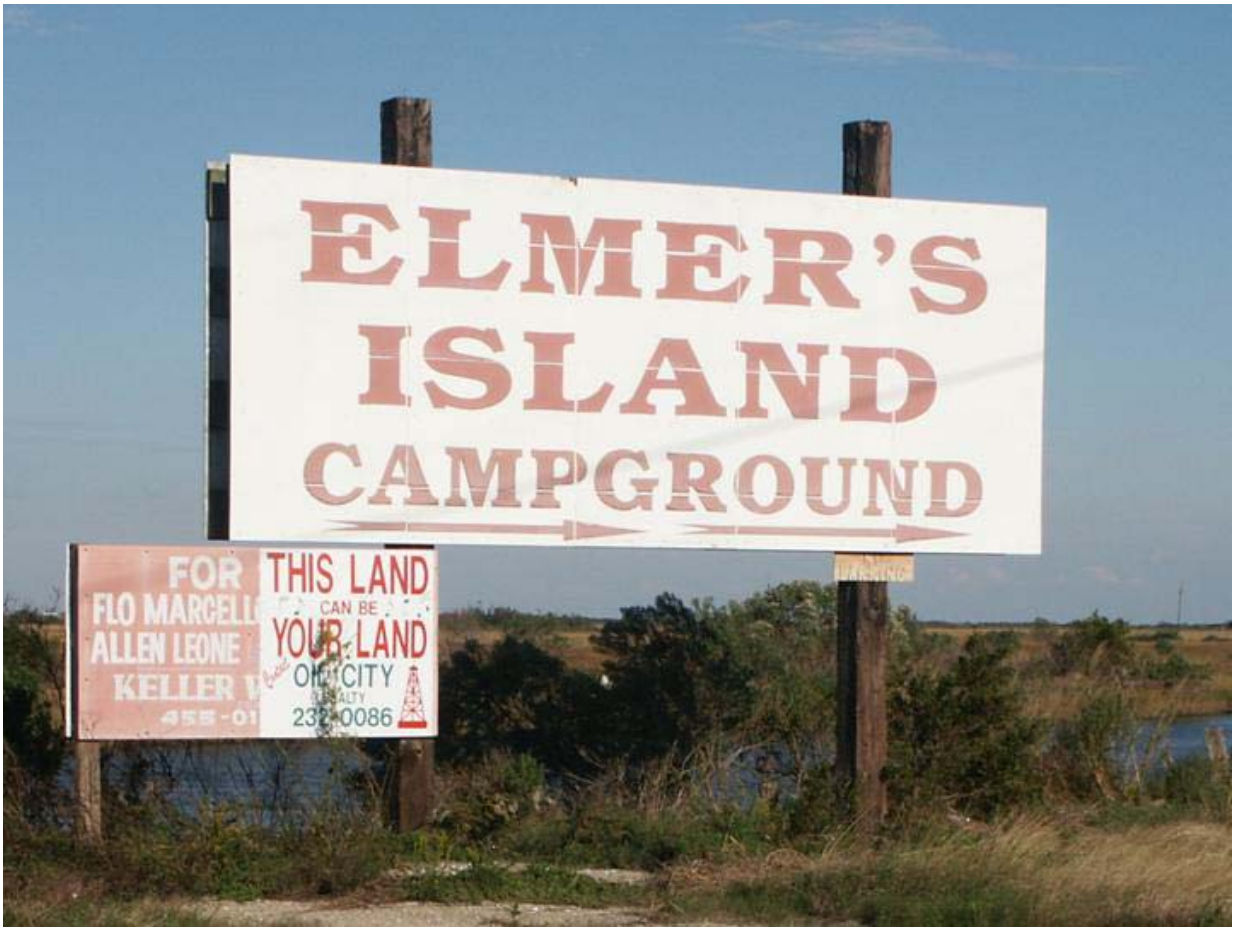
Elmer's Island Coastal Preference Survey



A Preliminary Report

Presented to:
The Louisiana Sea Grant College Program

By:

Rex H. Caffey, Krishna Paudel, and Larry Hall

Center for Natural Resource Economics and Policy
Department of Agricultural Economics and Agribusiness
Louisiana State University Agricultural Center

December 2, 2003

Executive Summary

A study based on travel-cost and contingent valuation methodologies was conducted in the summer of 2003 to measure the demand for natural resource based recreation in coastal Louisiana. Through Internet and intercept surveys, a total of 2,696 respondents, 88% of them anglers, provided information on economic expenditures, destination preferences, and preferences for specific site amenities. A subset of questions was included to gauge support/opposition for the proposed public acquisition and management of a 1,160 acre tract of coastal property commonly known as Elmer's Island. Results indicate overwhelming support (96%) for public acquisition of the property and high levels of consensus on specific management issues related to access, enforcement, and restoration. Expenditure and visitation data were examined in the context of various land value appraisal models.

Recent restoration projects on properties similar to Elmer's Island have cost $14,000 to $58,000 per acre. Although this range is considered exorbitant for appraisal purposes, it reflects a dichotomy between the market- and non-market values assigned to Louisiana's coastal wetlands. By comparison, a preliminary appraisal based on the comparable sales method places the value of Elmer's Island at $862 per acre. In September 2003, the Louisiana Division of Administration requested additional information regarding the business value of Elmer's Island. Results from this study were incorporated into an income capitalization appraisal model that replicated the commercial history of Elmer's Island as a fee-based campground. The resulting business value was estimated to be $1.9 to $2.8 million, based on a preliminary but objective assessment of visitation, fee structure, fixed and operating costs, and capitalization rates.

Regardless of the appraisal method used, estimates of fair market value will invariably fail to capture the full contribution of Elmer's Island to the environment and economy. In addition to the consumptive, recreational demand for Elmer's Island, survey respondents indicated a willingness to pay an additional $300,000 to ensure the passive values associated with ecosystem services, culture, and tradition. Elmer's Island has also generated a substantial economic impact. At the historic visitation rate of 40,000, it is estimated that $3.7 million in annual expenditures were associated with Elmer's Island tourism prior to its closure. Assuming a conservative multiplier of 2.0, these expenditures produced a regional economic impact of $7.3 million. Given a site substitution effect of 80%, a minimum of $750,000 in direct expenditures and $1.5 million in economic activity has been lost annually since Elmer's Island has been closed. This impact extends to the statewide economy, although the majority of losses have occurred in lower Lafourche Parish and in the Grand Isle community. These losses could be recaptured, and significant increases in tourism expenditures gained, if Elmer's Island were to be acquired by the State of Louisiana and managed as a public recreation area.

TABLE OF CONTENTS

BACKGROUND

Louisiana's abundant coastal resources have attracted an increasing amount of consumptive and non-consumptive tourists in recent years; however, most of the state's coastal region is comprised of isolated marsh, and very few areas are accessible by road. Of particular importance is Elmer's Island, located approximately 50 miles due south of the city of New Orleans. Though commonly referred to as an "Island," Elmer's is actually a 1,160-acre tract of coastal land comprised of interior wetlands and adjoining seashore. Elmer's Island is positioned directly across Caminada Pass from Grand Isle and is a continuation of one of only three land-accessible beaches on the Louisiana coast (Figure 1).

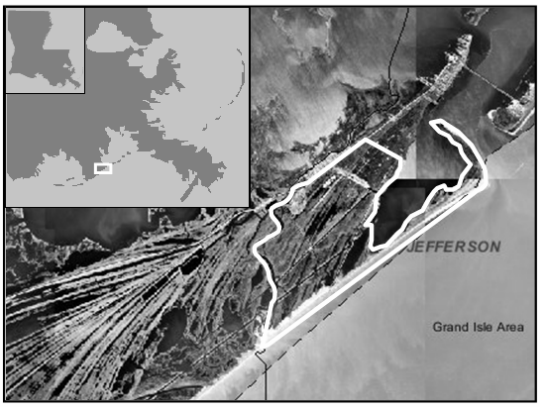


Figure 1. Site Location of Elmer's Island.

For the past 30 years, Elmer's Island has been operated as a commercial campground and primitive area. The property has become a popular destination for many thousands of Louisiana citizens and out-of-state tourists (Curole and St. Pe 2002). For a nominal fee, users have had access to the location for fishing, bird watching, camping, and beachcombing. The area also provides significant habitat for numerous bird species and other forms of coastal marine life.

In the summer of 2001 the proprietor of Elmer's Island died unexpectedly, and the land was closed to the public and advertised for sale. Soon afterward, heirs to the property indicated an interest in selling Elmer's Island to the state. A resolution calling for state purchase and management of Elmer's Island was developed by the Louisiana Wildlife Federation in 2002, and unanimously supported by the Louisiana Legislature in April of 2003 (Baldone et al. 2003).

Negotiations between the state and the Elmer's family began in May of 2003 but have since stalled because of disputes over boundary delineation and appraised value. Initial estimates of property value ranged from $6 million, by the Elmer's family, to a preliminary estimate of $1 million, by a state-contracted land appraiser. Concurrent with these negotiations, an economic study of the recreational demand for Elmer's Island has been under way at Louisiana State University. The state is currently awaiting results from this study to resume negotiations for the acquisition of Elmer's Island (Davis 2003).

OBJECTIVES

In May 2003, the LSU Center for Natural Resource Economics and Policy (CNREP) initiated a research project designed to gauge public preferences for the acquisition and management of Elmer's Island. Specific research objectives included:

1) Examining public preferences for the acquisition and management of Elmer's Island under various ownership and management scenarios;

2) Soliciting expenditure data for activities associated with Louisiana coastal recreation in general, and Elmer's Island recreation in particular;

3) Extrapolating the economic tourism potential of Elmer's Island tourism using survey data, historical visitation, and information derived from a pre-existing state park in the region; and

4) Measuring the effect of distance traveled, time traveled, and the impact of alternative destinations on the development of Elmer's Island as a publicly-owned recreation area.

