

# Big Thicket National Preserve: Trails to the Future



Capstone Project  
The George Bush School of  
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# Executive Summary

The following report is entitled “Big Thicket National Preserve: Trails to the Future.” It represents the culmination of the authors’ academic experience at The George Bush School of Government and Public Service at Texas A&M University. The research was conducted as part of a Capstone seminar at the Bush School, a course that takes the place of a master’s thesis and allows students to apply their theoretical knowledge to a practical policy problem. The student authors selected for the Big Thicket Capstone seminar have all showed interest in environmental policy issues throughout the course of their study at the Bush School.

Chapter One of this report traces the history of the Big Thicket region and the political process that occurred to establish Big Thicket National Preserve (BTNP). This chapter places the current biological predicament in context, by making it clear that the Preserve has been in a permanent state of crisis regarding sustainability. Its very inception was the result of compromise between timber interests, conservationists, and political actors. This compromise netted a protected and recognized federal preserve, satisfying the conservationists, but divided the land into nine non-contiguous tracts. This “string of pearls” design is largely responsible for the continued threat to the biological sustainability of BTNP.

Chapter Two identifies the current threats facing the Big Thicket region, including comments from the numerous interviews the group conducted with local citizens, political decision makers, business leaders, and concerned interest groups. Through our research and interviews, we discovered BTNP is threatened by development as timber companies have placed 1.5 million acres of forested land on the market; highway expansion as the Texas legislature seeks to turn Highway 69 into a 1,200 foot-wide trans-corridor with 10 highway lanes and four rail lines; and water shortages as plans are made to raise the current dam on the Neches River by 10 feet.

The nature of these problems rules out a silver bullet approach to ensure the Preserve’s sustainability. What is needed instead is a solution that is flexible, enduring, and broad-based. Through interviews, academic experience, and brainstorming sessions, the idea of creating an institutional board comprised of diverse stakeholders charged with addressing the evolving threats in a coordinated and agreeable way was launched. The theoretical underpinnings of such a board are discussed in Chapter Three.

The following three chapters describe a continuum of possible policy solutions that might be applied to the threats facing Big Thicket. Chapter Four discusses how maintaining the status quo policies related to land use and conservation is the simplest course of action, but the results are unpredictable and unmanageable, leaving BTNP in a precarious position. But recommending the government purchase all of the land near the Preserve is not practical either, as Chapter Five explains. Accordingly, Chapter Six lays out our recommended institutional approach. An institution is enduring, flexible enough to adapt to a changing environment, and broad-based enough to handle the myriad of possible threats facing the Preserve. In our estimation, this approach is the best hope of preserving the unique convergence of ecosystems that make BTNP so special. This chapter provides a roadmap that key leaders can use to turn this recommendation into a substantive venture.

Such an institutional structure does not guarantee success, however. Chapter Seven discusses several of the structural and resource issues the board will likely face. This chapter also reviews some of the academic literature on best practices and recommendations for successful implementation of these types of institutional designs. It is hoped this chapter will serve as a “nuts and bolts” chapter that the board can refer to as it begins the process of writing its constitution and establishing group norms.

Our Capstone group also conducted a survey of nearly 100 identified stakeholders to explore their preferences for the development of an institutional stakeholder board. Chapter Eight of this report presents the results of the survey. The results of the survey indicate overwhelming support for some type of multi-stakeholder board. We hope that the results in this chapter, along with the recommendations throughout this report, provide some suggestions on how to make such a board not only possible, but a feasible and effective policy solution.

Through the course of interviews and research, a number of ideas and suggestions were compiled. These ideas all served the purpose of preserving BTNP, although none of them alone could guarantee a successful effort. Accordingly, a toolbox of single policy proposals has been compiled and included in Appendix A of this report. It is our hope that these ideas will provide policy strategy guidance for the board to discuss and implement.

The Big Thicket region of East Texas is as ripe with history as it is biologically diverse, representing a broad convergence of multiple ecosystems into a single geographic location (refer to Map 1). The densely packed forestry that gave Big Thicket its name served to keep Native Americans and early settlers out, escaped slaves and criminals hidden, and the unique assortment of flora and fauna in.

But as population grew and technology became available, the Big Thicket region became less of a barrier and more of a valuable resource. Unfortunately, it was also a limited resource. Hence the continuing struggle between development and conservation was born to the region.

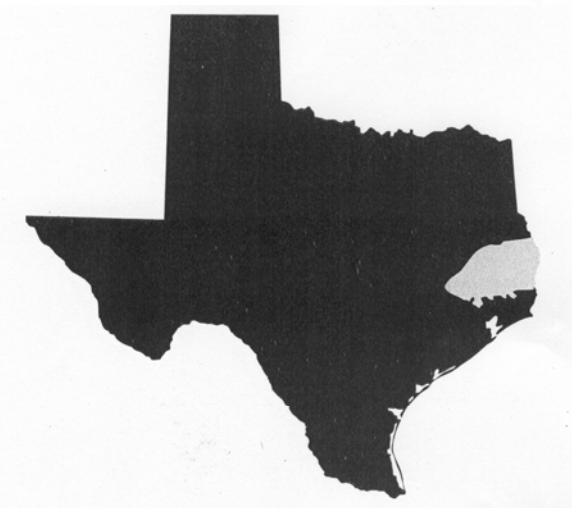
### Industry Arrives to the Thicket

Timbering first hit the Big Thicket in the 1850s, but progress was slow as logs had to be floated down the Neches River to sawmills in Beaumont. Massive timber operations did not occur until the railroads arrived thirty years later. Railroads meant more logs could be shipped faster, increasing profits exponentially, expanding operations, and in turn, commissioning more railroads. By the early 1900s, Big Thicket had four major railroads crisscrossing over 200 miles of track. By World War I, the total had doubled to 400 miles of track, along with countless tram lines used to haul timber from the cutting site to the larger railroad.<sup>1</sup>

By most accounts, the cutting was extreme, characterized by one writer as a “cut and get out” policy.<sup>2</sup> The land was heavily taxed, so the incentive was to move as quickly as possible over the land. Competition from multiple companies, the need for speed, and a sense that the forest was infinite left little time and money for re-forestation.

But timber was not the only resource attracting attention to the Thicket. When domestic hogs would return to their owners covered with a sticky black liquid, settlers investigated and discovered oil. The first oil well in Texas was drilled in 1869 in Saratoga.<sup>3</sup> Wells would continue to spring up throughout the region as men were eager to extract as much of the precious liquid as they could get in the quickest time possible. But early drilling was crude and oil spills were frequent, damaging several acres of the Big Thicket by killing trees and polluting waterways.

By the end of the oil boom, three oil rushes had enveloped the region from Saratoga, Sour Lake, and Batson. More than 231 million barrels of oil had been pumped from these sites alone. Adding the oil production from the sawmill towns of Silsbee, Votow, Buna and Village Mills increases the figure by an additional 180 million barrels. All told, more than 32,000 acres within the Big Thicket were oil-producing.<sup>4</sup>



- BIOLOGICAL SURVEY (1938)
- ECOLOGICAL AREA (MCLEOD, 1970)
- TRADITIONAL (HUNTER'S) THICKET (1890-1900)

Map 1. Source: Gunter, Pete. *The Big Thicket: A Challenge for Conservation*. Jenkins Publishing Company: Austin, 1971. pg.46-47

Figure 1. Transposition of three maps of The Big Thicket: Biological Survey, McLeod's Ecological Analysis, and the Traditional Thicket.

## **Conservationists Lobby for a National Park**

Studies at the end of the century indicated that if left unchecked, the timber industry would decimate the forested landscape in relatively short order. One conservationist estimated sloppy lumbering techniques wasted approximately 40 percent of the trees. Furthermore, U.S. foresters announced in the early 1900s that without conservation, Texas' forests would disappear in 20 years.<sup>5</sup>

Although conservationists existed throughout the period, they were unorganized and overwhelmed. The first organized effort began in 1914 with the creation of the Texas Forestry Association, dedicated to lobbying for the creation of a state forestry department and a formalized, comprehensive plan for forest conservation. The efforts were remarkably successful, and the Texas Forest Service was established a year later.<sup>6</sup>

The idea to actually create a national park in the region began in 1927 with R.E. Jackson of Silsbee, who founded East Texas Big Thicket Association. Jackson, a retired railroad conductor, owned a lease of 22,000 acres of Big Thicket land in the southeast corner of Polk County. He turned his land into a game preserve and held meetings with scientists, conservationists, newspapermen and anybody else he thought could help stir support for creating a national park.<sup>7</sup>

By 1936, a strong coalition was building, including key political figures like Governor James Allred, Congressman Martin Dies, and Senator Morris Sheppard. The Beaumont Chamber of Commerce, Texas Academy of Science and several Texas newspapers issued statements of support for the park. A national park was seen as the only way to ensure preservation of the Big Thicket woodlands.

In 1938, Senator Sheppard pressured the National Park Service to investigate the possibility of incorporating Big Thicket into the National Park System. Initially, things looked promising as the park service enthusiastically recommended including the Big Thicket, and Senator Sheppard and Representative Dies began seeking appropriations.<sup>8</sup>

Progress was interrupted, however, by World War II. A national need for timber coincided with a near evaporation of money for projects like national parks. The East Texas Big Thicket Association died away, timber companies stepped up logging efforts, and rumors began to circulate that converting Big Thicket to a park would kick people out of their homes, put timber companies out of business, and drive small towns to bankruptcy.<sup>9</sup>

In 1964, the Big Thicket Association of Texas was formed to replace the failed East Texas Big Thicket Association. The new association worked hard to draw powerful and prestigious people in line with the national park idea. But the timber companies' lobby was powerful in the state, and the issue was given little more than lip service. Enter the national government, led by the Department of the Interior and conservationist Senator Ralph Yarborough, who had grown up near Big Thicket and became its staunchest supporter. Yarborough submitted Senate Bill No. 3929 to create a Big Thicket National Park, which was read twice in 1966 and referred to a committee that neglected it for nearly five years. The bill called for a national park of 75,000



acres, and authorized the Secretary of the Interior to purchase land adjacent to the park in order to trade for privately owned land within the park.

But while the bill sat languishing in committee, the National Park Service conducted a second study in 1966 and identified a handful of specific areas to include in the park, creating what is known as the “string of pearls.” The size of the park would drop to just 35,000 acres and the dispersed tracts would be connected by scenic roadways. The new study was hailed by timber companies who were happy to surrender clumps of their forested property to retain cutting rights to the rest.

The decision to create a string of pearls park would condemn the park to a tenuous existence. In fact, one forward-thinking conservationist predicted the future plight of the Big Thicket when he complained, “What is the use of preserving small patches of pristine wilderness if they are going to be surrounded in ten years with red flag subdivisions, filling stations, barbecue joints, Dairy Queens, and the rest of suburban paraphernalia most tourists are trying to get away from?”<sup>10</sup> The stark realities of the string of pearls will be discussed in greater detail.

For the next couple years, locals were treated to a rather odd sight: timber companies actively lobbying for the creation of the park and conservationists undecided. But when it became evident that timber companies had not actually suspended logging operations in those pearl patches, the situation once again became volatile. Fortunately, coordinated efforts between enraged conservationists and the Big Thicket Association generated enough bad press that the timber companies announced a moratorium on cutting in selected areas.<sup>11</sup>

### **Political Wrangling**

Fearing the moratorium would serve more as a temporary cease-fire, conservationists and timber interests carried their fight to Washington in 1968. Representing the former was Senator Yarborough, who increased his park design to 100,000 acres; representing the latter was local Congressman John Dowdy, who favored a national monument between 35,000 and 48,000 acres.<sup>12</sup>

The tides seemed to turn completely against the timber companies. Members of the Big Thicket Association began patrolling the moratorium acreage, eagerly reporting violations. The resulting bad press, along with the timber companies’ decision to endorse a 35,500 acre park, turned public opinion firmly in favor of the creation of a park. Conservationists had just one problem. According to Congressional courtesy, the House of Representatives would not vote for the creation of a national park in the district of a Congressman that does not want it. Since Dowdy favored the smaller monument over the park, the former would have been likely to pass, had Dowdy not been indicted in 1970 on bribery charges and removed from office.<sup>13</sup>

Another potential disaster greeted conservationists when a wealthy insurance company executive named Lloyd Bentsen defeated Yarborough in the 1970 Democratic primary. But both Bentsen and his Republican opponent Congressman George H.W. Bush endorsed the proposal for a national park in Big Thicket. After his victorious election, Bentsen introduced his first legislation

in January 1971 calling for a 100,000 acre Big Thicket National Park, nearly identical to Yarborough's proposal.<sup>14</sup>

Freshman Republican Representative Charles Wilson, who replaced Dowdy as the Big Thicket congressman, was determined to broker a compromise between conservationists, preservationists, and timber companies. Wilson's own bill, calling for a 75,000 acre preserve, was called a "masterpiece of compromise, designed to appeal to every interest group affected by the Big Thicket plan."<sup>15</sup> The bill encompassed most units the preservationists wanted, protected the local homeowners, and allowed regulated hunting and fishing in certain areas of the preserve, and oil and gas exploration as long as integrity of the preserve was not threatened. Wilson also met with timber interests to get their backing.

Tense negotiations with the Senate increased the total acreage to a maximum of 84,550 acres. But after a few concessions on both sides, nearly 50 years of wrangling and 28 separately introduced Big Thicket bills, President Gerald Ford finally signed Wilson's bill into law in October 1974, officially designating Big Thicket as the nation's first National Preserve.

### **Detailing the Preserve**

The national preserve established by the final bill included eight preserve units and four stream corridors. The eight preserve units included Big Sandy, Turkey Creek, Hickory Creek-Savannah, Lance Rosier, Loblolly, Beaumont, Neches Bottom and Jack Gore Baygall and Beech Creek. The four stream corridors included Menard Creek Corridor Unit, Pine Island Bayou, and the Upper and Lower Neches River Corridor.

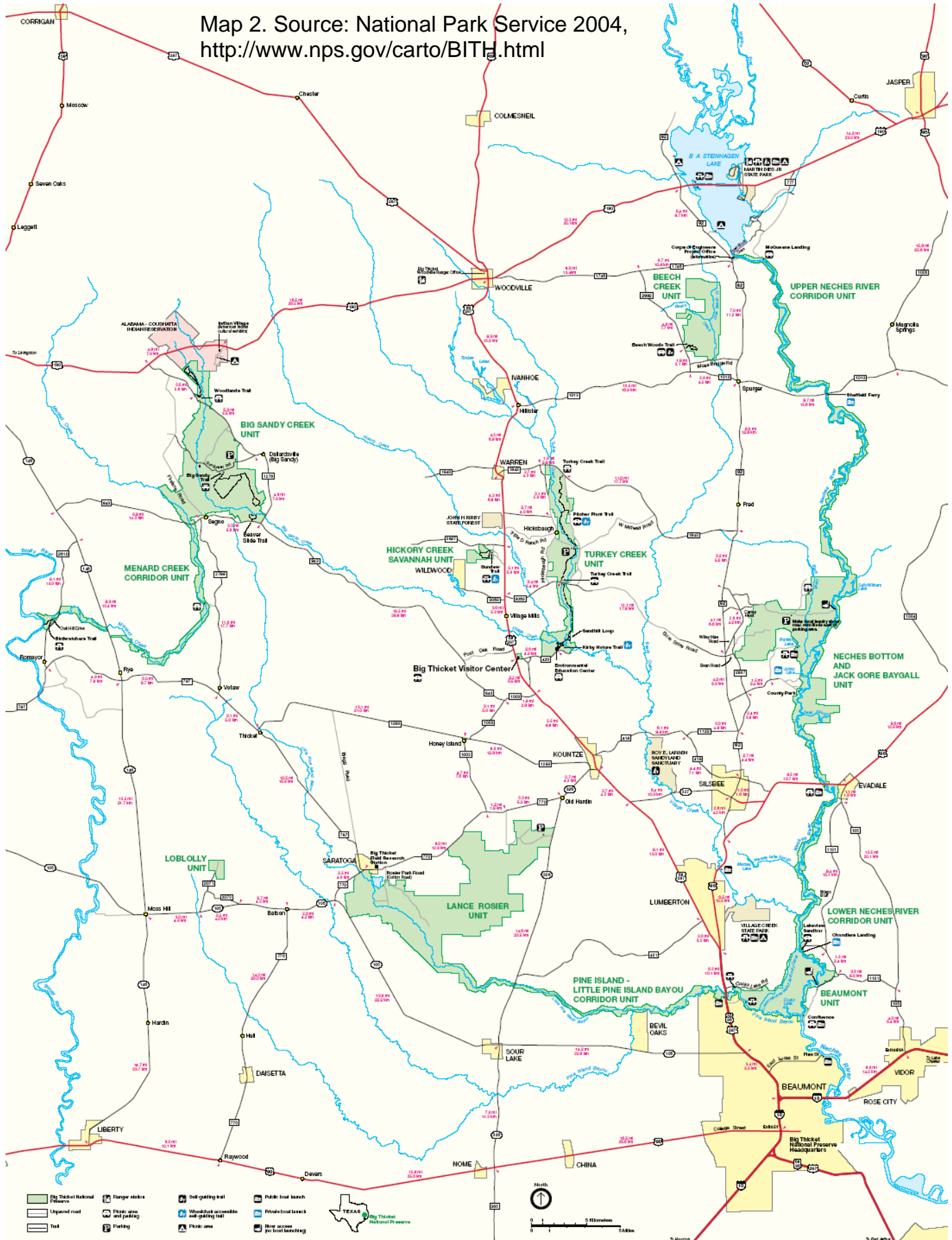
Big Thicket National Preserve (BTNP) is the only entity in the National Park System composed of widely dispersed units.<sup>16</sup> Apart from the obvious managerial difficulties, this string-of-pearls feature also poses a significant threat to the stability of some of the units within the Preserve. Most at risk are the 550-acre Loblolly Unit and the 668-acre Hickory Creek Savannah Unit.

### **Debating the String of Pearls**

As previously referenced, the decision to create a string-of-pearls design to Big Thicket National Preserve was a crucial one. Considering the current situation, it might also be described as a critical mistake. But at the time the idea served the valuable purpose it was intended for: to broker a design that would satisfy timber companies, homeowners, and conservationists while protecting the valuable diversity of flora and fauna unique to Big Thicket.

From the timber company perspective, the notion of a massive, single-unit protected park was patently unfair. With multiple companies, each claiming a different section of the Thicket for their cutting rights, preserving a single large unit would disproportionately impact a few companies without affecting the others. Timber companies held a united front from the beginning of the national park debate, and were unwilling to sacrifice a few of their number to the benefit of the rest. A string-of-pearls design (refer to Map 2) would shift a smaller impact over a greater area, thereby sharing the negative effects between more companies.<sup>17</sup>

Map 2. Source: National Park Service 2004, <http://www.nps.gov/carto/BITH.html>



Homeowners in the Big Thicket also preferred the string-of-pearls idea. Fearful the government would kick them out of their homes if they suddenly found themselves in federally protected lands, many homeowners lobbied against the creation of a national park. But the string-of-pearls concept focused more on identifying distinct ecological arrangements than maximizing park size. Therefore, fewer homes would be included and fewer residents faced the prospect of removal.<sup>18</sup>

Interestingly, many conservationists also rallied to the string-of-pearls design. The goal of these conservationists was not to protect the largest land area but to protect the biological crossroads of the Big Thicket. The Big Thicket is unique in that it incorporates such distinct ecosystems as the eastern hardwood forest, the Midwest prairies and the Gulf coastal plains into the same geographic location.<sup>19</sup> The string-of-pearls design sought to identify and protect each of these ecosystems.<sup>20</sup>

Conservationists also saw the string-of-pearls design as the first concrete step toward making a national park a reality. Debate over the creation of a national park had raged for more than 30 years by this point, and every year saw greater destruction of the forest. But when timber companies threw their support behind the plan, suddenly conservationists saw the dynamics of the debate shift from creating the park to designing the park.<sup>21</sup>

The eagerness to establish the park took precedence over concerns that the string-of-pearls design would not protect sufficient acreage to ensure long-term sustainability. Those conservationists who did fight the design were not only worried by the smaller acreage being preserved; they also believed that a national park must provide a genuine wilderness experience.<sup>22</sup> Such an experience is not possible with housing developments in view and the sounds of highway traffic in the background. But at the time suburbia seemed an unlikely adversary. Besides, it was argued, the government can always come along and purchase more land.<sup>23</sup>

### **Expanding the Preserve**

Potential became reality with passage of the Big Thicket Addition Act of 1993, which added Village Creek and Canyonlands units to the Preserve and extended the Big Sandy Creek Unit, increasing the total acreage of the preserve by 10,766 acres. This addition brings the total acreage managed by BTNP to more than 97,000 acres. Of course, as experience with this region would dictate, passage of the bill was slow, tedious and volatile.

Representative Wilson first proposed the idea of Village Creek in 1986, and a year later introduced a bill to add nearly 14,000 acres in the form of Big Sandy Corridor, Village Creek Corridor, and the Canyonlands Unit. Homeowners on Village Creek protested, political arguments arose, and the bill endured through several years of hearings and delays.<sup>24</sup>

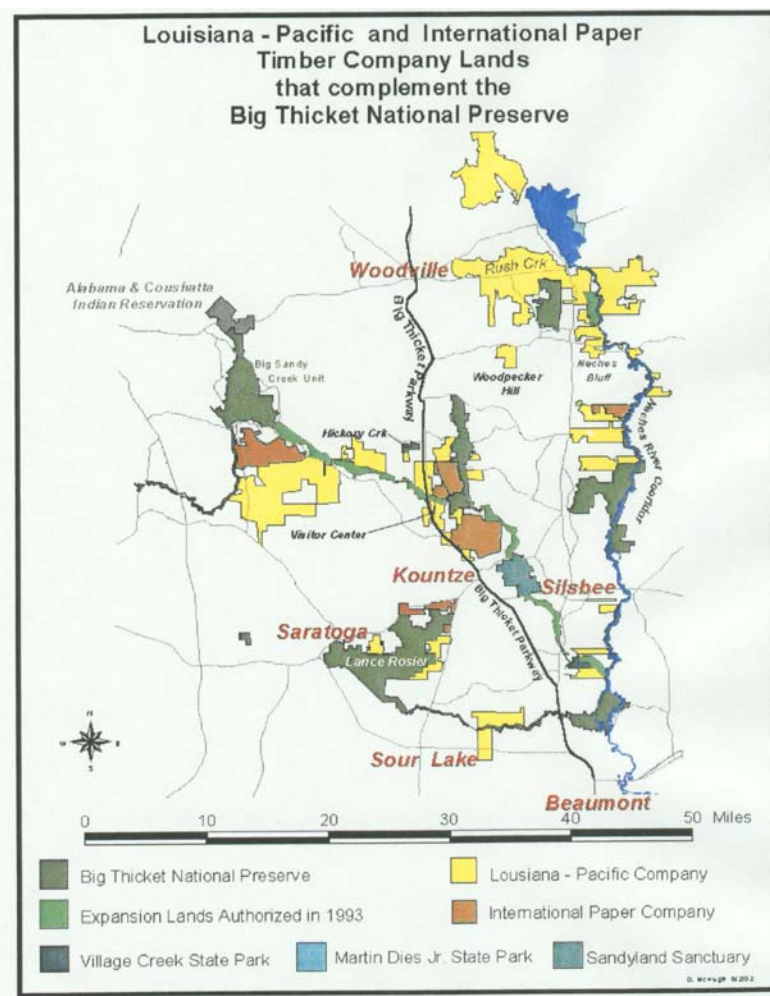
The House of Representatives eventually passed the bill in November 1991, but Texas' two senators, Phil Gramm and Lloyd Bentsen, had profound disagreements on the bill and refused to let it pass until they were able to meet and achieve consensus. This meeting did not occur until the middle of May 1992, leaving the bill faced with a tough time clock with recesses for holidays



and the fall elections.<sup>25</sup> Legislation not passed by the end of the year must begin again the next session.

Environmental groups and conservationists put pressure on Congress, but three senators held a number of bills hostage, including the Big Thicket Addition Bill, in an effort to squeeze their own pet projects through. The bill finally found its way to the consent calendar, whereby a handful of Congressman can pass non-controversial legislation with unanimous consent. In a move that stunned the entire Congress, however, a one-term California congressman that loathed Washington politics objected to each of 70 bills that were prepared for passage, effectively denying them from becoming law.<sup>26</sup>

This political maneuvering notwithstanding, though, the debate was over and Congress was fully supportive of the measure. The next year the Big Thicket Addition Act of 1993 sailed through Congress and garnered a presidential signature. The legislation represented the first act of Congress to significantly expand BTNP (refer to Map 3), although numerous small sites have been donated by individuals or organizations. Perhaps the most significant aspect of this story is how, despite little controversy, it took Congress seven years to finally pass the measure.



Map 3. Source: National Park Service 2003.

It is important to stress, however, that passage of the Addition Act did not immediately transfer ownership of the land from timber companies to the National Park Service. Funds still had to be allocated to purchase the land. Completing the acquisition of these lands will cost an estimated \$15 to \$20 million. Approximately \$8 million of that has already been appropriated, with an additional \$4.5 million in the President's current budget for fiscal year 2005.

### A Continuing Threat

Today, BTNP is threatened by development as timber companies have sold 1.5 million acres of forested land to developers; highway expansion as the Texas legislature seeks to turn Highway 69 into a 1,200 foot-wide trans-corridor with 10 highway lanes and four rail lines; and water shortages as plans are made to

raise the current dam on the Neches River by 10 feet. The combination of these threats has placed Big Thicket National Preserve in a frightening, although familiar, position. The Big Thicket community has risen to the challenge time and time again to protect and preserve the heritage and history of the region. They are called again to band together to defend the biological sustainability of the national preserve.

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<sup>1</sup> Cozine, *Assault on a Wilderness: The Big Thicket of East Texas* (dissertation), 29

<sup>2</sup> Gunter, *The Big Thicket: A Challenge for Conservation* (Austin: Jenkins Publishing Company), 12.

<sup>3</sup> *Ibid.*, 12.

<sup>4</sup> Cozine, *Assault on a Wilderness: The Big Thicket of East Texas* (dissertation), 165

<sup>5</sup> *Ibid.*, 134.

<sup>6</sup> *Ibid.*

<sup>7</sup> Gunter, 69.

<sup>8</sup> *Ibid.*, 70.

<sup>9</sup> *Ibid.*

<sup>10</sup> *Ibid.*, 80.

<sup>11</sup> *Ibid.*, 81.

<sup>12</sup> *Ibid.*, 84.

<sup>13</sup> Cozine, 259.

<sup>14</sup> *Ibid.*

<sup>15</sup> *Ibid.*, 307.

<sup>16</sup> *Ibid.*, 336.

<sup>17</sup> *Ibid.*, 214-215.

<sup>18</sup> *Ibid.*, 298-299.

<sup>19</sup> Gunter, *The Big Thicket: An Ecological Reevaluation* (Denton: University of North Texas Press), 48.

<sup>20</sup> Cozine, 308.

<sup>21</sup> Gunter, 76.

<sup>22</sup> *Ibid.*

<sup>23</sup> *Ibid.*, 167.

<sup>24</sup> *Ibid.*, 109-110.

<sup>25</sup> *Ibid.*, 175-176.

<sup>26</sup> *Ibid.*

## Chapter 2

# Definition of the Problem

As Chapter 1 describes, Big Thicket National Preserve (BTNP) has been in a permanent state of crisis. Its very inception was the result of compromise among timber interests, conservationists and political actors. This compromise netted a protected and recognized federal preserve, satisfying the conservationists, but divided the land into nine non-contiguous tracts totaling 97,000 acres.

Today BTNP faces threats from every direction. Two of the three largest timber companies in the region have put 1.5 million acres of forested land up for sale (refer to Map 4), some of which is being purchased by real estate investment trusts, who could potentially parcel the land into smaller units and sell to other entities, including commercial developers, residential developers, or conservation organizations.

