homeowners' property taxes by removing part of the home value from taxation (Longhorn Realty LLC, 2018). Texas law would also allow for other taxing entities to offer exemptions related to a percentage of the home's value. This means that the opportunity to reallocate the real estate tax to wildlife conservation funding is a viable option for Texas. This would work especially well with homes that are most benefited by the natural world and are located near wildlife habitats. A precedent has been set in Texas by offering a lower property tax for pieces of land that are classified as agricultural land, open-space land, and land that is used for wildlife management (Redmon & Cathey, 2010).

TRANSPORTATION PROJECT TAXES

Nationally, several Regional Habitat Conservation Plans (RHCPs) have been formed to gain conservation funding on transportation projects. Lederman, Jaimee, and Wachs (2016) studied 22 RHCPs that received funding through development fees-

additional fees paid by developers, tax benefit financing- a percentage of the increased property value due to the development, and mitigation payments- paid for by the transportation agencies through local sales tax. Some disadvantages to transportation funding are that they are often dependent on approval through state law and can be an unsteady revenue source due to fluctuations in transportation development.

Some disadvantages to transportation funding are that they are often dependent on approval through state law and can be an unsteady revenue source due to fluctuations in transportation development.

VOLUNTARILY-FUNDED

Voluntarily-funded taxes are considered attractive methods of funding as they are paid only by those who chose to pay and are not mandatory for the general public. This section considers four methods of voluntarily funding that could be used in Texas: license plate fees, stamps, lottery, and sumptuary taxes. These taxes are referred to, in our summary as personalization fees and as sumptuary taxes.

PERSONALIZATION FEES

LICENSE PLATE FEES

Wildlife-related specialty license plate fees is a commonly used source of funding with varying success. Previous research has found that license plate sales were not statistically influenced by specialty plate price, the number of other specialty plates available for purchase, or the requirement to display two plates (Laband, Pandit, & Sophocleus, 2009). However, specialty license plate sales were positively related to per capita income and the percent of individuals engaging in wildlife-related recreation (Laband, Pandit, & Sophocleus, 2009). Sales were also higher in the Southern United States. (Laband, Pandit, & Sophocleus, 2009). Specialty license plate fees as a method of funding conservation has been successfully implemented in Washington, Pennsylvania,

and Georgia. In each case, the state invested in strong relationships with stakeholders to creatively bolster the strength of the program.

STAMPS

Voluntary stamp purchases have been a widespread idea in an attempt to raise funds from non-hunting consumers of wildlife recreation. In a study from a 1980 Survey of Fishing, Hunting, and Wildlife-Associated Recreation, researchers Mangun and Shaw (1984) found that when respondents were asked to rate systems which involve financial contributions, the most favored (at 80%) were those that were purely voluntary such as stamps or income tax check-offs. Despite their popularity as an idea, conservation stamps have failed to bring states significant forms of revenue. In relation to the 2011 Survey of Fishing, Hunting, and Wildlife-Associated Recreation, total fishing expenditures, licenses, stamps, tags, and permits represent the smallest percentage of money spent at \$.6 billion (U.S. Fish and Wildlife Service and U.S. Census Bureau, 2012). The expenditures are similar for hunting at \$1 billion, representing the second smallest expenditure on the list of revenues in the survey (U.S. Fish and Wildlife Service and U.S. Census Bureau, 2012).

SUMPTUARY TAXES

Sumptuary or “sin” taxes are defined as “taxes on goods which are enjoyable to consume but create negative health consequences in the future” or are deemed harmful to society (Immordino, Menichini, & Romano, 2015). Examples of historic sumptuary taxes include alcohol, tobacco, and gambling (Carruthers, 2016). Recent efforts to expand sumptuary taxes includes sugar and sugary products such as sodas and candy, fast food, marijuana, and pornography (Nielson & Jenson, 2016).

SUGARY DRINKS, SNACK FOODS, AND RESTAURANT TAX

Taxes on sugary drinks, snack foods, and restaurant tickets are already in place in some regard, whether it be locally or state-wide. Over the past 30 years, several states and cities have attempted to enact or successfully combat taxes on sugary drinks and

snack foods. This issue is of current debate in states like Connecticut hoping to tax “sugar-sweetened drinks” in order to address the national obesity epidemic, however, these efforts have not been successful in over 20 years (Haigh, 2019). In the height of these taxes, it was reported that nationally, combined the 19 states and cities with taxes mitigating less nutritious foods and drinks and combined, sugary drinks and snack food taxes raised \$1billion annually for local and state governments (Jacobson & Brownell, 2000). Although there is a strong potential to profit from this excise tax, the state legislature has had difficulty reaching consensus on this matter.

Restaurant taxes or “meals taxes,” are considered “luxury taxes” placed on prepared meals either dined in or taken out from restaurants. These taxes are sparse and only exceed other goods taxes in a few cities across the nation (Bishop-Henchman, 2012). Restaurant taxes may be a sustainable approach to generating conservation contributions from the large urban populations of Texas. Unfortunately, we are not aware of any rigorous evaluations of these taxes at this time.

ALCOHOL AND TOBACCO TAX

The Texas alcohol tax has not been adjusted for inflation since 1984. By adjusting the tax rates, Texas could potentially earn \$112 million (Lavine, 2018). Furthermore, Texas has the lowest alcohol tax compared to its neighboring states, suggesting that Texans may be willing to pay more for alcohol (Scarboro, 2017). Similarly, Texas’ current tobacco tax rate of \$1.41 per pack is below the national average of \$1.79 (Boonn, 2018). These comparisons indicate that there is room to increase alcohol and tobacco taxes. Although these taxes are typically directed towards public health funding, using taxes on alcohol and tobacco products for conservation funding can be a creative way to improve both environmental conservation and health impacts through clean air and water. Furthermore, a healthy outdoor environment has been shown to improve mental health, physical health, social connectivity, water quality, and community resilience to climate change (Hager, et al., 2013).

MOTOR VEHICLE FUEL TAX

Twenty-nine out of 50 states have some form of environmental fee or additional tax for each gallon of gasoline purchased, on top of the state excise tax. In some states, like New Jersey, this fee is as much as 3 times the amount of state excise tax (Federation of Tax Administrators, 2019). Although exact annual revenue from these fees/taxes vary, the base of \$8.2 million private and commercial vehicles registered in the state of Texas would be able to produce \$20 million from an annual fee of \$2.44 per vehicle (Statista, 2019). Currently, Texas only requires a tax for fuel removal from a storage facility imposed on the supplier (Texas Comptroller of Public Accounts, 2018). There has not been much discussion of this tax within Texas, but adding a fuel tax could place some of the environmental externalities in the hands of the consumer while providing substantial revenue for conservation funding and more.

LOTTERY

Several states utilize lotteries to raise funds for conservation. This is an appealing method of funding since participation is voluntary with little public dissent. When there is dissent, it is often due to a general dislike for gambling or worries the lottery will detract from funding other issues. Below, we will explore the lottery funding methods used by Arizona, Maine, and Colorado as examples of how a lottery might be implemented in Texas. Arizona's Heritage Initiative (Arizona Heritage Fund) generates up to \$20 million per year of state lottery revenues for conservation (McKinney et al., 2005). The success is due to a collaboration between The Nature Conservancy, Arizona Game & Fish Department, and the Arizona Parks Department. Several strategic moves contributed to the success of the program including: public campaigns to encourage continued support, political support from both gubernatorial candidates, and transforming the Arizona Heritage Alliance into a nonprofit to prevent the redirection of the lottery funds.

The State of Maine implemented a lottery bill supporting the use of a \$1 scratch-off ticket that specifically allocates funds to wildlife conservation in Maine. The strengths of

this bill were grounded on political power and connections, and by grassroots efforts in Maine (McKinney et al., 2005). The initial research was conducted through a survey asking residents of Maine their willingness to pay for conservation funding. Volunteers were then used to spread the word about how citizens can help (McKinney et al., 2005). The funds were dispersed through a competitive grant program for agencies and conservation groups from the Maine Outdoor Heritage Fund.

When attempting to develop a source of conservation funding in Colorado, stakeholders such as politicians, businesspeople, and nonprofit conservation organizations collaborated to create the state lottery as a method of funding. The campaign to win public approval for the adoption of a state lottery took roughly 5 years to plan, utilizing several hundred volunteers, a petition with 70,000 signatures, and private donor assistance, including financial donations from conservation nonprofits (McKinney et al., 2005). Approved in 1992, this amendment is referred to as the Great Outdoors Colorado (GOCO) constitutional amendment. The Colorado Division of Wildlife receives GOCO-designated funds through grants, federal aid, and license fees. The Colorado Division of Wildlife does not receive any funding from state taxes. Over the years, Colorado's GOCO lottery fund has continued to be considered one of the most successful lotteries in the nation for funding conservation.

From such case studies, we can conclude lottery is a viable method of funding in Texas. If implemented, Texas would benefit from public support, partnering with other organizations, and diversifying the type of lottery games used in order to avoid diminishing returns.

THEORETICAL CONCLUSION

Our literature examined funding options that have been used and could possibly be used for raising the \$20 million to address the Texas Conservation Action Plan. Of these options, the ones that seem to be most viable are those listed under the consumer-

funded and industry-funded sections. Increased user fees at state parks and wildlife management areas, water surcharges, sales tax increases, and online sales tax, as well as taxes on outdoor recreation equipment and cameras, along with carbon emissions, real estate transfer taxes, and transportation project taxes, would all be the most viable for long term sustainability. Sumptuary taxes or sin taxes could possibly provide fast and easy revenue in the short run but as the population's preferences change because of the tax, the revenue stream could fall off abruptly. This form of tax is, therefore, less stable in regards to long term viability. As for the other taxes listed under the voluntarily funded section, such as license plate fees, stamps, and lottery, they have proven to be unsuccessful in raising sufficient revenue and are also not viable solutions for raising the \$20 million needed to conserve Texas' wildlife.