METHODS

A survey questionnaire was developed based on the Travel Cost Method (TCM), a standard approach for estimating the value of recreational sites (Emmert 1999). The basic premise of the TCM is that demand for a particular site is a function of travel time and expenses incurred in visiting that site. Thus, site value can be represented by the number of trips made by different users with different travel costs. Additional questions in the survey focused on demographics, primary recreation categories, and specific preferences for preservation or development. Finally, a subset of questions, based on the Contingent Valuation Method (CVM), was included to provide estimates of specific non-use values. Appendix A contains a complete text version of the questionnaire.

The survey was implemented using two modes of data collection. Most responses (92%) were obtained using an Internet survey developed by using Microsoft FrontPage © Version 2002. The Internet survey was hosted on a Web-server in the LSU Department of Agricultural Economics and Agribusiness, and responses were auto-loaded into a spreadsheet database maintained in Microsoft Excel © Version 2002. The database contained 120 columns of coded output representing 34 survey questions. Browser type, date, time, and remote computer identity were recorded. Duplicate responses were identified and deleted for any submissions sharing the same Internet protocol (IP) address. To view the survey online, go to: http://www.agecon-extension.lsu.edu/CaffeyWeb/EIsurvey2.htm

The Internet survey was available to respondents from May 15, 2003, to July 31, 2003. Announcements were made in 28 media outlets to attract a diverse range of participants. Notices were made via direct e-mail, Web-sites, newspapers, newsletters, magazines, and radio programs (Table 1). To compare data collected from the Internet survey, an in-person survey, or "intercept" survey, was conducted at Grand Isle State Park and Holly Beach. These two locations served as proxy sites for Elmer's island. To encourage participation in the intercept survey, a commemorative cap was provided to all who fully completed the survey questionnaire. Intercept surveying was conducted using a series of two-day trips between June 20, 2003, and July 31, 2003. Data obtained from the intercept survey were coded and recorded in an identical manner to that used for data from the Internet survey.

Table 1: Media Outlets Used for Advertising the Elmer's Island Internet Survey

Barataria Terrebonne National Estuary Program	Lafourche Chamber of Commerce
Baton Rouge Advocate	Lagniappe Fisheries Newsletter
Breaux Act News Flash	Louisiana Sea Grant College Program
Cajun Coast	Louisiana Sportsman's Magazine
Coastal Conservation Association	Louisiana Wetland News
East Ascension Sportsman's League	Louisiana Wildlife Federation
ElmersIsland.org	LSU Agricultural Center
Grand Isle Tourist Commission	LSU Dept. of Agricultural Economics
Houma Courier	New Orleans Times Picayune
Jefferson Parish Marine Advisory Board	Orleans Audubon Society
Jefferson Rod and Gun Club	Restore or Retreat email list
Louisiana Audubon	RodNReel.com
Louisiana Sierra Club Website	WWL 870 AM Radio – Outdoors with
LA-Bird e-mail listserv	Don Dubuc

Preliminary statistical assessments were conducted using Microsoft Excel 2002 and verified using SAS Version 8.0. Mean percentages were calculated for combined as well as separate analyses of the data obtained from the Internet and intercept survey data. Differences in response mode were analyzed for selected categories using the chi square test for statistical significance. The following results correspond with objectives 1-3 and represent a preliminary assessment only. Additional analyses will be included in a forthcoming manuscript.

SURVEY RESULTS

Response to the on-line survey was much greater than expected. A total of 2,493 responses were received in the 77 days that the Internet survey was posted. Though every effort was made to issue simultaneous announcements on day 1, several media collaborators experienced delays in posting announcements. As a result, daily responses increased dramatically on three separate occasions during the first 30 days of the survey (Figure 2).

The survey was first advertised on May 15, primarily via e-mail announcements through various lists, including the Breaux Act News Flash, the Louisiana Wildlife Federation, the LSU Agricultural Center, Louisiana Sea Grant College Program, the Barataria Terrebonne National Estuary Program, and LA-Bird. Because the first day of surveying was a Friday, daily responses dropped off slightly over the following weekend and then rapidly increased before peaking at 181 responses received on day 5.

Additional spikes in the daily response rate were observed on days 14 and 25 after major Web sites and news media posted announcements and links to the survey (e.g. LaSportsman.com, RodnReel.com, New Orleans Times Picayune and Baton Rouge Advocate). Responses declined to an average of 15 per day after day 40.

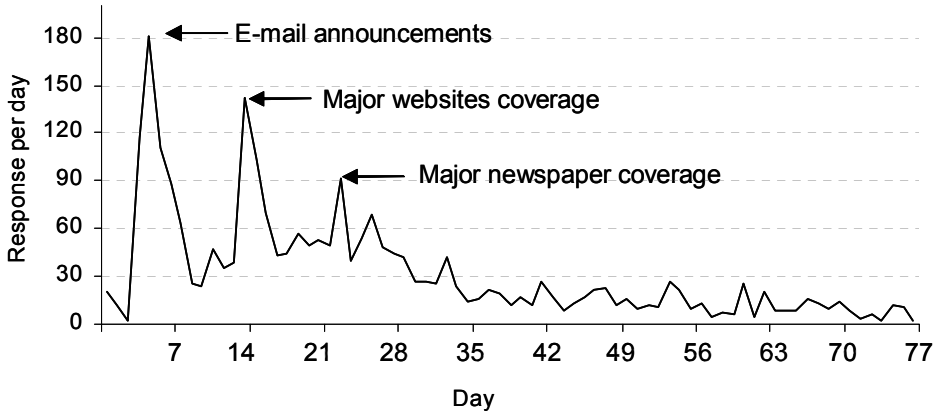


Figure 2. Daily Internet Responses
Elmer's Island Survey, May 15-July 31, 2003 (n=2,493)

In addition to the Internet survey, 203 individuals completed the intercept survey at the two proxy locations. Most intercept surveys (78%) were obtained at Grand Isle State Park. Together, the two modes of surveying produced 2,696 unique responses. Because of the manner in which the data were collected, it is not possible to calculate a traditional survey response rate (i.e. percentage of a sampled population); however, this condition does not restrict use of collected data to survey respondents alone. Specific requirements for data extrapolation are addressed in a later section.

Demographics and Recreation Preferences

Table 2 contains demographic data and recreation preferences obtained in the Internet and intercept surveys. Most respondents in the survey were male (weighted total = 86%), and the average respondent was 43 years old. Considerable difference was observed in the ratio of male-to-female respondents between the two survey modes, however. Females comprised 68% of respondents in the intercept survey, compared to only 10% in the Internet survey. One explanation for this difference is that interviewers were more likely to encounter families or couples while at proxy sites. In such cases, women in the groups were most often more willing to take the 20-30 minutes required to complete the survey.

More than half of Internet respondents (51%) reported annual household incomes of less than $60,000. The percentage of respondents in this income bracket was higher for the intercept survey (74%), suggesting that some income/technology bias may exist with respect to data collected online. Additional differences are observed under primary choices for coastal recreation. Although "surf/marsh fishing" comprised the largest percentages in each survey (80% and 47%), respondents in the intercept survey were represented by a broader spectrum of primary recreation activities. For example, while non-consumptive activities (camping, swimming/beachcombing, and bird watching) comprised only 8% of the Internet respondents, more than a third (37%) of intercept respondents chose these activities as their primary source of coastal recreation. This difference could be caused by the predominance of female participation in the intercept survey. It is also likely that the difference is driven by location context, specifically the fact that most intercept respondents participated in the survey while visiting a state park. Despite these differences, both groups listed Grand Isle and Fourchon as the primary and secondary locations for coastal recreation.

It is worth mentioning that the recreation alternatives provided to respondents were developed in a manner consistent with the historic usage of Elmer's Island. Thus, not all coastal Louisiana recreation activities were explicitly listed. About 2% of respondents used the "other" option to list activities such as duck hunting, crabbing, etc.

Table 2: General Demographics and Recreation Choices

Description:	**Total** Weighted **(N=2,696)**	**Internet Survey (n=2,493)**	**Intercept Survey (n=203)**	**Survey Question Ref.**
Male	86%	90%	32%	24a
Female	14%	10%	68%	24b
Age (years)	43	42.74	39.80	33
Income				
Below $20,000	6%	5%	12%	29a
20,000-59,999	47%	46%	62%	29b
60,000-99,999	35%	36%	21%	29c
100,000-149,999	9%	9%	4%	29d
Above 150,000	4%	4%	1%	29e
Primary Coastal Recreation Choice				
Offshore Fishing	10%	10%	12%	1a
Surf/Marsh Fishing	77%	80%	47%	1b
Bird watching	3%	3%	3%	1c
Camping	3%	2%	12%	1d
Swimming and beachcombing	4%	3%	22%	1e
Other	2%	2%	3%	1f
Most popular coastal destination	Grand Isle	Grand Isle	Grand Isle	3a
Second most popular destination	Fourchon	Fourchon	Fourchon	3b

Coastal Recreation Expenditures
As expected, surf and marsh fishing excursions made up a disproportionate amount of the annual number of trips reported by survey respondents (Table 3). Internet and intercept respondents reported taking an annual average of 16.21 and 11.30, respectively, for this purpose. To calculate the total average number of trips (A), the individual averages in each category were weighted according to their representation in the survey (e.g. 0.77 for surf/marsh fishing). These products were then summed to provide an overall estimate of the average number of trips across all recreation categories. This process produces a weighted average estimate of 13.36 trips per respondent annually.

Respondents were asked to provide estimates ($/person/day) for seven expenditure categories: 1) lodging, 2) fuel, 3) food and beverages, 4) equipment, 5) supplies, 6) fees (i.e. admittance, launching, and parking), and 7) other. Reported expenditures were similar in the two surveys, with the notable exception of lodging and food and beverages. Though data outliers were controlled on this question by deleting the top and bottom 5% of the reported range, the relatively smaller sample size of the intercept data may have limited the effect of this truncation process. Nevertheless, the weighted total expenditure of $149/person/day (B) provides the more conservative estimate for extrapolation purposes. Time costs, typically reported as on-third of the average wage rate, are not included in this estimate.

