

Potential Economic Impact of the Proposed Lone Star National Recreation Area

Technical Report



Photo: © Bob Howen.

Prepared by
The Harbinger Consulting Group

for
National Parks Conservation Association
Houston Wilderness
Rice University SSPEED Center

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EXECUTIVE SUMMARY

Hurricane Ike tore through the upper Texas Gulf coast in 2008, unleashing devastation on communities and economies. Yet portions of the region fared better, showing that undeveloped lands along the coast serve as a natural buffer for a tremendous amount of storm surge tide. This natural landscape, from sea level to as much as 15 feet elevation, is an integral part of a long-term, non-structural flood mitigation system. In other words, the water-storage capacity of these low-lying areas can help reduce flooding and property damage inland.

Creating a new recreation area under joint management of local partners and the National Park Service (NPS) has been proposed as one strategy for enhancing community safety while deriving additional economic benefits these lands. This new national recreation area would include voluntary land-owning participants in the coastal buffer zone. Behind this proposal is the idea that enhanced recreational use of these lands would draw additional economic value from maintaining this aspect of the region's flood mitigation system.

This analysis explores the potential economic impact of the proposed Lone Star Coastal National Recreation Area (LSCRNA) in a four-county region (Brazoria, Chambers, Galveston, and Matagorda) along the upper Texas Gulf coast.

It finds that, by the tenth year of operation, the National Recreation Area could attract 1,500,000 annual visitors and support:

\$192.0 million in local sales of goods and services
\$69.4 million in personal income (payroll and proprietor income)
5,257 jobs (full-time and part-time)

This is a four-fold increase over the estimated economic impacts of the LSCRNA's first year of operation.

Like some other national recreation areas, the proposed Lone Star Coastal National Recreation Area would be built around a voluntary core of existing sites managed by various public, private, and nonprofit landowners. Operating together as national recreation area, rather than continuing to operate as individual sites without the overarching identity and coordination a national recreation area can provide, could triple visitor spending by the tenth year of LSCRNA operations, bringing an additional \$258 million in visitor spending to the region.

INTRODUCTION

Hurricane Ike tore through the upper Texas Gulf coast in 2008, unleashing devastation on communities and economies. Yet portions of the region fared better, showing that undeveloped lands along the coast serve as a natural buffer for a tremendous amount of storm surge tide. This natural landscape, from sea level to as much as 15 feet elevation, is an integral part of a long-term, non-structural flood mitigation system. In other words, the water-storage capacity of these low-lying areas can help reduce flooding and property damage inland.

Creating a new recreation area under joint management of local partners and the National Park Service (NPS) has been proposed as one strategy for enhancing community safety while deriving additional economic benefits these lands.

A national recreation area is a unit of the National Park Service, along with a variety of other designations such as national parks, national historical parks, national seashores, and others. Created through Congressional action, national recreation areas encompass land and water areas with nationally significant outdoor recreation potential, and can promote coordinated conservation, land management, and visitor services. Like some other national recreation areas, the proposed Lone Star Coastal National Recreation Area would be build around a voluntary core of existing sites managed by various public, private, and nonprofit landowners.

There are 18 national recreation areas in the United States, including Lake Meredith and Amistad national recreation areas in west Texas. Most emphasize water-based recreation. They range in size, contiguity, land ownership structure, governing institutions and functional purposes. Some are stand-alone units; others such as the Golden Gate National Recreation Area comprise a cluster of noncontiguous lands and structures. The NPS provides a coordinating presence, but may own little of the managed lands. However, the NPS can forge customized management partnerships in which state and local governments, nonprofit organizations and private landowners choose to play a formal governing and management role.

This analysis explores the potential economic impact of the proposed Lone Star Coastal National Recreation Area in a four-county region (Brazoria, Chambers, Galveston, and Matagorda) along the upper Texas Gulf coast. The study finds that this impact would be largely driven by increased tourism, though there would likely also be some impacts from larger/new operating budgets that are paid for with dollars that come from outside the region (especially National Park Service operations).

While a range of economic benefits from a new LSCNRA is likely, this study looks specifically at effects on local jobs, personal income (payroll and proprietor income), and economic activity (sales of goods and services) that are likely to accompany the designation and operation of the Lone Star Coastal National Recreation area.

