

ECONOMIC IMPACT AND PRESERVATION
A CASE STUDY OF THE BIG THICKET NATIONAL PRESERVE IN EAST TEXAS

A Senior Thesis

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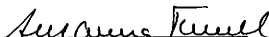
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Preservation and Economic Impact: A Case Study of the Big Thicket National Preserve in East Texas

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The Big Thicket National Preserve provides an excellent back drop to test whether there is a correlation between economic impact and preservation. Conflicts over resources and land use blocked the preservation of the park for over forty years and it is these same issues that remain at the forefront of any political discourse on environmental friendly policies. With the passage of the National Environment Policy Act in 1969, the National Park Service has been required to submit environmental impact statements for any park development. Alternatives produced through these studies have permeated federal regulation and show that the nation has slowly been shifting focus away from government intensive protection to more local interaction. Using this initial information and comparing it with the current statistical data generated by the National Park Service's Money Generational Model, the preservation of the land has been beneficial to the local economic community. The dependent variable is the economic impact of the area while the independent variable is the preservation of the land and its effect. The relationship has been shown to be positive, which means that with the act of preserving the land, the local economy has benefited. By doing a case study, the detail within the study can be used to support the preservation of more land. It also demonstrates that a positive correlation between preservation and the local economy exists.

Introduction

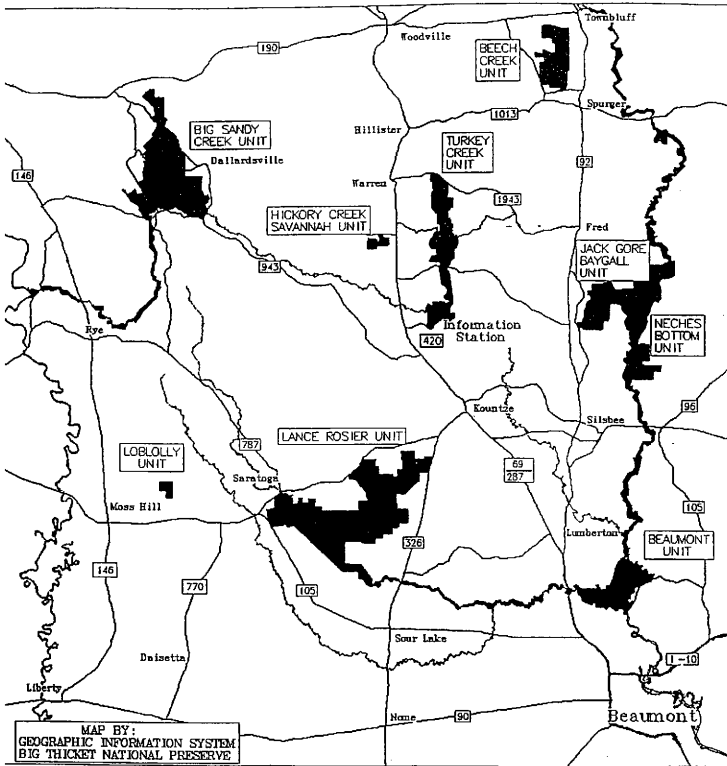
The Big Thicket is a vast area that once encompassed all of east Texas. Today, the name refers to a mere 85,000 acres of land carved from an area that once consisted of over 3.5 million acres. But like other national treasures such as Yosemite or Yellowstone, conservationists early on recognized the importance of this astounding biosphere. East Texas is an area of rich biological diversity where the eastern hardwood forests, the southern coastal wetlands, the western prairies and the arid southwest all converge. The Big Thicket provides an excellent template to test whether environmental protection must come at an economic loss. In the 1970's economic viability became a major concern within the National Park Service. Since then conflicts over resource and land use, combined with legislation mandating economic impact studies, have remained at the forefront of any political discourse on environmentally friendly policies. When this study began, the Big Thicket National Preserve was in the process of acquiring permission to set aside special corridors to connect the existing parcels of land. In effect, the proposal would increase the size of the park. By examining the economic impact that conservation has had on the local community in the past, current administrators will be better informed and more confident in their decisions. Although the proposal has since been approved, the study supports the decision to enhance the area with this corridor land by examining the economic viability of the preserve up to this point. Using a current statistical model and comparing its' data to the original economic impact statement created by the National Park Service, the paper supports the hypothesis that the preserve is actually economically

advantageous to the local community. Specifically, the study supports the growth of the Big Thicket in East Texas, however, on a broader scale, it will support the preservation of land across the United States.

