

Using Marketing Management Tools to Evaluate Non-credit, Nature-based Education:
The Seatauqua Program

by

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INTRODUCTION

As the role of tourism in Oregon's coastal economy grows, associated economic and resource management issues gain heightened importance. Outdoor recreation associated with natural resources is now the main component of tourist activity on the Oregon coast, and facilities and programs that address this public interest are growing in Oregon, as well as across the country. Many of these entities have a two-pronged objective: to provide a popular recreational offering to visitors, and to educate the public on natural resource issues.

The Seatauqua marine education program at the Hatfield Marine Science Center serves as a case study for understanding factors affecting the demand and supply of natural resource education programs. The program is presently a model for other coastal communities interested in developing education programs centered on enhancing enjoyment of marine coastal environments while teaching concepts of conservation and stewardship.

While, in general, Seatauqua has been considered a successful program, changes are now taking place which will require the program to re-evaluate management and promotional strategies. These inter-related changes include: 1) The retirement of Seatauqua's coordinator and subsequent incorporation of the program into the HMSC; 2) The redesign of the Marine Science Center's public wing, including an evaluation of Seatauqua's role as an educational vehicle; 3) Expected increases in the supply and demand for marine based "ecological tourism" in the Newport area during the next decade; and 5) Demographic changes among coastal regional populations. The Seatauqua program can improve its future effectiveness by adjusting its strategies in response to these market forces. However, in order to effectively develop new

strategies, Seatauqua must first evaluate its existing programs in order to determine their effectiveness in terms of objectives, costs and external benefits.

Over the years, evaluation of Seatauqua programs and attendance has taken place on an ongoing basis. However, a comprehensive analysis of Seatauqua management, programs and attendance was never completed. With the retirement of the Seatauqua coordinator, an extension agent, Extension requested an evaluation of the program. This evaluation was used as a decision-making tool in determining Extension's role in the future of Seatauqua. Oregon Sea Grant's Marine Advisory Service, the Coastal Oregon Marine Experiment Station, and the Holt Scholarship Fund also contributed funds for this evaluation. The purpose of this study was to evaluate Seatauqua using a framework consistent with strategic management principles, and provide suggestions for future management and marketing strategies.

The results have been reported in five parts as follows: Part 1: "The Seatauqua Marine Education Program: Program operations and attendance, and preliminary participant survey findings"; Part 2: "Determining Leisure Program Formats Based on Participant Preferences: A case study in nature-based education"; Part 3: "A Comparison of Alternative Markets for a Nature-based Marine Education Program"; Part 4: "Preferences for Job and Program Characteristics Among Environmental Educators" and; Part 5: "Recommendations and Strategies for the Future Existence and Management of Seatauqua." This compilation of the project provides an overview and brief description of each of these parts, as well as a copy of the original works. It also includes a brief summary of the main results as they would apply to suggested changes for the design of the Seatauqua program.

Part 1, "The Seatauqua Marine Education Program: Program Operations and Attendance and Preliminary Participant Survey Findings," provides an historical overview of Seatauqua, and an analysis of management, programming and funding issues at the time the Seatauqua coordinator retired. This paper also briefly describes the goals, design, implementation and testing of a mail survey delivered to a random sample of past Seatauqua participants. It is followed by a preliminary analysis of this survey; providing a socioeconomic profile of Seatauqua participants, participation patterns, visitor activities in Newport, advertising effectiveness and preferences for program characteristics. Preliminary analysis of participant information led to several hypotheses regarding the make-up of several user groups attending Seatauqua. This report was submitted to Extension Sea Grant.

Part 2, "Determining Leisure Program Formats Based on Participant Preferences," focuses on how participant characteristics and program attributes influence program preferences and projected participation rates. The goal of this portion of the study was to show the potential for developing marketing management strategies that target programs toward a range of market segments. Alternative strategies could then be combined to achieve audience composition, participation rates and program structure that would be consistent with an educational organization's mission. This concept was illustrated by looking at preferences and projected participation of three hypothetical audiences for different types of programs. The paper was published in the Summer 1995 issue of the *Journal of Park and Recreation Administration*.

Part 3, "A Comparison of Alternative Markets for a Nature-based Marine Education Program," compares past participants to other potential market segments. Given changes

indicating an increased generalist interest in nature-based education, visitors to the Marine Science Center's public wing were identified as a potential market, and given a survey similar to the one mailed to past participants. Of particular interest were similarities and differences in audience characteristics that would help identify different market segments. As in the second paper, hypothetical audiences were evaluated for a range of programs that reflected different potential management strategies. This paper is in review.

Part 4, "Preferences for Job and Program Characteristics Among Environmental Educators," focuses on the most important program attribute identified by management, and past and potential participants; the instructors. A sample of Seatauqua instructors were interviewed and given a written survey. Data collection goals included demographics, reasons for teaching, job satisfaction and interest in different compensation strategies. A model was developed that would allow a manager to gauge how desirable a program would be to teach, and how often an instructor would be willing to teach it given different program attributes and instructor characteristics. This paper is in review.

Part 5: "Recommendations and Strategies for the Future Existence and Management of Seatauqua" provides marketing management information that can be used to formulate the future direction and management of Seatauqua. This report provided a synthesis of the research in the form of alternative strategies, given different goals of the primary funding organizations. Possible strategies are presented for restructuring Seatauqua to meet the goals of Extension Sea Grant and HMSC. This paper was produced as a consultant report at the request of HMSC.

GENERAL SUMMARY OF PROJECT FINDINGS

This project generated volumes of data and, for a complete discussion of the study results, the reader is referred to the different papers. I would, however, like to provide a brief summary of general results and how they might apply to Seatauqua design. The marketing management approach that we used to evaluate Seatauqua focused on the program's goals and objectives, strengths and weaknesses, current and potential markets and the competitive environment. All of these components were taken into consideration to come up with suggested alternative strategies for Seatauqua.

Seatauqua was started in 1972 at Oregon State University. The program was coordinated by a marine extension agent and guided by a steering committee made up of, but not limited to, representatives from the President's Office, Summer Term, School of Oceanography, Extension Service, the Marine Science Center and the City of Newport. The program goals were laid out in a Memorandum of Understanding and included the following: 1) To increase public appreciation of the marine environment and enhance public awareness of the presence of OSU at the Oregon coast; 2) To encourage participation of those who seek to enlarge public understanding of the marine environment; 3) To certify certain events and programs as part of the Seatauqua program; and 4) To coordinate publicity of Seatauqua programs and events. Funding was provided by the different agencies on the steering committees, with Extension (the coordinator's salary) and the HMSC (facilities, equipment and support) as the primary contributors.

The main programs included films, walks, talks, van and boat trips, and workshops. All of these provided marine and coastal information in different formats to reach segments of locals

and tourists. For example, films, walks and talks provided information for participants interested in free programs with a 15 min.- 1 hr time frame. Evening boat trips and day long van trips were available for participants interested in an interactive 2 hour - 1 day format providing general information at a nominal fee. Workshops allowed participants to explore topics in more detail, and lasted 1-3 days for a nominal fee.

Seatauqua was traditionally a summer program and one small part of the coordinator's job. All growth and changes happened given that the coordinator had other commitments and priorities. Specific goals and objectives (financial and attendance) were largely unwritten. The primary focus was on providing high quality programs at a reasonable cost, and keeping the price to participants as low as possible. Financial goals appeared to be to cover the direct costs of the workshop. Administrative and advertising costs were acknowledged to be subsidized.

Our market surveys found that the typical Seatauqua participant resided within the state, earned \$43,000 per year household income, completed college and attended some graduate school, had an average age of 56 years and was retired or a professional. The average Seatauqua participant was more likely to be older, retired and have a higher level of formal education than the potential participants. While the two groups' average annual household income was the same at \$43,000 per year, potential participants generally had more household members than past participants, including younger children. Past participants were more likely to reside locally than potential participants. Those past participants that were visitors to the area were more likely to come specifically to attend Seatauqua, and to stay longer than potential participants.

Past participants were also more likely than potential participants to participate in other

General Findings

non-credit educational programs. Those potential participants that were interested in non-credit, nature-based marine education indicated preferences for programs that had a shorter time frame; 1-2 hour introductory programs, walks, films and boat tours.

With respect to workshop attributes, *instructor's skills* and *workshop format* were identified as the most important to both past and potential participants. We labeled these the primary attributes. Secondary attributes that varied in importance to past and potential participants were: *registration fee*, *inclusion of children in the workshop*, *class size*, *workshop length*, *day offered* and *time of year offered*. Potential participants found the *program length*, *class size* and *inclusion of children* all statistically more important than the past participants did.

The potential impact of these results on future workshop design is that if a workshop format is to attract a broader segment of the potential participants, some changes factoring in their time constraints and family commitments would need to occur. For example, shorter workshops that include children and still have the favorable qualities of expert instructors and hands-on activities may be marketable.

The results of the instructor survey suggest the following general instructor profile: approximately 50 years of age, holding a graduate degree, annual income of \$31,000- \$50,000, Oregon resident, and primary employment as a professor or Sea Grant Extension agent. The majority of instructors were considered experts in their field, taught one workshop per year and had been teaching for Seatauqua for seven years. These general trends suggest that Seatauqua instructors did not rely on this teaching position for income and, instead, were motivated to teach by factors other than compensation.

General Findings

Results further suggest that instructor motivation is a function of environmental education goals, and community service motivations. Important constraints to instructor availability include primary job and discretionary time, as opposed to compensation level. These instructors were not interested in teaching the workshops more often, and pay was not really an issue. However, it is important not to apply these results too widely. These findings describe an important type of instructor; however, for many instructors environmental education is a primary job. For these individuals, traditional compensation issues are most likely important motivators.

Seatauqua management, markets and instructors were considered in the context of trends within the community. Newport is being developed as a hub for marine education on the Central Oregon Coast. Besides Seatauqua, the HMSC offers educational programs for teachers, university students and school groups. The Oregon Coast Aquarium has interpretive displays, and offers programs on a variety of marine topics. These programs are similar to those offered through Seatauqua, often including many of the same topics (for example, fossils, fishprinting, coastal landscaping and marine mammals). The Sitka Center also offers some marine oriented workshops. Their focus tends to be art or activity oriented (for example, Northwest Indian carving and sea kayaking). Marine Discovery Tours is a new for-profit company that has marine education as a focus. They currently offer whale watching and estuary boat trips for the general public, as well as specialized programs for school groups. As the business grows, they are interested in offering workshops for the general public. These could include the more financially successful Seatauqua programs.

Options for the future of Seatauqua depend on tradeoffs between cost recovery and educational objectives and include:

- 1) Eliminate OSU sponsorship of Seatauqua.**
- 2) Out source Seatauqua.**
- 3) Restructure Seatauqua to meet the goals of Extension Sea Grant and HMSC.**

If Extension Sea Grant and HMSC do not require Seatauqua-type programs to meet their educational objectives, then eliminating Seatauqua could release funds for alternative uses. If Extension Sea Grant and HMSC want Seatauqua programs to continue, but need to reduce or eliminate their roles, they could help Seatauqua become a separate non-profit organization that would eventually operate without them.

On the other hand, if workshops, tours, and trips are considered a useful tool for meeting organizational objectives, then restructuring Seatauqua to meet the changing needs of Extension Sea Grant and HMSC may be a better alternative. Those workshops that are appropriate to existing businesses and organizations could be “spun off.”

The recommended option is to restructure Seatauqua to meet the mission, goals and objectives of Extension Sea Grant and HMSC while spinning off those workshops appropriate to existing businesses and organizations. Strategies to facilitate this include:

- I. Implement changes to Seatauqua programs to reflect changes in the educational goals of the new Visitors Center.**
- II. Spin off those workshops appropriate to existing businesses/ organizations.**

III. Implement program changes to reflect broader audience goals for the new Visitors Center.

IV. Integrate Seatauqua into the cost recovery goals for the new Visitors Center.

V. Manage and price the workshops and trips consistent with Extension Sea Grant and HMSC cost recovery goals.

VI. Communicate the strategies to those managing the program.

PART 1

**The Seatauqua Marine Education Program:
Program Operations and Attendance
and
Preliminary Participant Survey Findings**

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EXECUTIVE SUMMARY

The Seatauqua marine education program at the Hatfield Marine Science Center (HMSC) serves as a case study for understanding the demand and supply for natural resource based education programs. This program is presently a model for other coastal communities interested in developing education programs centered on enhancing enjoyment of marine coastal environments while teaching concepts of conservation and stewardship.

Research Scope and Goals

This study is one piece of a comprehensive project, "Evaluation of the Seatauqua Program: Impact and Market Opportunity Analysis". The goal of the research is to build a model that elucidates the primary characteristics of Seatauqua from both the supplier and the participant perspectives. Findings from this research are being delivered in parts. This study provides an historical overview of Seatauqua and the management, programming and funding issues it currently faces. It then discusses demand for Seatauqua programs in terms of participation trends, and presents a preliminary profile of program attendees.

Data in this report was drawn from Seatauqua administrative records, research of external sources, and surveys of program participants. Two surveys were completed. An in-depth survey was mailed to Seatauqua participants which included socioeconomic and participation questions. Then, a follow-up survey to test for bias was conducted over the telephone with individuals who did not return the mail survey. The follow-up survey found that participants that were local to the area and more involved in Seatauqua programs were more likely to respond. Other socioeconomic and participation differences between the two groups are currently being tested using contingency table analysis.

Important Management, Programming and Funding Issues

In the past, Seatauqua has operated on informal, implied goals and objectives. We recommend that, during this transitional period for Seatauqua, a new consensus be reached concerning the program's identity, goals, and objectives. If possible, the goals and objectives for Seatauqua should complement the goals and objectives of the parent agency or agencies. Written long and short term goals and objectives could act as both a guideline for the program administrator and as a standard to measure progress. If goals and objectives are going to be used as a standard to measure progress, however, some of those objectives should be quantitative in order to allow for effective evaluation.

Setting program priorities, especially in the areas of finances and programming, will aid in defining and achieving goals. A financial tracking and control system that tracks all spending by program, will support this effort by allowing for cost analysis on a program-by-program basis. Knowing all of the costs, the administrator will have a better idea of how much external support is needed. While participant willingness to pay and a program goal to keep the cost to participants low should not be ignored when setting the price of the workshop, costs should not be ignored either.

Apparent Demand for Seatauqua Programs

After early growth through 1978, Seatauqua attendance, and hence demand, varied in the 1980's, showed net decrease after 1986, and then saw a recent upsurge in participation. While initially attendance patterns may seem random, significant peaks and troughs in participation can be explained by variations in program format, and the ebb and flow of attendance in particular programs. Overall Seatauqua attendance patterns were driven by the high volume, free, daily programs, such as the films and daily walks. Outside of these programs, Seatauqua attendance followed a relatively smooth, cyclical pattern. External factors such as local and economic trends also impacted attendance, for example Seatauqua attendance was higher during periods of population and economic growth on the coast than during recessionary periods.

Seatauqua and the Hatfield Marine Science Center

While HMSC attendance was hypothesized to affect Seatauqua attendance, no relationship between the attendance rates at the two programs was found. Survey findings regarding how participants hear of Seatauqua, however, supported the hypothesized link between the HMSC and Seatauqua. One notable divergence between attendance rates at the two programs occurred in 1992: Seatauqua participation increased and HMSC attendance decreased. The opening of the Oregon Coast Aquarium may have affected attendance by creating a competitive relationship with HMSC which decreased its attendance, while having a complementary influence on Seatauqua attendance.

Attendance in Individual Programs

Attendance in Seatauqua varied on a program by program basis. Attendance at films, talks, and boat tours all showed declining trends while workshops and van tours showed increasing trends. Advertising efforts and changes in participant interests were two major factors in program-wide attendance. Introduction of new topics, and scheduling of classes were the main factors impacting workshop attendance. It was hypothesized that weather played an important role, and weather data is currently being examined.

The Typical Seatauqua Participant

Data from the mail survey revealed clear trends in the socioeconomic characteristics of participants and their participation patterns. The typical (mean) participant resided in Oregon, earned \$42,600 yearly, completed college and attended some graduate school, was female, and was retired or a professional, between 56-65 years old.

Approximately half of the participants heard about Seatauqua directly or indirectly through the HMSC. He or she participated in several of the Seatauqua programs, including the workshops (78% of respondents), and most frequently the films (40%), van trips (31%), guided walks (29%), or boat trips (28%).

The mean number of workshops attended was 2.99, and most often attended either with a spouse (37%) or alone (34%). Sixty-one percent of the respondents who had taken more than one workshop said they had taken one workshop a year. Twenty-five percent of respondents took more than one workshop a year. Respondents attended both different workshop topics (67%) and

the same workshop topic (49%). The most popular workshop topics were Crabbing (27%), Exploring Tide pools (23%), Coastal Fossils (21%), Clamming (20%) and Coastal Plants (19%).

For visitors, Newport was most often the primary vacation destination. The length visitors stayed in the area varied greatly, with a median of 1.5 nights, and a mean of 4.67 nights (standard deviation = 5.5). While in Newport, visitors commonly toured the HMSC (80%), went sightseeing (75%), and participated in non-consumptive coastal activities such as tide pooling and bird watching (55%).

In addition to Seatauqua, respondents were active in other non-credit, community-based education programs. Fifty-seven percent of respondents took non-credit classes through community colleges, and fifty-one percent attended free films and lectures at zoos, aquariums, or museums. Other common activities included travel in the US(70%), reading about wildlife and the environment(67%), and visiting zoos and aquariums(65%). A fairly high number (48%) read scientific research journals.

Eighty-seven percent of the respondents expected to attend Seatauqua in the future. Most planned to attend a different topic (70%). In regard to future formats, sixty-three percent wanted to see Seatauqua workshops offered year round and fifty-six percent were interested in learning more about current research going on at the HMSC. Interest in classes offered by local businesses was low.

Seatauqua Participants Compared to The Typical Oregon Visitor

A comparison of the typical Seatauqua participant and the average traveler to Oregon as defined by Dean Runyon Associates indicated that similarities exist between the two groups. This finding suggests that Seatauqua programs drew a representative subset of Oregon visitors. In the future Seatauqua strategy could be structured to appeal to this wide cross-section of visitors or targeted toward particular groups, depending on the specific program goals.

Preliminary Findings on Seatauqua Market Segments

In order to elucidate Seatauqua participation within subgroups, and to understand what types of people each program serves, a preliminary analysis of attendance data was completed to determine what correlations, if any, existed related to participant characteristics. These subgroups were based on age, income, sex, number of household members, education, employment, and residence. The following preliminary findings from this data are currently being tested and fully explored: (The results will be included in the final analysis.)

- **Mutually Exclusive User Groups Were Not Evidenced:** While attendance in Seatauqua programs tended to vary based on socioeconomic factors, single programs were not attended exclusively by any one group.
- **Local and Visitor User Groups Exhibited Varying Participation Trends:** Visitors exhibited more casual attendance patterns by participating in programs of shorter duration with greater frequency during a bounded time period. This trend reflected different logistical considerations of users that significantly affected attendance.

- Categories of Classes Existed, as Defined by Subject Matter, Format and Appeal: Classes could be roughly divided by appeal and could be viewed in terms of interest categories such as family activity, special interest science, and less strenuous for less active attendees. In addition, general interest and special interest classes existed that leveraged one another in encouraging first time and repeat attendance by participants.
- Future Marketing and Advertising Could Be Targeted Based on Other Interests of Potential Attendees: Information on the hobbies and visiting patterns of attendees could help to determine what combination of activities to advertise and where to market the information.

INTRODUCTION

This study is one piece of a comprehensive project, "Evaluation of the Seatauqua Marine Education Program: Impact and Market Opportunity Analysis". The goal of the research is to build a model that elucidates the primary characteristics of Seatauqua from both the supplier and the participant perspectives. Findings from this research are being delivered in parts. This study provides an historical overview of Seatauqua and the management, programming and funding issues it currently faces. It then discusses demand for Seatauqua programs in terms of participation trends, and presents a preliminary profile of program attendees.

Over the years, evaluation of Seatauqua programs and attendance has taken place on an ongoing basis. However, a comprehensive analysis of Seatauqua management, programs, and attendance has never been completed. Section I addresses this need by analyzing management, programming and funding issues. Seatauqua attendance trends are used as a vehicle for understanding program demand. This analysis includes consideration of external and supply factors that may have impacted attendance, both in the context of Hatfield Marine Science Center attendance (HMSC) and on a program-by-program basis. Data from this section was compiled from Seatauqua administration and HMSC records.

Two surveys of participants were completed, analyzed and tested in order to explore socioeconomic characteristics and participation patterns. Section II briefly describes the goals, design, implementation and testing of a mail survey delivered to a random sample of past Seatauqua participants. It is followed by a preliminary analysis of this survey which provides a socioeconomic profile of Seatauqua participants and describes participation patterns, visitor activities in Newport, advertising effectiveness and preferences for program characteristics.

Preliminary analysis of participant information has led to several hypotheses regarding the make-up of several user groups attending Seatauqua. Attendance patterns were considered based on participant characteristics including primary residence, age, income, education, gender, and number of household members. Further analysis of the participant survey will test these findings and lead to fully defined segmentation of user groups.

The second survey was conducted to test for any inherent biases in the data from the first due to sampling factors. People who had not responded to the first survey were contacted in order to compare the two populations. Section IV presents the preliminary results from the phone survey by comparing program involvement, program participation patterns and participant socioeconomic characteristics for mail survey non-respondents and respondents. The similarities and differences postulated in this section will be tested statistically in the next stage of the project.

A comparison of the emerging Seatauqua participant profile and Oregon visitor socioeconomic characteristics was completed in order to examine similarities and dissimilarities between the two populations. The results of this comparison are presented in Section V.

The next phase of research in this project will:

- Test preliminary findings regarding participant attendance trends through statistical analysis and other research methodologies and develop sets of program characteristics and market strategies for specific user groups.
- Gather and analyze information on program instruction dynamics through a survey of Seatauqua instructors.
- Compare Seatauqua as a program to other supplier models and formats through a survey of similar program offerings, including other non-credit natural resource education programs.
- Develop training materials for other community-based, non-consumptive marine education programs. A manual based on the findings from Seatauqua research will recommend optimal educational program formats for given management goals, geographical characteristics, and potential attendees.

SECTION I. SUMMARY OF THE SEATAUQUA PROGRAM

The purpose of this section is to present an overview of Seatauqua as it existed as of 1991. Seatauqua is a summer educational program designed to educate the public about the coastal environment through a series of workshops, films, talks, guided walks, van and boat tours, and special events. In addition to participant registration fees, the program is funded through a coalition of several groups including Extension Sea Grant, the Hatfield Marine Science Center, Bureau of Land Management, Oregon Department of Fish and Wildlife. User groups participating in Seatauqua include local residents, tourists, Hatfield Marine Science Center staff, and volunteers.

Seatauqua was created in 1972 when a group of people headed by extension marine education specialist, Don Giles, saw an opportunity to: a) increase the University's public service offerings; and b) enhance OSU's image as a center of marine science. While there were many components to the plan, the overall goal was to further develop educational activities in and around Newport for residents and summer visitors. In order to bring these components into clearer focus, and to assist in publicizing the presence of OSU at the coast, the founders proposed a collective name and appointed an acting coordinator. Central to the concept of Seatauqua was the emphasis on the sea and related topics. A memorandum of understanding was drawn up to establish the purpose of, and management structure for, Seatauqua (appendix 1).

The mission of Seatauqua has been to provide low cost, entertaining, and educational programs that will educate the general public about different aspects of the marine and coastal environment. This mission is in line with that of its coordinating agency, OSU extension. If, in light of current changes within extension, the mission of extension changes, or a different agency decides to coordinate the program, then the mission of Seatauqua would need to be re-evaluated.

1.1 Seatauqua Program Goals and Objectives

Goals and objectives can be used to clarify what a program hopes to accomplish both over the long and short term. These expected targets support an organization's purpose. Goals span the broad directions or results the firm wants to accomplish and tend to involve longer term or continuing results that may not have a specific time frame for their accomplishment. Objectives, on the other hand, are more specific ends to be met within the framework of the broader goals and usually relate to a given period (Digman, 1990). Goals and objectives are typically applied in certain specific areas, including: sales, marketing, programming, operations, and finances.

Seatauqua does not appear to have specific written goals or objectives. Instead, implied or unwritten goals and objectives exist. One potential weakness of these goals and objectives is that they are qualitative, not quantitative, making them difficult, if not impossible, to objectively measure. Based on interviews with management, Seatauqua's goals and objectives were determined to be:

Sales: In the case of Seatauqua, sales imply program attendance. The goal is to increase participation for programs that do not have enrollment limits (like films, talks and walks) and fill those that do. The main objective for accomplishing growth has always been to increase public awareness of all of the programs.

Marketing: The main marketing goal is to get the word out about Seatauqua programs any way possible. The objectives, depending on funding, time and availability, have included media interviews, newspaper articles, radio ads, Public Service Announcements (PSAs), a bulletin mailed to interested people, and word of mouth.

Programming: The programming goal is to make sure that all of the programs are accessible to the general public both in price and in level of understanding. The programming objectives for each year have been to line up workshop and talk topics that are interesting, and instructors and speakers that are knowledgeable and dynamic. Another objective has been to consciously keep the price down for workshops, van trips, and boat tours, continue free programs such as films and walks, and design new programs as time and funds permit.

Operations: The operational goal is to optimize smooth program operation and maximize delivery of information in a relaxed environment. Given limited funding and resources, management maintains very high quality by providing very knowledgeable and communicative instructors. Management remains personally involved in programs, especially to workshops, to ensure smooth operation. The Seatauqua coordinator acts as a facilitator during each program session in order to help the instructors maintain program quality at the desired standards.

Finances: The financial goal is to give high quality programs while keeping costs down as much as possible. The objective to reach this goal was to look at program spending at the end of each Seatauqua year and determine cost cutting measures if the Seatauqua steering committee, and funding agencies felt that it would be necessary.

1.2 Seatauqua Program Operations

1.2.1 Management

Although Seatauqua was set up as a cooperative program, in practice it appears to be run as an extension program. For example, the Seatauqua program coordinator has been an extension agent with the salaries for both the agent and the primary assistant coming out of a Sea Grant Extension budget. The cost for their time is not directly applied to a Seatauqua budget. In fact, money from extension for running Seatauqua is included in the Seatauqua coordinator's overall educational budget. The amount of money "saved aside" for Seatauqua is determined based on budget projections, but the money does not appear to be in an account separate from the other educational programs.

The HMSC and other cooperative agencies "donate" money and facilities to help extension run Seatauqua. There seems to be a tendency to discount any Seatauqua expenses that are not paid for from the extension education budget. For example, since the coordinator's and assistant's salaries are paid by a different extension budget, their salaries are not included as costs of Seatauqua. The classes that the coordinator teaches and all of the facilitation time is considered "free" because Seatauqua does not pay for it. In addition, facilities, other instructors that are extension agents, and instructors that are paid for by other agencies are not charged to Seatauqua budgets.

The main disadvantage of this practice is that it makes it difficult to determine the full cost of the program. The costs of Seatauqua are being evaluated further through analysis of records which make use of a more detailed accounting system used during the 1992 Seatauqua season. The results of this evaluation will be presented in the final report.

A steering committee made up of University and community members (including representatives from each of the cooperative agencies), helps with program planning and implementation. The Seatauqua coordinator chooses committee members based on their ability to act as advisors, instructors, or speakers. This committee meets two to three times a year to discuss how the past Summer Seatauqua program went and to provide suggestions for the future.

Most of the workshops are run by two people, an instructor and a facilitator. The facilitator's role is to make sure the instructor has all of the necessary materials to insure the program runs smoothly, to facilitate discussion, to help field questions, and to make sure the participants are having a good time. From the program inception to the present the facilitator's role has been filled by the Seatauqua coordinator. The only workshops that do not have a facilitator are the ones that the Seatauqua coordinator teaches. Most of the other programs that require pre-registration and a participant fee are taught by the Seatauqua coordinator.

One side effect of this front line involvement of management (both as a facilitator and an instructor) is that there does not appear to be much time for any other management functions. From June to September the coordinator spends every day either preparing for a program or helping run a workshop. Furthermore, because of the way the salaries are funded, the primary people who run Seatauqua are only able to devote part of their time to the Seatauqua program. They are obligated to spend the rest of their time with other extension programs. Therefore out of necessity, program growth has been limited under the current management structure.

Programming, registration, class operations, and marketing all rely heavily on what has been done in the past. This helps make it possible for the Seatauqua coordinator to run the program as a small part of a larger educational effort. Dramatic changes that would take additional time and funds have not been made. Any recommendations for improvements are incorporated if they sound reasonable and would not take additional staff time to implement. Programs are added only if there is someone else to manage the program. The types of programs and when and how they have been added is discussed in more detail in the programming subsection of this section.

1.2.2 Budget

Program planning starts when the Seatauqua coordinator submits a budget to extension Sea Grant for the annual educational programs. Based on past expenses and program incomes, funds are requested to support the Seatauqua program. Since money for Seatauqua comes out of a single annual educational budget, the money has been managed as a whole and not necessarily on a program by program basis. This does allow for a small margin of error in budget estimation as long as the educational programs as a whole do not go over budget.

Funds external to the educational program budget are usually provided to cover the costs of producing, printing and mailing the Seatauqua bulletin, one of the major program expenses. Until 1982 this support came from the Summer Term Office. From 1983 to 1990 an account

specifically set up for extension Sea Grant publications paid for the Seatauqua bulletin. As Sea Grant funds are getting more and more scarce the 1991 bulletin was paid for out of the educational program budget.

In the mid to late 1980's Seatauqua management started getting more pressure to keep careful tabs on program spending. Until then ample money was available, between all of the cooperating agencies, to run Seatauqua in the way management was accustomed to (Giles). Since the mid 1980's, however, different factors including changing priorities and goals of the different funding agencies, have reduced the amount of money cooperating agencies are willing to spend on Seatauqua. Management response to financial pressures appears to have been two fold, to cut back on the number of programs, and to increase the fee to program participants.

1.2.3 Program Planning

Once funding is secured considerable effort goes into planning programs and lining up instructors. Programs have been rather constant with 5-7 different types offered each year (appendix 2). The types of programs offered depend on availability of people and money to run them. The evenings of reading and song and the auto rally, for example, were discontinued because the people who originated or coordinated the programs were no longer available. The Sea Classic program was discontinued when there was pressure to cut back on Seatauqua spending. The Yaquina head walks were discontinued when the Bureau of Land Management took over the coordination of activities at Yaquina head.

Films are rented or borrowed from a library. They are chosen based on their availability and on their compatibility with the workshops being offered. Many of the same films are used from year to year. One benefit of this practice is that it cuts down on the amount of time spent coordinating the films. The time element is further emphasized by the fact that HMSC volunteers are used to show the films, so that the coordinator can concentrate on the other programs.

Workshops and talks require the most organizational work. Planning for workshops and talks occurs by reviewing past topics, deciding which ones to keep, and then using past participant and steering committee input to think of new topics and potential instructors. In choosing final topics, however, the deciding factor is the availability of quality instructors and speakers. A quality instructor is defined here as one that meets the standards set up by management. The instructors have to have considerable knowledge about the subject, experience in the field, ability to communicate the information in lay terms, and an enthusiastic and upbeat personality. The most important characteristic of a quality speaker is being able to communicate the information in lay terms. If an instructor or speaker that meets these standards can not be found, the topics are not offered. The emphasis is in offering high quality programs.

The coordinator tries to get as many instructors and speakers as possible from the Seatauqua steering committee itself and from other extension agents. This practice, as mentioned in the previous section, helps cut down on costs attributed to the Seatauqua budget as those people either volunteer their time or are paid out of different budgets. Management of the individual programs and the effect management has on attendance is discussed in section 1.3.

1.2.4 Program Evaluation

Seatauqua has a formal evaluation/feedback process for the programs that cost the most money to offer, workshops, van trips and boat tours. One page evaluation forms are given to all of the participants at the end of the program. While the participants are encouraged to fill out and hand in the evaluation forms immediately, they are allowed to take them home and mail them in later if they prefer. Although this practice potentially leads to a lower evaluation response rate, it is thought that a lower response rate is preferable to "pressuring" participants when they are "just there to have fun."

The main purpose of the evaluation form is to find out what participants view as the strengths and weaknesses of the program, and what topics they would like to see in the future. This information is used for future program planning. The evaluation form also encourages the workshop participants to think about talk topics that they would like to attend. This is one additional way to publicize the existence of the talks and initiate discussion about them between participants and the facilitator. Through these discussions management could encourage attendance at the talks, which is declining (talk attendance patterns, as well as attendance patterns for other programs, will be discussed in further detail in a different subsection within this section).

These evaluations also serve as justification for not changing the format of the workshops, van trips or boat tours. Participant comments are highly favorable. Any recommended changes are superficial at best and easy to accommodate (Seatauqua files).

1.2.5 Program Linkages

The different Seatauqua programs work together to provide a comprehensive program to different segments of the general public. Films, walks, and talks all provide free, general information to those who do not have the time, money, or interest to explore marine and coastal topics in more depth. The workshops, van tours, and bay boat tours provide more in-depth information on a variety of topics but require advance registration, entrance fees, and a longer time commitment. Even these more in-depth programs still only provide general information, however, as they are all geared for the beginner.

While Seatauqua does not offer intermediate and advanced courses, the instructors are more than capable of teaching at an advanced level. The theory is that Seatauqua participants take the program for enjoyment and, therefore, want a beginner's overview of the topic. To what extent this theory holds up will be discussed in the section of this paper that presents the results from our survey of the participants. Currently (and historically), the Marine Science Center bookstore stocks some supplementary material for most of the workshops for those that do want more advanced information. Also, the instructors are capable of answering advanced questions about the topic, and reference materials are provided in the class itself. Management finds this system adequate given the goals and resources of Seatauqua. The types of programs and the amount of information provided during a program session could vary if the goals and resources of Seatauqua change. The management theory is that those participants wanting a deeper coverage of the material will sign up for the same workshop again and still be able to learn something new.

Workshop evaluations from participants who did sign up for the same workshop again do support this theory.

1.2.6 Marketing and Sales

Seatauqua management talks about the market as two broad segments, locals and tourists. These groups are seen as the participants that the Seatauqua structure serves. Yet while participant preferences are taken into consideration when designing the programs, Seatauqua is primarily supply rather than market driven. For example, it is the availability of quality instructors and their time schedules that drive when workshops are offered, not participant demand. Some instructors are only available during the week, so workshops are offered then, even though this scheduling excludes many potential attendees that work.

Instructor time schedules also control whether or not additional workshops are offered. The presence of additional demand for a workshop topic, as signified by a waiting list, does not appear to have an effect. While this practice makes sense given the current management resources, it makes it very difficult for tourists who have not had the opportunity to pre-register to attend some of the workshop topics. It can be argued, therefore, that Seatauqua is serving subgroups of its targeted markets rather than all locals or all tourists. The survey results in Section three of this paper will go into further detail as to what the Seatauqua subgroups appear to be. It is up to management to answer the question of "Are those the subgroups we want to serve?"

Pricing for the workshops is also not market driven; the registration fee for the workshop is the same, regardless of the demand for the topic. The presence of additional demand for some workshop topics suggests that one potential strategy is differential pricing; charge a higher price for more popular workshops. The questions on our mail participant survey were structured so that we would be able to gauge the price sensitivity according to workshop topic, and demographic characteristics. The final analysis of this information will offer possible strategies for differential pricing. Once again, Seatauqua management will be left to make the decisions as to which strategies fit in with the goals for the program.

Advertising for locals and tourists is primarily through the same channels. Advertising efforts concentrate on brochures mailed to an extensive Seatauqua mailing list (composed of past Seatauqua participants and HMSC visitors interested in being on the Seatauqua mailing list), frequent PSAs in the local newspapers and on local radio stations, announcements at the HMSC, and word-of-mouth. Besides being mailed out to potential participants, the brochures are also distributed around the local hotels, chamber of commerce, and other spots where tourists might pick up information about local events. Advertising efforts are timed to start at least a month before the brochure goes to press and runs until September, when all of the Seatauqua programs end.

The main vehicle for advertising Seatauqua is the annual Seatauqua brochure which lists the different programs. The brochure is designed and assembled by the Seatauqua coordinator and the HMSC extension secretary, and sent to the University printing department. Approximately 20,000 brochures are printed up, mailed out to those on the Seatauqua mailing list (including newspapers, radio and TV stations, and chambers of commerce around Oregon), and distributed

to local businesses. Because of management time constraints the brochure is not always out on time. While there is not any data on the effect late publication has on attendance, it is thought that late publication of the brochure hurts workshop enrollment, especially the workshops offered early in the summer.

In the past, a graduate student intern has been used to write PSAs, design radio and newspaper ads and, most importantly, make sure that the word about Seatauqua gets out in a timely manner. Funding for this intern position, and most of the paid advertising, was cut in the mid 1980's. This probably hurts enrollment as, with management time constraints, the coordinator considers himself lucky if he can get any PSAs out at all, much less anything else. Interviews are given when solicited, as time permits.

1.2.7 Physical Resources

A major strategic advantage for Seatauqua is the link between the HMSC and OSU. Through this link, Seatauqua management has a vast amount of physical resources available to use for the different programs. These resources are "free" in that their use is not directly charged to Seatauqua. For example, management has access to classrooms, labs, video and audio equipment, coffee pots and computers. Photocopying of handouts can be done at a reduced rate through the University. These resources are most important for the workshops, talks, and films.