Our literature review has focused on the possible options for raising revenue, their success and deficiencies. The following parts of this paper will focus on what the people of Texas, both the conservationists and the business people, see as fair, practical, and viable options for raising \$20 million. A recent report entitled the Nature of Americans, by Dr. Stephen R. Kellert (2017) of Yale University found that Texans today are more disconnected from nature even though they highly value nature and are willing to "support nature-related programming, funding, and conservation" (Kellert et al., 2017, p. 4). This tells us there is a willingness to protect wildlife, but people are disconnected from what wildlife really is. Therefore, the biggest challenge to preserving Texas' wildlife are Texans themselves. Values shape people's attitudes toward issues that subsequently drive the actions and behaviors of individuals and groups (Jones, Shaw, Ross, Witt, & Pinner, 2016). Our project assesses attitudes of Texans to funding options for conservation, which we hope will facilitate public decisions about expanding revenues for conservation.

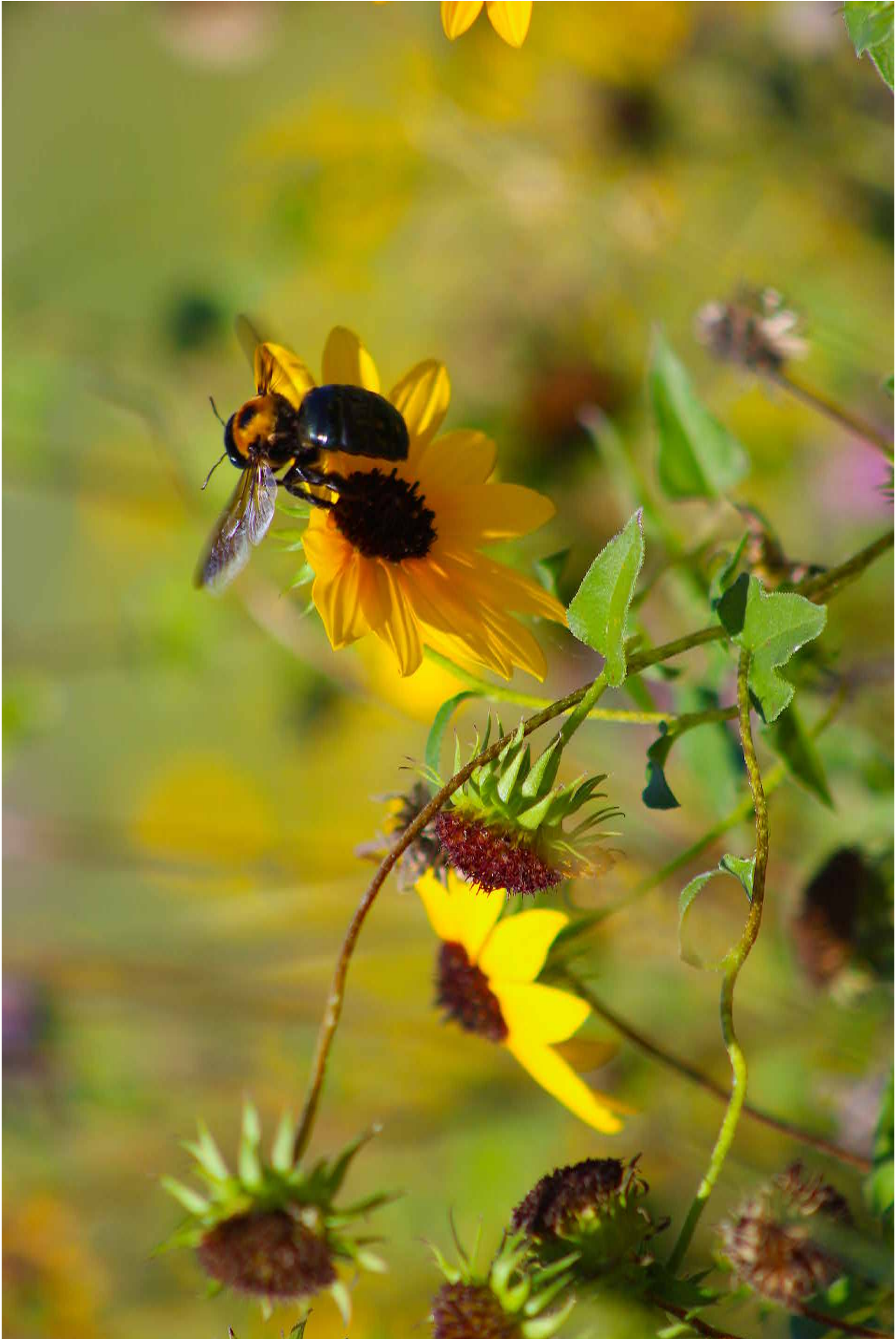


Photo taken at Welder Wildlife Refuge by Adria Escobedo

PART TWO: DATA COLLECTION

RECRUITING RESPONDENTS

We identified our stakeholders as chambers of commerce throughout Texas, and key wildlife organizations that support H.R. 4647 and S. 3223 (Texas Alliance for America's Fish and Wildlife, 2018). We began by creating a spreadsheet of contact information for all Chambers of Commerce in Texas, as well as for the different wildlife organizations. In order to maximize the number of respondents, we called chambers to ask if they would like to participate in our survey. For those that agreed, we asked if they wanted a paper version of the survey or an online version. For those chambers that declined, we marked them accordingly, to ensure we did not send surveys to those who did not want to participate. Once we had gathered a list of respondents, we sent the questionnaires to all of the stakeholders: 150 wildlife organizations and 289 chambers of commerce. We also created an informational video that was emailed to all of the stakeholders along with the survey to further explain the value of participating in the survey. Our goal was to target as many regions of Texas as possible. If these criteria were not satisfied, we wanted to ensure that we had a variety of respondents that represented over 50% of Texas' population in some capacity (e.g. stakeholders that served large metro areas). Respondent recruitment required over 600 person hours for collecting information on stakeholders, making introductory and follow-up calls to stakeholders, and compiling and distributing surveys.

GOALS AND HYPOTHESIS

Our goal is to find funding methods for conservation that are acceptable to Texans based on consensus in responses of both the chambers of commerce and the wildlife organizations. We hypothesize that wildlife organizations will rank all funding methods more highly than the chambers of commerce because wildlife organizations have a

vested interest in conservation. We expected chambers to rank conservation funding at or below the level for social services such as health, education, and transportation whereas conservation would be ranked above social services by wildlife organizations. Our study design, therefore, uses the wildlife organizations as a positive control for comparison with the broader attitudes of the chambers of commerce to funding conservation.

COMPOSITING THE QUESTIONNAIRE

We used a survey of twenty-nine-questions in three parts (Appendix A). In Part I of the questionnaire, we asked each respondent about their affiliated organizational information such as the number of personnel in the organization, organizational support for relevant legislation, and ranking of importance for conservation funding in relation to other public goods. In Part II of the questionnaire, we used the options for Texas wildlife conservation funding that are detailed in Part One – Theoretical Analysis. Each funding option was singled out in a survey question where we asked respondents to rank the funding option on a scale of 1 (least) to 5 (most) in regard to fairness (ability to pay or benefit), practicality (ability to administer), and long-term viability (will this method be a sustainable way of raising revenue). In Part III of the questionnaire, we asked respondents about their organization's level of support for H.B. 4647 and S. 3223 on a scale of 1 (no support) to 5 (fully support).

DATA ANALYSIS

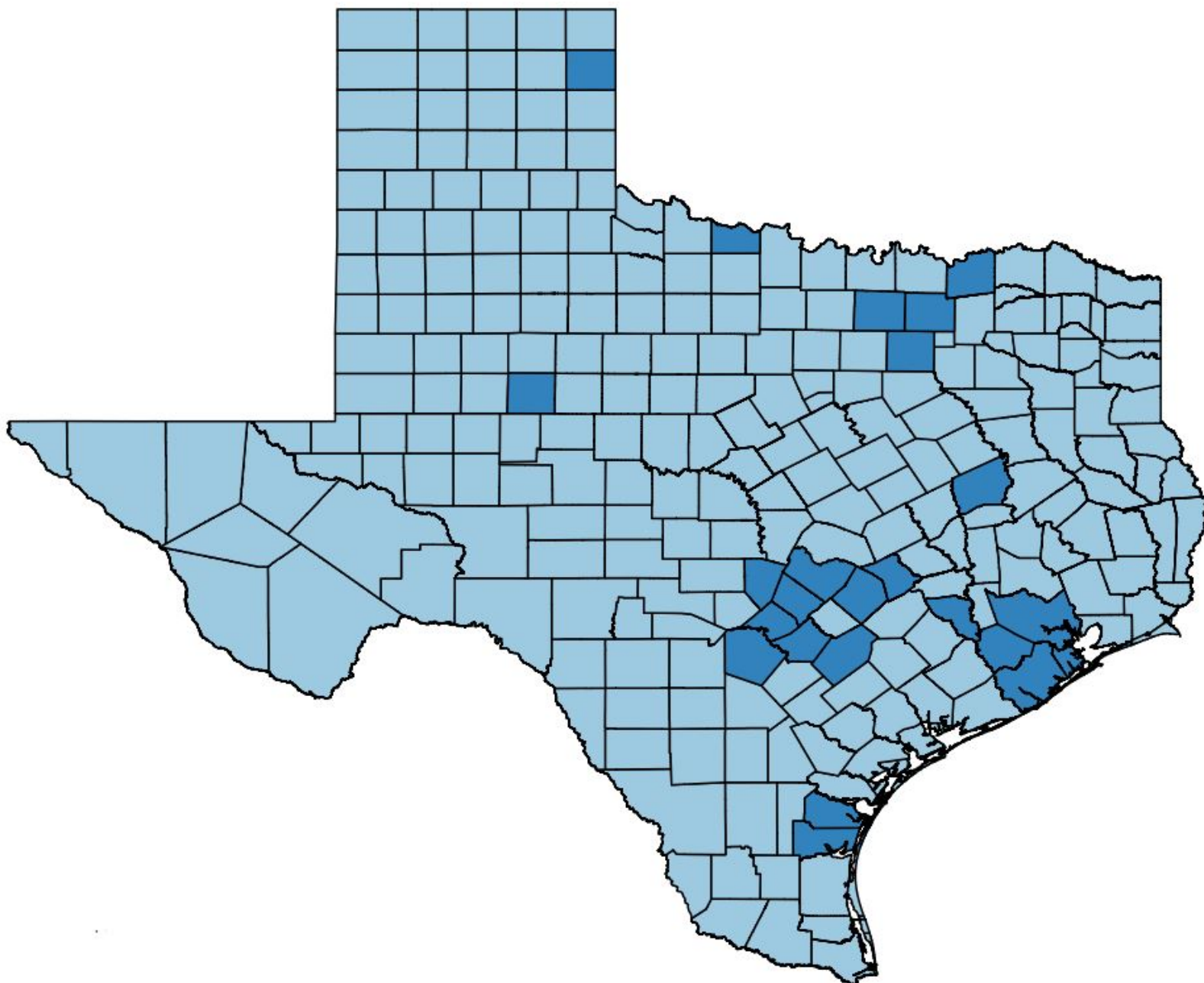
We set a cut-off date of March 1st for all submission of responses. Once that date arrived, we limited our data to those surveys that were already received and began processing the data. The survey had a response rate of 5.53% for chambers of commerce and 12% for wildlife organizations for an overall rate of 7.82%. We received responses from 24 counties in Texas (Figure 1) that included large metropolitan areas in the state.