Tourism is already big business in this region. Across the four counties, about one in five jobs is related to tourism, with the highest concentration being in Galveston County.¹ Visitation to the Texas Gulf Coast region ranks second among the state's seven tourism regions. Nature and cultural tourism are more important here than in Texas as a whole: 17 percent of Gulf Coast visitors participated in nature-based recreation, compared to 11 percent statewide. In large measure, the difference is due to presence of ocean and bay coastal areas. Hunting and fishing are more popular among the region's visitors (four percent participate, versus two percent statewide). And 12 percent of Gulf Coast visitors participate in cultural activities, compared to 11 percent statewide.²

1 Profiles of Industries that Include Travel and Tourism (Brazoria, Chambers, Galveston, and Matagorda counties). Generated using the Economic Profile System-Human Dimensions Toolkit (<http://headwaterseconomics.org/tools/eps-hdt>). December 2011.

2 D.K. Shifflet & Associates. Texas Destinations 2008-2009. The Office of the Governor, Economic Development Tourism Division. 2010.

TECHNICAL BACKGROUND

ECONOMIC IMPACT ANALYSIS METHODS

Overview

This economic impact analysis uses an “input-output” model. This model assumes that money spent locally—for example, by visitors paying for meals, lodging, fuel, and gifts—supports further economic activity. Businesses spend these dollars to pay employees, purchase goods, and pay for rent, fuel, taxes, and other expenses. Some of these expenditures are made locally, where the money can then be spent “again” by the businesses and persons who receive it, and so on.

“Direct impacts” are calculated as the amount of spending for an activity or by an organization or group—such a nonprofit preserve manager or non-local visitors—and the jobs this spending immediately supports. “Total impacts” reflect the “multiplier effect” of portions of those direct expenditures being circulated through the local economy, as described above.

Impacts of visitor spending are estimated based on non-local visitor spending only. Their expenditures are clearly “new” dollars that originated outside the study area and can be clearly linked to the presence of the sites and entities that together could comprise the Lone Star Coastal National Recreation Area. Spending by local visitors does have an economic impact, but it is difficult to determine how much of that money would *not* have been spent locally if the National Recreation Areas did not exist. Given these difficulties, and the relatively small contribution of local visitor spending would make to the economic impacts examined in this study, this analysis takes a conservative approach, calculating the economic impact of visitor spending based solely at the expenditures of out-of-area visitors (those from outside the four-county study area).

Impact Model Used

This study uses the established National Park Service economic analytical model, the Money Generation Model (MGM2), to estimate the potential economic impacts of the proposed National Recreation Area.

MGM2 is a system of calculations for estimating the economic impacts of NPS visitor spending on a local region. MGM2 is an update of the NPS Money Generation Model as originally developed by Ken Hornback. Daniel Stynes and Dennis Propst at Michigan State University developed the new version, called MGM2, in 2001.

MGM2 estimates the impacts that park visitors and operations have on the local economy in terms of their contribution to sales, income, and jobs in the area. MGM2 produces quantifiable measures of park economic benefits that can be used for planning, concessions management, budget justifications, policy analysis and marketing. MGM2 economic impact information has been used to foster partnerships between parks and gateway communities. The economic analysis can help to illuminate the roles the park, local community and tourism businesses play in attracting and serving visitors.

COMPONENTS USED IN ESTIMATING ECONOMIC IMPACTS

Overview

To arrive at projections of future economic impacts, the analysis begins by estimating visitation during the first year of full operation of the LSCNRA. That estimate is used as a foundation upon which to project future visitation levels after ten years of operating the national recreation area and developing new facilities, programs, and marketing efforts associated with it.

Estimating First-Year Visitation

If created, the national recreation area would be built around a core of existing sites that currently or potentially could provide bay-focused natural recreation opportunities and historic and cultural recreational experiences. These sites range from preserves managed by nonprofit organizations to the national wildlife refuges and state wildlife management areas that provide critical cores of wildlife habitat while providing for public recreational access.

Although the core participating sites in the proposed national recreation area have not been confirmed, a list of potential or likely sites was used to estimate visitation in the first year of LSCNRA operation. Visitation to these sites was quantified, where possible, using existing data, and estimated for sites where visitor numbers were not available. In estimating first year national recreation area visitation, the total number of reported visitors was reduced to avoid double counting persons who visit multiple sites on the same trip, and also to account for the likelihood that not all potential participating sites will take part in the LSCNRA. (The list of sites and visitation counts and estimates appears in the appendix.)

Estimating Tenth-Year Visitation

The year-one visitation estimate serves as the foundation for projecting visitation in the tenth year of LSCNRA operation. This analysis projects visitation growth across the national recreation area's entire gateway region, rather than pegging it to specific sites or gateway communities.

At some mature sites or those that operate close to their capacity, dramatic visitor growth is unlikely. However, the development of new facilities, services, and programs, along with a regional "brand" or identity connected with the national recreation area and broader exposure because of affiliation with the National Park Service are likely to result in increased visitor traffic. This increased activity can be viewed as an opportunity for communities across the region to both help create and use to their economic benefit.