Because of the need to reconcile number of trips to daily expenditures, respondents were asked to report the average number of hours taken on each coastal trip. This question yielded little difference from the two survey modes, with the average trip lasting just under one full day, or 18.91 hours. Thus for the purposes of this report, trips and days are henceforth used interchangeably.

A total of 62% of respondents indicated that their coastal trips were primarily for recreation (C). The remainder of respondents reported that recreation was either a joint purpose (33%) or incidental purpose (4%) of their average trip. Finally, respondents were asked to report the average number of travel companions per trip. This average was somewhat larger for the intercept survey (4.15) than in the Internet survey (2.87). This higher number of companions could be linked to the predominance of groups and families encountered during intercept surveying. Again, using the weighted average of 2.99 companions per trip (D) provides a lower average, and thus a more conservative estimate for extrapolation purposes. Taking into account the number of respondents (n), the average number of trips per respondent (A), the average expenditures per trip (B), and the fraction of trips taken primarily for the purposes of recreation, it is estimated that respondents who participated in this survey account for $2,917,722 in primary, coastal recreation expenditures annually. When the average number of travel companions per trip (D) is considered, this value expands to $8,390,130.

General Environmental Preferences
Ninety-three percent of respondents indicated that environmental amenities were an important consideration when visiting coastal recreation sites (Table 4). When asked to rank specific site amenities on a scale of 1-5, with 5 being very important and 1 being not important at all, Internet and intercept respondents ranked seven of 10 amenities in like order.

Concerns about pollution and site access were of greatest importance amongst all respondents, with averages of 4.77 and 4.31, respectively. On the other hand, the provision of park-oriented amenities (i.e. interpretive signage, naturalists and camper hook-ups) were ranked only somewhat important by intercept respondents and of little importance by Internet respondents.

These rankings suggest that the average respondent in this survey favors recreation sites with low levels of development and high levels of environmental integrity. Such preferences are consistent with the findings of other studies in which coastal tourists were found to have high preferences for environmental amenities (Gunter et al. 1987; Kenchington 1993; and Leatherman 1997). The primary context of this research project, however, was to gauge public preference for the purchase and management of Elmer's Island. For that characterization, questions of a more specific nature are required.

Table 3: Coastal Recreation Expenditures

Description:	**Total** Weighted **(N=2,696)**	**Internet Survey (n=2,493)**	**Intercept Survey (n=203)**	**Survey Question Ref.**
Number of trips per year taken:*				
Offshore Fishing	5.40	5.50	4.22	2a
Surf/Marsh fishing	15.83	16.21	11.30	2b
Bird watching	2.52	2.35	4.53	2c
Camping	4.86	4.84	5.15	2d
Swimming and beachcombing	5.18	5.08	6.38	2e
Other	6.58	6.69	5.25	2f
Average number of trips (A)				
Weighted by category	13.36	13.65	8.18	--
Expenditures* ($/person/trip):				
Lodging	$33.49	$32.11	$50.54	8a1
Fuel	$34.48	$34.81	$30.57	8a2
Food and Beverages	$37.11	$35.50	$57.00	8a3
Equipment Purchases	$17.78	$17.56	$20.63	8a4
Supply Purchases	$16.81	$17.13	$13.01	8a5
Fees	$6.33	$6.50	$4.33	8a6
Other	$3.02	$3.01	$3.27	8a7
Total expenditures (B)				
($/person/ trip)	$149	$147	$179	--
Hours per trip*	18.91	18.82	20.08	6a
Travel to my favorite destination is:				
Primary (C)	62%	63%	56%	4a
Joint	33%	33%	38%	4b
Incidental	4%	4%	6%	4c
Number of travel companions* (D)	2.99	2.87	4.15	7a
Annual Expenditures of Respondents only: N(AxBxC)	$2,917,722	$3,143,953	$168,109	--
Annual Expenditures of Respondents and Companions: N(AxBxCxD)	$8,390,130	$9,023,146	$697,652	--

** Response range truncated (5% upper, 5% lower) to control for outliers*

Table 4: General Environmental Preferences

Description:	Total Weighted (N=2,696)	Internet Survey (n=2,493)	Intercept Survey (n=203)	Survey Question Ref.
Environmental amenities matter	93%	93%	95%	9
Rank of environmental site considerations*				--
Lack of pollution	4.77	4.78	4.72	10a1
Ease of access to site	4.31	4.31	4.33	10a2
Active enforcement of rules	4.15	4.14	4.32	10a3
Abundant wildlife	4.12	4.12	4.17	10a4
Low human congestion	3.95	3.96	3.87	10a5
Catch per trip	3.78	3.80	3.62	10a6
Lack of development	3.47	3.47	3.48	10a7
Nearby/on-site food and lodging	3.25	3.20	3.98	10a8
Interpretive signage/naturalists	2.12	2.07	2.84	10a9
Camper hookups	2.05	1.98	2.91	10a10

** 5 = Very Important, 4 = Important, 3 = Somewhat Important, 2 = Of Little Importance, 1 = Not Important*

Elmer's Island Preferences

Familiarity with Elmer's Island (outside of the survey) was 97% and 74% amongst Internet and intercept respondents, respectively (Table 5). Only about half of intercept respondents (53%), compared to 86% who took the survey online, said that they had visited Elmer's Island at some time; however, of all those respondents who had visited Elmer's Island, the largest percentage of all (35%) included those who had visited 25 or more times in their lifetimes. As reported for other coastal areas, the primary recreational activity while visiting Elmer's Island was surf/marsh fishing (86%). Multi-use aspects of Elmer's Island were obtained by asking respondents about their second most favorite on-site recreational activity.

Secondary activities included camping (36%) and swimming/beachcombing (35%). Despite its reputation as a prime birding area, bird watching at Elmer's Island accounted for only 3% of primary activity and 5% of secondary activity by survey respondents. Seventy-four percent of all respondents indicated that they had heard of the potential state purchase of Elmer's Island before this survey. Perhaps the most important finding of the study is that 96% of respondents, regardless of survey mode, favored state purchase and management of the Elmer's Island property. Furthermore, 98% indicated that they would visit Elmer's Island if the property were re-opened to the public.

Table 6 depicts the management preferences for Elmer's Island as indicated by the survey respondents. The average respondent preferred a management regime that consists of little more than what was provided at Elmer's Island in the past. The preference code of 2.81 corresponds with a semi-primitive to sparse management regime, the difference in the two being that some type of improved road would be required under a sparse management regime.

A notable difference in management preferences was observed from the intercept respondents, who preferred to have more park-like amenities. Intercept respondents had an average preference selection of 3.81, which corresponds to a moderate to full state park, complete paved roads and paved parking areas, restrooms, a welcome center, camper hookups, rental cabins and dormitories.

Visitation and Fees

Although Elmer's Island is widely known as a popular recreation site for coastal residents, most visitors likely come from outside of the local community. If survey responses are indicative of historic use, more than 75% of Elmer's Island visitors have come from areas more than 2.5 hours away (Figure 3). The majority of visitors (59%) reported travel times that correspond closely to distances from the cities of New Orleans (2.5 hours) and Baton Rouge (3 hours), respectively.

Table 5: Elmer's Island Preferences

Description:	Total Weighted (N=2,696)	Internet Survey (n=2,493)	Intercept Survey (n=203)	Survey Question Ref.
Persons who have heard of Elmer's Island	95%	97%	74%	11
Persons who have visited Elmer's Island	84%	86%	53%	12
Number of visits per lifetime:				
1	5%	5%	4%	12a1
2-5	20%	19%	31%	12a2
6-9	11%	11%	14%	12a3
10-14	13%	13%	12%	12a4
15-20	12%	12%	11%	12a5
20-24	4%	4%	3%	12a6
>25	35%	36%	25%	12a7
Primary Recreation Activities at Elmer's Island:				
Offshore Fishing	2%	1%	9%	13a1
Surf/Marsh Fishing	86%	88%	64%	13a2
Bird watching	3%	3%	0%	13a3
Camping	4%	3%	11%	13a4
Swimming/beachcombing	4%	3%	12%	13a5
Other	2%	2%	5%	13a6
Secondary Recreation Activities at Elmer's Island:				
Offshore Fishing	3%	3%	8%	13b1
Surf/Marsh Fishing	15%	15%	12%	13b2
Bird watching	5%	5%	3%	13b3
Camping	36%	36%	31%	13b4
Swimming/beachcombing	35%	34%	43%	13b5
Other	7%	7%	2%	13b6
Prior aware of potential state purchase of Elmer's Island	74%	75%	63%	14
Supportive of state (public) Purchase/ownership	96%	96%	96%	15
Would visit Elmer's Island if state-owned	98%	98%	95%	16

Table 6: Preferences for future Management of Elmer's Island

Description:	Total Weighted (N=2,696)	Internet Survey (n=2,493)	Intercept Survey (n=203)	Survey Question Ref.
Preferences for preservation and Development at Elmer's Island				
1=Primitive	15%	15%	4%	20a1
2=Semi-primitive	30%	30%	15%	20a2
3=Sparse	26%	26%	13%	20a3
4=Moderate park	16%	16%	31%	20a4
5=Full park	12%	12%	37%	20a5
6=Commercial	1%	1%	1%	20a6
Average Preference Code	2.88	2.81	3.81	

Legend:
1=Primitive – unpaved access road only
2=Semi-primitive - unpaved access road and restrooms/sewage disposal
3=Sparse - paved access road and restrooms/sewage disposal
4=Moderate park – paved roads/parking, restrooms, welcome center, camper hookups
5=Full park – moderate park plus rental cabins and dormitories
6=Commercial – I believe it should be sold for private development

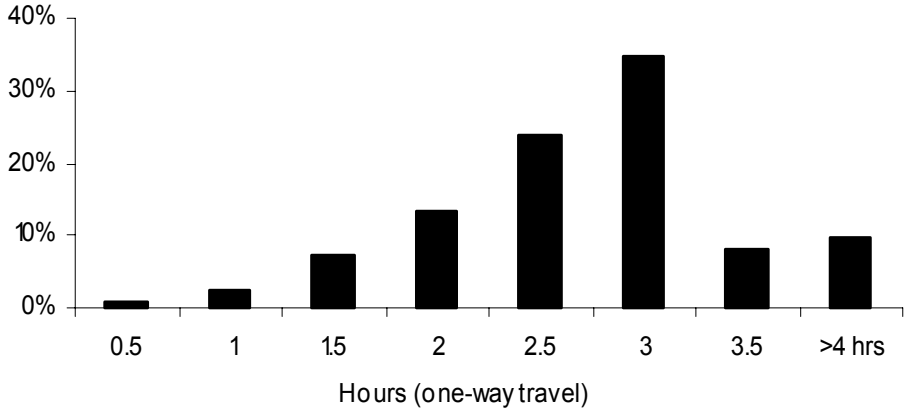


Figure 3. Estimated Travel Times to Elmer's Island (N=2,696)

Survey respondents indicated that they would take an average of 5.27 trips annually to Elmer's Island if it were to re-open for public use (Table 7). Given the trip-to-day reconciliation mentioned previously, this amount of visitation equates to approximately 5 single days, or 2.5 weekends. Thus, the estimated total number of trips per year from all survey respondents alone would be 14,233.