We entered responses into data files and used descriptive statistics to locate outliers and check anomalous entries in Excel (version 1903) and in STATA (version 15). We removed three respondents from the data set due to incomplete responses. The final

data set was, therefore, comprised of 16 chambers of commerce and 19 wildlife organizations.

We used pairwise correlation of scores for fairness, practicality, and sustainability to assess the independence of responses among funding options. We found that the fairness scores were strongly correlated with those for practicality (.800) and long-term viability (.960). We, therefore, used only the scores for fairness as the best indicator of acceptance for each funding option. We compared scores of the chambers of commerce with those for the wildlife organizations by the nonparametric Mann-Whitney test with a p value of <0.05 . Responses were scored on a scale of 1-5. A score of 3.0 was a neutral response. We, therefore, used a score of 3.5 and above as a favorable response for the fairness of each option. The proportion of favorable responses for each funding option was calculated for comparisons of chambers of commerce and wildlife organizations.

Figure 1. Represented counties highlighted in dark blue



PART THREE: RESULTS

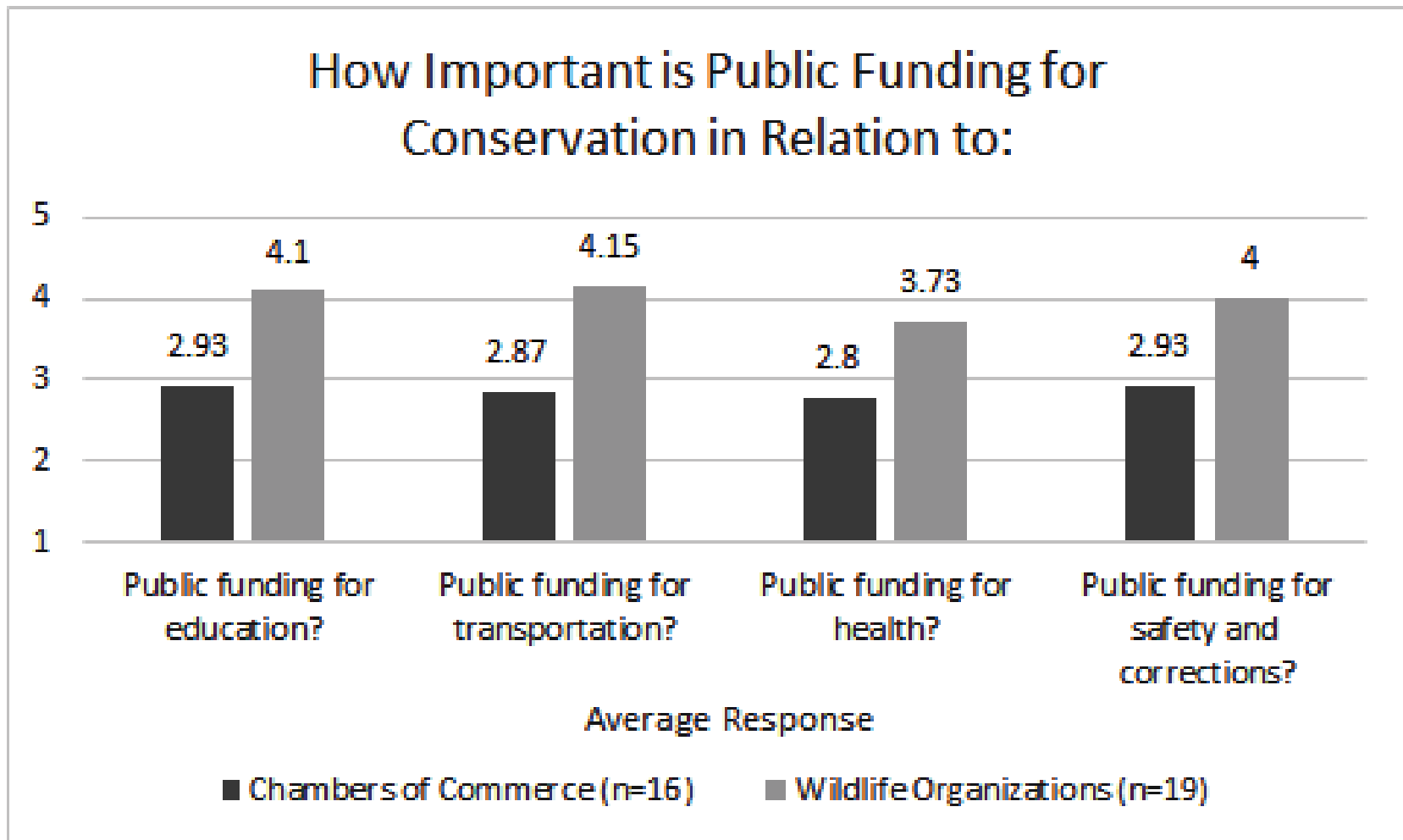


Figure 2. Average response for the importance of public funding for conservation over social services

Note: Social services are including education, transportation, health, and safety, etc.

In the first part of the survey, respondents were asked on a scale of 1 (not important) to 5 (most important), how important their organization considered public funding for conservation in relation to public funding for education, transportation, health, and safety and corrections. Figure 2 displays the average responses from all stakeholders. Likewise, the median response for each of the four individual funding comparison questions rendered a median response of 3 and 4 for chambers of commerce and wildlife organizations, respectively. Wildlife organizations were positively disposed to conservation funding, that is scores were greater than 3.0 for funding conservation when compared with funding education, transportation, health, and safety respectively

(Figure 2). Conversely, scores for chambers of commerce were neutral (3.0) for these contrasts (Figure 2). However, only 25% of chambers of commerce favored funding conservation over funding any of the four categories of social services (Figure 3).

