

The Economics of Coastal Tourism and Research Perspectives for Florida: A Workshop Proceedings

Compiled by Dr. Charles M. Adams

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**The Economics of Coastal Tourism
and
Research Perspectives for Florida:**

A Workshop Proceedings

Compiled by Dr. Charles M. Adams

Florida Sea Grant Marine Economist
Department of Food and Resource Economics
Institute of Food and Agricultural Sciences
University of Florida

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Introduction

Florida's 1350-mile shoreline is infinite in its variety and offers an array of recreational opportunities. These opportunities include boating, sportfishing, beachgoing, snorkeling, diving, and sight-seeing. All of these activities provide an important economic benefit to coastal communities. There are about 1500 public and private marinas with 10 or more slips in Florida to serve the growing fleet of resident- and tourist-owned recreational boats. About 14 percent of all public and 29 percent of all private marina business results from tourists. Over 58 million angler days are spent annually engaged in marine sportfishing in Florida by residents and tourists. This sportfishing activity generated \$1.9 billion in direct retail expenditures in 1980 and employed over 44,000 persons. One-third of these angler days are attributed to tourists. Marine beach activity may be the most popular mode of outdoor recreation in Florida. Of 13.2 million residents and tourists using Florida's beaches in 1984, about 61 percent were tourists. Beach-use activity generated total beach-related sales of \$4.6 billion and created 179,256 jobs, \$1.1 billion in payroll, and \$164 million in tax revenue.

The recreational use of Florida's coastal marine resources continues to grow from both resident and out-of-state sources. The extent of coastal recreation-related activities is directly dependent on the finite natural resource base (i.e., beaches, wetlands, bays, fisheries, aesthetic coastal vistas, etc.) which is collectively unique to Florida. To cope with the growth in recreational activity, state and local policy makers must ensure the wise utilization and efficient management of the state's coastal marine resources. Coastal management decisions should reflect the importance of the coastal marine recreation industry.

Statewide academic involvement aimed at gaining a better understanding of the coastal tourism industry in Florida has been limited. Given the apparent lack of research effort directed toward this important marine-related industry, the Florida Sea Grant College Program sponsored a workshop to address the research opportunities which may exist. The overall purpose of the workshop was to identify the researchable issues of importance in assessing the role coastal tourism plays in the economy of Florida. A selection of key speakers and respondents from various federal, state, academic, and private institutions addressed topics concerning the extent and nature of coastal tourism, how to measure the economic benefits associated with coastal tourism activity, and current/future policy related issues in Florida.

Summary of Session Objectives

To fulfill the overall purpose of the workshop, five topic areas were to be covered: the status of tourism research in Florida, the extent and nature of coastal tourism in Florida, measuring the benefits of coastal tourism, coastal tourism policy in Florida, and the challenge to academic Extension planning. The session objectives for each of these topic areas are briefly summarized as follows:

Status of Tourism Research in Florida

What are the goals, research functions, operational procedures and data distribution systems currently in place in Florida? Who is responsible for these data? How is current research designed?

Extent and Nature of Coastal Tourism

What is coastal tourism? What findings and conclusions are available? What research needs are not currently being met by the available data? How do academia, private industry, and regulatory agency efforts mesh in addressing research regarding coastal tourism in Florida?

Measuring the Benefits of Coastal Tourism

What are the methods and practical importance of measuring the economic benefits associated with coastal recreation? What are the market and non-market values associated with recreation and tourism? What are current research needs?

Coastal Tourism Policy

Clarify the policy variables affecting coastal tourism, both as direct purposes of policy and as inadvertent consequences of tax, land use, environmental and other policies, etc. How does Florida's comprehensive planning process fit in? What are the policy research opportunities related to coastal tourism and how might they benefit the implementation of effective future policies?

Extension Program Planning

What role can Extension play in developing affective coastal tourism research? Conversely, how can these research findings be used in developing effective educational Extension programs? What are the current opportunities for Extension with respects to marine-related tourism?

Speakers Remarks

The following papers represent remarks given by topic speakers and respondents. Some of the remarks are provided in outline form.

Outline of Remarks to
Florida Sea Grant Conference on Tourism

By Barry E. Pitegoff
Tourism Research Administrator
Florida Department of Commerce
Division of Tourism

I. Introduction to the Department of Commerce Division of Tourism

- A. The goal is to enhance the economy of the state through tourism. To do this, we welcome visitors with information; we stimulate interest in travel among travel industry professionals and among consumers; and we conduct research.
- B. Research programs have three functions: To monitor the volume of and characteristics of those visiting the state to help us understand the current product user; to put these results into perspective, by accumulating data on tourism in other destinations; and conducting and commissioning research on specific marketing issues to enhance the performance of the Division of Tourism and the tourism industry. In the latter category, some topics we have looked at recently include travel market, group leisure travel, the impact of baseball spring training on the state, Canadian visitor characteristics and travel patterns, and advertising development and positioning studies.
- C. Data distribution systems --- We maintain a mailing list for the visitor study exit interviews results on an annual and a quarterly basis; announcements of completed research appear in the Department Newsletter, "On The Record." And reports are regularly distributed to the Florida Tourism Advisory Council. We try to stay active in the Florida Chapter of the Travel and Tourism Research Association and present findings at its conference.

II. The Role of Florida Coastal Resources in Attracting Visitors -

- A. We have conducted no specific research on the role of the coast, basically because that would be research for one part of the state, which is not our purview. However, the coast seems to come up in much of our research, because it is such an integral part of tourism, both on a literal level and on a symbolic level.
- B. A few years ago we conducted eight focus group sessions with Florida visitors in their origins to gather insight into what is important to them about the state, in order to develop new advertising.
 - 1. Beaches were essential to the trip

2. "First Mentions" in response to "Florida" included: sunshine, warm weather, sand and sea, and sea gulls.
 3. When we asked them for symbols of Florida, we received: Palm trees, sun, ocean, sounds of surf, smell of sea, beaches, white sand, and shells.
 4. Between 65% and 73% of those in these groups reported enjoying water sports in Florida.
- C. However, in our annual visitor study, only about 16% of the visitors report enjoying the beaches in Florida. This leads to the question of "necessary and sufficient." Is it important to have a feature even if it is not used? Possibly so. Many New York visitors may not go into the Empire State Building, yet it is a symbol of that destination.

III. The Role of the Academic Community in Tourism Research

- A. Who knows? In all seriousness, the biggest problem is lack of effective communications, which is needed before effective partnerships can be established. We may go in cycles, but I feel that we are in a period again when the academic community is too esoteric and the business community is too practical and we are not really talking to each other. We have felt that some of the reports we have received from the academic institutions have been "so literate that you could not understand them." Improvement is possible, with an example being the layman-oriented newsletters of the medical schools of some great universities, like Harvard, the University of California, and the University of Alabama. The sources are credible, one assumes that the authors understood the very technical source material, and yet the output is clear and understandable by those in other fields.
- B. In the past, we have worked with the University of Central Florida, the Florida State University, Niagara University, the New School for Social Research, and the University of Florida. Some projects coordinated by students were too elemental, and some projects coordinated by professors were too esoteric.
- C. The future must hold ways to improve this dilemma if we are to work more closely together.
1. Create a better sense of what each group is doing.
 2. Create more involvement with each others programs. For example, I have been asked twice recently to be an independent reviewer for a grant request for academic-based tourism research. The most recent one was from within this field, from the "National Coastal Resources Research & Development Institute." These groups apparently welcomed industry input on these grants.
 3. Similarly, tourism programs could use more academic input. I am thinking of the Florida Tourism Advisory Council

and its various subcommittees....perhaps something to explore.

4. Here is a sore point with me. To achieve credibility, you need to begin by doing very well what you are expected to do well. When I receive mail from any unit of a university, it is a reflection of that university. When that mail has spelling and syntax errors in it, it reflects problems with the basics of what a University should do well. That happens more often than I prefer.

IV. Needs for More Research, Particularly Coastal

- A. Research on levels below state information, such as regional and local.
- B. Research on expenditure patterns of visitors, which now cannot be measured accurately because of two problems; difficulty with methodology, such as diaries and recall; and because of some similar expenditure patterns between visitors and residents, like buying leisure shoes.
- C. The roles of the coastal activities in the overall tourism product, both on the indirect and symbolic level and on the direct and activities enjoyed level. This could open a controversial area because tourism development funds are often used for beach renourishment and to what extent do visitors really use the facilities. On the other hand, to what extent do visitors need these facilities to be in top-notch shape to be able to enjoy the idea of visiting the destination in the first place?

V. The Need for International Tourism Research

- A. Yes, there is a substantial need, particularly because our budget cutbacks have reduced our ability to study this area.

VI. Wrap-Up

- A. It is great that this conference brings us all together, because it is long overdue. We need to fully understand what each other is doing before we can suggest new areas to each other.
- B. You should have a better idea now of what we do. You are welcome to visit us when you are in Tallahassee to learn more about these programs.
- C. My suggestions for change have included:
 1. Have the business sector and the academic sector welcome more input from the other side.
 2. Look at coastal research on the many values of the coast to the Florida tourism product.

3. Look at local research and regional reports.
4. Look at expenditure research.
5. Look at international research.
6. Talk to each other, in language each other understands, and begin this way.

OUTLINE OF REMARKS TO THE SEA GRANT CONFERENCE ON
THE ECONOMICS OF COASTAL TOURISM

Abe Pizam
College of Business
University of Central Florida

COASTAL TOURISM TRAVEL MOTIVATORS:

- (1) Physical - Relaxation and rest sporting activities and medical treat
- All connected to body health
- (2) Cultural - Motivator - desire to learn about other people, countries and cultures, etc.
- (3) Interpersonal - Desire to visit friends and relatives escape from family, make new friends, etc.
- (4) Status & Prestige - Identified with needs of personal esteem and personal development - i.e. business or professional interest, education.

- Coastal tourism satisfies mostly the physical needs of individuals.
- By participating in coastal tourist activities individuals fulfill the following sub-needs (or objectives)

- *relaxation and refreshment of body and mind
- *health purposes - fresh air, sunshine and warmth
- *active participation in sporting activities, i.e. swimming, sailing, fishing, water skiing, surfing, etc.
- *sheer pleasure, fun and excitement.

In addition to those, people visit coast lines because:

- (1) The sea itself has a magical quality for many people and especially landmen
- (2) The coastal scenery is infinite in its variety
- (3) The large availability of recreational facilities

Magnitude of coastal tourism in countries with an abundance of coastal resources is that a large percentage of domestic and international tourism occurs at coasts.

- United Kingdom - 75% of vacations of British citizens are spent at the sea-side.
- Spain - over 80% of international tourism occurs in the coastal areas and islands of southern Spain.
- Yugoslavia - over 90% of international tourism on the Adriatic Coast.