Economic Realities

After a long and tedious process that first began in the 1930's, the Big Thicket was finally preserved in 1974. Public law 93-439 of October 11, 1974 directed the establishment of the Big Thicket Preserve. Approximately 85,000 acres of land was set aside in the form of six distinct preserves (See map 1). In order to preserve the area's distinct biological identity, the overall preserve was created in a fragmented way to allow visitors to experience as many of the different biospheres as possible. Understanding the controversy that surrounded the beginning of the preserve helps to understand the importance of examining the economic viability of the area.

From the early 1900's, logging and oil interests became the main industries in the area. In the beginning, the timber industry practiced clear-cutting techniques that left entire areas with nothing to enhance regrowth. However, just as the lumbermen saw profit, conservationists saw the importance of saving this incredibly diverse land. Thus a controversy was born as both sides attempted to gain momentum in congress. As one conservationist lamented, "as much as they may feel blood kin to the woods and streams that have nourished them for generations, most people who live in the Big Thicket, and in the rest of East Texas, depend for their livelihood on the industries that are destroying them, and so they vote for candidates chosen by big companies" (Gunter, 79). Even



Map 1 Big Thicket National Preserve

though by the time conservationists began working towards a national park the area had been greatly depleted of much of its timber value (Gunter, 35), the lumber industries stepped up their struggle to protect their own interests. Although the park first met with huge resistance from both the local public as well as the local government, residents soon began to support preservation as they saw their backyards being destroyed by environmentally unfriendly actions. In 1970, Beaumont, the largest town near by, held a United States Senate hearing on creating a preserve in the area. Although the keynote speaker reminisced about his youth in East Texas, he quickly moved to basic economic facts to support his position on preserving the park. Senator Yarborough was indeed instrumental in preserving the park but the importance here is pointing out that economic realities were critical in swaying public opinion. "In a recent study sponsored by the National Park Service...the computations made show that national parks contribute as much as \$6.4 billion to the sales of a multitude of firms throughout the nation. From this amount, personal income of \$4,762,530,000 is generated...Travel to the National Park System resulted in \$952 million in taxes for the Federal Government in 1967" (Gunter, 81). The three things that were used as examples in 1970 were sales in businesses such as different service industries, personal income created through jobs, and finally, taxes. These same three things will be the variables that are examined by the current statistical model named the Money Generation Model. By comparing these same variables, the viability of the park is called into question and thus examined. The example of this speech also demonstrates the beginning of the national movement to examine the economic impact of preservation. The book Travel and the National Parks: An Economic Study was released in 1969 and is considered one of the first major economic studies examining the

National Parks. Big business still controlled a huge portion of the public opinion and so the economic feasibility of the park was obviously a huge concern with both the general public as well as congress. In order to reach a compromise, the park was instead made into a preserve with special distinctions that make it an interesting combination of use and conservation within the National Park System.

The area's distinction as a national preserve makes it an interesting combination of conservation and multi-use in the National Park System. The designation as a preserve has halted timber harvesting but activities such as hunting, trapping, and gas and oil exploration have continued. In the 1982 Basic Operations plan released by the National Park Service, managers write that "of all permitted activities within the preserve, the one which could have the greatest impact unless regulated is that of oil and gas exploration and production. Ongoing oil and gas operations, as well as new exploration and development, require plans of operation, environmental assessments, and continual monitoring to assure compliance with regulations and adequate care and maintenance of the resources." The statement refers to the idea that although the land is considered public domain, private enterprises can petition to gain access for profit. In effect, the administration did not acquire the mineral rights to the property when the preserve was created. By law, this means that the federal government, and thus the public, only owns the "upper" portion of the land and not what is held beneath the surface. In recent years, the number of petitions for oil and gas exploration has steadily increased creating a need for a full time position. However, this need remains unmet as the operating budget has stayed the same through time. The managers in 1982 were able to see this potentially unique problem for the preserve however, nothing is being considered to remedy it.

Although this aspect of the park is outside the scope of this project, it is interesting to extrapolate the hypothesis to what this means for the surrounding small towns. Basically, the conclusion that can be drawn is that as more private enterprises enter to explore, more jobs are created and the service industry such as gasoline and fast food receive more outside money. Although the public is not immediately benefitting from the oil and gas exploration, the secondary revenue generated through the workers of the private companies should be kept in mind. As mentioned above, the concept of the oil and gas explorations increasing the productivity in the area is not considered within this project. However, it needs to be mentioned in order to gain a fuller understanding of the diversity and importance of the preserve to the surrounding communities.