Respondents were asked to provide a range of fees they would be willing to pay to access Elmer's Island if the property were reopened to the public. On average, day use fees ranged from $4.90 (expected) to $8.70 (maximum) and overnight fees ranged from $10.38 (expected) to 16.56 (maximum). Thus, at the average per day visitation fee of $6.80 per person, 14,233 visits produce $96,685 in fees. Recall, however, that the average trip was approximately 19 hours. Thus if the average overnight fee is applied, revenues from respondents increase to $191,561. It is critical to emphasize here that these revenues are based solely on visitation by the survey respondents alone. No efforts have been made yet to extrapolate these calculations to a larger population of visitors.

Table 7: Visitation and Fees for Elmer's Island

Description:	**Total** Weighted **(N=2,696)**	**Internet Survey (n=2,493)**	**Intercept Survey (n=203)**	**Survey Question Ref.**
How many times a year would you visit?	5.27	5.3	4.95	17
Estimated visits (trips/year x N)	14,233*	13,213	1,020	
Daytime fees ($/person/day)				
Expected	$4.90	$4.91	$4.79	21a1
Maximum	$8.70	$8.69	$8.84	21a2
Average	$6.80	$6.80	$6.82	---
Overnight camping fees ($/person/day)				
Expected	$10.38	$10.26	$11.87	21b1
Maximum	$16.56	$16.52	$17.16	21b2
Average	$13.47	$13.39	$14.52	---
Estimated Fee Revenues** Using Avg. Daytime fee	$96,685*	$89,847	$6,875	---
Estimated Fee Revenues** Using Avg. Overnight fee	$191,561*	$176,920	$14,642	---

* Sum
**Does not include extrapolation

Contingent Valuation Estimates

The Contingent Valuation Method (CVM) is used by economists to estimate the value of ecosystem services (use and non-use) that market-based transactions fail to reflect. The method typically involves asking survey participants to reveal their willingness to pay (WTP) for a specific set of environmental services or options. An often-cited weakness of CVM is that it is based on stated behavior versus actual behavior, and unless stated values can be linked to real values they are difficult to justify. However, there is no other method than CVM to determine the non-use/passive values of the site. Thus, the strength of CVM lies in its ability to address protest and strategic bias. Specifically, if dollar estimates are not assigned to non-market, environmental amenities, the value of such amenities is treated as being either zero or infinite. By extracting passive use estimates, the CVM produces values that would ordinarily be underestimated or overestimated during the policy process.

Participants in this survey were asked to provide the maximum one-time amount they would be willing to pay to ensure future access to Elmer's Island for the following reasons: 1) option value - *so that I can visit in the future*; 2) bequest value - *so that my children, grandchildren, and great grandchildren can visit*; and 3) existence value - *just to know it's there and will be maintained for the public, whether I visit or not*. After truncating the response range by 5% (upper and lower), very similar values emerged from

both modes of surveying. On average, WTP estimates were $39, $42, and $29 for option, bequest, and existence values, respectively. The sum of these values is $109.84 per person, or $296,238 for all survey respondents (Table 8).

Though significant controversy remains over the validity and application of CVM estimates, numerous examples exist in which CVM is promoted as a decision-making tool in restoration and preservation initiatives (Costanza et al. 1989, Farber 1996, and Milon and Hodges 2000). Indeed, the comment section from this survey (Appendix B) is replete with statements that reflect the option, bequest, and existence value of Elmer's Island. Particular examples of such comments include: 1) option - "*Elmer's Island has a history of public usage and it would be a shame to lose that option*; 2) bequest - "*my greatest concern is that it will be maintained and preserved for the future. I am willing to pay a reasonable amount to ensure that it is*"; and 3) existence - "*I've never been to Elmer's Island, and should the state purchase it, I might never go to Elmer's Island. However, I think it's important that we not lose any more of our coastal area to whatever interests -- be it coastal land loss or private developers. We do not have much land remaining here, and what's left, we need to protect*."

Table 8: Option, Bequest, and Existence Values for Elmer's Island

Description:	**Total** Weighted **(N=2,696)**	**Internet Survey (n=2,493)**	**Intercept Survey (n=203)**	**Survey Question Ref.**
Option				
So that I can visit in the future.	$38.87	$38.87	$39.10	22a
Bequest				
So that my children, grandchildren, and great grandchildren can visit.	$41.97	$41.91	$42.90	22b
Existence				
Just to know it's there and will be maintained for the public, whether I visit or not.	$29.00	$28.94	$29.86	22c
Total* (per person)	$109.84	$109.72	$111.86	--
Total** (all respondents)	$296,233	$273,532	$22,819	--

* Sum
**Does not include extrapolation

VALUATION ISSUES

The inability of the open market to produce land prices reflective of environmental values and non-use options is one several contributing factors that have strained negotiations over Elmer's Island. Public sentiment, as represented in this survey, is overwhelmingly in support (96%) of state purchase and management of Elmer's Island, but, a preliminary appraisal of property value recently developed by the State fails to ascribe value to the suite of unique amenities that undergird this overwhelming support. Conversely, value estimates developed by the property heirs likely underestimate the numerous risks (environmental and economic) and regulatory hurdles that would be faced by full-scale commercial development.

Although land appraisal was not an original objective of this research, results from the survey provide information that could prove useful in reconciling the conflicting calculations of Elmer's Island value. Additional insight on the value and future use of Elmer's Island can be obtained by considering results from this study within the context of three basic forms of property appraisal: replacement costs, comparable sales, and income capitalization.

Replacement Costs
In theory, the value of the Elmer's Island property could be estimated using a replacement-cost approach. This appraisal technique estimates the value of an asset as a function of the costs required to replace or restore that asset in the event of complete loss. The method is commonly used for establishing insurance coverage on items such as jewelry and antiques, but its application in real estate often generates values that are far greater than any prices demanded for land and natural resources in the open market. Because most land in the United States is not at risk from complete loss, application of the replacement cost method in real estate is usually limited to land improvements such as buildings and roads (AIREA 1983). The Louisiana Coastal Zone (LCZ) differs from most regions of the U.S., however, in that complete loss of land is a distinct possibility.

Primarily because of hydrologic modifications, the LCZ has lost more than 1,900 square miles of land during the past century, and the region is expected to lose an additional 700 square miles by the year 2050 (Barras 2003). Since 1990 more than $600 million has been spent in Louisiana on various projects that aim to sustain and restore coastal lands (Caffey and Schexnayder 2003). The cost of implementing these restoration projects provides at least partial indication of the replacement value associated with Elmer's Island. For example, a recently proposed project on 2,896 acres of land adjoining Elmer's Island is estimated to cost $41 million. The "Chenier Unit" proposal is predicated on the ecological, educational, and recreational benefits of maritime habitat conservation (USACE 2002). Complete replacement of coastal habitat is even costlier. A recently completed project at Holly Beach in southwestern Louisiana required $19.3 million for the restoration of 330 acres of barrier shoreline (CWPPRA 2002).

From a replacement value standpoint, the costs of the Chenier Unit and Holly Beach projects equates to a range of $14,000 to $58,000 per acre, respectively. While this range extends well beyond the commercial prices paid for land in the LCZ, benefits from these projects are not limited to the private sector. Public benefits such as recreation, storm surge protection, and fish and wildlife habitat are increasingly used to justify the costs of restoration. Ironically, these same benefits are often overlooked when it comes to land preservation. Indeed, for the full non-market value of Elmer's Island to be recognized using a replacement cost approach, the property would have to be entirely lost to erosion or commercial development. Such threats are more real than conceptual, given the recent history of coastal land loss and development in Louisiana.

Comparable Sales
The value of Elmer's Island could also be estimated using a comparable sales approach. This technique appraises the value of an asset by considering recent sales that have occurred for similar assets within a specific time period and geographic area. The method is commonly used to estimate property values for residential or commercial real estate. The initial asking price of $6 million for Elmer's Island was based on informal application of this approach under a broad range of hypothetical scenarios. Major options for commercialization included: 1) full or significant development of the property for condominiums, marinas, rental lodging, and recreational homes and camps; 2) reactivation of existing sand mining operations; 3) construction of a golf course; and 4) the establishment of a light jet airport (Comardelle 2003, Truax 2003).