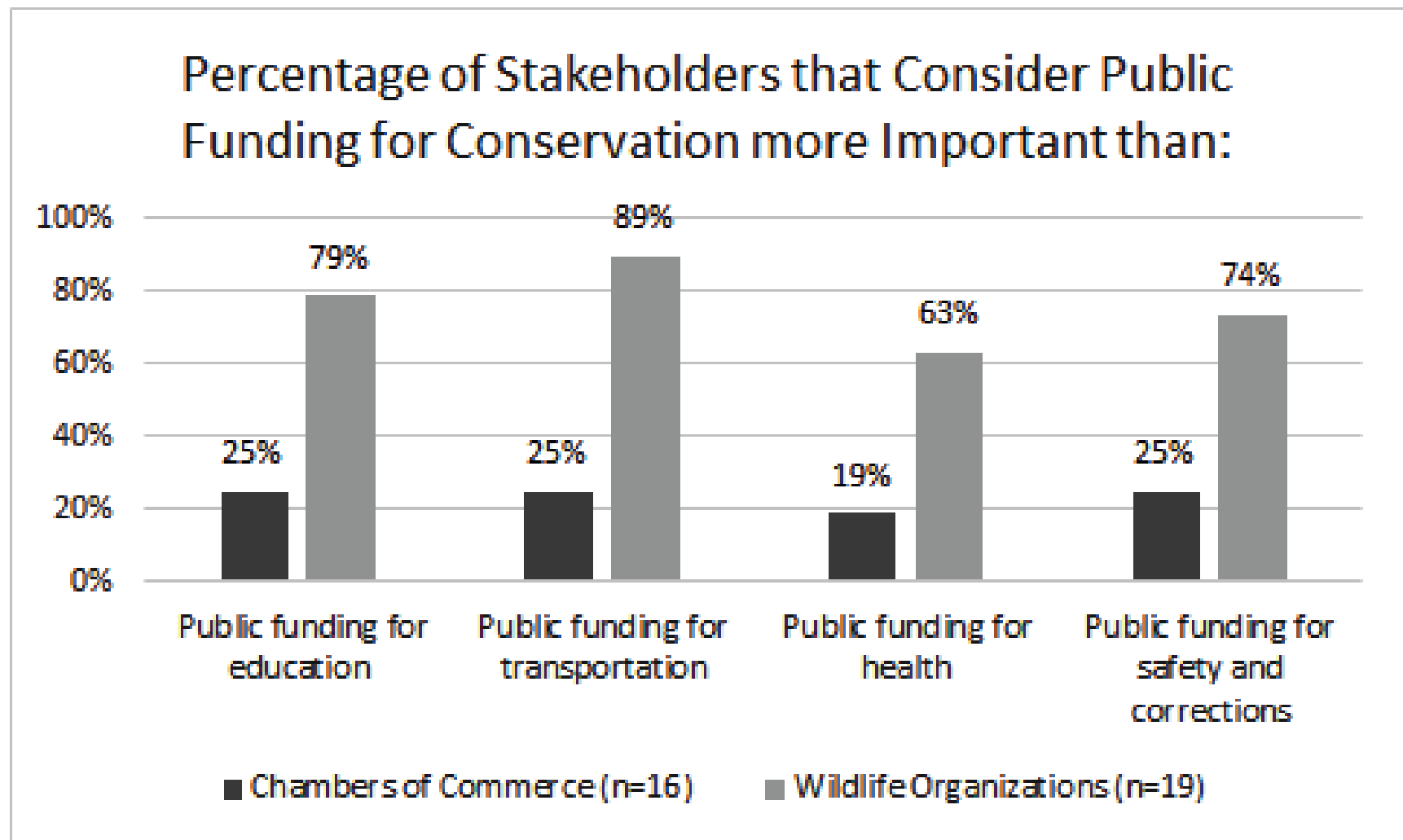


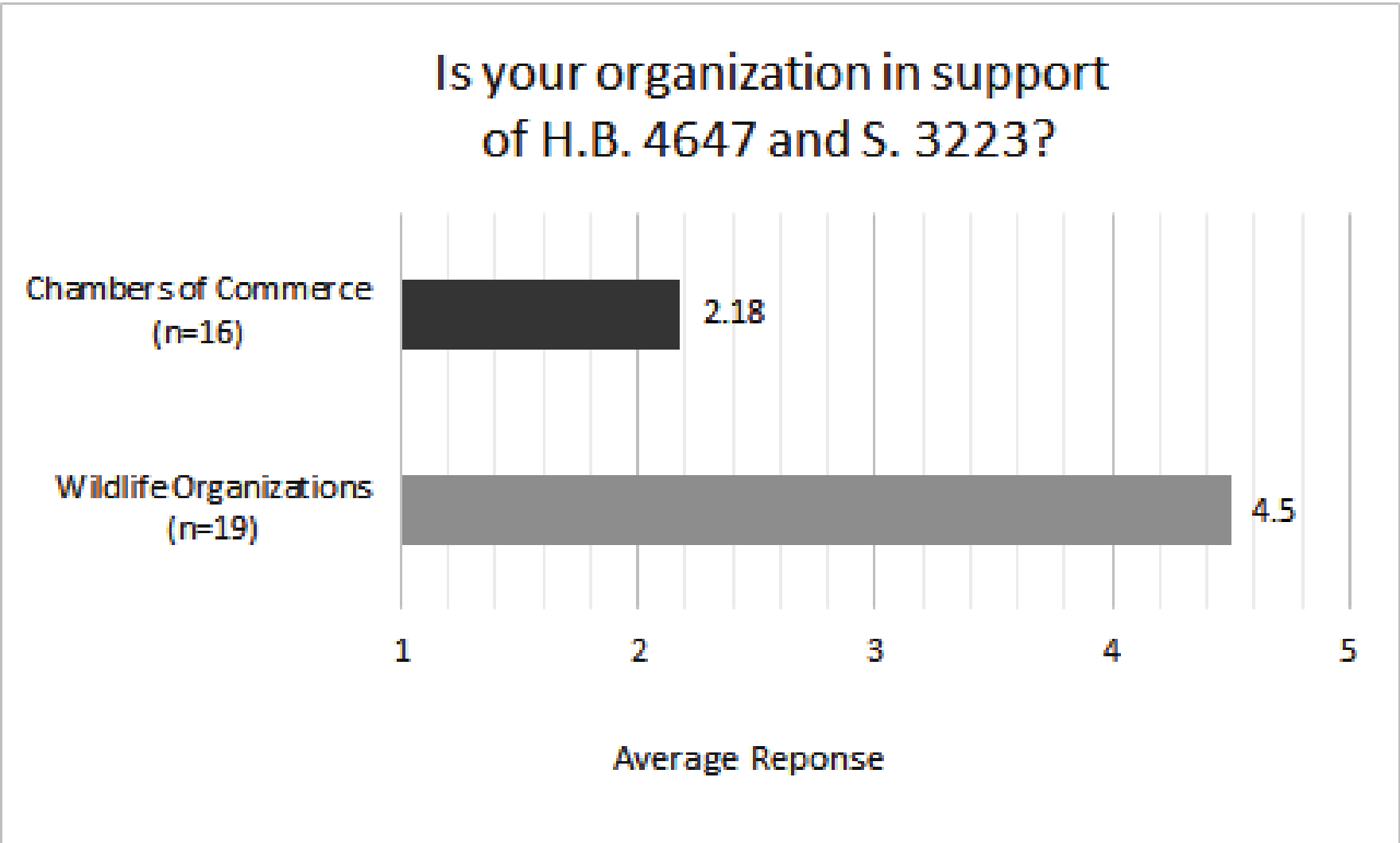
Figure 3. The proportion of respondents that favor funding conservation over social services

Note: Social services are including education, transportation, health, and safety, etc.

Figure 3 displays the percentage of stakeholders within each group that had a positive response to funding for conservation. Once again, a positive response is one with a score of 3.5 or higher.

Figure 4. Support for Recovering America’s Wildlife Act among chambers of commerce and wildlife organizations

Note: Recovering America’s Wildlife Act includes H.B. 4647 and S. 3223



In Part III of our survey, on a scale of 1 (no support) to 5 (fully support), respondents were asked if their organization was in support of H.B. 4647 and S. 3223, Recovering America’s Wildlife Act. Wildlife organizations were more supportive of the bills than chambers of commerce with 79% of wildlife organizations giving a positive response (3.5 or higher) and only 19% of chambers of commerce giving a positive response. Likewise, the median response was 2.5 for chambers of commerce and 5 for wildlife organizations. Figure 5 displays the percentage of chambers of commerce and wildlife organizations that responded to each funding option in Part II with a positive response when considering the fairness of the funding option. The funding options with the most positive responses from stakeholders were: stamps, license plate fees, plastic tax, outdoor recreation equipment tax, carbon emissions tax, and lottery (Table 1).

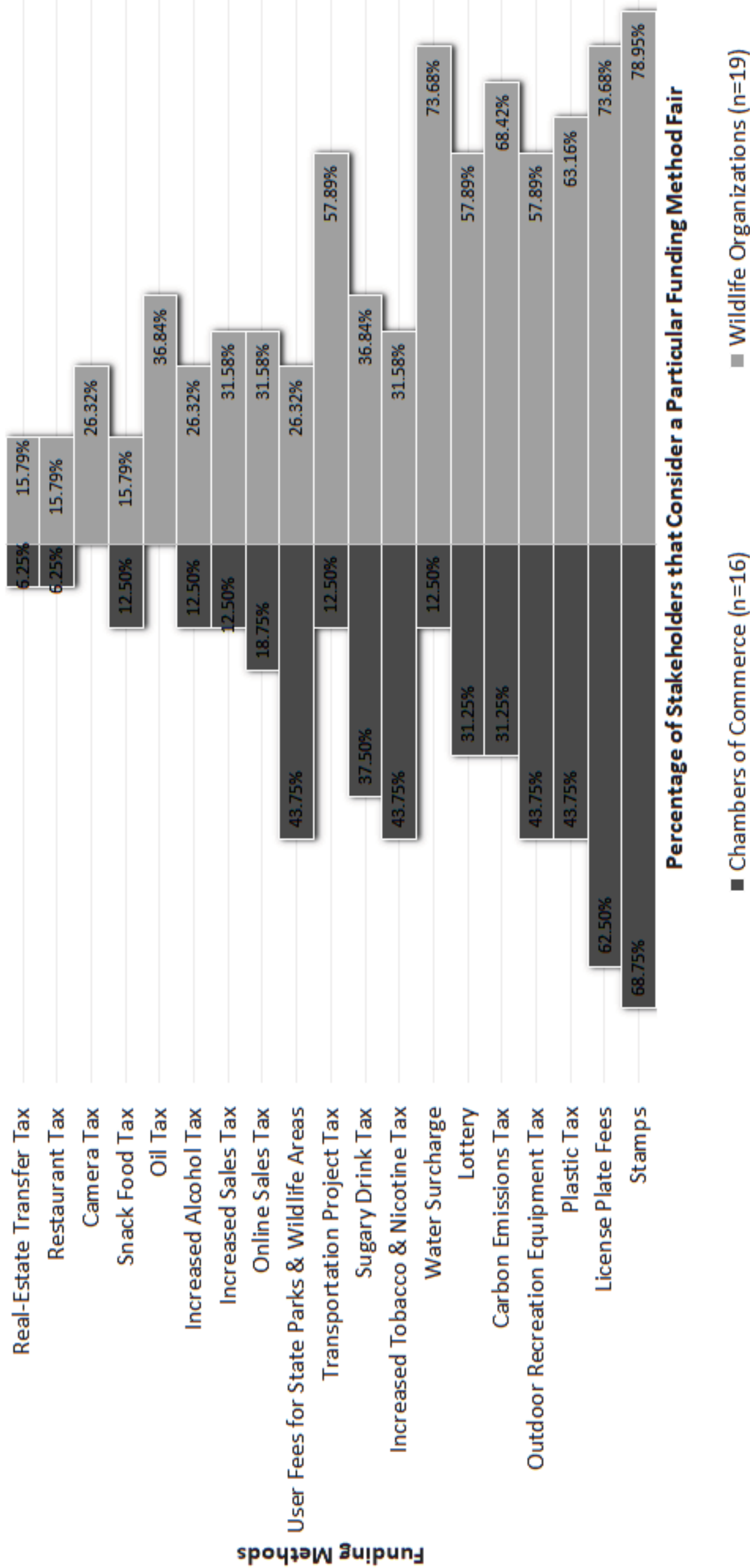


Figure 5. The proportion of respondents that favor funding options for conservation

Likewise, these top funding choices had the most consensus between the two stakeholder groups. Overall, wildlife organizations were 17% more likely than chambers of commerce to positively rank any given funding option as fair. The reason for such high fairness ratings and consensus can only be hypothesized but it is likely that these funding options received positive responses due to the familiarity of the options since they are the way fundraising is currently being done. Furthermore, some unpopular funding options such as sugary drink tax, snack food tax, restaurant tax, and real-estate tax had high negative consensus between the two stakeholder groups. Of the top funding options, stamps and license plate fees had the highest consensus with roughly 90% consensus between the two stakeholder groups for stamps and 89% consensus for license plate fees.