Another interesting aspect of the Big Thicket 's Preserve status is that it has been internationally acclaimed. Seven years after the preserve was originally created, UNESCO, an aspect of the United Nations, designated the Big Thicket as an International Biosphere. The designation obligates the area to continue gathering baseline data in the areas of different biological surveys. These collections first began when conservationists accumulated facts and statistics supporting the fledging idea of a park. In addition, specific monitoring programs examining such fundamental items as water quality are required to check progress and stability in order to detect any harmful deterioration of the resource due to management or outside actions. The purpose behind UNESCO's designation is that the International Biosphere's around the world are intended to be case studies on human impact and the environment. By studying an area so widely acclaimed, the results of this study will be extremely applicable to other local or regional parks. The study can also be replicated at other International Biosphere's by incorporating the same

statistical models and tests. It is also interesting to point out that international sustainability and environmentally friendly policies are becoming more and more important. Development strategies for non-Western countries have increasingly considered how the environment and economic progress can work together to enhance the economic development of the country (Mikesell, 86). The Organization for Economic Co-operation and Development, another aspect within the United Nations, released a practical guide entitled The Economic Appraisal of Environmental Projects and Policies in 1995. It was specifically written for countries trying to combine the environment with sustainability into their economic development plans. The book supports the fact that the International Biospheres have a reputation of benefitting the local communities. It also shows that economic viability is being widely considered because different countries are using the same valuation techniques described within different economic models. The generalizability that these facts allow will not only be significant to these worldwide preserves, but also to policy makers at a more local level.

Relations

The Big Thicket National Preserve is obviously an area of vast diversity and great importance. Since the Second World War, countries have been integrating the environment and the idea of sustainability into their development strategies (Mikesell, 2). On a smaller scale, individual communities must weigh these same options when an area is going to be designated as a national park. As Adela Backiel, the head of the Environmental Protection Section in the Environment and Natural Resources Policy

Division of the Congressional Research Service in Washington D.C. stated in a speech to SUNY College, “changing social trends, which have been documented in a variety of places include increasing distrust of large institutions, the growth of environmentalism as an important political and social force...and its implication for a changed world economy”. Statements like this reinforce the theory that as environmentalism has increased so has the importance of examining its economic effects. With the passage of the National Environmental Policy Act (NEPA) of 1969, the United States attempted to implement this idea. Among other things, the act required that an environmental impact statement be produced for any new development within the national park system. An environmental impact statement would assess such things as the flora and fauna, endangered species habitat, water quality control and the economic impact on the local community. However, the act excluded congressional acts from having to comply with this law. Public Law 93-439 of October 11, 1974 directed the establishment of the Big Thicket “...to assure the preservation, conservation, and protection of the natural, scenic, and recreational values of a significant portion of the Big Thicket area in the State of Texas and to provide for the enhancement and public enjoyment thereof.” (Resources Management Plan of 1982, 1). The establishment of this preserve by a congressional act allowed the Southwest Regional Department of the National Park Service to report a finding of no significant impact. By declaring this finding, the park service did not have to comply as strictly with NEPA. However, an economic impact statement was still produced. These original economic assessments in their entirety will be compared with statistics generated by a current economic model. By comparing the old versus the new, these statistics will reveal

whether or not the Big Thicket National Preserve has benefitted the local economic community.

By examining the minimal problems the directors originally believed the preserve would encounter, against the statistics generated by the current methods, the paper supports the idea that the preservation of land indeed benefits the local economic community. Within the National Park Service, the application and explanation of these valuation techniques are aimed at national level policy analysts in charge of developing environmentally friendly policies. However, these techniques are employed throughout smaller locales such as state or community level parks. The shift to more local and direct control of conservation is a recent phenomenon that can be seen through the widespread discussions of relinquishing federal control to more local administration. Alternatives such as preventing pollution or the use of incentives instead of regulatory requirements show that the nation has slowly been shifting focus away from government intensive control (John, 5). As this focus has been redirected, case studies of states have begun to emerge examining the costs and benefits of conservation and tourism against more traditional industries such as lumber and mining. Although a case study of just one park is extremely small, the importance of this preserve and the fact that it was considering expansion made it an ideal candidate for close scrutiny. The case study is applicable not only to other regions but also to other International Biospheres. The Big Thicket with its current proposal of expansion is following the national trend of incorporating more local administration into general management plans.