- Caribbean & South Pacific Islands - in many cases close to 100% of tourism takes place in coastal areas.
- Florida 1986 - Major purpose of visit of out of state tourists
 - *Beaches, climates and water sports
 - Air visitors = 23%
 - Auto visitors = 27%
 - Est. Total = 9 million
 - Total nights spent = 157.3 M

Research needs of coastal tourism

1. Market analysis - identification and description of current and potential markets

- Types
 - *counts of visitors at destinations
 - *survey conducted with tourists at home
 - *demography and economic characteristics of current and potential tourists
 - *expenditures: magnitude and pattern
 - *trip characteristics
 - *psychographics and life-styles
- Methods
 - *surveys (regional forms exit surveys, in-flight, mail, telephone)
 - *focus groups
 - *psychological
 - *secondary data
- Focus
 - *national
 - *state
 - *regional
 - *local
- Users
 - *public authorities
 - *private enterprises

2. Supply analysis - inventory at the tourism related components

- Types/
methods
 - *desk research
 - *expert surveys
- Focus
 - *national
 - *state
 - *regional
 - *local
- Users
 - *public authorities
 - *private enterprises
 - *investors
- Performers
 - *National Travel Organizations
 - *state travel office
 - *private research organizations
 - *academic institutions

3. Evaluation research - assessing the effect of various marketing programs

Types *advertising research
 *sales promotion effect
 *price changes
 *product changes and modifications

Methods *coupon conversion
 *pre-post
 *pretest of alternatives
 *experimental design

Focus *national
 *state
 *regional
 *local

Users *public authorities
 *private enterprises

Performers *private research organizations
 *Non-profit research organizations
 *academic institutions

4. Monitoring tourist activities - periodic analysis of tourist activities and products.

Types *Seasonal variation
 *forecasting
 *effects of external factors (gas price inflation, currency exchange)

Methods *surveys
 *time series
 *regressions
 *expert opinions

Focus *national
 *state

Users *public authority
 *private enterprise
 *investors

Performers *academic institutions
 *Non-profit research organizations
 *private research organizations

5. Impact analysis - estimating the positive and negative effects of tourism

Types *economic impacts
 *socio-cultural impacts
 *environmental impacts

Methods	<ul style="list-style-type: none"> *expenditure studies *multipliers and input-output models (income, employment output) *attitudinal surveys of residents *analysis of case studies *longitudinal surveys *observation and measurement of changes in the ecosystem (distribution of two nations, distribution of habitats, erosion of dunes, interference with habitats of wildlife, alteration of water levels and nutrient concentration, pollution and aesthetic pollution, damages to marine life (manatees, overfishing, etc.)) *carrying capacity analysis
Focus	<ul style="list-style-type: none"> *state *regional *local
Users	<ul style="list-style-type: none"> *public authorities and governments *planners *private enterprises
Performers	<ul style="list-style-type: none"> *planning organizations *academic institutions *private resident organizations

COMMENTS ON BARRY PITEGOFF'S TALK AT
"THE ECONOMICS OF COASTAL TOURISM" WORKSHOP

Dr. Frederick W. Bell
Department of Economics
Florida State University
Tallahassee, Florida 32306

Mr. Pitegoff gave an excellent talk here this morning. I am encouraged by his dedication to tourism research. I do have some reservations. For example, it is certainly instructive to ask certain groups such as Canadians just why they visit Florida; however, it is not quite clear who uses this information! Also, some of the tourism research is fragmented within State government. For example, the State econometric model has a tourism equation which attempts to explain what variables influence tourism in Florida. Then value of the U.S. dollar is an important variable so the Division of Tourism could do some research on predicting exchange rates. Maybe, the State econometric model could be discussed in the Department newsletter, "On The Record." How often does the Division of Tourism relate (or use) the State econometric model?

The Division of Tourism does coastal research such as focus group sessions with Florida visitors. Beaches were essential to the trip. What is not answered is, how essential? The DNR has information on beach erosion so why not see how sensitive tourism is to crowding on an eroding beach. This would give us a better predictive model. The hypothesis that beaches are necessary, but not physically used is an intriguing hypothesis. The Division should pursue the meaning of this hypothesis and the supply of beach resource for tourism.

A cutting edge of research is a tourist's willingness to pay for the use of common property resources such as beaches, fish and the waterways. Willingness to pay questions help place an economic value on Florida's resources which attract tourists. The Division might consider cooperating with Sea Grant efforts in this regard.

I believe the Division can use the academic community more effectively in its research efforts. For example, Sea Grant reports are usually very practical and can be understood by businessmen. I agree with Barry that the "... output is clear and understandable by those in other fields." But, give the university people a chance to do this by matching funds, for example, with Sea Grant. We would be happy to serve on the Florida Tourism Advisory Council and its subcommittees if asked. I welcome the opportunity, as I am sure all of us do, to visit with Barry and the Division of Tourism in the near future. I, for one, am supportive of his comments and hope he will keep in touch with the Florida Sea Grant Program. We have a lot to learn from each other so lets take advantage of this opportunity.

**Measuring the Economic Benefits
of Coastal Recreation***

by

Theodore Graham-Tomasi

**Department of Agricultural & Applied Economics
University of Minnesota**

May 1988

*Revised version of a paper presented to the Florida Sea Grant
Workshop on Coastal Recreation, Orlando, Florida; February 1988.
My thanks go to Wally Milon for comments on an earlier draft.

Measuring the Economic Benefits of Coastal Recreation

I. Introduction

In this paper, I will attempt to assess the state of the arts for placing an economic value on recreation resources in coastal areas of Florida. However, the literature that is relevant to this task is vast and I will be able to only touch on a few of the aspects of this issue which, in my opinion, are most important. Since full justice cannot be done to this topic in so short a space, the interested reader strongly is encouraged to seek out the sources contained in the bibliography. My goal here is to provide an overview of some of the work that has been done, to note the potential for research which is useful to policy makers, as well as to point out some of the problems with existing methods and current suggestions regarding their resolution.

By recreation resources I mean the natural and environmental resources as well as the built facilities upon which recreation and tourism depend. Thus, the approach taken is quite "micro" in its orientation, focusing on the characteristics of the final destinations of tourists. In addition, emphasis here will be placed on public recreation facilities and public policy concerning them, although much of what is discussed also will have some applicability to private facilities.

II. Recreation Benefits

Before proceeding much further, it is reasonable to answer the question: what is meant by the economic value (or benefits) of recreation resources? A distinction must be drawn between the economic benefits of recreation and the economic impacts associated with it. Much useful research has been done on the manner in which the money spent by recreationists makes itself felt in local and regional economies. Attention has been given to the estimation of expenditure and employment multipliers via input-output or other methods. This regional economic research is important for planning and for assessing the desirability of alternative development strategies. However, expenditures by recreationists do not represent the benefits generated by recreation facilities or investments in them.

The benefits of recreation are the value that would be gained (or lost) by the whole economy if recreation resources are created (or eliminated) or altered in some fashion. As an example, suppose that a sport fishery is harmed by the filling of wetlands for housing, so that catch rates fall and fishing is less attractive than previously. Anglers may fish less often and some may stop fishing altogether. The money they spent on fishing will be spent on something else, maybe for going to movies more often. But the charter boat operator's loss is the theater owner's gain and this nets out in the total economy. A transfer of that expenditure within the economy as a whole will have taken place, with no overall loss.

Of course, this depends on what one considers to be "the economy as a whole." If the boundary of the economy is Florida and a former angler goes to a movie across the state line in Alabama, then a loss of income does occur and this represents a real cost to Floridians. Similarly, improving Florida's recreation resource base may attract new income (expenditures) into the economy, and this is a real benefit to the State. It is important to note, however, that this counting of expenditures as value must only be applied to new expenditures. If a visitor would have gone to a different site in Florida instead of the one improved, a transfer has again taken place (though it may be that a stay of longer duration than would otherwise have taken place occurs and this additional expenditure is new and therefore a component of value). These types of "macro" effects typically are fairly difficult to uncover; for the most part it is assumed that changes in expenditures are transfers within the economy and not losses from it. While this approach may be reasonable for fairly small changes, it is unreasonable for large ones, and in any event, one risks a fallacy of composition in an important non-resident destination such as Florida. The state would do well to attempt to assess the long-term relationship between the resource base and visitation.

This distinction between values and expenditures does serve to focus attention on the quite obvious but often neglected point that the value of something cannot be defined independently of the person or persons for whom the value is supposed to exist. Thus, a county will have a different valuation of the same event than will a state or city or individual, since impacts outside of its "jurisdiction" will not matter to it.

Ignoring the export of expenditures outside of the relevant jurisdiction, what is lost to the economy due to the filling of wetlands is the value of the fishery, not expenditures previously spent on fishing but now transferred elsewhere in the economy. If expenditures are not lost when a recreation site is harmed, and are not necessarily created when a recreation site is improved, it would seem they cannot be used to place a value on recreation. How then might this value be measured? The economist's approach is known broadly as "willingness to pay." More attention will be given to this in the sequel; suffice it to say here that what something is worth plausibly can be assessed by what someone will give up to obtain it (or by what they must be given to relinquish it). This concept of economic benefit could then be compared to the costs of whatever policy, program, or investment was being considered.

It sometimes is the case that we are interested in the "total value" of the recreation resource, e.g., the value of a particular wetland. In this circumstance, one seeks the willingness to pay to have the resource in its current state versus having to do without it completely. But in many instances, the action being considered will alter the character of a recreational resource, rather than create a new or destroy an existing resource. Thus, managers often will not be as interested in the total value of recreational resources as they are in how their values change as the nature of the recreation experience they provide changes. Examples are improvements in the facilities at an existing site, or deterioration

in environmental quality, especially water quality, associated with recreational activities. Recently, research has focused on this aspect of the valuation problem.

II. Willingness to Pay

The concept of willingness to pay (WTP) is somewhat more complicated than it appears on the surface. There actually are several measures of the basic idea of willingness to pay, and the relationship among these has been a source of consternation and confusion among economists and noneconomists alike.

Imagine some event which can either improve or harm an individual's well-being. In specifying the benefits or costs of such an event, two points of view are possible: the event is assumed to happen, or it is assumed to be avoided or foregone. In the first view, if the event is beneficial, we can seek the amount of money which could be taken from the person to leave her as well off before the event as after it. This represents her willingness to pay (WTP) for the change. If, on the other hand, the change is detrimental, we could find the amount of money which could be given to the individual to leave her as well off as if it had not happened. This is her willingness to accept compensation (WTA). Following the second point of view, suppose now that the event does not happen. Then for a beneficial event foregone, the person would have to be compensated for giving it up (WTA), while if the change is harmful, she would be willing to pay to avoid it (WTP).

The first set of measures, where the change is supposed to occur, are known as compensating variations. The second set of measures are known as equivalent variations. Note that either of these can represent a payment by the individual or a payment to her depending on whether the change is an improvement or not of the status quo. These measures of benefit or cost first were defined by Sir John Hicks and therefore are also known as Hicksian measures of welfare change. The possibilities are depicted in the table below.

Given that a choice exists, which should be used? The answer to this question is provided by the institutional setting surrounding the valuation problem and the implicit property rights that these institutions define. For example, suppose that the event in question is the abatement of pollution that is suppressing fish reproduction and thereby damaging recreational fishing. If the law gives the right to clean water to the anglers, then the appropriate conceptual measure of benefit is the reduction in the compensation they would have to be paid for bearing pollution. This is the Hicksian equivalent variation (EV). That is, since the right of clean water lies with the anglers, and this beneficial situation is not occurring due to the pollution, anglers should be compensated (conceptually if not in fact) by the polluters. As pollution is abated, the amount of this "payment" can be reduced, and this is the measure of the benefits of abatement. In contrast, if the right to pollute is granted to polluters, then anglers must purchase clean water

from them, and their willingness to pay for it is the relevant measure. This is compensating variation (CV). In some instances, the property right will be clear; in others cases it will not be.

	Event Happens (CV)	Event Doesn't Happen (EV)
Beneficial Event	WTP To Obtain	WTA To Forego
Detrimental Event	WTA Compensation	WTP To Avoid

How much does all of this matter? Until quite recently it was thought, based on theoretical research, that these two measures should be fairly close together (Freeman; Randall and Stoll). If this is the case, then for practical purposes the distinction does not matter. However, a wide variety of empirical investigations have revealed very large differences between the equivalent and compensating variations and the distinction appears to matter a great deal; the answers they give can differ by an order of magnitude or more.

Economists forwarded one of two explanations for this: either (i) the theory predicting "closeness" is faulty (does not accurately predict real behavior), in which case new theory which better captures the psychology of decision-making is needed, (see e.g., Gregory), or (ii) the tests of closeness were faulty, in which case all was fine, at least in theory. Recent (traditional) theoretical research has refined the debate by pointing out that the two measures need not be close if the event in question affects aspects of well-being that cannot easily be substituted for by income (Hanemann). For environmental changes or loss of species, this may be reasonable; for changes in recreation facilities, the familiar prediction of "closeness" of the two measures would seem to apply.