Table 1. Funding options for conservation in Texas with the greatest proportion of favorable responses among each stakeholder group

Popularity	Funded	Option	Chamber (% Fair)	Wildlife (% Fair)	Scores (P<0.05)
1	Voluntarily	Stamps	69	79	C = W
2	Voluntarily	License Plate Fees	63	74	C = W
3	Industry	Plastic Tax	44	63	C<W
4	Consumer	Outdoor Equipment Tax	44	58	C=W
5	Industry	Carbon Emissions Tax	31	68	C<W
6	Voluntarily	Lottery Tax	31	58	C = W

Note: Chambers of commerce (C; n= 16) and wildlife organizations (W; n=19). Each “% Fair” column lists the proportion of the group that scored the fairness of each funding option at 3.5 or above. Groups were compared on the basis of a raw score on a scale of 1 to 5 using the Mann Whitney test at P<0.05.

LIMITATIONS

As with any project, there were limitations to our research. Below are the limitations that we faced during the collection of the data.

COMMUNICATION LIMITATIONS WITH RESPONDENTS

We used Texas Chambers of Commerce List (2018) to find to links to the websites of all the chambers. However, some of the links that were listed on the site were incorrect, which required a search for contact information on multiple websites. From there we had the challenge of locating their contact information on their websites. Most of the information was generic emails and toll phone numbers. In addition to this, many of the chamber's hours were outside regular business hours of Monday – Friday from 8am to 5pm. A few chambers also required the entire chamber to vote on responding to our survey. The wildlife organizations were also difficult as many of them did not have phone numbers or emails but instead required paper mail or direct contact. Due to the size of Texas, our limited funds, and the length of time for the project, we were only able to contact those stakeholders via mail.

In addition, some chambers refused participation because their response would not be anonymous. There were also cases where the person who received the email did not want to respond to the email because they did not want to represent the views of the entire chamber.

LIMIT IN NUMBER OF RESPONDENTS

We knew that low response rates were common in survey research. To mitigate against this, we made sure to call all of the chambers to alert them to receiving a survey and the importance of responding to the survey by the due date. Nonetheless our average rate of response was only 7.82%. Delays of 3 – 4 weeks between first contact and the receipt of surveys may have contributed the low response rate.

RESPONDENT ERROR

During the process of data sorting, we noticed that some respondents had selected multiple options for the same question. For instance, they selected that the option was least fair to fair. We did not know if that meant that the respondent made a mistake in their decision and tried to go back to fix it but could not, or felt that the question was slide-based and needed all the answers up to their final answer to be selected. To mitigate that we dropped them from our data, or averaged their responses. As a result, we had to decrease the number of successful respondents for our data. We dropped one respondent from the data set because they did not identify the organization, which precluded their assignment to either the chambers of commerce or the wildlife organizations in the analysis.

OVERALL TIME RESTRICTIONS

As this project is comprehensive and consists of both quantitative and qualitative data analysis, time proved to be a limitation. With more time, our group would have hoped to focus more on the implementation of proposed funding changes as the Texas legislative session commences. Because this project topic is vast and multifaceted potential for future research is abundant, accounting for the possible limitations such as a follow-up survey and individual respondent interviews that were not possible within the constraints of our academic schedule.

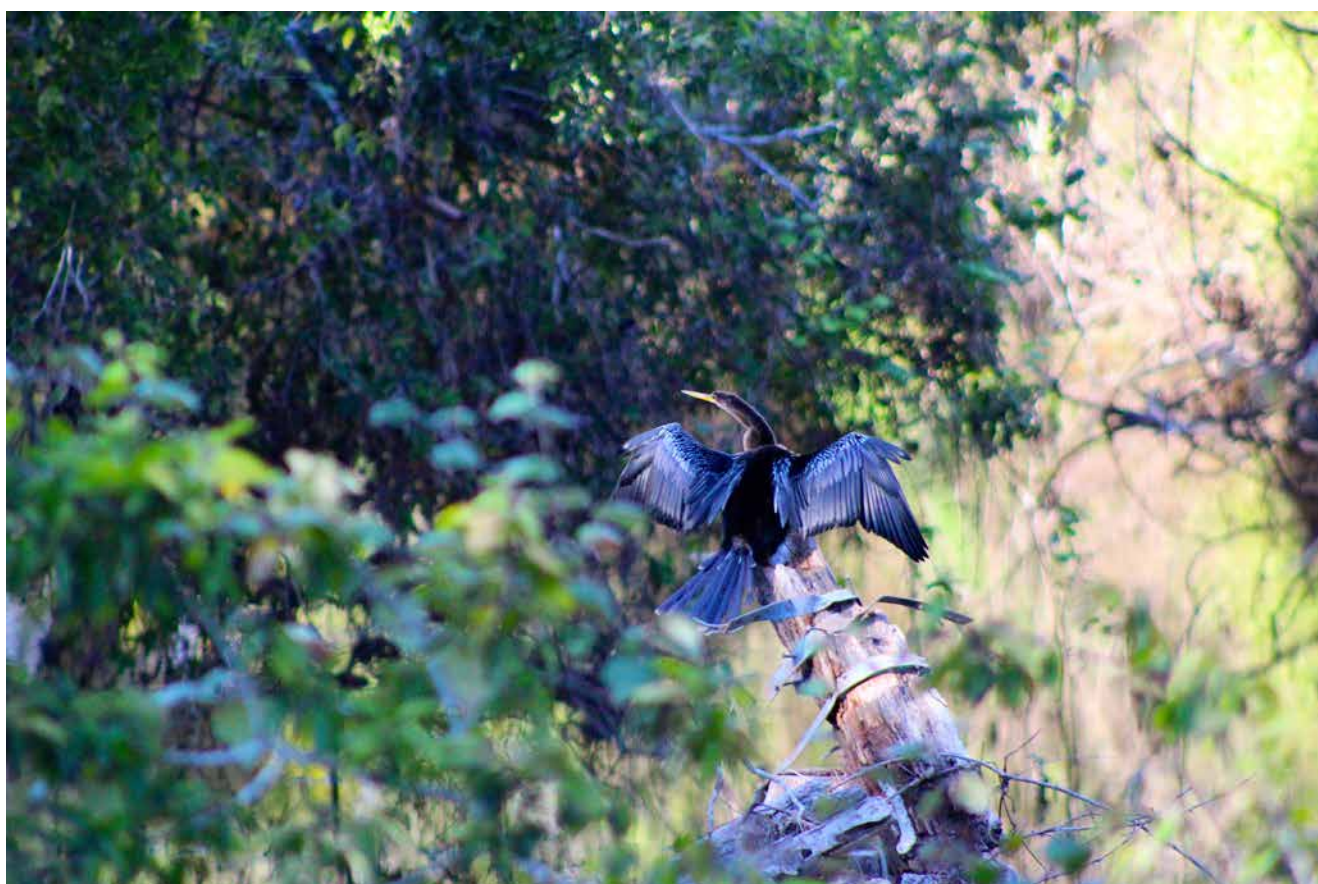


Photo taken at Welder Wildlife Refuge of Greg Connell by Adria Escobedo



Photo taken at Welder Wildlife Refuge of Greg Connell by Adria Escobedo

PART FOUR:

RECOMMENDATIONS

RECOMMENDATIONS FOR THE TOP SIX FUNDING OPTIONS

Our review indicated that water surcharges, or increased taxes on statewide sales were the best funding options for providing Texas with sufficient funding for wildlife conservation but those options were not popular with the chambers of commerce (see Figure 5). This finding is pertinent in evaluating how different populations in various regions of Texas think and possibly vote regarding issues of conservation. The pattern we see in this evaluation is that the more familiar the method (stamps, license plate fees, etc.), the more stakeholders felt those methods were fair. These user-based fees may be considered fair due to their voluntary nature, however, these fees are not likely to generate sufficient revenue. In the next paragraph, we discuss our ideas on how to increase the effectiveness of user-based fees.

NO. 6: LOTTERY

Lottery funding has a high likelihood of raising the needed \$20 million for Texas conservation. As it stands now, 65.1% of the lottery winnings go to the lottery winner, 25.5% goes to Texas Education, 5.4% goes to the retailer, 3.7% goes to lottery administration, and .3% goes to the fund for Veterans Assistance (Texas Lottery Commission, 2019). In the fiscal year 2018, \$18.1 million from lotteries was transferred to the Texas Veterans Commission. A similar allocation of .3% would allow Texas to approach the goal of \$20 million for conservation. Allocation of lottery funds to conservation would entail a campaign for public support, which could succeed because the method has become familiar to Texans.

NO. 3&5: PLASTIC TAX AND CARBON EMISSIONS TAX

Regarding the more novel options such as the plastic tax and carbon emissions tax, the chambers favored these options at a rate of 43.75% and 31.25%, respectively. The business community may be becoming more familiar with practicable taxes that arise from environmental degradation. These taxes have a possibility of being accepted by the public and a more stable source of conservation revenue over a long period of time. We theorize that this increase in familiarity may be due to nationwide publicity campaigns highlighting the detriment plastics and microplastics have on oceanic habitats. We also project that chambers understand the long-term costs of waste collection through the use of landfills and dumps and want to mitigate the increase of those costs as much as possible.