Another important strategic advantage for Seatauqua is the use of motor pool vans. These vans are "rented" on a month to month basis with a monthly rate and mileage charged to Seatauqua. The cost of motor pool vans is cheaper than using an external source (Wolff et. al.) and is thought to be the key reason why OSU outreach education programs with field trips can be offered so inexpensively. A relatively cheap source of transportation is very important as most of the workshops and all of the van tours need it. As an added bonus, one of the two vans used every summer has been donated to OSU specifically for use by Seatauqua. This van is rented like other motor pool vans but the money for its use is charged to a foundation account set up for that purpose. Unfortunately, this account money ran out in 1990. We are looking into the effect that the loss of the foundation account has on the strategic advantage of motor pool vans. It is possible that the situation has changed enough to make an outside source of transportation a more cost efficient option for Seatauqua.

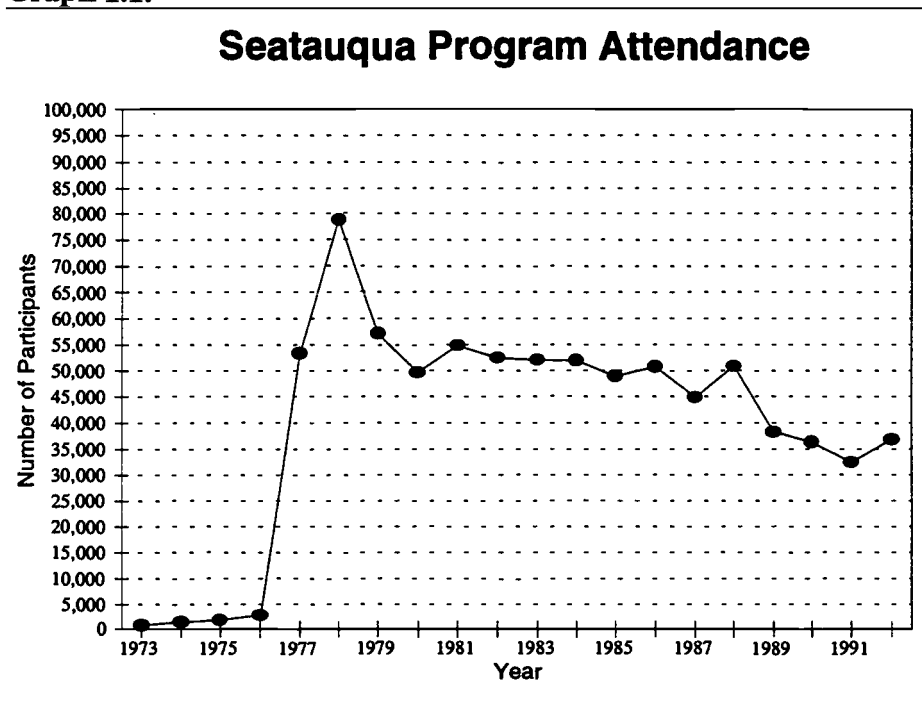
The main resources that are not readily available for use by Seatauqua programs are boats. Local charter boats are used for crabbing, clamming and fishing workshops, and the bay boat tours. Seatauqua occasionally receives group discounts for these boats.

1.3 Seatauqua Participation Trends

The supply of different Seatauqua programs and different external factors have affected the demand for Seatauqua. This changing demand is reflected in the observed attendance patterns for both Seatauqua as a whole, and for the individual programs. This section attempts to explain some of the trends seen in demand by looking at the effect of external factors (for example, changes in the economy, local population, and competition) and the effect of internal factors (for example, the number and types of programs supplied and changes within individual programs).

Seatauqua participation has varied throughout the years as shown in Graph 1.1. Overall attendance showed gradual growth through 1976, followed by a dramatic leap to a peak of almost 80,000 in 1978. Attendance then decreased to 50,000 in 1980. Over the following six years, 1980-1986, attendance ranged between 50,000 and 55,000 and declined slightly. Attendance has continued to decrease since 1986, with the exceptions of 1988 and 1992. 1992, the most recent season, sees an increase in attendance to 37,000.

Graph 1.1.

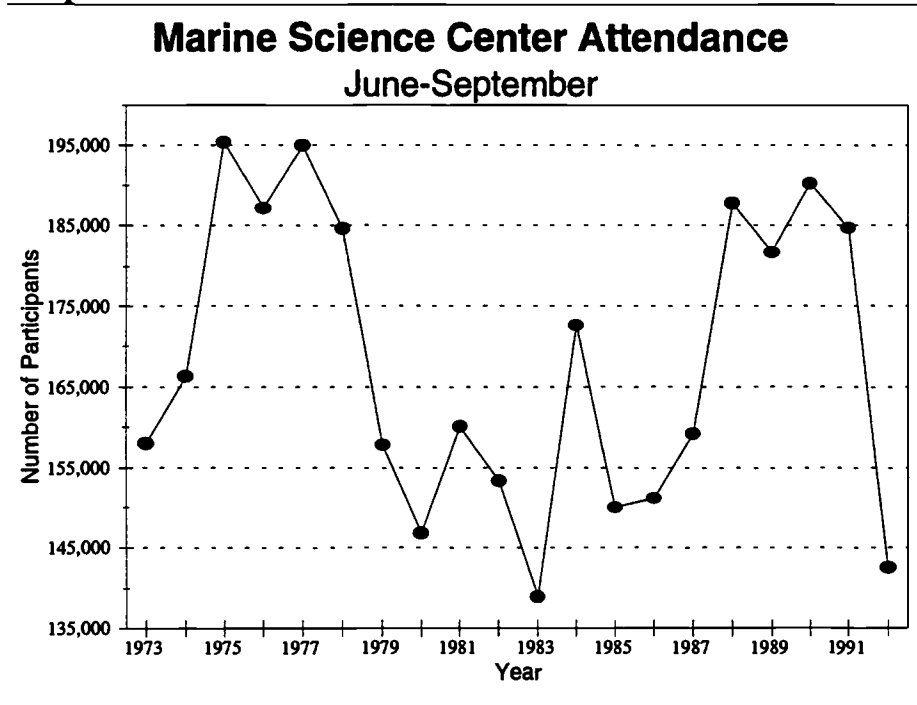


Notably, attendance at the Hatfield Marine Science Center does not appear to have a direct effect on Seatauqua program attendance. HMSC attendance, shown in Graph 1.2, reveals peaks and troughs in attendance that are not mirrored by Seatauqua. This is surprising given the common belief that the HMSC is the primary source of exposure for Seatauqua.

Undoubtedly, the facility attracts people who are interested in the topics covered at Seatauqua and provides an important site for advertising the programs. These factors lead to the expectation that variance in Seatauqua attendance would be linked to HMSC attendance trends, with reflected peaks and troughs occurring concurrently or shortly after one another. Since the films and estuary walks are free and offered frequently, these programs might show the closest linkage to HMSC participation.

The underlying relationship between attendance at Seatauqua and the HMSC is as of yet unclear. One possible explanation is that the volume of visitors who toured the HMSC during the summer is so high relative to the number that participate in Seatauqua, that any effects are linked to subgroups and are masked by overall attendance counts.

Graph 1.2.



One notable deviation in attendance patterns between Seatauqua and HMSC is that while Seatauqua attendance increased in 1992, overall HMSC attendance plummeted. The decline in HMSC attendance may be explained by the opening of the Oregon Coast Aquarium. The new facility drew 1 million visitors to the coast in its first summer. A portion of these visitors were presumably potential attendees at the HMSC who may have been drawn to the aquarium instead. While a competitive relationship may have existed between the two facilities similar public displays, no courses comparable to Seatauqua were offered at the aquarium. As a result, the aquarium may have indirectly increased Seatauqua program attendance by drawing additional potential attendees to the Newport area.

1.3.1 Effect of External factors on Demand for Seatauqua

Some of the fluctuations in Seatauqua attendance coincide with regional growth patterns and state-wide economic trends. We believe that these growth patterns and economic trends have had an effect on demand for Seatauqua. For instance, 1970-1980 marked a period of growth for the Oregon coast. Population for Lincoln county grew at an annual rate of 3.2%, compared to 2.3% in Oregon and 1.1% in the nation (Oregon Coastal Conservation and Development Commission, 1974). The population growth rate in the county during this ten year period was the largest of the Coastal Oregon counties. This same ten year period showed growth for Seatauqua programs until 1977 (see graph 1.1).

It is not known exactly why attendance in Seatauqua programs dropped in 1978, 1979 and 1980. Perhaps it is related to the recessionary period in the late 1970's to the mid 1980's in the United States which was marked by low population growth for Lincoln County and reduced travel for the nation as a whole. While more research is needed to either confirm or refute this idea, data from some sources suggest that it might be true. For example, the population of Lincoln county grew only 0.8% per year from 1980-1986. The unemployment rate in 1980 was 8.9%, and from 1980-1987 was at its highest (11.5%) in 1983 (OCZMA, 1988).

Economic and demographic data from other sources indicate the economy has slowly picked up since 1987. One indication of this is that from 1987 to 1990 the population of Lincoln county has grown at 1.6% per year. Projections from the department of transportation expect Lincoln County to continue to grow at about 1.6% per year, reaching 46,197 by the year 2000 (1990 Census data). Employment in hotels and lodging places (an indicator for the tourism sector) has grown steadily in most coastal communities. Even during recent recession years, Lincoln County experienced a substantial growth in employment within the tourist-related sectors, as reported by the OCZMA. From 1987 to 1989, Lincoln County employment in tourism industries increased by 2% (OCZMA, 1989).

It is surprising, therefore, that Seatauqua participation did not fare as well. Possible reasons include the number and types of programs supplied and changes within the individual programs. These supply factors have also had an effect on the demand for Seatauqua. The next section discusses the effect of the number of Seatauqua programs on demand. Section 1.3.3 discusses the effect of changes within some of the key Seatauqua programs on demand.

1.3.2 Impact of the Number and Type of Programs on Demand for Seatauqua

Some notable attendance trends can be attributed to variations in Seatauqua's format, including changes in the number of programs offered, the types of programs and the methods of recording attendees. Considered independently, these factors help explain significant peaks and troughs in attendance records.

The observed attendance patterns are driven by the programs that have the most attendees, daily films and walks. These programs, offered on a daily basis, free of charge, have significantly more participants than the other Seatauqua programs which tend to be offered less often and with a small participant fee. Since its introduction in 1977, daily films have been the most attended Seatauqua program. The dramatic increase in Seatauqua participants in 1977 (seen in graph 1.1) is due to this program's inclusion in Seatauqua participant counts. In 1978 film attendees increased, and this accounts for the overall increase in Seatauqua participants in 1978. Without the daily films, the total number of participants drops to under 10,000 for all years.

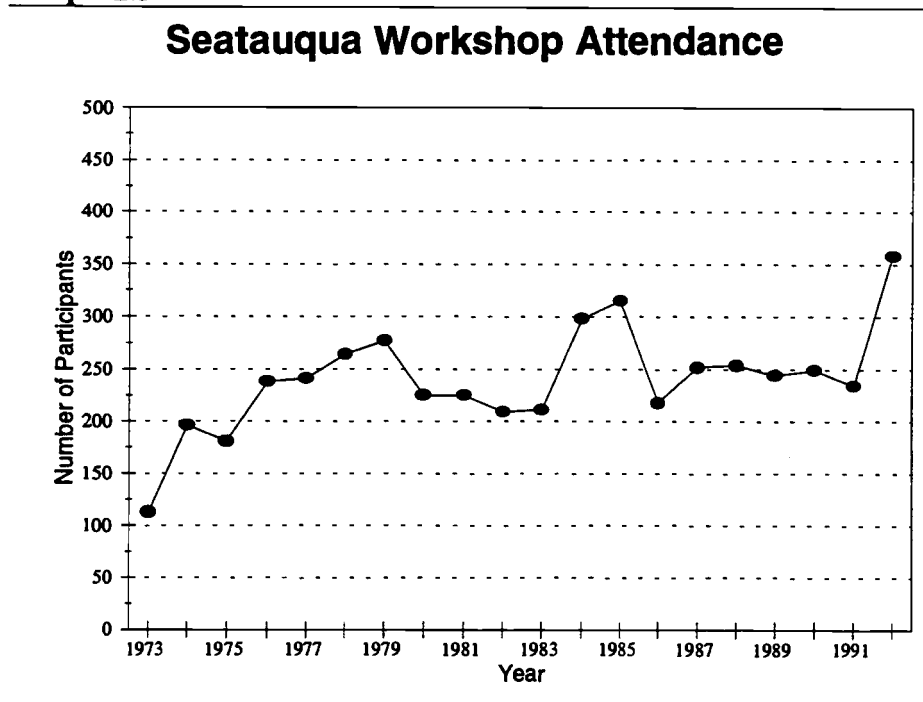
A second program factor affecting overall attendance trends is the Yaquina Head walks that were conducted from 1978-1988. The Yaquina Head walks attracted 200-4,800 visitors a summer. The year in which this is most noticeable is 1988 when attendance at the Yaquina Head walks hit its peak. One reason for the decline in attendance seen in 1989, and the smaller attendance numbers since then, is the simple fact that the Bureau of Land Management took over administration of these walks from that year on and no new "high volume" programs were added to replace the losses.

The effects of other programs on Seatauqua attendance are hard to gauge when attendance is looked at as a whole. Therefore, we broke down Seatauqua attendance by program and looked at the effect of internal and external factors on the demand for each program.

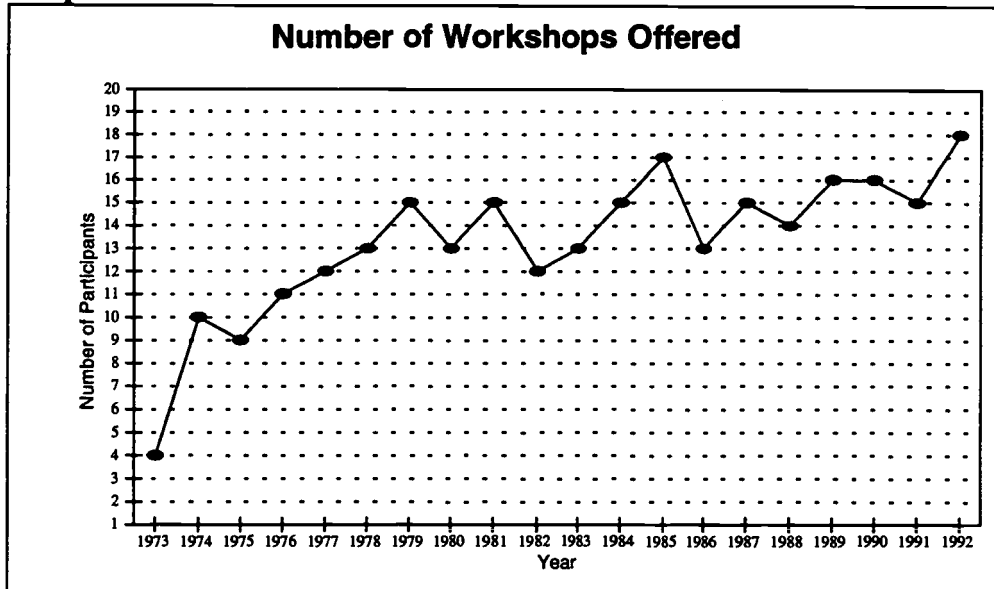
1.3.3 Workshops

Demand for Seatauqua workshops, as illustrated by attendance, has varied over the years (graph 1.3). This might be attributed to natural yearly fluctuations in available participants (as mentioned under external factors in section 1.3.1), and parameters of the workshops themselves.

Graph 1.3



One of the workshop parameters that affects attendance is the number of workshops offered (graph 1.4). For example, the number of workshops grew from four in 1973 to ten in 1974. By 1979, 15 workshops were offered. Attendance increased over these same years. One reason for the dip in attendance in 1975 (graph 1.3) could be that only nine workshops were offered that year, a drop of one workshop from 1974.

Graph 1.4

The fact that the difference between the two years is only 15 participants, the size of an average workshop, supports this idea (the actual number of participants and the number of workshops for each year are listed in appendix 3). The number of workshops offered also partially explains the peaks in attendance for 1984, 1985 and 1992, all years in which a large number of workshops were offered. What the number of workshops does not explain, however, is why attendance is low from 1980-1984 even though the number of workshops is from 12 to 15. It also doesn't totally explain observed attendance from 1986-1991.

Another workshop parameter that might help explain attendance patterns is the workshop topics. Workshop topics are chosen based on participant requests, steering committee recommendations, and availability of instructors. There are 12 topics that have been repeated ten or more years. Five additional topics have been repeated 5-7 years. These 17 topics represent the meat and potatoes of the workshop menu. Common characteristics of these topics are that they seem to attract an average of 12-25 participants each year, a highly qualified instructor is available to teach the workshop, and the workshop gets excellent participant evaluations. Other workshop topics have been tried over the years as instructors have become available and have continued if they attract between 12 and 25 participants and have an acceptable instructor available to teach it. The deciding factor is the availability of an acceptable instructor. Attendance for all of the workshop topics can be seen in appendix 3. The workshops have an enrollment limit of 20-25, depending on the topic. There has not been a consistent minimum enrollment necessary for a workshop to be offered. While 10 appears to be the cut off in some cases, the belief that all of the workshop topics are worthwhile and that funding would cover expenses led to workshops being held with as little as five participants. This practice helps explain how even though the same number of workshops, or sometimes more workshops, can be offered and not cause an increase in the number of participants; workshops were not as full.

Another possible reason for lower, relatively stable, attendance for a period of years is that the workshop topics offered remained fairly constant. There were not always very many new topics offered. This appears to be true for years where attendance numbers are relatively low and stable. Also, years in which new topics were introduced or old topics were revived often saw higher

attendance. For example, 1985 saw an additional photography class, fish printing class and wood carving class. All of these proved to be popular topics and could help account for the increased attendance that year. The following year, 1986 saw a decline in workshop participation. We think that the drop in attendance was not only because of a drop in the number of workshop but also because of the topics that were not offered. Fish printing and one of the photography classes, two classes that usually fill, were not offered that year. Furthermore, not only did the number of workshops increase in 1992, but new topics that had never been offered before turned out to be very popular, such as Exploring the Rain forest and Marine Mammals.

One thing that is not easy to explain is why attendance at workshop topics that have appeared popular in the past is declining. The best examples of this trend are the bird and photography workshops. One possible explanation is that the people who know about Seatauqua have taken these workshops as many times as they want to and that advertising is not reaching new populations that would be interested in the topics. There are several factors that support to this explanation.

First, several mail and phone survey respondents indicated that they had taken these topics in the past and were now waiting for new topics to be offered before they would attend again. These participants, and others, have a recorded history of taking workshop topics over a period of several years as ones they are interested in are offered (the recorded data is in the Seatauqua files and in results from the participant surveys).

Second, besides the topics there doesn't appear to be many differences between the workshops. The format, price, and popularity of the instructors are all constants. These constants also happen to be the workshop characteristics that are most important to the participants (participant surveys).

Seatauqua workshops are known for their combination of practical information, hands-on experience, and tidbits of history or biology. For example, in the crabbing workshop participants learn about the biology of the animals, the laws regarding crabbing and the reasons behind them, and the types of equipment available for crabbing in a morning classroom session. In the afternoon participants go crabbing with the instructor on a charter boat to practice what they learned. All of the workshops use this combination of lecture and hands-on activities to explain science and technology in terms that the lay person could relate to and understand. Workshop evaluations confirm that this technique is used in all of the workshops and is considered a key attraction of the workshops.

All of the workshops are priced the same, regardless of workshop length, in order to keep registration simple for both the registrar and the registrant. Because workshop price has been held constant across workshop topics, it is not thought to cause the differences in attendance between workshops.

While there are differences between the styles of the different instructors, the popularity of the instructor to the participants in their workshop appears to be the same. According to workshop evaluation forms and participant survey responses, all of the instructors are viewed as highly knowledgeable, charismatic, and good teachers. Therefore, differences in the popularity of instructors is also not thought to be a cause of differences in attendance between workshops.

What might be different, however, is the type of people that the workshop topics attract. Our theory is that there are groups of workshops that attract different types of participants. For example, we think that the crabbing and clamming workshop participants have different interests from those that attend fossil or rock id workshops. Bird workshop participants are probably different from fish printing participants. Furthermore, advertising efforts over the years have been more or less successful at attracting the different types of participants. The effectiveness in attracting the types of participants that are interested in the specific topics is a big reason why participation has varied between workshop topics (this is also based on the premise from participant evaluations and comments for all years that all of the workshops are enjoyable and of high quality).

We are currently testing this theory by looking for differences between the mail survey participants that attended the different workshop topics. The preliminary results from our tests are presented in section 3 of this paper and do seem to suggest that there are differences between the participants that attend different program types. Further statistical analysis, currently being completed, will provide a profile for these different participants, suggest what workshop topics they are most likely to be interested in, and suggest ways to use target marketing to increase the number of potential participants.

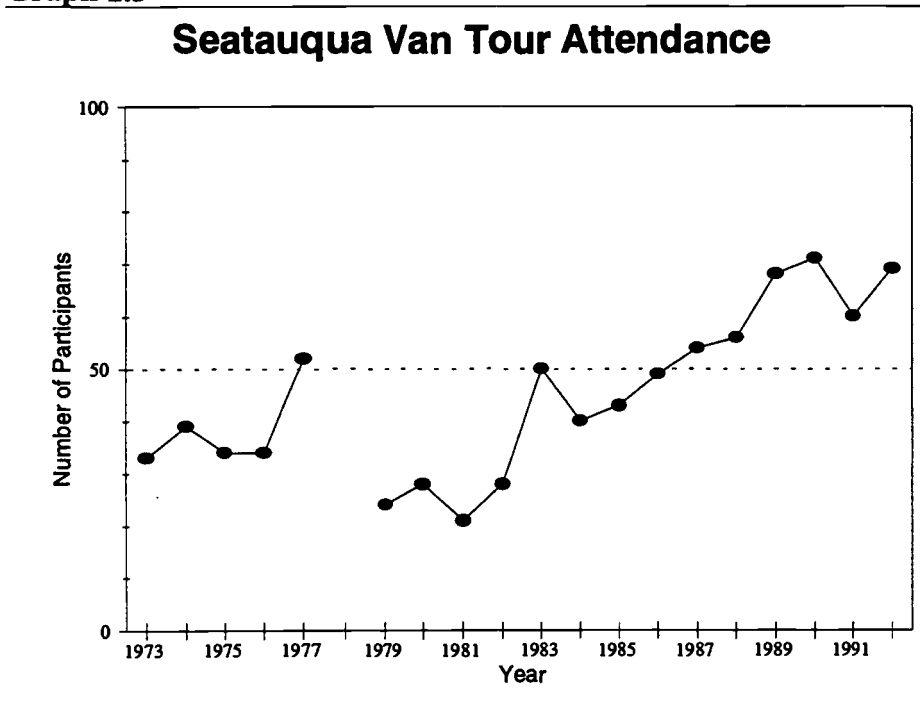
The workshop strengths might also be barriers to growth of the program. This may or may not be a problem depending on the importance of growth as a management goal for Seatauqua. The important thing to note is that at 18 workshops (the highest number offered) and a workshop attendance limitation of 20, the most participants the program can have is 360, given that all of the workshops fill to capacity. In 1992 there were 358 participants. If the workshop program is going to continue to grow, more workshops would have to be added and/or the maximum number of participants allowed in a workshop would have to be increased.

There are structural limitations to both of these. First, there is a limit to the number of workshops that one coordinator can manage. Second, increasing the number of participants per workshop beyond 20 could decrease the enjoyment of the participants at many of the workshops. Participant comments, evaluations, and survey responses indicate that they have problems hearing or seeing during lecture or lab if the workshop has more than 20 participants. Hands on activities such as tidepooling, crabbing, fishing, fish printing, or clamming started getting many complaints if the number of participants goes over about 15. If there are enough people to draw from, the price is kept low and the number does not affect the willingness of the instructor to teach, this may not be a problem. Other potential strategies include having the coordinator spend less time in the classes, hiring additional personnel to help manage the program, increasing the price on some workshops to cut down the number of attendees, or adding additional classes for workshops that are wait listed. All of these strategies have strengths and weaknesses. Additional analysis of the preliminary results of our mail survey will help clarify what the impact of choosing each of these strategies would be to Seatauqua. This should help Seatauqua management choose strategies compatible with their goals for the program.

1.3.4 Van Tours

Demand for Seatauqua van trips, as illustrated by attendance, has varied over the years (graph 1.5). This might be attributed to natural yearly fluctuations in available participants (as mentioned under external factors in section 1.3.1), and parameters of the van trips themselves.

Graph 1.5



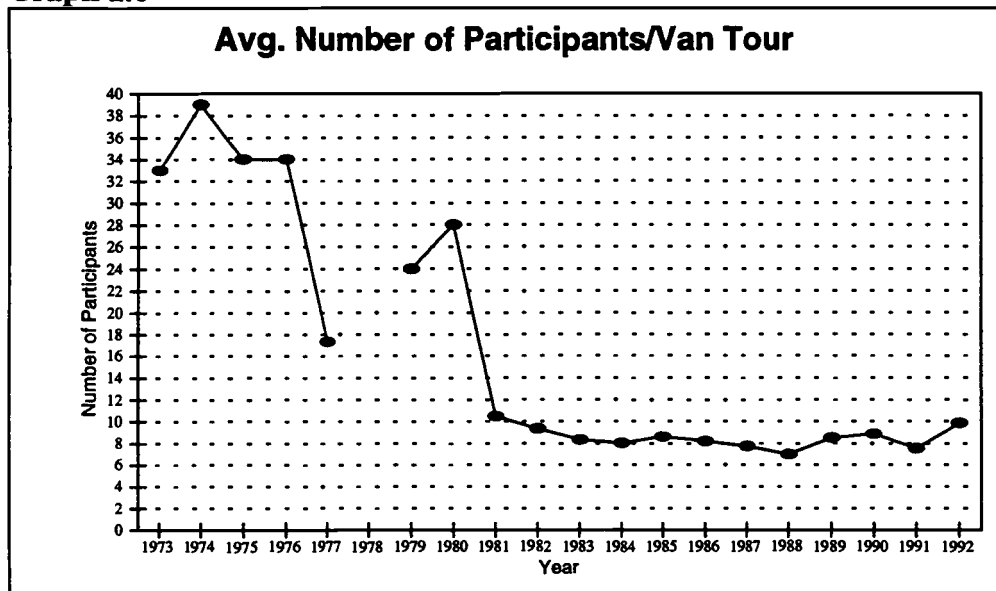
Van tour attendance has increased over the long term, but varied greatly from season to season, as shown in Graph 1.5. One of the parameters that has affected attendance is the scheduling and organization of these tours. From 1973 to 1976 one 40 passenger bus was used. This tour was offered once a summer as a general information excursion along the Central Oregon Coast. Out of necessity the trip was limited to 40. Attendance increased dramatically in 1977 when the trips were expanded, offering three tours in 40-passenger busses instead of one. The next year, management tried something different, a three day bus tour. This trip had to be canceled because very few people signed up for it. We do not know why this trip was successful. It is possible that it was too much of a time commitment, too expensive, not advertised to the right people, or a combination of all of these factors and more.

In any case in 1979 and 1980 management once again offered one bus tour in a 40 passenger bus. While attendance increased in 1980, both years showed attendance lower than when the bus tours were first offered. In 1981 attendance for the bus tour dropped even further. Once again we're not sure why attendance declined for the bus trips. It is difficult to draw any conclusions as the Seatauqua records did not appear to have evaluation forms for the bus tours and none of the Seatauqua participants who responded to the mail survey had attended them. One possible explanation is that interest in the large bus format declined. Possible support for this explanation is that attendance increased in 1982, at the same time a format change was implemented. In 1982 the Seatauqua coordinator started offering van tours. An 11 passenger van was used instead of the bus, and enrollment was limited to 10 for each tour (this gave management an extra

space in case someone unexpectedly brought along a friend, child or spouse). The trips gave the participants a mixture of information on plants, birds, marine mammals, geology, coastal hazards, and natural history in a manner comparable to a small, personalized tour of the coast. Not only did this format give the participants a well-rounded overview of the coast, the coordinator was well informed, personable, willing to answer questions and able to devote personal attention to the participants (Participant evaluation forms).

The van format itself does not, however, help explain the attendance patterns seen after 1982. Another parameter that has an effect on the observed attendance is the number of van tours that were offered. The increase in van tour attendance in 1983, for example, is almost exclusively due to an increase in the number of van tours offered from three to six per season. The actual number of participants per van tour actually decreased by one in 1983, as shown in graph 1.6. Also, in 1987 the number of trips increased to eight, helping to account for the continual growth in attendance numbers from 1987 to 1990, note that the average number of participants per van tour remained the same. The overall increase in van tour attendance since 1982 indicates that the van tour format is working.

Graph 1.6



There have been two significant drops in attendance since 1982. A price increase in 1984 from \$5 to \$7.50 may have contributed to the observed decline in attendance during that year. It's more likely, however, that either external factors such as the economy or just a year of decreased demand affected attendance as a price increase to \$10 in 1985 did not have an observable negative impact. In fact, attendance increased. The decrease in attendance in 1991 might be partially explained by an increase in price to \$15, although a continued price of \$15 did not appear to have a negative effect on attendance in 1992. Another factor that may have played a part towards increasing attendance in 1992 is that the van tours were heavily promoted to Seatauqua workshop participants with the message that this would be the last year that the coordinator who always did the van tours would be doing them. This appeared to have the effect of persuading people to take the van tours this year rather than putting them off (Participant comments).

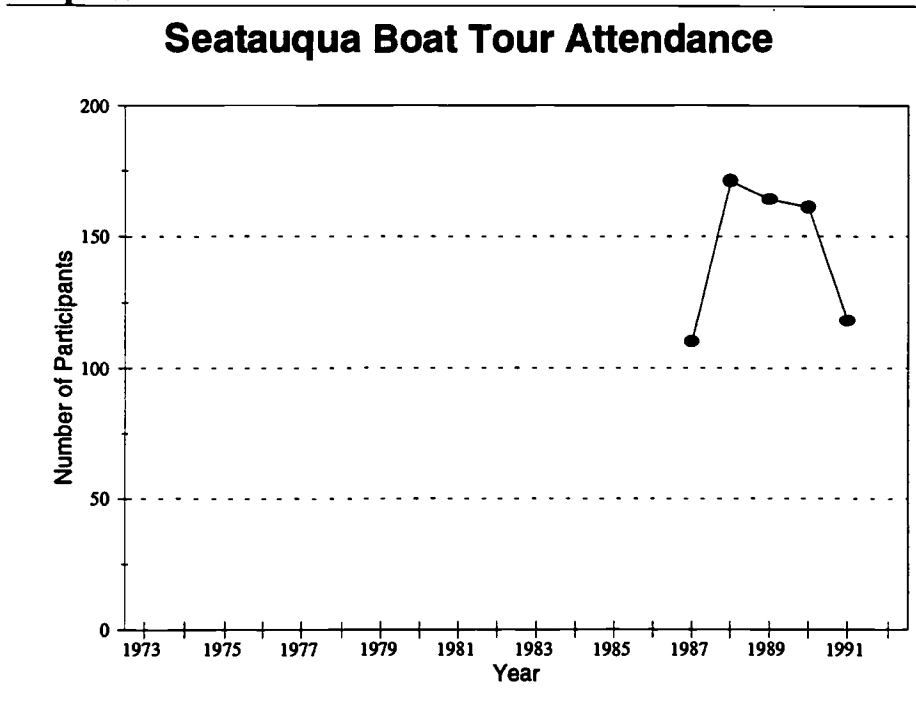
While the van tours might be "working" from a demand viewpoint, attendance does not address how the program is doing from the supply point of view. Have the van tours been meeting the goals of Seatauqua management? From talking to Seatauqua management personnel and reviewing Seatauqua records, it appears that the van tours have been considered successful from a program point of view. Because van costs have historically been reported as one lump sum including van use for both van tours and workshop field trips, separating the costs out to see if the van trips have been breaking even or making money has been difficult. In 1992 van costs have been recorded separately. This information on mileage is being combined with historical monthly van rental rates to reconstruct the individual costs for both van tours and workshop field trips. The individual costs combined with the known incomes from participants will allow us to tell how the van tours, and workshops, have done financially on a year by year basis. Blended with the data from participant surveys on future demand for this type of program, the financial data will let us suggest how van tours could be organized to meet a financial goal of breaking even or making money. The financial analysis will be included in the final report.

1.3.5 Boat Tours

The bay boat tours were set up as a two hour charter boat trip where the Seatauqua coordinator, acting as narrator, pointed out different aspects of the coastal area including plants, animals, geology, natural history, and industry. These trips were able to accommodate up to 45 people. Management required a minimum of 15 in order for the trip to run as this was the number needed to cover the cost of the boat. The cost of management time was not passed on to the participants in order to keep the cost of the program down. All participants were charged the same price. \$8 in 1987, \$10 from 1988-1990, and \$15 in 1991.

In 1987 three bay boat tours were offered. Because the trips seemed popular, management offered four tours in 1988 and continued to offer four tours until 1991.

Boat tour attendance is shown in graph 1.7. The assumed popularity of the program in 1987 appeared to be substantiated in 1988 by an increase in attendance that goes beyond just the addition of one extra boat tour. Attendance growth did not continue. Instead attendance declined. It does not appear that the quality of the program was responsible. Evaluations reflect that people who took the trips found them informative and interesting. They report recommending them to others.

Graph 1.7

One possible explanation is the external factor of weather. The boat tours were held in the evenings, regardless of fog. Phone survey respondents indicated that they enjoyed the boat tours, even though the fog made it difficult to see anything. One gentleman said that he had attended both in 1989 and 1990 and there had been fog on both trips. It's possible that while participants tended to enjoy the boat tour inspire of the fog other potential participants were discouraged from signing up.

Another possible reason for the declining attendance in 1991, at least, is that the price for the boat tours increased to \$15 and the primary source for advertising, the Seatauqua brochure, was released later than usual. Since, once again, there did not appear to be a decline in the quality of the program, its possible that a combination of the price increase, late advertising, and weather contributed to the observed decline in attendance.

Another consideration is that boat tours might attract a specific audience, one that is different from those that attend workshops or van tours and that advertising efforts were not reaching that crowd. This theory is being tested through further analysis of participant survey data and the results of the analysis will be included in the final report.

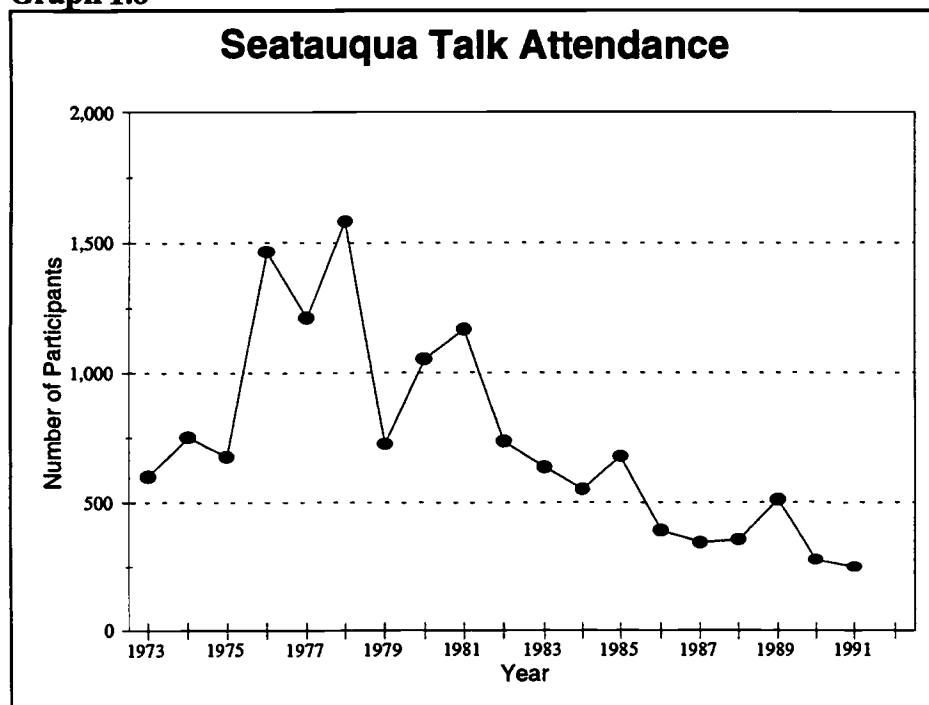
1.3.6 Afternoon or Evening Talks

The purpose of the Seatauqua talks was to impart more scientific information to the general public. Appendix 4 lists the different talk topics by year as well as the speakers, speaker costs, and participant numbers. For some of the years attendance numbers for individual workshops were not available, as those years' records were only listed on a sum total basis. It is possible that the attendance numbers from 1973 to 1987 (seen in graph 1.8) were estimated for some of the workshops. We were not able to find out whether or not attendance was counted for every workshop. Therefore, the talk attendance data should be taken with a grain of salt. Although the

peaks and troughs may be exaggerated, the overall declining attendance trend appears realistic, both from known attendance data and discussion with Seatauqua management.

The likely explanations for the observed attendance trend is a combination of external and supply factors on demand for the program. One of the supply factors that probably affected demand was the format of when the topics were offered. The times the talks were offered can be split into two slots, afternoon and evening. From 1973-83 the talks were held at 4:00 pm on Saturday afternoons. While this did lead to more participants, as reflected by attendance in the 1970's, there was also a problem of people walking in and out of the room while the speaker was speaking. Furthermore, attendance appears to have been more erratic under the afternoon format and might have been declining anyway. As mentioned before, inaccuracies in data collection might help accentuate the erratic behavior of attendance during the 1970's. The numbers also might not reflect true attendance depending on when the people were counted. It is difficult to get an accurate count when people are walking in and out of the talks. In 1984 the talks were moved to Wednesday evenings to cut down on these problems. While the people who attended the talks were more committed to staying the whole time, less people attended overall.