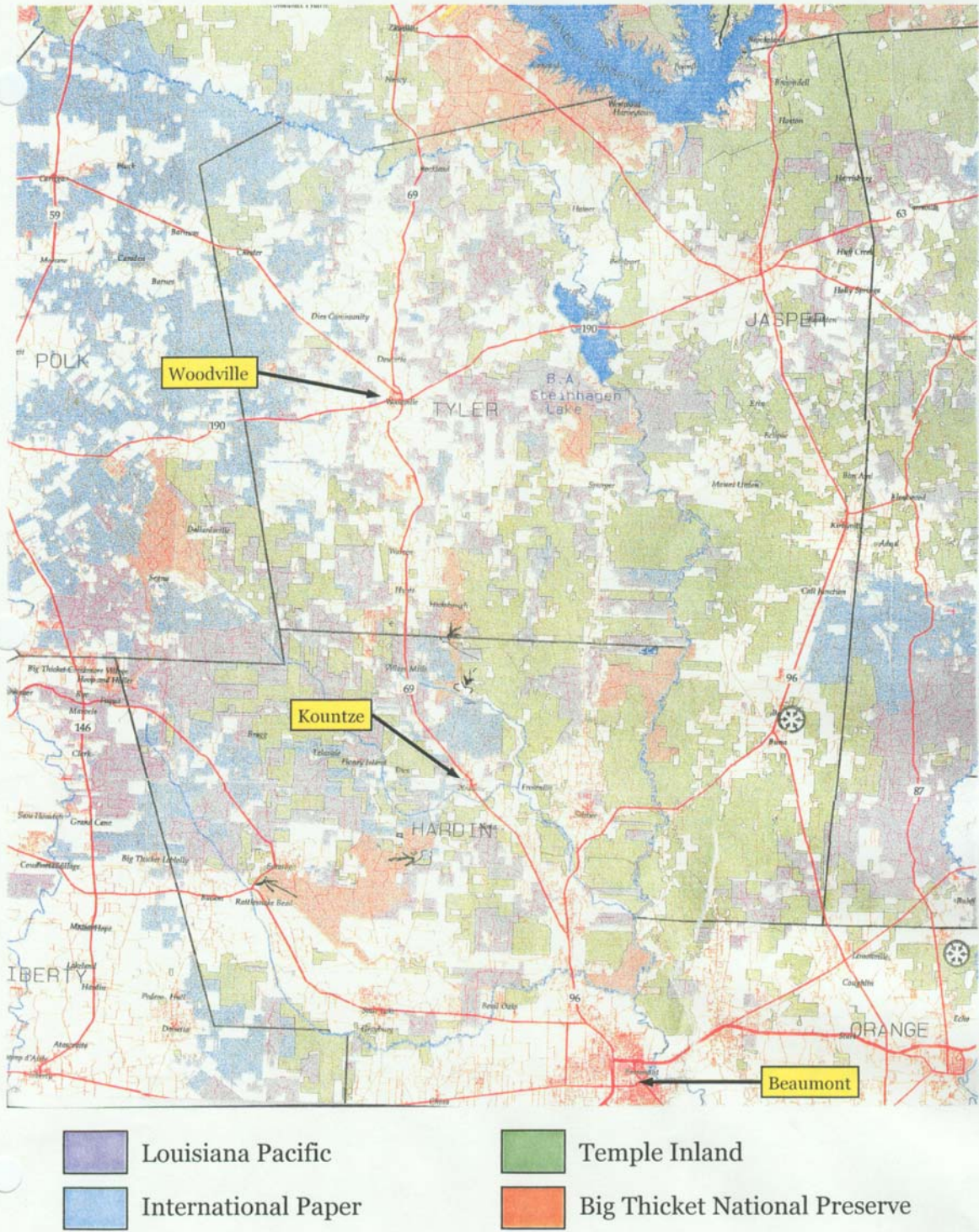
Another threat to BTNP involves highway expansion. The Texas State Legislature is currently considering the Trans Texas Corridor, the largest engineering project ever proposed in Texas. The Corridor would resemble a superhighway with “toll ways for passenger vehicles and trucks, passenger bullet trains, commuter trains, high-speed freight trains, pipelines of all types, and electrical transmission towers. Plans also include gas stations, garages, restaurants, hotels, stores, billboards, warehouses, freight interchange, intermodal transfer areas, passenger train stations, bus stations, parking facilities, dispatch control centers, maintenance facilities, pipeline pumping stations, and of course, toll booths.”<sup>1</sup> Four priority corridors have been identified, including U.S. Highway 69 from Texarkana to Houston to Laredo, which runs through the middle of BTNP in Hardin and Tyler counties.

Water shortages also threaten the Preserve. The Southeast Texas Region has witnessed significant growth in the last few decades. Gross domestic product has doubled since 1970, and the population has grown by 30 percent.<sup>2</sup> This growth can be expected to continue, as Houston is expected to double its population in the next 30 years. As the population increases, the demand for water increases as well. The State Water Plan calls for more dams and higher dams to increase the available water supply for urban centers. Conservationists argue that the plan does not provide enough habitat protection for fish and wildlife.<sup>3</sup> This debate extends to BTNP as plans are being considered to raise the current dam on the Neches River by 10 feet, effectively restricting the flow of water into the Preserve.<sup>4</sup>

The combination of these threats has placed BTNP on the National Parks Conservation Association’s Top Ten Endangered Parks list. In response, BTNP is studying options to protect the Preserve from these threats and ensure the long-term viability of the Preserve. This Capstone project is one aspect of the BTNP response. We seek to answer the question: What policy measures can be taken to ensure the long-term biological sustainability of Big Thicket National Preserve?



### Timber Company Lands and Big Thicket National Preserve Map



Map 4. Source: National Park Service 2003.



In order to obtain a comprehensive picture of these threats, we conducted a series of interviews with various stakeholders with interest in the region. Special effort was made to include representatives from each of the competing interests in the region. Interview subject ranged from political officials, both elected and non-elected, from city, county, state and federal governments; business leaders from private companies, economic development boards, and chambers of commerce; non-profit and special interest groups; and local citizens. A complete list of identified stakeholder organizations can be found in Appendix B. In the next two sections, we describe stakeholder responses to interview questions pertaining to the threats facing BTNP. The third section identifies specific legislation relating to zoning authority, annexation, land use, and conservation issues. Combined, these sections are intended to fully acquaint the reader with the current situation facing BTNP, both legally and practically.

## **Stakeholder Opinions on Development, Transportation, and Water**

### Development

According to one observer, a dichotomy of opinions exists among locals: those who want economic development and those who want conservation. This interviewee believes the idea of a combination of the two seems somewhat unfeasible to many locals in the Big Thicket region. Conversely, city leaders and other elites have discussed development and conservation as mutually beneficial goals.

Another interviewee noted, “The citizens are not pro-business, they’re pro-individual.” In one district, an interviewee suggested that citizens do not look favorably at urban sprawl. People would rather have hunting land. A county official said, “The City of Kountze doesn’t want development out at the Preserve. It recommends that there not be an off-ramp at the visitor’s center.”

Efforts have been made to capitalize on the Preserve’s attraction to tourists. In the past, a “Summit on Regionalism” was held in an attempt to bring together leaders from the southeast Texas area to create a plan for economic development, including ideas for use of the Preserve. The summit was successful for the first two parts, but the third never happened. As an interviewee explained it, “It just fizzled out. People lost interest and went home.”

The Big Thicket Nature Tourism Group was also created to encourage tourism in the area. Part of its efforts included hiring a consulting firm to create a regional plan. The group worked closely with an energy company in the region and had plans to apply for non-profit status. However, efforts began to slip and finally failed as funding decreased. Other efforts at improving the economic development in the Big Thicket region have similarly lost momentum, although most towns and cities have economic development corporations. Finally, counties face a loss in property and commercial taxes relative to the growth of BTNP, making their posture toward the Preserve somewhat mixed.

In the southern part of the Big Thicket region, expectations are also mixed. Beaumont planners noted that the issue of bringing in manufacturing is gaining momentum. Growth is stable, and the city is moving west toward Houston. “Houston,” an NPS official noted, “could be a salvation or a curse. BTNP could be Houston’s Everglades, and BTNP could benefit from an entrée into the

Houston market.” Others in Beaumont expect development up U.S. Highway 69 to be slow. An interviewee noted that there is very little development outside of Beaumont, saying, “Look up the road at the land the timber companies are selling. Who’s buying it?”

Selling the idea of conservation to generations of those living in the Big Thicket region is a complex endeavor. An interviewee noted, “It seems that the local Texas mentality does not value cleaning the environment.” A Beaumont businessman said, “You have to change people’s viewpoint to get collaboration.”

### Transportation Plans

Preparation for the Trans Texas Corridor (TTC) was signed into law by the 78<sup>th</sup> Texas State Legislature in 2003. TTC holds the promise of economic growth along its corridors, but also presents the potential for increased pollution and congestion. The plan is still in its beginning stages. The Texas Department of Transportation (TxDOT) wants to build TTC outside of major metropolitan areas. “BTNP... might as well get out of the way [of TTC],” said one interviewee in Austin, “Change[s] in [the] law show how less environmentally friendly Texas has become – if you don’t live within 25 miles of a [state construction] site then you can’t testify at Texas Commission on Environmental Quality hearings. This is an indication of what’s to come.”

TTC promises roadway improvements, utility lines, and rail. There will be a public hearing in every county in the state regarding the project. TxDOT may be buying wide corridor right-of-way lands in the near future, according to a TxDOT representative. Yet, having the necessary funds is a big precursor to the project actually going forward. Observers noted that “Texas has been talking about this idea for years.”

Some, however, are not convinced that TTC will ever be built. “The Environmental Protection Agency could nix the whole thing if they find an endangered species there,” said one interviewee. Another interviewee who was similarly skeptical about TTC noted that if it were built, it would most likely go through the Big Thicket region, although not the full plan with railways.

Experts at TxDOT note that a highway project timeline can last from two to 20 years. The research and paperwork involved in each project is enormous. Mitigation and imminent domain concerns must be addressed. Decisions about the TTC will not be made until the total environmental impact is assessed. Each project has different nuances. “The NAFTA corridor, especially, is a long time in coming,” noted a source from TxDot. “It will take top-level coordination of resource agencies teams and an international relations team to begin with.”

### Water Issues

Water rights have always been a flash point issue in the West. They are now becoming contentious in East Texas as well. During the 78<sup>th</sup> Texas State Legislature in 2003, representatives and senators debated and passed the “Riverbeds Bill,” which was signed into law on September 1, 2003. The bill prevents all-terrain vehicles from off-roading in streambeds. Despite this positive development for BTNP, water resources in the Big Thicket region are threatened by the increasing need for water in urban areas across the state. According to an interviewee in Austin, “The biggest threats are the State Water Plan and proposed dams.”

## **The Stakeholder Perspective on Threats Facing the Preserve**

What follows is a sketching of responses from interviewees concerning the threats facing BTNP:

Among those interviewed,<sup>5</sup> only one stakeholder thought that the Preserve was not threatened by fragmentation or by an influx of visitors and developers from Houston. The interviewee gave the impression that threats to BTNP are non-issues for larger chambers of commerce, as well as other smaller, regional chambers, and only a good marketing tool for the cities and towns in the area near BTNP. Other interviewees noted that BTNP is endangered. One knew that it was named one of the top ten endangered national parks.<sup>6</sup> Another source projected that in the next ten years, BTNP will decrease in quality and possibly in size.

The question, then, becomes: is the Preserve biologically sustainable into the future, assuming the current laws and conservation efforts now in effect remain. Replies varied only slightly from those who answered that the Preserve was threatened. The most consistent answer was that the Preserve would remain biologically sustainable if it had buffer zones. It is thought that the larger units might be able to survive, but edge effect would make the Preserve shrink. *Edge effect* is the encroachment of development that causes the destruction or reduction of species along the borders of the Preserve, potentially reducing species diversity.

During the course of the interviews, BTNP was compared to The Woodlands, a master-planned community near Houston that is determined to maintain its forest surroundings. The Woodlands was designed to incorporate nature into its appeal, offering miles of hiking, biking, and parks, as well as all the modern conveniences available in other cities. One interviewee suggested that, like The Woodlands, it is possible that citizens of the Big Thicket region could work together to ensure that the Big Thicket region remain undeveloped. Another interviewee from the Kountze area noted, "I think that the Preserve is valuable. Citizens of Kountze were once against the Preserve. Moods are changing. Now that we've got it, let's use it."

Using it may be the last step in a long process. The impact of the sale of timberlands poses a threat to the biological sustainability of the Preserve. A conservationist noted during an interview that Temple-Inland has "been a good friend to BTNP, but it is still a profit-driven entity that must first ensure its own survival." So, what can one anticipate in the next ten years? Interviewees did not expect BTNP to be in great shape. Preservation does not seem paramount in people's minds at the national level. Decisions made in the next two to three years will determine the future, and some interviewees see the federal government – Congress and the National Park Service's (NPS) actions and policies – as the solution. However, little budgetary support is expected, since expenditures from the National Park Service have been low for BTNP.

NPS is facing its own set of problems. According to our interviews, many think that the agency does not have enough funding due to flat rates of budget appropriations over the past few years. BTNP is facing a backlog of maintenance needs. Furthermore, to some interviewees, it seems that high turnover is common and continuity of resource management is low in BTNP. Lastly, because BTNP is not highly visible, it is not as high of a priority for NPS as parks such as Yellowstone National Park.

The number of visitors that come to the Preserve can be estimated, but not verified. To compound problems, it is difficult for NPS to bring attention to the Preserve. According to federal law, BTNP is not allowed to advertise. However, friends groups like the Big Thicket Association can advertise for the Preserve. This solution is an unpredictable one and relies heavily on the altruism of groups outside NPS. One Preserve official said, “People in the area don’t know much about our use. The visitor’s center is new with a greater carrying capacity for visitors. So far the entire Preserve is underutilized.”

One interviewee summarized the problems facing the region, noting that people in the Big Thicket region have historically been immersed in a culture of logging and mining. Inhabitants are accustomed to extracting, not protecting. Extreme poverty and negative economic growth in the area has contributed to decreasing individual wealth over the years. Finally, flora and fauna in the Preserve are threatened by loss of habitat from not only encroaching development, but feral hogs and invasive plant species as well.

### **Current Government Authority and Public Policy Action**

This section considers current government authority and public policy actions related to land use and conservation that affects the Big Thicket region generally, and BTNP specifically.

#### **Local Level**

In an effort to determine how local government bodies in the Big Thicket region approach land-use issues and policy, the research team contacted the city governments in the Big Thicket vicinity to find out whether the cities have zoning laws, general land-use plans, planning commissions, and/or planning authority. Information was solicited from 18 cities and was ultimately received from 14 local governments in cities ranging in population from approximately 800 to 11,500 people.

Only three of the 14 cities the group reached have zoning laws, although four have planning councils and a fifth is trying to establish one. None of the seven counties within which BTNP units are located have zoning authority. In the four cities with planning councils, the councils’ authority is advisory only. In most cases, these councils merely hear complaints and make recommendations to city councils. Additionally, only two of the cities have general land-use plans in place. The absence of general land-use plans is not particularly surprising due to the small size of many of the cities. If population and commercial development grow in the area near the Preserve, however, there will be no plan in place to guide development toward land that is further away from the Preserve’s buffer zones. In the end, development might occur in a checkerboard pattern around BTNP and within the buffer zones, instead of being clustered into a more centralized land area that would have a less negative effect on the biological sustainability of the Preserve.

#### Authority of Municipalities and Governments

Annexation is a contentious issue in regions near larger metropolitan areas. Texas House Bill 1197, signed into law by Governor Perry and made effective on June 20, 2003, attempts to



relieve some possibility for conflict and relates to the authority of municipalities and counties to regulate subdivisions in a municipality's extraterritorial jurisdiction. This newly added section gives substantial increased flexibility for owners and cities to operate with each other by agreement. It authorizes cities to enter into an agreement with an owner of land in the city's extraterritorial jurisdiction (ETJ) to govern the future development of the land. However, if the tract at issue is in the ETJ of a city with a population of 1.9 million or more, like Houston, this bill does not apply in that instance. This bill allows for developers and cities to agree on uses and development of the land before and after annexation. This may mean that a city can now agree to apply a zoning category to tracts prior to annexation, something many cities have chosen not to do in the past. This allows for greater certainty in the development planning process for the developer and keeps cities honest when negotiating to annex property voluntarily.

In typically rural areas, House Bill 722, effective September 1, 2003<sup>1</sup> and signed into law on June 20, 2003, grants more powers to of the Commissioner's Court in a county that has no incorporated municipality. The bill gives a Commissioner's Court in these counties all the powers of the governing body of a Type A general-law municipality. It is important to note in Sec. 81.033. (b) states that the Commissioner's Court may not regulate a tract of land that is appraised as agricultural or open-space land by the appraisal district; the Commissioner's Court may not exercise the powers of a municipality under Chapter 211 or 213; and if this code or other law provides for a procedure by which a county exercises a power, the Commissioner's Court must use that procedure. The power, therefore, of rural commissioners has been expanded, making rural commissioners relevant stakeholders in relation to land-use relating to BTNP.

It appears that the Texas State Legislature is willing to give municipalities some authority to regulate private property. Nevertheless, legislatures will always be hesitant to pass legislation that restricts private property rights.

House Bill 1129, effective September 1, 2003 and signed into law on June 20, 2003, is another example of an increase in municipal land-use authority. It relates to the types of restrictions that may be enforced by certain municipalities and greatly expands definition of land use "restriction." This means that municipalities can impose land-use regulations on real property, including residential and rental property. The bill regulates or restricts the type of activities that may take place on the property. The municipality can sue a property owner regarding a violation of a restriction located inside the boundaries of the municipality. Similarly, House Bill 1207 (and its twin, Senate Bill 991), effective September 1, 2003 and signed into law on June 20, 2003, relates to the enactment of certain municipal zoning regulations, and increase the power of cities to regulate the appearance of buildings, yards, and landscaping.

## **State Level**

Although BTNP is a federally created entity, it is nevertheless impacted by the laws of the state in regard to how state laws affect the surrounding region and land near the Preserve. As stated earlier, BTNP is threatened mainly by fragmentation caused by increased private and

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<sup>1</sup> A common practice of the Texas legislature is to make non-contentious bills effective before being signed into law by the Governor.

commercial development and the building of highway corridors, as well as the increasing demand for water in nearby areas.

Legislation passed in 2003 by the 78<sup>th</sup> Session of the Texas State Legislature and signed into law by the governor will have some impact on the property and land-use activities. This legislation is important to BTNP for two reasons. First, it puts into effect new laws that will influence decisions made about the Preserve. Secondly, it gives the reader an understanding of the tastes and preferences of the Texas State Legislature at this time. That is, we should have a better idea of what legislation might be more politically viable and, in turn, what legislation constitutes a feasible policy option for the preservation of BTNP.

#### New Texas Land-Use Laws

The Texas Property Tax Code, Sec. 5.03., grants the state comptroller powers and duties to oversee state appraisal districts and to establish “minimum standards for the administration and operation of an appraisal district.” The code grants each appraisal district the ability to excise taxes, and, in Sec. 6.037., gives conservation and reclamation districts (as “taxing units”) a vote in relation to appraisal district matters. House Bill 919, signed into law and made effective on June 20, 2003, furthers this power, and relates to the review and approval of a subdivision of land by certain special districts. It states that a district may require that a property developer who proposes to subdivide land located in the district submit for district approval a drainage report for the subdivision. This, effectively, brings the property developer under further scrutiny by the district.

House Bill 2212, effective September 1, 2003 and signed into law on June 20, 2003, restricts local power and relates to the continuation of legal land-use in newly incorporated areas, and it limits newly incorporated cities from imposing certain land-use regulations in the newly incorporated areas. This bill preserves rights of owners to continue existing land use in most instances. This, obviously, reinforces the rights of private property owners. In areas within the Big Thicket, this could become a speed bump for some very important zoning efforts (with the intention of providing buffer areas for BTNP).

#### Texas Water Laws

Water laws in Texas are extensive and at times conflicting. An NPS interviewee noted that water can be a contentious issue, even in the Preserve. He noted that in some places, the rivers within the Preserve boundaries belonged to BTNP. However, some of the banks of the rivers are privately owned, while the State of Texas owns the river channel. Ownership of water can be confusing as well. In short, if water runs over a parcel of land, it is the property of the landowner; however, water underground is sometimes treated the same way as mineral rights. House Bill 803, effective September 1, 2003 and signed into law on June 20, 2003, reinforces this concept. It relates to the assessment of damages in a condemnation proceeding based on the market value of groundwater rights as property apart from the land, because in certain instances the market value of groundwater rights may be considered and valued as property apart from the land to be condemned, in addition to the local market value of the real property.

## **Federal Level**

The federal players involved in preserving BTNP consist primarily of the President, Congress, and the National Park Service. While these actors serve in an official authority role regarding the Preserve, they also delegate significant responsibility and authority to subordinate individuals or groups for the purposes of conserving and maintaining federally owned lands. For example, the Council on Environmental Quality takes the President's conservation interests into account in fulfilling their duties; the U.S. Senate Committee on Energy and Natural Resources, along with the House Energy and Commerce Committee, represents the Congress in its decisions regarding federally owned land; and the Director of NPS and the Superintendent of BTNP represent the NPS's interests.

There are several federal statutes that impact BTNP. The first law is the National Park Service Organic Act of 1916, which established the NPS. The Organic Act states the NPS mission is "...to promote and regulate the use of the...national parks...to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."<sup>7</sup>

The enabling statute that created the BTNP is Public Law 93-439,<sup>8</sup> passed on October 11, 1974. This statute authorized the establishment of the Big Thicket National Preserve by appropriating funds to carry out the provisions of the Act in the amount of \$63,812,000 for the acquisition of lands and \$7,000,000 for development of the Preserve.

The next law pertaining specifically to BTNP was not passed by the US Congress until July 1, 1993, called the Big Thicket National Preserve Addition Act of 1993.<sup>9</sup> The Addition Act expanded the boundaries of BTNP to include the Village Creek corridor unit, the Big Sandy corridor unit, and Canyonlands units.

Finally, Public Law 104-333, passed during 104<sup>th</sup> Congress (1995-1996), included a minor boundary expansion to the Preserve.

Other important laws that affect BTNP are as follows:

- Clean Air Act
- National Environmental Policy Act
- Endangered Species Act
- National Historic Preservation Act
- Clean Water Act

While the more general laws listed above affect the governance of BTNP, the most important authority the federal government has over BTNP is the regulations it sets on BTNP's boundaries and how much land the Preserve can legally acquire.

Congress designates the Preserve unit boundaries in the enabling statute (PL 93-439) and U.S. Code Title 16, Chapter 6, Section 698. These boundaries are illustrated on map number 175-80008 on file in the NPS office. The Secretary of the Interior may make minor revisions to the

boundaries of the Preserve when necessary by publishing a revised drawing or other boundary description in the Federal Register. Despite having explicitly drawn boundaries, the NPS does not own all of the lands within the Preserve's boundaries. Some citizens retain private lands within the boundary, which are labeled "in-holdings." These in-holdings are considered private property and owners are free to build houses on them.

BTNP boundary designations are also directly related to land acquisition rules. The land acquisition regulations are best described in PL 103-46:

"The Secretary is authorized to acquire by donation, purchase with donated or appropriated funds, transfer from any other Federal agency, or exchange, any lands, waters, or interests therein which are located within the boundaries of the preserve: *Provided*, That privately owned lands located within the Village Creek Corridor, Big Sandy Corridor, and Canyonlands units may be acquired only with the consent of the owner: *Provided further*, That the Secretary may acquire lands owned by commercial timber companies only by donation or exchange: *Provided further*, That any lands owned by the State of Texas, or any political subdivisions thereof may be acquired by donation only."

The Federal government, therefore, can only purchase those lands within the congressionally established boundary of BTNP. NPS can acquire lands outside of the boundary only if they are donated and advance the goal of preserving the BTNP; and cannot use any government funds to purchase land outside the Preserve's established boundaries.

#### Current Federal Legislation Affecting Big Thicket National Preserve

Currently, there is no legislation in the 108<sup>th</sup> Congress directly pertaining to Big Thicket National Preserve. However, there are several bills being considered by Congress that could serve as example legislation for BTNP. One of the policy strategies for preserving the biological sustainability of BTNP is to lobby Congress to expand the Preserve's boundaries. This could compensate for the loss of buffer zones due to the selling of timber company land. There have been four bills passed by the 108<sup>th</sup> Congress that would alter the current boundaries of a national park. These bills are as follows:

#### **H.R. 546/S.254**

Title: To revise the boundary of the Kaloko-Honokohau National Historical Park in the State of Hawaii, and other purposes.

Last Major Action: Became Public Law 108-142 on December 2, 2003.

#### **H.R. 1399/S.677**

Title: To revise the boundary of the Black Canyon of the Gunnison National Park and Gunnison Gorge National Conservation Area in the State of Colorado, and for other purposes.

Last Major Action: Became Public Law 108-128 on November 7, 2003.

#### **H.R. 622**

Title: To provide for the exchange of certain lands in the Coconino and Tonto National Forests in Arizona, and for other purposes.

Last Major Action: Became Public Law 108-190 on December 19, 2003.

### **S.B.273**

Title: A bill to provide for the expeditious completion of the acquisition of land owned by State of Wyoming within the boundaries of Grand Teton National Park, and for other purposes.

Last Major Action: Became Public Law 108-32 on June 17, 2003.

In addition to these bills passed by the 108<sup>th</sup> Congress, there are numerous other bills that would affect a national park's boundaries or funding and are currently being considered by the Congress. All of these pieces of legislation serve as examples to BTNP because they call for actions similar to what would benefit BTNP.

On April 3, 2003, the Subcommittee on Interior and Related Agencies of the Appropriations Committee of the United States House of Representatives announced that \$10 million was to go to BTNP in fiscal year 2004 for land acquisition. This was \$6.6 million above what the administration requested. The committee stated: "[ \$10 million] to complete acquisition of land previously owned by timber companies within the 1994 boundary expansion. Big Thicket National Preserve, often called the 'biological crossroad of North America,' contains a unique mix of southeastern swamps, eastern deciduous forest, central plains, pine savannas, and dry sandhills. This acquisition is critical to protecting this unique area."<sup>10</sup>

Representative Jim Turner of Texas cosponsored a bill in the 107<sup>th</sup> Congress that would have expanded the boundaries of Big Thicket National Preserve. The bill was H.R. 5146, titled: "To establish the Highlands Stewardship Area in the States of Connecticut, New Jersey, New York, and Pennsylvania, and for other purposes." As one can see, neither Big Thicket National Preserve nor Texas is mentioned in the title of this bill. Expanding the boundaries of BTNP is one of the "other purposes" listed in the title. The last action taken on this bill was to refer it to the Subcommittee on Fisheries Conservation, Wildlife and Oceans, under the Subcommittee on National Parks, Recreation, and Public Lands, under the House Committee on Resources. This action occurred on July 24, 2002. This bill was not resolved before the close of the 107<sup>th</sup> Congress.

### **Conclusion**

In researching the problem and interviewing stakeholders, it has become apparent that conventional policy solutions alone are not appropriate to the threats facing BTNP. Because BTNP is operating in "real time," the region and the Preserve are faced with changing realities and an unsure future. Answers to the question of how best to preserve BTNP change depending on which threats are realized and which are postponed, delayed, or dissolved. Put simply, BTNP faces a different challenge if the Texas Trans Corridor plan is implemented or not, or if timber companies continue to sell land surrounding the Preserve.

In other words, the nature of the problem rules out a silver bullet approach that will help ensure the Preserve's sustainability. Instead, what is needed is a solution that is flexible, enduring, and broad-based. Through interviews, academic experience, and brainstorming sessions, the idea was launched of creating an institutional board comprised of diverse stakeholders charged with

addressing the evolving threats to BTNP in a coordinated way. The theoretical underpinnings of such a board are discussed in Chapter 3.

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<sup>1</sup> Corridorwatch.org. “What is the Texas Trans Corridor?”

<sup>2</sup> Comptroller report. Economic Trends and Outlook for Southeast Texas Region.

<sup>3</sup> [www.texaswatermatters.com](http://www.texaswatermatters.com). December 11, 2001

<sup>4</sup> National Parks Conservation Association Top 10 Endangered Parks

<sup>5</sup> All interviews were conducted under agreements of confidentiality. Therefore, no quote or comment is attributed to the speaker.

<sup>6</sup> A list of the top ten endangered parks of 2004, according to the National Parks Conservation Association, is available at the organization’s website:

<http://www.npca.org/across%5Fthe%5Fnation/ten%5Fmost%5Fendangered/bigthicket.asp>. 6 April 2004.

<sup>7</sup> National Park Service Organic Act, 16 U.S.C. 1 2 3, and 4

<sup>8</sup> Public Law 93-439. 93<sup>rd</sup> Congress, H.R. 11546

<sup>9</sup> Public Law 103-46, 103<sup>rd</sup> Congress.

<sup>10</sup> Subcommittee on Interior and Related Agencies, Appropriations Committee, United States House of Representative. “Statement of Thomas C. Kiernan, President, National Parks Conservation Association.” 3 April 2003.



At first glance, the history and current environmental, social, political, and economic problems facing Big Thicket National Preserve (BTNP) might suggest there is no feasible way to decrease the threat to the Preserve's future sustainability.

The research and findings in this document will be oriented around a common-pool resource – or public good – theoretical framework. The Capstone research team will be drawing from literature in academic disciplines such as policy analysis, economics, and political science. Equally as important, the research team will use real world common-pool resource situations to demonstrate how these unique types of problems can be solved, mitigated, or become intractable. Additionally, our proposed solutions can be based on environmental research that relies on an institutional analysis and development framework<sup>1</sup> to help resolve resource problems.