However, plastic and carbon emissions taxes have some hurdles to climb in order to be implemented in Texas. As previously mentioned, bills preventing plastic bag bans in Texas are already being heard in the state legislature and Austin just recently repealed its plastic bag ban. Carbon emission taxes are also a polarizing topic in the state, as opponents argue that the tax will hurt energy industries and raise utility bills. Yet, carbon taxes have been implemented in Europe and most recently in Vancouver, British Columbia to political and social favor (Murray and Rivers, 2015). As proposed, general education campaigns about plastic and carbon taxes would need to be conducted to engender acceptance among policymakers and citizens in Texas.

NO. 4: OUTDOOR EQUIPMENT TAX

Since 1993, the Texas legislature has determined that 94% of the state's sporting goods sales tax be dedicated to TPWD (Anchondo, 2019). However, on average, TPWD has received only 40% of the tax over the last twenty years (Anchondo, 2019). Most recently, though, TPWD has received 89% of the tax- totaling \$277.6 million over the last two years (Texas Parks and Wildlife Department, 2019). Although the tax has more recently been appropriated to TPWD at higher percentages, the total allotment has

varied by as much as \$100 million over the past ten years due to varying legislative appropriations (Texas Parks and Wildlife Department, 2019).

NO. 2: LICENSE PLATE FEES

Regarding license plate fees, this source of funding is directed to Fund 9: Game, Fish and Water Safety Account. This account may only be used for the purposes related to the protection, regulation, and conservation of the state's fish and wildlife, sand, shell, and gravel, and the enforcement of water safety law (TPWD, 2019). License plate fees, in addition to stamp revenue, account for 53.4% of the \$203.9 million in this fund (TPWD, 2019). However, due to its voluntary nature and the positive correlation between participation in this program and discretionary income, this source of funding is inconsistent and vulnerable to economic downturns like that of 2008. Transforming this source of funding from voluntary to mandatory would require the imposition of a flat conservation fee, for example a fee of \$25 on every new registration of a vehicle in Texas. To the average consumer who purchases a new vehicle at \$20,000, Texas registration and inspection fees are the following: \$51.75 registration fee, \$10.00 local fee (average), \$7.50 inspection fee, \$4.75 processing and handling fee, and other donations in an amount the registrant chooses (Texas Department of Motor Vehicles, 2019). This comes out to an approximation of \$74.00 without donations. With the mandated conservation fee of \$25, this makes the first-purchase fees approximately \$100.00 total. The fee would *not* be an annual collection. If the 8 million drivers in Texas (Statista, 2016) registered a new vehicle every 10 years, annual registrations would approximate 800,000 vehicles each with a conservation fee of \$25 for a total of \$20 million per year. This one-time fee is nominal in comparison to the price of the new car (only .125% of \$20,000) and just 20% of the initial registration fees for the new vehicle. The authority and the fund for receiving these fees are already in place, so legislative action on this method can be expedite. A conservation fee on car registration captures the externalities associated with driving, such as increased roadkill and air pollution.

NO. 1: STAMPS

Stamp revenue was the method deemed fairest by both chambers of commerce and environmental organizations in our survey, however, this source has an uncertain future. Stamps for waterfowl are added to a Texas hunting license as an endorsement in order to harvest migratory waterfowl. This method was practicable when it was first introduced in 1938, when J.N. Darling created 16 stamp images (The National Wildlife Federation, 2019) from commissioned artwork. Darling's art reflected the public problems of that time and his conservationist ethos spurred a movement that has



generated more than \$750 million to purchase and lease over 5.3 million acres of wetland habitats in the United States (The National Wildlife Federation, 2019). These stamps are collectible and the artwork is commissioned annually. However, as previously discussed, the number of hunters in Texas are only 4% of the population.

Thus, to raise higher revenues from this source, stamps would need to be shifted to a broader group of contributors. Perhaps an electronic subscription system such as Apple Music or Spotify, which both require a monthly subscription and could offer the user the option to donate a small amount every month towards conservation based on their state's needs. Targeting youth with video games and social media is also a future revenue source with millions of users and should be evaluated now for successful implementation. Another option is to create a conservation endorsement for business in exchange for contributions to the fund. Endorsements and certifications of products are becoming more prevalent in markets for outdoor equipment.

FUTURE RESEARCH

Ultimately, this study is a starting point for further capstone groups and research studies to firmly establish which funding option(s) could reshape Texas wildlife funding as needed through bills such as H.R. 4647 and S. 3223. The top six funding methods selected by the chambers and wildlife organizations need to be evaluated by the TPWD for each twenty-year span as both the demographics of Texans and the demands for conservation funding change.

CONCLUSION

Although the Dingell-Johnson and Pittman-Robertson Acts have been successful, they are not providing sufficient funding to conserve wildlife in Texas. Our review of the literature indicated that water surcharges, or increased taxes on statewide sales were the best funding options for providing Texas with sufficient funding for wildlife conservation but those options were not supported by our survey of chambers of commerce and wildlife organizations in Texas. We found that lottery allocations, carbon emissions taxes, outdoor equipment recreation taxes, plastic taxes, license plate fees, and stamp revenues were deemed the fairest options to raise matching funds for conservation actions in Texas. Future research is needed to select and implement methods best suited for the next 20-years.

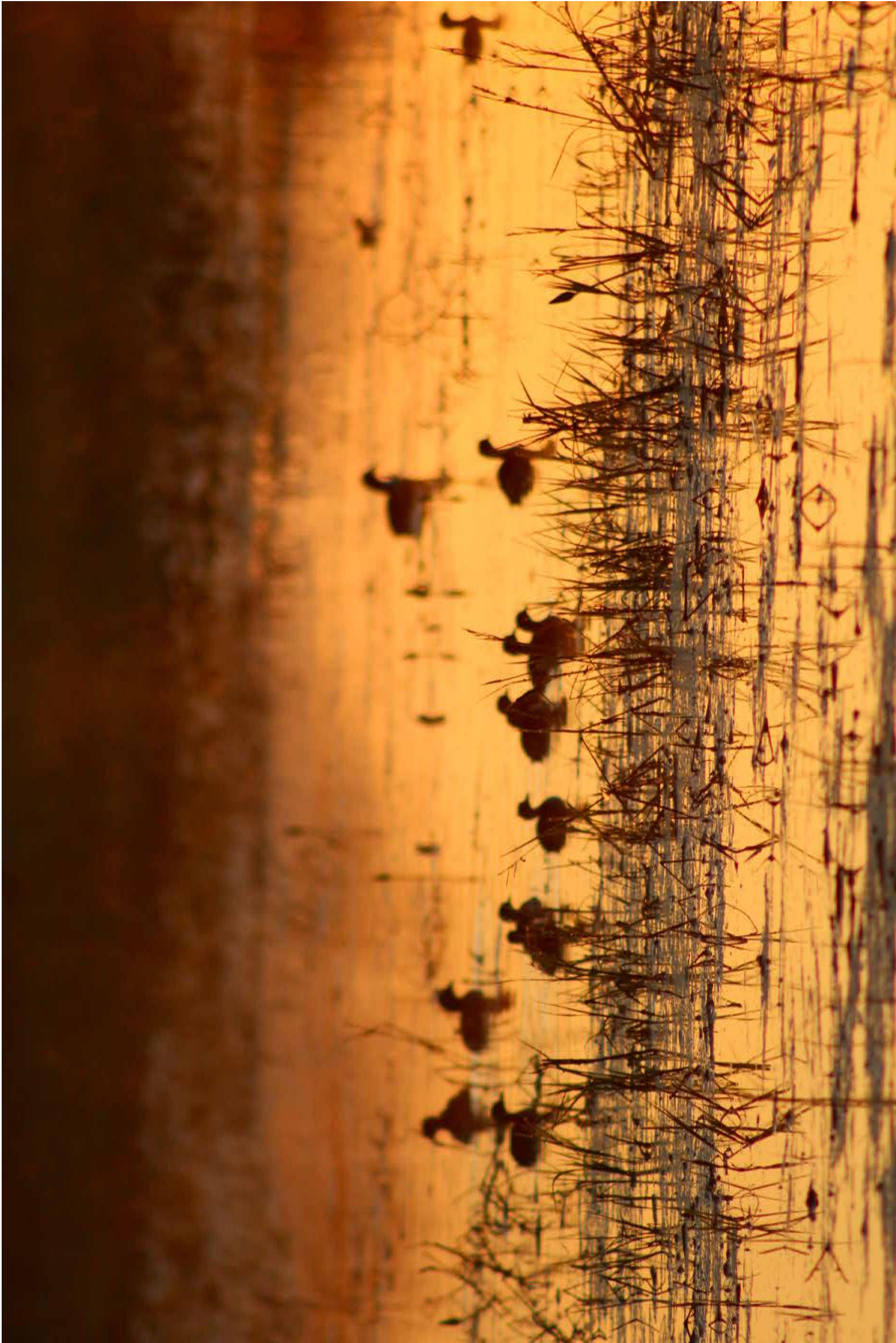


Photo taken at Welder Wildlife Refuge by Adria Escobedo

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Images that do not belong to us:

Big-Horned Sheep: <https://www.expeditionart.org/desert-bighorn-sheep>

Horned Lizard: [http://www.bbc.com/earth/story/20151105-if-it-has-to-a-horned-lizard-can-shoot-
blood-from-its-eyes](http://www.bbc.com/earth/story/20151105-if-it-has-to-a-horned-lizard-can-shoot-blood-from-its-eyes)

Duck Stamp: <https://www.fws.gov/birds/get-involved/duck-stamp.php>



Photo taken at Welder Wildlife Refuge by Adria Escobedo

APPENDICES

Below are the appendices. These appendices contain information that was not included in the report but might provide a broader overview of the data that we have collected.

APPENDIX A

This portion of the appendix contains the written communication that we had between our capstone group and the Texas chambers of commerce and the wildlife organizations.