A clear trend in visitation across multiple natural and historic/cultural sites in the region is difficult to establish. However, two observations provide relevant context for this analysis:

- 1) Visitation at many natural and cultural sites and events has been generally increasing over the past ten years, with some notable exceptions:

- a) Periodic hurricanes often depress visitation in recovery years following the storm, and sometimes take out infrastructure that can take a long time to replace; and
 - b) Visitation tends to be relatively static at sites that operate near their capacity (e.g., county parks with popular campgrounds, and small private nature preserves).
- 2) Across the region, events are used to attract concentrated visitation. Because of the difficulty estimating event visitation, in many cases determining trends in participation is difficult. Anecdotal evidence suggests that some of these events are growing in popularity, while others hover around a fairly consistent level of attendance.

Because of tremendous variation in visitation trends at specific sites that might participate in the national recreation area, we estimate a conservative level of ten percent aggregate growth in visitation to participating sites that is likely to occur regardless of whether the LSCNRA is designated.

On top of this assumed growth, there are several reasons to project that visitation at the Lone Star National Recreation Area would grow at a greater rate.

- 1) At seven National Park Service units that are, in various ways, peers to the proposed Lone Star National Recreation Area, visitation grew an average of 565% during the first ten years of operation. The NPS units used for comparison and the visitation growth rate in the first ten years of operation at each follow.
- a) C&O Canal National Historical Park (69%);
 - b) Cuyahoga Valley National Park (148%);
 - c) Delaware Water Gap National Recreation Area (201%);
 - d) Gateway National Recreation Area (125%);
 - e) Indiana Dunes National Lakeshore (2,903%);
 - f) Padre Island National Seashore (530%); and
 - g) Santa Monica Mountains National Recreation Area (-22%).
- 2) Interviews with local community and business leaders, and managers of natural and cultural sites suggest that the proposed LSCNRA and surrounding region are replete with opportunities for new, expanded, or better-developed sites, facilities, and programs. For example:
- a) New NPS visitor center(s);
 - b) New lodge at Matagorda Bay Nature Center and other new or rebuilt nature lodges;
 - c) Nature center and expanded facilities at East End Lagoon on Galveston Island;
 - d) Development of more bayside access for canoes/kayaks and fishing using buy-out sites on Bolivar Peninsula as anchors;
 - e) Development of more visitor facilities and lodging at Fort Travis Seashore Historic Park;

- f) Installation of photography blinds and other facilities, and development of “photography trail” linking those facilities;
- g) Coordinated promotion of recreation and heritage tourism opportunities in/around the LSCNRA, perhaps along thematic lines that build from and expand on existing “trails” such as heritage trails, kayaking, and birding; and
- h) Growth in attendance at natural and cultural festivals.

There is both anecdotal and quantitative evidence that capitalizing on opportunities like these will increase visitation. For example, visitation to the J.J. Mayes Wildlife Trace at the Army Corps of Engineers Wallisville Lake Project grew by nearly 800 percent to 26,000 during the first three years it was open (2004-2007). The J.J. Mayes Wildlife Trace is a complex of roads, trails, boardwalks, and picnic facilities designed to bring visitors a close-up view of marsh and riparian habitats along the river. Overall visitation at the Wallisville Lake Project nearly doubled between 2004 and 2010, despite hurricane damage to, and closure of the J.J. Mayes Trace in 2008.³

- 3) Regional identities or attractions for tourism can spark collaboration and coordination among local participants, attracting more visitors than typical approaches to tourism promotion in which neighboring localities compete with each other for visitation. For example, along the Crooked Road, a music heritage trail spanning ten counties in southern Virginia, collaborative marketing efforts led to measurable benefits. Accommodations sales in one county increased 90% in the first four years, and more than tripled in one town on the route. Existing music events experienced a 5% annual increase in attendance. The region experienced 2% higher growth in tourism share over other parts of the state.⁴

Another example: At 14 rural museums along Montana’s “Dinosaur Trail,” visitation grew more than 14 percent during the first two years of coordinated promotion.⁵

In our preliminary analysis, we considered three scenarios for visitation growth at the Lone Star Coastal National Recreation Area. The first, most conservative, scenario projected only a doubling of visitation beyond the ten percent “natural” growth rate anticipated for the existing sites that are likely participants in the national recreation area. The second scenario is the most optimistic growth projection, estimating growth in visitation using the 565 percent average drawn from evaluating visitation growth at comparable NPS sites. The third scenario projects a tripling of visitation during the first

³ Visitation data provided by the U.S. Army Corps of Engineers.