### Resources Defined

Before examining possible institutional solutions to BTNP's sustainability problems, it is first necessary to define the term common-pool resources and associated concepts as well as describe how BTNP fits into this resource category.

- Common-pool resource – “a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use.”<sup>2</sup>

For the purpose of the Big Thicket, the common-pool resource is defined as both the land within the boundaries of the Preserve as well as the buffer zones of timber land and other privately owned land adjacent to the Preserve. It is important to note that this definition is broader and more inclusive than merely the Preserve itself. The reasons for including the surrounding buffer zones and land adjacent to the Preserve in the definition are justified on historical and environmental grounds.

First, as Chapter one articulates, the original string-of-pearls design created a tenuous situation whereby the various pearls are in a state of constant jeopardy. Without buffer zones or strict regulation of development, the fragile ecosystem each pearl seeks to preserve is in danger of collapse. Based on interviews with National Park Service (NPS) employees, some believe the Preserve is only sustainable if fauna have the ability to cross from one unit of the Preserve to another without facing human barriers.<sup>3</sup> Additionally, the buffer zones surrounding the Preserve are necessary for the NPS to be able to conduct controlled burns, which are an integral part of sustaining the flora in the Preserve. Finally, from a cultural perspective, the Big Thicket National Preserve is part of a culturally distinct region of Texas called the Big Thicket, making it very difficult, if not impossible, to treat the Preserve as a common resource separate from the surrounding land area.

Before proceeding, several other terms require clarification as they relate to common-pool resources:

- Resource units – “what individuals appropriate or use from resource systems.”<sup>4</sup> These units can be either renewable or non-renewable.

In the case of the Big Thicket, a resource unit can take several forms. For example, one type of renewable resource unit is timber harvested by timber companies in the buffer zones surrounding the Preserve. This resource is renewable in the sense that the timber companies do not permanently disrupt the flora and fauna patterns on the land and replenish the trees they take with seedlings.

Defining non-renewable resource units in the Big Thicket context is more difficult, however. Some might claim that land bought by a developer near the Preserve – that subsequently has houses built upon it – is renewable in the sense that the house can be torn down and the land returned to a natural state in the future. However, we have chosen to define these types of resource units as non-renewable, because in the long-term future, the housing development will alter the landscape so significantly that it will be difficult to return the land to its previous natural state. In essence, flora and fauna patterns will be disrupted beyond repair in these types of resource units, rendering them non-renewable.

- Appropriation – process of withdrawing resource units from a resource system.<sup>5</sup>
- Appropriators – those who withdraw resource units.<sup>6</sup>

Appropriation is closely linked to resource units, in that it indicates *how* the units are withdrawn from the common-pool resource. Appropriation should be considered a neutral term, as it is undertaken by a variety of actors in a variety of contexts. For example, NPS employees act as appropriators when they conduct controlled burns in the Preserve and remove plant life. Timber company employees, mining companies, private developers, and citizens can also be considered appropriators if they withdraw resources from the land within or around the Preserve.

Considering the types and levels of appropriation of resource units over time is necessary when trying to determine BTNP’s future biological sustainability. Research shows that “as long as the average rate of withdrawal does not exceed the average rate of replenishment, a renewable resource is sustained over time.”<sup>7</sup> As Chapter 2 notes, the sale of significant amounts of timber land previously owned by Louisiana-Pacific and International Paper, and increasing residential development in the Big Thicket region make it doubtful that land replenishment levels will be great enough to sustain the BTNP’s biological integrity in the long-term future.

The sale of timber land within the Big Thicket region illustrates why it falls under the common-pool resource classification. Unlike a *public good* where one person’s consumption does not prevent anyone else from consuming the good, there is a limited amount of land in the Big Thicket region that can be consumed, making it a common-pool resource.<sup>8</sup> Once the number of units consumed passes a certain threshold, the common-pool resource may lose its ability to produce additional units in the future and be left in an unsustainable state. Because BTNP is facing a problem of over-consumption of land surrounding the Preserve, we now turn attention to

possible solutions that will change land consumption patterns near BTNP so that the average rate of withdrawal does not exceed the average rate of replenishment.

### **Common-Pool Problems and Institutions as Solutions**

To put in better context, institutions can range from informal neighborhood watch groups to more formal local, state, and federal governments. The design and rules of each institution have a direct bearing on its capacity, flexibility, and usefulness. Some think citizens alone are helpless to solve common-pool resource problems like the Big Thicket, believing government institutions are “the essential external authority that must solve social dilemmas for everyone.”<sup>9</sup> On the other hand, there are also those who believe government institutions cannot play any kind of constructive role in solving social dilemmas.

The institutional analysis and development framework (IAD) that we use to help construct some possible policy solutions for the Big Thicket differs from the above assumptions in two significant ways.

#### **Definition of Institutions**

First and foremost, the word *institution* has a unique definition in the IAD framework:

- Institution – “the shared concepts used by humans in repetitive situations organized by rules, norms, and strategies.”<sup>10</sup>

There are several important elements of this definition that warrant further explication, particularly in regard to BTNP’s situation. First, institutions in the IAD framework most often take the form of an institutional board or governing authority, although the institution does not limit participation to government employees only. All stakeholders, whether citizens, interest group members, or public agency employees, are potentially eligible to participate and have a vote in the institution.

Additionally, the definition does not outline a specific institutional design or structure that must be used in order for the institution to succeed. In fact, “extensive research on how individuals have governed and managed common-pool resources has documented the incredible diversity of rules designed and enforced by participants themselves to change the structure of underlying social-dilemma situations. The particular rules adopted by participants vary radically to reflect local circumstances and the cultural repertoire of acceptable and known rules used generally in a region.”<sup>11</sup> Thus, the stakeholders in the Big Thicket region have the freedom to design an institution that best suits their local culture and traditions.

When stakeholders are discussing the possibility of adopting a new institutional body, individuals have two alternatives available to them regarding the new structure. They can either support a change in the rules or support the status quo.<sup>12</sup> Ideally, the new institutional board/body should:

- Increase the initial likelihood of self-organization among stakeholders;

- Enhance the capabilities of individuals to continue self-organized efforts over time; and
- Exceed the capacity of self-organization to solve common-pool resource problems without external assistance of some form.”<sup>13</sup>

Institutions also require the use of formal rules and informal rules that manifest themselves as norms. There are three different levels of rules used in an institution:<sup>14</sup>

- Operational Rules – rules that affect daily decisions of participants;
- Collective-choice Rules – determines how operational rules can be changed and who is eligible to participate; and
- Constitutional-choice Rules – determines how collective-choice rules are created and who is eligible to participate.

The solutions presented in this document will discuss all three types of rules but will place special emphasis on constitutional-choice rules and suggest ways in which interested stakeholders can mobilize to create an appropriate institutional design to protect the sustainability of the Preserve and the community character of the Big Thicket region, while also taking into account the economic needs of the communities and private companies located near BTNP. Collective-choice and operational rules are often more viable and successful if they are designed by those who will actually participate in the institutional body instead of being imposed upon the body by an external authority. However, government entities may have an important role in legitimating and enforcing the rules of the institutional body, and these ideas are expanded upon in the following chapters.

### **Role of Citizens and Government**

The second way in which the IAD framework is unique is in how it conceptualizes the roles of citizens and the government in solving common-pool resource problems. First, rather than viewing citizens and stakeholders as helpless and naïve people who are unable to solve complex problems, the IAD framework assumes individuals in small-scale settings possess “social capital with which they can build institutional arrangements for resolving common-pool resource dilemmas.”<sup>15</sup> In the case of BTNP, this “social capital” includes the localized nature of the problem, the small community characteristics of towns in the Big Thicket region, and the fact that one of the major timber companies has its corporate headquarters located in Texas.

Furthermore, because the IAD framework assumes “individuals can draw on heuristics and norms to solve some problems and create new structural arrangements to solve others...the image of what a national government might do is somewhat different”<sup>16</sup> than it is when one assumes individuals lack knowledge and ability to create an institutional body to protect a common-pool resource.

Thus, the proposed institutions aimed at solving BTNP’s sustainability problems reflect a “bottom-up” solution to the common-pool resource problem, in that citizens and stakeholders play a direct role in forming the institution and participating in it. In fact, IAD rests on bottom-up participation and democratic principles.

However, this solution does not exclude the government from playing a constructive role in sustaining the Big Thicket either. There is also a “top-down” role that government can play in legitimating the new BTNP institutional body, in particular by granting it some type of statutory authority and supporting the institution’s decisions. The government will not be responsible for designing the institution’s structure, but it is possible that an agency like the National Park Service could start the institutional design process by inviting diverse stakeholders to participate in the formulation of the rules, using this report as a framework to begin.

The actual choice of institutional design will be the responsibility of the stakeholders (which includes the National Park Service), although if the institution seeks legitimacy from an elected governing body, the original design may face some amendment. The elected body that legitimates the institution’s authority could take the form of either the Texas State Legislature or the U.S. Congress.

### **Challenges in Forming New Institutions**

Despite its potential to help resolve common-pool resource problems, the process of forming new institutions is not easy. According to the IAD framework, four factors affect the ability of stakeholders to put the IAD framework into practice: discount rates, expected benefits, expected costs, and internal norms.<sup>17</sup> Before turning attention to these four factors, the next section will consider an additional challenge facing individuals who desire to solve common-pool resource problems, labeled the *collective action problem*.

#### **Collective Action Problems**

In a collective action situation, it is problematic to compel individuals to participate, because while the group as a whole would be better off if everyone participated, the rational individual believes his/her contributions will not make enough of a difference to change the level of collective good provided.<sup>18</sup> As a result, in many collective action situations, no one participates at the necessary level and the good is not provided.

In relation to common-pool resource situations, there are three specific collective action problems: problem of supply, credible commitment, and mutual monitoring.<sup>19</sup>

- Problem of Supply – the act of formulating new rules and institutions is a collective-good problem in and of itself. A rational individual – even knowing he/she would be better off with a new institutional design – will not find the benefit great enough to take on the cost of creating the rules.

However, this problem can be overcome by “establishing trust and establishing a sense of community”<sup>20</sup> among stakeholders. The IAD research suggests that reciprocity, reputation, and trust relationships must be fostered in new institutional bodies to effectively overcome collective action problems.<sup>21</sup> Fortunately, the BTNP common-pool resource situation provides relatively fertile ground to build these relationships. First, the Big Thicket region has a small community character, and many actors that would be involved in building a new institutional body to sustain the Preserve will likely have had previous interaction with one another on the local level but not



necessarily on the regional level. Second, the Big Thicket region is culturally distinct, potentially indicating significant shared norms exist among stakeholders. Finally, the regional geographic locality of BTNP and repeated encounters fostered by the institution will likely increase opportunities for stakeholders to display reciprocity toward one another. According to the IAD framework, reciprocity involves the following five elements:<sup>22</sup>

1. Identify who is involved in the decision-making process;
2. Assess the likelihood that others will cooperate to solve the problem;
3. Decide to cooperate with others if you believe they will cooperate with you;
4. Refuse to cooperate with those who do not reciprocate; and
5. Punish those who betray trust.

In repeated academic simulations testing cooperation among actors, reciprocity, sometimes referred to as tit-for-tat, has been shown to be the most effective strategy to reach desired goals and/or prevent worse-case outcomes.<sup>23</sup> By rewarding others when they cooperate and punishing them when they do not, individuals can better predict how others will respond to their actions and tend to change their behavior accordingly. Thus, those who show an initial willingness to cooperate will likely be better able to work together toward a common goal, as actors feel confident that their cooperation will be returned by cooperation from others in the group. Simulations have shown that this confidence leads them to act in favor of the group's interests more often than when confidence is absent and they act primarily out of self-interest.<sup>24</sup>

The second major collective action problem that faces common-pool resources is the problem of credible commitment, which discusses the incentive for individuals to disobey the institution's rules.

- Problem of Credible Commitment – “how does one appropriator credibly commit himself or herself [to the institution's rules] when everyone knows that the temptation to break that commitment will be extremely strong in future time periods? External coercion is a frequently cited theoretical solution to the problem of commitment...[but] what motivates the external enforcer to monitor behavior and impose sanctions?”<sup>25</sup>

The IAD framework argues that “a self-organized group must solve the commitment problem without an external enforcer.”<sup>26</sup> Solving this problem is especially challenging to groups comprised of diverse stakeholders with potentially conflicting interests. Developing the reciprocity, trust, and norms relationships discussed above is one way to address this problem, but a group can also strategically limit its size to mitigate against this tendency to cheat as well. Collective action research argues that four negative effects occur when the size of a group pursuing collective action becomes too large:<sup>27</sup>

- As group size increases, benefits to individuals decrease;
- As group size increases, the importance of any individual's contribution decreases;
- As group size increases, transaction costs increase;
- As group size increases, social incentives for individuals become weaker.

Thus, when stakeholders are determining a new institution's design, they must balance the need to make the institution's board representative but maintain a small enough size to ensure that informal pressures can be utilized to monitor other actors and ensure compliance. "Increasing the number of participants is associated with increased transaction costs. How steeply the costs rise depends, to a large extent, on the rules-in-use and the heterogeneity of the users."<sup>28</sup> Compliance is closely connected to the issue of monitoring, which comprises the third collective action problem facing actors in common-pool resource situations.

- Problem of Mutual Monitoring – "Without monitoring, there can be no credible commitment; without credible commitment, there is no reason to propose new rules."<sup>29</sup>

The two concepts are interdependent with one another, thus the potential solutions to the compliance problem also apply to the monitoring problem. However, monitoring may be one area in which the government can play a useful role. Local, state, or federal government agencies may be better-equipped to do the monitoring for the institution because of their much larger resources than the institution will likely possess. This issue will be raised again and considered in the design proposal sections.

### **Discounting the Future**

Discount rates can be characterized as the degree to which individuals value the future and believe it is personally important to them. In relation to common-pool resources, individuals discount the future to a high degree when they "attribute less value to benefits they expect to receive [from the resource] in the distant future, and more value to those expected in the immediate future."<sup>30</sup>

Discount rates are affected by three main factors: stakeholders' level of physical security, economic security, and general norms in the community.<sup>31</sup> "Discount rates are also affected by the general norms shared by the individuals living in a particular society, or even a local community, regarding the relative importance of the future as compared with the present."<sup>32</sup>

In situations where individuals heavily discount the future, they are unlikely to be self-motivated to create new institutions to solve common-pool resource problems, even if the actual problem is quite serious. Research has shown that "people want to change the rules and bring about structural change when they observe that the common resource is being depleted."<sup>33</sup> This presents a significant hurdle in the context of the BTNP common-pool resource problem. According to one National Park Service employee, citizens do not realize the Preserve is being threatened by encroachment.<sup>34</sup> In this employee's view, many citizens in the Big Thicket region do not believe the Preserve and its buffer zones are at risk of being depleted because they still see so much forest land surrounding them, decreasing the credibility of expert claims that the Preserve's sustainability is currently at risk.

Furthermore, politicians have been shown to discount the future heavily given their need to pay greater attention to short-term problems that will help them become reelected.<sup>35</sup> This places even greater pressure on local stakeholders and citizens with longer-term concerns about BTNP's

sustainability to mobilize a new institutional structure that will be equipped to address the problem adequately.

### **Benefits of New Institutions**

One of the greatest benefits of forming a new institutional structure for BTNP is the simple fact that it will facilitate communication between diverse, multiple stakeholders who have a direct interest in the Preserve and surrounding communities. Academic simulations examining cooperation among individuals have provided two empirical facts about the effect of communication on cooperation. First, even “cheap talk” – communication that creates agreement to cooperate but cannot be enforced – increases the level of cooperation among individuals.<sup>36</sup> Second, face-to-face communication substantially increases cooperation rates among individuals in simulations where the incentives for non-cooperation are great.<sup>37</sup>

Evidence suggests five positive outcomes that result from increases in communication.<sup>38</sup> The following factors have been shown to facilitate greater cooperation among actors:

- Transferring information from those who can figure out an optimal strategy to those who do not fully understand what strategy would be optimal;
- Exchanging mutual commitment;
- Increasing trust and thus affecting expectations of others’ behaviors;
- Adding additional values to the subjective payoff structure;
- Reinforcement of prior normative values; and
- Developing a group identity.

Once an institution is created, these outcomes will be much easier for stakeholders to achieve through the formalized and routine interaction of the institution’s board. It is necessary to point out that academic research has also shown that as the stakes surrounding a common-pool resource increase and monitoring individuals becomes more difficult, communication alone will likely be unsuccessful in solving the common-pool resource problem.<sup>39</sup> Because BTNP is a common-pool resource problem, the stakes over how the land should be used are quite high. The land surrounding BTNP clearly has economic as well as environmental and recreational value, but there is a limited amount of it. Because stakeholder groups have their own individual interests that cause them to weight the value of the land in different ways, dialogue alone is unlikely to resolve conflict over which value of the land to weigh most heavily.

In a situation where cheap talk is the only institutional mechanism to reach cooperation, no stakeholder has any incentive to sacrifice any portion of their self-interest for the interest of the group and knows the other stakeholders are in the same position. By granting the board some type of power to act, even if only in an advisory capacity, the members know that an outside party will be watching them and will perhaps have a greater incentive to resolve differences among themselves. Thus, one could predict that an institution might have a higher likelihood of success in protecting the Preserve adequately with some statutory or advisory authority.

## Costs of New Institutions

Stakeholders who are reluctant to participate in creating a new institutional structure to solve common-pool resource problems often cite the high cost of participation as a disincentive to lend their help. Thus, it is helpful to consider the different types of costs facing potential participants in the institutional formation process.

There are two types of costs for changing institutions, ex ante and ex post costs.<sup>40</sup>

- Ex ante costs (transformation costs) – cost of changing the rules.
- Ex post costs – compliance, monitoring, and enforcement costs.

Research evidence provides several insights into how stakeholders view costs. First “transformation costs are lower when skillful leaders are involved. Because transformation costs are up-front costs, they are less likely to be affected by the discount rates used by participants.”<sup>41</sup> Thus, the success of the institutional formation process for Big Thicket will require stakeholder groups to provide good leaders to work on the project.

The type of proposed rules will also affect the transformation costs associated with it. “Proposed rules with positive expected benefits and low transformation costs are likely to be adopted before rules with high transformation costs.”<sup>42</sup> Research and practice have shown that “...achieving the benefits of small rule changes will transform the calculus involved in evaluating larger changes.”<sup>43</sup> Thus, it is often most effective to first present desired small cost changes to stakeholders which will decrease the cost of future, more contentious changes.

## Internal Norms

Internal norms can serve as a positive or negative force when trying to create new institutional structures to solve common-pool resource problems. Norms are defined as “internal valuation – positive or negative – to taking particular types of action.”<sup>44</sup> When trying to solve common-pool resource problems, a high level of norm homogeneity often makes it easier to create a legitimate structure that is accepted by stakeholders. In situations where stakeholders share widely different norms, it is more difficult to create consensus on institutional structure.

Because it is extremely difficult to change the norms of any given actor, in situations in which different actors possess widely different norms, it is often wiser to focus on changing heuristics through a new institutional structure than on changing the norms of certain actors. Heuristics are defined as general “rules of thumb” that individuals learn lead to good outcomes in certain situations. “In frequently encountered, repetitive situations, individuals learn better and better heuristics that are tailored to particular situations. With repetition, sufficiently large stakes, and strong competition, individuals may learn heuristics that approach best-response strategies.”<sup>45</sup>

Thus, in the case of the Big Thicket region where actors potentially hold different norms, a new institutional design might change whom actors consult before taking a specific action, while the action itself does not change. In effect, the institution has second-order effects on the common-pool resource. For example, an institution might require residential developers to communicate

their building plans to members of the Big Thicket Association on regular intervals through an institutional board, but the institution itself may not have the authority to force builders to move their building locations further away from the Preserve. By creating routine communication between builders and BTNP advocates, however, the hope is that building location decisions might change. For example, it might be the case that regular communication gives the advocates and other members of the board the opportunity to present alternative sites to builders (that will be also be profitable) and that are located further away from the Preserve’s boundaries. However, communication alone will not lead to institutional success, which is addressed further in the following chapter.

### **Characteristics of Long-Enduring Common-pool Resource Institutions**

The following list is taken from the IAD literature and is merely intended to serve as a general concept list of design principles that are more likely to create enduring common-pool resource institutions. The principles are purposefully general in order to allow individual communities to make them fit appropriately within their local contexts. Each of these design principles can be reference when considering institutional choices available to Big Thicket stakeholders.

Table 1. Eight Design Principles of Long-Enduring Common-Pool Resource (CPR) Institutions.<sup>46</sup>

1. **Clearly Defined Boundaries** – Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. **Congruence between appropriation and provision rules and local conditions** – Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.
3. **Collective-choice arrangements** – Most individuals affected by the operational rules can participate in modifying operational rules.
4. **Monitoring** – Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.
5. **Graduated Sanctions** – Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators, or by both.
6. **Conflict-Resolution Mechanisms** - Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
7. **Minimal recognition of rights to organize** – The rights of appropriators to devise their institutions are not challenged by external government authorities.
8. **Nested enterprises** – Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.



## Conclusion

Institutional solutions to common-pool resource problems have been successful in many settings, yet they have failed in others. The reasons for the successes and failures have been highly contingent on the suitability of the institutional design to local conditions. Equally important, the success of a new institution will be dependent upon stakeholders' recognition that creating a new institutional body is not an easy process and requires both time and commitment by all involved actors. Often, "a long period of trial and error is needed before individuals can find rules that generate substantial positive net returns over a sufficiently long-time horizon."<sup>47</sup>

"Instead of there being a single solution to a single problem, I argue that many solutions exist to cope with many different problems. Instead of presuming that optimal institutional solutions can be designed easily and imposed at low cost by external authorities, I argue that 'getting the institutions right' is a difficult, time-consuming, conflict-invoking process. It is a process that requires reliable information about time and place variables as well as a broad repertoire of culturally acceptable rules. New institutional arrangements do not work in the field as they do in abstract models unless the models are well-specified and empirically valid and the participants in a field setting understand how to make the new rules work."<sup>48</sup>

In order to create a successful institution, actors must approach the formation process one step at a time as opposed to trying to design, implement, and evaluate the institution all at one time.<sup>49</sup> The process occurs in a sequential order. First, the common-pool resource problem should be identified and stakeholders should be assembled before a new institutional structure is chosen. Second, the formation of a new institution, as well as its successful operation, is contingent upon multi-stakeholder participation and the social and political environment. Finally, once the institutional design is chosen and the institution is operating, actions that affect the common-pool resource will come to depend on institutional rules and norms, whereas before any actor could take action at any time without consideration of the effect of his/her actions on other stakeholders.

One of the greatest benefits of using an institutional analysis and development framework to solve common-pool resource problems is that fact that local stakeholders – who are directly affected by the decisions made by the institution – choose the institutional design and rules by which they must abide. The flexibility of this approach is clear; stakeholders can develop institutions that are appropriate and viable for their local conditions. Thus, institutions created to help solve common-pool resource problems will vary significantly in different regions.

This framework assumes that a more conventional solution is not more effective and practical. Rather than accept that assumption blindly, this report will investigate in detail two conventional policy choices: status quo and federal land ownership. The status quo policy option explores the likely effect of no outside entity attempting to influence events and allowing current dynamics to play out. The federal land ownership option discusses the possibility of government intervention to ensure BTNP preservation. The following two chapters will discuss the basic concept behind

each approach, the level of preservation expected from each approach, the economic impact of each option on the local community, and the political feasibility of enacting each option.

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<sup>1</sup> Ostrom, Elinor, *Governing the Commons: The Evolution of Institutions for Collective Action*. ( New York: Cambridge University Press, 2003).

<sup>2</sup> Ibid., 30.

<sup>3</sup> Interview with National Park Service Employees, Spring 2004.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid., 32.

<sup>9</sup> Ostrom, Elinor. "A Behavioral Approach to the Rational Choice Theory of Collective Action: Presidential Address, American Political Science Association, 1997." *American Political Science Review* 92(1): 1-22. 1998, 17.

<sup>10</sup> Ostrom, *Governing*, 37.

<sup>11</sup> Ostrom, *A Behavioral Approach*, 8.

<sup>12</sup> Ibid.

<sup>13</sup> Ostrom, *Governing*, 29.

<sup>14</sup> Ostrom, Elinor. 1996. "Institutional Rational Choice: An Assessment of the Institutional Analysis and Development Framework." Chapter 3. Pg. 59.

<sup>15</sup> Ostrom *A Behavioral Approach*, 184.

<sup>16</sup> Ibid., 17.

<sup>17</sup> Ostrom, *Governing*, 37.

<sup>18</sup> Olsen, Mancur, *The Logic of Collective Action*. (Cambridge, Mass.: Oxford University Press, 1965).

<sup>19</sup> Ostrom, *Governing*, 42.

<sup>20</sup> Ibid., 43. Ostrom quoting Bates.

<sup>21</sup> Ostrom, *A Behavioral Approach*.

<sup>22</sup> Ibid.

<sup>23</sup> Axelrod, Robert. 1984. *The Evolution of Cooperation*. New York: Basic Books.

<sup>24</sup> Ibid.

<sup>25</sup> Ostrom *Governing*, 42.

<sup>26</sup> Ibid., 44.

<sup>27</sup> Bendor, J, and D. Mookherjee. "Institutional Structure and the Logic of Ongoing Collective Action." *American Political Science Review*. 81(1): 129-154. 1987.

<sup>28</sup> Ostrom, *Institutional Rational Choice*, 57.

<sup>29</sup> Ostrom, *Governing*, 45.

<sup>30</sup> Ibid., 34.

<sup>31</sup> Ibid., 35.

<sup>32</sup> Ibid.

<sup>33</sup> C. Samuelson and Messick 1995, 147, in Ostrom, *A Behavioral Approach*, 1998.

<sup>34</sup> Interview with National Park Service Employee, Spring 2004.

<sup>35</sup> Fiorina, year?

<sup>36</sup> Ostrom, *A Behavioral Approach*, 6.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Ibid., 7.

<sup>40</sup> Ostrom, *A Behavioral Approach*, 19.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

<sup>43</sup> Ibid., 20.

<sup>44</sup> Ibid., 9.

<sup>45</sup> Ibid.

<sup>46</sup> Ostrom, *Governing*, 90.

<sup>47</sup> Ibid., 8.

<sup>48</sup> Ostrom, *Governing*, 14.

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<sup>49</sup> Ibid., 39.

## Chapter 4

### Policy Choice #1 – Status Quo

The status quo of land-use policy as it applies to the Big Thicket region is outlined in Chapter 2. It addresses the current state of the Preserve as well as local, state, and federal policies actively in place in the Big Thicket region. Additionally, there currently exists no third-party governing entity involved in coordinating policy to reach the desired outcome of biological sustainability in and around the Preserve.

It is important at this point to identify exactly what is meant by third-party involvement, as the term will be used frequently throughout this chapter to identify alternative solutions to the status quo. Third-party involvement could range from an advisory organization of multiple local stakeholders with no regulatory authority on the more private side of the spectrum, to a government-appointed body with extensive regulatory authority on the more public side of the spectrum. This particular section will not distinguish between the options for third-party involvement, which will be discussed in detail in Chapter 6. For purposes of this chapter, third-party involvement simply refers to any policy solution other than the status quo, whether that party is locally organized or government authorized.

Under the current policy framework, most land-use actions taken by stakeholders will be conducted according to general economic principles. The supply and demand for land in the Big Thicket region will determine its cost, and all interested parties will seek to purchase that land at their own desired price.

In this environment, conservation is possible if conservation organizations such as the Nature Conservancy or Trust for Public Land have a willingness to pay that exceeds the willingness to pay of developers for that same land. On the reverse side, if economic development interests view the land as more lucrative for development than conservation, the equation is reversed, developers will pay more than conservation organizations are willing, and conservation will not occur. Since it is assumed developers have greater resources than conservation groups, they will likely have a greater ability to pay for land in the Big Thicket region.

Accordingly, the status quo option can be described as a situation where the playing out of individual incentives is not likely to result in a socially optimal solution. Although self-interested parties left free to engage in commerce creates Adam's Smith invisible hand mechanism that forms the basis of the free market system, it is inadequate in situations involving common-pool resources. A common example of this inadequacy is the fishing industry. A given body of water has a limited number of fish. The future supply of these fish directly depends on the current population of fish. If multiple fishing companies are allowed to independently pursue their own self interest, they will each seek to acquire as much fish as they can each day. They may be aware that such aggressive fishing will decimate the fish population and destroy their profit in

future years, but they are also aware that any fish they do not catch may be caught by the other companies. Left to their own devices, the self-interested companies will likely overfish, decimate the population, and force several companies out of business over time. We have seen scenarios of this type play themselves out in places such as Nova Scotia, Sri Lanka, and Turkey.<sup>1</sup>

Big Thicket can likewise be considered a common-pool resource. Many people want to move to the woods to get away from the traffic, crime and hustle of city life. Often, a population influx into a less developed area means less woods. The resource depletes as those who seek to benefit from it grows. Eventually, if left unchecked, the population surges into the Thicket may overwhelm the very environment that was originally so attractive.