This whole area is somewhat unresolved, and one should give careful consideration to the property rights implied by the situation vis a vis those implied by the WTP measure chosen. In my opinion, all aspects of this issue are important and worthy of further effort. That is, the traditional theory has served us very well for most purposes; but it is vitally important to use it to deduce very specific testable hypotheses regarding behavior and to devise accurate tests of these hypotheses. If it cannot stand up to such empirical scrutiny, it cannot be used to guide applied policy research. In this case (which has by no means been established), more refined psychologically-based theory will be needed to account for individual behavior and to guide the further development of methods for measuring the benefits of providing public goods.

III. Measuring WTP: Market Goods and Consumer Surplus

The issue at hand, of course, is the measurement of the quantity WTP (or WTA). Before turning to how this can be done for non-market goods such as recreational opportunities, it will be useful to assess briefly the use of market data to compute the benefits of providing market goods.

There is yet another measure of economic benefits known as consumer surplus. It is given by the area under a market demand curve for a good, net of the persons's expenditure for the good. In general, consumer's surplus is not equal to either of the conceptually correct Hicksian measures. However, its ease of computation makes it a quite attractive alternative. Until relatively recently it was thought that consumer's surplus is measurable empirically, while the Hicksian measures CV and EV were not. Attention focused on the potential magnitude of the difference between these (Willig). However, new techniques have been developed to compute the Hicksian measures from demand curves that have been estimated with data. There are two reasons for discussing consumer surplus here; one is that it is a useful heuristic device, the second is that it is used quite frequently in applied research.

How does the area under a demand curve relate to WTP? Consider the valuation of a good traded on an organized market. Since people are buying this good we can observe how much they purchase at different prices. The relationship between the price and the quantity demanded is called a demand curve. A typical one is exhibited in Figure 1. Its downward slope reflects the fact that at high prices people purchase fewer units than they do at a low price. One way of looking at this curve is to ask, if the price of the good is $\$p^0$, how many units will you buy? An alternative way to view it, which is more suggestive for our purposes, is to ask, if this is the quantity of the good, what is the most you would pay for it per unit? The answer to this latter question is, of course, the price given by the demand curve corresponding to that quantity. Thus, the most this person would be willing to pay for Q^0 units of the good is $\$p^0$ per unit. This suggests a tie between demand curves and willingness to pay (WTP).

As an example, suppose that the good in question is red wine from the Beaujolais region in France. At \$20 a bottle, I might buy one bottle a year; if it is \$14, I might buy two a year; while if it is \$5, I might buy a case and have one a month. Suppose that this wine is, in fact, \$5 per bottle. Then I would have been willing to pay \$20 for the first bottle that I buy, and \$14 for the second. But I only had to pay \$5 for both of these, since I get to buy all of the wine I consume at the single price. Hence, I receive a net benefit, or surplus, of \$15 on the first bottle, and \$9 on the second, and so on with all of the bottles I purchase in the case. Adding this up over all of these bottles yields the consumer surplus: my willingness to pay for wine over-and-above what I actually had to pay.

In fact, it can be shown that the area under the demand curve up to the actual quantity purchased (i.e., the area OABQ in Figure 2) is an

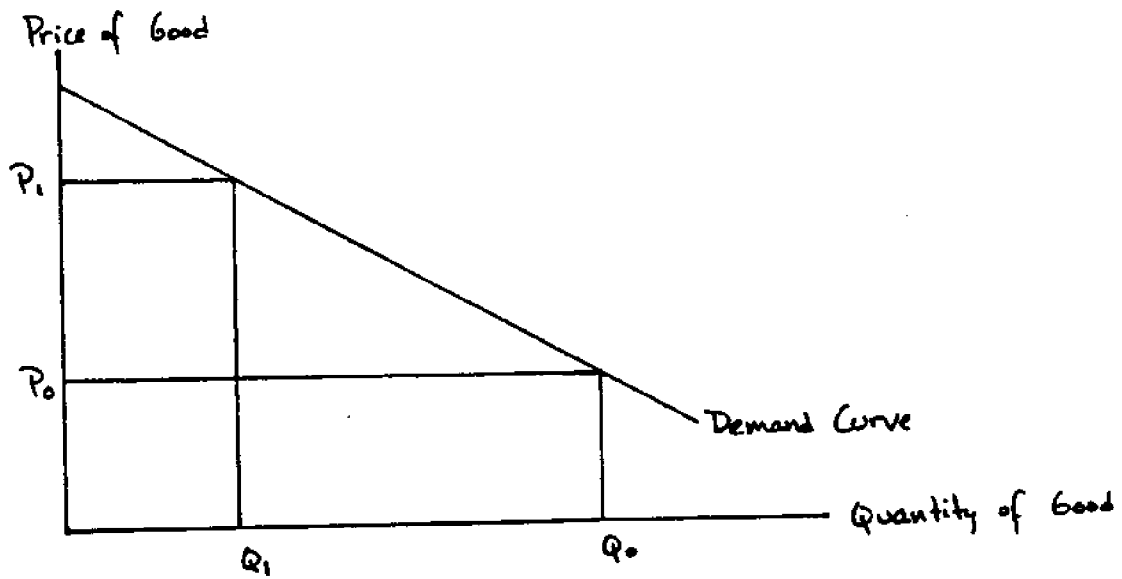


FIGURE 1: Demand Curve for a Good

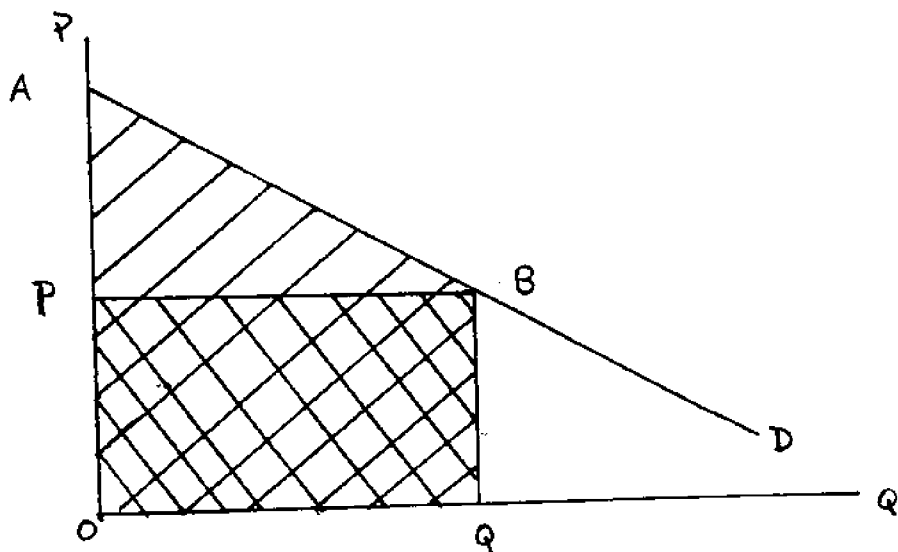


FIGURE 2: WTP and Consumer Surplus

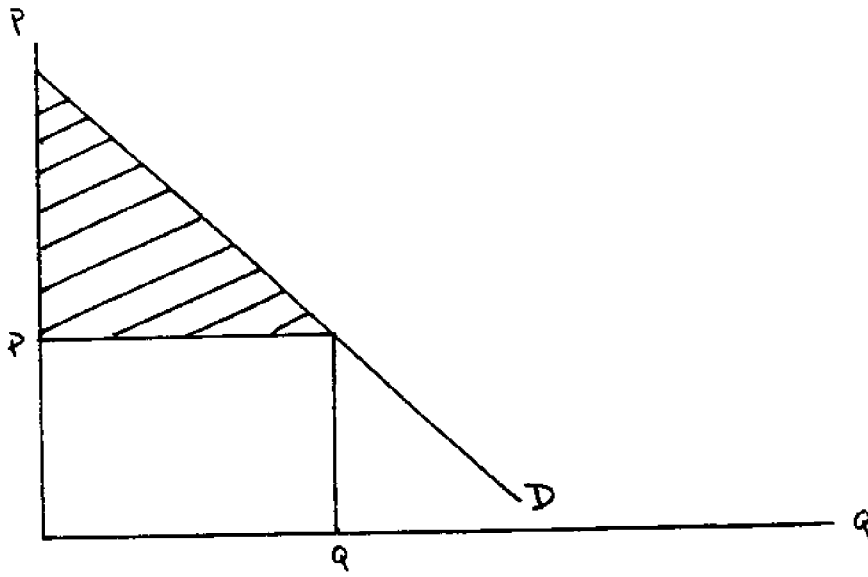
approximation to total willingness to pay for the good, while the total willingness to pay, net of what actually was paid (the expenditure on the good is given by the area OPBQ) is an approximation to the desired quantity Hicksian WTP as defined above. This net willingness to pay is given by the area under the demand curve and above the price line (area is PAB in the figure); this is the consumer's surplus. It represents the benefit to me of being able to buy Beaujolais at \$5 a bottle, rather than do without it (i.e., face a price higher than \$20 so that I don't buy it).

There are several things to note about consumer's surplus. First, it easily can be computed given observations of the quantities of a good purchased at various prices. Second, it appropriately excludes expenditure on the good, as is consistent with earlier discussion. And third, its magnitude depends on the steepness of the demand curve. One of the most important determinants of this steepness is the availability of substitutes for the good. If the good in question has many good substitutes, an increase in its price will lead to a relatively large change in quantity demanded as individuals switch to these readily available substitutes. In this case, the demand curve is relatively flat, as is exhibited in Figure 3a. If, on the other hand, the good has few substitutes, then the demand curve will be relatively steep, since a rise in price will not induce much of a response in purchases as it is "the only game in town." This is shown in Figure 3b. Note that the expenditures in the two panels of Figure 3 are equal. As can be seen from Figure 3, the magnitude of consumer's surplus depends critically on the availability of substitutes for the good. In essence, a good is more valuable if it is unique. One also can compute the change in consumer's surplus induced by a change in the price of a good or by a change in its quality. The quality of a good will act as a shifter of the demand curve. That is, if the quality of a good improves, more will be purchased at a given price. This is shown as an outward shift in the demand curve (from D^0 to D^1 in Figure 4). The benefit of this improvement is the change in consumer surplus given by the area between the two curves.

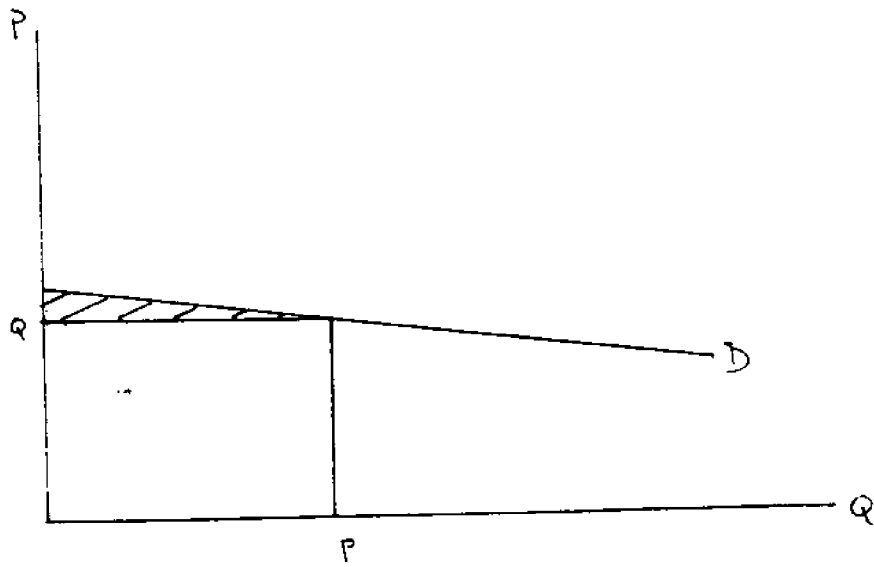
This discussion of consumer's surplus points toward a basic approach for measuring the benefits of being able to purchase a good at a specified price if one has access to data on the quantities purchased by individuals at alternative prices: statistically estimate a demand curve from these data using regression techniques and then compute consumer surplus. There are a couple of things that one must worry about using these approaches, however.