Graph 1.8



Another supply factor that affected demand was the talk topics. The challenge was to find speakers that could relate their research information in layman terms. According to Seatauqua management, this goal was not always accomplished. Furthermore, management mentioned a switch in emphasis from general topics to more scientific research oriented topics as one likely reason for the decline in talk attendance. The Seatauqua coordinator said that the audience for the talks by 1991 was almost exclusively University faculty and graduate students (Giles).

Another problem was that people were sometimes confused as to what the topic was going to be. The names were often jazzed up to make the topic appeal to the general public. What seemed to happen instead was that people would come because of what they thought the topic was, be

disappointed about what the topic actually was, and not attend any future talks. One example is a talk in 1988 titled "Is There a Snorkel in Your Future?". A woman took that to mean the topic was about scuba diving and was disappointed to find out that the talk was really about global warming. This problem could have affected attendance by not attracting people who were interested in the actual topic.

Like the workshops, talk topics were chosen based on participant interest and speaker availability. The Seatauqua coordinator was able to make use of many of his workshop instructors as speakers. The other speakers were OSU faculty or graduate students, or members of the community. There were 8-12 talks offered per year and of those talks 0-5 of the speakers would not accept the token honorarium. Appendix 5 shows the speaker honorarium by year.

As the talks were offered as a public service, and no participant fee was charged, price is not considered as an issue in the decline of attendance. The fact that no money came in from the participants but speakers were paid is cited, along with the decreasing attendance, as one of the reasons why the series was not continued in 1992.

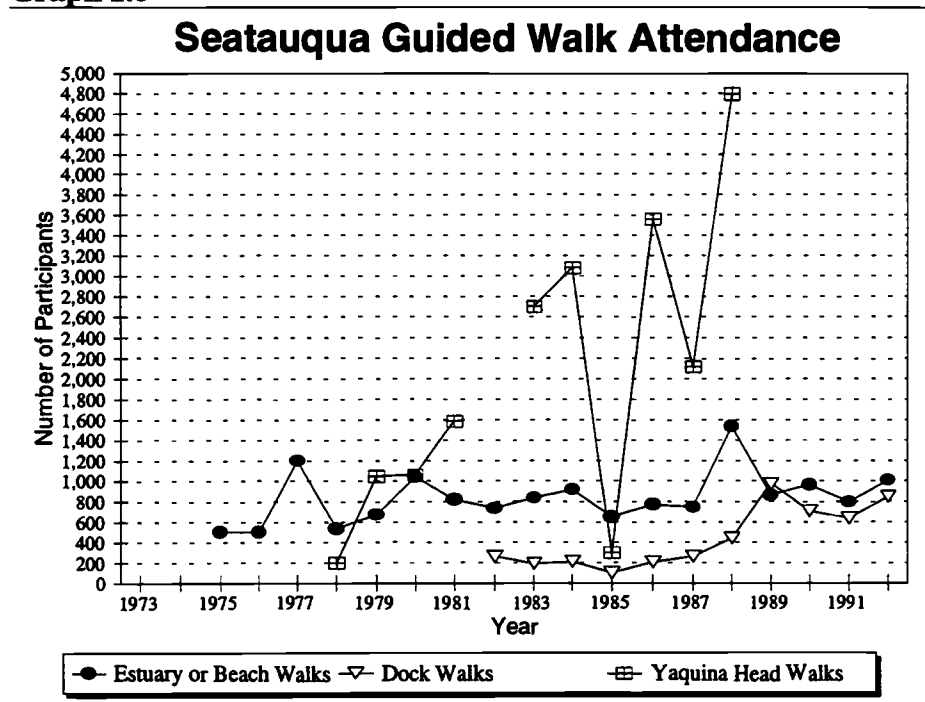
1.3.7 Guided Walks

Another regular Seatauqua program offered to the general public free of charge was a series of different nature walks. HMSC volunteers led all of the walks. They were given handouts to give them ideas of what to mention on the walks. These walks have included, over the years, tidepooling and birding (Yaquina Head walks), estuary and beach walks, and dock walks. The years that the walks were offered, and the number of participants per year can be seen in Appendix 3 and is illustrated in graph 1.8.

The high variability of attendance might be explained by several different factors, including economic conditions and supply oriented factors.

One supply factor that influenced walk attendance was scheduling. For example, dock walks were offered Wednesday through Friday from 1982-1988. In 1989, they were scheduled daily and on weekends, this expansion coincides with a growth in attendance that year. Variations in Estuary and Beach Walk scheduling had less of an impact. These walks were not offered Monday or Tuesday in some years (1978-1986 and 1988). However, these days at the beginning of the week were not particularly high volume.

Errors in keeping track of the number of participants could also explain some variation. Since the walks were only offered when there seemed to be a group of people waiting around to attend, they were free of charge, and led by volunteers, the attendance tracking was more casual and included several guesstimates. There is no way of telling how accurate any of the attendance numbers are.

Graph 1.8

Yaquina Head Walks were very popular. Since Yaquina Head is a tourist attraction in and of itself, the walks held there tend to have higher exposure. Between on site advertising and advertising at the HMSC, advertising for this walk probably reached a much greater number of potential attendees than did advertising for the other walks. Low attendance in 1985 and 1989 were likely due to construction or other interruption in service. After 1989, the Bureau of Land Management assumed responsibility for the Yaquina Head Walks.

As a whole, economic factors influencing the number of visitors or residents on the coast also affect the Walks. However, since walks were free of charge, they were probably affected less dramatically than the other programs which had a fee. The number of attendees at these free walks are consistently higher than the numbers for any of the programs that had a fee.

In spite of these explanations, observed attendance patterns are not completely understood. The records suggest that demand is down, however, this conclusion does not mesh with consensus on the part of most researchers that this type of programs would be popular among visitors to the Oregon coast. Additional research on the impact of advertising and program structure may provide more information.

1.3.8 Daily Hatfield Marine Science Center Films

Another Seatauqua program that did not have a participant fee was the weekly film series. The main purpose of the film series was to reach more people with coastal and marine information. It was thought that 15-20 minute films would attract participants that were interested in learning about a marine topic but were not able to spend the time and energy to learn about the topic in a more structured and time consuming manner (i.e. workshops, van tours, or boat tours). Whenever possible film topics were chosen to support the workshops going on that week in order to advertise to casual participants that a more in depth treatment of the subject was available as well

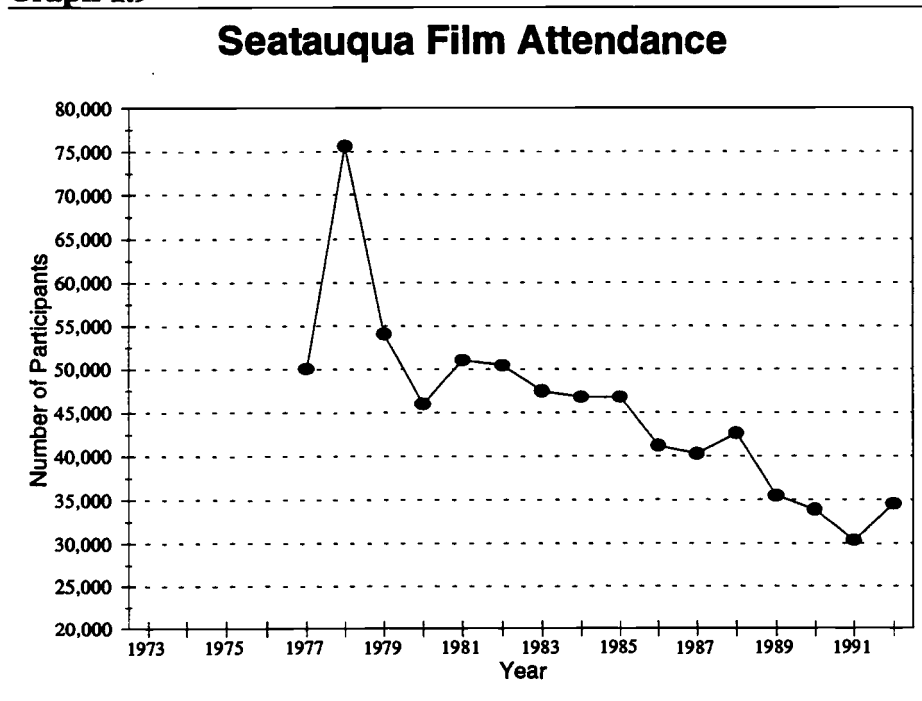
as provide additional information for workshop participants. Actual film topics and their integration with the workshops was dependent on what films were available for rental or library loan. These films were interspersed with the regular films offered by the HMSC educational wing. Films changed during the middle of the weekend so that weekend visitors could see more films if they wished. Appendix 3 shows the number of people reported at these films. Film attendance is also illustrated in graph 1.9.

The Seatauqua budget was responsible for the cost of the film rentals. HMSC volunteers made sure that the films were shown at the designated times.

In terms of gross attendance, the film program accounts for the vast majority of Seatauqua participation. The success of films can be attributed to their format and subject matter: films are free, offered frequently, require no advance planning and little time commitment, have a high maximum number of attendees per film, and cover a wide range of topics.

Film attendance, as with the talks, declines overall, as shown in Graph 1.9.

Graph 1.9



The significant decline after the initial two years of the film program may be related in part to the accuracy of early attendance recording methods. For the first two years, attendance records show single rounded attendance totals of 50,000 and 75,000, without incremental counts. As reported by staff member Bev Lund, in subsequent years film attendance was recorded by a volunteer or intern who conducted head counts at each film. These figures are likely to be more accurate.

Regardless of isolated inaccuracies, however, film attendance has declined. There has not been a change in the number of films offered or in the times offered. There doesn't appear to be a correlation between film attendance and Hatfield Marine Science Center attendance and visitors to the coast have supposedly increased, so there is a high likelihood that demand for the films has

decreased. One possible reason for the decline in film attendance is that the films are often repeated from year to year. If the HMSC has a high number of repeat visitors, it's possible that they have seen the films as often as they want to and, therefore, are not attending in later years.

1.3.9 Conclusions

This section summarized the history and dynamics of Seatauqua operations. It also discussed the possible effects of management practices on demand for Seatauqua programs, as illustrated by attendance. This information illuminated areas for change and generated some assumptions for the mail participant surveys to test.

The first recommendation is that a decision be made about who is going to manage the program. Is Seatauqua going to remain a cooperative program, or is one agency going to take over its administration? Is Extension Sea Grant going to continue to administer the program, or will another agency take over as administrator?

Once responsible parties are identified, those people should formulate goals and objectives for the program. Important points to keep in consideration is that the goals and objectives for Seatauqua should complement the goals and objectives of the parent agency or agencies. Also, written long and short term goals and objectives could act as both a guideline for the program administrator and as a standard to measure progress. If goals and objectives are going to be used as a standard to measure progress, however, some of those objectives should be quantitative and, at the very least, considerable care will have to be taken when evaluating the administrator on qualitative goals. It's important that perceptions, and expectations, of the program are shared by the administrator and parent agencies or any evaluation will end up ineffective.

Setting program priorities, especially in the areas of finances and programming is another recommendation for change. How much of its own funds is Seatauqua supposed to make? What target market or markets should the program serve? What type of programs does Seatauqua want to offer? What assets will Seatauqua have available to it? All of these questions need to be answered.

If Seatauqua is going to be held accountable for spending, then the method of tracking costs should change. An on-going financial tracking and control system should break down the workshops and keep track of spending for each one. This way if overspending occurs the administrator will know which workshop went over budget and why. Then educated decisions can be made on program spending taking into account all different factors.

For example, the current system of lumping together van costs for van tours and workshop field trips makes it look like cutting van tours would considerably reduce costs. If the different costs were attributed directly to the programs, however, the picture could look different. Van tours might cost more, but they could also be attracting more people and generating more income. The "problem" might be hidden travel costs or excessive printing costs for one or more workshops. Unless costs are broken out on a program by program basis, there is no way of knowing for sure. As mentioned, the 1992 Seatauqua program did break down spending by program, and by individual workshop. This data is being analyzed and the financial analysis will be included in the final report.

Also, ALL of the program costs, including costs paid for by other budgets (like instructor and facilitator stipends) and a certain amount for equipment, room use, and maintenance, should be added up and applied to the appropriate workshops. Then, once knowing all of the costs, if the program administrator chooses not to pass some of that cost on to the participants at least the administrator will have a better idea of how much external support is needed. The point is to make the amount of subsidy a conscious decision. While participant willingness to pay and a program goal to keep the cost to participants low should not be ignored when setting the price of the workshop, costs should not be ignored either.

More information is needed before decisions about Seatauqua programming, marketing, and pricing should be made. It is very important that Seatauqua planners know who the current participants are, what aspects they value of the current program, what changes they would like to see in the future, the potential users of the program, and the amount different types of participants are willing to pay for the program. Planners should also look at the needs of the community and the other organizations that provide outreach educational programs (both in the community and elsewhere) with an eye towards Seatauqua's role now and in the future. Without information about participants, the community, and other educators, Seatauqua planners could design what they see as the "perfect" program and end up satisfying no one.

This evaluation of Seatauqua operations and attendance patterns suggests several program assumptions or ideas that are potentially the key to Seatauqua's success. Some of the key assumptions and ideas, along with the questions that they generate, are discussed below.

One assumption is that participants value Seatauqua because of the program format (combination of lecture and hands-on experience), the excellent instructors, and the low price. How true is this assumption? How much value do participants put on the program format? Would they be just as satisfied taking the program as a "do it yourself" with audio or video tapes? What defines an excellent instructor? Instructors are usually evaluated on knowledge, enthusiasm for the subject, and ability to communicate. How important are each of these characteristics to the enjoyment of a Seatauqua workshop? Is price that important to participants and, if not, at what point does it become important?

Also, what are the tradeoffs of charging a higher price even if participants are willing to pay it? Another assumption of this program is that people are taking workshops with their partner or even entire family, and that they are attending more than one workshop during the summer. At what point does the price make this practice prohibitive? Is the ability to take more than one workshop topic during the summer a key to most participants enjoyment of the program or just to a few?

One idea generated from this evaluation is that holding workshops during the week affects participation. Is it affecting the number of participants, the type of participants, or both? If the time that the program is offered is affecting the type of participants that are taking the program, then what are those participants like? Are they the target market that Seatauqua wants to serve? If so, how can the program attract more participants from that group? If Seatauqua wants to attract participants from other segments of the population, what changes need to be made? How much

of an effect does the time that the program is offered have? If Seatauqua wants to attract more participant to its programs, what mix of programs should be offered?

What management changes would be needed to support different program mixes? For example attendance at daily films, a low management involvement program, serves a large number of people, but attendance has been declining and films do not currently generate income from participants to support the cost of film rentals. Programs with high management involvement such as workshops and van tours have held fairly constant or increased in attendance, s and generate income to support the programs from participant fees. What emphasis should be placed on which programs?

Many questions were generated from looking at the operation of and attendance at Seatauqua programs. All of these questions, and others, were incorporated into the mail participant survey. Section 2 provides a description of the survey design, testing and implementation methods, and the section 3 discusses preliminary analysis.

The final analysis will take the answers that our preliminary analysis has suggested and test them statistically. The final participant data will be combined with data collected on potential demand for Seatauqua from visitors to the HMSC (this data was collected in August and September of 1992 and is currently being analyzed) to come up with a demand model for Seatauqua. Looking at demand in relation to the cost of supplying educational programs will generate potential strategies for educational programs, including Seatauqua. Comparing the strategies to national and local trends in demographics and education will help narrow down the several strategies to a few that will be viable into the future. And, evaluating those few strategies for their fit into the managing agency or agencies corporate value system will help planners focus even better on the one or two strategies that will work for Seatauqua.

SECTION II. SEATAUQUA PARTICIPANT SURVEY DESIGN, TESTING, AND IMPLEMENTATION

2.1 Survey Goals and Design

A written survey was developed to assess participation patterns for the Seatauqua program. There were three main goals of the survey:

- To develop a profile of program participants, including socioeconomic background, residence, participation patterns in Seatauqua, involvement in other community-based education programs, and other hobbies/activities.
- To assess the strengths and weakness of Seatauqua's format, subject matter, marketing programs, and pricing/scheduling structure.
- To explore how potential changes to the current structure would affect the future success of the program, based on the revealed preferences and sensitivities of the participants.

The survey is included in Appendix VI.

2.2 Survey Delivery and Response

Given the diverse goals of the project, a lengthy survey was developed that included a wide range of questions regarding participants' socioeconomic status, program participation, hobbies, and future preferences for educational programs. Survey respondents were asked to score their preferences for a number of educational program attributes using a self-explicated utility format similar to that used by Sylvia (1992) for testing consumer preferences for salmon. This format was used to determine the relative importance of program characteristics. Survey respondents were also asked to score their preference for different hypothetical educational programs and indicate how often they would attend each program. This section forced respondents to trade off different program characteristics with price.

While a lengthy survey can potentially yield more information, the associated risk of a low return rate exists. This risk was judged to be low based on two factors: 1) The apparent high level of interest among past participants in Seatauqua led to the hypothesis that they would be very favorably inclined to take part in its review; 2) A lengthy or complex survey is more likely to be answered by people who have higher than average education and income (Dillman, 1978), which were apparent characteristics of program participants. These assumptions led to expectations of high return rates, despite the significant time period required for survey completion.

The survey was mailed to a random sample of 500 Seatauqua participants drawn from the 1985-1992 workshop participant registration files. Since workshops are the program type that require the highest level of investment, both in time and money, workshop participants were considered more likely to respond to the mail survey. Additionally, records prior to 1985 were not included due to the higher likelihood that they would be inaccurate. Four months after distribution, a total of 191 completed surveys were returned, yielding a return rate of 38%. The high return rates can

be attributed to both the profile of the participants and to the high level of good will toward Seatauqua on their part, as demonstrated by their written comments included in Appendix VII.

2.3 Independent Test For Sources of Error in the Mail Survey

There are inherent risks in characterizing a population through a single instance of information gathering. Given the length and complexity of the survey, it was expected that the results would be biased towards those participants that were most interested in Seatauqua, as demonstrated by the number of programs attended, the number of years attended, and future attendance plans. It was also suggested that our results could be biased in several key demographic characteristics; age, income, residence, education and occupation (working vs. retired).

In order to test any inherent bias related to the format or delivery of the written survey, a follow-up survey for non-respondents was conducted. Telephone interviews were completed with people who did not return their mail surveys in order to compare the population that responded to the mail survey to the population that did not. Differences in Seatauqua program involvement and socioeconomic characteristics were examined. The telephone survey is reproduced in Appendix VIII and findings are discussed in the section following the results of the mail survey.

SECTION III. SOCIOECONOMIC AND ATTENDANCE PATTERNS OF SEATAUQUA PARTICIPANTS

The length of the participant survey allows for the collection of useful data on multiple factors. We are especially interested in knowing:

- who the participants are
- what programs they have been attending
- what their opinions of the current programs are
- what they would be interested in attending in the future
- where they found out about the program
- what program characteristics are most important to them
- what class characteristics that they find most desirable

This section presents the results of running summary statistics on all of these survey questions. The summary statistics provide the data for testing some of our theories regarding possible segmentation of Seatauqua participants, and the implications, on the design and marketing of Seatauqua, of having clear subgroups out of these segmentations.

Potential subgroups include division of the participants according to residence, income, household members, education, gender, age, profession, and other activities. Besides summarizing the survey responses to these socioeconomic questions, we attempted to look for ways to segment Seatauqua participants according to each of these characteristics. For example, we segmented the survey respondents according to residence by dividing them into three subgroups-- locals, other Oregon visitors, and out-of-state visitors. We then looked for differences between responses to other survey questions, such as the type and number of Seatauqua programs participated in according to subgroups (Did locals, for instance, attend

workshops more frequently than out-of-state visitors?) The summary statistics and the segmentations that we tested for each of these characteristics are discussed in section 3.2.

In addition to presenting summary statistics for questions relating to participation patterns in Seatauqua and other activities, and Seatauqua advertising, subsections 3.-3.5 also discusses what a comparison of responses according to our potential subgroups revealed. Comparing survey question responses by subgroups did reveal some differences in the percentages of respondents that answered a certain way. For example, the Local subgroup had a higher percentage of workshop attendees than did either the Other Oregon or Out-of-state subgroups.

Unfortunately, we can not yet say how significant the differences between the subgroups are. There appear to be differences between the way the survey respondents participated in Seatauqua according to subgroups based on socioeconomic characteristics. Based on the findings presented here of this comparative, preliminary analysis, we have a good idea of which segmentations are most likely to give us important subgroups. The data are currently being tested statistically to see if any of the differences are significant. The summary statistics and the findings of our preliminary analysis are presented in subsections 3.3-3.5.

Subsection 3.6 discusses respondents' preferences for different workshop characteristics.

Data from the mail survey reveals clear trends in the socioeconomic characteristics of participants and their participation patterns. Section 3.1 summarizes the trends in the socioeconomic characteristics of participants and their participation patterns.

3.1 Summary Statistics "The typical participant"

The typical (mean) Seatauqua participant resides in Oregon, earns \$42,600 yearly, completed college and attended some graduate school, was female, and was retired or a professional, between 56-65 years old.

Approximately half of the participants heard about Seatauqua directly or indirectly through the HMSC. He or she participated in several of the Seatauqua programs, including the workshops (78% of respondents), and most frequently the films (40%), van trips (31%), guided walks (29%), or boat trips (28%).

The mean number of workshops attended was 2.99, and most often attended either with a spouse (37%) or alone (34%). Sixty-one percent of the respondents who had taken more than one workshop said they had taken one workshop a year. Twenty-five percent took more than one workshop a year. Respondents attended both different workshop topics (67%) and the same workshop topic (49%). The most popular workshop topics were Crabbing (27%), Exploring Tide pools (23%), Coastal Fossils (21%), Claming (20%) and Coastal Plants (19%).

Thirty-three percent of respondents considered themselves to be 'local' to the area. For visitors, Newport was most often the primary vacation destination. The length visitors stayed in the area varied greatly, with a median of 1.5 nights, and a mean of 4.67 nights (standard deviation = 5.5). While in Newport, they commonly visited the HMSC (80%), went sightseeing (75%), and participate in non-consumptive coastal activities such as tide pooling and bird watching (55%).

In addition to Seatauqua, respondents are active in other non-credit, community-based education programs. Fifty-seven percent took non-credit classes through community colleges, 51% attend free films and lectures at zoos, aquariums, or museums. Other common activities included travel in the US(70%), reading about wildlife and the environment(67%), and visiting zoos and aquariums(65%). A fairly high number (48%) read scientific research journals.

Eighty-seven percent of the respondents expected to attend Seatauqua in the future. The majority expected to attend a different topic (70%).

In regard to future program format, 63% wanted to see Seatauqua workshops offered year round, and 56% were interested in learning more about current research going on at the HMSC. There was little expressed interest in programs offered by local businesses.

3.2 Socioeconomic Characteristics

3.2.1 Residence

The majority of Seatauqua participants, 77%, were from Oregon, as shown in Table 3.1. Twenty-six percent of the participants came from outside Oregon.

Within residential groups, the subset that considered themselves to be local to the Newport area are included by percentage. In the cases of Portland, Eugene, Salem and Corvallis, these responses could have represented secondary residences or a flexible definition of 'local'.

Table 3.1

Residence of Seatauqua Participants (N=184)		
<u>Location</u>	<u>%</u>	
Coastal Oregon	34%	(86% local)
Portland, Eugene, Salem	20%	(4% local)
Corvallis	11%	(7% local)
Other Oregon	12%	
Washington	7%	
California	4%	
Other	13%	

We divided residence into three subgroups; coastal, other Oregon and out-of-state. The responses to several questions about Seatauqua participation were then compared based on the subgroups, and are discussed by question. Based on discussions with other educators and the Seatauqua files, we expected residence to be an important dividing factor in how respondents participated in Seatauqua.

3.2.2 Income

The mean income of respondents was \$42,610 (standard deviation of 22,650), with a median of \$40,000. On a percentage basis, the responses break down as shown below:

Table 3.2

Household Income of Mail Survey Participants (N=184)	
Under \$15,000	9%
\$15,000 - \$30,000	27%
\$30,000 - \$50,000	35%
\$50,000 - \$75,000	19%
\$75,000 - \$100,000	6%
Over \$100,000	4%

We divided income into three subgroups; low, medium and high income. The cut off points for the different income groups were set so that we would end up with three groups close to the same size. Our definition of low, medium, and high income groups, therefore, are not intended to be the same as it would be for a different population, say the whole United States, and are as follows:

- Low income: \$30,000 and under
- Medium income: \$31,000- \$50,000
- High income: Over \$50,000

The responses to several questions about Seatauqua participation were then compared based on these subgroups, and are discussed by question. Given the historical and current prices of Seatauqua programs, income is not expected to be an important factor in dividing how respondents participated in Seatauqua. Income may, however, be an important factor in how respondents react to changes in program price. This is being tested through regression analysis, and the results of the analysis will be available in the final report.

3.2.3 Household Size

Respondents had household sizes that ranged from 1 to 6 members with a mean of 2.21 members (standard deviation = 1.03). The breakdown of size by percentage was:

Table 3.3

Number of Household Members (N=189)	
One	23%
Two	50%
Three or more	7%

These data indicate that half of the survey respondents lived with only one other person. This suggests that most of our respondents did not have children at home. They may have been retired or families with grown children. Based on the ages listed for household members, we assumed

that the “three or more” household member group indicated families with children. If the respondents’ answer to this question is representative of Seatauqua participants, then it indicates that Seatauqua’s primary audience was not families with children.

We did divide number of household members into three subgroups; Alone, two household members, and three or more household members. We were especially interested in seeing if household size varied in relation to attendance at a specific program type or workshop topic. Differences in attendance patterns between groups with different household sizes could illuminate programs or workshops that attract families. Knowing this could be important in designing future program formats for Seatauqua.

The responses to several questions about Seatauqua participation were compared based on these subgroups, and are discussed by question.

3.2.4 Education

Ninety-two percent of respondents had some college education or higher. The breakdown by percentage is shown below:

Table 3.4

Level of Education (N=185)	
High School	6%
Vocational School	2%
College	38%
Graduate School	54%

We divided education into three subgroups; low, medium, an high education. These divisions, however, are very artificial given that we do not have many of what could be considered low education groups. In fact, 92% of our respondents can be considered very highly educated. Our definition of low, medium, and high education groups, therefore, are not intended to be the same as it would be for a different population, say the whole United States, and are as follows:

- Low education: High school or Vocational school
- Medium education: College
- High education: Graduate school

The responses to several questions about Seatauqua participation were then compared based on these subgroups, and are discussed by question. Given the highly different sample sizes of the subgroups, education is not expected to be an important factor in dividing how respondents participated in Seatauqua.

3.2.5 Gender

A significant majority of respondents were women, as shown below:

Table 3.5

Gender (N=179)	
Female	63%
Male	37%

The observed results, however, might be an artifact of the survey. We know from responses to other survey questions and Seatauqua records that many of the respondents attended Seatauqua with their spouse. These results, then, might just reflect a tendency for females to be more likely to respond to surveys.

We did, however, divide gender into two subgroups and compared the responses of males and females to questions about Seatauqua participation. We did not expect to see any differences in the responses, and what we did find are discussed by question.

3.2.6 Age

Ninety-five percent of respondents were over 35. Given that most of the workshops are geared for adults, the limited number of younger participants was in keeping with program guidelines. The breakdown of age by percentage is shown below:

Table 3.6

Age (N=186)	
Under 25	2%
26 - 35	3%
36 - 45	21%
46 - 55	19%
56 - 65	23%
Over 65	31%

The observed age distribution was highly skewed towards an older population. We did divide age into three subgroups; Under 35, 36-55, and over 55. The problem with these subgroups is that the sample sizes are very different. Considerably different sample sizes can give misleading results with the type of comparative analysis that we did. Therefore, a more statistical analysis will be important for determining the significance of differences between respondents based on age.

The findings from our preliminary comparison of age group responses are discussed by question. Age is expected to play a role in participation trends, but we hypothesize that this role is primarily a reflection of the working status of the respondents.

3.2.7 Profession

Seatauqua participants were mainly retired (39%) and professionals (36%). One possible reason for the high number of retired people is that they are more able to take the many workshops which have been offered during the week. Working professionals may either have had a flexible schedule or make up a high number of the visitors. The breakdown by percentages is shown in table 3.7.

Table 3.7

Profession (N=185)	
Retired	39%
Professional	36%
Homemaker	16%
Self Employed/Owner	15%
Clerical/Service	8%
Management	5%
Traditional Industries	2%
Other	10%

We divided profession into two subgroups; working, and retired. We hypothesized that these subgroups would be sufficient to discover differences in participation trends. Once again, the results from the preliminary comparison are discussed by question. Respondents' status with regards to working is expected to be one of the more important factors for explaining participation trends.

3.2.8 Participation in other activities

As a group, respondents to the mail survey reported that they participated most frequently in education and travel-related activities and were likely to participate in environment-based classes. Seven activities were identified by more than 50% of survey respondents. These create a clear profile of the types of activities this group was most likely to participate in, as shown in Table 3.8.

TABLE 3.8

Other Activities (N=185)	
US Travel	70%
Reading about wildlife/environment	67%
Visiting zoos, aquariums	65%
Visiting museums	63%
Family activities	58%
Non-credit classes/lectures	51%
Reading about technology/research	49%
Birding	34%
Photography	30%
Foreign Travel	29%
Other	26%
Fishing frequently	25%
Recreational vehicles	19%
Organized bus tours	9%
Charter boat tours	6%

This data can be used to target advertising content, format, and placement. Specifically it can help to determine what complement of activities to advertise and where to place the information. For example, if we find that a large percentage of out-of-state Seatauqua participants travel by recreational vehicles (RVs) and enjoy attending non-credit classes/lectures, then magazines for RV enthusiasts or publications advertising non-credit classes may be good places to advertise Seatauqua. Analysis of other activities will be done as part of the final report.

3.3 Participation Patterns

This subsection presents the responses to the survey questions about Seatauqua participation and discusses the results of segmenting the responses according to:

- Residence
- Income
- Number of household members
- Education
- Gender
- Age
- Working Vs Retired

3.3.1 Programs Offered by Seatauqua

Most of the respondents (78%) attended Seatauqua workshops, as shown in Table 3.9. This attendance pattern diverges from the Seatauqua records in that the records show films and guided walks to have had much higher relative attendance numbers. This difference can be attributed to the higher likelihood of active participants to answer the survey. Also, there was a lower likelihood of casual attendees to the films or other non-registration activities of having signed up with Seatauqua and, therefore, being on the survey mailing list.

Table 3.9

Programs Attended (N=189)	
Workshops	78%
Films	40%
Van Trips	31%
Guided Walks	29%
Boat Trips	28%
Talks	20%
Never	2%

Respondents also took a variety of other Seatauqua programs with films having the next highest percentage (40%). The films were shown daily, free of charge, at the Marine Science Center. Management tried to have the films on similar topics as the workshops being offered that week. The high number of films, price (free), subject correlation to workshops, and location (at the HMSC) could help explain why so many Seatauqua participants attended the films.

Observed Differences by Residence

Of the programs run by Seatauqua -- boat trips, guided walks, films, talks, van trips and workshops -- people from outside Oregon attended every category of program with greater frequency than coastal residents or other Oregon visitors except workshops. Both types of visitors, out-of-state and other Oregon most often participated in several different programs, whereas locals were more likely to attend one specific program. Fewer visitors from outside Oregon attended workshops than Oregonians; Sixty-five percent of those outside Oregon participated, as compared to 81% of coastal respondents, and 81% from other locations within Oregon. While we do not know if the differences in program attendance between residence subgroups are significant, these trends do suggest that residence is important in deciding program participation. Residence is currently being tested further as an important determinant of different usage patterns.

Observed Differences by Income

Participation in workshops did not appear to vary based on income. In addition, frequency of participation, that is the number of workshops taken, also did not appear to vary based on income. This data suggests that workshop pricing is not a disincentive to low income people, either for single or multiple attendance. A likely reason for these results is that the historical and current prices for Seatauqua programs have not been considered very expensive.

Boat trips, however, appear to be attended most often by low income people. Forty percent of the low income participants attended, as opposed to 21 % of middle income and 19% of high income respondents. Given the higher fees related to boat trips, this participation trend suggests that in spite of additional charges, lower income people are not price sensitive to the current level of pricing.

Median and high income respondents appeared to attend walks with greater frequency, with respective attendance percentages of 37% and 30%, as related to 26% attendance among low income respondents.

The differences in boat tour and walk participation between income subgroups are surprising and hard to explain. Therefore, income is currently being tested further as a determinant of different participation patterns.

Observed Differences by Number of Household Members

Another interesting trend was within workshop participation among sole household members. Fewer respondents who lived alone had attended the workshops; sixty-five percent as opposed to 83% of respondents from households of 2 members and 80% of respondents from households with 3 or more members. This data could be an artifact related to differences between the subgroup sizes and is being tested statistically for significance.

Observed Differences by Education

Education appeared to play a role in boat tour attendance. Forty percent of those respondents who had completed high school or technical school attended, as opposed to 20% of those who attended college, and 29% of those with graduate school education. The observed difference in attendance is hard to explain and may not be statistically significant.

Education appeared to be the most important subgroup correlating to talk attendance. Twenty-six percent of respondents with graduate school level education attended, as opposed to 16% of those with college education and 20% of those completing high school or technical school. The question is are these differences statistically significant? Our hypothesis is that they probably are not significant given that the sizes of the subgroups were so different.

Observed Differences by Gender

More males appeared to attend films than females; forty-eight percent as opposed to 35%. The observed differences are probably not statistically significant.

No differences were observed in the types of programs participated in based on the subgroups of age or working Vs retired.

3.3.2 When Respondents Attended Seatauqua

Only 18% of the respondents attended Seatauqua before 1985 (Table 3.10). Given that the mailing list was limited to attendees between 1985 and 1992, the higher percentage of recent visitors was projected. As a result of the mailing list bias, all of the respondents who attended before 1985 also had to have attended after 1985 in order to have been included on the mailing list. This suggests that several of the respondents have taken more than one workshop and have attended for more than one year, a trend supported by other data analysis.

Table 3.10

When Respondents Attended Seatauqua (N=165)	
1972-1974	2%
1975-1979	4%
1980-1984	12%
1985-1989	59%
1990-1991	56%
1992	21%

Attendance at multiple workshops was common. Sixty-three percent of the respondents took more than one workshop (Table 3.11) with 20% taking more than 3 workshops. Sixty-one percent of the respondents who had attended more than one workshop took one workshop a year (Table 3.12). This further suggests that Seatauqua participants were attending Seatauqua for more than one year.

Table 3.11

Number of Workshops Taken (N=152)	
One	37%
Two - Three	32%
Four - Five	17%
Six - Seven	4%
Eight - Ten	7%
More than Ten	2%
No Response	1%

Table 3.12

Pattern of Participation Over the Years (N=96)	
One workshop/year	61%
More than one workshop/year	25%
One workshop some years, More than one other years	13%
No response	4%

While the majority of respondents took different workshop topics (67%), almost half (49%) were also repeating workshop topics (Table 3.13). Since some Seatauqua mail survey respondents continued to take the same workshop topic while also taking new topics, the percentages do not add up to 100%. Workshop registration files for actual participation patterns reflect this finding. Records showed people attending both more than one workshop a year and workshops for two or more years (same and different workshop topics).

Table 3.13

Pattern of Participation by Workshop Topic (N=92)	
Attending different workshop topics	67%
Attending same workshop topic	49%

Respondents attended mostly with their spouse or by themselves. The breakdown by percentage is in Table 3.14.

Table 3.14

Who Attended with the Respondent (N=154)	
Spouse	37%
(Grand)children	18%
Another friend or relative	31%
No one	34%

Observed Differences by Residence

Coastal residents appeared to be much more likely to attend workshops alone; forty-seven percent of coastal residents attended alone, as compared to 31% from other locations within Oregon, and 23% from outside Oregon. If this holds up under statistical analysis, one possible reason for coastal residents to attend workshops alone is that the subgroup is made up primarily of local Newport residents, and their spouses had something else to do with their time. Visitors, on the other hand, were probably vacationing with their spouse or children and did not want to leave them alone.

Observed Differences by Number of Household Members

While sole household members were much less likely to enroll in workshops, those that did participate appeared to take more workshops. More than 50% of these respondents had attended more than 6 workshops. This finding is difficult to explain and will be tested statistically.

Observed Differences by Gender

Men appeared more likely to take multiple workshops than women. Forty-nine percent of women took only one workshop, as compared to 22% of men. Fifty-eight percent of males took between 2 and 5 workshops and 20% of men took more than 6 workshops. If this finding holds up under statistical analysis, one possible reason is that some men took workshops by themselves in addition to the topics that they attended with their spouses. The Seatauqua records do show, for example, that couples attended workshops such as crabbing together with the men going on to attend topics such as fishing and claming by themselves.

Another attendance difference between men and women was that men appeared most likely to attend with a spouse, while women were likely to attend either with a spouse or with another person. This finding is being tested for significance, but we do not expect it to be important to either programming or marketing strategies for Seatauqua.

Observed Differences by Working Vs Retired

Retired respondents most often attended with their spouses; forty-seven percent as compared to 33% of working respondents. This data is continuous with age data that shows those over 55 to be more likely to attend with a spouse. Furthermore, these differences in attendance patterns suggest strong tendencies among retired persons to take part in activities as a group. These findings are currently being tested for statistical significance.