In the summer of 2003, these alternatives were evaluated for their physical, legal, and financial feasibility through a preliminary property value appraisal commissioned by the Louisiana Division of Administration. The appraisal, which included a very thorough evaluation of options 1 and 2 above, determined the alternatives to be highly speculative and risky because of problems related to public resistance, environmental regulation, and economic limitations (Marschall 2003). The highest and best use for Elmer's Island was determined to be preservation, and the 1,160-acre property was valued at $1 million, or $862 per acre. This estimate was reportedly based on a range of comparable sales ranging from $50 to $1,200 per acre (Truax 2003). Though no citations were provided, the range was defined as "sales of wetland parcels acquired for preservation and/or speculation."

The upper bound of comparable preservation values used in the state appraisal is well below the prices demanded for undeveloped property on nearby Grand Isle. One preservation group on Grand Isle recently offered $14,000 and $17,000 per acre for small tracts (12-17 acres) of interior, non-developed land (Landry 2003). Despite the proximity, the islands are only partially comparable from a real estate standpoint because Elmer's does not contain the same infrastructure (utilities, improved roads, and levee protection) as Grand Isle. Conversely, no properties on Grand Isle offer the unique location, size, and historical use found at Elmer's Island. But like Grand Isle, Elmer's Island is one of the few remaining beachfront properties in coastal Louisiana that is road-accessible.

Elmer's Island is strategically located in a coastal area with high levels of tourism. Grand Isle and Fourchon are within a five-mile radius of Elmer's Island, and these locations were identified in this survey as the most popular destinations for coastal tourism in Louisiana. Recent property delineations have noted that a portion of Elmer's Island is actually comprised of 194 acres of accreted beachfront, and thus state-owned according to the Public Trust Doctrine (Acadia 2003; Wilkins and Wascom 1992). Yet this doctrine has not constrained the value of beachfront property on nearby Grand Isle, where lots sell for an average $1,000 per linear foot of width along Hwy. 1 (Landry 2003).

Perhaps the most unique aspect of Elmer's Island pertains to its size and commercial history. No beach front property of similar size in coastal Louisiana has been operated for the past 30 years as a commercial primitive area and campground. Though Cameron parish contains 29 miles of road accessible beach, public use is limited to a 300 foot span between the shore and adjacent roads (Figure 4). A similar band of narrow beach that was once open to the public via Port Fourchon is now blocked off, reducing users to less than two-miles of accessible recreation area. At 1,354 acres, Elmer's Island has been the largest contiguous recreational tract in Louisiana located directly on the Gulf of Mexico. Though nearby Grand Isle is seven miles in length, the public only has access to the tidal beachfront, and most adjacent properties are privately owned. Grand Isle State Park does provide the same combination of interior wetlands and beachfront found on Elmer's Island, but it is much smaller.

It is well-known that the comparable sales approach is only a reliable metric of land value for those properties in which multiple analogs exist. Clearly, the preliminary appraisal of $1 million represents the lower bounds of property value. Few if any land sales in coastal Louisiana are useful for comparison to Elmer's Island because of its unique commercial history. Additional value is imbued by the scarcity of accessible recreation sites on the Louisiana coastline. While its many bays and estuaries provide Louisiana with the second longest coastline in the coterminous U.S. (7,721 miles), that same characteristic provides Louisiana with the least amount of road accessible beaches (Culliton et al. 1999). Road-accessible beaches and recreation areas situated directly on the Gulf of Mexico currently comprise less than one percent (0.63%) of the entire Louisiana coastline.

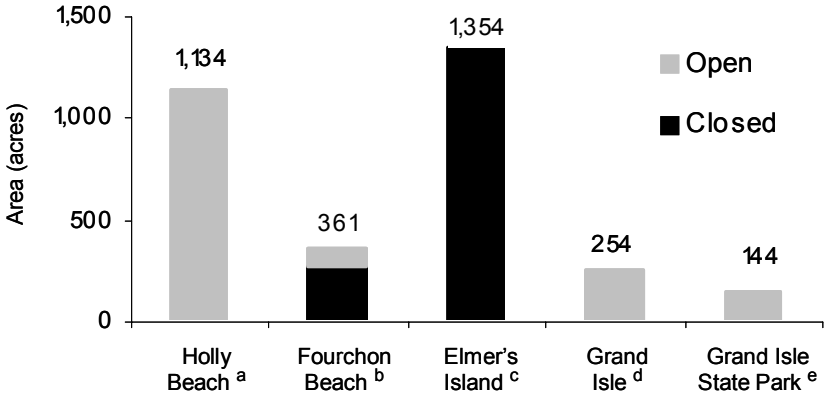


Figure 4. Publicly Accessible Recreation Areas in Louisiana on the Gulf of Mexico
Assumes 300 foot width of beach and beach lengths of 29 [(a)], 9 [(b)], and 7[(d)] miles.
Total public areas including state-owned beach [(c,e)].

Income Capitalization

For more than 30 years, Elmer's Island was operated as a commercial campground and primitive area. A similar management regime warrants consideration under the income capitalization approach. This technique appraises the value of an asset as a function of the cash flow (income) generated by that asset to an investor. The method is commonly used to estimate the value of businesses and income producing properties. The formula for income capitalization appraisal is simply net income divided by a capitalization rate. Rates of 5% to 7% are commonly used for inland business properties; however, a capitalization rate of 10% is suggested to account for the higher environmental and economic risks associated with coastal businesses.

Estimating the income potential of Elmer's Island under an "owner-operator" scenario requires some knowledge of the property's revenue potential. Since income tax records are not available, revenue estimates are generated here using a combination of anecdotal accounts and survey data. Former employees and patrons of Elmer's Island were interviewed and asked to estimate the average number of cars for each weekday during: 1) early season, April-May; 2) mid-season, June-August; and 3) late season, September-October (Lozier 2003; Gail 2003; Horst 2003). Using an average of three companions per car (Table 3), this systematic inquiry yields an estimated visitation of 40,354 people annually for the years 1998-2002. This estimate is considered to be conservative in that more than one-third of this visitation could be provided by the more than 14,000 trips annually indicated by survey respondents alone (Table 7). Additional support of this estimate is obtained through consideration of Grand Isle State Park. Although the park is considerably smaller than Elmer's Island, it has averaged 100,000 visitors annually over the past decade (LaCRT 2002) (Figure 5).

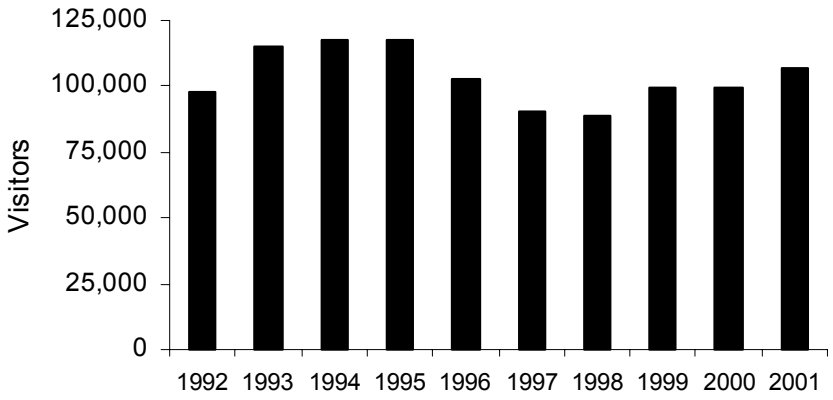


Figure 5. Annual Visitation to Grand Isle State Park

The original owner, Mr. Jay Elmer, reportedly conducted all management tasks and provided maintenance labor on all machinery and roads. Additional labor was employed only seasonally (April-May) and paid minimum wage for tasks such as fee collection (1 person, 40 hrs/week) and trash collection (2 people, 8 hrs/week). Given an annual salary consistent with local income and assuming no fixed expenses, Mr. Elmer would have had a minimum Total Annual Costs (TAC) of approximately $50,000 per year.

Clearly, liability insurance coverage would have significantly increased operating costs, but information on Mr. Elmer's insurance costs is not available. Major insurance companies do not routinely rate privately run coastal primitive areas, and thus no estimates are readily available from the open market; however, insurance schedules are available from the largest commercial U.S. campground franchise. These schedules range from $0.63 to $0.85 per camper night (PCN) for an annual visitation of 10,000 or more (KOA 2001). Thus at approximately 40,000 visitors annually, TAC would be increased by $25,200 to $34,000 for liability insurance cost alone.

According to former employees and patrons, fees collected in the last year of operation (2002) were $8 per car plus $2 per person. Based on an average occupancy of three persons per trip, these fees equate to an average entrance cost of $4.67 per adult visitor. This entrance fee compares closely with the average expected fee of $4.91 per person derived from the survey (Table 7).

Although no efforts were made to calculate recreational price elasticity for access to Elmer's Island, it is assumed that entrance fees could be slightly higher without affecting visitation. Recall from Table 6 that the average survey respondent expected a reopened Elmer's Island to have a daytime fee of $4.91 and an overnight fee of $10.38. The average of these two numbers, $7.64, is useful for revenue calculations because it: 1) assumes an equal percentage of day and overnight trips, 2) is well below the $12.63 average maximum fee expressed by survey respondents, and 3) is less than the $11.00 per person overnight rate for tent camping charged at commercial camping sites across Louisiana (KOA 2001).

It is also assumed that the original visitation rate could be maintained under new ownership and substantially increased given limited site improvements. For calculation purposes, the upper end of the visitation range is assumed to be 60,000, a 50% increase in annual visitation. Since the context for this new business is a primitive camping area, higher visitation would be limited to the increased costs for advertising, road maintenance, and trash pick-up.

Finally, it is assumed that a minimum of $500,000 in start-up capital would be required for the previously mentioned improvements to infrastructure. Such investments would include fortification of existing roads and construction of an improved gatehouse with minimal restrooms facilities. Assuming a 20-year loan period and a conservative 8% interest rate, debt services would be about $60,000 annually. Given additional increases to labor, insurance, and other unforeseen costs, the new owner-operator would face a TAC range of $125,000 to $250,000. By comparison, the seasonal operating costs (April – October) for Grand Isle State Park are $192,083 (Johnson 2003).