The first concerns my earlier statement that the consumer's surplus measure is only an approximation to the true WTP or WTA quantity that one desires. It was shown by Willig that this approximation was quite good for price changes that were relatively small and for goods that make up a fairly small part of the consumer's budget. If one is interested in the whole of consumer's surplus, however, the change in price is large (i.e. from p in Figure 2 to point A at which demand for the good is driven to zero) and the approximation may not be very good at all (Bocksteal and McConnell, 1978). However, this really is a moot question now, since methods have been developed for computing the exact measures WTP and WTA

FIGURE 3: The Role of Substitutes



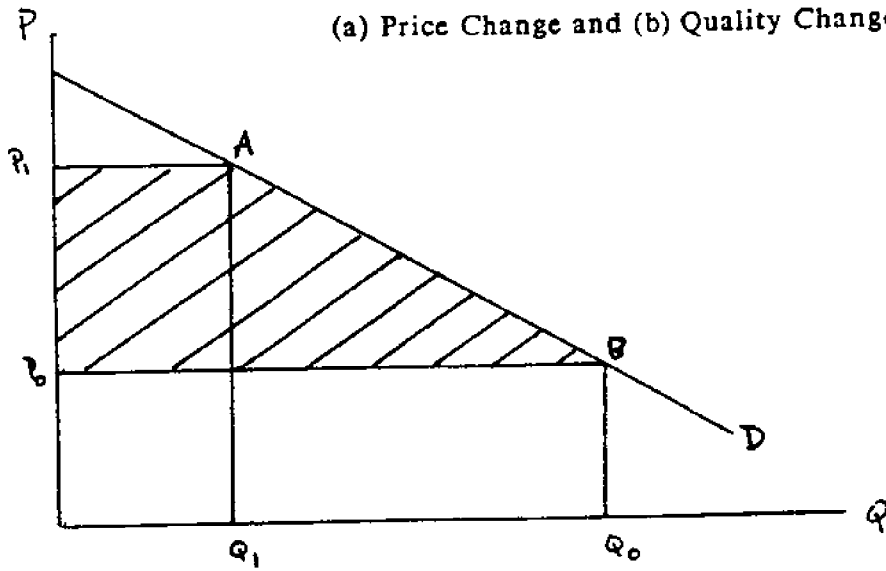
(a) Few Substitutes



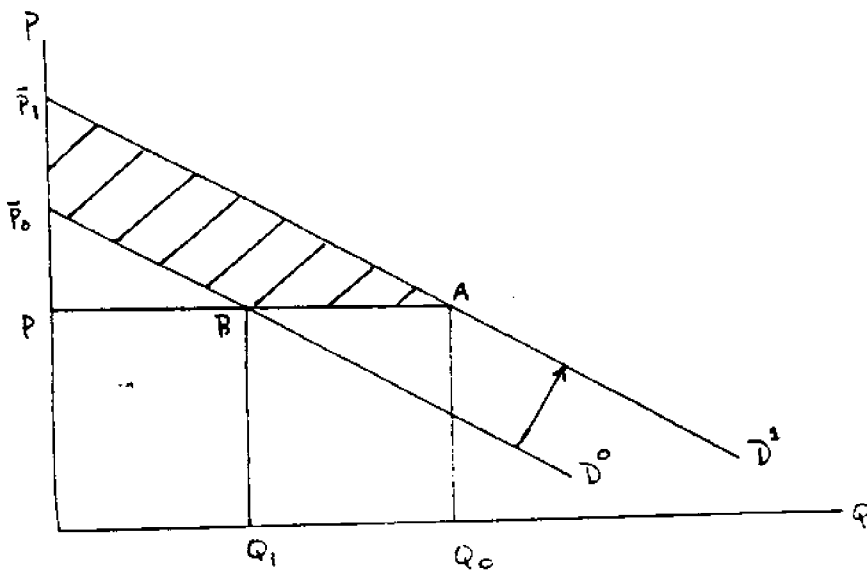
(b) Many Substitutes

FIGURE 4: Changes in Consumer Surplus

(a) Price Change and (b) Quality Change



4(a)



4(b)

from an estimated demand curve, as long as the demand curve form is consistent with economic theory. Examples of such exact benefit measures for some specific functional forms for demand curves have been provided by Hausman and by Bocksteal, et al. (n.d.).

An issue that must be faced when one is concerned about the complete elimination of access to a good is the choice of price that drives the quantity of the good demanded to zero. This will differ according to whether one is using the WTP, WTA, or consumer's surplus approach. As well, some specific functional forms for demand curves do not have any such price, so that the good is thought to be essential to individuals. This seems far-fetched when applied to recreation goods.

The theory of estimation of benefits (or costs) of price changes for marketed goods is relatively well developed and accepted within the profession. There are, however, some practical problems that arise in this area. Economic theory provides some guidance about the specifics of estimation, but leaves considerable leeway as well. For example, it says almost nothing about the specific functional form for the demand curve one should estimate (see Adamowicz, et al.). Is a linear model or one linear in the logarithms of the variables best? What do we mean here by best? What variables should be included in the analysis? Income and prices clearly should be in there, but how many prices of related goods should be included? What about other variables, such as age or health attitudes? Can goods be aggregated into groups? Since almost all data concerns some type of aggregation, one hopes so, but how much grouping is appropriate? What happens if one has access to data on only some of the goods people purchase, as is typically the case (see Hanemann)?

It is important to recognize that these kinds of issues are ones of the type of data one has available and of statistical theory as they interact with economic theory. These are difficult issues, but they pervade any statistical estimation problem and cannot be avoided. In my opinion, they do not by any means obviate the use of the basic approach, but they do highlight the need for continued research. They also somewhat undermine the credibility of the resulting numbers, since different somewhat arbitrary assumptions or approaches can lead to quite different final results. I will return to this in the specific context of recreation demand modeling below.

This discussion certainly points out the crucial importance of careful research guided by statistical and economic theory. When one employs a technique based on individual observations of actual behavior, alternative approaches become restrictions on the data and are testable hypotheses. It is unlikely that any single approach will be best across all situations. Thus, standardized procedures that are ad hoc and applied in every circumstance by practitioners are to be avoided, since the benefit estimates so generated are not defensible.

IV. Measurement of WTP for Recreation

The analysis presented in the previous section concerned a marketed good. In many situations, the actions being evaluated by public or private agents which affect recreation and resource-based tourism are not marketed. Many recreation sites have no entrance fees at all, or those that exist are not set to clear the market. In this case, they are not useful for benefit calculation. Also, sometimes a public good, such as environmental quality, is the object of study. Hence, it is desirable to consider methods designed for the estimation of the benefits of such non-market goods.

The methodologies that have been developed for measuring WTP for non-market goods can be divided into two basic groups, direct and indirect. The direct methods conceptually are very simple. They are based on the following idea: if you want to know someone's WTP, ask them. They employ survey techniques to set up hypothetical markets for goods on which people can "buy" the offered good. In the context of recreation valuation, this approach is known as contingent valuation (CV).

The indirect methods attempt to infer what individual's WTP must be from observations of their behavior. The use of a market demand curve to compute consumer's surplus or one of the Hicksian welfare measures is indirect in this sense. Two types of behavior are particularly useful in this regard. The first is travel behavior, which forms the basis for the travel cost technique and the closely related discrete choice methods. The second is purchases (or rentals) of real estate, which forms the basis for the hedonic method. There also is an approach, called the hedonic travel cost technique, which is an amalgam of these two, as might be guessed.

Indirect Recreation Valuation Methods

As mentioned above, there are two indirect valuation methods potentially applicable to recreation resources: travel cost and hedonic analysis. These will be addressed in turn.

The Travel Cost Technique

The most famous and widely used of the indirect methods was designed specifically for valuation of recreation and is known as the travel cost method. It was suggested in a letter to the director of the National Park Service by Harold Hotelling in 1947 and has been much elaborated in the literature since.

The basic idea parallels exactly the approach outlined above for marketed goods. The good in question is the number of visits to the recreation site, and its "price" is taken to be the travel costs of gaining access to it. This analogy is quite close, since the cost of obtaining one more unit of a marketed good is its price, while the cost of taking one more recreation trip is what it costs to get there. One can use the observed

relationship between travel costs and numbers of visits to trace out a demand curve for visits to the site. The consumer's surplus can then be computed as the area under this curve, or the exact benefit measures WTP or WTA calculated from it. Note that the value of the site is not equal to the cost of travel to it; rather, these travel costs are used as a proxy for a price, which then is used to compute consumer surplus.

All of the research concerning the use of this method is directed to its implementation; the basic idea is as accepted as is valuation of benefits for market goods. In this paper, I will concentrate on three aspects of using this approach: i) participation, truncation, and censoring, ii) the value of time, and iii) a variety of issues regarding use of multiple-site models to value changes in characteristics of recreation areas.

In its original incarnation, the technique employed as a dependent variable the number of trips per capita from a zone around the site (only a single site was investigated) with similar distance from it. As one moved farther from the site, the number of visits per capita for the more distant zones declined and a distance-decay function could be estimated statistically. The price of recreation that one wants for the demand curve is an entrance fee; if one assumes that individuals would respond in the same manner to an increase in travel costs as they would to an increase in an entrance fee, one can use the distance-decay function to trace out what the response would be to increases in entrance fees and the desired demand curve has been obtained.

A simple example should help to clarify the procedure. Suppose there are two zones A and B, with zone A \$10 in travel cost from the site and zone B \$15 in travel costs from it. The visit rate is 50 trips per season per 10,000 population for A, and 20 trips for zone B. If a \$5 entrance fee (price) is imposed at the site, then it should be that the visit rate for zone A would fall to 20 per season per 10,000 population, since now the total cost of a visit from A is \$15 and this is just the visit rate for zone B when that zone faces \$15 in cost. It is reasonable to control for demographic differences among zones at this stage. Now, multiplication of the visit rate by the population of each zone and adding up across zones yields the total quantity demanded at the hypothesized entrance fee. Doing this for a variety of such fees traces out the demand curve.

A number of issues related to this use of zonal averages have been raised, many of which are beyond the scope of this short review. In general, the practice has fallen out of favor and the use of individual observations now is preferred. An exception to this view has been voiced by Brown and colleagues, who note that different participation rates for individuals from different distances from the site will lead to biased results if this is not adjusted for. This bias is naturally controlled by using zonal averages for participation.

This leads us directly to one of the key areas of current research in this area: how to account for different participation rates for individual data. The travel cost model typically asks people at a site where they came from, among other things. Naturally, people who do not visit the

site are not included in the sample, so no information exists about people who choose not to participate. There are several aspects of this participation issue upon which I wish to comment.

The first is a sampling problem: people from close by (who use the site more often) have a higher probability of being included in the sample. This leads to bias in statistical estimates; an example of how to correct for this in a recreation study is provided by Jones (1987).

Second, statistical bias in estimated coefficients will result from the truncated or censored nature of the sample. These problems arise when values of the dependent variable (number of trips) are observed only if it is zero or positive (censoring) and/or if individuals are included in the sample only if they are users (truncation). Note that if an entire population is sampled, rather than just the participants, there will not be truncation, but there still will be censoring, since the number of trips observed cannot be negative. What one needs to correct for this is an explicit model of participation combined with an appropriate statistical estimation method. Several approaches exist for obtaining valid estimates for both truncated or censored samples (Maddala), which should be employed with greater frequency in this area. Unfortunately, these somewhat complicate the estimation procedure.