3.3.3 What Respondents Attended

The most frequently attended workshop topics were Crabbing (27%), Exploring Tide pools (23%), Coastal Fossils (21%), Claming (20%) and Coastal Plants (19%). There is a rough correlation between how frequently the workshop was attended and how often it was offered. For example, Crabbing was the most frequently offered workshop between 1985-1992 (22 times), so it's not surprising that it was the most frequently attended workshop. The other most frequently attended workshops (Tide pools, Fossils, Claming, Plants, Birds, Wood Carving, and Fishing) were all offered once a year during the same time period (Seatauqua management records). All of the other workshop topics were offered less often.

Table 3.15

Workshop Topics Attended (N=154)			
Crabbing	27%	Cooking Sea Vegies	9%
Exp. Tide pools	23%	Coastal Photo.	9%
Fossils	21%	Fish Printing	8%
Claming	20%	Tide pool Photo.	6%
Plants	19%	Salt Marshes	5%
Birds	17%	Navigation	2%
Fishing	17%	Reptiles	1%
Wood Carving	16%	Folklore	1%
Geology	13%	Writing	1%
Rock ID	10%		
Landscaping	10%		
Driftwood ID	9%		

Some of the workshop topics appeared to vary in the type of person who was most likely to attend. The biggest potential problem with all of the findings about the workshop topics is the small sample sizes. This problem should be kept in mind when reading the workshop topic findings regarding differences among subgroups. These observed findings are ALL preliminary and must be statistically tested. Findings that suggest this hypothesis and are being statistically tested are as follows:

Observed Differences in the Bird Workshop

Low income respondents appeared to participate less in the bird workshop: only 8% as opposed to a total attendance rate of 17%.

Residence also appeared to affect attendance. Coastal Oregon residents and visitors to Oregon attended at comparable rates, as opposed to those from other regions of Oregon, who had much lower attendance rates; thirteen percent as compared to 22% among other groups.

Observed Differences in the Fossil Workshop

Visitors to Oregon appeared more likely to attend the fossil workshop than Oregonians. Thirty-one percent of respondents residing outside Oregon had attended, as opposed to 21% of Oregonians.

Interest in the fossils workshop also appeared to be related to age. A higher percentage of older respondents attended: twenty-seven percent, as opposed to 16% among younger respondents.

Observed Differences in the Plant Workshop

Low income respondents appeared to attend these workshops less; fifteen percent had participated, as compared to 29% of middle income respondents.

Visitors to Oregon showed a high participation rate of 31% as opposed to 9% among Oregonians.

The plant workshop appeared popular among working respondents; twenty-four percent attended as opposed to 14% of retired respondents.

Observed Differences in Geology

Geology was most frequently attended by middle income respondents. Twenty-one percent attended as opposed to 8% of low income respondents and 11% of high income respondents.

Observed Differences in Crabbing

Men more often attended, with a 44% participation rate, as opposed to 17% among women.

The over 55 age group was more highly represented, with 33% attendance as compared to 23% attendance among the 36-55 age group.

Observed Differences in Claming

As in the crabbing workshop, the over 55 age group was more highly represented, with 25% attendance, as opposed to 15% among the 36-55 age group and 20% among those under 36.

Observed Differences in Fish Printing

Low income respondents attended fish printing less, with 4% attendance as opposed to 10% and 14% among middle and high income respondents respectively.

Participation among retired respondents appeared to be low; two percent attended as opposed to 13% of working respondents. Comparable rates were reflected among age groups. The highest attendance rates were among the 36-55 age group, which attended at a rate of 16% as opposed to only 3% among those over 55.

Observed Differences in Wood Carving

Wood carving appeared to be least popular among middle income respondents. Only 4% attended the class as opposed to 21% of low income respondents and 28% of high income respondents.

Observed Differences in Landscaping

Locals exhibited the most interest in Landscaping. Twenty-four percent attended as opposed to less than 10% among those from other regions.

High income respondents appeared to be more likely to take Landscaping, with 17% participation, as opposed to 4% attendance for low income respondents and 8% for middle income respondents.

Observed Differences in Exploring Tide pools

Interest in the Exploring Tide pools class appeared to be related to the residence of the respondents. Visitors to Oregon attended most frequently; forty-two percent participated as opposed to 16% of coastal residents and 24% of other Oregon residents.

Fifty percent of the under 35 age group attended, as opposed to 18% of those 36-55 and 27% of those over 55.

Middle income respondents had attended in the highest numbers: thirty-three percent as compared to 13% of low income respondents and 19% of those from the high income category.

Observed Differences in Fishing

Respondents who considered themselves to be locals were much more likely to enroll in the fishing class. 30% had attended, as compared to 11% of visitors. This difference in attendance rates may be related to the associated course requirements: attendees must provide their own fishing gear and license.

Twenty-six percent of retired respondents attended, as compared to 11% of working respondents. Correspondingly higher rates were seen among those over 55 years old.

Men were much more likely to take fishing, with 35% attendance rate as opposed to 5% of women respondents.

Overall conclusion:

We hypothesize that the topics can be roughly divided by appeal and can be viewed in terms of interest categories such as family activity, special interest science, and less strenuous for less active attendees. Examples of special appeal classes include Landscaping, which draws the local population; Fossils and Geology, which deliver more formal scientific information; and the Rain Forest, which included an uphill hike through the Cascade Forest. In addition, general interest and special interest classes exist that leverage one another in encouraging first time and repeat attendance by participants.

3.3.4 Reason for participating

The majority of the respondents participated in Seatauqua because of their interest in the specific topic. The next most cited reason for participating in Seatauqua was their interest in the marine environment in general. The breakdown is in table 3.16.

Table 3.16

Reason for participating (N=153)	
Interest in the marine environment in general	25%
Interest in the specific topic	62%
Interest in Seatauqua programs in general	7%
Other	6%

No differences were found, among the subgroups considered, in the stated reason for participating.

3.3.5 Effect of Workshop Participation on Participants

The majority of respondents felt that participation in Seatauqua increased their enjoyment of the Oregon coast (82%) or increased their enjoyment of the HMSC (47%). This response rate suggests that the primary benefit of Seatauqua is in its role as a general educator in providing information on basic marine processes to attendees. It increased respondents understanding of the coastal environment, as opposed to their environmental activism or knowledge of local marine industries.

Table 3.17

Effect of Participation on Participants (N=185)	
No effect	6%
Increased enjoyment of the HMSC	47%
Increased enjoyment of the Oregon coast	82%
Increased participation in marine protection	21%
Increased understanding of marine-related industries	17%
Other	4%

While all participants responded that the primary effect of Seatauqua was o increase their enjoyment of the Oregon Coast and the secondary effect was to increase their enjoyment of the HMSC, there appeared to be other variations based on subgroups.

Increased interest in environmental protection was expressed by two respondent subgroups: women and those within the 36-55 age group. Twenty-seven percent of women, as compared to 14% of men, felt their interest in environmental protection had increased. Twenty-eight percent of the 36-55 age group also reported increases in their interest in environmental protection, as compared to 11% of those under 35 and 11% of those over 55. It is hard to explain these differences, and the results are being tested statistically.

3.3.6 Participant Opinions About Current Workshops

Respondents were asked to describe the workshop they attended, or if they attended multiple workshops, their favorite. Findings are listed in Table 3.18. Respondents graded their instructors very highly, including the areas of knowledge, communication skills, and enthusiasm.

Classes were attended during a mixture of weekends, weekdays and combination of the two. While most classes had 15 attendees, classes with 25 participants were also common. By far, the majority of classes combined lecture with hands-on teaching, and spanned 1 or 2 days during the summer. Older kids were most often included in the same class with adults.

The importance of each of these characteristics to respondents will be examined using variance testing during the next stage of research of survey data.

Table 3.18

Respondent Opinions About Current Workshops

Instructor's Knowledge

Knew subject "inside and out"	92%
Knew subject moderately well	7%
Knew subject well enough to get by	1%

Instructor's Enthusiasm

Very enthusiastic	89%
Moderately enthusiastic	11%
Not very enthusiastic	0%

Instructor's Communication Skills

An excellent communicator	84%
An average communicator	16%
A poor communicator	0%

Day Workshop was Offered

Weekdays	42%
Weekends	32%
Combination	26%

Class Size

5 participants	1%
15 participants	69%
25 participants	29%
35 participants	1%

Registration Fee (for one person)

\$5	8%
\$10	53%
\$15	39%

Hands-on Activities or Field Trips

Entirely hands-on	21%
Mixture	77%
Entirely lecture	3%

Kids Ability to Participate

Shared experience between adults and kids	30%
Adults and older kids	65%
Did not allow kids, alternative programs provided	1%
Did not allow kids, not alternatives provided	4%

Length of Workshop

1 class for 1 day (7 hours)	33%
1 class for 2 days, 4-6 hours per day	48%
1 class for 3 days, 4-6 hours per day	19%

Time of Year Workshop was Offered

Summer	84%
Fall	4%
Winter	3%
Spring	9%

Preliminary analysis did suggest some differences in respondents' opinions regarding current workshops. These differences indicated subgroups that needed to be tested statistically and were as follows:

Observed Differences in Instructor Qualities

No differences among subgroups appeared to be related to the perceived knowledge or enthusiasm on the part of instructors. However, differences did exist in regard to instructor's communication skills.

While the majority of all respondents considered the instructors to have excellent communication skills, the number of respondents who considered their instructor to have just "average" communication skills was greater within younger age groups. Thirty-three percent of those under 35 considered the instructors to be average communicators, as opposed to 23% of those 36-55, and 10% of those over 55. This could be related to the age of the instructors, who were all primarily older. Maybe instructors relate best to their own age group. This is an interesting finding and will be tested statistically.

Observed Differences in Day Workshop Offered

Trends appear to exist between age, working status and workshop attendance. Thirty-eight percent of working respondents attended weekend workshops as compared to 17% of retired respondents. The under 35 and over 55 age group also attended at higher rates during weekdays.

Observed Differences in the Class Size

There were no apparent differences among subgroups.

Observed Differences in Registration Fee

There were no apparent differences among subgroups.

Observed Differences in Hands-on Activities

There appeared to be differences, according to age groups, in the opinions of respondents as to the amount of hands-on activities included in the workshops. Fifty percent of those under 35 said that they participated in a workshop that was a mixture of hands-on activities and lecture, as opposed to 74% of those 36-55 and 84% of those over 55. All of these results are surprising given that ALL of the Seatauqua workshops are considered by management to be a mixture of hands-on activities and lecture. Therefore, if this finding is statistically significant, what we are measuring are differences in perceptions. Apparently half of the respondents under 35 either thought that attended workshops were all lecture or all activities. In any case, it would be very interesting to see if responses to this characteristic were related to the workshop topic.

Observed Differences in Kids Ability to Participate

Older children, as a general rule, were allowed to participate in the workshops with the adults. Perceptions of this characteristic did not appear to vary across subgroups.

Observed Differences in Length of Workshop

The length of the workshop did not appear to vary based on subgroup.

Observed Differences in Time of Year Offered

As expected, residence appeared to be related to trends in the time of year for participation. Ninety-six percent of visitors to Oregon attended during the summer, as compared to slightly lower rates of 78% among coastal residents and 86% among residents of other parts of Oregon.

Spring was the most popular time for attendance among coastal residents, while winter was the second most popular time for other Oregon residents to attend. This is interesting given that traveling to the coast is often difficult in the winter. These findings will be tested statistically.

3.3.7 Future Participation

The majority of respondents planned to participate in the Seatauqua workshops in the future if they were offered in their current format. Ten percent do not plan to attend in the future, citing time constraints most frequently as the reason.

Table 3.19

Future Plans for Workshop Participation (N=173)	
<u>Plan to participate in the future</u>	<u>87%</u>
Same workshop topic	17%
Different workshop topic	70%
<u>DO NOT plan to participate in the future</u>	<u>13%</u>
No time	10%
No interest	2%
Too expensive	1%
<u>No response</u>	<u>1%</u>

The percentage of those planning to attend workshops in the future did not appear to vary based on subgroup, in general. The one exception was among those who live outside Oregon. Sixty-eight percent of those living outside Oregon plan to take classes again, as compared to 82% of coastal residents and 87% of other Oregon residents. This is probably because of the greater distance involved.

Of those who did not plan to attend Seatauqua in the future, several subgroups cited different reasons for lack of participation. Low income respondents, those under 35 and visitors to Oregon cited lack of time as the primary reason for not attending in the future. Notably the cost of the classes was the least chosen reason for future non-attendance for all three income groups.

3.3.8 Future Workshop Formats

The level of interest expressed in proposed new workshop formats revealed clear preferences on the part of respondents. Notably, the most popular change in format was expanding course offerings to year-round. The second most popular topic was current research at HMSC.

Table 3.20

Interest in Future Types of Workshops (N=180)	
Year-round lecture and hands-on	63%
Current research at HMSC	56%
1-2 hour intros by instructors with optional labs	20%
Series to beginning-to-advanced courses	17%
1-2 week intensive courses	14%
Same workshops offered by local businesses	7%
Other	3%
Intro classes on tape and field trips on own	2%

The preferences for future programs revealed the strong value placed by respondents in the HMSC alliance. Fifty-six percent of respondents were interested in workshops covering current research at Hatfield, expressing a marked interest in HMSC. In addition, only 7% of the respondents expressed interest in the same type of courses offered by local businesses. Given the popularity of Seatauqua among the mail survey respondents, this is a very low level of interest.

The importance of the instructor revealed in the variance testing is echoed in preferences for future courses. Only 2% of the respondents expressed interest in classes on tape.

All of the subgroups exhibited highest interest in classes covering research at the HMSC, and lowest interest in the same classes being offered through local businesses. More than 50% of every subgroup expressed interest in HMSC research classes, while less than 10% expressed interest in local businesses. This data reflect the high value of HMSC to Seatauqua among current participants. It clearly plays a large role in their expressed preferences for future classes.

Secondary to the global preference for HMSC research, preferences for program changes varied among subgroups. Oregonians were most interested in year round classes, while those living outside Oregon were more interested in beginning-to-advanced series.

Interest in class format also showed a relation to working as compared to retired status. Twenty-three percent of working respondents showed interest in short introductory classes, as opposed to 13% of retired respondents. This could reflect different time commitments.

Men appeared to express much higher interest in intensive classes than women. Twenty-three percent of men were interested in intensive classes, as opposed to 10% of women. This response rate shows similarities to the higher number of workshops taken by men than by women.

Expressed interest in introductory tapes was relatively low. This data does not contradict the high perceived quality of the instructors, and is likely to be directly related to the perceived

importance of the instructors to the strengths of current offerings. The relative importance of instructors' skills is being examined and will be further discussed in the final analysis.

3.2.8 Other Courses / Other Interests

As a whole, Seatauqua participants tended to be active in continuing education programs. Fifty-seven percent of survey respondents attended non-credit classes, and over half attended films and lectures, as shown below:

TABLE 3.21

Participation in Other Programs (N=169)	
Non-credit Community College Classes	57%
Free films and lectures at zoo, aquarium, other	51%
Extension workshops	37%
Workshops at zoo, aquarium, other	31%
Other	16%
None	17%

Only 17% of respondents did not participate in non-credit programs, classes, or lectures. This data suggests that one or several subgroups existed that were likely to enroll in non-credit continuing education. This high level of community involvement also reflects the retired status of many participants. Of the 17% that were not involved in other educational programs, time is rarely cited as an issue, as shown in Table 3.22. Notably, the least frequently cited reason for refraining from other courses is economic. Price sensitivity was low, only 9% of the respondents cited cost as a factor in not taking classes.

TABLE 3.22

Reasons for Non-involvement (N=34)	
No interest	41%
Insufficient time	26%
Other	34%
Too Expensive	9%

Participation in other programs did not appear to vary based on subgroup.

3.4 Visitor Participation Patterns

Visitors to Seatauqua had most frequently come to Newport as a primary vacation destination, as shown in Table 3.23.

Table 3.23

Primary Reason for Last Visit to Newport (N=175)	
Primary vacation destination	25%
To attend Seatauqua	18%
Traveling through area on vacation	15%
Combined business and vacation	7%
Traveling on business	2%

Among visitors, the average length of stay (median) was 1-2 nights, ranging from one day to more than 3 weeks.

Table 3.24

Average Stay in Newport (N=116)	
1 day	24%
1-2 nights	28%
3-5 nights	21%
1 week	11%
1 - 3 weeks	8%
Over 3 weeks	6%

While in Newport, visitors participated in activities as listed in Table 3.25. Percentage denotes total number of visitors participating in each activity, and respondents chose multiple activities, so percentages do not add up to 100%:

Table 3.25

Visitor Participation in Other Activities (N=128)

Visiting HMSC	82%
Relaxing / Sightseeing	77%
Tide pooling / bird watching	56%
Visiting museums, tourist attractions	44%
Camping	35%
Whale watching	33%
Crabbing/claming	30%
Other	24%
Fishing	19%
Visit friends and relatives	17%
Charter boating	15%
Private boating	10%

Visitor participation patterns did not appear to vary based on subgroup.

3.5 Advertising Effectiveness

It has long been assumed that the HMSC is greatly responsible for helping to create demand for Seatauqua's marine-based education classes. This long standing assumption was confirmed by survey data relating to how participants heard of Seatauqua. The majority of respondents, 31%, stated that they had found out about Seatauqua from information posted at the HMSC, as shown in Table 3.26. The second most common source of information was brochure mailings, followed by word-of-mouth recommendations from friends or relatives.

Table 3.26

How Respondents First Learned Of Seatauqua (N=181)

Information posted at HMSC	31%
Seatauqua brochure mailed to home	22%
Friend of relative	20%
TV documentary/magazine article	10%
Volunteering or Working at HMSC	7%
Chamber of Commerce or Visitor Information Bureau	3%
Brochure at hotel, motel, restaurant	2%
Other	8%

While the HMSC proved to be the greatest source of Seatauqua demand, as expected, the range and distribution of responses to this question differed from hypothesized results. Researchers had hypothesized that HMSC was responsible for at least half of attendance. This discrepancy can be explained through another discrepancy. The second most frequent response, "brochure mailing" was higher than projected. Since the program did not purchase mailing lists, virtually every brochure recipient must have provided his or her name to the HMSC or had it provided by a friend. Thus, the second category, brochure mailing, can also be attributed indirectly to the HMSC.

As hypothesized, word-of-mouth plays an important role in spreading awareness of Seatauqua. Twenty percent of respondents first heard of the program through a friend or relative. The survey also attempted to identify the ultimate source of recommendations by friends or relatives. These results are summarized in Table 3.27.

Table 3.27

How Friend Found Out About Seatauqua (N=49)	
Attended Seatauqua workshop	26%
Volunteer/employee at HMSC	31%
Don't Know	43%

Despite the high level of "don't know" responses, this data confirms two important sources of participation.

Another equally important provider of information on Seatauqua was the volunteers and employees of HMSC. Seven percent of the respondents worked at HMSC. In addition, 31% of those who came to Seatauqua due to word-of-mouth, were recommended by HMSC volunteers or employees. This data clearly underlines the important role of volunteers and employees of HMSC as evangelists of Seatauqua, both formally and informally.

Information provided at traditional visitor sites, such as the Chamber of Commerce, visitor information bureaus, hotels, campgrounds, restaurants and other tourist attractions was attributed to garnering a small proportion of attendees, 6% total.

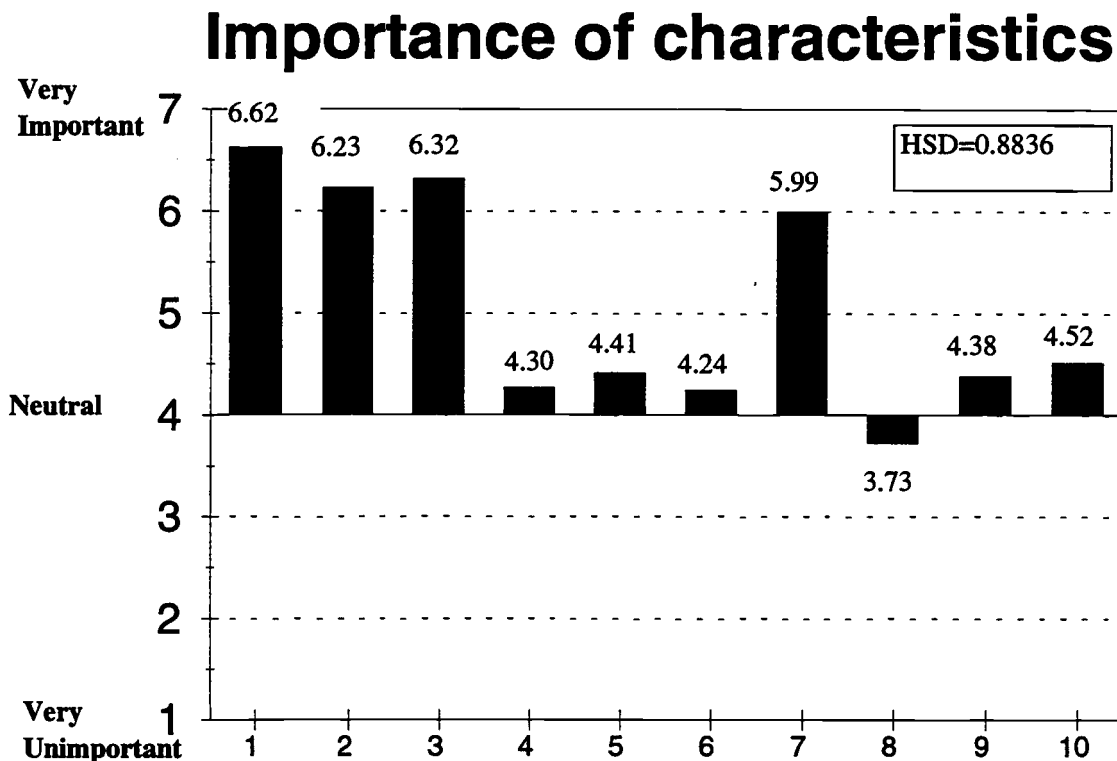
Where respondents heard about Seatauqua did not appear to vary based on subgroup.

3.6 Program Characteristics: Respondents' Preferences

Graph 3.28 shows the scoring of 10 characteristics hypothesized to be important to participants in educational programs. A score of seven indicated that the characteristic was "very important" to the participant; a score of 4 meant the category was neither important nor unimportant; and a score of 1 "not important." The respondents also had the choice of selecting "N/A" (not applicable or characteristic unknown) for each question, which would then have been treated as a missing value. The HSD score indicated on each of the self-explicated graphs indicate significant difference between the means. For example, the importance of the different characteristics are significantly different when the means differ by 0.8836 or more.

In general, the characteristics fell into two groups. All of the instructor characteristics and the workshop format (hands-on activities and lecture) were considered relatively important. Respondents were relatively neutral to all other characteristics. These findings were confirmed by Seatauqua participant comments as noted by management. Current statistical tests are looking for differences in the importance of the characteristics by the different subgroups. Results of these tests will be incorporated into the final analysis.

Graph 3.28



Key to graph 3.28, Program Characteristics

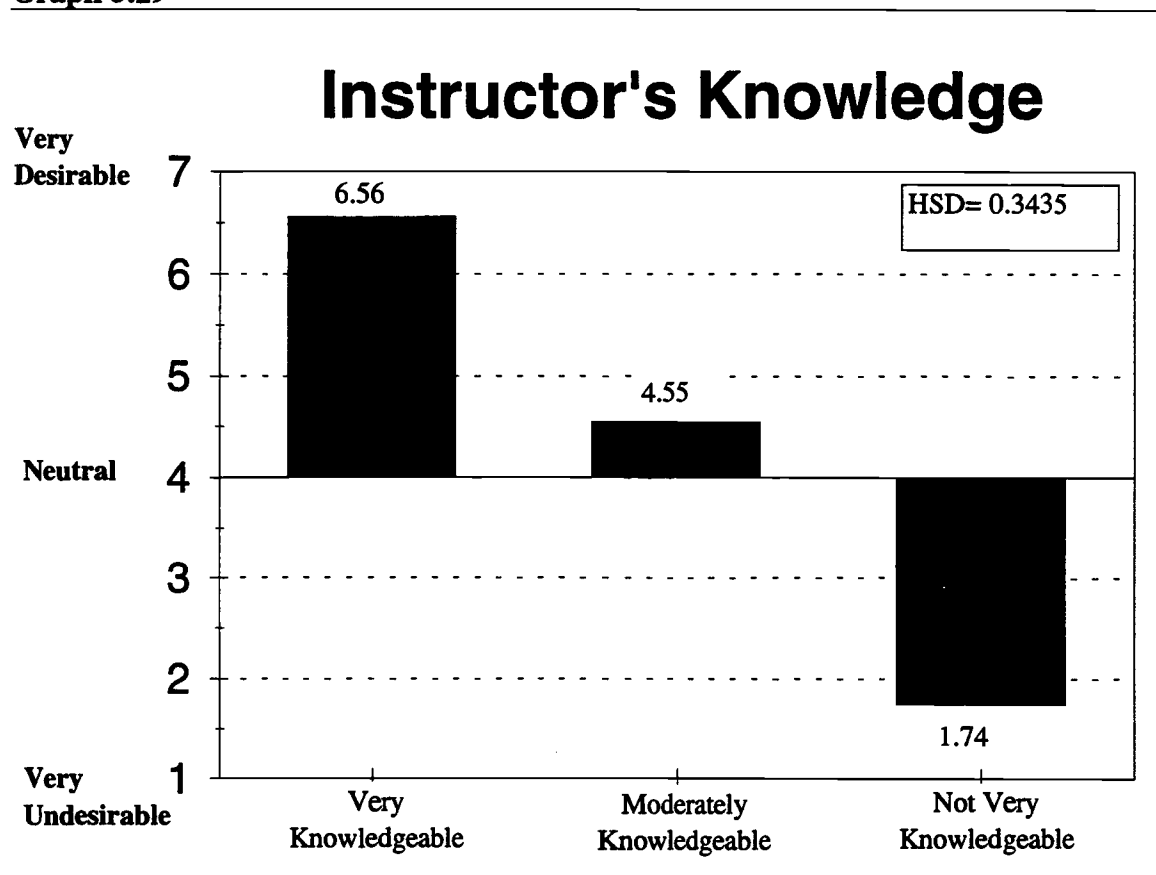
- 1= Instructor Knowledge
- 2= Instructor Enthusiasm
- 3= Instructor Communication Skills
- 4= Day Workshop is Offered
- 5= Class Size
- 6= Registration Fee
- 7= Hands-on Activities/Field Trips
- 8= Kids Ability to Participate
- 9= Length of Program
- 10= Time of Year Offered

Each of the program characteristics were divided into different levels. These levels reflected possible offerings for each characteristic. For example, the characteristic instructor knowledge was divided into three different levels ranging from very knowledgeable to not very knowledgeable. The respondent was asked to score the desirability for each level. All of the desirability scores need to be weighted by the importance of the characteristic. This will give a better indication of the desirability of different characteristic levels relative to each other. Weighted scores will be included in the final analysis. For this analysis, differences between the different levels within each characteristic are significant if the differences between the mean scores exceed the listed HSD score.

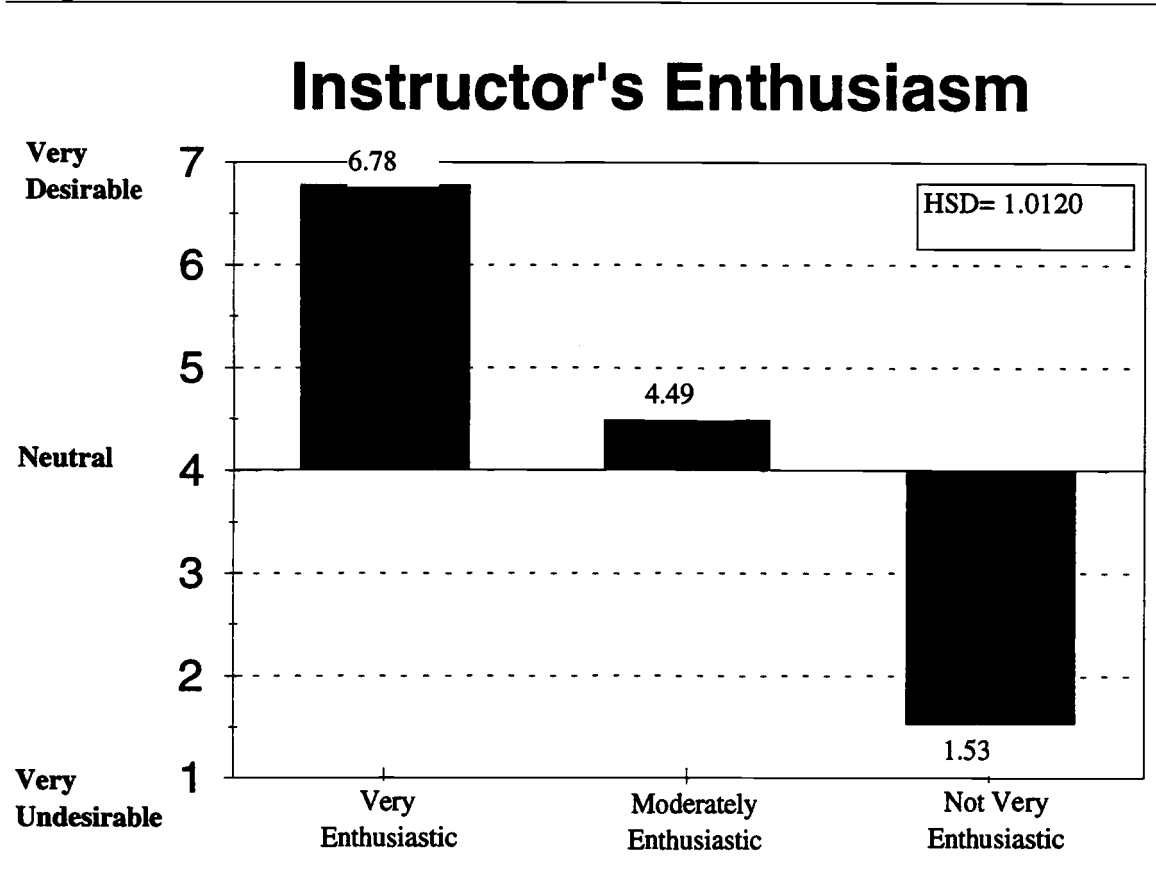
We did have preconceived notions of how respondents would score the different levels for some of the characteristics. First, we expected levels like “very knowledgeable”, and “excellent communicator” to be the preferred levels for the respective characteristics of Instructor’s knowledge and Instructor’s communication skills. What we were interested in was the preference for “very knowledgeable” relative to the other levels. This way we can trade off different levels of characteristics in a model to come up with different combinations of desirable programs. Second, we expected respondents to show a preference for the level that described the current Seatauqua program for many of the characteristics. Observed preferences did concur with what we expected.

For example, respondents indicated that very knowledgeable and very enthusiastic instructors with excellent communication skills were the most desirable levels of those characteristics (graphs 3.29, 3.30 and 3.31). These levels of instructor characteristics were also cited most often as the levels seen in the current Seatauqua workshops. One additional trend that we saw was that the instructor characteristics of knowledge, enthusiasm, and communication skills showed similar trends.

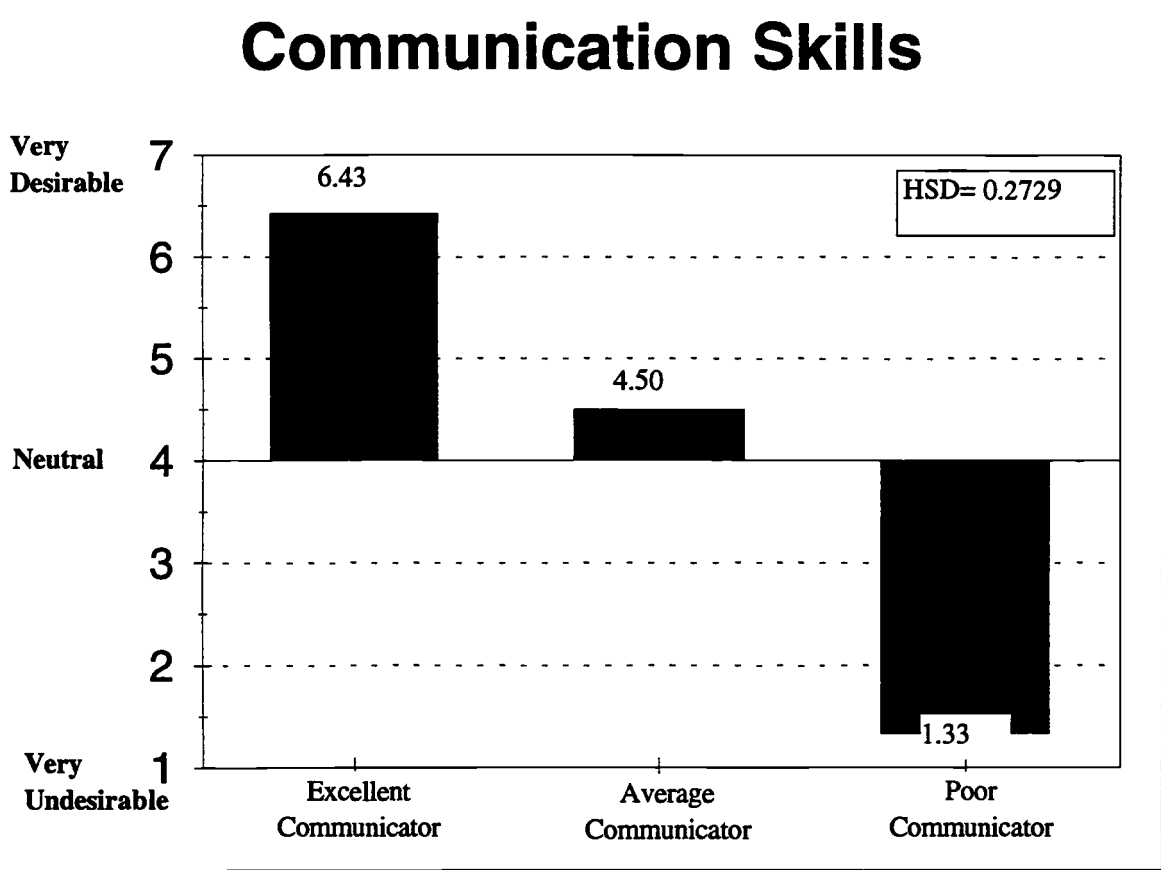
Graph 3.29



Graph 3.30

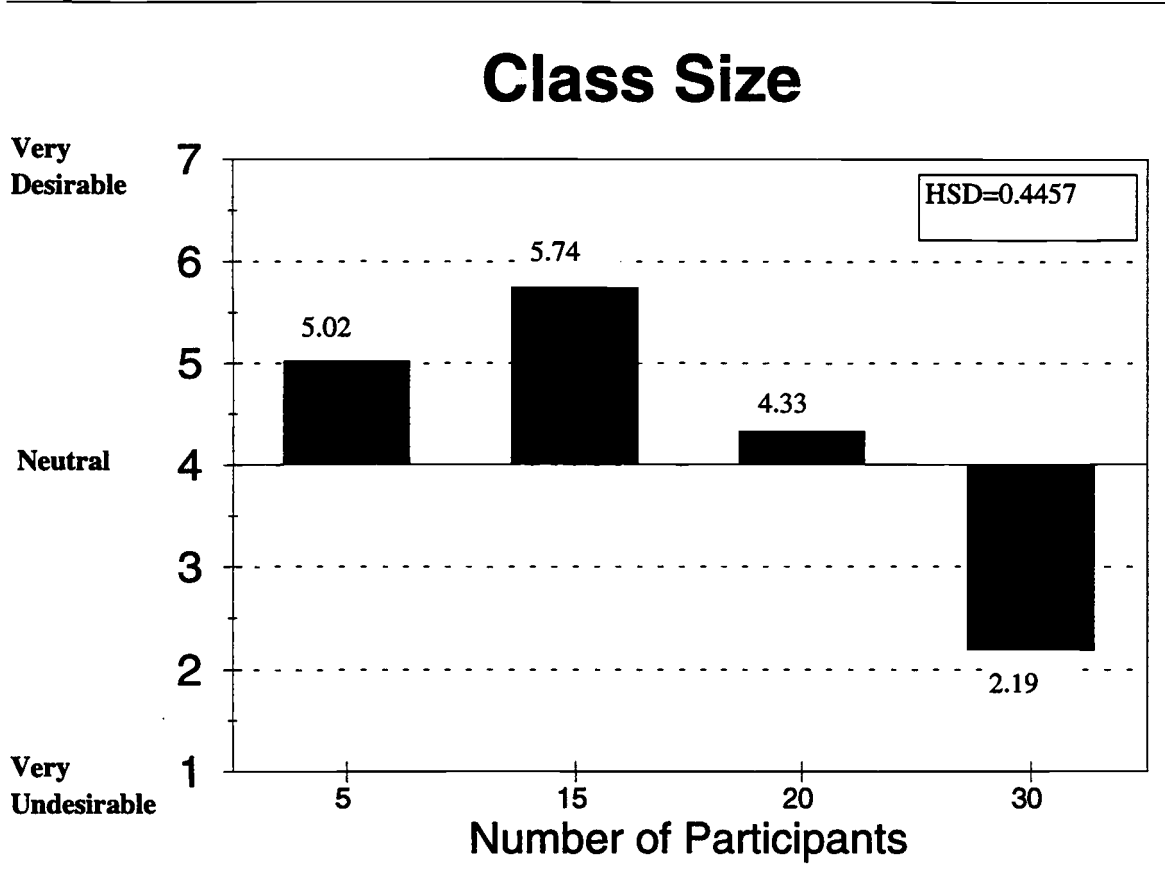


Graph 3.31



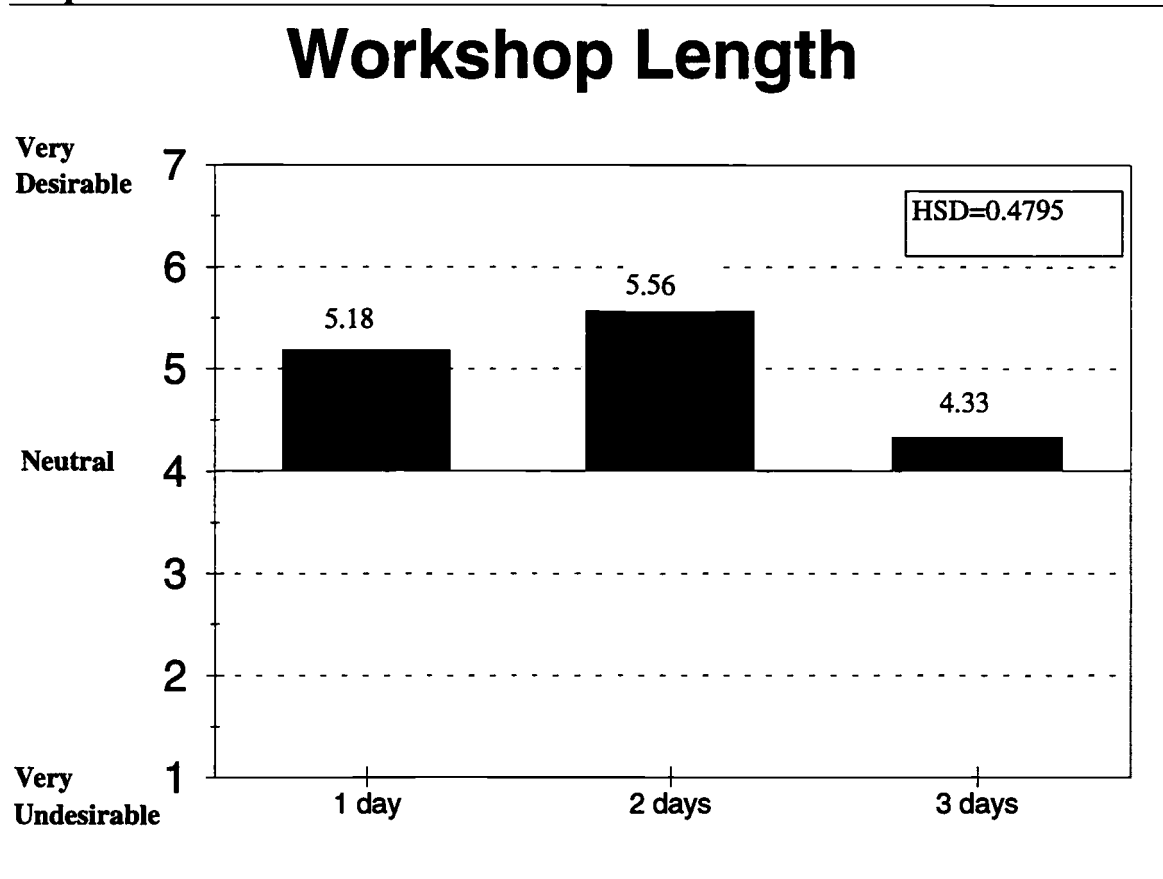
This preference for the current Seatauqua condition was also reflected in the desirability of class size. Respondents indicated that an average class size of 15 was most desirable (graph 3.32).