Tables 9 and 10 depict the results of income capitalization appraisals of the Elmer's Island property assuming 1) the expected, maximum, and average daily entrance fees, 2) TAC ranging from $125,000 to $250,000, and 3) capitalization rates of 10% and 15%. Given these variables, property values can vary from a low of $140,000 to a high of $4.7 million. A realistic combination of assumptions includes an average entrance fee of $7.64 and a minimum TAC of $175,000. For this combination, the value for the Elmer's Island is estimated $870,667 for the 15% capitalization rate $1,306,000 for the 10% capitalization rate; however, if an annual visitation of 60,000 is assumed, these values increase dramatically to $1,889,333 and $2,834,000 for 15% and 10% capitalization rates, respectively.

Table 9: Income Capitalization Value of Elmer's Island at 40,000 visitors annually

	10% Capitalization Rate			15% Capitalization Rate		
	$4.91	**$7.64**	**$10.38**	**$4.91**	**$7.64**	**$10.38**
TAC						
$150,000	460,000	1,556,000	2,652,000	306,667	1,037,333	1,768,000
$175,000	210,000	1,306,000	2,402,000	140,000	870,667	1,601,333
$200,000	--	1,056,000	2,152,000	--	704,000	1,434,667
$225,000	--	806,000	1,902,000	--	537,333	1,268,000
$250,000	--	556,000	1,652,000	--	370,667	1,101,333

Table 10: Income Capitalization Value of Elmer's Island at 60,000 visitors annually

	10% Capitalization Rate			15% Capitalization Rate		
	$4.91	**$7.64**	**$10.38**	**$4.91**	**$7.64**	**$10.38**
TAC						
$150,000	1,440,000	3,084,000	4,728,000	960,000	2,056,000	3,152,000
$175,000	1,190,000	2,834,000	4,478,000	793,333	1,889,333	2,985,333
$200,000	940,000	2,584,000	4,228,000	626,667	1,722,667	2,818,667
$225,000	690,000	2,334,000	3,978,000	460,000	1,556,000	2,652,000
$250,000	440,000	2,084,000	3,728,000	293,333	1,389,333	2,485,333

Managing a fee-based campground and coastal primitive area would be a tedious and difficult lifestyle and is not likely to appeal to large number of prospective investors. It is, nevertheless, exactly how Elmer's Island was operated for the past three decades. And because of high recreational demand and environmental concerns, it would likely be the commercialization option most acceptable to the public.

Of the three appraisal scenarios presented, the income capitalization approach best approximates the value of Elmer's Island because of its ability to account directly for historical use and indirectly for the unique size and location of the property. Unfortunately, the inherent sensitivity of the income capitalization approach results in a wide a range of output. Though certainly a valid appraisal method, marginal changes in one or more assumptions produce large shifts in estimated value. Assumptions must be based on a conservative but fair assessment of all existing and potential costs and revenues.

ECONOMIC IMPACT

When sufficient information exists, replacement costs, comparable sales, and income capitalization are valid techniques for property appraisal, but these methods have specifically evolved for the valuation of property that is transferred from one private entity to another private entity. Considerations beyond fair market value are required when evaluating the benefits of public ownership.

Impact analysis is frequently used to evaluate the feasibility of government investment in business and infrastructure projects. Impact analysis is based on economic multipliers that account for the total economic effect (re-spending and employment) of an investment within a specific local, state, or regional economy. The majority of impact analysis is conducted using input-output (I-O) models that are programmed into computer software containing the necessary the databases, coefficients, and multipliers. If expenditure data and other variables are available, impact analyses can be calculated without formal I-O analyses, provided certain caveats are heeded.

Mulkey (1978) established that economic multipliers will generally be higher for communities that: 1) have a diverse economy, 2) have low per capita income, and 3) are located a substantial distance from competitive retail/service centers. Hughes (2003) provides general policy guidance on the use of economic multipliers for the purpose of impact analysis. The author provides a probable range of economic multipliers ranging from 1.5 to 2.5 for employment classes of 1,000 to 50,000, respectively. Given these parameters, a relevant multiplier range can be developed for estimating the economic impact associated with Elmer's Island tourism.

The only way to access Elmer's Island by road is by traveling south on Hwy 1 through lower Lafourche Parish. This parish has a diverse economy based largely on petroleum, agriculture, ship building, seafood, and tourism. At the southernmost end of the parish lie the Jefferson Parish boundary and the Grand Isle corporate limit, which contains the only road entrance to Elmer's Island. Coastal tourism is the major economic driver in the community; the closest major provider of retail services is located 30 miles north in the town of Galliano. Lafourche Parish ranks 26th in per capita income amongst 64

Louisiana parishes and has a tourism employment base of 43,000 (TIAA 2002). Given these geographic and demographic characteristics, an economic multiplier of 2.0 is used to estimate the impact of tourism expenditures associated with Elmer's Island. This multiplier is considered to be conservative compared to the multipliers typically used to justify public recreation areas. For example, the Louisiana Office of State Parks estimates that every dollar spent in association with park visitation fosters an economic impact of $5.62 to $6.53 for the local and state economy, respectively (Earle and Loughridge 1997).

Recall that expenditures for coastal tourism (weighted average) were approximately $149 per person per trip (day) for the combined expenses of lodging, fuel, food and beverages, equipment, supplies, fees, and other; however, only 62% of respondents indicated that recreational tourism was the primary purpose for their coastal visits. Expenditures can be reduced by 38% to account for this response. Thus $92 per person is assumed to be the daily expenditure level generated solely from coastal recreation. Given the average respondent's willingness to visit Elmer's Island 5.3 times annually, a total of $1,313,107 would be spent each year by the 2,693 respondents of this survey alone, assuming no extrapolation or multiplier effects.

As previously mentioned, the application of data from this survey is limited by the method in which it was collected. Without the use of a bootstrap technique, it would be incorrect to assume that survey respondents reflected the general preferences of Louisiana's 4.2 million residents. It would also be incorrect to assume the sample was representative of Louisiana's 330,000 licensed saltwater anglers. The data could reasonably be extrapolated to the historic visitation of Elmer's Island, however.

Table 11 provides an estimation of the economic impact associated with Elmer's Island tourism under various visitation scenarios. Recall from the previous section the annual visitation to Elmer's Island historically was estimated to be 40,000. It was further estimated that an annual visitation of 60,000 could be achieved with modest site improvements and limited advertising. Given these two scenarios and a $92 per visit expenditure, base expenditures would range from $3,695,200 to $5,542,800 annually. Assuming a multiplier of 2.0, the range of economic impact in lower Lafourche Parish and the Grand Isle community would range between $7,390,400 and $11,085,600 annually.

Table 11: Associated Economic Impact of Elmer's Island Tourism
Assumes $92 expenditures per person, per visit

	Annual Visitation					
	10,000	**20,000**	**30,000**	**40,000**	**50,000**	**60,000**
Multiplier						
1.00	923,800	1,145,512	2,771,400	3,695,200	4,619,000	5,542,800
1.25	1,154,750	1,431,890	3,464,250	4,619,000	5,773,750	6,928,500
1.50	1,385,700	1,718,268	4,157,100	5,542,800	6,928,500	8,314,200
1.75	1,616,650	2,004,646	4,849,950	6,466,600	8,083,250	9,699,900
2.00	1,847,600	2,291,024	5,542,800	7,390,400	9,238,000	11,085,600

The broad range of economic impact listed above requires some qualification. While it is likely that the historic visitation (40,000) is associated with $3,695,200 in direct expenditures, it is not clear what the fate of these expenditures has been since closure of the property in 2002. Clearly, some of this spending has simply stopped occurring; some of it has likely been switched to substitution sites. The question ultimately becomes one regarding the specificity of Elmer's Island expenditures.

Table 12 provides a range of non-substitutable expenditures and economic impact that is specific to Elmer's Island. An "expenditure specificity" schedule of 20%, 30%, and 40% was developed through consideration of specific survey questions (Q3a-f, Q23) that solicited names and preferences for alternate (substitute) sites. If a minimum rate of 20% expenditure specificity is assumed, $739,040 in direct expenditures and $1,478,080 in economic impact have been lost annually since the closure of Elmer's Island.

An annual loss of nearly $1.5 million in economic activity would undoubtedly produce negative effects on the community of Grand Isle and small businesses in south Lafourche Parish. Given that substitution effects have been factored out of this estimate, the loss would extend to the statewide economy as well. Conversely, reopening Elmer's Island under a public management regime would likely recapture all of this economic activity. Indeed, at 60,000 visitors, the state could reasonably net a minimum of $2,217,120 in economic activity related solely to Elmer's Island tourism.

Table 12: Specific Economic Impact of Elmer's Island Tourism
Assumes $92 expenditures per person, per visit

	Annual Visitation					
	40,000 visits			60,000 visits		
Specificity	**0.20**	**0.30**	**0.40**	**0.20**	**0.30**	**0.40**
Multiplier						
1.00	739,040	1,108,560	1,478,080	1,108,560	1,385,700	2,217,120
1.25	923,800	1,385,700	1,847,600	1,385,700	1,732,125	2,771,400
1.50	1,108,560	1,662,840	2,217,120	1,662,840	2,078,550	3,325,680
1.75	1,293,320	1,939,980	2,586,640	1,939,980	2,424,975	3,879,960
2.00	1,478,080	2,217,120	2,956,160	2,217,120	2,771,400	4,434,240

SUMMARY AND CONCLUSIONS

The closure of Elmer's Island in 2002 was a setback for thousands of individuals and families who had come to depend on the site as a low-cost source of coastal recreation. Latent demand for the property was clearly demonstrated in June and July of 2003 when 2,693 respondents participated in the Elmer's Island Coastal Recreation Preference Survey. Of 30 major survey findings (Table 13) the most compelling result of all is that 96% of respondents, in both Internet and intercept surveys, wanted to see Elmer's Island purchased by the state of Louisiana. Clearly, 30 years of low-cost access has led Elmer's Island to be viewed as part of the public domain. Appeals for state ownership reflect widespread concern that public access might not be continued under a new private management.