In common-pool resource situations, of which we argue Big Thicket is one, the status quo solution is a risky venture in regard to preservation. No result can be guaranteed, and because one result is non-renewable (or irreparable), the prospect of permanent damage is very real.

### **Economic Impact**

Because the very definition of status quo implies the absence of interference, the economic impact of the strategy can reasonably be described as “whatever the market will bear.” But this depiction, although accurate, is not particularly useful when considering the advantages and disadvantages of the strategy compared to other options. A more beneficial discussion can proceed by discussing the status quo’s economic impact in both a short and long-term framework.

#### *Short-Term Impact*

Massive tracts of land previously held by timber companies are being sold to real estate investment trusts and other interested parties, which will presumably be parceled out into smaller sections and sold to developers and conservation organizations. If this occurs, the local economy will grow with an influx of new residents and their pocketbooks. The increased cash flow will likely attract new businesses, new employees and their families. A cycle of economic growth could seize Big Thicket and alter the financial landscape of the region.

It is a common misperception that such rapid economic growth would never hit the Big Thicket region. But its close proximity to urban centers like Houston and Beaumont, picturesque scenery, the promise of an expanded highway system, and the sudden availability of cheap land combine to make Big Thicket an inviting area for possible large-scale growth. Under the status quo, such development may not occur immediately, but it would likely occur eventually.

This process could take several years or even a few decades to mature. The time frame will depend largely on the general economic growth patterns in Texas. If the state population continues to grow at its current rate, citizens will be looking for new areas to settle and Big Thicket might appear to be a prime location. If Texas suffers an economic downturn, the population growth will be slower, and the maturing process will likely take longer.

Eventually the market will mature and stabilize. The flow of new residents will slow down, businesses unable to compete effectively will close their doors, and the region will once again

settle into a new equilibrium. But what will the Big Thicket look like when that time comes? Will it still be predominantly forested or will concrete and billboards rule the day? Will the biological diversity that now exists in the Preserve be sustained or will it be choked off by traffic and suburban sprawl? The answers to these questions will likely determine the long-term economic impact of the status quo.

#### Long-term Impact:

A common economic problem associated with common-pool resources is discounting the future. This concept entails individuals placing greater value to benefits expected in the immediate future than those benefits they expect to receive in the distant future. Discounting the future is a particularly salient issue when considering the long-term economic impact of the status quo policy option for the Big Thicket region.

Consider the fate of oil towns that boomed when oil was discovered and collapsed when the oil market fell. If more strategically planned, the companies could have restricted their oil production to obtain optimal prices and a more stable economy. The zealous appetite for a quick profit overwhelmed more efficient notions. The collapse of the oil industry led logically to the collapse of the oil town. The wells ran dry, money ran out, and businessmen ran away.

Great care must be taken to preserve whatever resource first attracts attention to a region. Historical towns that fail to protect their history suddenly find themselves without an identity. Isolated coastal towns that become too commercialized suddenly find it hard to attract visitors. Similarly, nature tourism sites that neglect nature may lose their most defining feature. And particularly when that feature is biologically fragile, the long-term effects of discounting the future can be disastrous. An example of this situation can be found in Costa Rica, where over commercialization has led to a decline in ecotourism.<sup>2</sup>

Ideally, the emerging economy of the Big Thicket region will be buffeted by its nature tourism. However, assuming that short-term economic changes will last permanently is folly. If the forces that first bring development to a region shift, the region must once again rely on the resources that first gave it life. In this case, the region would once again turn to the nature tourism industry. If proper care is not taken to buffer the Preserve and protect its biological diversity, the region may find itself in the position of a chef that sold his prize-winning recipe: without a marketable future.

#### **Level of BTNP Preservation**

The biggest weakness with the status quo is determining the future level of BTNP preservation. Put simply, it is both unpredictable and unmanageable. As described previously, the level of preservation could reasonably be expected to fall anywhere along the spectrum from complete preservation to total elimination of forested land beyond the Preserve's borders. The exact placement along this spectrum would be determined by a number of free market economic principles outside the control of any single organization or interest.

## Political Feasibility

The main advantage of the status quo is its political feasibility. Obviously, the lack of third-party intervention is easier to achieve than the introduction of an outside control or advisory mechanism. Put another way, it is easier to do nothing than to do something. The current political environment in Texas strongly favors private solutions over government solutions and individual property rights over community property interests. Accordingly, the status quo solution is the most politically feasible option.

When comparing between alternative policy options, two common values are effectiveness and feasibility. Promoting a policy option that is effective but not feasible is a waste of effort. Pursuing a policy option that is feasible but ineffective is impractical. The status quo is clearly feasible, but of questionable effectiveness. Accordingly, the status quo option is not an optimal solution. The next chapter will discuss the option of federal land ownership.

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<sup>1</sup> Ostrom, Elinor. 1990. *Governing the Commons*.

<sup>2</sup> [www.gefweb.org](http://www.gefweb.org). Global Environment Facility's report on Conservation of Biodiversity in Costa Rica



Public ownership can be considered the simplest form of ownership, or it can be construed as a complex institution that brings a variety of externalities to the forefront. Nevertheless, public ownership is one possible strategy that can be used to solve the fragmentation problem of Big Thicket National Preserve (BTNP).

According to the National Park Conservation Association, 1.5 million acres of timber company land surrounding Big Thicket National Preserve has been placed on the real estate market since 2001.<sup>1</sup> These lands have traditionally provided a vital buffer zone between the Preserve and development. Now that the lands are on the market, they could be clear-cut and developed, thus eliminating the much needed buffer area.

There are two options of public ownership: complete ownership of lands surrounding BTNP, or selective ownership of priority tracts of land vital to the Preserve. The first option would require the federal government to purchase all land available for sale. In essence, the government would purchase the 1.5 million acres of surrounding land and make it a permanent part of the Preserve to ensure that a suitable buffer zone would continue to surround the entire BTNP. The second option of public ownership would be the purchase of crucial boundary areas using federal funds.

The *Houston Chronicle* states, “Conservationists and the Park Service believe that preserving the park’s diverse and fragile ecosystem, and protecting essential wildlife corridors, would require obtaining less than 10 percent of the timberland that is for sale.”<sup>2</sup> In this case, the federal government would purchase approximately 150,000 acres of surrounding timberland. In either case, government ownership of buffer zone lands would allow biologists and ecologists to manage the area in such a way as to best sustain the biological diversity of BTNP.

Public ownership of the surrounding land implies that the people own the land. If society as a whole owns the land, it potentially has control over how the resource will be used. In this case, the government would be the manager of the land acting on behalf of the public. Therefore, how the public values the land becomes crucial. Because society theoretically would have control of the land, the public must agree on the use of the land. Therefore, the public ownership solution assumes that sufficient political interests must agree that the land surrounding BTNP is best used as a buffer zone for the Preserve.

### **Economic Impact**

The economic impact of the public ownership concept would be wide ranging. First, in order to purchase the buffer zone, the government would need to extract resources from the general revenue funds. In the first option, the expected amount needed to purchase all of the land on the market ranges from \$1.125 billion to \$2.1 billion. (These estimates are based on the following figures: low range – 1.5 million acres at 750 dollars per acre, high range – 1.5 million acres at

1400 dollars per acre.) In the second option, the expected amount needed to purchase 10 percent of the land ranges from \$112.5 million to \$210 million based on the figures listed above.

Opportunity costs associated with the use such a large amount of money could translate into a large loss in general welfare, depending on how much value is placed on preservation of the Big Thicket. For example, if Congress allocated \$500 million to acquire land, that \$500 million could not be used for other public goods such as the construction of highways. If highway construction provides greater social benefits than the government acquisition of buffer zone land, the opportunity costs would result in a welfare loss. In other words, if the money allocated to purchase the land could be used elsewhere to provide greater social benefits, there would be a social welfare loss.

In addition, public ownership of the lands surrounding BTNP could entail lost consumer and producer surplus as compared to the status quo alternative because the land would not be available to produce goods that could provide consumer and producer benefits. For example, public ownership of the land would prevent the construction of retail stores. Thus, consumers lose the benefits of associated with buying products from the stores and the producers lose potential sales profits.

Another economic impact would be the external effects, otherwise known as externalities, associated with the purchase of the buffer zones. Externalities can be associated with a positive or negative value. There would be some positive externalities connected with the buying of the land surrounding the Preserve. BTNP would be better preserved, there would be less pollution, and visitor rates could increase. But placing a numeric value on these externalities is very difficult without knowing the weight the public places on these positive effects. Therefore, if externalities summed to be greater than the cost of the land, there would be a welfare gain; however, if externalities were not valued higher than the total price of the buffer zones purchased, there would be a welfare loss.

Furthermore, if no capital gains are being derived from the government-owned land, no tax revenues will be gained. Because a large percent of county tax revenues are secured from property tax, the counties in the Big Thicket region would see a loss in total tax revenue. In order to offset these losses, the counties are faced with two options: decrease the operating budget or increase taxes.

The loss in tax revenue could potentially translate to a lower operating budget for the counties in the Big Thicket region. A lower operating budget would mean that fewer services would be provided to the citizens of the county, thus a reduction in social benefits. An option to offset the losses in tax revenue would be to raise taxes. This option would mean that more social costs would be placed on citizens of the Big Thicket region, hence lowering the social welfare associated with public ownership of the buffer zones.

In summary, the final economic impact depends on how much value the public places on the preservation of BTNP. If the value associated with preservation were greater than the social costs of public ownership, there would be a welfare gain. However, if preservation of BTNP were valued at less than the social costs of public ownership, there would be a welfare loss.

## **Level of BTNP Preservation**

It is likely that the public ownership solution would provide the maximum amount of land and ecosystem preservation to the Preserve. In the first option of purchasing all of the available land surrounding BTNP, the government could effectively create a contiguous buffer zone surrounding each Preserve unit. These buffer zones would provide protection from outside development activities that could threaten the sustainability of the Preserve. This protection would ensure that BTNP would be biological viable for future generations.

The second option of purchasing only the vital buffer zones would provide land and ecosystem preservation to a lesser extent than the first option. Buffer zones would be purchased to protect the most fragile ecosystems in the Preserve. Therefore, government-owned buffer zones would surround only a small percentage of BTNP. The remainder of the Preserve would have no protective buffer zones. This would mean that certain units of the Preserve would shrink in biological diversity, as the outer edges of these units would then become the active buffer zone.

## **Political Feasibility**

The public ownership solution is not likely to be politically feasible, and we believe the main reason is because of BTNP's low visibility. The Big Thicket National Preserve has been called the "invisible park." The *Houston Chronicle* quoted the BTNP superintendent as saying, "I consider the Big Thicket the invisible park. Very few people know what it is and what it means."<sup>2</sup> BTNP is not nearly as visible as other national treasures such as Yellowstone and Yosemite. Because of this low visibility, issues that threaten the Preserve are rarely presented to the public. Political figures react to public interest. Therefore, without national public interest on issues surrounding BTNP, it is very unlikely that politicians will react to those issues.

In order for the public ownership solution to work, Congress would have to allocate a large amount of funding to secure the buffer zones around BTNP. The funds for such a purchase would come from general tax revenues. Given the lack of or perceived lack of public interest, it is unlikely that Congress would allocate such a large amount of funding for a low interest issue. In 1993, the Big Thicket Addition Act was passed which authorized the addition of 10,766 acres to the Preserve. However, 11 years later, as was described in detail in Ch. 2, the additional land has not been completely purchased.

In addition, Congress would have to enact new legislation to allow for the purchase of the lands on the market. New legislation is rarely passed without a political fight. Given the past history of BTNP, we believe that it is very unlikely that legislation authorizing the purchase of a large amount of land will be realized. Other factors that reduce the feasibility of public ownership are a political culture in Texas that values private property rights and is generally considered to be pro-business.

In conclusion, we argue that a public ownership solution is not likely to be feasible due to the lack of political visibility, high expense, and a long political history where private property rights dominate. Chapters 4 and 5 have explored the effectiveness and feasibility of the status quo and

public ownership policy choices. We have argued that the status quo option is certainly feasible, but its effectiveness is unpredictable and unmanageable. Public ownership is likely to be the most effective option, but it is not likely to be feasible. We believe another that a full exploration of another course of action is warranted. The remaining sections of this report identify our recommended institutional approach. This approach provides an enduring, flexible solution that is capable of adapting to a changing environment and broad-based enough to handle the myriad of possible threats facing the Preserve. Chapter 6 will discuss the institutional approach in greater detail.

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<sup>1</sup> “Big Thicket National Preserve.” National Park Conservation Association.

[http://www.npca.org/across\\_the\\_nation/ten\\_most\\_endangered/bigthicket.asp](http://www.npca.org/across_the_nation/ten_most_endangered/bigthicket.asp), March 27, 2004.

<sup>2</sup> Freemantle, Tony. “TEXAS: Oil drilling, land sales threaten the Big Thicket,” The Houston Chronicle. January 14, 2004.

The IAD theoretical framework has limited utility unless it can be successfully implemented in the Big Thicket region. The purpose of this chapter is to outline what we believe to be the minimum necessary steps that must be taken in order to form a multi-stakeholder Board/institution capable of preserving the biological sustainability of Big Thicket National Preserve (BTNP). Results from a survey of stakeholders in the region, outlined in Chapter 8, show that over 90 percent of our respondents<sup>1</sup> favor increased collaboration between stakeholders in the Big Thicket region. One strategy to heighten such collaboration is the creation of a multi-stakeholder board.

Thus, what follows can be viewed as a “how to” guide to forming a Board given the local context of the Big Thicket region. The recommendations in this chapter follow the IAD theoretical framework outlined in Chapter 3. The following steps are not intended to be overly prescriptive regarding the Board’s formation. In fact, many of the phases are left purposefully broad to allow for an exploratory committee to use their discretion to implement the Board in a way that will make it most likely to succeed. However, these suggestions do form a basic foundation for the Board’s creation, and the research suggests that the Board’s success is more likely if each phase is completed.

### **Phase 1 – Exploratory Committee**

The first requisite step for successful Board creation necessitates a small group of individuals – who are concerned with the future of BTNP – to come together and spearhead the Board formation process. For the purposes of the Big Thicket Board, this group will be labeled the exploratory committee. The exploratory committee should include some of the most knowledgeable and diverse stakeholders in the Big Thicket region, but because the group is temporary and its main function will be to identify all relevant stakeholders and coordinate the formation of the Board, the membership on this committee does not have to be inclusive of all stakeholders. The exploratory committee membership should be as small as possible to decrease communication barriers and free rider problems that would potentially hurt the momentum of the group’s work.

After conducting a wide array of interviews with stakeholders, it is recommended that a representative from each of the following three interest groups serve as members on the exploratory committee:

- National Park Service representative
- Timber industry representative
- Political representative (preferably at the federal level where the member’s district covers the entire Big Thicket region)

The inclusion of these interest groups are ideal for several reasons. First, they represent both public and private interests in the region. Second, they are central players in the Big Thicket and

possess numerous contacts with a wide variety of stakeholders connected to the region. Finally, they each have members working directly in the Big Thicket region, which will facilitate their ability to meet face-to-face and coordinate activities.

## **Phase 2 – Identify Stakeholders**

Once the exploratory committee is formed, their first task is to identify all of the relevant stakeholders that play a direct or indirect role in the biological sustainability of Big Thicket National Preserve and the surrounding Big Thicket region. This list should be as inclusive as possible, and at this point in the process, it is advisable to include all stakeholders identified by the committee to avoid neglecting potentially relevant interests in the area. A list of potential stakeholders was compiled by the research group through informational interviews and can serve as a guide for the exploratory committee (Appendix B), although is in no way exhaustive and the committee is encouraged to use their own professional networks and contacts to create a more comprehensive list.

However, it is likely not sufficient to simply identify relevant organizations that have a stake in BTNP. Within each of these organizations, the committee should strive to identify individual actors who would be the most likely to desire participating in the Board's creation and its functioning. The exploratory committee is also encouraged to use the "snowball" technique to expand the list of stakeholders. This is accomplished by asking each of the contacted stakeholders for suggestions on other relevant stakeholders until all of the lists overlap and all organizations have been identified.

## **Phase 3 – Hold a Stakeholder Forum**

Once the relevant stakeholder organizations and individuals have been identified by the committee, the committee should organize a stakeholder forum that brings together all of relevant stakeholders from local, state, and federal levels, as well as private and nonprofit actors. The stakeholder forum serves four distinct purposes. First, it creates a professional networking opportunity for diverse stakeholders concerned with BTNP and the Big Thicket region that may not interact on a regular basis. Second, it facilitates dialogue between different interest groups on joint strategies that can be taken together to preserve BTNP. Third, it provides an opportunity for feedback from diverse actors on the feasibility and usefulness of creating a Board. Finally, if the stakeholders agree that creating a Board is warranted, the participants can also draft a Board member selection process for the exploratory committee to use as a guide. Careful consideration should be given to the selection process of Board members to ensure adequate representation of all interests.

Another important purpose of this forum is to present several different Board composition ideas to the participants – as well as seek additional Board composition proposals - and ask them to rank their preferences as a group. In order to reach a consensus (or at least a prevailing view) on the most appropriate Board composition and responsibilities, the exploratory committee may want to consider using breakout sessions during the forum. The breakout sessions would have members of different interests grouped together and asked to reach a prescribed level of agreement or consensus regarding the following issues:

- Define the problem facing Big Thicket National Preserve and the Big Thicket region;
- Rank the proposed Board compositions; and
- Suggest alternate Board compositions or policy ideas that will contribute to preserving the Preserve.

After the breakout sessions are complete, the exploratory committee will facilitate the presentation of each group's rankings and ideas, which will ideally give the committee a solid basis for working to create one of the proposed Board types. Several different types of Boards that could be presented to stakeholders are listed below:

**Voluntary Advisory Land-Use Board:** a voluntary multi-stakeholder board - comprised of business, political, community, and conservation members in the Big Thicket region - that works together to identify priority land conservation areas and willing sellers in the Big Thicket region and makes non-binding advisory purchasing and conservation recommendations to local, state and federal government entities and nonprofit organizations.

**Government-funded Advisory Land-Use Board:** a government-funded multi-stakeholder board – comprised of business, political, community, and conservation members connected to the Big Thicket region – that works together to identify priority land conservation areas and willing sellers in the Big Thicket region and makes non-binding advisory purchasing/conservation recommendations to the local, state and federal government entities and nonprofit organizations.

**Land Purchasing Board:** a non-governmental, voluntary multi-stakeholder board – comprised of business, political, community, and conservation members connected to the Big Thicket region – that works to identify priority land conservation areas and pools members' financial resources to purchase available land for conservation from willing sellers in these priority areas. This board would also seek additional funding to buy land through donations and grants.

**Planning and Land-Use Board:** a state-sanctioned and government funded multi-stakeholder board – comprised of business, political, community, and conservation members connected to the Big Thicket region – that possesses regulatory authority to limit certain land uses near Big Thicket National Preserve.

**No Board:** no board is created and land conservation issues are handled in the same manner as they are currently handled.

These five Board types were presented as options in a survey sent by the research team to all of those interviewed – as well as other identified stakeholders – in which respondents were asked to rank the five Boards from the most to least preferred Board option. While the respondents represent only a targeted sample, their preferences may provide the exploratory committee with some insight on which Board forms will be best received by stakeholders. Over 87 percent of those surveyed supported the formation of some type of multi-stakeholder board, and 62 percent ranked the no board option as least desirable. A more comprehensive explanation of the survey respondents and results is discussed in Chapter 9 of this report. Other examples of successful



institutional boards that have been implemented in both Texas and the wider United States are listed in Appendix D.

**Phase 4 – Create a Multi-Stakeholder Board**

Phase four is perhaps the most sensitive and time-consuming phase of the institution building process, for it is at this point that the exploratory committee – using a selection process agreed upon at the stakeholder forum – chooses the representatives for the inaugural multi-stakeholder Board. Selecting the first Board members requires a balancing act for the committee, as the Board membership should reflect the broad array of stakeholder interests while remaining small enough to function effectively.

The purpose of this document is not to prescribe any specific Board composition, but through the interviews conducted by the researchers, the following broad interests were consistently mentioned as essential participants for the Board’s success:

Table 1. Big Thicket Stakeholder Groups.

Private Sector	Public Sector	Nonprofit/Civic
Timber industry	Elected Officials or members of their staff (local, state, federal)	Concerned Individuals
Retail/Land Developers	Public Agencies (local, state, federal)	Conservation Groups
Private Landowners	Quasi-governmental bodies (such as Councils of Governments)	Educational Institutions
Builders’ Associations		Chambers of Commerce
Other Private Businesses		

One of the most frequently recurring themes from the interviews with individuals connected to the Texas State legislature was that the involvement of county commissioners on the Board is an absolute necessity for the Board’s success. The county commissioners often bring local issues of concern/activity to the attention to state elected officials, and if they have a role on the Board (as a committee or voting member), those interviewed suggested state legislators would be more likely to be receptive to the Board’s ideas and activities.

Once the Board membership is created, the exploratory committee and the Board should work in collaboration to create membership rules and institutional procedures, perhaps by drafting a Board constitution. It is at this point that the exploratory committee begins to take a more advisory than leadership role on the Board. If one or more of the exploratory committee members receives a seat on the Board, they will begin functioning in a dual role until the Board rules have been drafted.

The types of issues the Board will address at this initial juncture may include:

- What is the Board’s mission?
- Who will have voting power on the Board?
- How will subsequent Board members be selected and rotated? Appointed? Elected?
- How will citizens communicate with the Board?
- How will the Board be structured? Leadership? Committees?
- How will the Board’s activities be financed?
- How will the Board enforce its rules on members?
- How will the Board gain authority and/or use the authority it has been granted?
- Board resources?

Once the Board has agreed upon a mission and defined membership and operational rules, it can begin regular meetings and pursue its preservation goals for BTNP and the Big Thicket region.

### **Phase 5 – Institutionalizing the Board**

While a multi-stakeholder Board for Big Thicket National Preserve will begin as a bottom-up – or grassroots – endeavor, as the Board’s institutional capacity increases, the Board may decide to seek formal sanctioning from the Texas State Legislature or the U.S. Congress. In the state of Texas, special utility districts (SUDs) serve as possible models for the Board to follow when seeking government recognition. See chapter 7 for a more comprehensive description of SUDs.

The Board could also pursue recognition similar to water authorities and transportation authorities. According to one interviewee, “There’s enough to generate support in this geographical area. It is pretty bipartisan when it comes to junior water rights and land use... For the public to support it, it must be fiscally neutral and protect private property rights.”

Some type of formal status granted by the government could be useful in several ways. It would provide the Board with increased legitimacy in the eyes of those within and outside of the Big Thicket region, which could aid the Board in its preservation efforts. Furthermore, formal status could help the Board increase its funding from either private donations, foundation grants, or public monies.

### **Phase 6 – Continued Role of Exploratory Committee**

The necessity of maintaining a role for the exploratory committee after the Board’s creation is somewhat contingent upon the role the committee members ultimately have on the Board itself. If the committee members are voting or expert advisory members on the Board, the exploratory committee may not have reason to continue meeting. However, after the first year of the Board’s operation, it may be useful for the exploratory committee to reconvene and evaluate the Board’s progress and look at where the Board’s responsibilities are likely to move in the future. The exploratory committee could present these findings to the Board and solicit feedback from them on an annual or bi-annual basis.

## **Conclusion**

Before proceeding to the next chapter, which discusses some of the key internal structural and resource issues involved in forming an effective Board, a note of caution is in order. The academic literature clearly notes that institutional formation is a difficult and time-consuming process.<sup>2</sup> Thus, each of the following stages could take months or even years to complete. This creates some difficulty as active players in the process may change over time and commitment to the project could potentially wane due to this turnover. In an effort to expedite the Board formation process and maintain a high level of interest in creating a Board, the exploratory committee is advised to designate an employee to tackle this issue full-time.

However, given that funding for staff salaries and extra time are often non-existent, it may be worthwhile for the Board to consider seeking public funding or grant money to hire a full-time Board coordinator. Furthermore, the stakeholder forum and Board creation process will require some minimal funding that could possibly be provided by grants.

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<sup>1</sup> While increased collaboration among stakeholders appears to be favored among those surveyed, the result can not be generalized to the whole population of the region due to sample size limitations. See Chapter 8 for a more detailed description of the sample size limits of the survey.

<sup>2</sup> Ostrom, Elinor. 1996. *Governing the Commons*.

## Chapter 7

# Laying the Foundation of the Board

### Board Appointment and Continuity

In order for the Board to be effective in the long term, a method of board member selection must be determined. When considering the process, the following questions should be considered:

- Will this person be appointed, elected, or selected by a committee?
- What knowledge or expertise does this person need to possess?
- Is this person committed to working on the problems facing the Big Thicket region?

According to academic literature, Board recruitment can occur through defining a board member “profile,” which the questions above could shape.<sup>1</sup> Defining the membership of the Board is important. The academic literature specifies that the potential board member should know about the organization, such as what it does and what is expected of them as a board member.<sup>2</sup> In addition, while the Board should be diverse in its representation, such diversity can pose “greater participatory challenges.”<sup>3</sup> An exploratory committee will have to decide whether it wants the Board to reflect the diverse interests it is representing or be otherwise comprised. This will be a difficult decision because of the numerous stakeholders and stakeholder groups in the region. In addition, board structure and roles should be considered.

It will also need to be determined whether the board members will have limited terms and what the length of those terms may be. The academic literature suggests that board member terms should be staggered, which would allow for evaluation of that board member and allow a transfer of knowledge from the experienced board members to new members.<sup>4</sup> Term length is important to consider in that longer terms will allow board members to be better experienced, but also requires a longer personal commitment by the individual. Shorter terms provide for less of a commitment on the part of the member, but may not allow enough time for the member to become seasoned as a board official before the end of his/her term.

If the Board becomes a politically recognized subdivision of the state of Texas, it would have to comply with open meetings laws and regulations of the Texas Regulations Commission. Such sanctioning would enable the Board to be tax exempt, obtain government grants for capital improvement, establish a tax base, and support bond referenda proposals. Two examples of this type of recognized institution in the state of Texas include special utility districts (SUDs) and municipal utility districts (MUDs). The advantages of becoming a recognized SUD, for example, include: no property taxes, no ad valorem taxes, lower interest loans, greater access to grants, etc. The disadvantages are more subtle. By moving from a private corporation to a government entity, the district is opened up to stricter laws and regulations, and all the political concerns that go along with it (i.e. loss of control). A more detailed description of SUDs and MUDs is given in Appendix E.

## **Size of the Board**

The size of the Board is instrumental in shaping whether the Board will be effective. According to the literature, “[I]ncreasing the number of participants is associated with increased transaction costs.”<sup>5</sup> This suggests that if the Board is too large, the mere number of members will increase the complexity and duration of decision-making. However, having a membership that is too limited may restrict discussion, problem identification, and consideration of alternative policy options.

The literature also points out that “success in starting small-scale initial institutions enables a group of individuals to build on the social capital thus created to solve larger problems with larger and more complex institutional arrangements.”<sup>6</sup> Considering the vastness of the issue facing the Big Thicket region, starting small may be the best method in order to reach some level of consensus on the problem. As time goes by and people continue to collaborate, increasing the size of the Board is a possibility in order to maintain the knowledge base as the problems being assessed become more difficult. The problems at the beginning of the board process will generally be centered on the establishment and solidification of the Board, such as building momentum and collective action issues. After the establishment problems have been addressed, however, the Board’s attention will likely shift to substantive land-use policy issues.

Because the Board will represent the Big Thicket region, it should incorporate members from the entire region. Conceptually this could be modeled after a council of governments and be considered a council of interests. Councils of governments (COGs) are made up of “at least two-thirds [of] local elected officials of cities and counties.”<sup>7</sup> The remainder of the council membership is left to the COG to determine and may include non-elected stakeholders.<sup>8</sup> The Big Thicket’s Board could select percentages of the sectors to be represented on the Board and have at-large stakeholders who may span many interests.

## **Communication and Information Channels**

The Board must have a means of communicating internally with the membership and externally with the general public. One of the Board’s main purposes, no matter the type selected, is to facilitate and foster communication.