The National Park Service began to focus on the trend to incorporate more statistical and more local management into their policies beginning in the 1980's. The

preserve's first year of operation was in 1981. Therefore, the original management plans that were generated by the Southwest office of the National Park Service reflect this shift. By comparing these ideas and statistics with a current economic model, the study is also able to support the idea of local management. In other words, the two current trends in park management, one of local administration and the second examining the economic impact of the areas are both reflected in this case study. The three variables that were originally mentioned in Senator Yarborough's speech are all taken into account when comparing the original management plans and the current data available. The current economic model was created only eight years ago. Although the dollar amounts from the original plan to this current model are in different years, the point is not to examine exact figures but to judge the overall trends that the statistics support.

In 1990, Dr. Ken Hornback of the Denver Statistical Office of the National Park Service developed the Money Generation Model, or the MGM. Using this economic model, estimates are produced evaluating the economic costs or benefits of parks for their local economies. Although it originally focused on the economic benefits associated with park tourism it has since been expanded to "include the economic effects of two additional types of expenditures, namely expenditures by the Federal Government for National Park Service salaries, park construction projects, and other park related activities; and expenditures by other outside parties, such as state spending for park access roads, or dollars spent by outside interests for marinas, motels, restaurants, and other park related capital development projects." (Briceland memo) Studying whether the conservation of the Big Thicket in East Texas has had a positive impact on the local economic community is important by showing that this change in the national direction works to solve the

problems of limited resources and differing opinions in land use. Since the Big Thicket recently proposed to acquire more land, it again became an ideal landscape for this study. By demonstrating that conservation has had a positive effect on the local economic community, the move to preserve even more land can be made with more confidence. Since the proposal for this preserve has been approved, administrators can be more certain that it was the correct decision. The MGM also lends support and understanding to the national trends of local management and the prominence placed on economic viability

Testing the Economic Impact of Conservation

The MGM enables parks to estimate the cost or benefits to three important components of the local area. These three are the new sales as measured by increased purchases of goods and services, increased sales tax and income tax revenues, and number of new jobs feasibly created in the area. They are also the three values originally quoted by Senator Yarborough in 1970. By incorporating economic appraisals of the conservation of this region, the immediate economic community will be examined to establish the correlation between conservation and economic impact. The relationship has been shown to be positive, which means that by preserving the land, the local economy benefited from the conservation. The dependent variable is the economic impact of the area while the independent variable is the preservation of the land and its effect. By demonstrating a causal relationship between the two variables, the null hypothesis was rejected.

There are three main components to establishing a causal relationship. First, the variables need to covary. This implies that there is positive movement between the two variables. In table 1, the MGM demonstrates an increasing importance of tourism and revenue. Through the years 1990 to 1995, the economic model consistently showed an increase in revenue generated from the sales benefits and the tax revenue benefits. By comparing this to the next graph, which outlines the attendance of the park since its inception, the covariation between the two variables becomes obvious. In other words, as the attendance for the park has steadily increased through time, the MGM model demonstrates a more significant increase with the three economic variables that it tests. The tables exhibit a visual representation of the covariation by demonstrating that the local economy has indeed benefited in all three categories outlined. It is also important to consider here that the attendance is only being recorded at the Kirby Information Center (see map 1). Since the preserve does not charge any fee for use, the attendance is actually skewed lower than the overall use. The preserve simply has no way of maintaining accurate attendance records. Although the original environmental impact statement was not as detailed as many other documents complying with the NEPA law, the table below lists the manager's rough estimates in 1981 of the losses they viewed as the most irrevocable. The losses outlined here were considered the major drawbacks of creating what is known as Big Thicket National Preserve. The management plan placed the most importance on property taxes as well as the loss accrued by the school districts. The table shows what was originally considered to be the adverse effects produced by preserving the park. The most important aspect of this table is that these three figures were considered the most controversial when the preserve was originally being formed.