In addition to the consumptive, recreational demand for Elmer's Island, considerable value has been linked to passive values associated with ecosystem services, culture, and tradition. The average respondent was willing to pay a one-time sum of $110 simply to maintain: 1) the option of public usage, 2) the right to bequest the property to future generations, and 3) the existence value of keeping Elmer's Island available in a natural state. Contingent values such as these are reflected throughout more than 70 pages of survey comments (Appendix B), but such values are not captured in the open market.

Unfortunately, for the non-market value of Elmer's Island to be recognized under the current regime of coastal restoration, the property would have to be entirely lost to erosion or development. Such threats are more real than theoretical in coastal Louisiana, where more than 1,900 square miles of wetlands have been lost in the past century alone, primarily due to human causes. Recently proposed and completed coastal restoration projects in habitats similar and adjacent to Elmer's Island have incurred conservation and replacement costs of $14,000 - $58,000 per acre, respectively (Table 14).

The tendency to over-inflate real estate values makes replacement costs an unsuitable method for appraising the value of Elmer's Island. The most common real estate appraisal method, comparable sales, could be equally inappropriate. The comparable sales approach is only a suitable metric of land value for those properties in which multiple analogs exist. Yet, few if any properties in coastal Louisiana compare to the unique location, size, and history Elmer's Island. Thus, the preliminary appraisal of $1 million is likely derived from comparisons to isolated, interior marshlands that have little or no established market for recreational tourism.

Table 13: Summary of Major Results

1	Number of survey respondents: 2,693: 92% Internet and 8% Intercept
2	Male (86%), Female (14%); Average age: 43. Median income: $20,000-$60,000
3	Primary forms of coastal Louisiana recreation: offshore fishing (10%), surf/marsh fishing (77%), bird watching (3%), camping (3%), swimming/beachcombing (4%), other (3%)
4	First and second most popular destinations for recreation: Grand Isle and Fourchon
5	Average expenditures per trip to coastal Louisiana: $149/person, $92/person (primary)
6	Average number of hours per trip: 18.91
7	Average number of travel companions (including respondent) on a trip: 2.99
8	Average number of trips taken to coastal Louisiana annually: 13.3
9	Percentage of trips taken primarily for the purpose of recreation: 62%
10	Annual coastal recreation expenditures of survey respondents alone: $2.9 million
11	Respondents indicating environmental factors are an important site consideration: 93%
12	Most important site considerations: pollution and access
13	Least important site considerations: camper hookups and interpretive signage
14	Respondents who had heard of Elmer's Island prior to the survey: 95%
15	Respondents who had visited Elmer's Island prior to the survey: 84%
16	Respondents had visited Elmer's Island 25 or more time in their lifetime: 35%
17	Primary forms of Elmer's Island recreation: offshore fishing (2%), surf/marsh fishing (86%), bird watching (3%), camping (4%), swimming/beachcombing (4%), other (2%)
18	Secondary forms of Elmer's Island recreation: offshore fishing (3%), surf/marsh fishing (15%), bird watching (5%), camping (36%), swimming/beachcombing (35%), other (7%)
19	Respondents aware of a potential state purchase prior to survey: 74%
20	Percentage in favor of state purchase of Elmer's Island: 96% Internet and 96% Intercept
21	Percentage that would visit Elmer's Island if purchased by the state: 98%
22	Average management preference for Elmer's Island (Internet): Semi-primitive to Sparse
23	Average management preference for Elmer's Island (Intercept): Moderate - State park
24	Average number of trips annually respondents would take to Elmer's Island: 5.27
25	Respondents traveling to Elmer's Island from greater than 2.5 hours away: 77%
26	Annual trips (projected) to Elmer's Island by survey respondents alone: 14,273
27	Average fees per person for day visits - expected: $4.90; maximum: $8.70
28	Average fees per person for overnight camping - expected: $10.38; maximum: $16.56
29	Contingent value averages: $38.87 (option); $41.97 (bequest); and $29.00 (existence)
30	Total contingent value: $110 per respondent

Table 14: Factors Affecting Appraised Value

1	Total area of Elmer's Island according recent delineation: 1,109 acres of private land
2	State claimed beachfront on Elmer's Island: 194 acres of public land
3	Ratio of state and private beachfront (length): approximately 60:30
4	Replacement cost value of Elmer's Island: $14,000 to $58,000 per acre
5	Comparable sales of undeveloped Grand Isle property: $14,00-$17,000 per acre
6	Comparable sales of interior Louisiana marsh (preliminary appraisal): $50-1,000 per acre
7	Comparable sales that are appropriate for valuation of Elmer's Island: Few to none
8	Miles of Louisiana coastline: 7,721
9	Percentage of Louisiana coastline with road-accessible beachfront recreation area located directly on the Gulf of Mexico: Less than 1% (0.0063)
10	Size of Grand Isle State Park: 144 acres
11	Average visitation to Grand Isle State Park, 1992-2002 : 103,650 annually
12	Estimated annual visitation of Elmer's Island, 1999-2002: 40,354 annually
13	Estimated annual visitation of Elmer's Island under a new owner-operator scenario: 40,000 - 60,000 annually
14	Seasonal operating costs for Grand Isle State Park: $192,083 (April-October)
15	Total annual costs for Elmer's Island under new management: $150,00 - $250,000
16	Income capitalized value of Elmer's Island as a business venture: $1.9 - $2.8 million
17	Annual expenditures associated with projected trips to Elmer's Island from the 2,693 survey respondents alone:$1.3 million
18	Annual expenditures associated with Elmer's Island tourism given historic (40,000) and projected (60,000) visitation: $3.7 - $5.5 million
19	Economic impact multiplier used by Louisiana Office of State Parks: 5.0
21	Economic impact multiplier used in this study: 2.0
22	Annual economic impact associated with Elmer's Island tourism given historic (40,000) and projected (60,000) visitation: $7.3 - $11 million
23	Annual expenditures forgone to Louisiana because of the closure of Elmer's Island (assuming 40,000 visitors and 20% expenditure specificity): $740,000
24	Annual economic impact forgone to Louisiana because of the closure of Elmer's Island (assuming 40,000 visitors and 20% expenditure specificity): $1.5 million

A more appropriate application of this approach would account for the fact that Elmer's Island is a business property that is counted amongst the small fraction (0.0063) of coastal Louisiana land that: 1) contains beachfront property, 2) is accessible by road, and 3) is situated directly on the Gulf of Mexico.

State appraisers have determined the highest and best use of Elmer's Island to be preservation. Though this determination is consistent with public demands, it is based largely on the repudiation of commercial options associated with condominiums, marinas, and sand mining. Public opposition and environmental regulations would clearly impede such developments on Elmer's Island, but it would be imprudent to assume such activities could never occur. At best, environmental concerns make commercial development in the coastal zone more expensive and time-consuming. But in cases where demand is high and coastal property scarce, the increased costs of permitting, insurance, and mitigation are easily transferred to willing buyers. Indeed, such constraints have not halted new and expanding waterfront developments under way in many other areas of coastal Louisiana, including Shell Beach, Venice, Cocodrie, Fourchon, and Grand Isle (Taylor 2003).

To date, no formal appraisals have been conducted to evaluate the value of Elmer's Island based on its historic use, as a fee-based campground and primitive area. This business regime was the prevailing model for more than three decades, and there is little doubt that the market still exists. The income capitalization approach can be used to generate property values based on the feasibility of re-opening Elmer's Island under this scenario. Given a broad range of revenue and cost assumptions, property values ranging from $140,000 to $4.7 million are generated. The most realistic portion of this range, from $1.9 million to $2.8 million, is based on a preliminary but objective assessment of visitation, fee structure, fixed and operating costs, and capitalization rates.

Similar to appraisals based on replacement costs and comparable sales, the income capitalization technique is not without flaw. Relatively minor changes in assumptions produce large shifts in estimated value. Refinement of the technique is typically handled through consideration of the historic business record, provided such a record is available and accurate. The overriding flaw of all appraisal techniques, however, is that fair market value is a concept ultimately assigned to assets that are transferred between private entities. Additional factors must be considered when evaluating a prospective property for public purchase. Public benefits are not limited by property boundaries; instead they consist of intangible goods that accrue to environments and economies at the local, state, and regional level.

Data collected from this survey suggest that respondents alone would spend an estimated $1.3 million on tourism associated with a reopened Elmer's Island. At the historic annual visitation rate of 40,000, $3.7 million in expenditures would be associated with Elmer's Island tourism. Assuming a conservative multiplier, these expenditures produce an economic impact of $7.3 million. Indeed, as much as $11 million in economic impact could be achieved if the annual visitation of Elmer's Island were to reach 60,000. While this visitation level represents a 50% increase over historic levels, it is not considered overly optimistic. Grand Isle State Park averages 100,000 visitors annually, and at 144 acres it's only 11% of the size of Elmer's Island.

While Elmer's Island has undoubtedly generated a sizeable economic impact for the state and local economy over the past three decades, the question ultimately becomes one of specificity. In short, how unique is the Elmer's Island experience? While this is a subjective question with no single correct answer, some insight is provided using survey data related to substitution sites for coastal recreation. Assuming an expenditure specificity rate of 20%, a minimum of $740,000 in direct expenditures and $1.5 million in economic activity has been lost annually since the closure of Elmer's Island. Given that substitution effects are factored out, this loss extends to the statewide economy. The brunt of this loss, however, is felt in lower Lafourche Parish and Grand Isle, communities that are clearly linked to the viability of coastal tourism.

RECOMMENDATIONS

The following recommendations are based on a preliminary analysis of the Elmer's Island Coastal Preference Survey:

1) The State of Louisiana should continue negotiating for the purchase of Elmer's Island.

2) In calculating a new offering price, the State should consider the recent history of coastal land loss and commercial development in the Louisiana coastal zone.

