

AN ANALYSIS OF ATTITUDES TOWARDS THE COMPREHENSIVE EVERGLADES RESTORATION PLAN USING MARKET SEGMENTATION

Jeffrey J. Bransford
Clemson University

Robert D. Bixler
Department of Parks, Recreation & Tourism
Management
Clemson University
Clemson, SC 29634-0735
rbixler@clemson.edu

William E. Hammitt
Clemson University

Abstract

Manipulation of water systems in south Florida have created hundreds of miles of canals, dams, and other diversions. These efforts significantly altered the region's hydrology and introduced unanticipated changes into the ecosystem. In 2000, the Comprehensive Everglades Restoration Plan (CERP) was authorized to restore, protect, and preserve these wetlands. Because CERP is the product of negotiated compromise between divergent interests, public outreach and involvement serves an important role. Using data collected from a telephone survey of south Florida residents ($n = 1,806$), four segments were derived to assist managers understand the public's support of the restoration plan. Results show that most respondents ($n = 984$) had no awareness of the plan. Differing demographic and psychographic profiles of segments suggest that varied communication strategies are necessary to promote CERP to each subgroup. Using marketing principles, a prioritization schema is constructed to assist managers communicate with the public.

1.0 Introduction and Background

The nation's most expansive subtropical wetland, known as the Everglades, covers approximately 2 million acres in south Florida (South Florida Water Management District [SFWMD] 2005). Human induced manipulation of natural drainage systems starting in the late 1800s allowed white settlement to burgeon. Agriculture flourished as hundreds of miles of canals and levees were constructed to reclaim the land (Clarke & Dalrymple

2003). After several decades, these alterations – created to control flooding and divert water for agricultural irrigation – contributed to over-drainage and severe soil loss (Clarke 2003, Sklar et al. 2000). Petitioning state and federal governments, the citizens of south Florida requested assistance in managing the region's water (Clarke & Dalrymple 2003). Congress responded by authorizing the U.S. Army Corps of Engineers to complete several complex projects aimed at providing “flood control, water supply, prevention of saltwater intrusion, and protection of fish and wildlife resources” (SFWMD & Florida Department of Environmental Protection [FDEP] 2004).

Unexpected ecological changes and rapid increases in the human population of south Florida continued to pose threats to the wetlands despite the efforts of the Army Corps of Engineers. By the end of the 1900s, the Everglades constituted only one-half of its original geographic extent and 30 percent of historic water flows (SFWMD & USACE 1999). In 1994, the Comprehensive Everglades Restoration Plan (CERP, or “plan”) was proposed as a way to correct historical misallocations of water through hydrological and ecological restoration of the Everglades system (Clarke 2003). The underlying assumption of CERP supposes that the ecosystem will recover when natural water flows and cycles are restored to the remaining lands of the Everglades (Clarke & Dalrymple 2003).

The stated goal of CERP is to “restore the quantity, quality, timing, and distribution of water to the Everglades ecosystem” (SFWMD & FDEP, 2004). More generally, the plan aims to reconcile ecological values with social and economic priorities to achieve sustainable well-being (Clarke 2003, SFWMD & USACE 1998). And, given the complexity and scale of CERP, officials recognize that its effects may not become evident for several years (SFWMD & FDEP 2004). CERP managers need an understanding of prevailing attitudes of south Florida citizens towards the restoration effort, including communication strategies, to respond to the public's concerns and to succeed in adaptive assessment. This

study seeks to: 1) segment a sample of south Florida residents based on the nature of their awareness and support of CERP; 2) profile each segment using socio-demographic and psychographic measures; and 3) develop strategies for managers to use for communication with the segmented resident subgroups.

2.0 Methods and Procedures

2.1 Question Development

Based on researchers' review of relevant literature, visits to south Florida, and meetings with personnel affiliated with CERP and the National Park Service, a survey instrument was produced. Potential questions were assembled from prior studies and were written by the research team in collaboration with National Park Service staff. Question item content and order underwent cognitive pre-testing techniques to ensure that survey participants did not respond to questions that, as Bishop (2005) suggests, would significantly influence subsequent survey answers or compel participants to submit survey answers not supported by requisite familiarity or acquaintance. The length of time necessary to complete the questionnaire was determined by conducting mock interviews. The survey instrument was approved by the Office of Management and Budget.