A third problem occurs with a truncated sample. One would imagine that an improvement in the characteristics of a visit would induce some people to visit who previously had been non-participants. In Figure 5, this is illustrated for a change in the original demand curve, D^0 , which shifts due to improvement of the site to D' . The new participants are represented by the segment AB. These people had zero trips along the old demand curve. No estimate of the size of this effect can be obtained if the model does not account for non-participation explicitly. In the absence of this information, we underestimate the value of the improvement by the area ACE. All we can do is to estimate (adjusting for censoring) the change in the amount of activity of current recreators. This is potentially a severe shortcoming of this type of data. Unfortunately, a general survey of the population usually has to have a large sample size in order to pick up enough recreators at specific sites or in specific activities, and this is expensive.

The second basic area of current research on use of the travel cost model concerns the valuation of time. Earlier I defined the travel cost variable to be the cost of an additional trip to the site in terms of travel and time costs. What is this time cost and why does it matter?

Recall the example with the two zones; it was stated that when a fee of \$5 is in place the visit rate for A would fall to the visit rate for B when B faces a zero entrance fee. But will this really happen? No; the full cost of travel from A is \$10 plus, say, an hour of travel time, while the full cost from B is \$15 plus an hour and a half of travel time. Hence, at an entrance fee of \$5, the full cost from A is less than the full cost from B at a fee of zero, and participation would not fall off as much as predicted when travel time is ignored. Thus, ignoring travel time leads

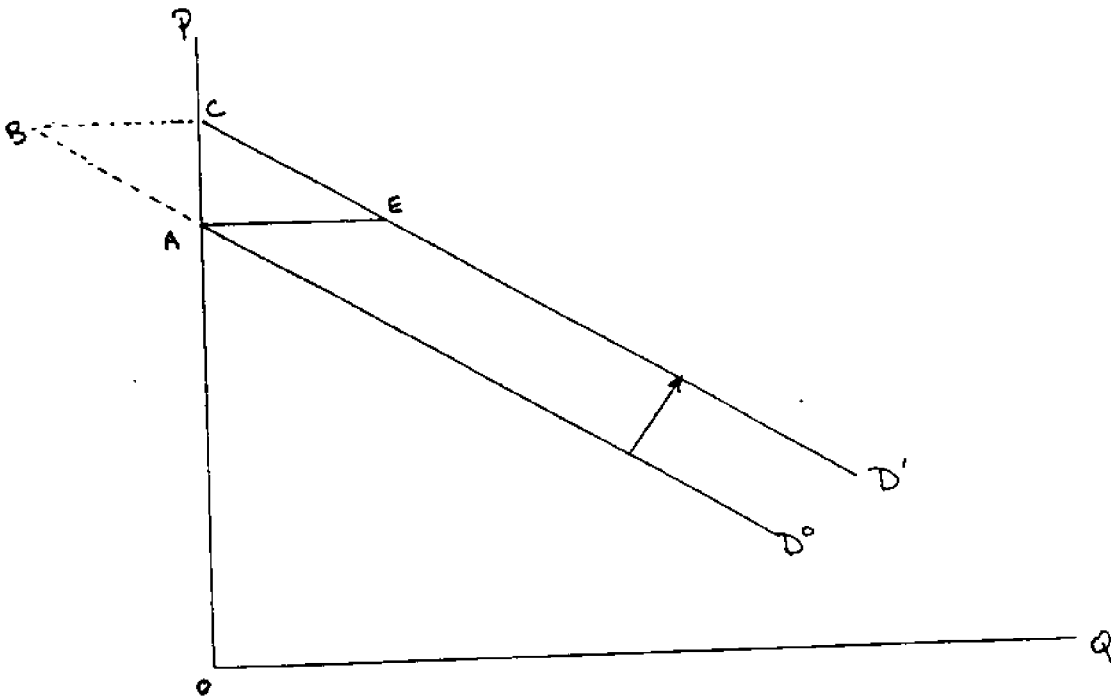


Figure 5: Truncation Bias

to underestimate of recreation value. Empirical research has shown that this effect can be quite large, with value estimates four times as large when time is included as when it is not (Bishop). But how should this time cost be valued?

Naturally, if one spends time travelling to a recreation site and undertaking some set of activities, one cannot simultaneously do something else. Hence, there exists an opportunity cost of allocating time to recreation (or to any other activity for that matter). What we seek is the opportunity cost of time spent traveling. Unfortunately, accounting for this is a highly problematical issue to which much attention has been devoted with little resulting guidance for applied work. One practical approach which often is employed is to use the individual's wage rate to value time and to add the time cost of travel to its money cost. To cope with the fact that trips are of varying durations, one can simply stratify the sample into people who take visits of equal duration and conduct separate analyses of each group. This can be a problem, though, since if the overall sample size is not very big, there will be too few observations in each strata.

However, it is not all that clear that the opportunity cost of travel time for recreation is equal to the wage rate for several reasons. First, one presumably enjoys travel for leisure activities more than one does working and this needs to be accounted for (Wilman). Second, if one were not recreating, one very often would be undertaking some other leisure activity. The opportunity cost of time depends on what the other opportunity is, and this kind of information seldom is obtained in surveys. Some research by Adamowicz and Graham-Tomasi discovered that these sorts of issues had a substantial impact on time valuation. These considerations have led many researchers to use some fraction of the wage rate, typically $1/4$ to $1/2$. This is an ad hoc approach that has little theoretical support, however. A somewhat more rigorous way to estimate this fraction from sample data was proposed by McConnell and Strand, but their specific technique is not broadly applicable.

In any event, all of these ways of coping with time valuation separate travel time and on-site time and thereby ignore possible trade-offs between the two. What one really needs to do is to estimate this trade-off as a simultaneous choice of both trip duration and number of trips. Huang and Graham-Tomasi employed the McConnell-Strand method to value both travel time and on-site time in such a simultaneous model and found no consistency in time value across individuals in the sample, or across sites that are visited. These discouraging empirical results echo the theory, which basically warns: it depends.

Finally, individuals cannot make any choice between work and leisure that they want to. There are rigidities in the way that leisure time is available, e.g., with fixed weekends and vacations. Some techniques of analysis developed for the analysis of labor markets should prove useful in the recreation context, but there has been little applied work along these lines to date.

Attempts to date to cope with all of these issues concerning the value of time have been useful but not entirely successful. The theoretical and applied issues are on the forefront of demand modeling in general and are very exciting. But no easy answers (or even difficult ones) have been forthcoming. This somewhat undermines the credibility of the methodology in its current state, and certainly calls for more research using data specifically designed to tackle these questions. In the absence of exact guidance about how to incorporate time, a range of estimates for recreation value corresponding to a range of time estimates should be computed.

The third set of issues I wish to address concern the use of multiple-site models and the valuation of changes in site characteristics. Recall the earlier discussion of the role of substitutes in the determination of WTP via consumers' surplus. Clearly, how these substitutes are accounted for is critical to the operation of the travel cost technique. In large part, how this should be accomplished depends on the objectives of the research.

Early work by Burt and Brewer and by Cicchetti, et al., focused on the benefits of introducing a new site into an existing system of sites. In both of these investigations this was modelled as a price (travel cost) change for each individual for an existing site assumed to be a perfect substitute for the new one. A very complicated system of interrelated demands was estimated for these sites. However, if only one price change is envisioned, it is perfectly reasonable to only estimate one equation (rather than a very complicated system), as long as this equation has the prices of all the substitute sites in it as explanatory variables (Hof, et al.).

However, if one is interested in assessing changes in the characteristics of sites, one clearly cannot estimate demand for only one site. What one needs is information about how demand for recreation varies across sites of different qualities. In this case, several relevant concerns arise.

First, what does one do about all of the sites that an individual does not visit? Most models (such as the system models mentioned above) assume that each person buys some of each good. But this obviously is not the case with recreation data; individuals may have available 20 or 30 sites, only a handful of which they actually visit. Moreover, recreation data very often contain information on only a single trip, i.e., the one the person was on when he or she was interviewed or, in the case of mail or telephone surveys, their last trip. The system models need information on all of the places the individuals went.

Recently, work has progressed on the use of models which can cope with these limitations. Called discrete choice-random utility models, these suppose that there is randomness in individual choices and seek to estimate the probability that a person visits a site. This probability can depend on travel costs to the site as well as site characteristics. While there is a positive probability that people visit any particular site it is feasible for them to get to (given that they will recreate).

this is not inconsistent with observations of visits to only a few sites for any group of trips. As well, these probabilities can be estimated with information on only one trip.

These models have proven useful in research on water quality and lake fishing in Wisconsin (Caulkins), acid rain in Minnesota (Graham-Tomasi, et al.), on water quality and stream trout fishing in Michigan (Graham-Tomasi), water quality and beach use in the Boston area (Hanemann), catch rates for salt water fishing in the Pacific Northwest (Morey and Rowe) and construction of artificial reefs off of South Carolina (Bocksteal, et al.).

Several other concerns arise in any attempt to value changes in site characteristics. Notable among these is the choice of characteristics. These must do double duty in the analysis: they must adequately represent the site and thereby help to "explain" recreation choices, and they also must capture relevant aspects of the policy being evaluated. This is a difficult measurement issue and existing research only poorly has dealt with the fact that the perceived attractiveness of a site to an individual is a variable that we cannot observe. We seek proxy variables that we hope a related to the true attractiveness. Statistical methods do exist for coping with these measurement issues, but they have not been used by investigators in the recreation field.

A number of difficult issues are raised by these three topics: participation, time value, and multiple-site models. If we recall the additional concerns raised at the end of the second section regarding the inherent problems of statistical demand estimation (choice of functional form, etc.) it may seem that my impression of the travel cost technique is pretty unfavorable. This would be a misapprehension of my stance. I believe that the basic idea is sound and that the empirical procedures used currently are appropriate for the most part. The method has a proven track record in applied work, and it gives sensible answers that are reasonably consistent across applications. The things to which I have devoted attention above are needed refinements, but they do not undermine the basic usefulness of the method. In general, however, they imply that the method is not of the "off the shelf" variety; each application requires careful assessment of the unique theoretical and statistical issues raised by that situation. They also imply that more research remains to be done.

Hedonic Analysis

Hedonic analysis also is an indirect method which employs observations on behavior to deduce WTP. With this technique, the behavior is purchases or rentals of real estate. All else equal, a home that is near a desirable recreation site is more valuable than one that is not. The price of a home will reflect all of its attributes, and if one has access to data on sales prices of homes as well as their attributes, one can estimate statistically the functional relationship between sales price (or rental price) and these attributes. Such a relationship is known as a hedonic price function. One can use the relationship between how the overall

price changes in response to variations in one characteristic and the quantities of the characteristics purchased by different individuals to estimate a demand curve for a characteristic (Rosen; Freeman).

As a simple example, suppose that the hedonic price function is such that sales price depends on the number of rooms, lot size, and distance to a marina. Having estimated this relationship with appropriate data, one can then infer how much individuals are willing to pay for a house that is closer to a marina. This information could then be used to compute the benefits of a new marina, which changes the distance to a marina for each home.

The method is not well suited to the computation of the total value of recreation facilities, but it can be used to value changes in their characteristics as long as the sites are associated in some way with housing markets. Using the technique requires access to fairly extensive cross-section data on home purchases or rentals, since one needs sufficient variation in the recreation characteristics obtained across other attributes. For example, suppose that condominium prices depend only on the number of tennis courts and the quality of freshwater fishing within a 45 minute drive. If one is to use this information to compute the value of improving water quality in lakes, then one needs observations of the prices of condos with every combination of good and poor fishing and many and few courts in order to sort out the various effects.

It may be that this kind of extensive data are not readily obtained, but that the necessary variation does exist in the housing or rental markets. In this case, one suffers some statistical inefficiency by not having the data, but the estimation can proceed if the deficiency is not too severe. However, it often is the case that the necessary variation does not exist in the market. For example, if I move to a city a look for housing, the quality of schools may be an important variable, with as proximity to a golf course of secondary importance. But, if the only good school district has no golf courses and the only district with golf courses has very poor schools and there is nothing in between, I am stuck with kids who have small classes, but who can't hit a 5 iron. My choice does not fully reveal my willingness to make fine trade-offs between these two attributes of housing. The existence of "lumpiness" in the set of choices creates ambiguity in the valuations obtained.