Table 1 Money Generation Model

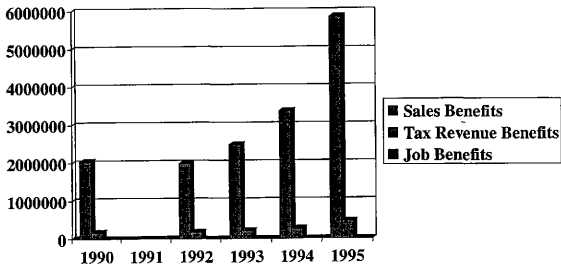
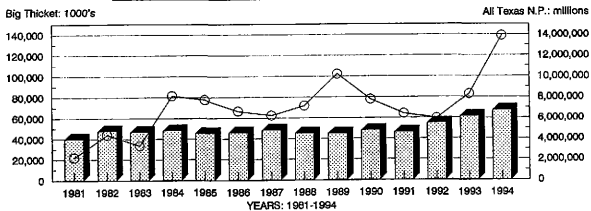


Table 2 Attendance

**Big Thicket National Preserve
Total National Parks in Texas
ATTENDANCE: 1981-1994**



Big Thicket N.P. National Parks-Texas

Texas Almanacs, 1990-91 and 1996-97
Note: In 1988 BTNP got only 1.6 percent of all Texas N.P. Visitors.

Table 3. Original Management Plan Statistics

1975 Environmental Impact Statement
<ul style="list-style-type: none">• The overall land acquisition removes 84,550 acres from the tax rolls• \$31,600-\$36,600 (1974 dollars) lost annually from property tax• \$106,634 (1974 dollars) lost annually from school districts

The managers of the preserve expected the local economic communities to be adversely affected. However, as the MGM model combined with the attendance graph demonstrates, the economic community is actually benefitting from increased tourism. As the park has received more visitors, the figures for the MGM model have steadily increased. The two should covary in a positive way if the impact from the park is positive. In other words, as more visitors come to the region for the Big Thicket, the park should have a larger positive impact with the revenue generated from the visitors. By comparing these groups of data, the preservation of more land for the preserve is supported. The data also supports the hypothesis that preservation has a positive economic impact on a local community. The original apprehensions will be addressed further by examining two other important programs. But first, the two other aspects of a causal relationship must be examined. The two are time order and an ability to minimize the chances of any spurious relationships. By examining the statistics over the entire life of the park, a sense of time order has been established. Examining the flux of tourism against the statistical model reduces the possibility of a spurious relationship. The study has thus met all three criteria

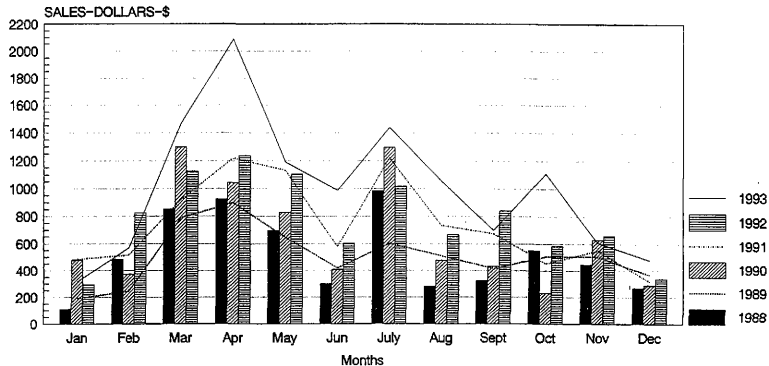
to demonstrate a causal relationship. The positive relationship that they show supports a positive conclusion.

In the Final Environmental Statement produced by the Department of Interior, managers predicted the largest irrevocable loss to accrue from the removal of the approximately 85,000 acres of land from the tax rolls. By removing this land from the public tax rolls, the 17 local independent school districts are also affected. In 1973, when this plan was originally produced, managers predicted that the losses could “be partially offset by revenue and taxes generated by increased regional tourism” (Final Environmental Statement, 84). There are two different statistics that support this prediction. The first is that the Texas Highway Department estimated that visitors spend \$20.00 per person per day (Texas Visitor Industry Survey 1974). Although this estimate is in 1974 dollars, it is reasonable to suspect that this figure still holds relatively true. Looking back to table 2 outlining the number of visitors to the park over the years, an idea of how much revenue the park has created for the local communities can be approximated. Secondly, sales from the Kirby Information Center can be calculated since the store opened in 1988. Although this revenue does not directly benefit the local economy, the idea that it has continually risen supports the concept that the more visitors that come, the more money is spent. Table 4 gives a visual representation of the amount of money generated at the Kirby Information Center. It is this same center where the attendance is being accurately kept and so again the attendance graph covaries with the sales graph. When more money is spent within the park, there is in all likelihood, more money spent in service facilities surrounding the area. These two statistics would help offset the potential problem of removing the land from the tax rolls. When the fact is considered that the numbers for

SALES: 1988-1993

Big Thicket National Preserve Texas

Table 4 Sales



attendance is skewed negatively, the study base can be viewed as very conservative. Even though these statistics are conservative, they support the thesis that the local community benefits by the increase in tourism, no matter how small. Although the dispersion of the park creates a problem when measuring visitors, it also means that many more small towns are affected in a positive way. Tourism is dispersed over a larger area so more traffic is traveling through various small towns. These communities will rely more heavily on the service industries and will obviously benefit as attendance continually increases. Beyond this hypothesizing though, the land taken from the tax rolls is benefitting the local community in one concrete way.