2.2 Data Collection

National Opinion Research Services of Miami, Florida, conducted computer-assisted telephone interviews (CATI) using a sample of 34,500 telephone numbers from the five southernmost counties in Florida (Broward, Collier, Lee, Miami-Dade, and Monroe). National Opinion Research Services specializes in sampling multi-lingual populations; interviewers used in this study spoke both non-accented English and Spanish. Also, several tri-lingual interviewers were utilized for the study to allow for an adequate sampling of Creole-speaking Haitian residents of south Florida.

Using the CATI system, interviewers called phone numbers generated for sample. Only those individuals 18 years of age or older were interviewed. Upon contacting a household, the resident having had the most recent birthday was asked to participate in the interview. If the interviewer reached the interviewee at an inconvenient time, a later appointment was scheduled. The CATI

system was used to track these appointments. Ten attempts were made to reach participants at a phone number before that number was abandoned. The interview cooperation rate for the study was determined to be 17.3 percent. Cooperation rate is considered to be the percentage of the total eligible interviews conducted out of the combined total of all eligible interviews conducted, break-offs, refusals, etc. The total useable sample yielded 1,806 respondents.

3.0 Analysis

Recall that the objectives of this study include segmenting a sample of south Florida residents based on the nature of their awareness of and support for CERP, then profiling each segment using socio-demographic and psychographic measures. One segment of the study population (n = 984, or 54.5%) indicated they did not know there was a restoration plan. This segment was dubbed UNFAMILIAR. About 46 percent (n = 822) indicated they possessed awareness of CERP. These 822 individuals were subsequently segmented based upon their support of the plan. Approximately 89 percent of those aware of CERP (40.4% of the total sample; n = 730) said that they supported it and were therefore referred to as SUPPORTIVE. A segment named UNSUPPORTIVE declared that they did not support CERP (1.8% of the total sample; n = 32). Some respondents could not say whether they supported the plan or not; they were called UNSURE (3.3% of the total sample; n = 60). Figure 1 depicts the steps of analysis.

4.0 Results

4.1 Socio-demographic Profile

Chi-square analysis using cross-tabulation was employed to investigate differences between segments in terms of the following socio-demographic variables: ethnicity, country of birth, language, employment, presence of vehicle in household, county of residence, level of education, household income, and age. Results show that familiarity with CERP distinguishes segments within the context of most of these socio-demographic measures. That is, the UNFAMILIAR segment revealed above expected tendencies to be Hispanic, Latino, or Spanish; speakers of non-English languages mostly; born outside the U.S.; younger; and without access to a

household vehicle. This segment also tended to have a lower education level and lower income. Figure 2 illustrates these differences.

4.2 Psychographic Profile

Principal components factor analysis with a varimax rotation was conducted to reveal underlying dimensions of respondents' attitudes towards a series of statements of generic park policies. Ten statements of attitude from the survey were reduced to three factors explaining 51.1 percent of the variance (see Table 1).

Resource protection attitudes include expressions that suggest human use of and behavior in parks should be secondary to environmental stewardship and guardianship. Counter-mission attitudes are protected area management opinions that are incongruent with the prevailing philosophies of most land management agencies, including the National Park Service (the administrator of much of the Everglades ecosystem). The informed attitudes factor includes opinions that have likely been cognitively justified in the respondent's mind by learned, factual information. Analysis of variance was conducted to investigate differences between segments in terms of the attitude factors. Mean regression factor scores for each segment were used to compare responses. Results are presented in Table 2.

The UNFAMILIAR segment was characterized by negative mean scores on the resource protection attitude factor (-0.18) and on the informed attitude factor (-0.15). This indicates that members of this subgroup tended to hold opinions that do not support natural and historical resource protection, nor did they hold opinions that are commonly supported by complex, counter-intuitive facts. Logically, this segment also exhibited a positive mean score for the counter-mission attitude factor (0.27), indicating that respondents tended to disagree with prevailing park management approaches.