⁴ Robert R Jones. Economic Impact Assessment of the Crooked Road; Virginia’s Heritage Music Trail. Lebanon, VA: Sustainable Development Consulting International. 2008.

⁵ National Trust for Historic Preservation. Dinosaur Trail Links Sites in Eastern and Central Montana (<http://www.preservationnation.org/issues/heritage-tourism/survival-toolkit/dinosaur-trail-links-sites-in-montana.html>). Accessed December 10, 2011.

ten years. The third scenario is the one used to create the impact estimates for this analysis.

Visitor Spending Model

To estimate visitor spending, which drives most of the economic impact of National Park Service units such as national parks and national recreation areas, we use average visitor expenditures for the Gulf Coast tourism region as reported in a recent study of Texas tourism.⁶ These averages include the spending of day-trip visitors traveling more than 50 miles from their homes, as well as overnight visitors.

Average Total Expenditure (Per Person Per Day) \$113.70	
Transportation	\$37.20
Food	\$25.40
Room	\$20.20
Shopping	\$13.30
Entertainment	\$11.60
Miscellaneous	\$6.00

These averages do not break out differences in spending between overnight visitors and day visitors. Across Texas, overnight visitors' daily spending average of \$263 is nearly three times greater than the \$91 spent by an average day visitor.⁷ Rather than attempting to parse out the proportion of day-use and overnight visitors for these projections, in this analysis, we use a multiplier of 2.39 to calculate total spending per visitor, reflecting the average length of stay for all visitors.⁸

Attributing Visitor Spending to the LSCNRA

Based on the information outlined above and in the appendix, we estimated total economic impacts of national recreation area visitor spending in the first and tenth years. These total impacts were then adjusted to reflect the role that the LSCNRA would likely play in attracting those visitors and their dollars to the region.

The impacts of visitor spending to be attributed to the Lone Star Coastal National Recreation Area are adjusted to reflect the role the NRA is likely to play in attracting those visitors. Many LSCNRA visitors are likely to come to the area primarily for reasons other than the NRA (e.g., visiting other attractions, renting a beach house, visiting friends or family). Taking that into consideration, we "credit" only part of the impact of their spending to the national recreation area.

In the first year of operation, we estimate that 30 percent of Lone Star Coastal National Recreation Area visitors would come to the region primarily to visit sites within the

⁶ D.K. Shifflet & Associates. *Texas Destinations 2009-2010*. The Office of the Governor, Economic Development Tourism Division. 2011.

⁷ D.K. Shifflet & Associates. *Texas Destinations 2008-2009*. The Office of the Governor, Economic Development Tourism Division. 2010.

⁸ *Ibid.*

national recreation area, while the remaining 70 percent would come primarily for other reasons, and visit the LSCNRA while in the area. All of the spending (and resulting economic impact) of the primary national recreation area visitors is attributed to the LSCNRA. A quarter of the spending of the visitors who came to the region for other reasons is attributed to the LSCNRA.

By the tenth year of operation, we project that the Lone Star Coastal National Recreation Area would be a stronger destination in its own right, and that 50 percent of its visitors would visit the region primarily because of the national recreation area. All of their spending is attributed to the LSCNRA, while a quarter of the spending of the visitors who came to the region for other reasons is attributed to the national recreation area.

National Recreation Area Operations

If designated, the Lone Star Coastal National Recreation Area would be operated by a group of partners, including the agencies and organizations that currently manage the sites that would provide the backbone for the national recreation area. It is difficult to anticipate what the operating budget of the LSCNRA would be because details of that governing partnership could be worked out in many ways.

Assuming that operating budgets for the participating sites remain largely the same as they are today, or grow only slightly in aggregate, the main source of new funding for the LSCNRA is likely to be the contributions of the National Park Service. For purposes of this analysis, the annual NPS operating budget is estimated at \$4 million, which is the approximate operating budget of nearby San Antonio Missions National Historical Park, and much less than the operating budget of the NPS peers to the LSCNRA identified above.

ECONOMIC IMPACT PROJECTIONS

Economic impacts are estimated for the four-county region in the first year of operation of the Lone Star Coastal National Recreation Area, and in the tenth year.