1.A Phone Conversation Script

Below is the phone script that we used when addressing the Texas Chamber of Commerce if they were interested in participating in our survey

You: Good morning/afternoon, how are you today? (pause for response, improvise any dialogue here) My name is (your name) and I am a graduate student with the Bush School of Government here at Texas A&M University. I am calling you today because we are working on a research project pertaining to conservation in Texas.

In our research, we want to survey key wildlife organizations and chambers of commerce around the state to see which methods they feel would be the most viable funding options in Texas. The general background of our research is the Pittman Robertson Act, are you familiar with this act? (If yes, continue to part B, if no, read part A)

Part A: The Pittman-Robertson Act is an excise tax on guns, ammunition, and hunting equipment. The funds raised from this tax are deposited into federal funds for the restoration of wildlife and their habitats. The PR Act matches state conservation funds 3 to 1. It has been one of the most successful taxes in the United States. (Continue to Part B)

Part B: As it stands now, funds for conservation efforts in Texas are low due in part to a decline in the percent of hunters in the state and in the nation. In order to successfully maintain conservation efforts in Texas, the state needs to fund \$20 million for a federal match of \$60 million in order to reach a state goal of \$80 million.

We would like you to take this survey. What is the contact information for the best organization representative to complete this survey? (If willing to take survey, see Part C, if declined see Part D.)

Part C: Thank you so much for your willingness to participate. Here is my contact information in case you have additional questions. The survey will be mailed and emailed out on (or around) **January 18th, 2019**. Thank you for your time, have a great day!

Part D: I appreciate you taking time out of your day to take my call. Sorry for the inconvenience. If you change your mind and would like to take the survey, here is my contact information, please feel free to reach out to me with any inquiries or concerns. Have a great day!

Figure 2.A

Original Email Template

Below is the email template that we used to to communicate with the Chambers of Commerce and the wildlife organizations.

Dear [Insert Name or Company]

Attached is a survey asking for your thoughts on wildlife and funding options for conservation in Texas. We encourage your participation. Our team consists of master's candidate students at the Bush School of Public Service and Government at Texas A&M. We do not seek monetary gain. Instead, we have a passion to serve the public and be advocates for conservation. We want to make Texas a better place. We can do that with your help. We have also included a short video and brochure, which highlights why our team believes in this project.

We are passionate about conserving the beauty of Texas and its unique ecosystems. We believe that Texas is strong and we have the chance to make a difference for ourselves and for future generations.

We are specifically asking your organization because we feel you play an important part in determining adequate funding for conservation in Texas and for the future of Texas.

This survey takes less than 10 minutes of your time. Thank you for your time and consideration. Your response will help us determine an adequate conservation funding option for Texas. If you have thoughts or questions or would like to receive a paper version of this survey, you can contact our team at ConsCapstone@tamu.edu.

*We ask that you fill out this survey no later than **February 15th, 2019**.*

Sincerely,

Bush School of Public Service and Government Capstone Team

Figure 3.A

Second Email Template

A few weeks after the initial emails were sent the team decided to send out another email to nudge the chambers and the key wildlife organizations to take the survey. Below is the email that we sent to chambers if they did not respond to us within the first two weeks of our survey conducting. After this email, the number of respondents increased.

Dear valued stakeholder,

We have noticed that you have not responded to our survey about your organization's thoughts on wildlife funding options for conservation in Texas.

We request that you fill out this survey no later than February 15th, 2019: https://survey.az1.qualtrics.com/jfe/form/SV_9SUrlr8d3emyWxf

Your response to this survey is a crucial step in providing answers to preserving Texas for future generations. We are specifically asking your organization because we feel you play an important part in determining adequate funding for conservation in Texas and for the future of Texas.

Our team consists of master's candidate students at the Bush School of Public Service and Government at Texas A&M. We do not seek monetary gain. Instead, we have a passion to serve the public and be advocates for conservation. We want to make Texas a better place.

This survey takes less than 10 minutes of your time.

If you have thoughts or questions or would like to receive a paper version of this survey, you can contact our team at ConsCapstone@tamu.edu.

Thank you for your time and consideration.

Sincerely,

Bush School of Public Service and Government Capstone Team

APPENDIX B

This portion of the appendix contains the information about the survey and the codebook we used to collect the data.

Figure 1.B

Survey

Below is the survey that we designed to send out to both the Texas chambers of commerce and to the wildlife organizations. We collected our data in an online qualtrics survey. The one below is the paper copy that we sent to those that requested to have mail ballots. The layout of the qualtrics survey and the paper layout are the same.

Wildlife Conservation Questionnaire

Boone & Crockett Capstone Group- Texas A&M University

The State of Texas needs more funding for conservation. Texas Parks and Wildlife Department (TPWD) has identified over 1310 species of greatest conservation need. TPWD estimates that the State needs at least \$80 million in conservation funding. The recent house bill 4647 and senate bill 3223 will allocate federal dollars at a 3:1 match program for wildlife conservation. Texas must raise \$20 million to reach a combined \$80 million. Your participation in this survey will help determine funding options that are fair, practical and sustainable for increasing conservation funding in Texas.

**Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized. Your responses are voluntary and will be confidential. Responses will not be identified by individual. All responses will be compiled together and analyzed as a group. Answers are confidential and aggregate.*

Note: As representatives of your organization, you are being asked to consider your organization's perspective when answering the following questions.

PART I

- 1) What is the name of your organization?
- 2) How many members are in your organization?
- 3) How often does your membership meet?

PART I

1) What is the name of your organization?

2) How many members are in your organization?

3) How often does your membership meet?

4) Revenues placed in a general fund may be reallocated for other purposes. One of the main reasons the Pittman-Robertson act, as well as the Dingell-Johnson act, were successful was the security of the revenue they raised which was dedicated and protected for conservation uses only.

Would your organization be in support of establishing a dedicated State fund for the collected conservation revenues?

☐ Yes ☐ No ☐ Not sure

5) Evaluate the importance of using public funds for conservation actions at the State level for restoration of species and their habitats (70%), actions to improve access and participation in outdoor recreation (20%) and education on conservation actions and outdoor recreation (10%):

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Most Important

6) How important is public funding for conservation in relation to public funding for education:

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Most Important

7) How important is public funding for conservation in relation to public funding for transportation:

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Most Important

8) How important is public funding for conservation in relation to public funding for health:

☐ 1

☐ 2

☐ 3

☐ 4

☒ 5

Most Important

9) How important is public support for conservation in relation to public funding for safety and corrections:

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

Most Important

PART II

The following sources of revenue are proposed for funding new conservation actions by Texas Parks and Wildlife with the following allocations: restoration of species and their habitats (70%), actions to improve access and participation in outdoor recreation (20%) and education on conservation actions and outdoor recreation (10%).

Please evaluate each method for collecting public revenue for conservation on the basis of three **criteria**: fairness, practicality and long-term viability. Please *rank each method from 5 (highest) to 0 (lowest) for each criterion.*

PERSONALIZATION FEES

10) STAMPS: Individuals voluntarily purchase a “stamp” for conservation actions e.g. “Duck stamps” for the conservation of migratory waterfowl

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation by using stamps:

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation by using stamps:

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by using stamps:

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Most

11) LICENSE PLATE FEES: Individuals voluntarily pay an added fee for a vehicle license to support conservation

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation by using specialty license plate fees:

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation by using specialty license plate fees:

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by using specialty **license plate fees**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

USAGE FEES

12) WATER SURCHARGE: A fee is added for consumers of public water utilities

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation by using **water surcharges**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation by using **water surcharges**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by using **water surcharges**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

13) RAISING USER FEES FOR STATE PARKS & WILDLIFE MANAGEMENT AREAS

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation by raising **state park access fees**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation by raising **state park access fees**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by raising **state park access fees**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

SUMPTUARY TAXES

14) SUGARY DRINK TAX: a small fee added to each sale of commercially prepared non-alcoholic beverages

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **tax on sugary drinks**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **tax on sugary drinks**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **tax on sugary drinks**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

15) RESTAURANT TAX: a small fee on food prepared by commercial food outlets

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **restaurant tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Continued on Next Page

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **restaurant tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **restaurant tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

16) TAX ON SNACK FOODS: a small fee added to the sale of *prepared* snack foods based on sodium content

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **tax on snack foods**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **tax on snack foods**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **tax on snack foods**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

17) INCREASED TAX ON ALCOHOL

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with an **increased tax on alcohol**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with an **increased tax on alcohol**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an **increased tax on alcohol**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

18) INCREASED TAX ON TOBACCO AND NICOTINE PRODUCTS

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with an **increased tax on tobacco**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with an **increased tax on tobacco**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an **increased tax on tobacco**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

19) LOTTERY: establish a new lottery for conservation

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **lottery**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **lottery**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **lottery**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

SALES TAXES

20) ONLINE SALES TAX: Small percentage taken from each online transaction

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with an **online sales tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an **increased tax on tobacco**:

<input type="radio"/>	1	<input type="radio"/>	2	<input type="radio"/>	3	<input type="radio"/>	4	<input type="radio"/>	5
									Most

19) LOTTERY: establish a new lottery for conservation

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **lottery**:

<input type="radio"/>	1	<input type="radio"/>	2	<input type="radio"/>	3	<input type="radio"/>	4	<input type="radio"/>	5
									Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **lottery**:

<input type="radio"/>	1	<input type="radio"/>	2	<input type="radio"/>	3	<input type="radio"/>	4	<input type="radio"/>	5
									Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **lottery**:

<input type="radio"/>	1	<input type="radio"/>	2	<input type="radio"/>	3	<input type="radio"/>	4	<input type="radio"/>	5
									Most

SALES TAXES

20) ONLINE SALES TAX: Small percentage taken from each online transaction

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with an **online sales tax**:

<input type="radio"/>	1	<input type="radio"/>	2	<input type="radio"/>	3	<input type="radio"/>	4	<input type="radio"/>	5
									Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with an **online sales tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an **online sales tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