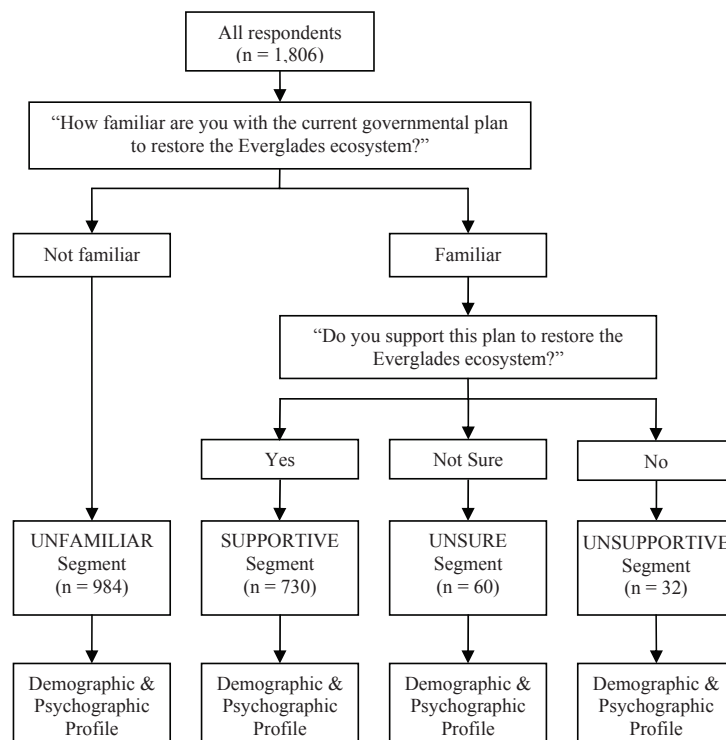


Figure 1.—Steps of Analysis.

Members of the SUPPORTIVE segment exhibited positive mean scores for the resource protection attitude factor (0.25) and the informed attitude factor (0.16). Additionally, this subgroup had a negative mean score on the counter-mission attitude factor (-0.30). Taken together, one can conclude that members of this segment generally held opinions consistent with most land management agencies, and they valued resource management efforts.

Although the UNSURE segment received a negative mean score on the resource protection attitudes factor (-0.11), it received a positive mean score on the informed

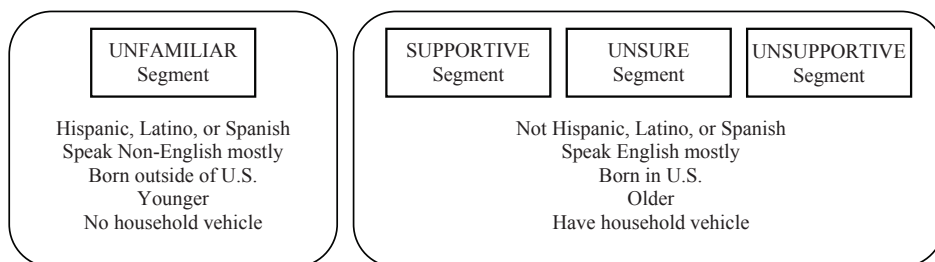


Figure 2.—Above Expected Socio-demographic Tendencies for the UNFAMILIAR Segment Compared to Other Segments.

Table 1.—Factor Analysis of Attitudes Towards Park Management Policies

Items	Item Mean Score ^a
Resource protection attitudes	
“National parks and preserves are important places even if many people do not visit”	4.32
“South Florida parks and preserves are a good use of taxpayers’ money”	3.95
“More rangers are needed to enforce laws and rules in parks and preserves”	3.80
“Natural and cultural resources should be protected in parks and preserves, even if it means reducing the number of visitors”	3.76
Counter-mission attitudes	
“Parks and preserves are a good place to let go of unwanted pet fish or birds”	2.28
“Sports fields, swimming pools or golf courses should be added to attract more visitors to parks and preserves”	2.35
“Panthers, bears, and other large wild animals should be removed from south Florida parks and preserves for the safety of visitors”	2.13
“Only people who deeply respect nature and history should visit parks and preserves”	2.25
Informed attitudes	
“Removal of non-native plant and animal species by park managers should be high priority for south Florida parks and preserves”	3.31
“Parks and preserves should set controlled forest fires to imitate ecological effects of naturally occurring fires”	3.08

^a 1 = “strongly disagree;” 3 = “neutral;” 5 = “strongly agree”

Table 2.—Analysis of variance of park management attitude factors across segments

Attitude Factor	Segment				F	p
	UNFAMILIAR n = 716	SUPPORTIVE n = 587	UNSURE n = 41	UNSUPPORTIVE n = 25		
Resource Protection	-0.18 _{ab}	0.25 _c	-0.11 _b	-0.52 _a	24.4	< .001
Counter-Mission	0.27 _b	-0.30 _a	-0.33 _a	-0.07 _{ab}	38.6	< .001
Informed	-0.15 _a	0.16 _{ab}	0.28 _b	0.12 _{ab}	12.2	< .001

Means in the same row that do not share subscripts differ at $p < .05$ in the Duncan’s post-hoc comparison.

attitudes factor (0.28). Furthermore, the segment received a strong negative score on the counter-mission attitudes factor (-0.33). Members of this subgroup tended to agree with prevailing resource management philosophies and held opinions supported by fact, but weakly disagreed on the tenets of resource management.