One of the greatest benefits of forming a new institutional structure for BTNP is the simple fact that it will facilitate communication between diverse, multiple stakeholders who have a direct interest in the Preserve and the surrounding communities. Academic simulations on cooperation among individuals have provided some empirical evidence about the effect of communication and cooperation. First, as discussed in Chapter Three, unenforceable “cheap talk” and face-to-face communication increase cooperation rates among individuals in simulations where the incentives for non-cooperation are great.<sup>9</sup>

## **Norm/Rule Creation**

The Board must create rules for itself and the membership. Rules structure how actors interact and decisions are made within the context of the Board. Additionally, they provide a mechanism

to punish members who violate norms of the group or act contrary to the purpose of the Board. According to the literature, there are multiple level of rules:

- Operational Rules – rules that affect daily decisions of participants, such as an operations manual;
- Collective-choice Rules – determines how operational rules can be change and who is eligible to participate. This might take the form of a constitution which outlines the rules necessary for the organization to govern; and,
- Constitutional-choice Rules – determines how collective-choice rules are created and who is eligible to participate<sup>10</sup>. This type of rule would be focused on determining who participates in collective-choice rules and how they will make decisions.

These rules generally “forbid, require, or permit some action or outcome.”<sup>11</sup> For example, the Board must determine rules for membership, such as Board member terms. This is an example of a collective-choice rule. Constitutional-choice rules, on the other hand, are one’s the come into play for the exploratory committee and stakeholder forum when decisions regarding Board membership are made. If the Board is given land purchasing power, rules about how land will be selected for purchase and types of development allowed are examples of operational rules. The Board should also periodically reexamine its decision-making process to ensure all level of rules are being followed and that its current rules still serve the purpose for which they were intended.

Committees could also be used in order to create norms. Looking at the County of San Diego’s General Plan 2020 (a case study outlined in further detail in Appendix D), committees were created to discuss the County’s land-use plans. Two committees are utilized by the County, one comprised of interest groups and the other comprised of community representatives. They discuss the plans being proposed and bring their opinions to the attention of the Planning Commission. These committees are required to reach a consensus on local land-use planning proposals and present their decision to the Planning Commission.

The committees would need to recognize that it is difficult to change the norms of individual stakeholders. It would be wiser for the committee to focus on changing heuristics, or “rules of thumb,” through a new institutional structure than on changing the norms of certain actors. Thus, in the case of BTNP, a new institutional design might change whom actors consult before taking a specific action, while the action taken does not necessarily change. In effect, the institution has second-order effects on the common-pool resource. By creating routine communication between builders and BTNP advocates, however, the hope is that building location decisions might change in such a way that both interests are satisfied.

### **Grievance Process**

The Board will need to create some way for board members and stakeholders to discuss and resolve internal board problems. According to the literature, “[I]f individuals are going to follow rules over a long period of time, there must be some mechanism for discussing and resolving what constitutes an infraction.”<sup>12</sup> These mechanisms, which will likely take the form of rules, ensures that the Board can adequately address the concerns of board members and its constituents.

Consider again the County of San Diego’s General Plan 2020. If individuals experienced problems with any aspects of the Plan, they can voice their complaints with the County Supervisors at a general hearing. Having some sort of mechanism for complaints to be voiced is important in order to ensure that people know that their concerns are heard. This is also a way to focus attention on new problems and adjust priorities.

**Scope of authority**

The scope of authority of the Board will be dependent upon the type of Board selected. The table below represents the possible authority each board type may have.

Table 1. Board type and scopes of authority.

<b>Board Type</b>	<b>Planning Authority</b>	<b>Land Conservation Authority</b>	<b>Land Purchasing Authority</b>
Voluntary Advisory Land-Use Board	Low (comments only)	Low (comments only)	Non-existent
Government-funded Advisory Land-Use Board	Low (comments only)	Low (comments only)	Medium (works with willing sellers)
Land Purchasing Board	Medium	High	High
Planning & Land-Use Board	High	High	High
No Board	None	None	None

**Resources**

Resources, both monetary and non-monetary, will be essential for the effective functioning of the Board. It is up to the Board to determine how it will gain funding, either through government sources, membership fees, grants, or other means. The literature suggests that “...regional and national governments can play a positive role in providing facilities to enhance the ability of local appropriators to engage in effective institutional design.”<sup>13</sup> Government support could be as minimal as providing a building facility for board meetings to giving seed grant money to hire a board coordinator whose job is to facilitate the board’s development.

**Conclusion**

This chapter has focused on some of the most important internal structural and resource issues related to forming an effective Board to address the biological sustainability problems facing BTNP. Most of the structural components discussed in the chapter should be addressed before the Board begins work on substantive policy issues, because without a strong foundation from which to work, it is unlikely the Board will have the resilience to handle both internal and external pressures placed upon it when it begins considering actions that can be taken to preserve BTNP. Once the Board is solidly established, however, it can begin to turn attention to policy



strategies that will facilitate its preservation goals. Appendix A highlights some conventional and innovative land-use policy strategies the Board may want to pursue in the course of its work.

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<sup>1</sup> Block, S.R. 1998. "Board of Directors." In S.J Ott, ed., *Understanding Nonprofit Organizations: Governance, Leadership, and Management*. 2001. Boulder: Westview Press, 19.

<sup>2</sup> Ibid., 18.

<sup>3</sup> Ibid., 18.

<sup>4</sup> Ibid., 22.

<sup>5</sup> Ostrom, E. 1996. "Institutional Rational Choice: An Assessment of the Institutional Analysis and Development Framework."

<sup>6</sup> Ostrom, E. 1990. *Governing the Commons: The evolution of institutions for collective action*. Cambridge University Press: New York, 190.

<sup>7</sup> Texas Association of Regional Councils. 2004. "What is a COG?" Web page. (<http://www.txregionalcouncil.org/what.htm>) 30 March 2004.

<sup>8</sup> Ibid.

<sup>9</sup> Ostrom, E. 1990, 100.

<sup>10</sup> Ostrom. 1996. 59.

<sup>11</sup> Ostrom, E. 1986a. 139.

<sup>12</sup> Ibid., 100.

<sup>13</sup> Ostrom, E. 1990, page 212.

## Chapter 8

# Survey Results

In an effort to better understand how stakeholders view the formation of a new institution to handle the Big Thicket dilemma, the research team developed a survey<sup>2</sup> that evaluated stakeholders' opinions on the current problems in the Big Thicket region and the proposed multi-stakeholder board. The survey questions are listed in their entirety in Appendix C. The participants of the study were chosen based on an anticipated knowledge of the subject and the region. The research team collected the majority of potential respondent names from interviews conducted throughout the research period and from recommendations of interviewees. In total, 91 people were asked to participate in the survey. Participants represented a wide range of interests connected to BTNP including local, state, and federal government actors, non-profit organizations, and private industry in the Big Thicket region.

When considering the results, the survey can be divided into three parts. The first part of the survey was designed to develop an understanding of how different stakeholders view economic and environmental issues in the Big Thicket region. The second part of the survey was designed to obtain information related to receptiveness of stakeholders to the proposed multi-stakeholder board. The final part of the survey was designed to gauge the level of interconnectedness of officials, agencies and organizations in Big Thicket and related to BTNP.

The survey was administered through the use of two modes. An online survey was distributed to the people who had access to email and the Internet. Of the 91 participants, 62 were asked to complete the survey using the online tool. The second mode involved faxing hard copies of the surveys to participants. This mechanism was used only when the participant did not have access to email. Twenty-nine participants were asked to complete the survey via fax. The online and faxed surveys consisted of exactly the same question wording, and the same format scheme was used in both. Significant differences between the two modes were not anticipated and are not discernable due to relatively small size of the sample. The online survey produced a response rate of 40.3 percent, while the faxed survey had a response rate of 24.1 percent. The overall response rate to the Big Thicket survey was 35.2 percent, or 32 respondents, which we believe to be a good response rate particularly given the short time horizon<sup>3</sup> respondents had to complete the survey.

### Sample Size and Composition Limitations

The purpose of the survey was not to try to fully estimate the opinions of all stakeholders in relation to BTNP, but to derive a general estimate of the opinions of the leading decision makers in the region and state and federal offices – the same decision makers who may one day hold positions on a board overseeing issues related to conservation in the Big Thicket region. In order

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<sup>2</sup> It is important to note the difference between interviews of stakeholders and the survey of the same. Both measures were conducted to gauge opinions regarding Big Thicket, BTNP and related issues. The survey, following the interviews, delved further to quantify those opinions in some form.

<sup>3</sup> The time horizon was from March 29 to April 14, 2004.

to identify these decision makers, interviewees were asked whom they considered important to BTNP. We made every effort to include a wide variety of interests. Those individuals, and others gleaned from our research comprised the list of survey participants.

Half of the respondents to the survey were from local governments and organizations. State and non-governmental organizations/universities each were represented by nearly 22 percent of the respondents. Federal officials and stakeholders were the least represented group that responded to the survey. The sample size and the groups represented, however, are not large enough to draw true generalizations about any of these populations. For this reason, we report the survey responses as a single group.

### **Environmental and Economic Concerns of the Big Thicket Region**

The survey respondents showed significant concern for *both* the environmental and economic state of the Big Thicket region. Over 58 percent of the respondents stated that maintaining biological sustainability in and around Big Thicket is a serious problem while only 6.4 percent of the respondents did not think it was a problem or was only a minor problem (Question 2)<sup>4</sup>. In addition, most respondents felt strongly about land conservation issues, with 76.6 percent responding that land conservation in the Big Thicket is of high importance (Question 5). When asked if their respective employers or organizations held the same opinion, the average response shifted only slightly from a mean of 8.07 to 6.65<sup>5</sup>, yet four respondents noted that their employers or organizations placed little or no importance on land conservation issues in the Big Thicket region (Question 6).

All respondents agreed that economic development issues are at least somewhat important in the Big Thicket region with 80.7 percent of the respondents replying that economic development issues are very important with a mean of 8.84<sup>6</sup> (Question 3). When the participants were asked to compare economic development issues with land conservation issues, 38.7 percent placed the same priority on the two issues. Again, respondents were asked about their employer or organization's stance regarding the same issue (Question 4). Four respondents noted that their employer or organization sees economic development issues in the Big Thicket as "not important" or hardly important. In general, the lower level of importance given to economic development in the Big Thicket region can be seen in the lower means of the responses, 8.84 in Question 3 versus 6.88 in Question 4, of those who said that their employers or organizations felt these issues were "extremely important."

However, 45.2 percent of the respondents placed a higher priority on land conservation than economic development while only 16.2 percent placed a lower priority on land conservation (Question 7). These results show that, *among the survey respondents*, there is higher concern for land conservation issues than economic development issues in the Big Thicket region. This does not mean that citizens in the Big Thicket region in general value land conservation issues more

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<sup>4</sup> The survey asked participants to rank concerns on a scale from 0 to 10, 0 being not important and 10 being very important. For the purposes of this survey, we have defined the responses of 0-2 to be a little or no importance and 8-10 to be of high importance.

<sup>5</sup> Where 0 was no importance and 10 was extremely important.

<sup>6</sup> Again, where 0 was no importance and 10 was extremely important.

than economic development, however. Sample size limitations and the narrow composition of survey respondents must be reiterated. The sample that was chosen to take the survey may have a bias toward land conservation given the subject matter being investigated by the researchers. Additionally, because all of the survey respondents were contacted in their professional capacities, the survey responses do not reflect average citizen views regarding land conservation in the Big Thicket region.

### Multi-stakeholder Board Results

The participants were asked several questions pertaining to the development of a multi-stakeholder board as described in Chapter 6. Several key findings of the survey include:

- **61.3 percent** of the respondents strongly support the idea of a multi-stakeholder board to increase collaboration among interest groups concerned with land conservation in the Big Thicket region.
- **90.3 percent** of the respondents agreed that increased collaboration between differing interest groups concerned with land use would benefit the Big Thicket region as well as the Big Thicket National Preserve.
- **87.1 percent** of the respondents support the development of some type of multi-stakeholder board, as opposed to the option of no board at all.

The most significant statement that can be made from the ranking of different types of boards is that the “no board” option is overwhelmingly the least preferred option among respondents:

- **74 percent** of the respondents ranked the “no board” option as their last or second to last preference.

The most preferred option is difficult to distinguish because the four board options received similar rankings. These options are ranked so closely that it is impossible to assert a clear first choice for the Board’s structure. Thirty-one of the thirty-two respondents answered this question (Question 8). The results are given in the following table:

Table 1. Survey results on Board Type.

Board Type	1	2	3	4	5	Response Average
<b>Voluntary Advisory Land-use Board</b>	<b>27% (6)</b>	18% (4)	<b>27% (6)</b>	23% (5)	5% (1)	2.59
<b>Government-funded Advisory Land-use Board</b>	19% (4)	14% (3)	19% (4)	<b>38% (8)</b>	10% (2)	3.05
<b>Land Purchasing Board</b>	19% (5)	<b>42% (11)</b>	15% (4)	15% (4)	8% (2)	2.50
<b>Planning and Land-use Board</b>	<b>30% (8)</b>	15% (4)	22% (6)	19% (5)	15% (4)	2.74
<b>No Board</b>	19% (5)	4% (1)	4% (1)	12% (3)	<b>62% (16)</b>	<b>3.92</b>

Survey participants were also given an opportunity to describe why they prefer the board design that they ranked the highest (Question 9). Some of the answers included:

- “I believe that government funded boards would tie the group too closely to the government entity whether federal or state. There are many fine ‘friends’ groups who do great work, but keep one far removed from funding.”
- “Grass roots efforts tend to work the best. Locals tend to distrust the government.”
- “I believe in private land ownership without government or board interference.”
- “Voluntary cooperation only goes so far. Without regulatory control the area can and will become even more fragmented as individuals pursue their own goals.”
- “Any board that is nonbinding will not have the power to accomplish what needs to be done. An advisory board will not have the power to protect the Big Thicket. However, having no board is the worst. A board with regulatory authority is the best.”
- “A voluntary non-government land purchasing board would potentially have more flexibility to identify and complete key strategic actions to benefit biodiversity conservation. However, this board should recognize that perhaps not all lands would require purchase. The acceptance and cooperation of the region's population for a non-government entity may be higher.”
- “[A] [c]ross-section of the community ensures greater 'ownership' of the issue as opposed to a 'special interest' group which, while having a lot of passion, cannot enlist the broad based support needed to sustain the Big Thicket.”
- “Planning is essential to identify and to address problems of fragmentation, protection of water resources, and exploration for mineral resources. Land use around dispersed units is critical to their survival. Without effective regulatory authority incompatible uses are likely to become major problems.”
- “Local control by community residents may avoid political influence, manipulation, and [the] money lobby that seems to be prevalent in state agencies managed by state appointed positions funded through the offices of state elected officials. Regulatory decisions from a local board may reflect the interests of the community better than a state funded (regulated) board.”
- “There is too much ‘anti-government’ sentiment in the region. A board outside the regulations of government will be more flexible and be able to negotiate better purchases. The down side would be that it depends entirely on the volunteer commitment and depth of pockets of the people on the board.”
- “Voluntary boards can be unreliable depending on the passion of a few vocal participants. Land use and planning can create the best strategy not only for the identification of parcels to purchase, but also for prioritizing which parcels to purchase and how to manage them.”
- “Land use planning is a valuable effective tool that should be the first option in situations such as this. Even though the Big Thicket area is experiencing growth at this time and no doubt will continue to see growth in the future, presently there is limited concentrated development. Because of this, I believe that by instituting a well-researched method of planning/zoning before growth accelerates, we can be most effective in ensuring proper land and habitat conservation.”

- “I believe that the only people who will devote the time will be all the governmental funded players who can ensure that this happens in a timely fashion. They have accountability to the people as well.”

As the above statements reflect, respondents also agree that funding for the Board should come from mix of private and government funding mechanisms. This is also evident in further responses to questions posed on the survey about funding:

- **67.7 percent** of the respondents agreed that a mix of private and government funding would make a multi-stakeholder board most sustainable over time.
- **64.5 percent** personally prefer a mix of private and government funding for a multi-stakeholder board.

Results were evenly divided when participants responded with what funding strategy they thought their organization might prefer for a multi-stakeholder board.

- **38.7 percent** of respondents suggested that most/all funding should come from private donations and member group contributions. Likewise, **38.7 percent** of respondents felt that their organizations would prefer a mix of private and government funding.
- **35.5 percent** of the respondents noted that their organization would be more willing to provide some funding to a multi-stakeholder board if there was a representative from that organization on the board.
- **28 to 33 percent** of the respondents felt that their organization would have no authority to provide funding, while **10 to 14 percent** thought it was very unlikely that their organizations would provide funding and **10 to 21 percent** felt that it was perhaps likely (5 on a scale from 0 to 10) that their organization would provide funding.
- **21 to 31 percent** of the respondents, however, felt that their organizations would be very likely to provide “resources” to a multi-stakeholder board. Examples given of some resources are: meeting locations, technology, expert consulting, supplies, and time release for a member of an organization to serve as a board member.

### **Interconnectedness of Stakeholder Organizations**

A loose network of relationships exists between local, state and federal government elected officials and government agencies, conservation groups, universities, and others. Survey respondents were asked to identify actors and organizations with which their organizations have had working relationships on land-use, conservation or related policy issues in the past five years. Organizations receiving 43.3 percent or higher recognition from respondents are: city governments, county governments, the Texas State Legislature, chambers of commerce in the Big Thicket region, economic development corporations, the Southeast Texas Regional Planning Commission, the Deep East Texas Regional Planning Commission, Texas Parks and Wildlife,

the National Park Service, Big Thicket Association, and The Nature Conservancy. County governments received the most recognition at *80 percent*.

Respondents were also asked to name any specific agencies or organizations for some of the more general categories listed in the survey question. City governments listed are: Sour Lake, Kountze, Lumberton, Newton, Beaumont, Silsbee, Jasper, Woodville, Orange, West Orange, Pinehurst, Port Author, Houston, and Colmesneil. Counties mentioned are: Hardin, Jefferson, Tyler, Jasper, Orange, Polk, Liberty, and “all the counties in the east Texas area.” A complete list of stakeholders related to BTNP and Big Thicket is located in Appendix B.

### *Suggested Solutions*

Survey participants were also given the opportunity to offer their own solutions to the threats facing BTNP. Question 23 read: If you were given complete authority over the Big Thicket region, what would you do to address BTNP’s biological sustainability problem? Responses were varied:

- “[I]f I had funding do go with authority, I would purchase key tracts of land near the BTNP land to prevent or control commercial or other development. Buffer zones are critical to some units.”
- “[I would] secure enough land for a truly viable ecosystem. With timber company lands coming on the market, mixed pine and bottomland hardwood systems are available now and may be lost and fragmented quickly as the lands are sold off.”
- It is a very hard problem with the extreme fragmentation faced. [I would] continue to add lands adjoining where possible, generate private agreements with adjoining landowners on uses, survey the resources on a regular basis to document problems or changes.”
- “I would preserve the area around the Big Thicket to protect it. Development would be inside the nearby cities- not at the Big Thicket sites. I believe the Big Thicket should be accessible to the general public, but not to the point that it is damaging to the Preserve. I do not believe that the Big Thicket should be accessible to scientists only.”
- “I am not comfortable talking about it as a problem.”
- “(1) Secure funding for improved survey of regional landscape for key resources. (2) Re-evaluate authorized boundary and desired landscape vision; (3) Secure Congress[ional] support for boundary revision; (4) Create a board as described above that can not only advise, but act; (5) Increase staffing of Preserve to improve current state of resource; (6) Work with Lamar Univ[ersity] to heighten profile of Center for Big Thicket Studies; (7) Aggressively pursue local support from key community leaders/business; (8) Improve efficiency and allocation and expenditures of park unit; and (9) Raise [the] profile of preserve through education and outreach to adults as well as children.”



- “I would work collaboratively with stakeholders to demonstrate that economic development and the Big Thicket are not mutually exclusive--in fact, the two are very interrelated and we can enhance our economic development through preservation and promotion of the Big Thicket.”
- “Add buffers to protect units and stream corridors from adverse development and land use. Ensure that the Preserve has adequate funding to employ an adequate resource management team with expertise and experience that includes botanists, wildlife biologists, geologists, foresters, etc. Fund research to provide the data needed for management. Address problems related to oil exploration; work toward acquiring mineral interests. Work to mitigate impacts of highway expansion and water projects.”
- “My first step would be to establish an organization with specific instructions and goal[s]. Next I would attempt to secure government funding from both the federal and state levels. I would also make sure to notify all area stakeholders who have an interest in both habitat preservation and the business community. Stress the fact that a strong ecological environment, especially in this area, is essential to a long-term sustainable business environment. Eco-tourism, recreation, and hunting/fishing all bring in significant amounts of cash flow into the area and have terrific potential to expand in the future if managed properly. The key to ensuring that the environment is preserved properly is to make the obvious connection between it and the business community (jobs) known to the people.”
- “[I would] try to educate the COG's, local economic development organizations, chambers, and other civic organizations as to how important it is to preserve their biological and historical resources. They need to understand that these resources are their economic future.”
- “[I would] add 100,000 to 200,000 acres of the timber land that has either been sold or will likely sell in the near future to the Preserve. Encourage Cities and Counties to be more aggressive in protecting the Preserve when it comes to economic development decisions, [and would] come up with a way for the region, including Houston, to fall in love with the Preserve.”

### **Discussion**

It would be irresponsible to draw concrete conclusions about attitudes toward BTNP from such a limited survey sample. However, the survey is useful in the sense that it sheds light on the basic concerns of the Big Thicket. Overall, the results show that there is a strong concern for conserving the land in the Big Thicket region; however, our dataset is neither large enough nor representative enough to generalize that concern for all stakeholders in the region. However, we made a sincere effort to contact all those who we thought would have an active interest or has recently played a leadership role in this area. Furthermore, responses to the proposed development of a multi-stakeholder board are mostly positive. Interconnecting relationships exist in the Big Thicket and in relation to BTNP, which we believe provides a workable foundation from which a board-creating authority can draw members and appropriate resources. The survey

suggests that a large group of relevant stakeholders have some concern for the Big Thicket and agree that the development of a board would be beneficial to the Big Thicket region as well as Big Thicket National Preserve.

### **Economic Development and Conservation**

Our survey also shows that there is a concern for economic development in the area as well as land conservation in the Big Thicket region. Although these interests are often viewed as conflicting, our respondents and interviews indicate that they can both be beneficial to the preservation of BTNP, because it is possible to have both economic development and land conservation in the Big Thicket region. Preservation of BTNP could lead to long term economic benefits by increasing visitor rates and maintaining the uniqueness that brings visitors to the region. Similarly, careful land-use planning and economic development in the region could serve to increase the popularity and use of the Preserve. Therefore, the forces driving the economic development and land conservation concerns could work together to achieve multiple benefits including the preservation of BTNP.

### **Feasibility of a Proposed Board**

The survey also showed that a collaborative board is viewed as a very positive option among our participants. When asked to rank the different types of board in order from most preferred to least preferred, the non-existence of a board was clearly the least preferred option. Respondents noted that locals are suspicious of government and put a strong emphasis on the creation of a Board from the bottom-up – at the grass-roots level. However, there was no clear preference to what type of board should be developed; the only preference was that a board be put in place. This result shows how difficult it is for all stakeholders to agree on what type of board would best benefit the Big Thicket region. Because of the variety of opinions and interests, compromise and negotiation tactics will likely be necessary when determining the board type.

### **Big Thicket Network**

When respondents were prompted to identify organizations and government institutions with which they and their organizations had working relationships, they answered with a wide range of organizations and government agencies and officials. Results show that there is, indeed, a network of people and organizations with ties throughout Big Thicket, in Austin and nationally. Our data does not really permit a complete description of the characteristics of the network or the strength of the various ties. However, our results indicate that these networks do exist and that these relationships have been developed over the years in the Big Thicket as the Preserve was created and as organizations and governments have worked together to address issues important to their members and communities. Although no strong network exists that works specifically on issues related to the economic development of the region and the biological sustainability of the Preserve, a strong foundation appears to have been laid. Good pre-existing relationships should contribute to the overall strength and effectiveness of a board.

### **Suggestions for Future Surveys**

The survey tool used for this study is broad and general. It is meant to evaluate stakeholders' opinions on the current problems in the Big Thicket region and the proposed multi-stakeholder board. The research team suggests that a board-creating authority re-structure the attached survey (Appendix C) and send it out to a wider and more varied array of stakeholders to form a more representative sample in order to better gauge opinions of who should be included on the board and which members are most suitable for membership within a board structure.

The title of this report, “Big Thicket National Preserve: Trails to the Future,” was purposefully chosen to emphasize that we believe the future biological sustainability of BTNP can progress down several different paths. In a sense, the Preserve stands at a fork in the road. If stakeholders continue on the status quo path upon which they are currently traveling, Chapters One, Two, and Four provided evidence that the path will narrow and the biological sustainability of BTNP will shrink and perhaps even disappear. And while some stakeholders might find the path of total public ownership of the buffer land around the Preserve appealing, Chapter Five demonstrated that this path is fraught with political and financial obstacles too great to overcome for even the most committed stakeholders.

Hope for maintaining BTNP’s biological sustainability is not lost, however. We are confident that there is another path which stakeholders can choose to take, the multi-stakeholder board path. Admittedly, the path has never been taken before in this particular case and has some obstacles for stakeholders to clear as they travel down it. Yet this report has tried to demonstrate that working to create a multi-stakeholder board offers the most promise for developing and implementing biologically sustainable policy solutions for the Big Thicket region. As shown by the cases described in Appendix D, it has successfully helped with similar situations in the past.

The purpose of the report has been to show both the benefits of a multi-stakeholder board and how to begin creating one. Chapter Three provided a theoretical justification for the creation of multi-stakeholder boards in common-pool resource situations like the one facing BTNP. Chapter Six served as a “how to” guide for the Board’s formation, indicating the numerous phases of creation that will have to occur to bring the Board into existence and some of the questions and challenges that will likely arise in each phase. Chapter Seven complements Chapter Six by delving into a deeper description of internal structural and resource issues the first board members will have to resolve in order for the Board to remain viable and active over time. The survey results discussed in Chapter Eight provided evidence that relevant stakeholders in the Big Thicket region are highly interested in increasing collaboration among actors, and the Board may be an idea to which many of them are receptive. Finally, Appendix A also provides some policy ideas a multi-stakeholder board could pursue in conjunction with its land conservation or land-purchasing work.

We hope this report can serve as a map for stakeholders as they navigate their way through the difficult – albeit potentially rewarding – process of organizing a new institutional form from the grassroots level to help protect BTNP’s biological sustainability. The potential reward offered by this path is clear; creating a Board provides the possibility that the biological sustainability of BTNP will be preserved. The realization of this reward now rests on the shoulders of the many diverse stakeholders in the Big Thicket region and their commitment to working together to ensure that the unique ecology of BTNP – and the local cultural heritage associated with it – is preserved for future generations.

# Appendix A | Complementary Conservation Strategies: A Policy Toolbox

This chapter discusses various types of conservation strategies that can be used for the direct or indirect preservation of the biological integrity of Big Thicket National Preserve (BTNP). These policy strategies can be actions taken by the proposed board, should one be established, or these strategies can be employed by individual interests who desire to aid in the preservation of BTNP. Every policy strategy is a separate action that can be taken to increase preservation, and each method has its advantages and disadvantages, which will be discussed for each policy strategy. These methods can be used alone or in combination with each other.

## **Federal Legislative Options**

The following conservation methods would require Congressional approval, most likely through the passage of legislation. Various interviewees stated that they would prefer that the federal government dealt with the Big Thicket problem and should provide more money to solve BTNP issues.<sup>1</sup> Another said that legislation is ideal because it could give NPS the authority to purchase more land along the Preserve's borders.<sup>2</sup>

### Earmarking Funds

Interviews conducted with Congressional staff members revealed that federal funds have been earmarked, or set-aside, within the Department of the Interior's budget for BTNP.<sup>3</sup> These funds have been designated since the Big Thicket Addition Act was passed in 1993, and the funds are to be used to purchase land within the Preserve's new boundary. Earmarking funds is an advantageous strategy for BTNP because it sets aside funds for the expansion of the Preserve. However, earmarking is simply a guideline technique used by appropriations committees and does not guarantee that funds will ultimately be directed to the earmarked purpose.