21) INCREASED STATEWIDE SALES TAX

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with an **increased sales tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with an **increased sales tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an **increased sales tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
Most

22) TAX ON OUTDOOR RECREATION EQUIPMENT FOR CAMPING AND HIKING

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **tax on outdoor recreation equipment**:

☐1

☐2

☐3

☐4

☐5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **tax on outdoor recreation equipment**:

☐1

☐2

☐3

☐4

☐5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **tax on outdoor recreation equipment**:

☐1

☐2

☐3

☐4

☐5

Most

23) TAX ON CAMERAS AND CAMERA EQUIPMENT

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **tax on cameras and camera equipment**:

☐1

☐2

☐3

☐4

☐5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **tax on cameras and camera equipment**:

☐1

☐2

☐3

☐4

☐5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with an **oil tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an **oil tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

26) CARBON EMISSIONS TAX

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **carbon emissions tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **carbon emissions tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **carbon emissions tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **tax on cameras and camera equipment**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

GREEN TAX

24) PLASTIC TAX: a fee on plastic products that result in long-term pollution

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **plastic tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **plastic tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **plastic tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

25) OIL TAX: a small fee on fuels for motor vehicles

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with an **oil tax**:

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Most

27) REAL-ESTATE TRANSFER TAX: taxes imposed by states, counties and municipalities on the transfer of the title of real property within the jurisdiction

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **real-estate transfer tax**:

☐1

☐2

☐3

☐4

☐5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **real-estate transfer tax**:

☐1

☐2

☐3

☐4

☐5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **real-estate transfer tax**:

☐1

☐2

☐3

☐4

☐5

Most

28) TRANSPORTATION PROJECT TAX: a new tax on expansion or creation of roads

a. Evaluate the **fairness** (ability to pay and benefit) of collecting public revenue for conservation with a **transportation project tax**:

☐1

☐2

☐3

☐4

☐5

Most

b. Evaluate the **practicality** (ability to administer) of collecting public revenue for conservation with a **transportation project tax**:

☐1

☐2

☐3

☐4

☐5

Most

c. Evaluate the **long-term viability** (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a **transportation project tax**:

☐1

☐2

☐3

☐4

☐5

Most

Part III

29) Would your organization be in support of HB 4647 and S. 3223 (The bill proposing to use additional funds from Federal oil revenues to expand the Pittman Robertson Fund that would provide \$60M/y for a match of \$20M/y from the State of Texas).

☐1

☐2

☐3

☐4

☐5

Most

END OF SURVEY

APPENDIX C

Below is the appendix for the codebook variables that we wrote and studied our data with.

Figure 1.C

The Code Book

This shows the codebook that we used to write and define the variables that we used in our graphical data.

Survey Codebook		
Survey Questions	Answer Choices	Description of Variable
1) What is the name of your organization?	Open-ended	
2) How many members are in your organization?	Open-ended	
3) How often does your membership meet?	Open-ended	
4) Revenues placed in a general fund may be reallocated for other purposes. One of the main reasons the Pittman-Robertson act, as well as the Dingell-Johnson act, were successful was the security of the revenue they raised which was dedicated and protected for conservational uses only. Would your organization be in support of establishing a dedicated State fund for the collected conservation revenues?	Yes/No/Not sure	Nominal

5) Evaluate the importance of using public funds for conservation actions at the State level for restoration of species and their habitats (70%), actions to improve access and participation in outdoor recreation (20%) and education on conservation actions and outdoor recreation (10%):	1 (Not Important), 2, 3, 4, 5 (Most Important)	Ordinal
6) How important is public funding for conservation in relation to public funding for education:	1 (Not Important), 2, 3, 4, 5 (Most Important)	Ordinal
7) How important is public funding for conservation in relation to public funding for transportation:	1 (Not Important), 2, 3, 4, 5 (Most Important)	Ordinal
8) How important is public funding for conservation in relation to public funding for health:	1 (Not Important), 2, 3, 4, 5 (Most Important)	Ordinal
9) How important is public support for conservation in relation to public funding for safety and corrections:	1 (Not Important), 2, 3, 4, 5 (Most Important)	Ordinal

<p>10) STAMPS: Individuals voluntarily purchase a “stamp” for conservation actions e.g. “Duck stamps” for the conservation of migratory waterfowl</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation by using stamps:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation by using stamps:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by using stamps:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>11) LICENSE PLATE FEES: Individuals voluntarily pay an added fee for a vehicle license to support conservation</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation by using specialty license plate fees:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation by using specialty license plate fees:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by using specialty license plate fees:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>12) WATER SURCHARGE: A fee is added for consumers of public water utilities</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation by using water surcharges:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation by using water surcharges:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by using water surcharges:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>13) RAISING USER FEES FOR STATE PARKS & WILDLIFE MANAGEMENT AREAS</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation by raising state park access fees:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation by raising state park access fees:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation by raising state park access fees:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>14) SUGARY DRINK TAX: a small fee added to each sale of commercially prepared nonalcoholic beverages</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a tax on sugary drinks:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a tax on sugary drinks:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a tax on sugary drinks:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>15) RESTAURANT TAX: a small fee on food prepared by commercial food outlets</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a restaurant tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a restaurant tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a restaurant tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>16) TAX ON SNACK FOODS: a small fee added to the sale of prepared snack foods based on sodium content</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a tax on snack foods:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a tax on snack foods:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a tax on snack foods:</p>	1 (Least), 2, 3, 4, 5 (Most)	Ordinal
<p>17) INCREASED TAX ON ALCOHOL</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with an increased tax on alcohol:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with an increased tax on alcohol:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an increased tax on alcohol:</p>	1 (Least), 2, 3, 4, 5 (Most)	Ordinal

<p>18) INCREASED TAX ON TOBACCO AND NICOTINE PRODUCTS</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with an increased tax on tobacco:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with an increased tax on tobacco:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an increased tax on tobacco:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>19) LOTTERY: establish a new lottery for conservation</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a lottery:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a lottery:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a lottery:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>20) ONLINE SALES TAX: Small percentage taken from each online transaction</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with an online sales tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with an online sales tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an online sales tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>21) INCREASED STATE-WIDE SALES TAX</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with an increased sales tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with an increased sales tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an increased sales tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>22) TAX ON OUTDOOR RECREATION EQUIPMENT FOR CAMPING AND HIKING</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a tax on outdoor recreation equipment:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a tax on outdoor recreation equipment: c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a tax on outdoor recreation equipment:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>23) TAX ON CAMERAS AND CAMERA EQUIPMENT</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a tax on cameras and camera equipment:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a tax on cameras and camera equipment: c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a tax on cameras and camera equipment:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>24) PLASTIC TAX: a fee on plastic products that result in long-term pollution</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a plastic tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a plastic tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a plastic tax</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>25) OIL TAX: a small fee on fuels for motor vehicles</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with an oil tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with an oil tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with an oil tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>26) CARBON EMISSIONS TAX</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a carbon emissions tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a carbon emissions tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a carbon emissions tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>27) REAL-ESTATE TRANSFER TAX: taxes imposed by states, counties and municipalities on the transfer of the title of real property within the jurisdiction</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a real-estate transfer tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a real-estate transfer tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a real-estate transfer tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>

<p>28) TRANSPORTATION PROJECT TAX: a new tax on expansion or creation of roads</p> <p>a. Evaluate the fairness (ability to pay and benefit) of collecting public revenue for conservation with a transportation project tax:</p> <p>b. Evaluate the practicality (ability to administer) of collecting public revenue for conservation with a transportation project tax:</p> <p>c. Evaluate the long-term viability (will this method be a sustainable way of raising revenue) of collecting public revenue for conservation with a transportation project tax:</p>	<p>1 (Least), 2, 3, 4, 5 (Most)</p>	<p>Ordinal</p>
<p>29) Would your organization be in support of HB 4647 and S. 3223 (The bill proposing to use additional funds from Federal oil revenues to expand the Pittman Robertson Fund that would provide \$60M/y for a match of \$20M/y from the State of Texas).</p>	<p>1 (No Support), 2, 3, 4, 5 (Fully Support)</p>	<p>Ordinal</p>

APPENDIX D

Appendix D contains all the key terms and acronyms that are mentioned throughout this project that are not common terms.

Clean Air Act- is a United States federal law designed to control air pollution on a national level. It is one of the United States' first and most influential modern environmental laws, and one of the most comprehensive air quality laws in the world.

Congressional Business Office (CBO)-is a federal agency within the legislative branch of the United States government that provides budget and economic information to Congress.

Endangered Species Act- A federal act passed in 1973 that protects threatened and endangered plants and animals along with their habitats.

Endangered Species- A species of animal or plant that is seriously at risk of extinction

Excise Tax- a flat-rate tax that applies to specific goods, services, and activities.

Game Animal- Animals that are hunted for sport or food. e.g. deer, elk.

Great Outdoors Colorado (GOCO)- A fund from a lottery that the Colorado Parks and Wildlife use to fund wildlife conservation efforts in Colorado.

Non-Game Animals- Animals that cannot be hunted for sport or food. e.g. Ocelots, horned lizard.

Pittman-Robertson Act & Dingell-Johnson Act- The federal acts that are currently funding wildlife conservation nation-wide with taxes on hunting and fishing equipment and licenses.

Real-estate transfer taxes (RETT)- a tax that may be imposed by states, counties, or municipalities on the privilege of transferring real property within the jurisdiction.

Regional Habitat Conservation Plans (RHCP)- is a document that meets federal Endangered Species Act requirements and enables local agencies to allow projects and activities to occur in endangered species' habitats.

Species of Greatest Conservation Need (SGCN)- Native animals or plants that are in need of conservation efforts to recover or to prevent the need for federal or state listing.

Sumptuary Tax- An excise or ad valorem tax applied to goods and services that support a habit viewed by society as undesirable. Commonly referred to as a sin tax.

Texas Parks and Wildlife Department (TPWD)- The Texas state agency that oversees wildlife conservation and their habitats.