Lastly, members of the UNSUPPORTIVE segment were characterized by a strong, negative mean score on the resource protection attitude factor (-0.52), indicating that they tend to disagree with these statements. The mean regression score exhibited by this segment on counter-mission attitudes (-0.07) is near the overall mean regression score (0.00). Individuals in this segment tended to have some knowledge of resource management, as the mean score for the informed attitudes factor is positive (0.12), though weak.

5.0 Conclusion and Implications: Communication Strategies Through a Prioritization Schema

According to Kotler (2000), targeting groups for marketing or information campaigns necessitates an evaluation of the segment's overall attractiveness within the context of the organization's objectives and resources. Although CERP is expected to be a relatively expensive government project (\$7.8 billion according to Clarke, [2003]), it would behoove decision-makers to consider conservative approaches to policy marketing efforts. Therefore, a prioritization schema has been developed to assist CERP decision-makers implement various strategies depending on the availability of resources.

The schema was created based on data collected for this research project. Communication strategies were developed for each segment based upon principles of positioning. First, a determination was made of the attitudes toward the plan that are held by the segment in question (Ries & Trout 1986). Next, particular communication strategies were chosen for that segment from the seven possibilities suggested by Aaker and Shansby (1982) and Aaker and Myers (1987): positioning by attributes/benefits, positioning by price/quality, positioning by use/application, positioning by product class, positioning by user, positioning by competitor, and positioning by cultural symbols. Last, an assessment of

resources necessary for positioning were made (Aaker & Myers 1987).

5.1 First Priority: UNFAMILIAR

If the organizational objective is to garner support for CERP among individual south Florida residents, the first subgroup to target should be UNFAMILIAR persons. Of the four, this was the largest segment, therefore it holds the most potential to achieve support, given that communication efforts are implemented prudently and without distractions from competing interests (Belch & Belch 2004). Because members of this segment held no awareness of the restoration plan, one can logically assume they possessed no attitude towards it. Considering the socio-demographic characteristics of the segment, positioning by cultural symbols and by user are effective approaches.

5.2 Second Priority: UNSURE

Second in the prioritization schema is the UNSURE segment. Members of this subgroup had no cohesive attitude towards the restoration plan, although they were familiar with it. UNSURE individuals tended to exhibit a positive attitude towards often-controversial resource management practices such as prescribed fire and non-native species removal from parks. To appeal to these informed attitudes, marketers should consider positioning by attributes/benefits. Such an approach can attempt to sway UNSURE individuals in the direction of support by emphasizing the advantages of the plan from an ecological perspective. Analogies can be drawn between CERP and invasive species control, for instance. Or, the benefit of biodiversity can be emphasized. The link between environmental well-being and CERP should be demonstrated in a way that portrays the restoration effort as analogous to other resource management practices that have been supported repeatedly by science.

5.3 Third Priority: UNSUPPORTIVE

As Newman and Perloff (2004) put it, "...not all products can be sold to all consumers" (p. 20). In that light, it is not surprising to see that some residents of south Florida did not (and will never) support the Everglades restoration plan. This subgroup, the UNSUPPORTIVE segment, was the smallest of the four identified in this study. They were familiar with the plan

and have explicitly expressed disdain with it. So, although UNSUPPORTIVE residents had the most potential to frustrate or hamper CERP, focusing on them before other subgroups would not be a wise use of resources. Rather, the UNFAMILIAR and UNSURE segments have the potential to yield more support. For these reasons, the UNSUPPORTIVE subgroup receives third priority.

UNSUPPORTIVE individuals may have disliked the plan for many varied reasons, the measurement of which were beyond the scope of this study. They may have borne adversity to any government project, or they may have simply believed in a better notion of how to protect the Everglades. Whatever the reason, their propensity to hold informed attitudes towards park management suggests that any attempt to inform these non-supporters should utilize the positioning by attribute/benefit approach, much in the same way as it was prescribed to the UNSURE segment. That approach should stress positive benefits to the natural environment and the human systems therein. Simply linking CERP to a healthy environmental future may be excessively superficial – insightful connections that associate the plan with the availability and price of the urban water supply, the ability of south Florida's infrastructure to provide a high standard of living, or the far-reaching effects of economic stimulation as the result of increased ecotourism may be effective arguments.