Graph 3.32



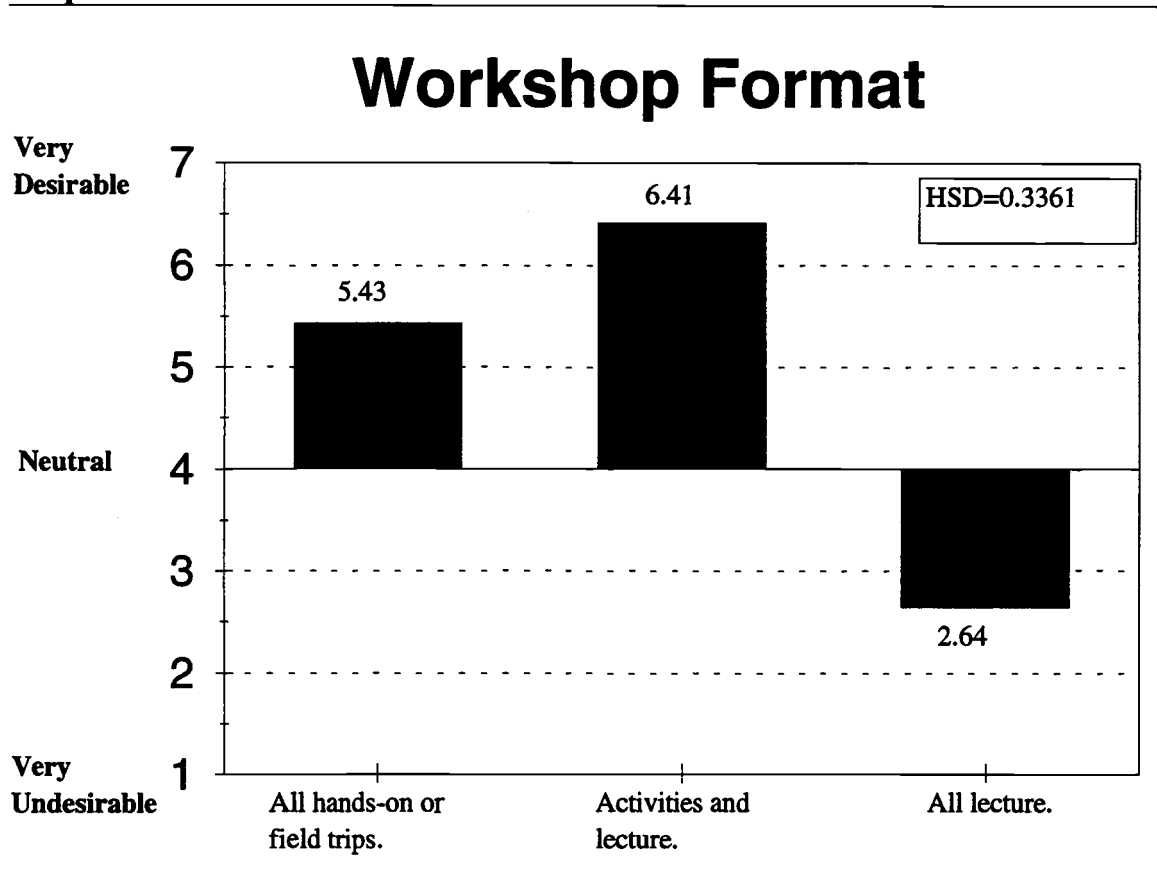
There are no statistical differences between the desirability of the different levels for workshop length (graph 3.33). This could reflect the current Seatauqua condition of offering workshops on both weekdays and weekends.

Graph 3.33

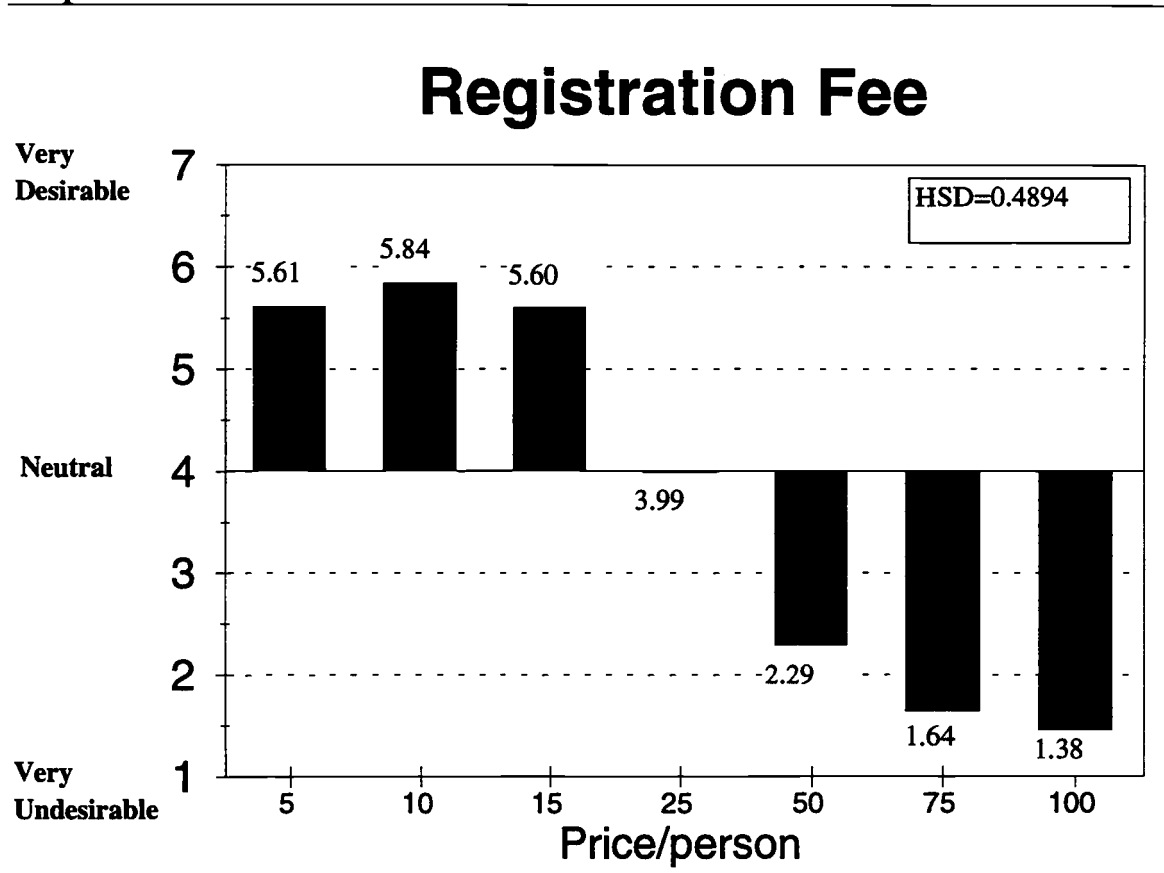


The Seatauqua current practices of combining activities and lecture (graph 3.34) and charging \$15 (graph 3.35) were also the preferred choices. Once again, these preferences could be a result of satisfaction with current conditions as well as actual respondent preferences.

Graph 3.34

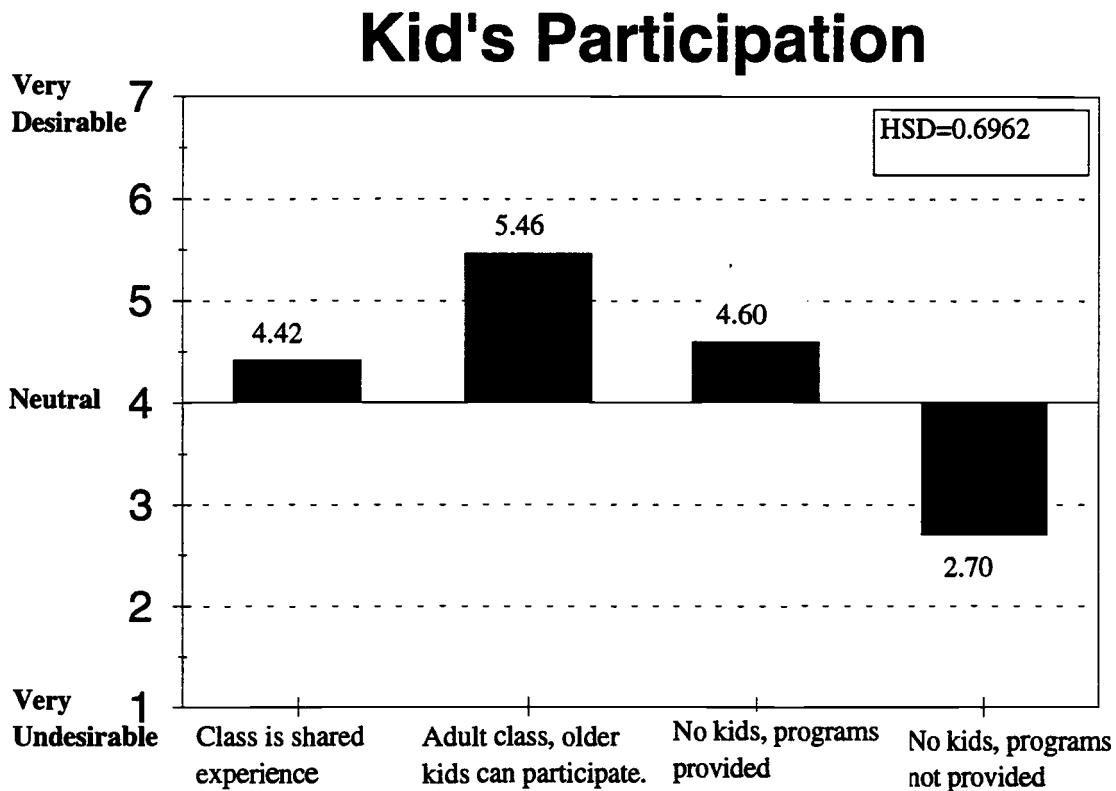


Graph 3.35



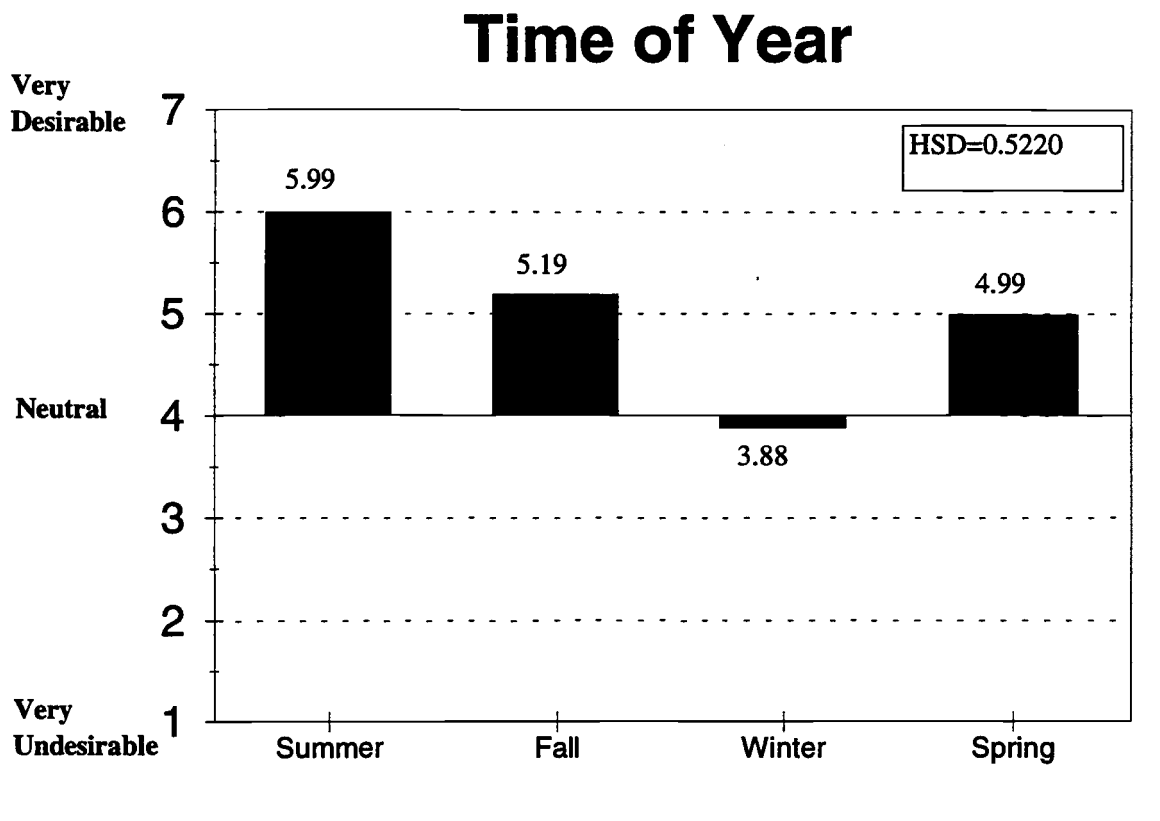
One characteristic where the current Seatauqua condition is not entirely the preferred characteristic is in kid's ability to participate in the program. Seatauqua workshops are designed largely for adults with older kids being allowed to participate if their parents think the child can handle it. This type of workshop was preferred by the respondents (graph 3.36). But, Seatauqua does not offer alternative programs for children, and this level was considered undesirable by many respondents.

Graph 3.36



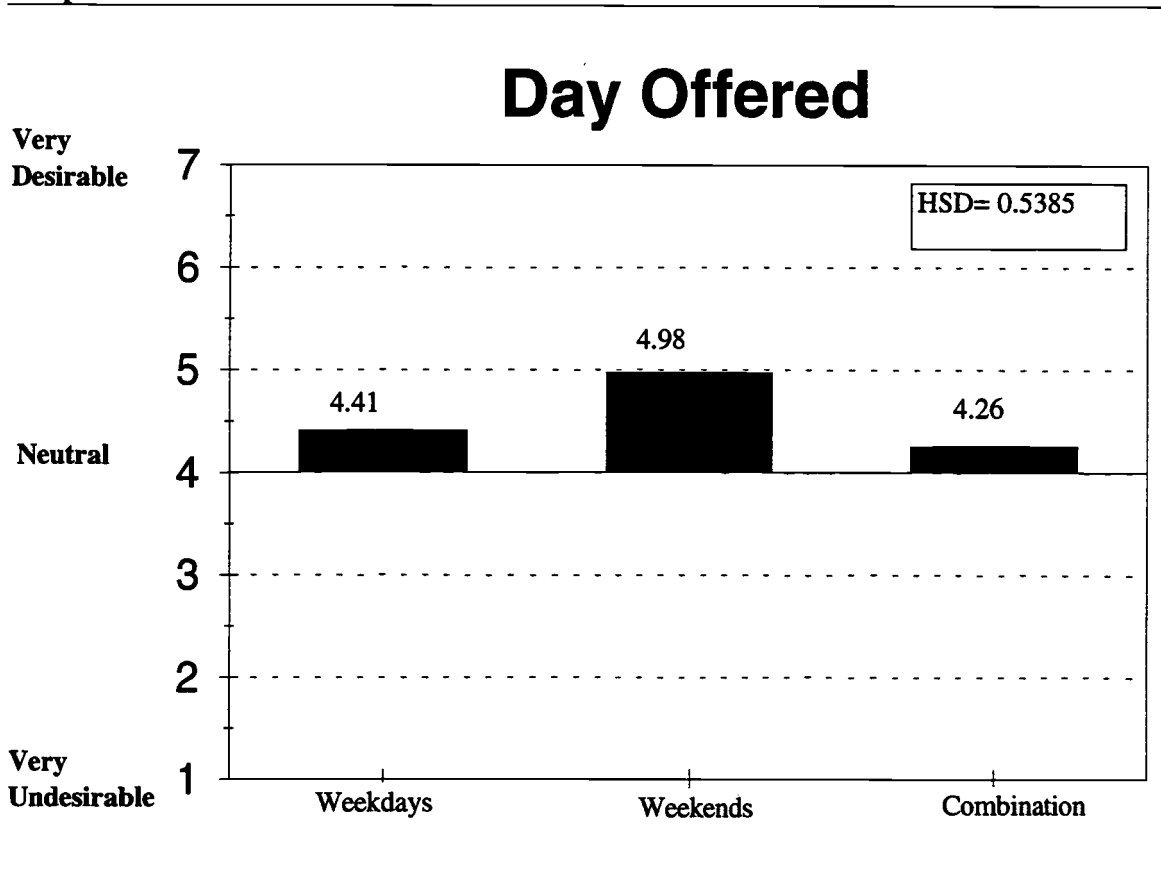
While summer classes were preferred, respondents also found fall and spring classes desirable (graph 3.37). Respondents were neutral to winter class offerings. This could be a reflection of adverse travel condition or minimal spare time due to the holiday season.

Graph 3.37



While respondents found weekend classes desirable (Graph 3.38), relative to other characteristics, the day the workshop was offered was not as important (This relative importance will show up better in the final analysis, when weighted scores are used.). This response might reflect seasonal factors in that the day of the week might not be as important during the summer when people are on vacation as it would be during other times of the year.

Graph 3.38



As for the other participant survey questions, these program characteristics and the desirability of each of the levels are currently being tested for differences between subgroups. The presence of differences in participation, program characteristic importance, or program characteristic levels by subgroups will indicate the socioeconomic factors that should be incorporated into the demand side of our educational program model.

SECTION IV PARTICIPANT SURVEY TESTING AND VALIDATION

4.1 Purpose of the telephone survey

A crucial part of analyzing the results of the mail survey was to explore potential biases related to the sampled population. Results could have been biased in several key demographic characteristics, including age, income, residence, education and occupation (working vs retired). Another hypothesized bias was related to the format of the mail survey. The length and complexity of the survey could have inhibited participants who were less dedicated to the program or had less time available.

A comparative test was conducted to study biases. Individuals who did not return their mail surveys were contacted and surveyed by telephone in order to compare the population that did not respond to the mail survey to the population that did. The phone survey focused on differences in Seatauqua program involvement and socioeconomic characteristics between the two populations. With it we hoped to answer the question, "Were the people who responded to the mail survey different from those that did not respond, and if so, how were they different?" The phone survey is included in Appendix 3.

4.2 Hypothesis

There were six main sources of bias that were considered likely to have impacted individuals who did not respond to the survey. These hypotheses were:

1. Non-respondents were less involved in Seatauqua -- they took fewer programs and fewer workshops, and had not attended as recently as mail survey respondents.
2. Non-respondents were less enthusiastic about the Seatauqua program.
3. Non-respondents lived further away and, therefore, were less likely to attend Seatauqua in the future.
4. Non-respondents were lower than average in regard to education and income (Dillman, 1978.)
5. The percentage of working non-respondents was greater than the percentage of working respondents. This trend would have been reflected in age data, since the majority of retired people were older.
6. The most frequently cited reasons for not returning the survey were insufficient time, and the length and complexity of the survey.

4.3 Method

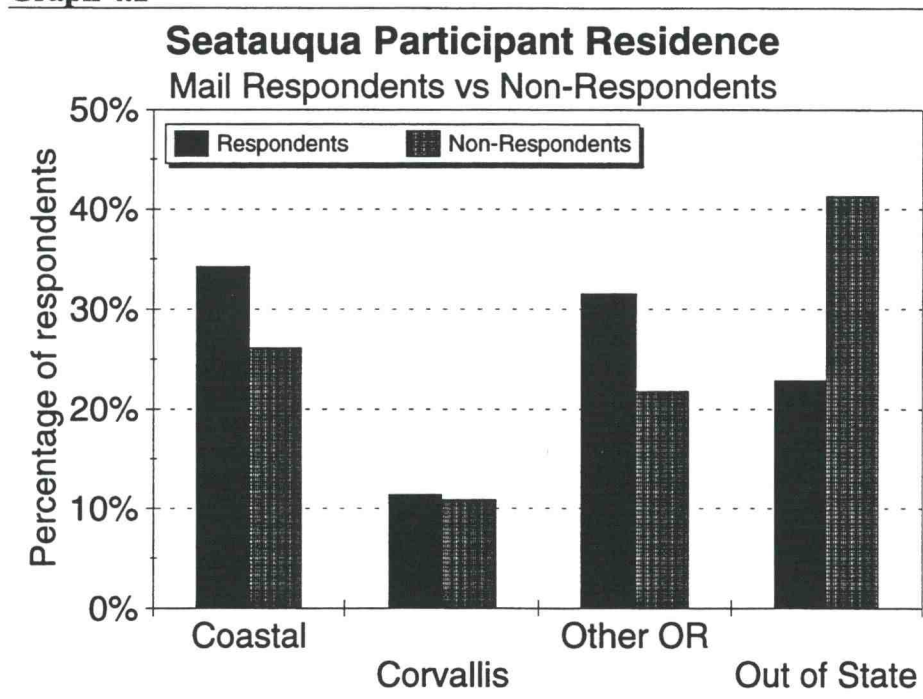
Sixty of the 300 people who did not respond to the mail survey were randomly selected for a short phone interview which is included in Appendix 4. Interview questions were designed to test for differences between mail survey respondents and non-respondents in the following characteristics: involvement and interest in Seatauqua, residence, future participation plans, age, education, income, and occupation (working vs retired). Involvement and interest in Seatauqua was measured through examining programs attended, years attended, number of programs taken, and comments on strengths and weaknesses of the program.

4.4 Results

Of the 60 people contacted, 77% gave completed phone surveys. Preliminary findings support the hypothesis that non-respondents were more likely to be visitors to the area and less involved in Seatauqua programs.

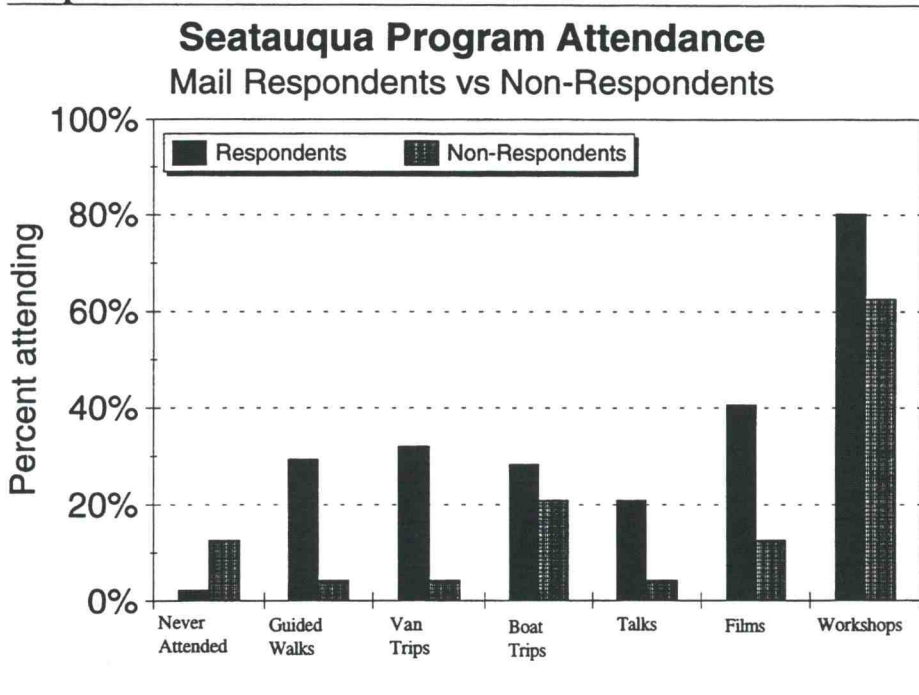
Graph 4.1 illustrates the breakdown of non-respondent residence as compared to residence of mail survey respondents. Non-respondents' residences were as follows: 24% Local (Newport, Waldport, Toledo), 11% Corvallis, 24% Other OR, and 41% Out of State. This data showed that proximity to Seatauqua was related to survey completion. Non-respondents were more likely than respondents to be from out-of-state.

Graph 4.1



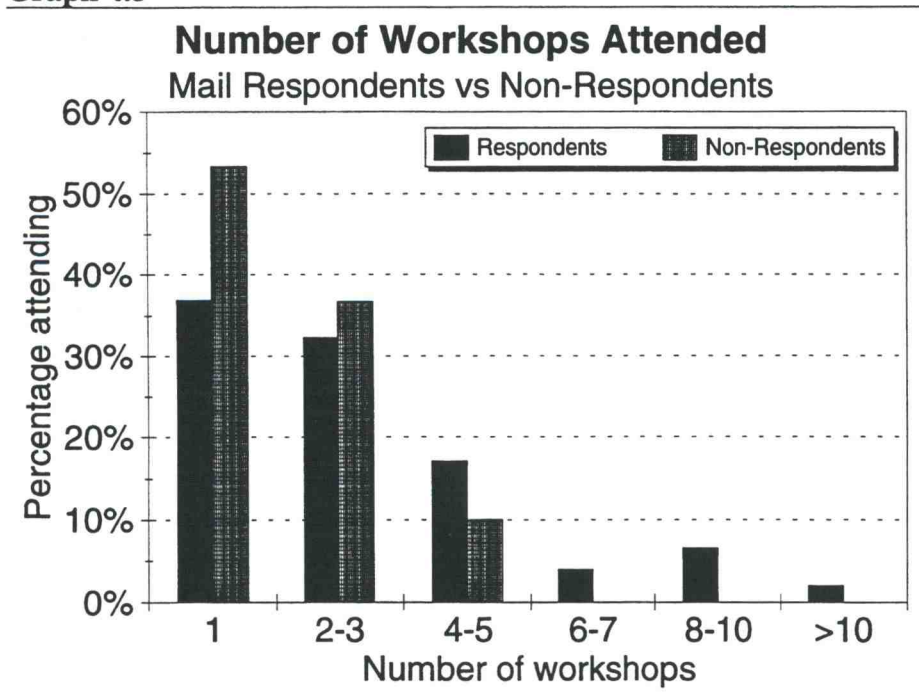
Involvement in Seatauqua was measured by the type and number of programs individuals had attended. Graph 4.2 shows the breakdown of programs attended for both non-respondents and respondents. The hypothesis was that non-respondents did not attend as many Seatauqua programs as mail survey respondents. The data collected from the phone survey supports this hypothesis in that the total number of programs participated in by non-respondents was much lower than that of respondents. In addition, non-respondents were more likely than respondents not to have attended any of the Seatauqua programs (Graph 4.2). These individuals who did not attend any programs were considered to have received the survey in error.

Graph 4.2



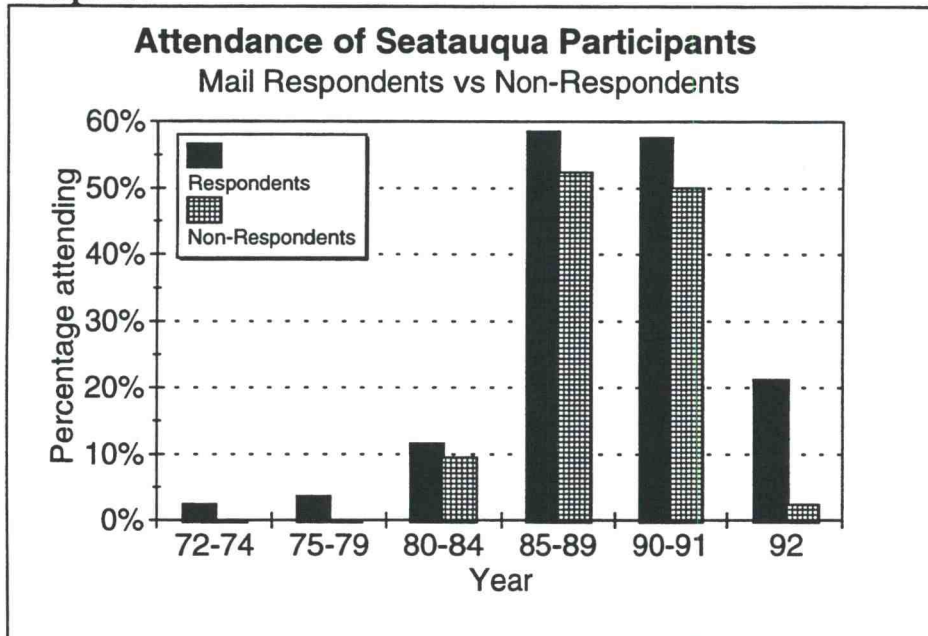
A lower level of involvement among non-respondents was also evidenced by the number of workshops they reported taking. The majority of the non-respondents only attended one workshop (53%), and none had attended more than five, as shown in Graph 4.3. This level of involvement compares to 37% of mail respondents who had attended one workshop and 9% who had taken over five workshops.

Graph 4.3

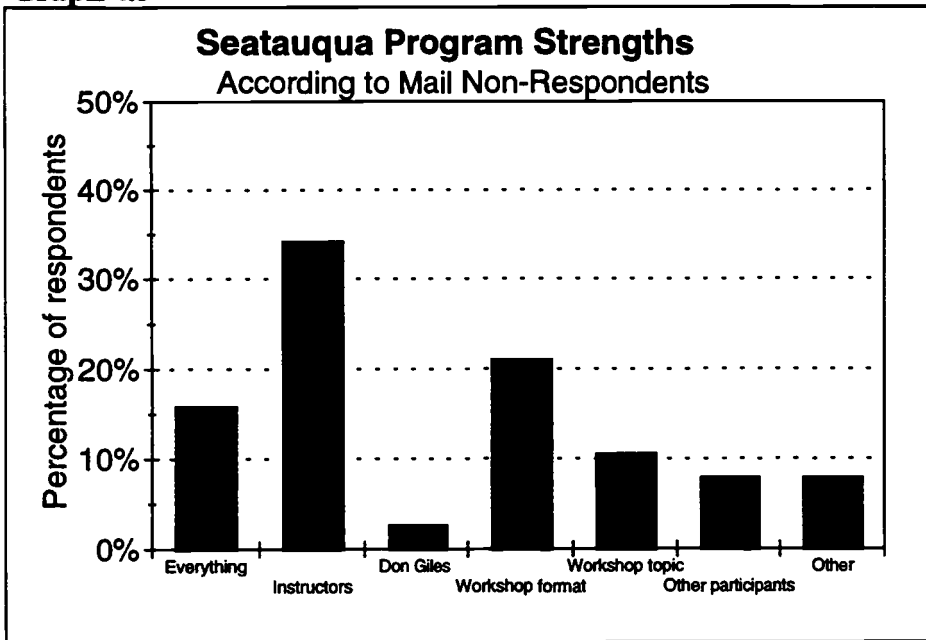


In addition, non-respondents had not attended Seatauqua as recently as mail survey respondents. Graph 4.4 shows when non-respondents and mail survey respondents participated in Seatauqua. Only 5% of the non-respondents attended Seatauqua in 1992, compared to 21% of respondents.

Graph 4.4



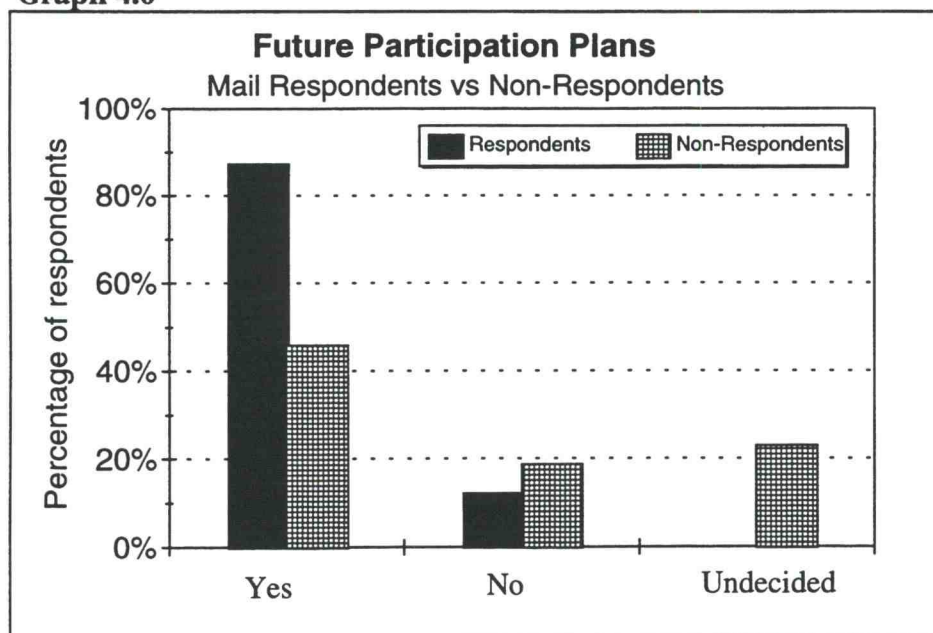
While there were differences in the level of involvement in Seatauqua between the two groups, it is important to note that the data also suggests some similarities. For example, although the percentage of non-respondents who had not attended any of the Seatauqua programs was higher than that for respondents, the program participation trends were the same for both groups. That is, the majority of both groups, respondents and non-respondents, had attended Seatauqua workshops (the program that has the highest investment in time and money). In addition, almost 47% of non-respondents participated in 2-5 workshops. This is similar to the participation trend seen for respondents. Another similarity is that the majority of respondents and non-respondents attended Seatauqua workshops between 1985-1990.

Graph 4.5

Another area the survey explored was the level of satisfaction with Seatauqua by non-respondents and their preferred program characteristics. Non-respondents were asked to listed what they considered to be the most important strengths of the program. Graph 4.5 shows the responses of non-respondents to the question of what they saw as strengths of the program. For non-respondents, the most important program characteristics were the instructors and the class format. As shown in Section 3.6, these were also the most important program characteristics to the mail survey respondents.

Regarding satisfaction with Seatauqua, non-respondents unanimously reported that they had enjoyed Seatauqua. While the level of satisfaction varied by person and some weaknesses were cited such as quality of hand-outs or large class size, no individual reported the program to be substandard. We feel that this overwhelmingly positive response is related in part to the relatively low program fees. Had they paid more, the participants might have been more critical and had higher expectations.