Recent research has sought to identify a set of conditions under which the hedonic model works (Mendelsohn, 1985 a,b; McConnell and Phipps). Unfortunately, the conditions are quite restrictive and serve to limit the applicability of the technique. One situation in which it may work reasonably well is in the valuation of changes in developed recreation areas associated with rental properties for vacations or for homes purchased by retirees, when there are a wide variety of available properties. We can be more sanguine about use of the hedonic approach in this situation for several reasons.

First, the condition that there is a wide variety of types eliminates the lumpiness problem referred to above. Second, vacations and retirement are

times when wage differentials across locations are unimportant, and these wage differentials have proven to be a problem for hedonic analyses in other contexts. Finally, if areas are developed commercially, then the array of characteristics provided is the result of (mostly) reasoned choice instead of by nature. This latter feature of undeveloped recreation is a problem in applications of the Hedonic Travel Cost method (Brown and Mendelsohn). This hedonic technique uses increases in travel costs over some minimum in order to gain access to a more desired recreation destination as the "price" variable for the site in a hedonic price function. But if the locations of sites with characteristics are given by nature rather than by a profit-maximizing supplier, then, given some travel origin for an individual, it is possible that hedonic prices will be negative (which is not sensible) and the hedonic price function can have very odd shapes (Bocksteal, et al.). The full implications of this have yet to be determined, but it seems that the procedure breaks down (or at least is very difficult to interpret) in this case.

The use of hedonic analysis to value small changes in the quantity of a marketed commodity is a fairly standard demand analysis. Thus, they would certainly be of interest to condominium and other developers. But our focus here is on public, as opposed to private, actions and it is not at all clear that the hedonic techniques are well-suited to such applications.

Direct Valuation Methods

The primary direct method for recreation valuation is known as contingent valuation (or CV, which should not be confused with the compensating variation initials used previously). Instead of using data on choices to infer individual WTP, in a CV study people are directly queried regarding the value they attach to recreation opportunities. Application of this approach to non-market goods such as recreation is of relatively recent origin, and the field is undergoing rapid development. Although I would not quite characterize the method as exploratory, it seems clear to me that considerable research needs to be undertaken before confidence can be placed in its widespread use for practical policy analysis.

Contingent valuation is a very flexible technique which can be applied in a wide variety of valuation situations. Its primary deficiencies, to be explored in somewhat more detail below, are related to two propositions. The first is that people will lie in response to such questions; the second is that if you ask such questions, people will have no idea what you are talking about, or more precisely, you will have no idea what they are thinking about when they respond.

The method proceeds via a sample survey. The interview can be administered either in person, through the mail, or via telephone, although this latter approach has not seen wide use in contingent valuation studies due to the need for extensive use of visual aids in the survey. There is a considerable preference for personal interviews over mail surveys. In general, to maintain the validity of any sample survey the interviewing should be done by a reputable professional survey outfit

and the survey instrument carefully developed with considerable pre-testing of the instrument. This significantly increases the cost of the CV approach relative to the others, which may rely on secondary data exists for their implementation.

A typical CV experiment sets forth a hypothetical market for a public good and seeks bids for alterations in the quantity of the good provided. An example might be valuation of improvements in water quality. Visual aids and descriptions of alternative scenarios can be used to depict various levels of water quality that could be achieved by some policy change. One could then ask how much a respondent would be willing to pay to obtain higher quality. Investigators have experimented with a variety of formats for such questions.

One approach is iterative bidding, with the respondent answering yay or nay to payment increments (or decrements) from some starting point. This contrasts with a "take it or leave it" payment of some fixed amount. Recently, researchers have used contingent behavioral responses (e.g., how many more trips would you take if fishing success improved?) as well as voting on hypothetical referenda. These latter two appear quite promising.

The technique is attractive for two reasons. First, respondents may have a variety of reasons for valuing a resource and their own perceptions of the opportunities and constraints they face in making choices. With the indirect methods, the researcher must assume some of this information, undoubtedly with some error. With CV, no such assumptions need to be made, since they automatically are built into responses. Second, the method is very flexible and can be applied in a variety of situations where appropriate data for the indirect methods are absent. However, the technique suffers from some potential difficulties. Two excellent, comprehensive books on the potential as well as the problems of the CV technique have appeared recently (Mitchell and Carson; Cummings, et al.). I will concentrate here on just two issues: strategic bias and hypothetical bias.

Economists originally thought that the method suffered from a fatal flaw: when valuing a publicly-provided good, individuals have an incentive to strategically misrepresent their true valuations of the good. In short, when asked their willingness to pay, people would lie. My own interpretation of this proposition is that it is based on an inadequate model of social behavior, and that people have all sorts of incentives, based on the successful long-term operating of a society, to cooperate with others when it appears on the surface that they could do better in the short run if they were uncooperative. The data on this is inconclusive. Indeed, there is no real ability to test the proposition in the field since individual valuations are inherently unobservable. This is a basic problem with the CV method. Personally, I think that, unless the survey is so poorly done as to make obvious the incentives to lie, people will in general attempt to give accurate responses. Unfortunately, evidence is accumulating that asking a person how much compensation they would accept for a change constitutes such poor practice; thus, contingent

valuation surveys prove inaccurate in some property-rights situations where WTA is indicated, as was discussed earlier in this paper.

To me, the hypothetical nature of the valuation exercise is more problematical than is the concern for strategic responses. The difficulty here is that of assuring that the policy change that the analyst seeks to evaluate is exactly the change that all of individuals have in mind when they respond to the questions. Two things must hold for this to occur. First, the depiction of the change used by the researcher in the survey must be able to be tied to the policy at issue. And second, the depiction must be sufficiently precise that the individuals in the sample have the same mental image of the change when formulating their valuation of it. This is very difficult to achieve.

There exists some evidence of this problem of hypothetical bias. In the iterative bidding procedure, it has been established that the final bids are sensitive to the starting point for the bids. Thus, a higher starting point induces a higher valuation. This "starting point bias" may be due to respondents who have little idea how to value the good, or even what the good is, and are searching for a clue from the starting point as to what an appropriate valuation is. This inability to establish a stable valuation would be evidenced by responses that vary with small changes in the survey, the information presented in it, or in attempted replications of the analysis. Earlier it was stated that an advantage of the method is that individuals have their own perceptions of goods and the constraints they face and that these must be assumed in the indirect methods, but not in a CV study. The problem is that these perceptions, etc., are not constantly in our consciousness; they are brought to mind and made salient by events, such as answering survey questions, and different questions can make different things salient and thereby alter valuations. Much more research is needed along these lines.

A related issue is that individuals may give valuations that they do not really hold. In opinion surveys, this is called the problem of "non-attitudes," i.e., answers to attitude questions which are fabricated for the benefit of the interview, or perhaps more charitably, induced by the stimulating event of being confronted by a question. These non-attitudes are very unstable in replications of the analysis, in contrast to real attitudes, which are stable. Consider a person who has never thought about the existence of National Wildlife Refuges, who happens to be included in a sample of subjects for a CV analysis. When asked their valuation of a wildlife refuge, they will state some positive value, perhaps a non-attitude due to yay-saying. This is an induced value that would not exist if the person had not been asked the question. How should this response be aggregated over the population that the sample is supposed to represent? After all, the population did not have the question; only the sample did. This is a sticky problem in the philosophy of science: the only way to falsify the existence of the value is to ask the question, which creates the value. Does the value exist?

While a large amount of research has been done on the general problem of using surveys, very little has been done in this regard for the unique

difficulties presented by CV studies. In my opinion, much more basic research, experimental research, needs to be done on this technique before substantial confidence can be placed in its use on a regular basis by practitioners. It does, however, have great promise and this research program should go forward.

V. Conclusion

In this paper, I have attempted to provide a brief overview of some of the concepts and techniques for valuing non-market goods such as coastal recreation. I think that one can reach some general conclusions from this review: (i) a lot of work has been done on these methods and that they potentially are valid, useful and accepted techniques, (ii) their application involves some fairly complex issues of both economic theory and statistics, (iii) cannot be applied in the same manner in all situations, i.e., they are not "off the shelf" technologies, and (iv) there is some exciting and potentially valuable research to be done in this area.

Of these, I wish to stress here the first conclusion. It is possible to read this paper and get the impression that so many difficulties are presented by the techniques that they are not really practical yet for applied policy analysis. This would be a misapprehension of my stance. These are useful methods that can be employed with confidence now. Moreover, they are able to address important questions regarding the allocation of coastal and other recreation resources. To not employ them would, I believe, lead to considerably worse decisions than would their careful, judicious use by policy makers.

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FLORIDA COASTAL RECREATION AND ECONOMIC RESEARCH

J. Walter Milon
Associate Professor
Food and Resource Economics Dept.
University of Florida

No one doubts that Florida's natural resource, and her coastal resources in particular, make an important contribution to the Florida economy. National and international promotion campaigns emphasize the quality and abundance of the beaches, the diversity of fishing opportunities, the numerous boating pursuits, and the unique wildlife inhabiting Florida's coastal environment. Everyone knows these attractions bring millions of tourists annually and contribute to the quality of life for Florida's residents. Yet, it is surprising how little is known about the value of specific resources and their importance to both tourists and residents. Private and public planning decisions are made every day that influence the use of these coastal resources but most of these decisions must be reached without adequate data and research on the economic implications.

In his paper, Graham-Tomasi provides a comprehensive and insightful review of the most widely discussed techniques for identifying the economic value of coastal recreation resources. His discussion of the contingent valuation, hedonic and travel cost techniques is a balanced, fair appraisal of the current state of knowledge. I am very much in agreement with his assessment that this type of research can provide useful insights for policy decisions. But, the research must be conducted with a clear recognition of the potential problems and policy makers must understand the limits of this type of research. These are not "off the shelf" techniques, but this does not mean that well designed studies cannot improve the information available about coastal resource decisions.

An important issue not addressed by Graham-Tomasi is the reason why coastal resource management agencies in Florida, such as the Department of Natural Resources, the Department of Environmental Regulation, and the Marine Fisheries Commission, have devoted so few resources to research on the economic value of coastal resources. While these agencies are required to complete an economic impact analysis (EIA) for any rule or regulation under the Florida administrative code, in practice these EIAs are typically little more than descriptive statements based on limited facts and figures. The State of Florida spends millions of dollars each year promoting the natural resource base but only a fraction to understand how resource use and management decisions affect the economic value of these resources. Even basic management issues, such as the potential impact of a saltwater fishing license or a user fee charge for beach access, are discussed as speculations and conjectures rather than being supported by basic research. Private industries providing recreation services such as Disney World do not make management decisions without solid information about the potential consequences. Given the enormous economic interest

the State of Florida has in its coastal resources, it is surprising how few resources the State has devoted to these research problems.

The Florida Sea Grant College has been a leader in the State in encouraging and funding research on important coastal resource allocation problems. However, it is clear that future progress depends on more interest and involvement from coastal resource management agencies in defining management problems and in providing support to conduct economic research. Researchers in agencies and universities around the U.S. are using the methods described by Graham-Tomasi to provide information about the economic consequences of management decisions. It is time for Florida's resource management agencies to build an effective partnership with the Sea Grant College to provide the type of research needed for wise use of our coastal resources.

COMMENTARY ON FLORIDA'S POLICY WITH RESPECT TO IT'S COAST

James C. Nicholas
Professor of Urban and Regional Planning
Affiliate Professor of Law and
Co-Director Growth and Management Studies
University of Florida

Florida has the second longest coastline in the United States, second only to Alaska. Florida's 1,350 miles of coast and 8,426 miles of tidal shoreline represent approximately 10% of the nation's total--including Alaska. By contrast, California has only 840 miles of coastline and 3,427 miles of shoreline -- approximately one-half that of Florida.