5.4 Fourth Priority: SUPPORTIVE

It is fortunate for managers that the SUPPORTIVE segment is relatively large, as this subgroup already possessed the attitudes that CERP advocates seek. Ranked fourth in priority, they should not be overlooked entirely. Some communication effort will be required to reinforce positive attitudes towards the plan.

6.0 Recommendations for Future Investigation

More accurate, appropriate, and meaningful inferences about the residents of south Florida can be drawn if future researchers improve upon the shortcomings of this study. A sizeable number of stakeholders were not included in data collection because of monetary and temporal constraints. If a similar study is to be conducted in the future, surveys should be administered

during months that would permit the inclusion of seasonal residents (e.g. January or February). While the demographic characteristics of the sample used in this project demonstrated a remarkable likeness to actual population parameters, such validity is not guaranteed for future studies, as geo-demographic changes and shifts occur constantly. Census information should be analyzed with close attention to detail in future studies so that shifts in geographic and demographic trends are captured in the study sample. Instead of telephone interviews, alternative methods of data collection should be considered. Focus groups are frequently used in market research (Babbie 2002) and may reveal ascendant attitudes towards CERP not represented by the segments derived in this paper. Qualitative approaches such as this may be used to generate questions for another quantitative study.

7.0 Citations

- Aaker, D.A., and Myers, J.G. 1987. **Advertising management (3rd ed.)**. Englewood Cliffs, NJ: Prentice Hall.
- Aaker, D.A., and Shansby, J.G. 1982. **Positioning your product**. Business Horizons. 59: 56-62.
- Babbie, E. 2002. **The basics of social research**. Belmont, CA: Wadsworth.
- Belch, G.E., and Belch, M.A. 2004. **Advertising and promotion: An integrated marketing communications perspective**. New York: McGraw-Hill.
- Bishop, G.F. 2005. **The illusion of public opinion: Fact and artifact in American public opinion polls**. Lanham, MD: Rowman & Littlefield.
- Clarke, A.L. 2003. **Introduction to special issue: Restoring the Florida Everglades – Balancing population and the environment**. Population and Environment. 24: 451-453.
- Clarke, A.L., and Dalrymple, G.H. 2003. **\$7.8 billion for Everglades restoration: Why do**

environmentalists look so worried? Population and Environment. 24: 541-569.

Kotler, P. 2000. **Marketing management: Analysis, planning, implementation, and control.** Upper Saddle River, NJ: Prentice-Hall.

Newman, B.I., and Perloff, R.M. 2004. **Political marketing: Theory, research, and applications.** In L. L. Kaid, ed. Handbook of political communication research (pp. 17-44) Mahwah, NJ: Lawrence Erlbaum Associates.

Ries, A., and Trout, J. 1986. **Positioning: The battle for your mind.** New York: McGraw-Hill.

Sklar, F., DeAngelis, D., Fitz, C., Gawlick, D., Krupa, D., Maddeen, C., et al. 2000. **Hydrological needs – Effects of hydrology on the Everglades, Chapter 2.** In South Florida Water Management District, Everglades consolidated report, 2000 (pp. 2-1 - 2-31). West Palm Beach, FL: South Florida Water Management District.

South Florida Water Management District. 2005. **Entire ecosystem – Everglades/Florida Bay watershed management.** Retrieved January 18, 2005, from http://www.sfwmd.gov/org/wrp/wrp_evgl/2_wrp_evgl_watershed/2_wrp_evgl_watershed.html

South Florida Water Management District and Florida Department of Environmental Protection. 2004. **Comprehensive Everglades Restoration Plan Annual Report, January 2004.** West Palm Beach, FL: South Florida Water Management District.

South Florida Water Management District and United States Army Corps of Engineers. 1998. **Central and Southern Florida Project comprehensive review study: October 1998.** West Palm Beach, FL: South Florida Water Management District.

South Florida Water Management District and United States Army Corps of Engineers. 1999. **Rescuing an endangered ecosystem: The plan to restore America's Everglades.** West Palm Beach, FL: South Florida Water Management District.

Citation:

In: Peden, John G.; Schuster, Rudy M., comps., eds. Proceedings of the 2005 northeastern recreation research symposium; 2005 April 10-12; Bolton Landing, NY. Gen. Tech. Rep. NE-341. Newtown Square, PA: U.S. Forest Service, Northeastern Research Station