YEAR ONE ECONOMIC IMPACTS

VISITOR SPENDING

<i>Total number of visitors</i>	500,000
<i>Number of out-of-town visitors (70%)</i>	350,000

Total economic impacts of out-of-town visitor spending

Sales	\$87.5 million
Personal income (payroll and proprietor income)	\$30.3 million
Jobs (full-time and part-time)	2,432

Adjusted economic impacts of out-of-town visitor spending (for role of LSCNRA in attracting visitors and their spending)

Sales	\$41.6 million
Personal income (payroll and proprietor income)	\$14.4 million
Jobs (full-time and part-time)	1,155

NPS OPERATIONS

*\$4 million annual operating budget,
NPS only*

Sales	\$4.6 million
Personal income (payroll and proprietor income)	\$4.4 million
Jobs (full-time and part-time)	46

TOTAL YEAR ONE ECONOMIC IMPACTS

Sales	\$46.2 million
Personal income (payroll and proprietor income)	\$18.8 million
Jobs (full-time and part-time)	1,201

YEAR TEN ECONOMIC IMPACTS

VISITOR SPENDING

<i>Total number of visitors</i>	1,500,000
<i>Number of out-of-town visitors (80%)</i>	1,200,000

Total economic impacts of out-of-town visitor spending

Sales	\$299.9 million
Personal income (payroll and proprietor income)	\$104.0 million
Jobs (full-time and part-time)	8,338

Adjusted economic impacts of out-of-town visitor spending (for role of LSCNRA in attracting visitors and their spending)

Sales	\$187.4 million
Personal income (payroll and proprietor income)	\$65.0 million
Jobs (full-time and part-time)	5,211

NPS OPERATIONS

*\$4 million annual operating budget,
NPS only*

Sales	\$4.6 million
Personal income (payroll and proprietor income)	\$4.4 million
Jobs (full-time and part-time)	46

TOTAL YEAR TEN ECONOMIC IMPACTS

Sales	\$192.0 million
Personal income (payroll and proprietor income)	\$69.4 million
Jobs (full-time and part-time)	5,257

APPENDIX

This list of sites was used to support Year One visitation estimates.

Key: A number with no additional notation is drawn from visitor data provided by the managing agency. Numbers followed by (est) are estimates, typically based on partial data or estimates provided by the managing agency, or on visitation at similar sites in the region. “N/D” signifies no data available or provided by the managing agency for this study.

<u>Site of Interest</u>	<u>Baseline Annual Visits (2010 data, unless otherwise noted)</u>
Galveston Island State Park (Texas Parks & Wildlife)	123,000
Note: In 2007, visitation was 243,560; 2010 visitation reflects operating with limited facilities in the aftermath of Hurricane Ike	
Sea Rim State Park (Texas Parks & Wildlife)	44,000
Bolivar Flats (Houston Audubon)	3,000 (est)
Horseshoe Bay	3,000 (est)
High Island	6,600
Brazoria NWR (US Fish & Wildlife)	35,000
Anahuac NWR	70,000
San Bernard NWR	38,000
Big Boggy NWR	20,000 (est)
Texas Point NWR	20,000 (est)
McFaddin NWR	20,000 (est)
Nannie Stringfellow Wildlife Management Area (Texas Parks & Wildlife)	2,000 (est)
Justin Hurst WMA	2,000
Jo Murphee WMA	2,000 (est)
Mad Island WMA	2,000 (est)
Sea Center Texas (Texas Parks & Wildlife)	n/d
Upper Texas Coast Waterborne Education Center	n/d
Matagorda County Birding Nature Center	7,800
Matagorda Bay Nature Park (LCRA)	133,000
Gulf Coast Bird Observatory	400
Surfside Jetty park (Brazoria County Parks)	n/d
Quintana Beach park (2010 overnights 6,300)	20,000 (est)
San Luis Pass park (2010 overnights 4,600)	18,000
Fort Travis Seashore Historic Park (Galveston County Parks)	n/d
East End Lagoon (Galveston Island Nature Tourism Council)	5,000 (est)
Sea Wolf Park (Galveston Island Park Board of Trustees)	n/d
Texas City Dike (Texas City)	393,000 (est)

Wallisville Lake Project (US Army Corps of Engineers)	222,000
Note: Capacity and visitation prior to Hurricane Ike was much higher.	
John M. O'Quinn Estuarial Corridor Preserve (Scenic Galveston)	500 (est)
Virginia Point Peninsula Preserve	500 (est)
Galveston Bay Foundation:	
Sweetwater Preserve, Galveston County	n/d
Pierce Marsh, Galveston County	n/d
Frost Dean Tract, Galveston County	n/d
Texas City Tract, Galveston County	n/d
Rich Sanctuary, Chambers County	n/d
Shipe Woods, Chambers County	n/d
Varner Hogg State Historic Site (2006)	36,000
TOTAL ANNUAL VISITATION	1,226,800
(Partial count, not including many potential, key participating sites, some of which are included on this list)	