### Buying from Willing Sellers

Currently, the only way for BTNP to acquire land is by purchasing land within its Congressionally mandated boundary.<sup>4</sup> A policy strategy that could increase land acquisition would be for Congress to pass legislation allowing BTNP, as well as all other national parks and preserves, to purchase lands from willing sellers that fall outside its boundaries. Such legislation would be advantageous to BTNP because at least two of the timber companies that hold land surrounding BTNP but that does not fall within its current boundaries are willing to sell tracts of land to the Preserve for the purpose of buffer zone preservation.<sup>5</sup>

### Tax Incentives

Should legislation be passed allowing BTNP to purchase land from willing sellers, then providing tax incentives for timber companies may be another strategy to increase preservation. Because acquiring funds for the purchase of these lands is often difficult, timber companies must usually hold their land until BTNP acquires the funds to purchase it.<sup>6</sup> However, as stated above, funds are currently only being earmarked within the Department of the Interior's budget for the

purchase of lands *within* BTNP’s Congressionally mandated boundary. Interviews with timber companies have revealed some timber companies are currently holding land that falls within BTNP’s boundary to be purchased by the Preserve.<sup>7</sup> These timber companies must pay the same tax rate (50 percent) for the lands that are awaiting sale to BTNP as they pay for the lands they are harvesting. Paying the same tax rate on lands that are not being harvested is a deterrent for timber companies to hold their land for BTNP.<sup>8</sup>

Federal legislation could be passed allowing timber companies to claim a “holding land” tax status on lands that are awaiting purchase by BTNP. A suggested tax rate for holding lands is 20 percent, which is the rate paid by real estate investment trusts.<sup>9</sup> This would be a likely incentive for timber companies to hold their lands for eventual purchase by BTNP instead of putting the land on the market, which could protect BTNP from development. Additionally, such legislation would help all domestic timber companies become more competitive with their neighbors to the north and south, which is also an inducement for the timber companies to stay in the Big Thicket region and to not sell their land.

This policy strategy is advantageous for the Preserve because it is likely to increase timber companies’ willingness to hold tracts of their land for eventual purchase by BTNP.

### **State Legislative Options**

The following conservation policy strategies would require approval by the Texas State Legislature, most likely through the passage of legislation.

#### Zoning

The Texas State Legislature could grant zoning authority to counties, in addition to the zoning authority that cities hold, which would allow counties to zone lands that do not fall under municipality jurisdiction. In Texas, “[g]enerally, counties have no zoning authority and have limited authority to regulate land use.”<sup>10</sup> Given zoning power, counties surrounding BTNP could zone the lands immediately bordering the preserve as non-development areas. While these lands could still be purchased for private ownership, the amount and type of development that could occur on the land would be limited based on the zoning restrictions placed on it. This makes this strategy advantageous for the Preserve. On the other hand, it has some difficulties because development would still be occurring to some degree on the land that borders BTNP.

#### Open Space Zoning

One particular type of zoning that would be beneficial to preserving BTNP’s buffer zones is “open space zoning.”<sup>11</sup> This type of zoning “allows the same overall amount of development that is already permitted. The key difference is that this technique requires new construction to be located on only a portion – typically half – of the parcel.”<sup>12</sup> Open space zoning is based on the principle of clustering, which condenses development onto part of the parcel, leaving the remainder of the land as unbuilt open space. This type of zoning has been successfully used by a number of municipalities in New England and the Mid-Atlantic states and by several counties in Virginia, Washington, and California. “The beauty of open space zoning is that it is easy to administer, does not penalize the rural landowner, does not take development potential away from the developer, and is extremely effective in permanently protecting a substantial portion of

every development tract.”<sup>13</sup> This disadvantage of this strategy is that development is still occurring on the land.

### Urban Growth Boundaries

The Texas State Legislature could mandate that cities near the Preserve create urban growth boundaries (UGB). An urban growth boundary is a “line drawn on planning and zoning maps to show where a city is expected to grow.”<sup>14</sup> Lands up to the UGB are considered “urbanized areas” and will eventually be developed. All land falling outside of the boundary will remain rural and will not become part of the city. This strategy to reduce urban sprawl has been used in the state of Oregon for the past 15 years. UGBs have been drawn around each of Oregon’s 241 cities, and the program is considered by state officials to be highly effective.

These boundaries could protect BTNP from the development that comes with urban sprawl, making this an advantageous method for BTNP.

### Impact Fees

Impact fees are another conservation strategy for preserving BTNP. “With a few exceptions, counties lack the authority to charge impact fees.”<sup>15</sup> Because of this, the Texas State Legislature could grant counties to authority to impose impact fees. Impact fees are “charges assessed against newly-developing property that attempt to recover the cost incurred by a local government in providing the public facilities required to serve the new development.”<sup>16</sup> Such fees could be placed on lands surrounding the Preserve, and they would be likely deterrents for developers to construct infrastructure on their land. This makes impact fees an advantageous strategy for BTNP. On the other hand, impact fees tend to increase the cost of housing, which would be seen as a disadvantage by the community.<sup>17</sup>

## **Other Methods**

### Incentive-Based Programs

Incentive-based programs can be powerful and effective tools for environmental stewardship.<sup>18</sup> These programs offer financial, tax, or other types of benefits for participants who voluntarily enroll their property in the program. One such program is the Texas Forest Stewardship Program, which is a federal-state partnership that supports the belief that the right to own land is one of our most important rights.<sup>19</sup> This program states: “The private landowner in East Texas has perhaps the most to gain from our program - and the most to lose if good land and timber management practices are not followed.”<sup>20</sup> After enrolling land in the program, landowners are given a “10-year course of action, outlining step-by-step measures to keep [the] land productive now and in the future.”<sup>21</sup> Natural resource professionals develop this course of action. By enabling landowners to make their land more productive, the Texas Forest Stewardship Program provides for other benefits, such as cleaner air and water, healthy populations of fish and wildlife, quality outdoor recreation, and forest products.

This strategy is advantageous for land that border BTNP. While the Preserve would not actually own this land and its visitors would not have access to this land, these programs keep development from occurring at BTNP’s borders, preserving this undeveloped land as buffer zones. Because the landowner is receiving benefits, it is unlikely that he/she will withdraw the

land from the program, making incentive-based programs a possible long-term solution. The disadvantage to incentive-based programs is that specific incentive-based programs would have to exist for landowners to take advantage.

### Conservation Easements

Many incentive-based programs use conservation easements, although not all conservation easement programs offer incentives for participation. The Nature Conservancy argues that, “Conservation easements are one of the most powerful tools available for the permanent conservation of private lands.”<sup>22</sup> “A conservation easement is a restriction landowners voluntarily place on specified use of their property to protect natural, productive or cultural features.”<sup>23</sup> It is a signed legal document between the landowner and the easement holder, which may be a government agency or a nonprofit organization. While the landowner retains legal ownership of the property, there are restrictions agreed upon for its use by the owner and the holder. Often restrictions include commercial development or residential subdivisions.<sup>24</sup> Easements could guarantee that the land will be protected from development to remain buffer zones for the Preserve. Conservation easements have been successfully used to buffer Yellowstone, Canyonlands, Shenandoah, and Glacier National Parks.<sup>25</sup>

The advantage of conservation easements is they restrict development on land at the consent of the landowner. A disadvantage of easements is that landowners can withdraw their land from the easement at the end of the term, which would no longer hold restrictions on development.

### Forest Legacy Program

The Forest Legacy Program (FLP) is a federal program that partners with states to support state efforts to protect environmentally sensitive forestlands.<sup>26</sup> This program allows the U.S. Forest Service to work with state forestry agents to provide incentives to private landowners through the use of conservation easements and other methods.<sup>27</sup> This program is voluntary for landowners, making it an advantageous method of preservation for BTNP. The disadvantage of this strategy is the involvement of the Forest Service and the implications this might have for NPS.

### Land Trusts

“Land trusts are local, regional, or statewide nonprofit conservation organizations directed involved in helping protect natural, scenic, recreational, agricultural, historic, or cultural property.”<sup>28</sup> Currently in the United States, there are more than 1,200 nonprofit land trusts.<sup>29</sup> These organizations protect land through donation and purchase of land, working with landowners who wish to sell or donate conservation easements, and by acquiring land outright to maintain as open space. These organizations work through these methods to protect open space and undeveloped land. Partnering with a land trust organization would be advantageous for BTNP because the land trust could work to keep lands bordering the Preserve as open space. Another advantage is that landowners can receive significant tax benefits based on the value of the land donated or easement.<sup>30</sup> A disadvantage of this strategy is that landowners can withdraw their land from the program if the land is bought outright, meaning the land would no longer hold restrictions on development.



### Conservation Banks

“A conservation bank is a parcel, or series of parcels, of habitat owned by a private party or public agency and managed for its natural resource value.”<sup>31</sup> These banks are pre-approved sites in areas that regional planning designates as open space.<sup>32</sup> “These banks sell conservation credits, not simply acres. Generally, all the credits in the bank have equal habitat value. Each credit sold represents mitigated habitat, a management plan, and a prorated portion of the endowment account that will fund management in perpetuity. A developer needing mitigation can purchase a credit from a bank...”<sup>33</sup> This strategy is advantageous to the Preserve because of the likely expanse of development around its border in future years. Such a bank could be established in a strategic location around BTNP to remain as buffer zones. The disadvantage of this strategy is it is based on regional planning guidelines, of which do not exist in most areas surrounding BTNP. Also, determining appropriate areas to preserve as habitat is difficult and complex.

### **Increasing Tourism**

Tourism could certainly benefit the Preserve with a mixed bag of opportunity and few costs. Increasing interest in the Preserve gives BTNP leverage to secure more funding and the ability to spread information about the area without advertising. On one hand, “The ‘love it to death effect’ probably won’t happen in that area if tourism ever takes off,” an Austin source noted. But on the other hand, “The visitor center is key to the tourism in the area. Tourism is becoming a big topic as an industry to replace the ones that are leaving,” said another one of our interviewees.

### Publicize

An increase in annual visitation to BTNP could aid preservation because it is likely that the more visitors who utilize the Preserve, the more people will become concerned about a national treasure that could be lost. One plan to increase visitation is to publicize unique and tourist-attracting features of the Preserve in order to entice people to visit. Although the Preserve is not allowed to advertise because it is a federal entity, other organizations, such as the Big Thicket Association and non-profit organizations, could be contacted to publicize on behalf of the Preserve. An example of this would be for an organization to publicize tourist attractions in the Big Thicket region of which BTNP could be listed.

This method is advantageous for BTNP because its visitation could increase. The disadvantage of this method is the possible effect that increased human traffic could have on the biological integrity of the Preserve.

### Biological Survey

BTNP could update its list of endangered species, threatened species, and species of concern, which was last updated in May 1998. This can be accomplished by conducting a biological survey of all flora and fauna species that exist within BTNP. The Big Thicket region is called “America’s Ark” by biologists,<sup>34</sup> and BTNP could capitalize on this characteristic. A biological survey would reveal all species that would be considered “unique” because of the endangered species, threatened species, or species of concern classifications. Once the list is updated, BTNP

could choose several endangered or threatened species for which visitors could associate with BTNP.

An fitting example of visitors associating a particular species with the Preserve is with the recreation of birding. Birding is second only to gardening as the nation's number one outdoor activity,<sup>35</sup> and thousands of birders come to the Texas coast every spring for the migration season.<sup>36</sup> BTNP could take advantage of publicizing its unique bird species. In their "Big Thicket Region Strategic Plan for Nature Tourism," Fermata Incorporated recommends that BTNP adopt the Pileated Woodpecker as an icon for its Turkey Creek Trail.<sup>37</sup> Fermata Incorporated also recommends this trail because of its abundance of pitcher plants.<sup>38</sup> Other such bird and plant species could be adopted by certain trails and areas of the Preserve and then publicized to attract tourists.

This method is advantageous to BTNP because it could increase visitation. The disadvantage of this method is that BTNP would have to arrange for the biological survey to be conducted, which could financially cost the Preserve. This cost could be prevented, however, if BTNP partners with a state university to conduct the biological survey for the Preserve.

#### "Trail Riders" Trails

Several methods for increasing visitation of BTNP and its surrounding region were revealed during interviews. One of these methods is for BTNP to construct a "trail rider's" trail within the Preserve that would allow for horses and wagons. Trail riders are individuals who enjoy riding horses on trails, often pulling a wagon. According to the interviewee, this recreation is popular with many people in the Big Thicket region, and attracting local tourism to the Preserve is just as important as attracting tourism from outside the region.

This method would be very advantageous to BTNP, assuming that trail riding is popular in East Texas. The disadvantage to this method is the possible effect increased human traffic could have on biological integrity and may be hard on trails.

#### Skywalk Trail

Another idea revealed in an interview is to construct a skywalk in the trees of BTNP. This idea, in particular, would be a unique feature to the Preserve that could be publicized to increase tourism. It is advantageous to the Preserve because it would likely increase tourism and would give the Preserve a feature that the public could associate with BTNP. However, this method could be a disadvantage to BTNP because it would likely cost in the millions of dollars, as indicated by a NPS employee.

#### Bike Trail

Another idea is to construct a bike trail between Hardin and Tyler Counties that would travel through part of BTNP. Such a trail would draw tourists to the Preserve and Hardin and Tyler Counties. This is advantageous to BTNP because it would increase visitation. The disadvantage to this method is the possible effect that increased human traffic could have on the Preserve's biological integrity.

## Conclusion

This chapter has outlined some conventional and innovative policy strategies that can be pursued by the Board to complement its work to preserve the biological sustainability of BTNP.

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<sup>1</sup> All interviews were conducted under agreements of confidentiality. Therefore, no quote or comment is attributed to the speaker.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> House Research Organization, Texas House of Representatives. "Do Counties Need New Powers to Cope with Urban Sprawl?" 6 November 2002. 5.

<sup>11</sup> Arendt, R. 1992. "'Open Space' Zoning: What It Is and Why It Works." *Planning Commissioners Journal* 7 (July/August).

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Oregon Department of Land Conservation and Development. "What is an Urban Growth Boundary." Website. <<http://darkwing.uoregon.edu/~pppm/landuse/UGB.html>>

<sup>15</sup> House Research Organization.

<sup>16</sup> Wisconsin Realtors Association. "Impact Fees." Web site <[http://www.wra.org/Government?Land\\_Use/impact\\_fees/default.htm](http://www.wra.org/Government?Land_Use/impact_fees/default.htm)>

<sup>17</sup> Ibid.

<sup>18</sup> Sand County Foundation. "Proven Conservation Tools." Web site <[http://www.sandcounty.ne/toolbox\\_inc.asp](http://www.sandcounty.ne/toolbox_inc.asp)>

<sup>19</sup> Texas Forest Service. "Texas Forest Stewardship Program." Web site <<http://fxforests-service.tamu.edu/shared/article.asp>>

<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

<sup>22</sup> The Nature Conservancy. "Conservation Easements." Web site <<http://www.tnc.org/aboutus/howwework/conservationmethods/privatelands/conservationeasements.html>>

<sup>23</sup> Texas Parks and Wildlife. 2000. "Conservation Easements: A Guide for Texas Landowners." 2.

<sup>24</sup> The Nature Conservancy.

<sup>25</sup> Ibid.

<sup>26</sup> USDA Forest Service. "Forest Legacy Program." Web site <<http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml>>

<sup>27</sup> Ibid.

<sup>28</sup> "Creating Land Trusts: Help Conserve Our Land and Natural Resources." Web site <<http://www.possibility.com/LandTrust/>>

<sup>29</sup> Land Trust Alliance. "About Land Trusts." Web site <<http://www.lta.org/aboutlt/index.html>>

<sup>30</sup> "Creating Land Trusts: Help Conserve Our Land and Natural Resources."

<sup>31</sup> Sand County Foundation.

<sup>32</sup> McCollum, Michael. 1997. "Conservation Banks: Regional Planning's Newest Tool." *Linkages* (Fall).

<sup>33</sup> Ibid.

<sup>34</sup> Fermata Inc. 2001. "Big Thicket Region Strategic Plan for Nature Tourism." 7.

<sup>35</sup> Ibid, 11.

<sup>36</sup> Ibid, 5.

<sup>37</sup> Ibid, 16.

<sup>38</sup> Ibid.

## Appendix B

## List of Stakeholders

### *Private sector/Business*

Beaumont Enterprise  
Beaumont Examiner  
Blackstone Minerals, Inc.  
British Petroleum  
Chevron Phillips Chemical Co., LP  
Cobra Oil and Gas Corporation  
Comstock Oil and Gas, Inc.  
DSTJ Corporation  
East Texas Oil Company  
Entergy Corporation  
Ergon Exploration, Inc.  
Exxon  
HS Resources, Inc.  
International Paper  
KBMT TV 12 (ABC) in Beaumont  
KBTW TV 4 (NBC) in Beaumont  
KFDM TV 6 (CBS) in Beaumont  
KITU TV 34 (IND) in Beaumont  
Louisiana-Pacific Corporation  
Merit Energy Company  
Molpus Woodlands Group  
Pure Resources, Inc. (a subsidiary of Unocal Corporation)  
Radco Operations  
Samson Lone Star LP  
Suemaur Exploration and Production, LLC  
Temple-Inland Incorporated  
Unit Petroleum Company

### *Civic/community*

Alabama-Coushatta Tribe of Texas  
Beaumont Chamber of Commerce  
Beaumont Convention and Visitors Bureau  
Deep East Texas Regional Planning Commission  
Hardin County Commissioners Court Partnership of Southeast Texas (POST)  
Kirbyville Chamber of Commerce  
Kountze Chamber of Commerce  
Kountze Economic Development Corporation  
Liberty/Dayton Chamber of Commerce  
Lumberton Chamber of Commerce  
Nederland Chamber of Commerce & Tourist Bureau

Newton County Chamber of Commerce  
Orange Chamber of Commerce  
Port Arthur Convention and Visitor's Bureau  
Silsbee Chamber of Commerce  
South East Texas Regional Planning Commission  
Vidor Chamber of Commerce

*Nonprofit/conservation*

Big Thicket Association  
Big Thicket National Heritage Trust  
Big Thicket Science Conference  
Hardin County Historical Commission  
Homebuilders Association of Southeast Texas  
Houston Wilderness  
National and Texas Audubon Societies  
National Parks Conservation Association  
Native Plant Society of Texas  
Nature Serve  
North American Mycological Association  
Partnership of SE Texas  
Sierra Club  
Texas Action Network (TexAN)  
Texas Coalition for Conservation  
The Conservation Fund  
The Nature Conservancy (Texas and Louisiana Chapters)  
Trust for Public Land

*City Government*

Beaumont  
Colmesneil  
Houston  
Jasper  
Kountze  
Lumberton  
Newton  
Orange  
Pinehurst  
Port Arthur  
Silsbee  
Sour Lake  
Tyler  
West Orange  
Woodville

*County Government*

Angelina

Hardin  
Houston  
Jasper  
Jefferson  
Nacogdoches  
Newton  
Orange  
Polk  
Sabine  
San Augustine  
San Jacinto  
Shelby  
Trinity  
Tyler

*State Government*

Clean Rivers Program  
General Land Office  
House of Representatives  
Lower Neches Valley Authority  
Office of Rural Community Affairs  
Office of the Comptroller of Public Accounts  
Railroad Commission of Texas  
State Historic Preservation Office  
State Preservation Board  
State Soil and Water Conservation Board  
Texas Commission on Environmental Quality  
Texas Department of Agriculture  
Texas Department of Economic Development  
Texas Department of Transportation  
Texas Forest Trails  
Texas Historical Commission  
Texas Interagency Coordination Center (Texas A&M University)  
Texas Parks and Wildlife Department  
Texas Real Estate Commission  
Texas State Legislature  
Texas Water Development Board

*Federal government*

Army Corps of Engineers  
Federal Highway Administration  
National Park Service  
National Wildfire Coordination Group  
U. S. Department of Agriculture  
U. S. Department of Agriculture Forest Service  
U. S. Department of Agriculture Southern Research Station

U.S. Congress  
U.S. Department of the Interior  
U.S. Environmental Protection Agency  
U.S. Fish and Wildlife Services

**Educational community**

Harvard University  
Lamar University  
Lyndon B. Johnson School of Public Affairs, University of Texas  
Rice University  
Stephen F. Austin State University  
Tarleton State University  
Texas A&M  
Texas Christian University  
University of Idaho  
University of North Texas  
University of Texas  
Vanderbilt University  
William Marsh Rice University

## **Appendix C**

# **Survey of Questionnaire and Results**









1. The research team is studying the feasibility of creating a multi-stakeholder board to increase collaboration among interest groups concerned with land conservation in the Big Thicket region. In general, would you support or oppose such a board?

		Response Percent	Response Total
<b>Strongly support</b>		<b>61.3%</b>	<b>19</b>
Support		25.8%	8
Oppose		3.2%	1
Strongly Oppose		3.2%	1
Don't Know		6.5%	2
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			1

2. On a scale of 0 to 10, with 0 being not a problem at all and 10 being an extremely serious problem, how would you rank the problem of maintaining biological sustainability in and around the Big Thicket National Preserve?

		Response Percent	Response Total
0		0%	0
1		3.2%	1
2		3.2%	1
3		0%	0
4		0%	0
5		6.5%	2
6		0%	0
7		12.9%	4
8		22.6%	7
9		9.7%	3
<b>10</b>		<b>25.8%</b>	<b>8</b>
No opinion		16.1%	5
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			1

3. On a scale of 0 to 10, with 0 being not important at all and 10 being extremely important, how important do you think economic development issues are to the Big Thicket region?

		<b>Response Percent</b>	<b>Response Total</b>
0		0%	0
1		0%	0
2		0%	0
3		0%	0
4		0%	0
5		3.2%	1
6		9.7%	3
7		6.5%	2
8		9.7%	3
9		22.6%	7
<b>10</b>		<b>48.4%</b>	<b>15</b>
No opinion		0%	0
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			1

4. On a scale of 0 to 10, with 0 being not important at all and 10 being extremely important, how important are economic development issues in the Big Thicket region to your employer or the organization you are involved with?

		<b>Response Percent</b>	<b>Response Total</b>
0		6.2%	2
1		6.2%	2
2		0%	0
3		0%	0
4		0%	0
5		18.8%	6
6		3.1%	1
7		6.2%	2
8		9.4%	3
9		18.8%	6
<b>10</b>		<b>28.1%</b>	<b>9</b>
No opinion		3.1%	1
		<b>Total Respondents</b>	<b>32</b>
		(skipped this question)	0

5. On a scale of 0 to 10, with 0 being not important at all and 10 being extremely important, how important do you think land conservation issues are to the Big Thicket region?


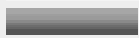



		<b>Response</b>	<b>Response</b>
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		Percent	Total
0		0%	0
1		0%	0
2		0%	0
3		0%	0
4		0%	0
5		6.7%	2
6		6.7%	2
7		3.3%	1
8		23.3%	7
9		10%	3
<b>10</b>		<b>43.3%</b>	<b>13</b>
No opinion		6.7%	2
<b>Total Respondents</b>			<b>30</b>
(skipped this question)			1

6. On a scale of 0 to 10, with 0 being not important at all and 10 being extremely important, how important are land conservation issues in the Big Thicket region to your employer or the organization you are involved with?

		<b>Response Percent</b>	<b>Response Total</b>
0		3.2%	1
1		3.2%	1
2		0%	0
3		6.5%	2
4		0%	0
5		12.9%	4
6		6.5%	2
7		9.7%	3
8		12.9%	4
<b>9</b>		<b>19.4%</b>	<b>6</b>
<b>10</b>		<b>19.4%</b>	<b>6</b>
No opinion		6.5%	2
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0

7. Compared to economic development policy issues, what priority do you place on land conservation for future generations in Texas?



		<b>Response Percent</b>	<b>Response Total</b>
Much higher priority on land conservation than economic development		25.8%	8
Slightly higher priority on land conservation than economic development		19.4%	6
<b>Same priority on land conservation and economic development</b>		<b>38.7%</b>	<b>12</b>
Slightly lower priority on land conservation than economic development		6.5%	2
Much lower priority on land conservation than economic development		9.7%	3
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0


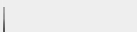
8. Our research team is studying the possibility of creating a multi-stakeholder board that would be charged with addressing land conservation issues in the Big Thicket region. Please rank each of the following multi-stakeholder board designs on a scale of 1 to 5, with 1 being your most preferred board type and 5 being your least preferred board type.

	1	2	3	4	5	Response Average
<p><b>Voluntary Advisory Land-Use Board:</b> a voluntary multi-stakeholder board - comprised of business, political, community, and conservation members in the Big Thicket region - that works together to identify priority land conservation areas and willing sellers in the Big Thicket region and makes non-binding advisory purchasing and conservation recommendations to local, state and federal government entities and nonprofit organizations.</p>	27% (6)	18% (4)	27% (6)	23% (5)	5% (1)	2.59
<p><b>Government-funded Advisory Land-Use Board:</b> a government-funded multi-stakeholder board – comprised of business, political, community, and conservation members connected to the Big Thicket region – that works together to identify priority land conservation areas and willing sellers in the Big Thicket region and makes non-binding advisory purchasing/conservation recommendations to the local, state and federal government entities and nonprofit organizations.</p>	19% (4)	14% (3)	19% (4)	38% (8)	10% (2)	3.05
<p><b>Land Purchasing Board:</b> a non-governmental, voluntary multi-stakeholder board – comprised of business, political, community, and conservation members connected to the Big Thicket region – that works to identify priority land conservation areas and pools members’ financial resources to purchase available land for conservation from willing sellers in these priority areas. This board would also seek additional funding to buy land through donations and grants.</p>	19% (5)	42% (11)	15% (4)	15% (4)	8% (2)	2.50
<p><b>Planning and Land-Use Board:</b> a state-sanctioned and government funded multi-stakeholder board – comprised of business, political, community, and conservation members connected to the Big Thicket region – that possesses regulatory authority to limit certain land uses near Big Thicket National Preserve.</p>	30% (8)	15% (4)	22% (6)	19% (5)	15% (4)	2.74
<p><b>No Board:</b> no board is created and land conservation issues are handled in the same manner as they are currently handled.</p>	19% (5)	4% (1)	4% (1)	12% (3)	62% (16)	3.92
<b>Total Respondents</b>						<b>31</b>

(skipped this question)	1
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9. In two or three sentences, please describe why you most prefer the board design you ranked as number one in the previous question.	
<b>Total Respondents</b>	<b>25</b>
(skipped this question)	7

10. Do you feel increased collaboration between different interest groups concerned with land use would benefit Big Thicket National Preserve?			
		<b>Response Percent</b>	<b>Response Total</b>
<b>Yes</b>		<b>90.3%</b>	<b>28</b>
<b>No</b>		9.7%	3
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0





11. Do you feel increased collaboration between different interest groups concerned with land use would benefit the Big Thicket region more generally?			
		<b>Response Percent</b>	<b>Response Total</b>
<b>Yes</b>		<b>90.3%</b>	<b>28</b>
<b>No</b>		9.7%	3
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0







12. If a multi-stakeholder board was created, what type of funding structure do you believe would make it the most sustainable over time?

		Response Percent	Response Total
Full funding from private donations and member group contributions		22.6%	7
<b>Mix of private and government funding</b>		<b>67.7%</b>	<b>21</b>
Full funding from the government		9.7%	3
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0

13. What funding strategy would you personally prefer for a multi-stakeholder board?

		Response Percent	Response Total
Most/all funding from private donations and member group contributions		22.6%	7
<b>Mix of private and government funding</b>		<b>64.5%</b>	<b>20</b>
Most/all funding from local, state, and/or the federal government		6.5%	2
No preference		6.5%	2
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0

14. What funding strategy do you believe your organization might prefer for a multi-stakeholder board?

		Response Percent	Response Total
<b>Most/all funding from private donations and member group contributions</b>		<b>38.7%</b>	<b>12</b>
<b>Mix of private and government funding</b>		<b>38.7%</b>	<b>12</b>
Most/all funding from local, state, and/or the federal government		6.5%	2
No preference		16.1%	5
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0

15. Do you think your organization would be more/same/less willing to provide some funding to a multi-stakeholder board if there was a representative from your group on the board?

		Response Percent	Response Total
<b>More willing</b>		<b>35.5%</b>	<b>11</b>
Same willingness		29%	9
Less willing		6.5%	2
My organization does not have the authority to provide any funding		29%	9
<b>Total Respondents</b>			<b>31</b>
(skipped this question)			0

16. On a scale of 0 to 10, with 0 being very unlikely and 10 being very likely, how likely do you think your organization would be to provide financial funding to the following types of Big Thicket multi-stakeholder boards? Some organizations are prohibited by law to contribute to the kind of board we are considering. If that is the case for your organization, please use the "No authority to provide funding."

	Very Unlikely 0	1	2	3	4	5	6	7	8	9	Very Likely 10	Don't Know/ No Opinion	No authority to provide funding	Response Average
Voluntary Advisory	13% (4)	10% (3)	3% (1)	0% (0)	7% (2)	13% (4)	3% (1)	3% (1)	7% (2)	0% (0)	0% (0)	7% (2)	<b>33% (10)</b>	<b>7.80</b>
Land-Use Board	14% (4)	3% (1)	3% (1)	0% (0)	0% (0)	21% (6)	3% (1)	7% (2)	7% (2)	0% (0)	0% (0)	14% (4)	<b>28% (8)</b>	<b>8.21</b>
Land Purchasing Board	14% (4)	7% (2)	7% (2)	3% (1)	3% (1)	10% (3)	0% (0)	3% (1)	7% (2)	0% (0)	0% (0)	17% (5)	<b>28% (8)</b>	<b>7.97</b>
Government-Funded Advisory Land-Use Board	10% (3)	3% (1)	7% (2)	0% (0)	3% (1)	10% (3)	10% (3)	10% (3)	3% (1)	7% (2)	0% (0)	7% (2)	<b>28% (8)</b>	<b>8.14</b>
Regulatory Planning and Land-Use Board	14% (4)	10% (3)	3% (1)	3% (1)	7% (2)	0% (0)	14% (4)	0% (0)	3% (1)	3% (1)	0% (0)	14% (4)	<b>28% (8)</b>	<b>7.79</b>
<b>Total Respondents</b>													<b>30</b>	
(skipped this question)													2	

17. On a scale of 0 to 10, with 0 being very unlikely and 10 being very likely, how likely do you think your organization would be to provide resources to the following types of Big Thicket multi-stakeholder boards? Examples of resources include: providing meeting locations, technology, expert consulting, supplies, time release for a member of your organization to serve as a board member, etc.