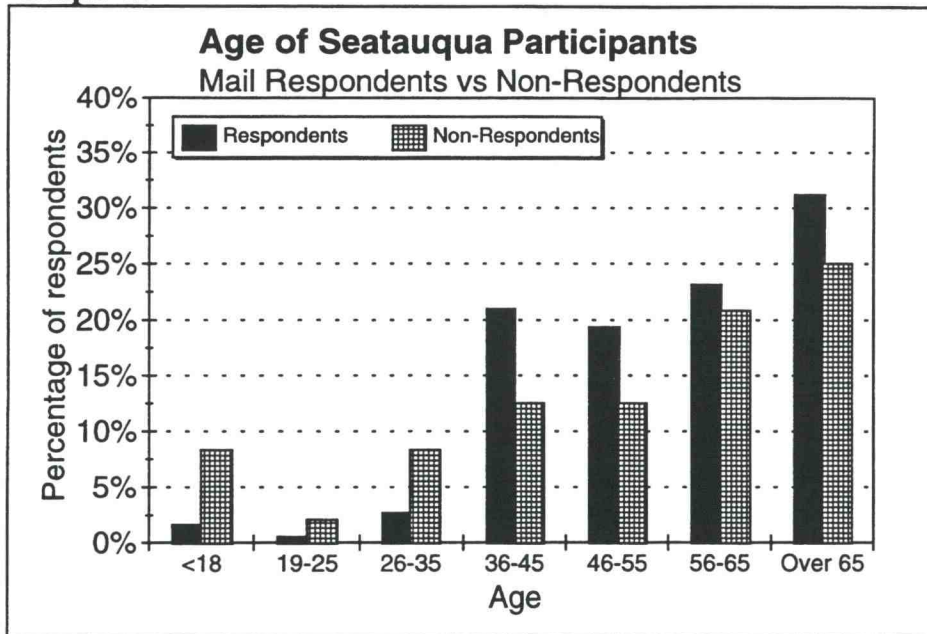
Graph 4.6



Graph 4.6 compares non-respondent and respondent plans for future participation in Seatauqua. As hypothesized, non-respondents were less likely than respondents to participate in Seatauqua in the future. It is important to note, however, that a high percentage of non-respondents were undecided. The undecided category for the non-respondents was almost exclusively made up of participants who really enjoyed the program, recommended it highly to others, and planned to attend again if they happened to be in the area. The Seatauqua program did stand out in their minds as an attractive reason to vacation on the Oregon coast, but it would not drive their future vacation plans. Since the undecided option was not provided in the mail survey, the response of respondents to the question of future participation might be biased by those who weren't sure of their future participation plans but were forced to make a choice. For those non-respondents who said they did not plan to participate in Seatauqua in the future, time was the reason cited most often.

It was hypothesized that non-respondents were more likely to be working than retired, and, therefore, a lack of time led them not to respond to the survey. As shown in graph 4.7, there was a higher percentage of non-respondents that were under 35, but the percentage of those over 35 was higher for respondents.

Graph 4.7



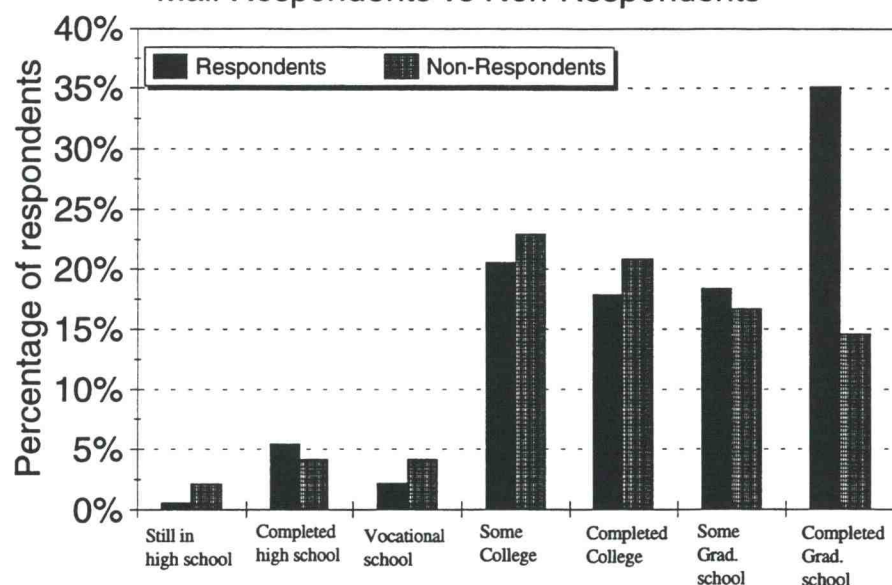
We attributed the low response rate among those under 18 to the complexity of the survey. Time constraints potentially explain the low response levels among the 19-35 age group. One possible reason for the high response level among those over 55 is that they were retired and had the time and interest to fill out a comprehensive survey on a subject that was important to them.

Although there were observed differences in the age relative population sizes in age groups, the general trends did not contradict one another. Both groups showed high percentages of older retired people. This finding supports the hypothesis of the mail survey that Seatauqua participants, in general, are older and retired.

The mail survey finding that Seatauqua participants were well-educated was partially substantiated by the survey of non-respondents. While there was a higher percentage of respondents that had attended graduate school (Graph 4.8), non-respondents still had a relatively high level of education. That is, both groups showed the same trend, a high percentage of people who had a college education or better. The results from the phone survey suggest that graduate school attendees were more likely to respond to the Seatauqua survey.

Graph 4.8

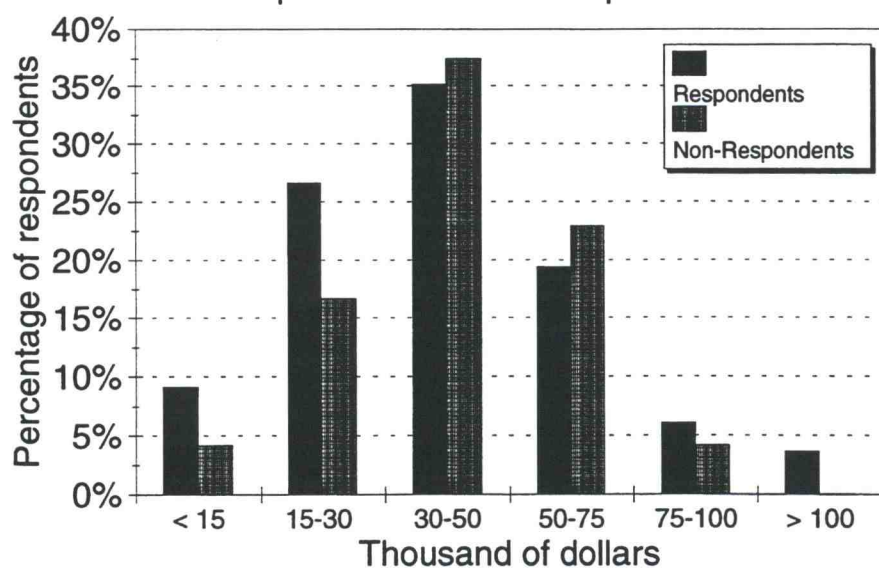
Education of Seatauqua Participants Mail Respondents vs Non-Respondents



The phone survey results also appear to support the mail survey finding that Seatauqua participants had a median income of \$30,000-50,000 (Graph 4.9). This income category was the most popular response for both mail survey non-respondents and respondents. Furthermore, the hypothesis that non-respondents would be more likely to have a lower incomes does not appear to hold true. Mail survey respondents show higher percentages of people with very low and very high incomes.

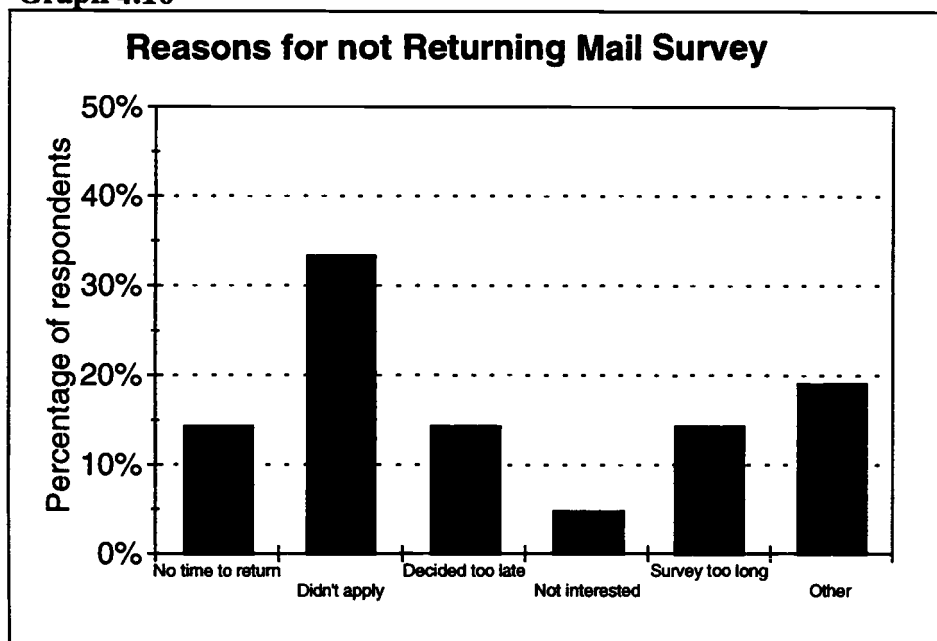
Graph 4.9

Income of Seatauqua Participants Mail Respondents vs Non-Respondents



The reasons why non-participants did not return the survey are shown in Graph 4.10. The most frequently cited reasons for not responding were that they did not receive the survey, they did not think the survey applied to them, and they did not have time.

Graph 4.10



One interesting issue emerged in regard to the people who reported that the survey did not apply to them. This category is listed as "didn't apply", and was cited by over 30% of those that did not return their surveys. Half of those that selected "didn't apply" had not attended any Seatauqua programs so their response is logical. However, the other half had attended Seatauqua programs. These individuals had attended Seatauqua casually but did not feel they had the breadth of experience to answer the survey because they did not attend one of Seatauqua's more intensive programs, such as the workshops. Or, in one person's words, going to a movie didn't make him able to answer all those questions.

4.5 Conclusions

In general, we found that non-respondents varied from respondents in their involvement with and commitment to Seatauqua. Respondents had taken more programs, attended workshops more often, attended Seatauqua more recently, and were more likely to attend Seatauqua programs in the future than non-respondents.

A higher percentage of non-respondents live out-of-state and in other areas of Oregon. Because of their distance from Newport, non-respondents are less likely to attend Seatauqua in the future. However, a large percentage did feel that they would be likely to visit the Oregon coast in the future and if they did, they plan to attend Seatauqua programs. Both groups reported high satisfaction with the program.

The majority of non-respondents had incomes of \$30-50,000, a formal education of some college or more, and a median age of 55- 65. These characteristics followed the same trends as the mail survey responses.

Contingency table analysis will be completed on these two populations in order to quantify the differences between them and determine the statistical significance of the observed differences.

SECTION V. COMPARISON OF SEATAUQUA PARTICIPANT PROFILE TO TYPICAL OREGON VISITOR

In planning future program formats for Seatauqua, management will have the option to target a single or multiple population subgroups depending on specific program goals. Currently, a large pool of visitors to Coastal Oregon exist that could potentially be targeted for Seatauqua attendance. More information on statewide visitors will enable Seatauqua management to select the most appropriate key subgroups to focus program development and marketing efforts on.

In 1989 Dean Runyan Associates completed a profile of the Oregon tourist for the Tourism Division of the Oregon Economic Development Department that elucidates some of the major statewide visitor characteristics and allows for comparison of the Seatauqua visitor to the larger pool of statewide visitors. The Dean Runyan profile segments tourists into groups based on planning and behavior trends based on the residence of the visitor. It considers to categories often considered by Seatauqua management: out-of-state and Resident travelers are described. The following excerpts from the report describe key characteristics for these groups:

Out-of-State Visitors

- 92% of out-of-state visitors were American, 5.8% were Canadian, and 2.2% were from other countries. The bulk of visitors are from the West (47.5%), the Great Lakes area contributes 11.2% and the South contributes 9.5%.
- The Coast and the Portland area are the most popular destination for visitors to Oregon. Over 62% of visitors travel to at least one portion of the coast, the Central Coast being the most popular. Pleasure visitors are particularly oriented to visiting the coast, and business travelers most often visit the Portland area.
- Relatively few visitors are under 35 (16.6%); the remaining are fairly evenly distributed among age categories. Nearly a fifth (18.2%) are 65 or over.
- Family income is spread fairly evenly between \$20,000 and \$75,000 per year, with few travelers above this range. Median family income is \$42,700 per year.
- Travelers are highly educated, well over half (58.3%) hold a bachelor's or graduate degree.
- Pleasure travelers comprise 70.6% of out-of-state visitors. The remaining percentage is split between business travelers and business/pleasure travelers. Business travelers and those combining business with pleasure are much more likely to travel a greater distance

than pleasure travelers. A small portion of (1.4%) travelers are with organized tour groups.

- Nearly a third of Oregon visitors(30.2%) live in California, and about an eighth (12.5%) in Washington. California is considered to be a primary market due to the concentration of relatively well-off households which tend to travel, and the relatively greater offerings in Oregon of accessible resources. While Washington is a significant market, its resource base is similar to Oregon's and its population base is smaller than California. 64.4% of Oregon travelers are repeat visitors
- Primary sources of information for travelers is friends, relatives, and the traveler's own prior experience. Other sources of information include AAA, commercial guidebooks, local chambers of commerce and visitor bureaus.
- Approximately half (49.0%) of travelers visited a number of locations in the state, while a quarter focused on a single location.
- Most travel parties consist of two people who stay between three to five nights in commercial accommodations; 58.4% stay in motels, resorts or bed-and-breakfasts, 15.6% stay with friends or relatives, 16.5% stay in public campgrounds, and 8.2% stay in commercial campgrounds.
- The most common activities included "relaxing" or sightseeing", shopping and visiting friends and relatives. The next most common activities related to a number of Oregon's historic or natural resources: almost half visited historic areas, a third hiked, and a quarter viewed or studied wildlife.

Residents

- Oregon residents averaged more than nine overnight trips during the year, six within the state. The bulk of these trips were recreational in nature (83% in Oregon).
- Residents made use of an automobile or RV for nearly all of their travel within the state. Instate trips tended to averaged 3.5 nights, approximately half the average length of stay for out-of-state visitors.
- The most popular destinations for resident overnight travel were the coast, the Central and North Coasts in particular, followed closely the Central Oregon. Overnight pleasure travel to the Portland area for residents was limited.
- Overnight travel by residents tended to be fairly focused, with nearly two thirds of respondents (63.8%) reporting only one primary destination. Residents were less inclined to "wander" as a travel pattern than visitors.
- Day trips were more common for residents, with average respondents reporting 11 such trips of which three quarters (75.8%) were recreational.

- Residents used a hotel, motel or resort for less than half of their trips (46.6%). Instead, they made extensive use of public campgrounds as accommodations.

In summary, the Oregon visitor in general was highly educated, with an average income around 42,000, and was older. Oregon had a high percentage of return visitors. Their main reason for coming to Oregon was the natural beauty and the opportunity to enjoy a variety of outdoor, historic and educational experiences. These are all qualities found in the Seatauqua user base.

A number of similarities exist between the visitor patterns for Oregon visitors and Seatauqua participants. Seatauqua's out-of-state visitors attended the casual, daily programs more frequently. State residents enroll more often in the lengthier workshops scheduled less frequently.

Differences also exist between Seatauqua and state visitor profiles, the most notable being age group distribution. Seatauqua has drawn a significantly older population segment of visitors in comparison to the statewide trends. Seatauqua management could continue to target this age group and/or attempt to capture the significant market of younger visitors to Oregon.

In addition to providing information, the visitor trends lead to potential formats and marketing strategies. The most popular destination for residents for weekend and holiday visits is the Central Oregon Coast. It is possible, then, that Seatauqua type courses could be marketed to appeal to them and draw them to Newport. Additionally, tourists might be more likely than residents to attend weekday classes.

The Dean Runyon study concludes with marketing and product development recommendations in regard to the Oregon travel industry. These include:

- Create named, thematic zones of the state and carry them through marketing and product development programs
- Continue the theme within each zone through signs, colors, logos and other mechanisms to offer a sense of continuity to the zone
- Encourage more travel developments that are in keeping with the theme of each zone; these include destination resorts, breathtaking photo galleries, museums of the subject matter of the theme, living history experiences, guided tours, excellent restaurants offering the products of Oregon, centers which highlight what Oregon is known for (beautiful forests, fishing, roses, apples, etc.), aquariums, nature centers, wilderness centers, and the like
- Focus on welcoming and assisting tourists in every way possible, especially through local travel establishments, and
- Promote Oregon's travel resources to the residents of the state.

These recommendations point to potential strategies that the community could use locally to develop and improve visitor offerings. Notably, Seatauqua's character integrates well into the resource-based strategy recommended by Dean Runyon. Seatauqua could potentially take advantage of some current or potential developments in Newport related to these recommendations. Examples include the development of integrated signage and material by The Lincoln County Interpretive Association, and efforts by local lodging providers to increase their pool of offerings to visitors. These types of strategies are synergistic and could benefit all participating members.

Section VI. CONCLUSIONS AND DIRECTION OF FURTHER INQUIRY

In the past, Seatauqua has operated on informal, implied goals and objectives. We recommend that, during this transitional period for Seatauqua, a new consensus be reached concerning the program's identity, goals, and objectives. If possible, the goals and objectives for Seatauqua should complement the goals and objectives of the parent agency or agencies. Written long and short term goals and objectives could act as both a guideline for the program administrator and as a standard to measure progress. If goals and objectives are going to be used as a standard to measure progress, however, some of those objectives should be quantitative in order to allow for effective evaluation.

Setting program priorities, especially in the areas of finances and programming, will aid in defining and achieving goals. A financial tracking and control system that tracks all spending by program, will support this effort by allowing for cost analysis on a program-by-program basis. Knowing all of the costs, the administrator will have a better idea of how much external support is needed. While participant willingness to pay and a program goal to keep the cost to participants low should not be ignored when setting the price of the workshop, costs should not be ignored either.

Many factors have been identified that affected Seatauqua attendance. One important one is that under current conditions management sometimes determines program scheduling based on supply rather than on demand. This practice applies primarily to instructor-based programs, but is also reflected in other sectors of Seatauqua.

While HMSC attendance was hypothesized to affect Seatauqua attendance, a clear relationship between the attendance rates at the two programs has not yet been discovered. Survey findings regarding how participants hear of Seatauqua support the hypothesized link between the HMSC and Seatauqua. One notable divergence between attendance rates at the two programs occurred in 1992: Seatauqua participation increased and HMSC attendance decreased. The opening of the Oregon Coast Aquarium is hypothesized to have created a competitive relationship with HMSC and decreased its attendance, while having a complementary influence on Seatauqua attendance.

Seatauqua participants tended to be well educated, above median income couples and families who were interested in the environment, and participated regularly in non-credit education classes. While the majority of the participants come from Oregon, there was also a significant population from outside the state.

Satisfaction with Seatauqua was high, evidenced by positive critiques of the programs and interest expressed in future Seatauqua workshops by more than 80% of respondents. The vast majority of Seatauqua participants took part in more than one of the Seatauqua programs. Current program cost was perceived to be low, as expressed by respondents in surveys and reflected by ongoing attendance from all income groups regardless of historical price changes.

Similarities between current Seatauqua participants and the profile of the average travelers to Oregon, as defined by Dean Runyon Associates, suggests that the current programs draw a representative subset of Oregon visitors. Future Seatauqua strategy could be structured to appeal to a wide cross-section of visitors or targeted toward particular groups.

In order to elucidate Seatauqua participation within subgroups, and to understand what types of people each program serves, a preliminary analysis of attendance data was completed to determine what, if any, correlations existed related to participant characteristics. These subgroups were based on age, income, sex, number of household members, education, employment, and residence. The following preliminary findings from this data will be statistically tested and fully explored:

Mutually Exclusive User Groups Were Not Evidenced

While attendance in Seatauqua programs tended to vary based on socioeconomic factors, single programs were not attended exclusively by any one group. Having taken the observed differences into account, it is important to note that different patterns within subgroups denote tendencies, rather than radically different behaviors. Understanding these tendencies will be crucial to optimizing program format for potential attendees.

Local and Visitor User Groups Exhibit Varying Participation Trends

Visitors exhibited more casual attendance trends, participating in programs of shorter duration with greater frequency during a bounded time period. In contrast, locals more often attended workshops, which were longer in time span, and required advance planning and pre-registration. These trends reflect different logistical considerations of users. Interest in topics was also a factor, reflected in varying rates of visitor and local attendance.

Categories of Classes Exist, as Defined by Subject Matter, Format and Appeal

Classes could be roughly divided by appeal and could be viewed in terms of interest categories such as family activity, special interest science, and less strenuous for less active attendees. Examples of special appeal classes include Landscaping, which draws the local population; Fossils and Geology, which delivered more formal scientific information; and The Rain Forest, which included an uphill hike through the Cascade Forest. In addition, general interest and special interest classes existed that leverage one another in encouraging first time and repeat attendance by participants.

Marketing and Advertising Can Be Targeted Based on Other Interests of Potential Attendees

Information on the hobbies and visiting patterns of attendees was collected as part of the participant survey. It can be used to target advertising content, format, and placement. Specifically, it can help to determine what suite of activities to advertise and where to place the information.

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October 4, 1972

Memorandum of Understanding

Sea-tauqua is a collective name applied to a series of cultural and educational events designed to increase public appreciation of the marine environment. Sea-tauqua events are produced in the summer at the Oregon coast by various agencies associated with Oregon State University.

The central purposes of Sea-tauqua are:

1. to encourage participation of those who seek to enlarge public understanding of the marine environment,
2. to certify certain events and programs as part of the Sea-tauqua program,
3. to coordinate publicity of Sea-tauqua programs and events. (As a public service, such publicity may include appropriate mention of related but non-Sea-tauqua designated events.)

Sea-tauqua is guided by a steering committee composed of five persons representing several agencies including, but not limited to, the President's Office, Summer Term, School of Oceanography, Extension Service, the Marine Science Center, and the City of Newport.

Any individual or agency may seek endorsement and publicity or other assistance from the steering committee, but none is limited in programming its own non-Sea-tauqua events.

In short, Sea-tauqua is a name reserved for activities endorsed by the steering committee and is created to enhance public awareness of the presence of Oregon State University at the Oregon Coast.

Other Programs	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Workshops	113	196	191	238	241	264	277	225	256	209
Talks	600	750	675	1,463	1,211	1,580	725	1,051	1,167	735
Van Tours	33	39	34	34	52		24	28	21	28
Bay Boat Tours										
Films					50,000	75,600	54,000	46,000	51,000	50,400
Sea Classics		360	360	360	495	370	350	230		
Evening of Reading and Song				130	75	160				
Yaquina Head Walks						200	1,045	1,060	1,587	?
Estuary or Beach Walks			500	500	1,200	533	670	1,042	820	734
Dock Walks								?		258
Auto Rally						34				
Tank Talks										
TOTAL PARTICIPANTS	633	1,149	1,569	2,487	53,033	78,477	56,814	49,411	54,595	52,155

Other Programs	1983	1984	1985	1986	1987	1988	1989	1990	1991	Totals
Workshops	211	298	315	218	252	254	244	249	234	4,485
Talks	633	552	677	390	345	357	511	281	249	13,952
Van Tours	50	40	43	49	54	56	68	71	60	784
Bay Boat Tours					110	171	164	161	118	724
Films	47,400	46,800	46,800	41,188	40,267	42,643	35,442	33,887	30,342	691,769
Sea Classics					138	159				2,822
Evening of Reading and Song										365
Yaquina Head Walks	2,700	3,080	297	3,557	2,115	4,795				20,436
Estuary or Beach Walks	832	915	646	767	745	1,530	862	959	792	14,047
Dock Walks	190	209	100	203	263	440	975	706	628	3,972
Auto Rally										34
Tank Talks				4,347	520	416				5,283
TOTAL PARTICIPANTS	51,805	51,596	48,563	50,501	44,557	50,567	38,022	36,065	32,189	754,188

Workshop	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Coastal Birds	23	29	23	57	42	53	35	29	18	32
Coastal Photo.	11		27	16	23	21	21	12	20	22
Tidepooling		26	25	41	26	25	22	36	20	25
Coastal Plants			20	23	21	20	20	13	9	18
Coastal Fossils			16	17	26		27		13	
Bay, Jetty, or Surf Fishing			25	22	27	23	28	29	31	24
Clamming						17	31	27	24	21
Coastal Landscaping					15	26	7			16
Driftwood ID					17	23	13	12	15	21
Coastal or Basic Navigation		17	7	14	20	11	6	14	10	
Coastal Rock ID						25	18	7		14
NW Indian Carving							18	11	15	
Bay Crabbing									31	
Fish Printing									20	
Cooking Seaweed/Seavegies										
Tidepool Photography										
Coastal Archeology		21								
Advanced Photography		20								
Coastal Fishes		21								
Diving		10								
Coastal Weather		7								
Coastal Oceanography		22					12	17		
Estuarine Ecology			10							
Nature or Creative Writing			15	3	12	15			7	
Seafood Cooking				22	12					
Rivers and Oceans in Art					0					
Folklore and Folksong							19			
Oceanographic Techniques								18		
Coastal Salt Marshes									8	8
Summer Steelhead									15	8
Coastal Geology	25	23	23	23		5				
Marine Fishes	54									
Fish ID										
Coastal Reptiles										
Constructing Kites										
Coastal Piloting										
TOTAL # PARTICIPANTS	113	196	191	238	241	264	277	225	256	209
TOTAL WORKSHOPS	4	10	10	10	11	12	14	12	15	11

Workshop	1983	1984	1985	1986	1987	1988	1989	1990	1991	Totals
Coastal Birds	23	35	32	14	10	15	16	17	10	513
Coastal Photo.	23	25	24	16	18	20	9	14	10	332
Tidepooling	22	23	20	10	18	21	21	20	16	417
Coastal Plants	15	18	16	21	20	17	19	20	13	303
Coastal Fossils	18	24	23	8	20	20		16	10	238
Bay, Jetty, or Surf Fishing	20	25	22	22	25	18	16	20	20	397
Clamming	25	26	19	22	21	20	23	20	20	316
Coastal Landscaping		11		12					19	106
Driftwood ID	11	9	8	8	5	0	8	5		155
Coastal or Basic Navigation						8		9		116
Coastal Rock ID	13	16	15	22	8	0	9	10	7	164
NW Indian Carving			16	17	20	23	16	20	20	176
Bay Crabbing	20	49	48	46	67	64	50	54	59	488
Fish Printing			26			21			14	81
Cooking Seaweed/Seavegies	6	22	23				31	8	16	106
Tidepool Photography			15	0	12	7	14	16		64
Coastal Archeology										21
Advanced Photography										20
Coastal Fishes										21
Diving										10
Coastal Weather										7
Coastal Oceanography										51
Estuarine Ecology										10
Nature or Creative Writing										52
Seafood Cooking										34
Rivers and Oceans in Art										0
Folklore and Folksong		15								34
Oceanographic Techniques										18
Coastal Salt Marshes										16
Summer Steelhead										23
Coastal Geology							5			104
Marine Fishes										54
Fish ID			8							8
Coastal Reptiles							7			7
Constructing Kites	15	0								15
Coastal Piloting					8					8
TOTAL # PARTICIPANTS	211	298	315	218	252	254	244	249	234	4,485
TOTAL WORKSHOPS	12	13	15	12	13	12	14	14	13	227

SEATAUQUA

Designing a model educational program for the future



This survey has been developed in order to better understand how Seatauqua participants feel about our workshops. Please answer all of the questions. If you wish to qualify your answers or make comments, please feel free to use the space in the margins. Your written comments will be taken into account along with your responses to the questions.

This research is funded by Extension Sea Grant and a Holt Marine Education Scholarship.

Thank you for your help.

INSTRUCTIONS: PLEASE CIRCLE THE APPROPRIATE RESPONSE FOR EACH QUESTION UNLESS OTHERWISE INSTRUCTED.

Q-1

Seatauqua is a summer educational program offered at the Hatfield Marine Science Center in Newport, Oregon. The program includes the following activities. Which ones have you participated in? (Please circle all that apply)

1. None, I've never attended Seatauqua.
2. Guided Dock, Estuary or Beach Walks
3. Van Trips
4. Bay Boat Tours
5. Afternoon or Evening Talks
6. Daily Films shown at the Hatfield Marine Science Center
7. Workshops

→ Please skip to
Q-11 on page 4.

→ Please continue
with Q-2.

If number 7 is NOT one of your choices, meaning you have NOT participated in any of the Seatauqua WORKSHOPS

→ Please skip to
Q-11 on page 4.

Q-2

Please indicate which year(s) you participated in Seatauqua by circling the appropriate grouping. (Circle all that apply)

- | | |
|--------------|--------------|
| 1. 1972-1974 | 4. 1985-1989 |
| 2. 1975-1979 | 5. 1990-1991 |
| 3. 1980-1984 | 6. 1992 |

Q-3

How many workshops have you participated in? If you have taken a workshop more than once, please count ALL the times you've taken it.

Please skip to Q-6. ←

- | | | |
|--------|--------|-----------------|
| 1. 1 | 3. 4-5 | 5. 8-10 |
| 2. 2-3 | 4. 6-7 | 6. more than 10 |

Q-4

If you have participated in more than one workshop, which of the following BEST describes your pattern of participation? (Circle one response only)

1. Take one workshop a year
2. Take more than one workshop a year
3. Participation varies. Take only one workshop some years, and more than one workshop in other years.

Q-5

Which of the following is true of the workshop topics that you attend? (Circle all that apply)

1. I participate in the same workshop topic(s) more than once
2. I participate in different workshop topics each time I attend Seatauqua

Q-6**Who has participated in Seatauqua workshops with you? (Circle all that apply)**

1. Spouse
2. Children or Grandchildren
3. Another relative or friend
4. No one, I have always participated by myself

Q-7**Please indicate the specific workshop topics which you have participated in. (Circle all that apply)**

- | | | |
|----------------------------------|--------------------------|------------------------------|
| 1. Coastal Birds | 9. Coastal Salt Marshes | 17. Coastal Landscaping |
| 2. Coastal Fossils | 10. Tidepool Photography | 18. Ocean Techniques |
| 3. Coastal Plants | 11. Coastal Photography | 19. Exploring Tidepools |
| 4. Coastal Rock ID | 12. Bay Clamming | 20. Nature/Creative Writing |
| 5. Coastal Reptiles | 13. Navigation | 21. Folklore/Folksong |
| 6. Coastal Geology | 14. Fish Printing | 22. Cooking Sea Vegies |
| 7. Construct Kites | 15. Driftwood ID | 23. Summer Steelhead |
| 8. Bay Crabbing | 16. Wood Carving | 24. Fishing (Bay/Surf/Jetty) |
| 25. Other (please specify) _____ | | |

Q-8**If you have participated in more than one Seatauqua workshop, please list up to three of them in order of your preference, using the numbers in the above list. (For example, if Bay Crabbing was your favorite workshop, you'd put "8" in the "first" space.)**

First _____ Second _____ Third _____

Q-9**Which of the following BEST describes why you participated in a Seatauqua workshop for the first time? (Please circle only one response)**

1. I was interested in the marine and coastal environment and thought the workshop might be interesting.
2. I was interested in the workshop topic and signed up because of my interest.
3. I was looking for something to do and decided to participate in the workshop on the spur of the moment.
4. Participation in other Seatauqua events (such as van or boat tours, films, or talks) inspired me to participate in the workshops.
5. Other (please describe) _____.

Now, how would you describe your favorite (or only) Seatauqua workshop (this is the one you listed "first" in Q-8) in relation to each of the characteristics mentioned in Q-10?

You are given several choices for each of the characteristics in Q-10.

Please indicate which choice BEST describes your favorite Seatauqua workshop by circling the appropriate letter. (Please circle only one choice for each characteristic)

1. Instructor's knowledge

- a. Knew subject "inside and out"
- b. Knew subject moderately well
- c. Knew subject well enough to "get by"

2. Instructor's enthusiasm

- a. Very enthusiastic
- b. Moderately enthusiastic
- c. Not very enthusiastic

3. Instructor communication skills

- a. An excellent communicator
- b. An average communicator
- c. A poor communicator

4. Day workshop was offered

- a. Weekdays (Mon-Thurs)
- b. Weekends (Fri-Sun)
- c. Combination of weekdays and weekends

5. Class size

- a. 5 participants
- b. 15 participants
- c. 25 participants
- d. 35 participants

6. Registration fee (for one person)

- a. \$5
- b. \$10
- c. \$15

7. Hands-on activities or field trips

- a. Class is entirely hands-on activities or field trips
- b. Class is a mixture of hands-on activities, field trips and lecture
- c. Class is all lecture

Q-10**Continued. (Please circle only one choice for each characteristic)****8. Kids ability to participate**

- a. Class was a shared experience between adults and kids
- b. Class was for adults but older kids could participate
- c. Class didn't allow kids. Alternative programs were provided
- d. Class didn't allow kids. Alternative programs were not provided

9. Length of workshop

- a. 1 class for 1 day (7 hours)
- b. 1 class for 2 days, 4-6 hours each day
- c. 1 class for 3 days, 4-6 hours each day

10. Time of year workshop was offered

- a. Summer
- b. Fall
- c. Winter
- d. Spring

Q-11

Listed below are several educational program characteristics. Please indicate how important each characteristic is to you by circling one score for each.

Please circle only one score per characteristic. If the characteristic is unknown or does not apply, be sure to circle "N/A".

	<u>Very Unimportant</u>					<u>Very Important</u>	
1. Instructor's knowledge.....N/A	1	2	3	4	5	6	7
2. Instructor's enthusiasm.....N/A	1	2	3	4	5	6	7
3. Instructor communication skills.N/A	1	2	3	4	5	6	7
4. Day workshop is offeredN/A	1	2	3	4	5	6	7
5. Class size.....N/A	1	2	3	4	5	6	7
6. Registration feeN/A	1	2	3	4	5	6	7
7. Hands-on activities/ field trips ..N/A	1	2	3	4	5	6	7
8. Kids ability to participate.....N/A	1	2	3	4	5	6	7
9. Length of programN/A	1	2	3	4	5	6	7
10. Time of year offered.....N/A	1	2	3	4	5	6	7

Q-12

Next we'd like to know HOW desirable (or undesirable) you consider each of the choices offered in Q-11 to be. Please circle one score for each choice under each characteristic as shown in the example below.

EXAMPLE

Please circle one score for each choice. If the choice is unknown or does not apply, be sure to circle "N/A".

		Very Undesirable					Very Desirable	
		1	2	3	4	5	6	7
1. Length of program (in hours)								
a. 1 hour.....	N/A	1	2	3	4	5	6	7
b. 4 hour.....	N/A	1	2	3	4	5	6	7
c. 8 hours.....	N/A	1	2	3	4	5	6	7

Please circle one score for each choice. If the choice is unknown or does not apply, be sure to circle "N/A".

		Very Undesirable					Very Desirable	
		1	2	3	4	5	6	7
1. <u>Instructor's knowledge</u>								
a. Knows subject "inside and out" ...	N/A	1	2	3	4	5	6	7
b. Knows subject moderately well ..	N/A	1	2	3	4	5	6	7
c. Knows subject well enough to "get by"	N/A	1	2	3	4	5	6	7
2. <u>Instructor's enthusiasm</u>								
a. Very enthusiastic.....	N/A	1	2	3	4	5	6	7
b. Moderately enthusiastic.....	N/A	1	2	3	4	5	6	7
c. Not very enthusiastic	N/A	1	2	3	4	5	6	7
3. <u>Instructor communication skills</u>								
a. An excellent communicator	N/A	1	2	3	4	5	6	7
b. An average communicator	N/A	1	2	3	4	5	6	7
c. A poor communicator	N/A	1	2	3	4	5	6	7
4. <u>Day workshop is offered</u>								
a. Weekdays (Mon-Thurs).....	N/A	1	2	3	4	5	6	7
b. Weekends (Fri-Sun).....	N/A	1	2	3	4	5	6	7
c. Combination (Any days).....	N/A	1	2	3	4	5	6	7
5. <u>Class size</u>								
a. 5 participants	N/A	1	2	3	4	5	6	7
b. 15 participants	N/A	1	2	3	4	5	6	7
c. 20 participants.....	N/A	1	2	3	4	5	6	7
d. 30 participants	N/A	1	2	3	4	5	6	7

Continued

Please circle one score for each choice. If the choice is unknown or does not apply, be sure to circle "N/A".

		Very					Very	
		Undesirable		Indifferent			Desirable	
6. <u>Registration fee</u>								
a. \$5	N/A	1	2	3	4	5	6	7
b. \$10	N/A	1	2	3	4	5	6	7
c. \$15	N/A	1	2	3	4	5	6	7
d. \$25	N/A	1	2	3	4	5	6	7
e. \$50	N/A	1	2	3	4	5	6	7
f. \$75	N/A	1	2	3	4	5	6	7
g. \$100	N/A	1	2	3	4	5	6	7
7. <u>Hands-on activities or field trips</u>								
a. Class is entirely hands-on activities or field trips.....	N/A	1	2	3	4	5	6	7
b. Class is a mixture of hands-on activities, field trips and lecture.....	N/A	1	2	3	4	5	6	7
c. Class is all lecture.....	N/A	1	2	3	4	5	6	7
8. <u>Kids ability to participate</u>								
a. Class is a shared experience between adults and kids.....	N/A	1	2	3	4	5	6	7
b. Class is for adults but older kids can participate	N/A	1	2	3	4	5	6	7
c. Class doesn't allow kids. Alternative programs are provided.....	N/A	1	2	3	4	5	6	7
d. Class doesn't allow kids. Alternative programs are not provided.....	N/A	1	2	3	4	5	6	7
9. <u>Length of workshop</u>								
a. 1 class for 1 day (7 hours)	N/A	1	2	3	4	5	6	7
b. 1 class for 2 days, 4-6 hours each day.....	N/A	1	2	3	4	5	6	7
c. 1 class for 3 days, 4-6 hours each day.....	N/A	1	2	3	4	5	6	7
10. <u>Time of year offered</u>								
a. Summer.....	N/A	1	2	3	4	5	6	7
b. Fall	N/A	1	2	3	4	5	6	7
c. Winter	N/A	1	2	3	4	5	6	7
d. Spring.....	N/A	1	2	3	4	5	6	7

Q-13

How has Seatauqua affected your enjoyment of the marine environment? (please circle no more than two responses)

1. Participation did not significantly affect my enjoyment of the marine environment.
2. Participation increased my enjoyment of the Hatfield Marine Science Center.
3. Participation increased my enjoyment of the Oregon Coast.
4. Participation increased my participation in environmental protection.
5. Participation increased my understanding of marine based industries
(for example, fishing, crabbing, or mining).
6. Other (please describe) _____.