Florida's coast is the product of millions of years of natural evolutionary forces. What we see today is but a momentary glimpse of this continuing evolution.

This coast has been protected by mosquitoes, heat, hurricanes, and common sense. Pioneers and early residents knew better than to build on the coast. Annual hurricanes demonstrated the consequences of such a location. But Florida's hurricanes have declined in frequency and severity, and with them common sense has declined, too.

Floridians have forgotten the biblical admonition that only a fool builds his house on sand. But perhaps this sounds like some left wing intellectual who cares nothing about property rights.

Mosquitoes and heat at one time combined as the most effective protection of the Florida natural environment, both coastal and interior. Now, air conditioning, drainage, and pest control have reduced these natural defenses to insignificance. In fact, we could say that air conditioning, drainage, and pest control have attacked and destroyed Florida's immunity from the destructive effects of growth. Since Floridians have not yet learned how to defend against attacks on their environment, we see a corpus ravaged by an uncontrolled virus called growth.

The growth virus, like all other viruses, is part of a system. It has a holistic role to play, and it is an important role. However, when the natural defenses against that virus are stripped away, what was once a positive component of a balanced whole becomes a monster consuming that whole. Then, until we develop a cure or preventive, we can only avoid tragedy by exercising great care.

When growth is not controlled, it becomes the natural environment - the coast, in this case - rather than existing in harmony with it. When growth is solely competition among builders to develop the coast to its maximum, then that growth is uncontrolled growth, and dangerous. From outward appearances, it seems that coastal developers are competing to see just which builder can most effectively build in such a way that the public cannot get to the public's coast.

The buildings constructed along the coast are frequently so located that, first, the dune system is destroyed and along with the system goes the beach, and, second, the buildings themselves are frequently destroyed because the buildings were simply too close to the ocean and they were built on sand. A third consequence is exclusion of the public from the beaches which are owned by the public.

The matter of receding beaches, a result of dune destruction, bring forth an oddity of modern American philosophy. When matters of public access to public beaches are discussed, the owners of oceanfront land hold that those are private beaches and the owners are strict believers in private enterprise and private property rights. That is, they are strict adherents to these principles until it comes time to renourish the beach - which eroded because of their buildings - or until it comes time to pay for buildings damaged by storms. Then it's the public's beach.

Unfortunately, the coast is seen simply as real estate, albeit very valuable real estate, to be developed and sold. This approach implies that there is no other role or function of the coast. Such an implication is simply wrong.

Approximately 30 million out-of-staters visit Florida annually. Assuming that each of the 13 million Floridians act as tourists within Florida at least once a year, the total would be 43 million tourists annually.

The Florida Division of Tourism reports that the average length of stay is 11.9 days and the average expenditure is \$100 per person per day**, 43 million individuals staying 11.9 days and spending \$100 per person per day would yield \$51.2 billion in annual expenditures. Tourism surveys indicate 70% of tourism is coastally influenced, that is, where the coast plays a role.

This means that coastal expenditures amounts to \$35.8 billion annually. By contrast, the total sales value of citrus is \$4.2 billion annually.

Assuming that the coast is, on average, 1,000 ft. wide, there would be 163,637 acres of coast. At \$35.8 billion per year, income to Floridians per acre from the coast is \$218,894 per year. This is, of course, gross revenue. A real estate rule of thumb is that the site - land - is attributed 15% of gross receipts. This would attribute a site value of \$32,834 per acre per year for coastal land. Capitalizing \$32,834 per year @ .6% for 99 years, yields an economic value of the coastal land at \$545,525 per acre.

This value is to the public - Floridians - and is not necessarily capitalized into the market value of the land. Moreover, property owners frequently find that it is much more profitable to withdraw coastal land into private use. For example, a coastal condo selling

**The author has taken note of this datum and has suggested to his family that they, in the future, restrict themselves to that amount.

at \$250,000 at 20 units per acre would yield a land value of \$750,000 per acre.

From a private perspective the issue raised in this example is clear - the value of a coastal acre is \$545,525 to the public while the value of this example is \$750,000 value per acre if that acre is withdrawn from the inventory of the coast.

However, in order that the individual receive the \$750,000 per acre - the public suffers a loss of up to \$545,000 in tourism.

Miami Beach is a classic and particularly disturbing example. Miami Beach had some of the most fantastic beaches that ever existed. However, it withdrew these beaches from inventory - it made them private and they washed away. Tourism virtually stopped. The last new hotel in Miami Beach "topped off" in 1967. In an attempt to reverse the mistakes of the past, the public has paid hundreds of millions to try to restore the beaches which were privatized.

Florida needs to look to its coast - its - beaches - in a different manner. We could learn from the so-called less developed countries - the backward countries.

In Brazil, for example, the beaches are owned by the public as they are here - and no one can impede the access of the owners to their land. No individual has the right to destroy another's land even if its the public which owns the land.

In Florida we view the coast simply as real estate, to be sold. We could learn from Michigan and how they view the auto industry. Imagine the reaction if it were suggested, or tried, that a General Motors, Ford or Chrysler plant - an active one - and convert it to condo? What's the difference between that and converting Florida's beaches to private housing?

Florida has been blessed with a marvelously productive and resilient coast. This coast provides employment, recreation and a place to live for millions. It also provides solace and refuge to a cornucopia of life. Unfortunately, Floridians have not yet come to see coast in this manner. Rather, Floridians, through their official enactments, continue to see the coast in a narrow way, almost as if the only function of the coast is a source of real estate commissions. This view is changing. As it changes, the prospects for Florida's coast become brighter.

TOURISM RESEARCH: A CHALLENGE TO EXTENSION PLANNING

Allan J. Worms
Associate Extension Professor and
Recreation and Tourism Specialist,
Department of Forestry
University of Kentucky
Lexington, KY 40546-0073

Thank you, Dr. Clarke, for your kind introduction and the invitation to address this particular group. I find this subject area of special interest because it addresses an educational role and responsibilities which are directly related to my work in tourism education in Kentucky. But, frankly, it is of still greater interest to me because of the special set of planning and management problems apparently manifesting themselves in this state and because of the urgent need to find solutions to these problems. Let me see if I can identify the task at this point...

Today, previous speakers have described the status of tourism research in Florida, setting out on-going activities and, also, illustrating needs for other research. The size and character of the coastal tourism industry and its importance economically and recreationally has been discussed. And, while it was not identified as a topic of primary attention in the advance program, concern with maintenance of a quality resource environment in the face of an aggressively growing tourist industry is an evident issue. Florida has an immense and complex tourist industry which is demand driven by both the recreation seekers and the business profit seekers and which is superimposed on or in a finitely fragile ecology. Many businesses, more than merely those in tourism, are increasingly land consumptive, increasingly ecology impactive, and in need of economic, physical and civic guidance. And, to a large extent, tourism and related forms of recreation are functioning as the big generator, the power force, if you will, behind this process.

Thus, a fundamental problem seems to have arisen. Several speakers have addressed it today, either directly or in passing. It is that the prospect exists for major deterioration in both physical and social levels of environmental quality from a development/use overload.

I feel sure some will disagree with this proposition. Apparently, dissension exists among the previous speakers as to research priorities and directions. To some, research of the markets to improve business is the first mandate. Others apparently are concerned, first, with research to enhance recreation experience. Still others are concerned with the propriety of who should be doing what research. In such a mixed setting it is easy to assume there would be differences in assessment with the size of the problem and its derivative characteristics.

Perhaps the task then, involves collective agreement that a significant problem exists and that a cooperative effort to deal with

it should be launched among business, government, academia (both research and extension), and, ultimately, the citizenry. Certainly, the organizers of this conference should be commended for taking the first step in calling this group together to identify and discuss the problems.

What should be the next steps? What should be the role of research, Sea Grant and Cooperative Extension, private businesses and state and other governments? And how can a functional linkage or liaison be established which will promote cooperative pursuit of problem identification, program implementation and the related widespread education which seems almost certainly necessary to such program implementation?

From my perspective, the need for more applied research which convey real meanings to help improve management and successful function of all aspects of the industry in concert with a quality environment is simply fundamental. Virtually no major industry operates competitively and successfully in contemporary society without sound research, whether it has to do with new product or service development, market research, management or procedural research or whatever. Tourism, as an industry or as an individual business simply does not function better in ignorance of the conditions impinging upon it. And directly related must be a primary effort to disseminate the right kinds of information. ---This is a main philosophy of the land grant university research-extension-citizenry partnership program.

The problem of determining research needs, and relating this to the best procedures for delivery of the information and how to apply it in the industry is not new, of course. More than a dozen years ago, it was addressed by researchers, managers and extension specialists in the context of the 1975 Southern States Recreation Workshop. Three principal keynotes representing each of these professional groups described the difficulties of this process from their individual viewpoints.

Managers were concerned: 1st, that researchers often did not really understand their needs; 2nd, researchers did research that met researchers interests and reward system needs; and, then, 3rd, didn't write the results in a manner that was readily digestible by managers. Much of this criticism could be leveled by tourism business entrepreneurs today, of course. Further, it seemed dialogue between business and managers with researchers was difficult if it existed at all. In my work in Kentucky I've found many instances where dialogue among business people was also nonexistent. They often don't talk to each other much less with researchers or researchers with them.

This workshop further pointed out, from the viewpoint of researchers, management often wanted answers almost immediately to

¹Proceedings of the Southern States Recreation Research Applications Workshop. USDA Forest Service General Technical Report SE-9, Asheville, NC, June 1976.

here and now types of operational questions. They frequently did not take a long view of conditions affecting their industry --and certainly were less tolerant of the long view perspective in which researchers must often operate. In short, researchers felt it took more time to identify researchable problems, develop funding, design research techniques, and conduct the research and prepare the results. Moreover, academic researchers often were not rewarded for "here and now" investigation and preparation of data in highly readable and applicable form, but for publication in refereed journals, to be read and re-applied by other researchers.

Perhaps the management keynoter put some of the problems in perspective with this series of questions:

Why is it managers and other field people aren't clamoring for your fantastic finding? Perhaps we can find part of the answers in this series of introspective questions. Is your research geared to the urgent-immediate needs of managers? Have you presented (packaged) your results so they will sell? Can managers understand what you've written? Have you geared your write up to management people or is it geared to fellow researchers? Do you aim at publications of interest to managers or publications of interest to no one? Do you describe the problem then prescribe the cure with step 1-10 recommendations? Did you work with management personnel in describing the problem or did you do a fine job without their help?

The same manager challenged research, and indirectly Extension, even further with:

"The interpreter or disseminator -- he will save us!" Extension Service personnel . . . and even folks like me spend considerable time telling others about research findings. It seems now, though, these professionals are to be prime linkage between the researcher and the manager. This is a dandy scheme, one I'm sure which will be covered well, indeed, by the following speaker. If it works, the research can take even less responsibility for providing relevant answers in understandable language.

The extension specialist is part of the answer, but asking him to do a job you've failed to do won't help our common dilemma.

Well, the 1988 setting differs considerably from the days of this workshop. We now possess much more rapid capacity to analyze research data. Communication of new information is almost immediate. And business, academic researchers and private researchers have now lubricated and streamlined the process, right?

Wrong. With notable exceptions, we still have companies paying for private research to generate quick answers to short view issues.

²Ibid., p. 3

³Ibid., p. 4.

We still have universities needing to conduct research which is publishable in refereed journals. Such research is often presented in a form which is difficult for managers to digest. And we still have managers doing their own thing, without really trying to learn how to talk to researchers in terms they can use to cross over the communication/application barriers.

And extension? What is the Cooperative Extension Service doing about business management education in Florida's number one industry? How is this premier educational organization helping to resolve the complex problem fabric existing between tourism business success, recreation consumer enjoyment objectives and social and environmental stress? Well, I am not a Floridian but I'm sure much has been done. It is also obvious that tourism business education and how to go about some sort of increased, more aptly applied effort would be a useful result of this meeting.