3) The State should continue attempts to reconcile existing appraisals with the business history of Elmer's Island. If historic business records are incomplete or unreliable, an income capitalization appraisal could be calculated using the visitation rates and revenue estimates (historic and projected) derived from this study. Current estimates using this appraisal method generate realistic property values for Elmer's Island in the range of $1.9 million to $2.8 million. For purposes of negotiation, this range could be used to supplement initial appraisals.

4) If an additional appraisal is required under the comparable sales method, that appraisal should be based on commercial properties located in coastal Louisiana that: 1) contain beachfront property, 2) are accessible by road, and 3) are situated directly on the Gulf of Mexico.

5) Any new purchase offers from the State should include an additional premium based on public benefits (market and non-market). As calculated in this study, such benefits include a minimum of $1.5 million annually in specific economic tourism activity and $300,000 in contingent value.

6) An advisory panel of public and private representatives should be convened to evaluate the options for public management of Elmer's Island. Representatives should be solicited from the Office of State Parks, the Louisiana Department of Wildlife and Fisheries, Jefferson and Lafourche parishes, the City of Grand Isle, the Louisiana Wildlife Federation, the Barataria-Terrebonne National Estuary Program, and the Louisiana Sea Grant College Program.

7) In evaluating management options for public use, semi-primitive to sparse development (improved roads and restrooms) alternatives should receive priority. If the property is to be managed as a state park, efforts should be made to limit that park to a modest infrastructure.

8) Under any management scenario, opportunities for fee collection should be fully explored.

9) When/if the State procures ownership and appoints a management authority, Elmer's Island should be reopened as soon as possible to minimize regional economic losses.

10) Given the relative scarcity of road-accessible coastal property in Louisiana, the purchase of Elmer's Island should be viewed as the first phase of a larger procurement effort designed to provide beachfront recreation lands to the general public. Second phase acquisitions should focus specifically on the adjoining coastal properties located between Elmer's Island and Port Fourchon.

"Where a site offers unusual or unique features, which are not duplicated or perhaps even approached elsewhere in the State, the strongest possible reason exists for including it in any proposed system, even in the face of serious obstacles."

Evison, H. (1930) National Conference on State Parks

REFERENCES

AIREA (1983). The Appraisal of Rural Property, American Institute of Real Estate Appraisers, ISBN: 0-911780-56-4, 11th Edition. Appraisal Institute, Chicago, 1983.

ALS (2003) Area Calculation of Elmer's Island, Acadia Land Surveying, L.L.C., 314 East Bayou Road, Thibodaux, La.

Baldone, D.J., H. Downer, H. Powell and C. Ullo (2003) House Concurrent Resolution No. 116. Louisiana House of Representatives.

Barras et al. (2003) Historical and Predicted Coastal Louisiana Land Changes: 1978-2050, USGS Open File Report, July 2003, 11p.

Burt, O.R. and D. Brewer. "Estimation of Net Social Benefits from Outdoor Recreation." Econometrica 39(1971):813-27.

Caffey, R. H. and M. Schexnayder (2003) "Coastal Louisiana and South Florida: A ComparativeWetland Inventory", in: An Interpretive Topic Series on Louisiana Coastal Wetland Restoration, Coastal Wetland Planning, Preservation, and Restoration Act Outreach Committee (eds.), National Sea Grant Library No. LSU-G-03, 8p.

Comardelle, D. (2003) Mayor of Grand Isle, personal communication, August 22, 2003.

Culliton, T., et al. (1999) 50 years of Population Change along the Nation's Coasts, 1960-2010. NOAA, Strategic Assessment Branch, Rockville, MD. 41 pp.

Curole, W. and K. St. Pe, Resolution of the Barataria-Terrebonne National Estuary Program Management Conference, July 31, 2002.

Costanza, R., Farber, S., and J. Maxwell (1989) The Valuation and Management of Wetland Ecosystems, Ecological Economics 1:335-363.

CWPPRA (2002) Holly Beach Sand Management (CS-31) General Project Fact Sheet, Coastal Wetlands Planning, Protection and Restoration Act, Project status report October 2002. http://www.lacoast.gov/projects/list.asp

CWPPRA (2003) Timbalier Island Dune and Marsh Creation (TE-40) Project Managers Fact Sheet, Coastal Wetlands Planning, Protection and Restoration Act, Project status report October 2003. http://www.lacoast.gov/projects/list.asp

Davis, A. (2003) Deputy Commissioner for Policy, Louisiana Division of Administration, Personal Communication. September 2003.

Emmert, J.J. "Income And Substitution Effects in The Travel Cost Model: An Application to Indiana State Parks." American Journal of Agricultural Economics 81(1999):1330-1337.

Earle, D. and D. Loughridge (1997) Louisiana State Parks Master Plan 1997-2012. 44p. http://www.lastateparks.com/pdffiles/Mplan.htm

Evison, H. (1930) Editor, A State Park Anthology, Washington, D.C., National Conference on State Parks, 1930, see Planning a System of State Parks for Connecticut, by Albert M. Turner, p. 78. Turner.

Farber, S. (1996). The Economic Welfare Loss of Projected Louisiana Wetlands Disintegration, Contemporary Economic Policy, 14 (1): 92-106.

Gail, P. (2003) Property-owner on Elmer's Island, Personal Communication, August 2003.

Gilbert, J. (2003) Commercial/Marine Insurance Adjuster, Kennedy, Lewis, Renton & Associates, Inc. Personal Communication November 2003.

Gunter, V.J., R.B. Ditton, and S.G. Olson. 1987. "An Assessment of Beach Access and Management Issues on Galveston Island." Coastal Management. Volume 15: pages 247 to 260.

Horst, J. (2003) Associate Extension Professor and State Fisheries Specialist, LSU Agricultural Center and Louisiana Sea Grant College Program, Personal Communication, August 2003.

Hughes, D. (2003) Policy Uses of Economic Multiplier and Impact Analysis, CHOICES, Second Quarter, July 2003, p. 1-6.

Johnson, S. (2003) Deputy Assistant Secretary, Office of State Parks, La Department of Culture Recreation, and Tourism. Personal Communication, October 2003.

Kenchington R. (1993) Tourism in coastal environments – a recreational perspective. Ocean & coastal management 19: 1-16.

KOA (2001) Kampgrounds Of America, 2001 Per Camper Nite Averages, Schedules A-D, Carol Preble, Franchise Sales, Billings, MT.

Landry, J (2003). Nature Conservancy of Louisiana at Grand Isle, personal communication.

LaCRT (2002) Annual Visitation Data for Grand Isle State Park, Louisiana Department of Culture, Recreation, and Tourism.

Leatherman S. P. (1997) Beach rating: A methodological approach. Journal of Coastal Research 13(1):253-8

Lozier, D. (2003) Former Elmer's Island Employee, 1997-2002, Personal Communication, August 2003.

Marschall, D. (2003) Summary of Environmental Issues Affecting the Value of Elmer's Island, Conestoga-Rovers & Associates, in July 29, 2003, consultation letter to Charles A. Landry, Jones Walker Law Firm. Reference No. 27524-00.

Milon , J., and A.W. Hodges (2000) Who wants to pay for Everglades restoration? CHOICES, Second Quarter, 2000, p 12-16.

O'Shea, S. (1999) Public Access to Louisiana Beaches Following Publicly Funded Restoration Projects, Tulane Environmental Law Journal, Volume 13, Winter 1999, Issue 1, pp. 95-124.

Taylor, T. (2003) Editor, Louisiana Sportsman Magazine. Advertisements for coastal property developments appearing in October 2003 issue, pages 27, 188, 240, 242, and 243.

TIAA (2002) The Economic Impact of Travel on Louisiana Parishes 2002: A Study Prepared for the Louisiana Office of Tourism by the Research Department of the Travel Industry Association of America Washington, D.C., July 2003, 50 p.

Truax, M. (2003) Restricted Appraisal Report and Preliminary Market Value Estimate – Elmer's Island Property, Jefferson Parish, La. Max J. Derbes Appraisers, L.L.C., August, 7, 2003.

USACE 2002. DRAFT FEASIBILITY REPORT- Wetland Creation and Restoration. Louisiana Coastal Area, Louisiana-Ecosystem Restoration; Barrier Island Restoration, Marsh Creation, and River Diversion, Barataria Basin Feasibility Study. http://www.coast2050.gov/

WaterMarks (1999) Projecting Barrier Island Disappearance Dates, Louisiana Coastal Wetlands Planning, Protection and Restoration News, Fall 1999, www.lacoast.gov/watermarks/

Wilkins, J.A., and M. Wascom (1992) The Public Trust Doctrine in Louisiana, Louisiana Law Review, Vol. 52, March 1992, Number 4, pp. 861-905.

ACKNOWLEDGMENTS

The authors wish to thank Jack Van Lopik, Ron Becker, and Mike Liffmann of the Louisiana Sea Grant College Program for providing the idea and funding for this research. We are also very appreciative of Dwight Landreneau, Stuart Johnson, and Elinor Craven of the Louisiana Office of State Parks for providing tourism data and facility usage at Grand Isle State Park. Steve Henning, Lonnie Vandeveer, and Gerald Giesler in LSU Department of Agricultural Economics provided valuable input on the topic of rural land appraisal. Additional thanks goes to the following people for their input and assistance: Randy Lanctot, Keith Saucier, Angele Davis, Tommy Prickett, Herb Holloway, Jean Landry, Richard DeMay, Kerry St. Pe, Jerald Horst, Mark Schexnayder, Darlene Lozier, Van Remsen, David Hughes, Patty Gail, Yang Qin, and Rick Bogren. Finally, we extend our gratitude to the many writers and media outlets that promoted the survey, with particular thanks to Mike Lane of RodnReel.com, Todd Masson and Andy Crawford of LaSportsman.com, Bob Marshall of the New Orleans Times Picayune, and Don Dubuc of WWL 870 AM radio.