Q-14

Now, please describe your plans for future participation in Seatauqua workshops. (Circle only one response)

1. I plan to participate in the same workshop topic(s).
2. I plan to participate in a different workshop topic.
3. I don't plan to attend any other Seatauqua workshops. No time.
4. I don't plan to attend any other Seatauqua workshops. No interest.
5. I don't plan to attend any other Seatauqua workshops. Too expensive.

Q-15

Which of the following types of workshops would you be MOST interested in if they could be made available? (Please circle no more than two responses)

1. Same types of workshops that are offered through Seatauqua now, but offered by local businesses instead (like hotels, campgrounds, bait shops, etc.).
2. Workshops about research being done at the Hatfield Marine Science Center. Taught as a combination of lecture, hands-on activities, and field trips.
3. Workshops offered year round. All taught as a combination of lecture, hands-on activities, and field trips.
4. Introductory classes on audio or video tape with advanced classes offered by instructors (any field trips would be on your own).
5. 1-2 hour introductory classes (by instructors) with an optional field trip or lab.
6. A series of workshops, beginning to advanced, taught consecutively during the same summer.
7. 1-2 week intensive workshops on a subject that you're interested in.
8. Other (please describe) _____.

Q-16

Next we would like to ask about your participation in non-credit, educational programs other than Seatauqua. This can include programs you have attended while on vacation, as well as those you have attended in your home town. Which of the following educational programs, other than Seatauqua, have you participated in? (Please circle all that apply)

Please skip
to Q- 18.

1. Non-credit classes offered through a community college
2. Extension workshops
3. Workshops offered by a zoo, aquarium, or museum
4. Free films or lectures at a zoo, aquarium, museum, or college
5. Other (please describe) _____
6. None of the above

Please continue
with Q-17.

Q-17

If you answered "None of the above" in Q-16, please indicate which of the following BEST describes why. (please circle only one response)

1. I don't have time
2. I haven't found any that interest me
3. The programs that interest me are too expensive
4. Other (please describe) _____

Q-18

In order to better design educational programs for the future, we need to know how you feel about trading off different characteristics of an educational program. Following are five hypothetical educational programs. These characteristics are the SAME for each program:

- **The program topic is your favorite.***
- **Kids can participate to the extent you like best. (for example, if you really like kids to be able to participate, then imagine that they can participate in ALL the hypothetical programs.)***
- **The programs are offered during the season that is most convenient to you.***
- **The class size is YOUR ideal.***
- **All of the programs last two days, 4-6 hours each day.***

Each program DIFFERS in these characteristics:

- **Price***
- **Use of Hands-on Activities or Field Trips***
- **Instructor's Skills (Knowledge, Enthusiasm, and Communication Skills)***
- **Day of the week program is offered***

Beneath each program is a scale on which you should circle a score to indicate how desirable or undesirable you would find such a program. Please also select one of the options to let us know how often you would be interested in attending a program with these characteristics.

Here's the catch, DO NOT give any two educational programs the same score. For example, if you score the first program a "4", you should not give a 4 to any other program. You may wish to review all educational programs before beginning your scoring.

Educational Program 1

Price: \$50.00
 Use of Hands-on Activities or Field Trips: Few activities or labs
 Instructor's Skills: Average skills
 Day of the Week Program is Offered: Weekdays

Very <u>Undesirable</u>								<u>Neutral</u>									Very <u>Desirable</u>
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			

****How often would you consider attending this program? (Circle one choice)**

a. Never b. Once in 10 yrs. c. Once in 5 yrs. d. Once a year e. 2-3 times a year

Educational Program 2

Price: \$15.00
 Use of Hands-on Activities or Field Trips: Few activities or labs
 Instructor's Skills: Average skills
 Day of the Week Program is Offered: Weekends

Very <u>Undesirable</u>								<u>Neutral</u>									Very <u>Desirable</u>
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			

****How often would you consider attending this program? (Circle one choice)**

a. Never b. Once in 10 yrs. c. Once in 5 yrs. d. Once a year e. 2-3 times a year

Educational Program 3

Price: \$100.00
 Use of Hands-on Activities or Field Trips: Many activities or labs
 Instructor's Skills: Average skills
 Day of the Week Program is Offered: Weekends

Very													Very
<u>Undesirable</u>							<u>Neutral</u>						<u>Desirable</u>
1	2	3	4	5	6	7	8	9	10	11	12	13	14 15

****How often would you consider attending this program? (Circle one choice)**

a. Never b. Once in 10 yrs. c. Once in 5 yrs. d. Once a year e. 2-3 times a year

Educational Program 4

Price: \$100.00
 Use of Hands-on Activities or Field Trips: Few activities or labs
 Instructor's Skills: Expert skills
 Day of the Week Program is Offered: Weekdays

Very													Very
<u>Undesirable</u>							<u>Neutral</u>						<u>Desirable</u>
1	2	3	4	5	6	7	8	9	10	11	12	13	14 15

****How often would you consider attending this program? (Circle one choice)**

a. Never b. Once in 10 yrs. c. Once in 5 yrs. d. Once a year e. 2-3 times a year

Educational Program 5

Price: \$15.00
 Use of Hands-on Activities or Field Trips: Many activities or labs
 Instructor's Skills: Below Average skills
 Day of the Week Program is Offered: Weekdays

Very													Very
<u>Undesirable</u>							<u>Neutral</u>						<u>Desirable</u>
1	2	3	4	5	6	7	8	9	10	11	12	13	14 15

****How often would you consider attending this program? (Circle one choice)**

a. Never b. Once in 10 yrs. c. Once in 5 yrs. d. Once a year e. 2-3 times a year

Q-19

We would now like to ask some questions about you that will help us interpret the results of this survey. How did you find out about Seatauqua? (Circle only one response)

Please continue
with Q-20.

Please skip to
Q- 21.

1. Friend or Relative
2. Through being a volunteer or employee at Hatfield Marine Science Center
3. Posted information at the Hatfield Marine Science Center
4. Seatauqua brochure, mailed to you
5. Chamber of Commerce or Visitor Information Bureau
6. Tourist information from another local attraction
7. Brochure or flyer at a hotel, motel, campground, or restaurant
8. TV documentary, magazine article, or newspaper
(please specify) _____
9. Other (please describe) _____

Q-20

How did your friend or relative find out about Seatauqua?

1. Attended a Seatauqua workshop before
2. Worked as a volunteer or employee at the Hatfield Marine Science Center
3. I don't know how they found out

Q-21

What was the primary reason for your last visit to Newport?

(Please circle only one response)

Please skip
to Q- 24.

Please continue
with Q-22.

1. Not applicable, I live in the area
2. To attend Seatauqua
3. Primary vacation destination
4. Primary destination for a combined business/vacation trip
5. Traveling through the area on business
6. Traveling through the area on vacation

Q-22

(If you live in the Newport area, skip to Q-24) If you are a visitor to the Newport area, we'd like to ask you some questions about your stay. How long did you stay in the Newport area the last time you attended Seatauqua?

- | | |
|---------------|-----------------|
| 1. 1 day | 4. 1 week |
| 2. 1-2 nights | 5. 1-3 weeks |
| 3. 3-5 nights | 6. over 3 weeks |

Q-23

Please indicate the activities which you and/or your companion enjoyed participating in while in Newport. (Circle all that apply)

- | | |
|----------------------------------|---|
| 1. Attending Seatauqua | 8. Relaxing and sightseeing |
| 2. Camping/ Hiking | 9. Visiting friends or relatives |
| 3. Fishing | 10. Visiting the Hatfield Marine Science Center |
| 4. Crabbing/ Clamming | 11. Visiting a tourist attraction or museum |
| 5. Boating (private vessel) | 12. Tidepooling or bird watching |
| 6. Boating (charter vessel) | 13. Whale Watching |
| 7. Other (please describe) _____ | |

Q-24

Which of the following best describes your educational experience?

(Please circle only one response)

- | | |
|---------------------------------|------------------------------|
| 1. Some high school or less | 5. Completed college |
| 2. Completed high school | 6. Some graduate school |
| 3. Vocational/ technical school | 7. Completed graduate school |
| 4. Some college | |

Q-25

Which of the following best describes your PRIMARY place of residence? (Please circle only one response)

Please continue
with Q-26.

Please skip
to Q- 24.

1. The Oregon Coast
2. Portland, Eugene or Salem
3. Corvallis
4. Another location in Oregon
5. California
6. Washington
7. Other (please specify) _____

Q-26

If you now live on the Oregon Coast, how long have you lived here?

- | | |
|---------------------|------------------|
| 1. less than a year | 4. 10-14 years |
| 2. 1-3 years | 5. 15-20 years |
| 3. 4-9 years | 6. over 20 years |

Q-27

Which choice best describes your annual family income?

- | | |
|----------------------|-----------------------|
| 1. Under \$15,000 | 4. \$50,000-\$75,000 |
| 2. \$15,000-\$30,000 | 5. \$75,000-\$100,000 |
| 3. \$30,000-\$50,000 | 6. \$100,000 & over |

Thank you for taking the time to go through this questionnaire! We look forward to seeing you at future Seatauqua activities.

Any comments you wish to make that may help us in our efforts to understand what participants want from the Seatauqua program will be appreciated, either here or in a separate letter.

Your contribution to this effort is very greatly appreciated. If you would like a summary of the results, please print your name and address on the back of the return envelope (NOT on this questionnaire). We will mail you a copy as soon as they become available.

Appendix V. Additional Comments to Select Questions From the Mail Survey

Q-7 Workshop topics- 20 responses

Bay Boat Tour	2
Bay and Coastal Fish ID	2
Crab Shaking and Fish Filleting	8
Rainforest trip	4
Other	4
(Sharks, Marine Mammals, Amphibians, Whale Watching)	

Q-9 Reason for Participation- 8 responses to "other"

Friend or Relative brought them along	4
Learn more about job or hobby	3
Reputation of sponsoring organization	1

Q-12 Self Explicated- 22 additional comments

Answers depend on the subject matter	14
Price is an issue because of family	3
Weekends and Summer most desirable	3
Other comments	2

Q-13 Seatauqua's effect on their enjoyment- 5 responses to "other"

Increased knowledge of subject	4
Helped visualize college lectures	1

Q-14 Plans for future Seatauqua participation- 12 additional comments

Plan to attend same and different workshop topics	7
Don't plan to attend, not in area	3
Other comments	2

Q-15 Types of workshops- 8 responses to "other"

Same as now	3
Linked through hotel (special package)	1
More van trips	1
Same workshops, advanced level	1
Liked all of our options	1
Can't afford too many nights	1

Q-16 Other program participation- 25 responses to "other"

Elderhostel	4
Bus outings	1
Courses offered through private groups	7
Parks and Rec. or Forest Service	3
College	3
Work related	1
Classes offered through public schools	5
Televised courses	1

Q-18 Conjoint comments- 9 additional comments

Didn't get the question	3
Comments on the options	6

Q-19 Where they found out about Seatauqua- 22 comments

Brochure at work	4
Oregon Coast Magazine	4
Newspaper	9
Seatauqua van trip	1
Other participants	4

Q-23 Activities they participated in while in Newport- 27 responses to "other"

Eating	6
Shopping	3
New Aquarium	5
Art or theater	5
Seatauqua class subjects on own	4
Beach	3
OSU class at HMSC	1

Q-25 Primary residence- 21 responses to "other"

Alaska	3
Arizona	2
Missouri	1
Montana	2
Utah	1
Colorado	1
Virginia	2
Canada	1
Illinois	2
Texas	1
New York	1
Florida	1
Wyoming	1
Nevada	1
Idaho	1

Q-28 Occupation- 14 responses to "other"

Educator	12
Writer	2

Q-32 Other activities that they enjoy-

Computers	3
Hiking/ Walking	17

Q-1. What programs have you participated in? And how often?

1. None (IF NONE, THEN: What is the main reason why?)

Have you ever heard of the summer programs?

Yes No

Participated in Whale Watching?

Yes No

Visited the Marine Science Center?

Yes No

of times

2. Guided Walks (dock, estuary or beach)

3. Van Trips

4. Bay Boat Tours

5. Afternoon or Evening Talks

6. Daily Films

7. Workshops

Q-2. How long ago did you participate?

1. 1972-74

4. 1985-89

2. 1975-79

5. 1990-91

3. 1980-84

6. 1992

7. NO RESPONSE

(WILL END UP GETTING RESPONSES LIKE "A COUPLE OF YEARS AGO" IF YOU NEED HELP TRANSLATING THAT INTO THE YEAR, ASK THEM IF A CERTAIN YEAR IS CLOSE)

Q-3. Who usually (or did) participate in the program or programs with you?

1. Spouse

2. Children or Grandchildren

3. Another relative or friend

4. No one

5. NO RESPONSE

SKIP TO Q-6 IF DIDN'T PARTICIPATE IN WORKSHOPS.

Q-4. What workshop topics have you attended (READ LIST OR GIVE EXAMPLES IF NEEDED)?

1. Coastal Birds

9. Coastal Salt Marshes

2. Coastal Fossils

10. Tidepool Photography

3. Coastal Plants

11. Coastal Photography

4. Coastal Rock ID

12. Bay Clamming

5. Coastal Reptiles

13. Navigation

6. Coastal Geology

14. Fish Printing

7. Construct Kites

15. Driftwood ID

8. Bay Crabbing

16. Wood Carving

17. Coastal Landscaping

21. Folklore/Folksong

18. Ocean Techniques

22. Cooking Sea Vegies

19. Explore Tidepools

23. Summer Steelhead

20. Writing

24. Fishing (Bay/Surf/Jetty)

25. Other

26. NO RESPONSE

Appendix VI. Continued

Q-5. ASK THEM WHAT THEIR FAVORITE WORKSHOP WAS. PUT A * BY THAT ONE.

Q-6 How much did you like the program?

1. Alot
2. Somewhat
3. Didn't like it
4. Don't remember

What stood out, if anything, as an outstanding feature? What did you see as a major weakness?) NO EXAMPLES!

Q-7. Do you plan to participate in MSC educational programs in the future?

1. Yes
 2. same workshop topic
 3. different workshop topic
 4. same program
 5. different program
6. No
 7. Time element
 8. Not interested
 9. Too expensive
10. NO RESPONSE

Now I'd like to ask you a few questions about yourself.

Q-8. First, your occupation.

1. Working
2. Retired
3. NO RESPONSE

Q-9. Your age group.

- | | | |
|-------------|----------|----------------|
| 1. under 18 | 4. 36-45 | 7. over 65 |
| 2. 19-25 | 5. 46-55 | 8. NO RESPONSE |
| 3. 26-35 | 6. 56-65 | |

Q-10. Your formal education?

- | | |
|--------------------------------|------------------------------|
| 1. Some high school or less | 5. Completed college |
| 2. Completed high school | 6. Some graduate school |
| 3. Vocational/technical school | 7. Completed graduate school |
| 4. Some college | 8. NO RESPONSE |

Appendix VI, Continued

Q-11. Your annual family income?

- | | |
|-----------------|-----------------|
| 1. Under 15,000 | 4. 50-75,000 |
| 2. 15-30,000 | 5. 75-100,000 |
| 3. 30-50,000 | 6. Over 100,000 |
| 7. NO RESPONSE | |

According to our records a survey about the Seatauqua summer educational programs was sent to you a couple of months ago.

Did you get it?

1. Yes
2. No

Did you return it?

1. Yes
2. No IF NOT, Why?

PART 2

Determining Leisure Program Formats Based on Participant Preferences: A Case Study in Nature-based Education

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RUNNING HEAD: Nature-Based Leisure Programs

AUTHOR NOTES:

This study is part of ongoing research for the Oregon Marine Advisory Service that evaluates the current status and potential future directions of the Seatauqua Marine Education Program at Oregon State University's Hatfield Marine Science Center. Funding assistance has been provided from Oregon Sea Grant Extension, Marine Advisory Service, Holt Scholarship Fund, and The Coastal Oregon Marine Experiment Station. Please address inquiries to Dr. Sylvia, Oregon State University, Hatfield Marine Science Center, Newport, OR, 97365-5296. (503) 867-0284.

Abstract:

This study examined the relationship between the structure of a nature-based education program and the program's potential popularity among different participants. The importance of a series of program attributes, including price, scheduling, and format, were measured to determine their relative impact on individual preferences and projected participation rates. These results were then applied to a series of hypothetical programs in order to consider implications for future program development. The results showed that program attributes could be divided into two groups based on their importance to participants. Primary attributes such as instructor skills and multiple activities were significant across subgroups of participants, and secondary attributes, such as day offered and registration fee, varied in importance between subgroups. Results also showed potential for market management strategies that target programs toward a range of market segments. Conclusions focus on how alternative strategies can be combined to achieve audience composition, participation rates, and program structure that are consistent with an educational organization's mission.

Keywords: Conjoint analysis, nature-based leisure, environmental education, program evaluation, stated preference and choice.

Introduction

Nature-based education programs have been rapidly growing in popularity, mirroring increased participation trends in non-consumptive tourism and other nature-oriented recreation. Recent efforts to understand these trends include studies of environmental education (Forestall, 1993), nature tourism, and ecotourism (Ryel & Grasse, 1991). However, due to the unique combination of nature, leisure, and education-related factors, nature-based education courses constitute an important subset of environmental education programs and nature tourism programs. Little formal research to date has focused on understanding how program attributes and participant characteristics relate to the demand for nature-based education courses.

Nature-based education typically refers to non-credit teaching sessions that cover topics including life sciences and traditional crafts. These programs fall into the loosely dubbed category of "informal education," which is defined by the National Science Foundation to include "rich and stimulating environments outside of school where individuals of all ages, interests, and backgrounds can increase their appreciation and understanding of science, mathematics and their applications" (National Science Foundation 1993, p. 3). As these programs are essentially leisure-based, perceptions of program desirability are shaped by many factors, including the participant's personal characteristics, leisure values, and past experiences. Therefore, attendance patterns can be better understood through a leisure studies perspective.

Traditionally, nature-based education courses are associated with zoos, aquaria, and museums. Other providers include public agencies, private facilities and educational institutions. In light of the wide range of providers and offerings, no single profile of participants exists. Broad trends follow those of zoo and aquaria attendance, which define the majority of adult visitors as being young (18-36 years), well-educated urban families (Whittall, 1992). Kellert (1984) found that visitors tend to be better off financially and better educated than the rest of the population. However, while visitors may be well-educated in general, most are not well-educated in biology or the life sciences.

Courses for children and school groups have been the focus of most nature-based education research to date. Non-credit education classes are frequently organized along age lines, with substantial participation for children and teenagers through classes, shows, camps, and theme days (Hotchkiss, 1989). However, many factors are leading to growth in nature-based education that is not age-specific, including growing environmental awareness and non-consumptive environmental recreation and tourism. These trends suggest a need to research participants that do not fall into the well-researched pre-adult age groups, including the growing segment of retired leisure visitors. A concurrent issue affecting suppliers of these programs is that they are being required to produce revenue as a result of decreases in traditional funding sources (Swanagan, 1990). These developments create a need for understanding participant leisure values and decision-making in order to create programs that can be financially self-sustaining.

Marketing research can be used to develop marketing management plans for ecotourism-related service industries. Successful marketing management plans are based on understanding the relationships between markets and program design, costs, and objectives. Marketing management research focuses on integrating these elements in order to generate "optimal" management plans and to compel managers to realistically evaluate program structure. However, for non-profit programs, program objectives may not be complementary. Approaches are needed which allow the manager to evaluate how alternative objectives may impact program design and management.

To illustrate these issues a marketing management study of a nature-based marine education program is presented. The following study has two major objectives: (1) to identify past trends in participation in nature-based education programs through examining a representative program, and (2) to apply results as a predictive tool for future program development.

Framework for Analyzing Nature-based Education

A theoretical framework derived from Stated Preference and Choice (SPC) analysis was developed to identify users and their preferences for a range of alternative nature-based education program formats. SPC approaches consider a product as a bundle of features or attributes (Green and Rao, 1971). SPC is an increasingly popular approach in recreation and behavior studies, as well as in other industries, because it quantitatively relates preference and choice to varying levels of program attributes (Louviere and Timmermans, 1992). Additionally,

personal computer software packages from companies such as Bretton-Clark and Sawtooth Software have made these techniques widely available to practitioners (Green and Srinivasan, 1990).

Typically, SPC models measure subjects' responses to hypothetical multiattribute program alternatives constructed from factorial experimental designs. These preferences are then decomposed to reflect the contributions of each attribute level. As a result, preference and demand functions can be modelled for products based on the product attributes and personal characteristics of product users. Common methods for preference structure measurement include self-explicated, conjoint, and hybrid approaches (Green & Srinivasan, 1990).

In this study, SPC methods were applied in order to measure the desirability of nature-based education programs as a function of personal characteristics and program attributes. The model measured: (1) program preference, represented by the relative importance of attributes and the relative desirability of a bundle of attributes, and (2) program demand, represented as the number of times a respondent would participate in an education program over a given time period. The success of a SPC analysis is strongly related to the appropriate selection of product and respondent attributes. Substantial research in the leisure studies field identifies individual characteristics that affect leisure values and behavior. Findings from these studies can be used to determine personal and program factors to consider as potential attributes. Market segmentation is commonly based on alternative models containing demographic, attitudinal and behavioral traits (Fitzgibbon, 1987). Within these broad

guidelines, attributes and levels must be customized to reflect the dynamics of local populations and markets (Backman, 1994.) In practice, robust segmentation schemes often combine characteristics from multiple models -- market segments can rarely if ever be divided simply into a series of mutually exclusive groups (Weinstein, 1987).

Given the dearth of existing attendance research specific to nature-based education participation, this study tested a wide-range of socioeconomic and demographic variables to gain preliminary information on factors related to preferences for nature-based education program formats. Table 1 and Table 2 respectively show the personal characteristics and programs attributes that were tested. The goal was to identify any subgroups of participants as defined by personal characteristics which are associated with significantly different preferences for educational program formats. Program attributes and levels were selected in concert with personal characteristics to reflect those factors that were most important to participants, and program managers in designing educational programs.

The demographic variables of *income, education, household type, working status, age, residence,* and *gender* are recognized to be important gross-level factors affecting leisure values and behavior (Jeffres and Dobos, 1993; Ragheb & Beard, 1982). It was hypothesized that higher income participants would be less constrained by program costs, and prefer the highest quality programs as represented by the levels of quality of instructor and number of activities included. Higher education levels were hypothesized to be positively related to greater

socialization with respect to the classroom environment, and correspondingly higher demand overall. It was also hypothesized that program and instructor preferences would be linked to gender, following wide trends in linking gender to leisure preferences and values (Henderson, 1990). Kelly (1983) showed that life cycle factors are important determinants of abilities, interest, and constraints on behavior. Thus, *working status, household type, and age* were hypothesized to affect preferences for class size, scheduling and format.

Demographics information collection was a high priority in order to compare study findings with existing research on regional visitation and tourism trends, and to focus future marketing efforts (Fitzgibbon, 1987). However, demographic segmentation alone often does not provide adequate discrimination between market segments (Bonn, 1982). Therefore, other key characteristics were identified. *Visit length* has been shown to be a useful indicator in identifying significant differences in leisure objectives and behavior among visitors (Bonn, Furr and Uysal, 1992). It was hypothesized that longer visits by travellers to the area would be associated with higher preference and attendance rates for this type of program which requires a day or more and must be scheduled in advance. *Previous attendance in program, and attendance in other non-credit programs* were included in order to test benefit segmentation findings associated with first-time versus repeat visitors (Uysal and Gitelson, 1988). It was hypothesized that previous attendance in either this specific program or in programs of this type would be associated with both higher preference and higher demand rates.

Instructor characteristics were considered as three separate attributes, *enthusiasm, knowledge, and communication skills*, in order to better understand which skills are most desired. Historical information showed that past participants attributed high importance to the capabilities of the instructor. Additionally, given the relatively high percentage of operating costs that are commonly attributed to employee costs, instructor selection is important in minimizing program cost for maximum profits (Yen & McKinney, 1992). *Hands-on activities and field trips* were included in order to judge whether the associated expense of that type of program format was critical to program desirability. Other variables that affected program scheduling and cost and were hypothesized to be related important to program desirability and constraints include *class size, registration fee, inclusion of children in workshops, length of workshop, day workshop offered*. Finally, *time of year* was included in light of research that shows seasonal variation to be a useful segmentation factor in coastal visitation (Bonn, Furr and Uysal, 1992).

Local visitation trends and educator opinion were then used to identify three broad classes of participants, defined by bundles of personal characteristics, that were hypothesized to have different educational preferences and demand based on the intersection of their leisure values and constraints. Audience 1 represents a retired couple on a vacation lasting several weeks, members of the senior travel market (Seelig, 1986). Audience 2 represents a highly educated family with adult children that is visiting the area for a short vacation, one type of Oregon coast visitor identified in regional studies (Oregon Economic

Development Department, 1989). Audience 3 represents a relatively young, single, college-educated adult female who lives in the area. This combination of characteristics were selected by instructors to embody a potential participant who was not described within the other audience groups, and who was hypothesized to have different preferences and demand.

Methods

Study Population

The Seatauqua marine education program at Oregon State University's Hatfield Marine Science Center was evaluated in order to provide information to management on future program opportunities. Seatauqua offers a wide range of environmental education programs including one- to three-day workshops that combine classroom and hands-on activities on topics such as fossils, clamming, marine mammals, tide pooling, and Northwest Indian woodcarving. The workshop format was selected for analysis based on its past success, and its potential applicability to multiple educational environments.

Like many non-profit educational organizations, Seatauqua is in transition. Traditionally, funding was provided primarily through the university and Oregon Extension Sea Grant. Revenue generation was not a primary objective, and program operation did not depend on proceeds. However, as funding from traditional sources has become scarce, revenue generation is becoming an important source of program support. Management is now faced with pressure to

develop programs that are self supporting as well as meeting educational, environmental, and community goals.

The Survey

A detailed mail survey was delivered to a random sample of 600 Seatauqua participants drawn from a pool of 3,000 participants in the 1985-1992 workshop registration files. An eight-year time series was included given intertemporal variations in tourism related to economic or weather-related factors. Specific survey information gathering goals included determining: (1) socioeconomic characteristics of the Seatauqua participants; (2) how participants traded off program attributes when making decisions on program desirability and participation. Since the focus of the survey was to determine respondents' preferences for future courses, the clarity of respondents' memories for the specific workshop they took was not a primary concern.

A modified Dillman survey method was used, which included an initial mailing and two follow-up mailings to nonrespondents (Dillman, 1978). Of the 600 surveys, 145 were returned as undeliverable. From the remaining 455 surveys, a total of 191 completed surveys were returned, yielding a return rate of 42%. In order to measure non-response bias, 60 follow-up phone calls were made to a random selection of the 264 non-respondents. Of the 60 people contacted, 77% gave completed phone surveys. The two groups were compared using Wilcoxon rank sum and chi-square analysis. Respondents did not differ significantly from non-respondents in age ($Z=-0.98$, $p=0.33$), income ($Z=1.14$, $p=0.26$), or working status (Chi-square=0.00, $p=1.00$). However, survey

respondents were found to have a significantly higher level of formal education ($Z=-2.07$, $p=0.04$) and were more likely than non-respondents to have attended Seatauqua within the last year (Chi-square=7.76, $p=0.01$). Non-respondents were also more likely than respondents to be from out-of-state (Chi-square=4.66, $p=0.03$). While these differences were not considered serious enough to invalidate the data, they were considered during subsequent analysis.

Self-Explicated Utility Analysis

Self-explicated utility analysis techniques (Rosenberg, 1956) were employed to measure the importance of program attributes and the preferences for different levels of program attributes. Respondents were asked to score the program attributes listed in Table 1 on a scale from one (very unimportant) to seven (very important.) They were then asked to indicate the relative desirability for different levels using a scale from one (very undesirable) to seven (very desirable.)

A self-explicated format was employed due to its simplicity and its flexibility in situations where the number of attributes is large. A recognized weakness of this data collection method is that direct questioning regarding socially sensitive matters may elicit socially conscious responses (Green & Srinivasan, 1990). However, this potential weakness in methodology was not considered to be a significant potential source of bias in this application since the subject of questioning focused on format preferences.

Conjoint Analysis

Conjoint analysis includes a major set of techniques for measuring buyers' tradeoffs among multi-attributed products and services (Green and Rao, 1971). The goal is to measure the importance of a series of product attributes and to measure how users trade off different levels of program attributes based on different individual utility profiles and varying situation-related considerations.

Conjoint analysis was used in order to identify individual preferences for educational program attributes. Conjoint techniques are widely used in new product evaluations to determine consumer demand for individual product characteristics (Green and Rao, 1971.) The approach assumes that the rating of a product is a function of the levels of its attributes, which additively determine each respondent's preference for a given product. Individuals are asked to evaluate various products in comparison to one another. Their preferences are then decomposed into part-worth estimates for the relevant attributes (Green & Srinivasan, 1990).

One potential weakness of conjoint analysis is the potential of constructing a model that has more variables than respondents can cognitively process (Louviere & Timmermans, 1992.) In order to avoid potential bias resulting from complexity, a subset of five program attributes were selected to reflect the factors that program managers indicated they were most likely to trade off in designing educational programs. A combination of program attributes and levels were selected using orthogonal arrays: *Price* (\$15, \$50 or \$100), *Activities* (few, many), *Instructor Skills* (below average, average, above average), *Day Offered*

(weekdays or weekends), and *Program Length* (1 day, 2 days). Price levels were selected in order to represent the high and low ranges of possible course fees and an intermediate value. The analysis limited the number of attributes in order to allow the respondents to easily compare the alternate programs and to focus on those attributes which were of primary interest to program managers. Then, from this possible combination of 72 products, each set was reduced using an asymmetrical fractional-factorial approach that imposes orthogonality among attribute levels (Bretton-Clark, 1987). This approach resulted in a total of nine hypothetical programs, of which each respondent was given five.

Respondents were asked to rank five hypothetical programs in order of desirability, using a scale from one (highly undesirable) to fifteen (highly desirable), and to estimate how often they would consider attending each program over the next ten year period. Other attributes were held fixed: class length was assumed to be one day for six to seven hours, and respondents were instructed to assume that other attributes were at their ideal level.

Survey information was used to estimate two models: (1) a preference model where the dependent variable was the desirability score; and (2) a participation model, where the dependent variable was the annual average projected participation rate derived from expected yearly participation over the next ten year period.

In both models, respondents' personal characteristics were used as dummy variables (Table 1). Additionally, two interactive variables were considered. *Working Status* and *Weekend Class Offerings* were considered based on the

hypothesis that time constraints for working participants were strongly related to preferences for weekend classes. *Gender* and *Average or Above Average Instructor Skills* were considered in order to examine the relationship between gender and the added value of instructor expertise. Based on the self-explicated analysis, these were considered the potentially most important interactive effects.

Data Analysis and Results

Population Sociodemographics and Attendance Trends

Prior to causal model testing a comprehensive review of participation was completed in order to identify participation and attendance trends. While details from these findings are beyond the scope of this paper, research showed that the typical (most likely) participant resided within the state, earned \$43,000 per household annually, completed college and attended some graduate school, was a 55-year old female, and was retired or a professional. Most often respondents attended either with a spouse (37%) or alone (34%). In addition to Seatauqua, fifty-seven percent of respondents took non-credit classes through community colleges, and fifty-one percent attended free films and lectures at zoos, aquaria and museums.

The Relative Importance of Program Attributes

Analysis of variance (ANOVA) least significant difference group means test was employed to analyze respondents' rating of the relative importance of attributes. Findings suggested that attributes could be divided into two groups: primary attributes that are significant across the population of participants, and

secondary attributes that were less important overall and/or varied by subgroup. The most important attributes were *Instructor Knowledge*, *Enthusiasm* and *Communication Skills*, and the *Inclusion of Hands-on Activities or Field Trips*. These attributes all received scores above six, while other attributes were considered significantly less important with scores less than five, as shown in Figure 1.

There were no significant variations within subgroups with respect to *Instructor Skills* or *Inclusion of Activities*. However, differences were observed in the relative importance of *Season Offered*, *Program Length*, *Day Offered*, *Class Size*, *Registration Fee* and *Inclusion of Children*. Many of the differences between groups in the perceived importance of program attributes can be explained by variations in the time and cost constraints limiting participation. For example, working respondents found the *Day Offered* to be significantly more important than retired respondents ($F=6.74$, $p<.01$), who presumably have more scheduling flexibility. Also, the importance of *Season Offered* increased with the distance from which the respondent lived from the site, reflecting constraints imposed by travel requirements ($F=7.78$, $p<.01$).

Desirability and Projected Participation as a Function of Attribute Levels

The results from the regression models measuring desirability of program attributes and projected participation rates are presented in Table 3 and Table 4 respectively. Except for *Program Length* (one or two days) all the program attributes were highly significant in impacting preferences and projected participation rates. The importance of program attributes was consistent with the

findings from the self-explicated utility analysis. *Instructor Skills* had the strongest influence -- *Average Instructor Skills* increased preference by 3 points and an *Above Average Instructor* increased preferences by 6.48 points compared to a below average instructor. The *Number of Activities* and *Day Offered* also had significant positive increases in desirability, of 2.12 and 0.27 points respectively. *Price* negatively impacted desirability, leading to a decrease in desirability by 0.5 points for every \$10 increase in price. To illustrate the importance of *Instructor's Skills* relative to *Program Price*, moving from *Below Average* to *Average* and *Above Average Skills* increased desirability sufficiently to offset price increases of \$57 and \$122 respectively per program, while maintaining the same overall desirability score.

Program desirability and projected participation rate were significantly related to past attendance in other types of non-credit educational programs. In contrast, *previous attendance in Seatauqua workshops decreased preference* by 0.84 points. However, while previous Seatauqua workshop participants were likely to report lower desirability scores, they were also more likely to have a high projected participation rate. One explanation is that past participants were more familiar with the programs than non-participants and less excited by program descriptions. Programs, however, may also exceed first time expectations, therefore encouraging future participation.

While program desirability was not significantly impacted by *Day Offered*, the projected participation rate significantly increased -- by approximately 1.4 visits per ten year period if the program was offered on weekends. However, the

interaction variable of *Working Status* and *Day Offered* was highly and positively significant in the desirability model. This result suggests that *Day Offered* is most important to working people, whose time constraints are relatively more binding.

College Education and *Graduate Level Education* were both inversely related to desirability and projected participation rate. This finding is contrary to the profile of the typical participant. It may be related to non-response bias: respondents were found to have significantly more formal education than non-respondents. Another possible explanation is that more highly educated individuals are more discerning or desire more technical programs. Alternatively, more highly educated individuals may have more leisure-based educational substitutes. Significantly less favorable evaluations by people with college and graduate-level education in informal education were also found by Thompson (1992).

Single Member Households had higher desirability scores and projected participation rates relative to other types of households. An *Adult Family* exhibited the most extreme negative relationship with a coefficient of -2.05 in the desirability model. The relatively large magnitudes and high degree of statistical significance indicate the importance of household or family status. The results suggest that single individuals with few family or other household encumbrances would have high desirability and projected participation rates. One possible explanation is that the specialized nature of the programs appeals to only a limited number of family members. The typical scheduling of Seatauqua may also

increase this effect since alternative programs are not scheduled during the same dates, which would provide leisure activities to other family members.

The interaction effect of *Instructor Skill* level and *Gender* was found to be highly significant in both models. Women consistently rated *Above Average Instructor Skills* higher in terms of preference and rate of expected attendance. This finding suggests that strong instructor skills are valued significantly more highly by women. Significant differences between genders in the perception of informal education were also found by Bitgood and Bishop (1991).

The variable *Visit Length* displayed a similar pattern as *Previous Seatauqua Workshop Attendance*, showing a negative effect on desirability and projected participation rate. One possible explanation is that most respondents visiting for two or more weeks tend to be from outside the state compared to short term visitors or locals. This result could be related to non-response bias: a significantly lower number of out-of-state respondents returned surveys.

The other remaining variables had either very small or statistically not significant direct effects. Gender was not significant (except through the interaction term) and income was only slightly significant in the expected attendance model (a \$10,000 increase in per capita annual income would increase the 10 year attendance rate by only 0.3 classes).

Predicting Results Among a Range of Programs and Participants

The regression models described above were applied to three programs and types of participants in order to compare the interactions between program attributes and participant characteristics, and to examine the effect on projected

participation rate. Table 5 shows the attributes of the three programs, characteristics of three audiences, and the results.

The programs were selected in order to compare program structures that are frequently traded off by educational program managers in response to resource and funding constraints. Program 1 combines attributes hypothesized to be preferred by a large population. Program fees are low, it is taught on weekends, instructor skills are high, and many activities are included. This combination of levels resembles Seatauqua's current educational offering, which is partially dependent on outside funding. Program 2 maintains a low program fee but provides less desirable offerings. Fewer activities are included, instructor skills are average, and classes are offered on weekdays. This structure decreases the associated operating costs in order to maintain a relatively low price. Program 3 combines a significant increase in price with ideal levels of resources. Many activities are included, instructor skills are high, and classes are offered on weekends. The matrix shows the desirability and projected participation rates for the nine program/participant combinations. An F-test at the 1% significance level found the desirability scores significantly different ($F=7.22$) and projected participation rates not significantly different ($F=.7621$).