One year later after the preserve's creation, the problem of removing the land from the tax rolls was seemingly alleviated with the passage of the Payment in Lieu of Taxes Program or the PILT program. "Briefly stated, payment in lieu of taxes is a program to compensate local units of government for the loss of their tax base as a result of Federal acquisition and to offset, to a degree, the additional costs incurred by local governmental units in providing police, fire, and medical services for the visiting public" (Regional Directors memo). Each year the Bureau of Land Management makes a payment to the local county government in lieu of the land taken from the tax rolls. The funds may be used for any governmental purpose since its main purpose is to offset the loss accrued by the county. The program thus eliminates the original irrevocable loss that the manager's wrote of in their original management plan. In other words, table 3 is completely done away with once this program was installed. It is important to remember that in the original economic impact management plan, the numbers created for table 3 were seen as the biggest obstacles to overcome and the biggest losses to be accrued by the region.

With the PILT program, the negative affect of the preserve, outlined in the management plan is overcome. The only thing that remains is the positive effect shown by comparing both tables 1 and 2. The three variables that Senator Yarborough originally used to demonstrate the importance of preservation have all been confirmed. Sales, personal income through job creation or service industries, and taxes have all directly benefitted the area surrounding the Big Thicket National Preserve.

Final Analysis

In summary, the main problem that the original planners saw was that the local communities were going to lose the money from the land as it was taken off the tax rolls. With the passage of the PILT program, this fear was completely alleviated. Beyond just another federal program though, the great dispersion of the park and the obvious under count of visitors, shows that many of the small towns in the region have benefitted from tourism. With the proposal to create connecting corridors, even more small towns will be effected as well as more money dispersed to the local county government. As the statistics and tables show, the attendance and revenue generated from the MGM model has steadily been increasing over time. If business corridors were created instead of preservation, the growth would not be as dynamic. It would be more of a one-time enhancement of the region whereas the park's contribution grows over time. In the final environmental statement published by the National Park Service, "weekend and retirement housing developments can be expected to be popular around the preserve due to the close proximity of several major urban areas". Although the valuation of other variables such as

the enhanced land value around the preserve was not taken into effect, it should also be kept in mind.

By comparing the original problems outlined by the manager's in 1974, to the current statistics generated by the Money Generation Model, the study supports a positive relationship between the preservation of the preserve and the local economic community. By choosing the Big Thicket, the study focuses on a locale relevant to today's discourse. The Big Thicket is not only internationally acclaimed but has gone through an expansion during the time of this project. In Senator Yarborough's speech, he drew upon three variables to urge the public to support conservation. Those three variables included sales revenue, taxes, and personal income generated through the National Park Service. The Money Generation Model examines those three variables as well. By comparing the MGM to the statistics or losses that the original management plan surmised, the economic benefit of the preserve becomes obvious. The preserve actually benefits the local economic community in more ways than the original management plan could ever have planned for. The preserve also shows its economic vitality since attendance and sales have been steadily increasing. The increase in attendance and sales also supports the covariation of the two variables being compared. The Big Thicket National Preserve has benefitted the local economic community by increasing tourism to the area. By cooperating with the PILT program in the United States, the original irrevocable loss that the managers assumed the preserve would create was eliminated. The national trend to create an impact statement that supports the economic viability of parks has also been shown. The Big Thicket case study lends support to this national idea. The preservation of more land is supported by this study not only at the Big Thicket but also across the

world. Current legislators can set more land aside with confidence. Not only has the documentation supported the expansion of this preserve, but it adds support to the current national trends of allowing more local management as well as using economic models such as the MGM to show the economic impact. Overall, this case study examined a highly visible area and determined that the economic impact covaries in a positive way with the act of preserving more land. The Big Thicket National Park is an excellent template to support the idea that conservation actually benefits a local community.

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