An interesting observation of the 1985 ECOP Subcommittee on CRD⁴ was that Extension is "demand driven." The Florida situation is certainly one in which extension and university researchers could come to feel demand driven. But I don't think responding to short term pressure is a good way to go about finding answers and solving problems. A well organized, comprehensive education program with lasting educational achievements is certainly more justified.

Some years ago in Kentucky, we swallowed our extension-researcher professional pride and took some lessons from a number of small tourism businesses, particularly the marinas and boat docks across the state. We sat down with a number of them and asked them what were their most pressing business problems and if we could help. They had problems with very basic issues. Pricing for moorage, insurance, service to customers, and the like were central to successful competition. Understanding how much customers would pay for moorage, products and services and the like could make a difference in their degree of success or even, in some cases, survival. Over a few years we were able to first, look beyond our need to do research with highly quantifiable statistically sound results which was publishable in journals to ways to deal with very here and now industry subjects. Gradually, as we (Extension and business) learned to work together and communicate on a variety of knotty problems, several things began to happen. We were able to develop a longer term program of education dealing with a more educated business clientele who began to see things in a broader and, we think, more sophisticated fashion.

But importantly, we had to learn how to do research in their arena and disseminate the findings in their language and in support programs of their liking, first. Now, they put on the programs and are beginning of their liking, first. Now, they put on the programs and are beginning to fund more sophisticated research. But this is only one small example of approaches to this maze of problems.

⁴ CRD Research/Extension Linkages. A Report of the ECOP Subcommittee on Community Resource Development and Public Affairs, December 1985.

It seems the task before you additionally, involves several up-front commitments.

1. The Florida Cooperative Extension Service and Sea Grant should recognize the enormous educational needs facing the state's primary industry and take steps to deal with the responsibilities inherent in this condition.
2. The FCES should accept and support a need to be expert in dealing with this industry. The FCES can't "be all things to all people", but being fearful of embarrassment by other experts is surely not a solution.
3. A series of program priorities should be developed which related to overall long term problem solutions within the tourist industry and in related areas of the Florida environmental and societal fabric.
4. Steps within the relationship mix between business, extension and researchers must be taken to identify both issue problems and working/cooperation problems. Functional three-way dialogue is, obviously, a first level priority.
5. Cooperative efforts between the business/extension/research "team" should be initiated, carried out and evaluated along the program priority lines.

Without the support of government on both administrative and research action levels and the support and involvement of business representation, there will be no really effective "team" program. Further, identity and wide acceptance of such a program is probably one of the primary criteria for success to any significant degree.

Research of the tourist industry in Florida presently seems to be far more narrowly applied than necessary to deal with problems confronting the industry and the presumably deteriorating environment important to its high success. Several areas of concern seem important.

1. There is a need to define acceptable limits of physical and social carrying capacity pursuant to maintaining quality standards appropriate to varied recreation settings. Research in these areas should be pragmatic and the results should be implementation oriented.
2. Understandings of the management and controls options available to alleviate portions of the problems must be identified and communicated. This effort probably begins with collaboration among government, business, research and extension/Sea Grant, should be followed up by research actions and then communicated widely, again through a collaborative effort.
3. The status of public awareness and concern with identifiable tourist industry and resource management problems should be measured. This would seem to be fundamental to development of sound education programs following agreement on the problem solution directions.

The relationship between research findings and extension education of the tourist industry's membership should appear obvious. However, this is only minimal portion of the task. From the very outset,

probably the most vital commitment should be to establish a continuing cooperative effort among the tourist industry, state government, the universities' segments involved with tourism and the recreational environment and eventually, also, local governments and interested organizations. Florida is a special and unique place with special and often unique problems. While this may seem trite, the immensity and complexity of the confrontations between the forces of the recreation/tourism/developmental interests and ecological stability presents a challenge which will probably not be met without a major broad-based program. Ultimately, an ethic of husbandry for Florida's natural and cultural resources must be much more widely and firmly established. Until the effects of such an ethic are portrayed in business development, community management and many other individual acts throughout the state's environment, a level necessary to sustain some balance with the state's ecology will not be reached.

Summary of Research Opportunities in Coastal Tourism

Jim Cato, Larry Libby, and Marion Clarke

Research opportunities focused on the Florida tourism sector can be grouped into four major categories. Specific research ideas are noted under each category.

Demand As in production of any commodity, the tourism opportunity combines various monetary and nonmonetary inputs in generating definable units of output available at a series of prices. In some cases, those prices are not traditional market prices but require indirect indicators of what consumers are willing to pay for that opportunity.

It is necessary for the public sector to provide consistent indicators of recreation demand through a comprehensive and systematic data system. This data set coupled with specific surveys will then allow the "willingness to pay" aspect of effective demand to be inferred from nonmarket indicators of cost incurred to enjoy a given recreation experience. Further, price and income elasticities related to various coastal recreation opportunities could be determined. This would allow the effects of changing the coastal tourism product mix to be measured. Florida might also be viewed as a bundle of resources. Many of these are fragile and limited in quantity. The effects of increasing demands on these resources to satisfy coastal tourism also should be known.

Supply Studies of the supply characteristics of coastal tourism would focus on the market failures associated with the willingness to supply various coastal recreation opportunities. For example, overfishing and beach congestion are supply "malfunctions" resulting from the absence of usual market signals on both the demand and supply side. Better market signals would have perhaps prevented these market failures. Research is needed to better document the economic characteristics of these market failures through case study and survey work. The purpose is to facilitate appropriate policy options that may encourage a more complete set of economic "signals" for suppliers of coastal recreation.

Marketing Research on the marketing of coastal tourism services and opportunities should focus on returns to product differentiation, promotion, generic "come-to-Florida" marketing versus target specific approaches, and the economic performance associated within each market sector (number of firms, concentration, degree of competitiveness, etc.).

Policy Major research in this category would focus on four areas. The first would be a diagnostic analysis of the political economy of coastal tourism in Florida. This would involve the description of major participants in tourism economics and policy decisions in the state, linkages among those major interests, identification of decision authority, and where the policy discretion lies with respect to tourism decisions. This knowledge constitutes the information flow that defines the "structure" of tourism policy.

The second is measuring the consequences of current tourism policy. These would include costs and benefits associated with a given policy as well as the distributional characteristics. Such current policies as private waterfront condominium development, cars on the beaches, and waterfront zoning provide examples. The positive and negative impacts of tourism should extend beyond that of just monetary values. Also of importance are the social and environmental aspects of "carrying capacity" of our coast in regard to tourism as one of its many uses.

Third, certain impacts of policies inadvertently affect coastal areas. Research in this category would focus on policies designed to accomplish other purposes but that indirectly affect coastal tourism opportunities. Studies might address policies that concern land taxation, environment, growth management, and economic development.

Fourth, performance consequences of alternative policies designed to change the use of coastal resources need analyzing. Studies here would focus on proposals for selected changes with emphasis on identification of gainers and losers and the magnitude of the impact.

In summary, research on coastal tourism can be focused on (1) identification and measurement of the demand and supply characteristics of the various commodities and services involved, (2) economic performance of alternative marketing structures and arrangements designed to alter the pattern of coastal resource use, and (3) the performance of policies affecting rights and obligations with respect to coastal resources. Emphasis will be on development and application of theoretically sound measurement techniques to determine benefits and values of tourism options. The development of a systematic data set to understand the economics and demographics of coastal tourism in Florida and the public choice problems of resource use underlies all these needs.

List of Attendees

<u>Name</u>	<u>Affiliation</u>
Chuck Adams	Florida Sea Grant University of Florida Gainesville, FL
Fran Buie	Bureau of Econ. Analysis Division of Econ. Dev. Tallahassee, FL
Fred Bell	Dept. of Economics Florida State University Tallahassee, FL
Jim Cato	Florida Sea Grant University of Florida Gainesville, FL
Marion Clarke	Florida Sea Grant University of Florida Gainesville, FL
Rod Clouser	Food and Resource Econ. Dept. University of Florida Gainesville, FL
Phil Flood	Div. of Recreation & Parks Dept. of Natural Resources Tallahassee, FL
Ted Graham-Tomasi	Dept. of Agricultural and Applied Economics University of Minnesota
Joe Halusky	Florida Sea Grant Marineland, FL
Roberta Hammond	Florida Dept. of Commercial Affairs Apalachicola, FL
Larry Libby	Food and Resource Econ. Dept. University of Florida Gainesville, FL
Karen Lougheed	Lougheed and Associates Orlando, FL
Wally Milon	Food and Resource Econ. Dept. University of Florida Gainesville, FL

Jim Murley	1000 Friends of Florida Tallahassee, FL
Jim Nicholas	Growth Management Studies University of Florida Gainesville, FL
Barry Petigoff	Florida Dept. of Commerce Division of Tourism Tallahassee, FL
Abe Pizam	Dick Pope, Inst. for Tourism Studies College of Business Univ. of Central Florida Orlando, FL
William Puckett	Marineland of Florida Marineland, FL
Roberto Salazar	Dept. of Economics Florida International Univ. Miami, FL
Allen Worms	Dept. of Forestry University of Kentucky Lexington, KY

**THE ECONOMICS OF COASTAL TOURISM:
RESEARCH PERSPECTIVES FOR FLORIDA**

United Technologies Conference Facility
Walt Disney EPCOT Center
Living Seas Pavilion
Orlando, Florida

29 February 1988

- 8:30 AM Welcome
Larry Libby, Chairman
Food and Resource Economics Dept., Univ. of Florida
- 8:35 AM Opening Remarks
The Status of Tourism Research in Florida: Filling the Voids,
Where More Information Is Needed
- SPEAKER: Barry Pettigoff, Director
Office of Marketing Research, Div. of Tourism,
Florida Dept. of Commerce
- 9:00 AM SECTION I: EXTENT AND NATURE OF COASTAL TOURISM
MODERATOR: Marion Clarke, Coordinator
Florida Sea Grant Marine Advisory Program
- SPEAKER: Abe Pizam, Director
Center for Tourism Research, Univ. of Central
Florida
- RESPONDENT: Fred Bell, Professor
Dept. of Economics, Florida State Univ.
- DISCUSSION:
- 10:00 AM SECTION II: MEASURING THE BENEFITS OF COASTAL TOURISM
MODERATOR: Larry Libby
- SPEAKER: Ted Graham-Tomasi, Professor
Dept. of Economics, Univ. of Minnesota
- RESPONDENT: Wally Milon, Assoc. Professor
Dept. of Food and Resource Economics, Univ. of Florida
- DISCUSSION:
- 11:00AM BREAK

11:15AM **SECTION III: POLICY RELATED TO COASTAL TOURISM**
MODERATOR: Chuck Adams, Marine Economics Specialist
Florida Sea Grant

SPEAKER: Jim Nicholas, Professor
Dept. of Urban and Regional Planning, Univ. of Florida

RESPONDENT: Jim Murley, Director
1000 Friends of Florida
(Formerly Division Director of Planning, Florida
Dept. of Community Affairs)

DISCUSSION:

12:15PM **LUNCHEON**
United Technologies Conference Facility
Speaker TBA

1:30 PM **INTRODUCTION OF ATTENDEES**
MODERATOR: Marion Clarke

2:00 PM **SECTION IV: PANEL DISCUSSION**
MODERATOR: Jim Cato, Director
Florida Sea Grant Program

Panel will include speakers and respondents from previous sections. A major focus of the panel discussion section will be to develop a set of priorities for future research and extension activities related to Coastal Tourism in Florida.

3:00 PM **Tourism Research: A Challenge to Extension Planning.**
SPEAKER: Allen Worms
Extension Tourism Specialist
University of Kentucky

3:15 PM **An IFAS Perspective:**
Speaker TBA
Institute of Food and Agricultural Sciences (IFAS)
Univ. of Florida

3:30 PM **CLOSING REMARKS AND IMPLICATIONS FOR FUTURE SEA GRANT RESEARCH**
Jim Cato

3:45 PM **ADJOURN - Optional tour of The Living Seas Pavilion.**