	<b>Very Unlikely 0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>Very Likely 10</b>	<b>Don't Know/No Opinion</b>	<b>Response Average</b>
Voluntary Advisory	13% (4)	3% (1)	3% (1)	0% (0)	0% (0)	10% (3)	3% (1)	13% (4)	7% (2)	10% (3)	<b>30% (9)</b>	7% (2)	<b>7.90</b>
Land-Use Board	14% (4)	0% (0)	3% (1)	0% (0)	0% (0)	10% (3)	3% (1)	17% (5)	7% (2)	7% (2)	<b>31% (9)</b>	7% (2)	<b>8.03</b>
Land Purchasing Board	14% (4)	0% (0)	3% (1)	0% (0)	0% (0)	14% (4)	3% (1)	17% (5)	7% (2)	7% (2)	<b>28% (8)</b>	7% (2)	<b>7.86</b>
Government-Funded Advisory Land-Use Board	14% (4)	3% (1)	3% (1)	0% (0)	0% (0)	10% (3)	7% (2)	10% (3)	3% (1)	14% (4)	<b>28% (8)</b>	7% (2)	<b>7.79</b>
Regulatory Planning and Land-Use Board	14% (4)	0% (0)	7% (2)	4% (1)	0% (0)	4% (1)	11% (3)	14% (4)	4% (1)	14% (4)	<b>21% (6)</b>	7% (2)	<b>7.57</b>
<b>Total Respondents</b>												<b>30</b>	
(skipped this question)												<b>2</b>	

18. Please check all of the following actors and/or organizations with whom your organization has a working relationship on land-use, conservation, or related policy issues in the past five years:

	<b>Response Percent</b>	<b>Response Total</b>
City governments	76.7%	23
<b>County governments</b>	<b>80%</b>	<b>24</b>
Texas State Legislature	73.3%	22
Chambers of Commerce in the Big Thicket Region	60%	18
Economic Development Corporations	63.3%	19
Southeast Texas Regional Planning Commission (a COG)	63.3%	19



Deep East Texas Regional Planning Commission (a COG)		46.7%	14
Texas Parks and Wildlife		73.3%	22
National Park Service		56.7%	17
US Department of Interior		40%	12
US Environmental Protection Agency		30%	9
Big Thicket Association		46.7%	14
The Nature Conservancy		43.3%	13
Sierra Club		33.3%	10
Texas Action Network (TexAN)		10%	3
Trust for Public Land		16.7%	5
Texas Universities		50%	15
Other		23.3%	7
<b>Total Respondents</b>			<b>30</b>
(skipped this question)			2


19. Please list any specific agencies/organizations in the categories you checked above. For example, list all cities with whom you have a working relationship.	
<b>Total Respondents</b>	<b>16</b>
(skipped this question)	16

20. On a scale of 0 to 10, with 0 being not willing at all and 10 being very willing, how willing would your organization be to work with the following actors/organizations on a multi-stakeholder board?													
	Not Willing 0	1	2	3	4	5	6	7	8	9	Very Willing 10	Don't Know	Response Average
City governments	3% (1)	0% (0)	0% (0)	0% (0)	0% (0)	3% (1)	7% (2)	7% (2)	10% (3)	0% (0)	<b>60% (18)</b>	10% (3)	<b>9.93</b>
County governments	3% (1)	0% (0)	0% (0)	3% (1)	0% (0)	3% (1)	3% (1)	7% (2)	13% (4)	0% (0)	<b>60% (18)</b>	7% (2)	<b>9.73</b>
Texas State Legislature	3% (1)	0% (0)	3% (1)	0% (0)	0% (0)	6% (2)	0% (0)	3% (1)	13% (4)	3% (1)	<b>58% (18)</b>	10% (3)	<b>9.81</b>
Chambers of Commerce	3% (1)	0% (0)	0% (0)	0% (0)	0% (0)	7% (2)	7% (2)	7% (2)	10% (3)	3% (1)	<b>57% (17)</b>	7% (2)	<b>9.70</b>
Economic Development Corporations	3% (1)	0% (0)	0% (0)	3% (1)	0% (0)	3% (1)	3% (1)	7% (2)	17% (5)	3% (1)	<b>50% (15)</b>	10% (3)	<b>9.67</b>
Southeast Texas	3% (1)	0% (0)	3% (1)	0% (0)	3% (1)	3% (1)	3% (1)	0% (0)	14% (4)	3% (1)	<b>59% (17)</b>	7% (2)	<b>9.62</b>

Regional Planning Commission (a COG)													
Deep East Texas Regional Planning Commission (a COG)	7% (2)	0% (0)	0% (0)	0% (0)	0% (0)	4% (1)	4% (1)	4% (1)	14% (4)	4% (1)	<b>54% (15)</b>	11% (3)	<b>9.64</b>
Texas Parks and Wildlife	3% (1)	0% (0)	3% (1)	0% (0)	0% (0)	3% (1)	7% (2)	3% (1)	14% (4)	3% (1)	<b>55% (16)</b>	7% (2)	<b>9.59</b>
National Park Service	4% (1)	0% (0)	4% (1)	0% (0)	0% (0)	0% (0)	4% (1)	4% (1)	8% (2)	4% (1)	<b>60% (15)</b>	12% (3)	<b>9.92</b>
US Department of Interior	7% (2)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	4% (1)	4% (1)	15% (4)	0% (0)	<b>59% (16)</b>	11% (3)	<b>9.81</b>
US Environmental Protection Agency	7% (2)	0% (0)	0% (0)	0% (0)	0% (0)	4% (1)	4% (1)	4% (1)	11% (3)	0% (0)	<b>56% (15)</b>	15% (4)	<b>9.74</b>
Big Thicket Association	4% (1)	4% (1)	0% (0)	0% (0)	0% (0)	0% (0)	4% (1)	4% (1)	8% (2)	4% (1)	<b>62% (16)</b>	12% (3)	<b>9.92</b>
The Nature Conservancy	4% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	4% (1)	12% (3)	8% (2)	4% (1)	<b>56% (14)</b>	12% (3)	<b>10.00</b>
Sierra Club	12% (3)	0% (0)	0% (0)	0% (0)	0% (0)	4% (1)	8% (2)	8% (2)	8% (2)	0% (0)	<b>46% (11)</b>	12% (3)	<b>8.92</b>
Texas Action Network (TexAN)	9% (2)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	9% (2)	9% (2)	4% (1)	0% (0)	<b>52% (12)</b>	17% (4)	<b>9.61</b>
Trust for Public Land	9% (2)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	9% (2)	0% (0)	17% (4)	0% (0)	<b>52% (12)</b>	13% (3)	<b>9.57</b>
Texas Universities	8% (2)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	8% (2)	0% (0)	12% (3)	4% (1)	<b>58% (14)</b>	8% (2)	<b>9.63</b>
Other	10% (2)	0% (0)	0% (0)	0% (0)	0% (0)	5% (1)	10% (2)	0% (0)	10% (2)	10% (2)	<b>43% (9)</b>	14% (3)	<b>9.29</b>
<b>Total Respondents</b>												<b>31</b>	
(skipped this question)												<b>1</b>	

21. How would you characterize your organization (e.g. government, private, advocacy, civic, etc.)?	
<b>Total Respondents</b>	<b>28</b>
(skipped this question)	<b>4</b>

22. Do you consider your residence to be located in the Big Thicket region?			
		Response Percent	Response Total
Yes		55.2%	16
No		44.8%	13
<b>Total Respondents</b>			<b>29</b>
(skipped this question)			2

23. If you were given complete authority over the Big Thicket region, what would you do to address Big Thicket National Preserve's biological sustainability problem?	
	<b>Total Respondents</b> 21
(skipped this question) 11	

24. If you have any additional comments you would like to add, please list them below. We would be interested in any comments or suggestions you might have.

	<b>Total Respondents</b>	<b>8</b>
	(skipped this question)	24

# Appendix D

## Case Studies



## **The Dialogue on Assembled Chemical Weapons Assessment**

### **Policy Problem**

In the past, the Army failed to obtain broad public acceptance for technology used in the disposal of chemical weapons. Non-acceptance has contributed to delays and costs increases in the baseline chemical weapons demilitarization program. The destruction of chemical weapons is not in question; public approval exists for the destruction of the chemical weapons. However, consensus has not been gained on how to dispose of the weapons. Incineration is the most common method of destruction; however, opponents have argued that the Army has consistently attempted to implement incineration before adequate testing and risk assessment were completed and that incineration poses an imminent threat to the public health. In an attempt to combat the public's non-acceptance, the Army has created the Assembled Chemical Weapons Assessment (ACWA) program to increase public acceptance for (or reduce opposition to) chemical weapon disposal.

### **Structure of the Institution**

The Army created the Dialogue on ACWA program to increase public acceptance for chemical weapon disposal. The Dialogue is an institution that includes important segments of the public in the process of identifying and evaluating alternative disposal technologies.<sup>1</sup> The institution creates opportunity for early and direct public involvement in the identification and demonstration of technologies for chemical weapons destruction.

The program, or Dialogue, is managed/facilitated by an outside agency. The Dialogue does not work without the voluntary participation of interested parties. The facilitating agency invites different agencies, interest groups, and members from citizen advisory committees to participate in a "voluntary, interactive consensus-building process that is designed to solve problems."<sup>2</sup> A wide range of perspectives is represented in the Dialogue; groups that strongly advocate and oppose incineration are both in attendance.

### **Evaluation of the Institution**

The ACWA Dialogue process is an attempt of the Army to lower the costs of disposing chemical weapons (a Congressional mandate). By gaining public acceptance, or reducing opposition, the Army can diminish the kinds of conflict, delays, and budget increases that have plagued the incineration program. The Army has an obvious incentive to reduce opposition – the chemical weapons must be destroyed, but public opposition to the destruction technology can hold up disposal. By bringing together all interested groups (including those opposed to chemical weapon disposal) and having a facilitated dialogue with ground rules, the chances of gaining acceptance and reaching a consensus is greater than if no action were taken. However, the final decision of weapon disposal lies with the Army and Congress. The public has the chance to participate in the policy decisions by making recommendations early in the process.

## **Applications to Big Thicket National Preserve**

Concepts from the ACWA Dialogue process can be applied to the BTNP situation. First, the ACWA program includes all interested parties – opposed or not. This should be the case with the BTNP as all interests should be accounted for in order to best capture a “public interest.” Second, the ACWA program provides an example of an organization creating its own collaborative institution in order to address an internal problem. If the Army can create a program to gain acceptance to chemical weapon disposal, the BTNP should be able create a program to gain support for the sustainability of biodiversity.

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<sup>1</sup> National Research Council. 1999. Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons. Washington, DC: National Academy Press.

<sup>2</sup> Ibid.

## **Forest Legacy Program**

### **Policy Problem**

As the population continues to rise, undeveloped land is becoming more and more scarce. In order to meet the demands of consumers, land is constantly being sought after for development. Private landowners are under continuous pressure to convert their lands to some sort of development. At the same time, restrictions on federal and other public lands are increasing. The restrictions on public land places even more pressure on private landowners to produce a wide variety of products from timber to recreational opportunities. Therefore, the Forest Legacy Program (FLP) was created to protect environmentally important forest areas that are threatened by conversion to non-forest uses by purchasing land or interests in land.

### **Structure of the Institution**

The FLP is a partnership between the federal, state, local governments and individual owners of forested lands. This institutional arrangement was mandated by Congress; the Secretary of Agriculture was directed to establish the FLP in cooperation with state, regional and other units of government.<sup>1</sup> The Cooperative Forestry Assistance Act (CFAA) provides authority for the U.S. Secretary of Agriculture to provide financial, technical, educational, and related assistance to States, communities, and private forest landowners.<sup>1</sup> The Secretary has delegated authority to the Under Secretary for Natural Resources and Environment who in turn passed his authority to the Chief of the Forest Service.

Each of the participating parties has different roles that are vital to the FLP. The U.S. Forest Service oversees the budget and project selection for the national project list. The USFS basically administers the program. State lead agencies and federally recognized Indian tribes are responsible for conducting an Assessment of Need (AON) on their respective forests. The AON is a document that contains the assessment of the forests and forest uses, a description of forces that are converting forests to non-forests uses, and describes the eligibility criteria to be a proposed Forest Legacy Area. In other words, the state or Indian tribe is responsible for submitting forest areas within their boundaries to become potential Forest Legacy Areas.

Another party involved in the development of the AON is the State Forest Stewardship Coordinating Committee (SFSCC). The SFSCC makes recommendations to the State lead agency regarding the AON, AON amendments, and the determination of project priorities. The SFSCC is chaired and administered by the State. Membership to the committee is composed of representatives from different agencies, organizations, and individuals representing interests appropriate to benefit the FLP. Finally, individuals play a role in the FLP. Interested and affected landowners present concerns and opinions at public hearings. Also, without private landowner participation, the program would be a failure. Therefore, landowner's voluntary participation is essential to the program.

## **Evaluation of the Institution**

The FLP is an institutional arrangement created by Congress that requires federal and state forest agencies to work with interested organizations and individuals. It is important to note that the institution has legislative backing; it is not a voluntary, collective action board. The decision making authority is divided between certain groups; i.e. the SFSCC (interested organizations, agencies, and individuals recommend potential areas to be acquired), the state (approves and submits AON), and the US Forest Service (project priority list).

Not all organizations that are affected by the Forest Legacy Program are included in the institutional structure. Only organizations and individuals that represent the interests of the Forest Legacy Program are active in the process to acquire the Forest Legacy Areas. The interests of developers, consumers, and local chambers of commerce are ignored. By ignoring these viewpoints, it is possible that the public's interest is not being represented when selecting possible forest lands to enter the Forest Legacy Program.

The power of the SFSCC should also be noted. The SFSCC is the source of participation that includes interested organizations and individuals. However, the SFSCC has no actual power; their only responsibility is to make recommendations to the lead State agency on the Assessment of Need. Even though the committee could feel very strongly about their recommendation, the actual decision on which lands to submit to the federal agency. In other words, all the committee does is acts as a consultant to the state agency.

## **Applications to Big Thicket National Preserve**

The Forest Legacy Program is an example of an institutional arrangement mandated to address the problems associated with common-pool resources. Congress saw a problem and felt strongly enough to create an institutional arrangement to address the situation. The creation of the institution by Congress has some advantages. The state and federal agencies are forced to work with each other. If the institution is strictly voluntary, an agency or organization could walk away from the arrangement at the first sign of hardship. A Congressionally mandated institutional arrangement, such as with the FLP, would have a stronger presence than a voluntary arrangement.

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<sup>1</sup> USDA Forest Service. 2003. "Forest Legacy Program Implementation Guidelines."

## **Soufriere Marine Management Area**

### **Policy Problem**

The town of Soufriere, located on the west coast of the island of St. Lucia in the Caribbean, is bordered by a submarine shelf that supports a diverse and productive reef system.<sup>1</sup> These reefs are some of the healthiest and most diverse on the island. This biological feature provides the main sources of employment and income in Soufriere – fishing. In these reefs live a variety of commercially important fish species. However, in the last three decades, the focus has been on the development of the tourism industry. These reefs that support the fishermen are also attractive to tourists because of their value for snorkeling and diving activities, and because of their aesthetic value for yachters. Now, fishermen must compete with tourists for access to this public resource. This led to conflict among users and over time led to the destruction of the fragile reef habitats.

In 1986, it was decided that this problem must be resolved.<sup>2</sup> Areas dedicated to fishing and marine reserves were established in an attempt to resolve conflicts. Unfortunately, this endeavor was not successful. The conflicts persisted and eventually began to worsen. Stakeholders in these conflicts included government, non-government and community group interests.

### **Structure of the Institution**

In 1992, the Soufriere Development Foundation, Department of Fisheries, and the Caribbean Natural Resource Institute joined in an effort to resolve the conflicts.<sup>3</sup> They began the resolution process by identifying all stakeholders. These groups were informed that consultations were to begin among the various stakeholders for them to express their concerns and make recommendations for resolving the conflicts. These groups were encouraged to meet prior to the consultations to prepare their position for negotiations and bargaining.

A series of consultations took place.<sup>4</sup> These allowed for the multiple and wide-scale stakeholders to voice their interests and opinions. As a result, a “Preliminary Agreement on the Use and Management of Marine and Coastal Resources of the Soufriere Region” was composed. This agreement incorporated all user groups and allowed for various coastal activities to coexist. In 1994, the Cabinet of Ministers approved this agreement, thus the Soufriere Marine Management Area (SMMA) was established.

In 1997, a Technical Advisory Committee was formed to review the institutional arrangements set forth by the preliminary agreement.<sup>5</sup> This committee was comprised of representatives of all stakeholder groups and individuals. This review took place in two phases. The first phase was the review of the SMMA’s strengths and weaknesses. The second phase was the formulation of a more efficient structure for managing the area. Once this process was completed, by-laws were written. These officially established the Soufriere Marine Management Association, which also included a new institutional structure, the Stakeholder Committee. This committee consists of broad representation from stakeholders. An agreement to manage SMMA was also written. The Cabinet of Ministers approved both the by-laws and the agreement.

SMMA is now managed by the Soufriere Marine Management Association, which includes a board of directors and the Stakeholder Committee.<sup>6</sup> The board of directors is comprised of representatives from each group that entered into the agreement. They are as follows:

- Ministry with responsibility for Fisheries
- Ministry with responsibility for Planning, Development, and the Environment.
- Ministry with responsibility for Tourism.
- St. Lucia Air and Sea Ports Authority.
- National Conservation Authority.
- St. Lucia Dive Association.
- St. Lucia Hotel and Tourism Association.
- Soufriere Fishermen's Cooperative.
- Soufriere Regional Development Foundation.
- Soufriere Water Taxi Association.<sup>7</sup>

The Stakeholder Committee serves as an advisory board for the board of directors. As it is comprised of broad membership, it ensures representation for all stakeholders. This committee meets once per quarter at minimum. All major proposals for management and development must go before the Stakeholder Committee for advice.

### **Evaluation of the Program**

The Soufriere Marine Management Area is a zoning system that allows for various user activities while protecting the fragile marine resources.<sup>8</sup> With a governing body in place, conflicts that continue to arise can be negotiated without the degree of conflict that existed before the Soufriere Marine Management Association was established. Since its inception, studies have been conducted which show an increase in fish biomasses and fish biodiversity. This proves that the association, its conflict resolution, and its management of the resource are successful.

### **Applications to Big Thicket National Preserve**

Although this particular example did not occur in the United States, it has many applications for the Big Thicket National Preserve. Like Big Thicket National Preserve, the Soufriere Marine Management Area is a common-pool resource that is utilized by various user groups. The SMMA is a system based on benefit-sharing among stakeholders. Its success depends upon community participation. Although the St. Lucia federal government, the Cabinet of Ministers, was involved in this process, a similar agreement and association could be formed without federal involvement. If the community surrounding the Big Thicket and the stakeholders among it would cooperate with one another, a similar group could be established to resolve conflict among stakeholders and to approve the management and development of the area.

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<sup>1</sup> Government of Saint Lucia. "Soufriere Marine Management Area." Accessed on 6 February 2004. <<http://www.slubiodiv.org/smma.pdf>>

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

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<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

## **Maine's Lobster Fishery**

### **Policy Problem**

Fisheries management is a common-pool resource problem for two main reasons: the resource is finite and the resource, being fish, can and do move around.<sup>1</sup> In the state of Maine, lobster fishing has been exploited for over 100 years. In the 1910s and 1920s, the resource became particularly depleted during to this exploitation. In the 1930s, the Maine Legislature enacted specific rules defining a legal catch size, legal catching methods and legal provisions for egg-bearing female lobsters.

The state legislature of Maine remained in governance over this industry and set all rules pertaining to it until 1996.<sup>2</sup> Under the authority of the state legislature, when a new conservation rule is proposed in the legislature that would affect the lobster industry, public discussions and meetings were held. In most cases, the initial suggestion for a new rule came from the scientific or management communities. Because rules that seemed reasonable for one part of the Maine coast were not always reasonable for another part of the Maine coast, these public discussions and meetings were held. Because of the amount of interests involved, the discussion process could take several years. Once the matter had been discussed, a general consensus would usually form among the lobster fishers. When the legislation was being considered by the legislature, lobster fishers were called to testify about the proposed rule on behalf of themselves and other lobster fishers.

### **Structure of the Institution**

In 1996, a state committee was put together to establish a legal mechanism for lobster fishers to collectively manage the fishery.<sup>3</sup> Lobster management zones were established in which the state gave locally elected councils of lobster fishers the authority to manage their zone. These local councils set the lobster fishing rules for their zone, including rules on equipment and time of fishing.

### **Evaluation of the Program**

Maine lobster fishers seem to be quite happy with the newly established lobster management zone.<sup>4</sup> James Wilson, resource economist at the University of Maine in Orono, stated that the fishers would never give authority back to the state. Apart from giving the fishers authority, this program also solves the problem mentioned above, that a rule may be reasonable for one part of the Maine coast but not reasonable for another part of the Maine coast. Now, the local council of each management zone can determine what works best for their coastal location and the fishermen who depend on this zone for their livelihood. In addition, because the council is elected, each stakeholder has a voice in who should be in authority. Like with all elected officials, the accountability of upcoming elections serves as a check to the council members decision-making and performance.



## Applications to Big Thicket National Preserve

While this case study addresses a common pool resource that determines many peoples' livelihood and incomes, I believe that it still has application to the common pool resource problem surrounding Big Thicket National Preserve. A program similar to the lobster management zones could be established to oversee and could be composed of stakeholders. This is particularly useful for Big Thicket, as opposed to other national parks, because it is composed of nine non-contiguous tracts of land instead of one whole unit. If separate management zones could be established around Big Thicket National Preserve, these zones and their local councils could be tailored to be applicable to the type of citizenry, industry, and development that existed within that zone. This allows each zone and council to be specific for the number of type of interests that exist, allowing a maximum number of stakeholders to be represented and a maximum number of opinions to be heard.

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<sup>1</sup> Jensen, Mari N. 2000. "Common Sense and Common-Pool Resources." *Bioscience* 50: 638-44.

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

## General Plan 2020 – County of San Diego

### Policy Problem

The state of California has mandated that every county possess an updated general plan for its regional area. The general plan serves as “a ‘constitution,’ a basis for rational decisions regarding a city’s or county’s long-term physical development ... expresses the community’s development goals, and embodies public policy relative to the distribution of future land uses, both public and private.”<sup>1</sup> The state requires the plans to be updated every ten years, or sooner when the existing plan becomes out of date and ineffective at meeting the environmental and/or growth needs of the city or county.

The existing general plan for San Diego County was adopted in 1979 and had not been updated for almost twenty years when the new planning process began in August 1998. The new general plan for San Diego is especially important to the county’s future use of land resources, as the county has seen significant population and economic growth over the past twenty years. Before the general plan update began in San Diego, there was growing concern that the area was at risk of becoming victim to Los Angeles-style sprawl land-use, which citizens and government officials alike feared would ruin the beautiful and highly biologically diverse land within the county.

An additional feature of the general plan process, and one that creates a bottom-up structure, is the *Brown Act* in California, which requires public involvement in preparation of the general plan. This statute only requires two public hearings during the process, one held by the planning commission and one by the city council or board of supervisors. But the Governors Office of Planning and Research states that “these minimal public hearing requirements do not constitute what most planners would consider an adequate community participation program for adopting or updating a general plan.”<sup>2</sup> Counties are encouraged to expand the opportunities for community participation.

### Structure of the Institution

The General Plan 2020 document evolves through several different bodies and processes

Public participation from individual communities occurs at the first level of the planning process. During 2001-2002, the Planning Commission decided more public input was needed in creating General Plan 2020. To gather more information and opinions from the public, the county held several open houses for each community under the jurisdiction of the general plan. The first workshop was informational and gave staff a better feel for the community’s character and needs. Staff members would pass around paper to those in attendance, asking them what they liked about their community, what they didn’t like, and what changes they wanted to see. From these initial meetings, the staff developed draft plans (goals and policies) for each community’s land-use. These plans were then submitted for consideration to the general plan committees.

These meetings also provided a forum for staff members to disseminate information to citizens and educate them about the general plan process and land use issues in their community. It is mandated by law that these meetings be well advertised, be held at times and locations that are accessible to all, and all documents must have a translation available to non-English speakers.

County staff members also work with two main committees in order to develop the general plan. The first committee is the steering committee, and it is comprised of twenty-four elected officials from each of the twenty-four communities affected by the general plan. They represent their community's interests, and this committee provides a way to foster dialogue between communities regarding land-use issues, regional goals, policies and the general plan process as a whole. The other committee involved in the formulation of General Plan 2020 is the interest group committee. It is a nineteen-member committee, with eight environmental members, eight building/development members, and three members from professional organizations. The interest group committee has an advisory role in the process. There is no legal requirement to include them, but state documents encourage it. During the process, they do take some time to reach consensus on contentious issues. They often use breakout sessions of five people who argue the issue, discuss various proposals, and report back to the committee. Once the committees have voted, county staff take their recommendations and create a proposal to present to the planning commission, who must approve the plans before they can be submitted to the board of supervisors for final approval.

The decision structure enables the county staff to bring responsible planning ideas to communities and interest groups, spark discussion and facilitate consensus among differing interests, and modify those elements of the general plan that are not technically or politically feasible. The process gives county staff the leverage to expend most of their energy on citizen input and the results of the plan itself. In essence, "the twin emphases on customers and results focuses administrators downward, toward citizens, rather than upward, toward elected officials."<sup>3</sup> Kettl cautions that this trend can undermine the ability of elected officials to assert their authority over bureaucrats, but General Plan 2020 process safeguards against this problem through the approval process. Elected officials do have veto power during the approval stage of planning. The elected board of supervisors and the board-appointed planning commission must approve the general plan before it becomes law.

Additionally, the planning commission has the power to accept all or parts of the proposal and can send unacceptable parts back to individual communities for revision. In one instance, the planning commission told an agricultural community, which is located near a city, that they needed a better balance between smart growth and agricultural land preservation goals. The community had developed a plan that favored agricultural preservation, but the planning commission said they went too far in that direction and had to consider more smart growth measures. After the planning commission accepts the proposals, the board of supervisors must give final approval before General Plan 2020 can be used as a policy document. The board is comprised of five elected officials from different regions of the county.

## **Evaluation of the Institution**

While the members of the county staff all agreed that the process takes longer due to increased public input and participation, they feel the benefits it provides outweigh the costs. In the words of one county planner, there isn't "any other way to do it" if the county truly wants to balance the needs of all citizens and interests.<sup>4</sup>

Furthermore, the bottom-up approach does not assume that all citizens will agree on every aspect of a specific policy. Ostrom believes "it would be foolhardy to assume that to simply bring together people in a room (or a stadium!) to discuss policy formulation and subsequent implementation will find them of one mind...[but] at the very least, institutions can be designed that will promote and protect social discussions."<sup>5</sup> As evidenced by the County of San Diego process, constructive social discussion does occur between opposing groups, and the results are surprisingly productive. Although it does take some time to reach consensus between the environmental and building members of the interest group committee, often requiring break-out sessions, the vast majority of the votes that come out of the committee are close to unanimous.

Despite the extra resources that must be expended to include citizens in the policy-making process, academics like DeLeon and DeLeon argue that it is essential for democracy.<sup>6</sup> For them, "a democratic approach to policy implementation would include reaching back in the policy process framework to include the policy formulation deliberations as a means to help define policy goals by talking with the affected parties well before the policy is adopted by the authorized policy maker."<sup>7</sup>

San Diego's General Plan 2020 policy process accomplishes that goal. It provides opportunities for the public participation at each step of the process, ranging from town hall meetings to public hearings before the board of supervisors. And although public participation has waned a bit as some of the more contentious issues in the plan have been resolved, that too is an indicator that the process is working. It provides the citizens of the county with a large degree of political/policy efficacy; they can easily participate and voice their opinions on issues that are important to them, but they are not coerced to do so through the entire process. And as other scholars have pointed out, "a greater inclusion of citizens' perspectives has, of course, an additional major attribute; in terms of social capital, it begins to counter the widespread perspective that the government and the governed are only occasionally acquainted."<sup>8</sup>

## **Applications to Big Thicket National Preserve**

While the counties in Texas are not given the same level of governance power as counties in California, General Plan 2020 provides useful insight on one way in which the government can actively engage citizens and interest groups in land-use decisions. In the case of the Big Thicket National Preserve, it may be more feasible for the National Park Service or the State of Texas to introduce citizen and interest group input on land decisions made in the Big Thicket region. While final land use decisions are made by elected officials in San Diego County, the General Plan 2020 process gives citizens and interest groups substantive influence in shaping those decisions.

It is important to note that the General Plan 2020 process was initiated by the County of San Diego in an effort to comply with state law. The county committed significant finances to the process that may not be available at the same level for the Big Thicket and devoted staff time to communicating with stakeholders. This government support legitimated the process considerably, encouraging greater citizen and interest group participation. The GP 2020 is a good example of how government agencies can successfully engage stakeholders in decision-making processes.

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<sup>1</sup> *General Plan Guidelines*. 2002. State of California: Governor's Office of Planning and Research.

<sup>2</sup> Ibid.

<sup>3</sup> Kettl, Donald F. 1997. "The Global Revolution in Public Management: Driving Themes, Missing Links," *Journal of Policy Analysis and Management* 16:3: 446-462.

<sup>4</sup> Telephone Interview with Dahvia Locke, Planner I. *General Plan 2020 Staff*. Land Use and Planning: County of San Diego, April 23, 2003.

<sup>5</sup> DeLeon, Peter, and Linda DeLeon. 2002. "Whatever Happened to Policy Implementation? An Alternative Approach." *Journal of Public Administration Research and Theory* 12:4: 467-492.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

## Two Turkish Inshore Fisheries

### Policy Issue

Fishing on the Aegean Sea, using a varied form of techniques, especially trawlers, represented an opportunity for quick economic gain with relatively low overhead costs in two fisheries: Bodrum and the Bay of Izmir. Those incentives lured a large number of fishers into each market, where the annual yield remained approximately the same, but the catch per unit of effort sharply declined over a short amount of time. It is no surprise, then, that overcrowding and rent dissipation form the two main problems noted in this case study.

More specifically, groups of fishers (divided according to fishing techniques) competed to appropriate resources from the same fisheries and sometimes spilled into a neighboring fishery. Diverse forms of harvesting technology made regulating the activities complex. The complexity was intensified by the steady increase in demand for resources (fish) created by an increase in tourism (in Bodrum) or by proximity to a large urban center (Bay of Izmir).

In the Bay of Izmir, fishing cooperatives represented distinct subgroups of fishers. Each group was in conflict with at least one other group, sometimes more. The confusion made coordination nearly impossible. For this reason, no operational rules were established to allocate the fish, to reduce the conflicts, or to limit overcrowding, according to Berkes.<sup>1</sup> A lack of an overarching institutional mechanism for rules and conflict resolution made attempts to address the problem feeble or short lived.

In Bodrum, as Ostrom<sup>2</sup> noted, “The general institutional setting within Turkey could be called ‘benign neglect.’ National legislation required fishers to be licensed, but did not limit the number of licenses.” Rules were not enforced and financing of new trawlers continued, which lead to resource depletion and, subsequently, failure of the governing body to protect the common-pool resource.

### Structure of the Institution

Each fishery had some sort of institution established to manage the natural resource – fish – within their area of authority. Both institutions failed to fully protect the resource, however, for various reasons. Lessons can be derived from both structures.

#### Bodrum

Small cooperatives of fishers attempted to mediate conflicts for some time; however, they never successfully reached a solution that benefited all and harmed none. The institution was made most vulnerable by the complexity of the problem: multiple styles of technology represented by each group exacerbated the varying needs and problems that caused conflict among them.

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<sup>1</sup> Berkes 1986b, 75; as quoted in Ostrom 1996, 145.

<sup>2</sup> Ostrom, Elinor. 1996. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press., 145-6.

### Bay of Izmir

The national legislation of Turkey required fishers to be licensed but did not limit the number of licenses. The ministry of agriculture, which had jurisdiction over the bay, formed the only institution charged with management of the resource. Both were ineffective.

In both cases, efforts to manage the common-pool resource were from the bottom-up and from the top-down:

- The Turkish coast guard enforced rules, keeping trawlers out of the Bay of Izmir. This, however, did not fully address the problem because other fishing techniques were allowed to continue.
- In both areas, “the coast guard, the rural police, and the ministry of the interior were supposed to enforce the rules.”<sup>1</sup>
- Legislation required fishers to be licensed, but the number of licenses was not restricted.
- Efforts had been made to segregate inshore and offshore (trawlers) fisheries, but no agents were employed to enforce the rules.
- Subgroups of fishers banded together to exert influence on each other to protect the common-pool resource.

### **Evaluation of the Institution**

In this case, Ostrom demonstrates the failure of fishers in the fisheries to organize to prevent rent dissipation. She notes that there are multiple causes for this failure:

- The subgroups/cooperatives were large and characterized by a “severe heterogeneity of interests.”<sup>2</sup>
- If rules were established collectively by the subgroups, given the different technologies in use, any rules designed to limit use benefited one subgroup over another.
- Transaction costs were substantial.
- No arenas for low-cost enforceable agreements were available through the government of Turkey (the political regime), making self-organization very costly.
- Top-down rules were not enforced, ignored, or only enforced in certain areas.

### **Applications to Big Thicket National Preserve**

The Big Thicket region can be thought of as a limited resource, comparable with the fisheries in the case study. Developers in the Big Thicket region, like the fishers, have an opportunity to capitalize on quick economic gains with relatively low overhead costs, especially considering the low price of land in the region.

The Big Thicket is unique in that it is diverse. The Preserve itself is composed of varied environments in relatively close proximity. Similarly, stakeholders’ needs are wide-ranging: the need for economic stimulus in a depressed area conflicts with the necessity of protecting the Preserve from development and fragmentation. For this reason, stakeholders’ interests are not only diverse, they are in conflict.

Again, like the fisheries, an overarching institutional mechanism for rules and conflict resolution concerning the Preserve seems necessary if the complexity of the problem is to be addressed fully. An un-enforced/unsupported top-down method may fail, especially in a region where people are known for self sufficiency and a strong commitment to private property rights. Likewise, a bottom-up effort may fail if stakeholders are not given an arena for conflict-resolution and enforceable agreements.

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<sup>1</sup> Ibid., 146.

<sup>2</sup> Ibid., 146.



## **Irrigation Solutions: El Paso County Water Improvement District No. 1**

### **Policy Issue**

Irrigation is necessary to raise crops in regions of Texas where normal rainfall (8 inches per year<sup>1</sup>) is insufficient to maintain optimal ground moisture. The El Paso County Water Improvement District No. 1 shares water from the Rio Grande River with a corresponding county in Mexico. Therefore, coupled with the need for a common resource are complexities within the district (small versus large farms) and from outside the district (international relations). For this reason, common-pool resource solutions are greatly needed.

### **History of the Irrigation District**

The El Paso Valley has a history of irrigation<sup>2</sup> dating back to the 1800s, which increased rapidly after the mid-1800s during colonization and development. Due to the increased demand for water, a number of private irrigation companies were established, laying the foundation for the water district. Several acts passed by Congress<sup>3</sup> encouraged water project development, the construction of the Elephant Butte Dam, and the subsequent impounding of floodwaters for irrigation purposes in southern New Mexico and west Texas. Furthermore, the Treaty of 1906 with the Republic of Mexico obligated the United States to deliver water to Mexico after the completion of Elephant Butte Dam, adding to the complexity of the irrigation system.

In 1980, the El Paso County Water Improvement District No. 1 accepted ownership and took over the operation and maintenance responsibilities of the Rio Grande Project, which had been operated and maintained by the United States Bureau of Reclamation. Since that time, the District has made water conservation a main priority. The District now manages over 32,727 accounts, whether the land is subdivided, used for small gardening plots or is still in use as farmland. Today, the El Paso County Water Improvement District No. 1. provides water for 69,010 acres of water right lands, which necessitates the existence of over 350 miles of canals and laterals in the distribution system, over 269 miles in the drainage system, and more than 2,205 turnouts, irrigating a variety of native and non-native crops and gardens.

### **Recent Developments**

Recently, non-farmers made news in the *El Paso Times* when they filed to run for the board. Challengers and reformists cited the need for representation of small-tract owners (who irrigate less than three acres) against what they saw as an over-representation of big farms on the board. They also commented about improving relations between the district and the city, “which are in a legal dispute over the steep price increases for water the district sells to El Paso<sup>4</sup>.” Other challengers mentioned the need to ensure that decisions made by the board are “truly good for everyone, particularly for socio-economically disadvantaged water users<sup>5</sup>.” The main motivation to the challengers was their observation that the board as it stands “has been there too long, and it’s not healthy<sup>6</sup>.”

This challenge was revolutionary. In the past, most district elections were cancelled because no one challenged the incumbents; or the interest of voters was demonstrated to be extremely low when an election was held. Notably, three of the challengers were members or recruits of the El Paso Hispanic Farmers Association.

The outcome of the elections resulted in no change of board membership. A subsequent news article from the El Paso Times stated:

“In an election Saturday that drew heavy turnout, which kept officials tallying ballots past 1:30 a.m. Sunday, three longtime incumbents in the El Paso County Water Improvement District No. 1 contest won re-election by wide margins. Johnny Stubbs, George "Bernarr" Spence and Indar Singh will continue as members of the five-member board, which parcels out water to farmers and small-tract owners in the Upper and Lower valleys. It also provides El Paso with about half its drinking water. ‘I think the results of this election show that people trust this board,’ said Jesus "Chuy" Reyes, district interim general manager and a board member. "They're happy with how things have been run<sup>7</sup>.”

However, the El Paso Hispanic Farmers Association might differ. Unfortunately, at the time of this race, the association had only 50 members and seemed to not be “heavily involved<sup>8</sup>” in the election. Perhaps they felt as though they simply could not compete with the larger voting majority.

### **Structure of the Institution**

The district was established under Article XVI, Section 59 of the Texas State Constitution. It is structured as a political subdivision of the State of Texas. For this reason, the Irrigation District has powers that in some ways are similar to those of a county or city government, such as levying taxes against lands lying within the boundaries of the district, which are classified as having water rights.

### **Policies of the District<sup>9</sup>**

- A five-member board of directors governs the irrigation district. The directors are elected by registered voters within the district's boundaries and serve a four-year term. There is no limit to the number of terms a member of the board can hold.
- The board of directors sets board policies at regularly scheduled board meetings.
- Administrative policies are set by the general manager, and enhance board policies.
- Standard operating procedures outline the actual procedures, which allow the district to enact board policies and administrative policies.

### **Goals of the District and the Board<sup>10</sup>**

- Exceeding water user expectations by providing high-quality water and service.
- Maintaining the highest standards of personal and professional integrity in the conduct of our business.
- Treating water users, co-workers, and suppliers with dignity and respect.

- Providing a clean, safe and rewarding work environment that offers continuing opportunities for personal growth of a diverse work group for its employees.
- Preserving and protecting the environment.
- Making a positive social and economic impact on the communities in the District.
- Always pursuing these beliefs and continuously improving.

## **Evaluating the Institution**

Ostrom outlines necessary conditions for a strong, productive board structure (1996, 180, Table 5.2): “design principles and institutional performances:” The District was evaluated using these conditions:

- Clear boundaries and memberships – Yes.

The District does have clear boundaries and memberships, yet it is embroiled in disputes with the City of El Paso over the price of water. It seems that not all stakeholders are members.

- Congruent rules – Yes, and they are enforced.

The rules concern how “all waters in the reservoirs are appropriated for the downstream users of Elephant Butte Irrigation District, El Paso County Water Improvement District No. 1, and the Republic of Mexico.<sup>11</sup>” Conflict exists, however, over water rights and debts between Texas and Mexico.

- Collective-choice arenas – Yes/No.

The “Number One Club” exists for small tract owners, but no information is currently available on the website. Large landowners do not seem to have a forum or collective-choice arena.

- Monitoring – Yes.

The Small Tract Coordinators and Alcalde liaisons serve both monitoring and representation services for small tract owners. Also, General Manager Jesus “Chuy” Reyes is charged with the responsibility of monitoring/enforcing rules and regulations of the district.

The district has a special team, the “River Team,” that consists of three field employees, a water quality specialist, and a supervisor. The River Team's duties are to monitor the flow of water in the Rio Grande. The district then schedules irrigations that maximize water released from Caballo Reservoir. When the water is released, the River Team monitors the water at points along the irrigation system within the District.

- Graduated sanctions – Yes.

“Taxes in the Irrigation District are assessed on a benefit basis, and are calculated by the amount of acreage having water rights. Today, every farm tract’s (2.01 acres and larger)

irrigation is metered and the water user is charged with a specific quantity of water regardless of the number of acres he/she irrigates. Now that water users see that they are charged with the quantity that is metered, they are irrigating the exact number of acres ordered.<sup>12,</sup>

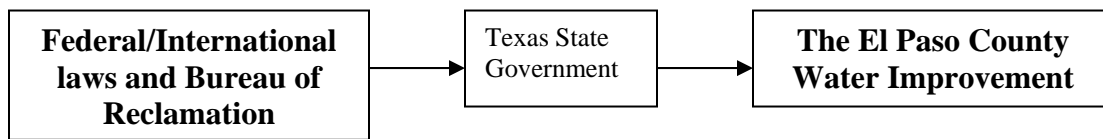
Smaller farm tracts that are not metered have a different set of regulations: “The Irrigation District delivers irrigation water to these small tracts during scheduled irrigations throughout the Irrigation Season. Small tract water users are charged for the full 4.00 acre-foot allotment if they utilize any part of the scheduled irrigations. If the irrigation water is not used at all during the irrigation season, the property owner is charged for the base allotment (taxes) only<sup>13.</sup>”

- Conflict-resolution mechanisms – No/Unsure.

It seems that the district relies on the state and federal court systems, as well as national diplomatic relationships to resolve conflict.

- Recognized rights to organize – Yes.
- Nested units – Yes.

The Irrigation District operates over the Texas Rio Grande Project and is a subset of nested authority:



The true nested unit occurs within the district, where there are two divisions:

1. Small tracts: Small Tract Coordinators (top-down) and Alcalde liaisons (facilitate weaker stakeholders from the bottom-up)
2. Large Farms: Farmers deal directly with the office of the district

- Institutional performance – So far, so good. However, I am unsure as to how the district manages to limit the number of licenses it provides.

### **Applications to Big Thicket National Preserve**

This case study can be applied *structurally* as large and small landowners are concerned. Large landowners would be seen as the timber companies, and smaller landowners would be private citizens. It would seem fitting for the small landowners to have their needs addressed in ways separate from larger landowners, just as in the case of the district. Especially in the region surrounding BTNP, it is important that all stakeholders be given an arena for conflict resolution, rule setting and enforcement.

A common difference between other CPR problems and those of BTNP is the immediate need for daily survival. There is nothing in BTNP that stakeholders seem to need imminently or on a

daily basis. Instead, the Preserve represents a national treasure that holds different values for different stakeholders. For this reason, it has been and will be difficult for stakeholders to truly invest in the issue. In the future, however, water issues could reach into Big Thicket as the demand for water from Houston and other large metropolitan areas increases.

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<sup>1</sup> Data taken from the El Paso County Water Improvement District No. 1. Website:  
<http://www.epcwid1.org/cms/index.php>.

<sup>2</sup> The following historical information and data taken from the El Paso County Water Improvement District No. 1. Website: <http://www.epcwid1.org/cms/index.php>.

<sup>3</sup> The Reclamation Act was passed by the United States Congress on June 17, 1902 to encourage water project development and irrigation in the western states. In 1905, the El Paso Valley Water Users Association was formed to encourage the construction of Elephant Butte Dam 140 miles upstream from El Paso. The Act of February 25, 1905, extended the Reclamation Act to a portion of the State of Texas bordering the Rio Grande.

<sup>4</sup> Crowder, David. "Non-Farmers seek irrigation board jobs." *El Paso Times*.

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*

<sup>7</sup> Hernandez, Michael D. "Incumbents handily re-elected to El Paso County water district." *El Paso Times*.

<sup>8</sup> Crowder, David. "Non-Farmers seek irrigation board jobs." *El Paso Times*.

<sup>9</sup> Policies taken from the El Paso County Water Improvement District No. 1. Website

<sup>10</sup> Goals taken from the El Paso County Water Improvement District No. 1. Website

<sup>11</sup> Information taken from the El Paso County Water Improvement District No. 1. Website

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

## **Portland: Its Urban Growth Boundary and Economic Expansion**

### **Policy Problem**

In the 1970s, Oregon was forward thinking and created land-use planning laws for their state, especially in the city of Portland. Of particular importance was SB100, the land use law, that was approved by the Oregon Legislature in 1973. Cities in Oregon had to create an urban-growth boundary (UGB), in addition to comprehensive plans which “focuses development in the urban core and prevents sprawl onto farm and forest land.”<sup>1</sup>

During the late 1990s Oregon’s business and agricultural sectors were booming. The problem was how to balance the two and remain within the UGB.

### **Structure of the Institution**

The institution created in the Portland-area UGB was the Metro. Metro is a regional government whose is in charge of planning and is ran by elected officials. As the regional government “Metro administers the UGB and establishes the regional planning goals to coordinate land use and transportation for the entire region.”<sup>2</sup> Burton described Metro as having the power to tax and create ordinances, in addition to providing many other services.

All was going well for Metro, however, they had to quickly respond to the economic growth that occurred in the 1990s, which brought with it increases in population. So during the 1990s Metro had to “manage growth and the design of their place – literally to insure that there is a ‘there’ there.”<sup>3</sup>

In order to manage the growth, yet remain focused on the UGB, Metro

“asked each of its 24 cities to determine how much space they had for a 20-year growth period, and what type of pattern would occur.” The cities were required to “discount 20 percent of all vacant and developable land for amenities such as openspaces, stream corridors, steep slopes and parks, and additional land for public facilities such as schools and fire stations.”<sup>4</sup>

Metro also required the cities to look at how growth would affect transportation issues and environmental concerns. In addition, Metro recognized that in order to maintain the open space, they would also need public support, which occurred through a bond.

### **Evaluation of the Institution**

Metro was created by legislation, in addition to being supported by the general population. It has an authoritative role in determining the future of the Portland urban growth boundaries. Its power to tax and create ordinances is essential to maintain its legitimacy.

## **Applications to Big Thicket National Preserve**

Although UGB and zoning are not used in Texas, this is a possibility for the areas of the Big Thicket that have high growth projections. Metro's ability to tax and make ordinances is essential. Perhaps the powers it has could be tied into some sort of county function, but that would reduce the amount of regional protection for the institution.

It is interesting that Metro incorporates transportation issues with growth issues. If such an institution was put in place in the Big Thicket region, this would definitely be needed, especially considering the future expansion of HWY 69.

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<sup>1</sup> Burton, M. 1998. "The City as Commons – Creating a Deliberate Place Through Land Use Planning." Presented at "Crossing Boundaries," the Seventh Annual Conference of the International Association for the Study of Common Property, Vancouver, British Columbia, Canada, June 10-14, 1.

<sup>2</sup> Ibid., 1-2.

<sup>3</sup> Ibid., 2.

<sup>4</sup> Ibid., 2.

## West Virginia Forestry's Assessment of Need

### Policy Problem

West Virginia's forests are threatened due to development and mining. In the past, the state's forests faced many threats, such as logging, agriculture and mining. The case discussed the lumber industry selling off its lands. Many of these lands are being bought by timber investment management organizations and real estate investment trusts.<sup>1</sup> With this in mind, the West Virginia Division of Forestry (DOF) studied the applicability of the Forest Legacy Program for its state.

### Structure of the Institution

The DOF did an assessment of need in regard to the Forest Legacy Program. An assessment of need "documents (1) the need for the Forest Legacy Program in the state by describing the land use changes affecting forests, and (2) how the program will be implemented by describing eligible areas and priorities."<sup>2</sup>

The DOF documented the current situation facing West Virginia's forests. They then documented the current applicable programs that deal with forests. Finally, the DOF discussed the need for the Forest Legacy Program in West Virginia and how it would be implemented. In addition, they included public comments.

Some interesting comments made in the report were:

"Large forest industry land sales have sometimes been accompanied by the separation of some of the low-producing timberland or high conservation value forests in the transaction, to be sold to nonprofit conservation groups for transfer to public ownership. In other situations, the new landowner will separate and sell high-value recreational or development lots to maximize return on the transaction. The land transfers, while too new to be picked up in the trend data compiled by the forest service, will have an impact on long term forest management and sustainability, but those affects remain uncertain at this time."<sup>3</sup>

"A ground-breaking Virginia Department of Forestry study found that the probability of sustainable forest management in an area approaches zero when population density reaches levels more than 150 people per square mile. Probabilities of sustaining active forestry were 25 percent at densities of 70, 50 percent at 45, and 75 percent at 20 people per square mile. (Wear et al. 1996)"<sup>4</sup>

### Evaluation of the Institution

This study was advisory. No institution at the time of the study had been created.



## **Applications to Big Thicket National Preserve**

The situation facing West Virginia and its forest is similar to that of BTNP. Much like West Virginia, the BTNP forest could be potentially lost to development. An assessment of need would probably be ideal for the BTNP, as a means of quantifying the problem at hand. In addition, by doing such a report and distributing it, perhaps the people living in the Big Thicket region would be able to fully grasp the situation.

The assessment of need should be one of the first steps the Big Thicket IAD board does or something that the NPS could do. It would also be interesting to know if the sustainable forestry management probabilities

In addition, it would be interesting to know if the West Virginia Department of Forestry's "probability of sustainable forestry management" could be generalized to other forests, like that of the Big Thicket region.

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<sup>1</sup> USDA and WV Division of Forestry. 2003. Forest Legacy Program: Assessment of Need for the State of West Virginia, 13.

<sup>2</sup> Ibid., 3

<sup>3</sup> Ibid.

<sup>4</sup> Ibid., 39.<sup>1</sup>

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## Appendix E

# Municipal Utility Districts (MUDs) and Special Utility Districts (SUDs)

### **MUDS—Municipal Utility Districts**

There are more than 1,000 MUDs in Texas. MUDs are formed by a majority of property owners in a district first appealing to the Texas Water Commission (TWC). If the TWC approves of the MUD, it will temporarily appoint 5 members to lead the board until an election is held to select permanent board members.

MUDs allow developers to provide basic services, such as water, sewer and drainage, to areas where municipal services are not already in place. Most of their work is contracted out to third parties.

MUDs are continually regulated by TWC, but are authorized to adopt and enforce charges, fees and taxes to provide service and maintain district facilities. MUDS are also legally empowered to engage in conservation, irrigation, electrical generation, firefighting, solid waste collection and disposal, and recreational activities (parks, swimming pools, etc.) Any such activities must be approved by the board and be funded by the district.

Developers have no authority or control over the MUDs board of directors unless they live within the district, at which point their control is equal to that of every other resident.

As recognized political subdivisions of the state, MUDS have to comply with open meetings laws and regulations of the Texas Elections Commission. They are tax exempt, can obtain government grants for capital improvement projects, have a tax base and general funds, and are able to support bond referendum proposals.

### **SUDS—Special Utility Districts**

SUDs can be best understood as a mature Water Supply Corporation. Unincorporated areas often lack a water system, with locals relying on wells or private filtering systems to get their water. If enough residents get together and pool their money they can create a Water Supply Corporation. Think of a WSC as a cooperative of members that buy into the system. It is completely optional to join a WSC. Members pay a fee to join and elect a governing board of directors. This board is then responsible for hiring a general manager to make the water system a reality. Interestingly, SUDS are allowed to acquire land through purchase, gift, grant or eminent domain proceedings.

### Cultural Heritage

The Big Thicket region is rich with resources, but poor in opportunity. It is thick with riparian beauty and a deep history, but few ever share it. Historically, locals grew up in a culture of reliance on Big Thicket for survival and are not interested in “outsiders,” according to an interviewee. These suspicions of outsiders and government that contribute to strongly independent attitudes form a strange mix with local’s dependence on timber industries and the forests for their survival.

According to an “outsider” who has lived in the Big Thicket for more than fifty years, “A large number of people in this county are descendants of people who came from Mississippi in the 1850s. The pioneer spirit is still the same. It’s a good thing that the government kept some [oil and gas] measures about the Preserve and with the [hunting] culture. Hunting leases are a big deal.” Thus, most relationships in the area are social, not business or government-related.

“Oil and timber companies don’t breed an idea of independence. It has molded the thought patterns of generations, folks who are used to shopping at the company store,” stated another interviewee, in contrast to the “pioneer spirit” mentioned above. “Locals have a defeatist attitude about larger picture issues. They aren’t reactionary. There is an identity crisis in Beaumont and the Big Thicket.” Another interviewee said, “Locals look at everything as jobs.”

Inhabitants are not only suspicious of others. “The local communities have these rivalries. They’re not talking to each other,” said an interviewee. Regional conflict still exists today, in the memories of generations and in practice. A local noted, “There’s a deep chasm between Kountze and Silsbee, and we call it Village Creek.”

In contrast, one interviewee from Kountze stated that the Economic Development Corporations of Kountze and Silsbee invested nearly \$200,000 in the Big Thicket visitor’s center. “We value the park. The relationship of Kountze with BTNP belongs to the Chamber. We’re closely related. We do workshops with the parks and schools. The Chamber does a ‘Birding in the Big Thicket’ celebration and ‘The Big Light in the Big Thicket’ that BTNP participates in.”

Finally, Kountze is interested in attracting the BTNP headquarters from Beaumont to Hardin County. They have, so far, experienced some competition from Beaumont. An interviewee countered, “In the past, we’ve undervalued the Preserve. Communities north of here want the headquarters, but Beaumont is the media marketplace.”

To be sure, “new folks” threaten the locals’ sense of community. However, the population in general “doesn’t have a clue [about threats to BTNP]” and “doesn’t really notice what’s going on. If [the threats to BTNP] were communicated correctly and everyone’s motives were

transparent, it might be successful. There are lots of people that don't want the government owning any more land," said some of the interviewees.

Furthermore, interviewees stated that many inhabitants of the Big Thicket region are "hunter/fisher types. People have seen realistic effects of timber companies [clear cutting] and development. Ten years from now they'd want to save it. Most people don't know and don't pay attention. If they were shown they might become involved. However, there must be a balance between environmentalists and property rights. The community doesn't really use the Preserve or parks. [They see it more as a] tourist activity. The community knows that tourist money comes from the Preserve. The community doesn't really go to BTNP. It is just a place around them."

### **Communication**

Communication methods in the Big Thicket region resemble a mode from centuries past: the general store. Most locals get information through word-of-mouth. "There's just not much else in the way of communication in those communities," said an interviewee. Townhall meetings are difficult to arrange because, "[i]t's hard to get word out because of dispersed community. People didn't really participate," noted an interviewee.

A Lumberton local also said that communication "in Lumberton is by word of mouth. For instance, someone became concerned that the apartments being put up were government housing, and the word spread. Next thing you know, people are at city hall asking about the value of their property."

Other forms of communication are limited. Few regional newspapers exist. Most news - even television channels - comes from Beaumont, Port Arthur, and Houston.

## Appendix G

# Stakeholder Opinions on Essential Board Members

*Ideas for the Structure of the Board* (all of the following came from interviews during the course of the Capstone team's research and should be considered exact quotes)

- Elected officials don't want to deal with criticism on how land is used, so the Board must involve all stakeholders, especially landowners.
- The Board should require that local, state, federal folks teaming up and working together for common goal.
- The board should also recognize the role that Temple-Inland and timber companies have played.
- The Board should appeal to other, new landowners to work with the NPS and be good corporate citizens.
- Board should include representatives from county, state, industry, and ecology groups.
- If regulatory authority is included, people not included will be hostile and "bent out of shape."
- In order to get statutory authority for the board, the membership structure needs to be spelled out very specifically. A statute should guarantee seats to specific actors/stakeholders.
- The Board must protect private property rights.
- Favor private solution with private groups purchasing land and setting it aside
- Would oppose any regional body with authority to restrict land use.
- Might be willing to support local planning board if it is clearly supported by the local people, i.e. resolutions of support from county commissioners.
- Also mentioned county commissioners as key stakeholders for a board to work.
- Management of acquired land best done by whichever entity is nearby. Better to acquire large areas than checkerboard pattern.
- Board inclusion can be problematic if too large and not committed to mission. TPWD board made up of lots of developers who don't see need for state park land because they own their own land. This is especially problematic if state run (governor appointed). Best way to avoid this is to go bottom-up style with the board being run by local people with definite interests.
- There needs to be a balance, as far as development goes, to save the Preserve. A person from Kansas would be more likely to give money to save the Preserve than those who live here.