Overall, Program 1 was rated highest in desirability, and projected participation rates among all three audiences. Program 3 was the second most desirable, and Program 2 was the least desirable. This trend suggests that while price is important to participants, the most important aspects of the programs are the quality of the offerings, including *Above Average Instructor Skills, Many*

Activities, and *Weekend Classes*. A higher projected participation rate in Program 3 relative to Program 2 suggests that significant price increases are a viable option for programs such as Seatauqua. Empirical evidence supports this conclusion: some similar non-credit courses in the area such as those at the Sitka Center for Arts and Ecology charge fees more than twice as high while maintaining acceptable attendance rates (Cook, 1993).

Discussion and Conclusion

This study has focused on understanding the importance of the attributes which impact preferences and participation in nature-based outreach education programs. The design of the study was based on the premise that successful design and implementation of these programs is a problem of marketing management. Before nature-based educational programs can be optimally designed, the demand for alternative programs must first be evaluated. Market research techniques including self-explicated analysis and conjoint analysis can be used to analyze the importance of both the attributes of the program and the characteristics of the participants in impacting desirability and projected participation rates. Research results can then be used in conjunction with other evaluations and expert opinion to design programs that meet management objectives.

The results of the study showed that program attributes fall into two general categories: primary attributes that are significant across most subgroups and include *Instructor Skills* and *Multiple Activities*; and secondary attributes that

vary in importance and level across subgroups, such as *Day Offered*, *Season Offered*, *Registration Fee*, *Class Size*, and *Inclusion of Children*. The first set of attributes are the most important in impacting desirability and projected rate of participation. These should be a high priority when planning nature-based programs similar to Seatauqua. Secondary attributes can then be considered in order to determine how program structure should change as a function of the target audience.

Ultimately, an educational program manager must build a set of offerings based on program objectives and constraints. Objectives can include maximizing revenue generation or net profit, attendance rates, or meeting various educational goals including teaching concepts of conservation or stewardship. Constraints could include meeting all fixed and variable program costs, limitation on availability of "expert" instructors, pricing caps, or enrollment standards - e.g., the need to meet absolute or relative attendance formulas based on socioeconomic characteristics. A comparative matrix or other technique that measures the relative impact of specific program attributes among key audiences can allow for predictive analysis of how each goal might be impacted by a program structure.

Trade-offs can occur at the level of the individual manager or organization, based on institutional considerations. One manager might raise educational program fees in order to increase revenue. For example, the manager might predict, based on these findings, that attendance trends among several subgroups would not be significantly affected by this change. However, low income local residents might be disproportionately affected by such a price increase. In order to

meet community education objectives, the manager could institute local 'scholarships' which effectively reduce the price for local attendance to some desirable level. The manager, therefore, would effectively become a price discriminator.

The findings of this study are now being applied to the management and design of the Seatauqua program. Since instructor expertise was found to be more important than price, management has decided to maintain very skilled instructors and increase workshop prices. The program schedule has been extended to run throughout the year in response to the varying preferences from season expressed by different market segments. Additionally, the brochure advertising the Seatauqua program has been updated to emphasize instructor expertise and the hands-on format. Managers of Seatauqua have also chosen to target families as an important component of their objectives, given that Seatauqua is a public institution serving the community. The number of weekend workshops has been increased, family discount fee structures have been developed, and family-oriented topics have been added.

This study points to important areas for future research. Market-based information can be combined with cost information and information on the characteristics affecting the supply of inputs such as instructors and the natural environment in order to develop "optimal" management programs.

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TABLE 1
Personal Characteristics and Levels

Characteristic	Levels
Family Status	1 Single 2 Couple 3 Adult family 4 Family with children
Working Status	1 Retired 2 Working
Education	1 High school 2 College 3 Graduate school
Age	1 Under 46 2 46-65 3 Over 65
Visit Length	1 Local 2 Less than 2 weeks 3 More than 2 weeks
Gender	1 Male 2 Female
Previous Attendance in Seatauqua Workshops	1 True 2 False
Attendance in Other Non-credit Educational Programs	1 True 2 False

TABLE 2
Program Attributes and Levels

Attribute	Levels
Instructor's knowledge	1 Expert in field 2 Moderately knowledgeable 3 Not very knowledgeable
Instructor's enthusiasm	1 Very enthusiastic 2 Moderately enthusiastic 3 Not very enthusiastic
Instructor's communication skills	1 Excellent communicator 2 Average communicator 3 Poor communicator
Hands-on activities/field trips	1 Entirely hands-on activities/field trips 2 Mixture of activities and lecture 3 Entirely lecture
Class size	1 5 participants 2 15 participants 3 20 participants 4 30 participants
Registration fee	1 \$5 2 \$10 3 \$15 4 \$25 5 \$50 6 \$75 7 \$100
Inclusion of children in workshops	1 Shared experience/adults and children 2 Older children can participate 3 Children not allowed, other programs provided 4 Children not allowed, programs not provided
Length of workshop	1 1 class for 1 day (7hrs) 2 1 class for 2 days, 4-6 hrs each day 3 1 class for 3 days, 4-6 hrs each day
Day workshop is offered	1 Weekdays (Mon-Thurs) 2 Weekends (Fri-Sun) 3 Any days
Time of year offered	1 Summer 2 Fall 3 Winter 4 Spring

TABLE 3
Mean Parameters and t Tests for Desirability as a Function of Program Attributes and Participant Characteristics

Attribute ¹	Coefficient Mean	SE	t	p(t)
Program Attributes				
Length (days)	0.12	0.23	0.53	.7018
Price (dollars)	-0.053	0.002	-27.17	<.0001
"Many" activities	2.12	0.16	13.63	<.0001
Average instructor skills	3.02	0.30	10.14	<.0001
Above average instructor	6.48	0.29	22.57	<.0001
Offered on weekends	0.27	0.20	1.34	.1808
Personal Characteristics				
Have attended Seatauqua	-0.84	0.29	-2.85	.0045
Couple	-1.23	0.34	-3.62	.0003
Family, children over 16	-2.05	0.51	-4.04	.0001
Family, children 16 and under	-1.45	0.40	-3.63	.0003
Working	-0.67	0.39	-1.72	.0859
Have attended other programs	1.11	0.38	2.95	.0033
Completed college	-1.92	0.76	-2.54	.0114
Completed graduate school	-2.23	0.74	-3.00	.0028
46-65 years old	-0.16	0.28	-0.56	.5757
Over 65 years old	-0.38	0.45	-0.86	.3902
Per-capita income (thousands of dollars)	-0.0026	0.01	-0.27	.7873
Long-time visitor (2 weeks or more)	-1.16	0.45	-2.57	.0104
Locals	0.011	0.23	0.05	.9601
Male	0.32	0.31	1.02	.3082
Interactives				
Working participant, weekend program	0.96	0.31	3.14	.0018
Average instructor, male participant	-0.11	0.42	-0.27	.7873
Above average instructor, male participant	-0.86	0.39	-2.23	.0262
Constant	8.28	1.02	8.13	<.0001
Sample size	570			
Buse R-square	0.74			
Log-likelihood function	-1357.47			
Mean, dependent variable	6.61			

¹The following levels of attributes were used as base levels and, therefore, omitted to maintain orthogonality and avoid the dummy variable trap: "few" program activities, poor instructor skills, offered on weekdays, have not previously attended Seatauqua, single household, retired, have not attended other educational programs, highest formal education of high school, under 46 years of age, short-term visitor, and female.

TABLE 4
Mean Parameters and t Tests for Participation as a Function of Program Attributes and Participant Characteristics

Attribute ¹	M	SE	t	p(t)
Program Attributes				
Length (days)	0.011	0.029	0.40	.6893
Price (dollars)	-0.0058	0.00	-16.48	<.0001
"Many" activities	0.15	0.027	5.65	<.0001
Average instructor skills	0.28	0.042	6.59	<.0001
Above average instructor skills	0.64	0.045	14.26	<.0001
Offered on weekends	0.14	0.042	3.25	.0012
Personal Characteristics				
Have attended Seatauqua	0.085	0.036	2.38	.0176
Couple	-0.073	0.056	-1.30	.1941
Family, children over 16	-0.26	0.067	-3.94	<.0001
Family, children 16 and under	-0.11	0.069	-1.55	.1217
Working	0.076	0.063	1.20	.2306
Have attended other programs	0.14	0.039	3.59	.0004
Completed college	-0.019	0.079	-0.25	.8027
Completed graduate school	-0.14	0.074	-1.85	.0648
46-65 years old	0.065	0.042	1.54	.1241
Over 65 years old	-0.004	0.064	-0.064	.9489
Per-capita income (thousands of dollars)	0.003	0.001	1.72	.0859
Long-time visitor (2 weeks or more)	0.14	0.082	1.70	.0897
Locals	0.037	0.032	1.17	.2425
Male	0.034	0.049	0.70	.4842
Interactives				
Working participant, weekend program	0.041	0.051	0.79	.4299
Average instructor, male participant	-0.12	0.061	-2.02	.0439
Above average instructor, male participant	-0.14	0.066	-2.16	.0312
Constant	0.13	0.13	1.01	.3129
Sample size	570			
Buse R-square	0.52			
Log-likelihood function	-277.53			
Mean, dependent variable	0.48			

¹The following levels of attributes are used as base levels and, therefore, omitted to maintain orthogonality and avoid the dummy variable trap: "few" program activities, poor instructor skills, offered on weekdays, have not previously attended Seatauqua, single household, retired, have not attended other educational programs, highest formal education of high school, under 46 years of age, short-term visitor, and female.

TABLE 5

Impacts of three programs and three targetted audiences on: desirability and projected annual attendance

Model type	Audience	Program 1 ^a	Program 2 ^b	Program 3 ^c
Desirability ^g scores	I ^d	12.82	6.97	8.31
	II ^e	11.37	4.56	6.86
	III ^f	14.96 (14.51) ⁱ	8.24 (8.45)	10.54 (10.00)
Projected ^h average attendance	I	1.26	0.61	0.76
	II	0.99	0.30	0.49
	III	1.43 (1.33)	0.74 (0.66)	0.94 (0.84)

^aProgram 1 is defined as: 1 day, on a weekend, for \$15 with many activities and an expert instructor.

^bProgram 2 is defined as: 1 day, on a weekday, for \$15 with few activities and an average instructor.

^cProgram 3 is defined as: 1 day, on a weekend, for \$100 with many activities and an expert instructor.

^dAudience I is defined as: A female with her husband. They are retired, have college degrees, are over 65 years of age and have an average annual per-capita income of \$30,000. They are visiting the local area for over two weeks.

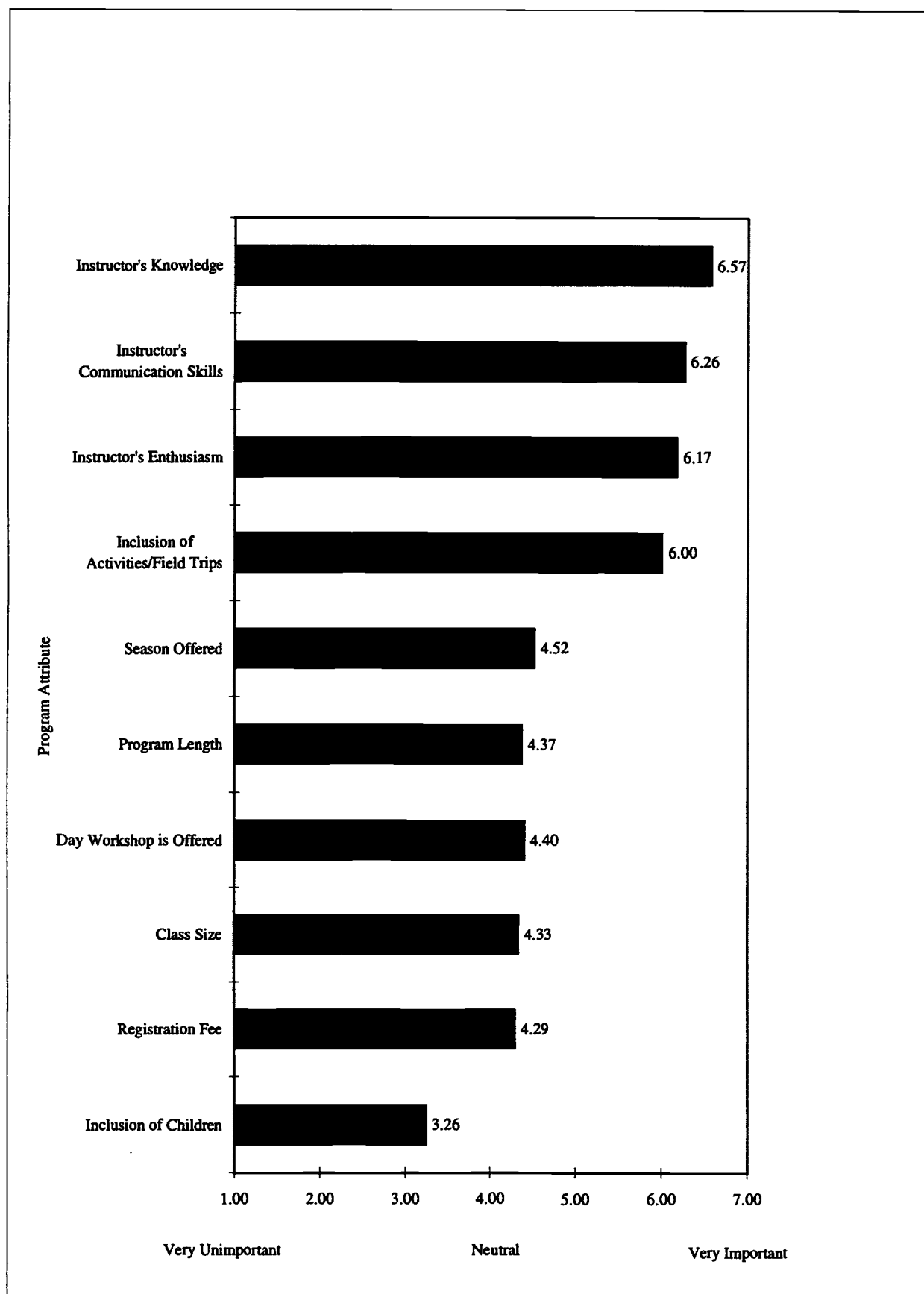
^eAudience II is defined as: A female with her husband and one or more children over the age of 16. She works, has a master or doctorate degree, is between the age of 46-65 and has an average annual per-capita income of \$45,000. Her family is visiting the local area for one week.

^fAudience III is defined as: A single working female with college degree who is under 45 years of age, has an average annual per-capita income of \$30,000, is a local resident and has attended both Seatauqua workshops and other similar educational programs in the past.

^gDesirability scores range from 1 (highly undesirable) to 7 (indifferent) to 15 (highly desirable).

^hProjected average annual participation is based on expected average attendance for the next ten year period.

ⁱResults for a male as generated for Audience I and programs 1-3. Used to compare the differences in scores between males and females.



PART 3**A Comparison of Alternative Markets for a Nature-based Education Program**

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RUNNING HEAD: Evolving Markets for Nature-based Education Program

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TITLE:

A Comparison of Alternative Markets for a Nature-based Marine Education Program

ABSTRACT:

Historically, nature-based education programs have served a predominantly specialist audience. However, growth in coastal tourism suggest that nature-based education potentially appeals to an expanding cross-section of the vacationing public. Using a stated preference and choice analysis, the research compares program preferences and potential demand for two alternative markets. Results include recommendations for new program development.

Recent studies indicate that coastal tourism and non-consumptive recreation have become mainstream forms of recreation along North America's coasts and are continuing to grow in popularity (Miller 1993). These studies also suggest an increase in demand for coastal recreational activities that include an environmental component (Ingram and Durst 1989). While no formal classification for these programs exists, they can be roughly grouped as "nature-based education programs." Nature-based programs are currently delivered in diverse forms including classes, interpretive programs, exhibits, and guided tours. To date, however, little work has been done to assess relationships between program participants and program characteristics.

Research into the dynamics of tourism has found that as the number of visitors increases, the composition of participants tends to shift from specialists to generalists, and the character of the services they prefer changes (Butler 1980). For example, for whale watching Duffus and Dearden (1990) found that as the popularity of the activity increased, the clientele's knowledge of whales decreased and participants tended to be interested in the trip as an entire experience rather than focused solely on whales.

Other tourism research supports the hypothesis that attractions which involve recreational activities and are associated with widespread conceptions of the local environment appeal to a wide cross-section of the traveling public. Dearden and Harron (1994) found that tourist satisfaction during visits to the Thailand hill tribes was increasingly associated with raft trips and elephant rides. Historically, however, the attraction was as a special-purpose experience which focused on interaction with native cultures. This change was concurrent with a significant expansion in the number and types of tourist visiting the tribes, and suggests a shift toward a more generalized recreational tourist attraction.

Individual leisure preferences are related to an individual's definition of "meaningful leisure" (Felson 1976). Constraints, such as leisure time and discretionary income, are equally important determinants of participation. Jackson, Crawford and Godbey (1993) suggest that constraints, however, do not necessarily lead to non-participation. Instead, individuals may modify participation as a way of negotiating constraints. As noted by Wright and Goodale (1991), personal variables impact how an individual negotiates constraints. As in the case of preferences, these are related to demographic and psychodemographic variables.

Crawford and Godbey (1987) suggest that constraints should be considered in the larger context of social and environmental relationships, and suggest a framework for three types of constraints: *interpersonal* (involving relationships with other individuals); *intrapersonal* (involving psychological states and characteristics); and *structural* (representing external variables that intervene between preference and eventual participation).

Trends suggest that the interaction of preferences and constraints make certain groups particularly strong potential markets for nature-based education courses. One important market for non-credit education programs is the growing population of retired leisure travelers. One example is the growth of the popular Elderhostel education program which offers short-term academic programs for older adults, hosted by educational institutions around the world. In the last decade, the program has grown to over 250,000 annual participants.

There have been a plethora of studies into segmenting markets for public and non-profit organizations. Segmentation has been accomplished based on visitor motivation (Andereck & Caldwell 1994), benefits sought (Loker & Perdue 1992), and constraints (Jackson 1988). An example of nature-based marine education is the Seatauqua program offered at Oregon State

University's Hatfield Marine Science Center (HMSC), Newport, Oregon. The center has a public exhibition and aquarium wing. Seatauqua is a non-credit, nature-based education program which includes films, walks, boat trips, van trips and workshops. Like many non-profit educational programs, Seatauqua is in transition. Traditionally, funding was provided primarily through the University and Oregon Extension Sea Grant. Revenue generation was not a primary objective, and program operation did not depend on proceeds. However, with changing financial goals of the parent organization, revenue generation is becoming an increasingly important source of program support, and critical for Seatauqua's long-term survival. As with other public agencies experiencing increasing competition for limited resources, management must now attempt to differentiate and understand potential market segments and how they are changing.

The following study examines the potential for growth of nature-based programs by using Stated Preference and Choice (SPC) methodologies to survey and evaluate current and potential audiences for the Seatauqua program. Specifically, it measures personal preferences and participation rates for an array of alternative program formats. In order to understand the preferences and constraints throughout the range of current and potential attendees, Hood's (1983) methodology of surveying participant and non-participant populations is employed.

METHODS

Study Population

Past participants in 1-3 day Seatauqua workshops were chosen to represent a population of participants ("participant"). Visitors to HMSC's public wing who had not attended any of the Center's education programs were selected to represent a potential audience that was not currently participating in nature-based education courses ("non-participant").

The two groups were surveyed to test the following hypotheses: (1) the populations of participants and non-participants differ demographically and psychographically; (2) price and schedule will be associated with different preferences and participation rates among non-participants and participants and; (3) various program formats will be characterized by significant differences in demand by alternative groups.

The Survey

A written survey was distributed to public wing visitors throughout the range of operating hours during the late summer and early fall, 1992. One member of every third visiting group was selected randomly and asked to participate in the survey. Over 90% completed the 10 page survey. Specific information included: (1) socioeconomic characteristics of visitors; (2) relative importance of selected program attributes; (3) interest in possible program formats and; (4) preferences for, and anticipated attendance in, a series of hypothetical programs.

A similar written survey was mailed to a random selection of past participants in the Seatauqua program. A modified Dillman survey method was used, which included an initial mailing and two follow-up mailings to non-respondents (Dillman 1978). See Sylvia et al. (1995) for a detailed description of the survey.

Measurement and Statistical Analysis

Demographic and participation trends in the Seatauqua program have been analyzed previously to determine the relative importance of program attributes and participant characteristics in impacting preferences and expected participation rates (Sylvia et al. 1995). The same model techniques used to describe and analyze the data from the past participants were used for the non-participants.

Self-explicated utility analysis techniques (Rosenberg 1956) were employed to measure the importance of program attributes and the preferences for different levels of program attributes. Respondents assigned a score (7 = very important; 1 = very unimportant) regarding the relative importance of each program attribute (Table 1) in contributing to the desirability of a nature-based educational program. They then scored the relative desirability (7 = very desirable; 1 = very undesirable) of different levels of each program attribute (Table 1). These results were used to help suggest key differences, both within and between study populations, that might lead to market segmentation.

Conjoint analysis, an SPC technique for measuring consumer trade-offs between multi-attributed products and services, was used to evaluate potential demand and to estimate the tradeoffs between educational program attributes (Green & Rao 1971). Conjoint techniques are often used when evaluating new products to determine demand for individual product characteristics (Green & Rao 1971). SPC is an increasingly popular approach in recreational and behavioral studies, as well as in other industries, because they quantitatively relate preference and choice to varying levels of program attributes (Louviere & Timmermans 1992). Additionally, personal computer software packages have made these techniques widely available

to practitioners (Green & Srinivasan 1990).

The approach assumes that the rating of a program is a function of the levels of its attributes, which additively determine each respondent's preference for a given program. Individuals are asked to provide relative comparisons of each program. Their preferences are then decomposed into part-worth estimates for the relevant attributes (Green & Srinivasan 1990).

One potential weakness of this form of SPC analysis is the potential of constructing a model that has more variables than a respondent is able to process. In order to cut down on the complexity and avoid potential bias, respondents were presented with five alternative educational programs. They were asked to assess the desirability of the program (15 = highly desirable; 1 = highly undesirable) and to estimate how often they would consider attending each program over the next ten-year period.

A combination of program attributes and levels were selected: *Price* (\$15, \$50, \$100), *Activities* (few, many), *Instructor Skills* (below average, average, above average), *Day Offered* (weekdays, weekends), and *Program Length* (1 day, 2 days). This subset of program attributes was selected to reflect factors that program managers believe are most important in designing outreach educational programs. The levels of each attribute were chosen to realistically represent the range of options that consumers might select from. Other attributes were held constant; for example, class length was assumed to be six to seven hours in a day, and respondents were instructed to assume that other program attributes were at the levels they felt were “ideal.”

Survey information was used to estimate two regression models: (1) a preference model where the dependent variable is the desirability score; and (2) a participation model, where the dependent variable is the annual average projected participation rate derived from expected

yearly participation over the next ten-year period.

In both models, respondents' demographic characteristics were used as dummy variables (Table 2). Additionally, it was believed that two interactive variables, *Working Status* and *Weekend Class Offerings*, and *Gender* and *Average or Above Average Instructor Skills* would add to the validity of the models. *Working Status* and *Weekend Class Offerings* were included because of the hypothesis that time constraints associated with employment would be strongly related to preferences for weekend classes. *Gender* and *Average or Above Average Instructor Skills* were included in order to test the hypothesis that gender would effect the value placed on the instructor's expertise.

RESULTS AND DISCUSSION

Socioeconomic and Program Participation Trends

Chi square analysis was used to compare the socioeconomic and program participation variables among the two audiences. Past participants had an average age of 56 years and potential participants an average age of 43 years. Using a rank sum test, this difference was found to be statistically significant ($Z = -9.29$, $p = 0.00$). Past participants also tended to have a higher level of formal education and participated with more frequency in other types of non-credit educational activities (Table 3). These findings suggest that more highly educated individuals are more likely to find classroom learning environments to be meaningful leisure.

Participants were also more likely to reside locally, while greater numbers of potential participants were from other regions within the state. Average annual income was found to be the same for both past and potential participants at \$43,000 ($z = -0.28$, $p = 0.78$). Participants were more often couples in households without children, while potential participants were more

likely to have children, suggesting that potential participants' may have less discretionary income. Additionally, while the majority in each group were working as opposed to retired, a higher percentage of potential participants were working as compared to past participants. These characteristics of past program participants-- local residence, no children, and retired, are characteristics which encourage participation given the design of current course offerings.

While participants were more likely to reside locally (33%), out of those that were visiting the area 18% came specifically to attend Seatauqua, 25% chose Newport as their primary destination, and 15% were traveling through the area. This visitor profile was statistically different from potential participants where only 6% were local. Of the visiting potential participants, 3% came to attend an educational activity, 46% chose Newport as their primary destination, and 4% were traveling through the area. Participants were also more likely to stay longer with an average visit length of 4.9 days, compared to a visit length of 2.3 days for potential participants. This suggests that participants tend to be specialists that are coming to the area to attend the program, while potential participants tend to be generalist, mainstream tourists.

Table 4 summarizes comparisons of program participation trends among past Seatauqua participants and potential participants. Past participants were more likely to participate in activities such as crabbing, clamming, fishing, tidepooling or bird watching. All of these activities are popular Seatauqua workshop topics (Sylvia et. al. 1993). It is possible that the Seatauqua workshops encourage participation in these activities either directly, or indirectly as a complementary activity. Other than this difference, the two groups had very similar profiles of activities in which they participated while visiting the central Oregon coast. For example, they were equally as likely to go whale watching, camping or hiking, or visit a local tourist attraction.

This suggests that visitors are coming to the region for similar desires and interests; it's the format or structure for their enjoyment that appears to be different.

Past participants also varied significantly from potential participants in their interest in program types and workshop formats. Past participants appeared to be more interested than potential participants in lengthier specialized programs such as workshops (78%) and van tours (31%). This preference for greater involvement and specialization was also reflected in the types of workshop formats that interested them, with a preference for 1-3 day workshops (63%).

Conversely, potential participants were more interested than past participants in guided walks (54%), boat tours (70%) or video tapes (21%). Of the 30% interested in workshops, most preferred a shorter format, 1-2 hour introductory programs (44%). This interest in shorter classroom formats could be due to personal and time constraints among potential participants who stay in the area for a shorter time period.

Higher interest in alternative activities such as boat trips and walks suggests a preference for learning experiences that are not classroom-based. The higher level of formal education among participants suggests that the ascriptive factor of education is positively related to perceived value of the classroom format. Many individuals might prefer the primary emphasis on experience within nature represented by boat tours and nature walks. Finally, life cycle factors could play a large role. Younger individuals and families with small children often prefer more active recreational activities, while older individuals often prefer less strenuous activities (Ibrahim 1991).

The high interest in boat trips also relates to recent findings by Forestell (1993) regarding recreational whalewatching boat trips in Hawaii. Forestell found that there were no significant

differences between tourists on boat trips and a group of randomly selected respondents waiting in line at the airport to board an airplane to the mainland United States. He concludes that “whalewatchers in Hawaii represent a cross-section of the traveling public” (Forestell 1993, p. 276). While differences between whalewatching in Hawaii and boat trips on the Oregon coast clearly exist, Forestell’s findings suggest that recreational activities such as boat trips that are related to the local environment can appeal to a broad cross section of the traveling public.

The Relative Importance of Program Attributes

Analysis of variance (ANOVA) Least Significant Difference (LSD) group means tests were employed to analyze respondents’ rating of the relative importance of program attributes both within and between the two study populations (Figure 1). Findings suggest that attributes could be divided into two groups: primary attributes that are significant across the populations of both past participants and potential participants, and secondary attributes that were less important overall.

The most important attributes were *Instructor Knowledge*, *Enthusiasm* and *Communication Skills*, and the *Inclusion of Hands-on Activities or Field Trips*. These attributes all received scores close to six, while other attributes were considered significantly less important.

While past and potential participants ranked the same attributes as most important, past participants found *instructor’s knowledge* and *inclusion of activities* significantly more important than potential participants. The lower perceived importance of instructor’s knowledge ($F=4.43$, $p<.05$) and inclusion of activities ($F=22.35$, $p<.01$) could be related to potential participants unfamiliarity with the workshop structure. It suggests that the perceived importance of these

attributes may be related to direct experience with the workshops. This is consistent with research by Goodrich (1978) who found product preference to be influenced by perceptions, familiarity, and/or knowledge of the product.

There were more differences between the two groups with respect to the secondary attributes. Potential participants found *Program Length* ($F = 10.30$, $p = 0.00$), *Class Size* ($F = 5.93$, $p = 0.02$), and *Inclusion of Children* ($F = 39.02$, $p = 0.00$) all significantly more important than past participants. These different levels of importance, when combined with differences in constraints, suggest changes needed in program format in order to attract new participants. For example, if management were to decide to attract individuals with children and less discretionary time, they would need to: 1) foster an environment that accepts children; 2) offer shorter programs; and 3) provide smaller classes while promoting greater individualized care for participants and their children.

Desirability and Projected Participation as a Function of Attribute Levels

The results from the regression models measuring desirability for workshops and projected participation rates, for both past and potential participants, are presented in Table 5 and Table 6 respectively. For both past and potential participants, all of the program attributes were significant in impacting preferences and participation rates except for *Program Length* (one or two days). The importance of program attributes was consistent with the findings from the self-explicated utility analysis.

Price negatively impacted both program preference and demand for past and potential participants; price, however, was relatively more important to potential participants ($T = 2.16$, $p < .05$). The amount and significance of *Price* suggest that the price range would have to increase

significantly in order to decrease preference or participation for either group.

Instructor Skills had the strongest influence for past participants. To illustrate the importance of *Instructor's Skills* relative to *Program Price*, moving from *Below Average* to *Average* and *Above Average Skills* increased preference sufficiently to offset price increases of \$57 and \$122 respectively per program, while maintaining the same preference score.

Although Instructor skills were also important to potential participants, the values calculated by moving from *Below Average* to *Average* and *Above Average Skills* were appreciably lower than those calculated for past participants; a \$25 price offset with an average instructor, and a \$76 price offset with an above average instructor. This difference in the importance of the instructor's skills was statistically significant ($T = 3.93$, $p < .01$ for average instructors; $T = 4.36$, $p < .01$ for above average instructors).

The lower relative importance of instructors to potential participants may be related to their lack of familiarity with the course. The unscripted nature of the course makes the instructor's expertise a primary determinant of course quality. As a result, individuals familiar with the course give instructors a relatively higher importance rating. Or alternatively, those experienced in taking these courses recognize the importance of the instructor's skills.

Offering the workshop on weekends increased the desirability and attendance rate for both past and potential participants. While this significantly increased the preference for potential but not past participants, the two groups were not significantly different from each other.

Working had a small negative impact on preference and attendance rates for both groups. This impact was only significant for the demand of past participants, reducing the projected

participation rate by .17 classes over the course of a year. This relatively small impact supports the idea that constraint negotiation leads to reduced participation rather than non-participation. Kay and Jackson (1991), for example, asked individuals how they dealt with time constraints and found that 71% said that they cut down on their leisure in various ways, 27% reduced the time they spent on household tasks, and 2% reduced their work time.

One hypothesis was that weekend programs might be relatively more important to the working segments in these groups, hence the inclusion of an interactive variable of working status and day offered. This interactive variable was highly and positively significant in the desirability model for past participants, but not for potential participants. The two groups were not significantly different from each other.

Program desirability and projected participation rate were positively associated with interest in workshop formats. Interest in workshop format was more important to potential participants than past participants ($T = 2.75, p < .01$). This suggests appeal of workshop formats to specialized audiences. Potential participants that had an interest in workshops as a leisure activity found these types of programs more desirable and were more likely to attend. The variable may not have been as important to past participants because they are already involved in workshop-type activities.

The variable *Have Attended Other Programs* also supported the idea that interest or participation in educational programs as a leisure activity would increase desirability and participation in these workshops. This variable increased desirability for past participants by 0.17, and demand by 1.46. This variable was positive but significantly less important to potential participants ($T = 2.38, p < .01$ for preference model; $T = 2.65, p < .01$ for demand model).

These findings support the hypothesis that potential participants do not participate as often as past participants in nature-based educational programs as a leisure activity.

Household make-up showed a different relation to preferences and participation rate for past and potential participants. These differences were found to be significant at the $p = .05$ level. For potential participants, *couples* and *families with children over 16* had significantly positive coefficients relative to Single-Member Households, while the coefficients for *families with children under 16* were not different from zero. This suggests that couples and families with older children may perceive these programs as family-oriented activities. In contrast, families with young children are constrained by interpersonal factors. Conversely, past participants showed significantly negative coefficients in the preference model for all household types other than singles. This suggests that single individuals with few household encumbrances would have potentially high desirability and participation rates. One possible explanation is that the specialized nature of the programs appeals to only a limited number of family members, thereby posing a constraint.

College Education and *Graduate Level Education* were both inversely related to desirability and participation for past participants and positively related to desirability and participation for potential participants. The two groups were statistically different from each other. While the potential participant results fit the profile of the typical program participant, those of past participants did not. Sylvia et. al. (1995) suggested that lower preference scores by educated participants could be related to more discerning judgment or having a greater number of activities to choose from. This could be especially true for those who have already participated in Seatauqua programs. Perhaps the survey choices did not compare favorably to programs they

have participated in. Potential participants, not having as much experience, might have found the choices more favorable.

The age coefficient was significantly negative for potential participants in both the desirability and projected participation of workshops, and the findings were significantly different from the past participants. This was contrary to the profile of program participants and illustrates the very specialized niche of current program offerings. This suggests that workshops do not appeal to all older individuals, but rather a specialized segment of the population.

The variables of *Visit Length* showed a positive impact on desirability and potential demand for both past and potential participants. Locals and visitors staying in the area for four days or longer, expressed higher potential participation rates than those staying in the area for less than four days, suggesting that short-time visitors may have significant time constraints.

Predicting Results Among a Range of Programs and Participants

The regression models described above were used to estimate desirability and participation for various hypothetical programs and audiences. Three programs were selected to represent a range of alternatives a Seatauqua manager might select. The hypothetical programs were considered in the context of three broad classes of typical participant audiences. Table 7 summarizes the attributes of the programs, characteristics of the audiences, and results.

Program 1 has ideal levels of resources: a low fee, many activities, an expert instructor and offered on weekends. This is the current Seatauqua offering and represents a subsidized program. Program 2 reduces costs by decreasing desirable attributes in order to maintain a low price. Programs are offered with an average instructor (possibly a staff person who has general knowledge rather than expert skills), offered on weekdays (during a regular work week), and has

few activities. Program 3 maintains the desired level of attributes but significantly increases the price: a reflection of a program that has lost its source of outside funding.

Overall, program 1 rated the highest both in desirability and projected attendance for all audiences. Program 3 rated the next highest and program 2 rated the lowest. This suggests that both past and potential participants would rather pay more than trade off desired levels of the attributes, further suggesting that program prices for Seatauqua could be raised while still maintaining acceptable attendance rates. This idea is supported by the existence of a similar educational program in the area that charges almost twice as much and still has acceptable attendance rates (Cook 1993).

Potential participants returned consistently higher desirability scores and participation rates than past participants. This could be due to lack of previous experience with Seatauqua, suggesting that these projected attendance rates are idealized and, therefore, higher. In comparison, past participant's experience with Seatauqua programs makes their projected attendance rates possibly more realistic.

CONCLUSIONS

This study has focused on understanding the preferences and participation rates of current and potential participants in nature-based marine education programs. Results suggest that demand exists for a wide range of nature-based education programs. Key constraints to participation include lack of awareness of the program, and the program's specialized format. Preferences for programs are related to several distinct market segments with differing leisure values and constraints.

The current workshop program format appeals to a specialist audience that have

antecedent interest in nature-based education and the classroom format, as evidenced in the profile of participants. This format also appeals to elderly, educated travelers. These audiences prefer the current formats, and interpersonal, intrapersonal and structural constraints are relatively low.

Results support the hypothesis that as popularity of a tourist area increases, a specialist tourist activity can potentially evolve to appeal to a generalist audience. The current participant profile differs from that of the typical visitor to the region, as defined through a survey by Dean Runyon Associates (1989). Additionally, among the audience we defined as potential participants, widespread appeal for more casual educational activities is evidenced. This suggests that nature-based education is an evolving mainstream activity that appeals to a cross-section of the traveling public. The casual recreational traveler represents a large potential audience. Attributes of programs that are preferred by a generalist audience include shorter program length and non-classroom settings such as walks or boat trips. Results also suggest that potential participants have more restricting time, leisure and household constraints.

Seatauqua managers will need to contend with these realities and design appropriate programs if they plan appeal to these non-traditional market segments in efforts to increase gross and net revenues while meeting the other Seatauqua objectives.

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TABLE 1
Program Attributes and Levels

Attribute	Levels
Instructor's knowledge	1 Expert in field 2 Moderately knowledgeable 3 Not very knowledgeable
Instructor's enthusiasm	1 Very enthusiastic 2 Moderately enthusiastic 3 Not very enthusiastic
Instructor's communication skills	1 Excellent communicator 2 Average communicator 3 Poor communicator
Hands-on activities/field trips	1 Entirely hands-on activities/field trips 2 Mixture of activities and lecture 3 Entirely lecture
Class size	1 5 participants 2 15 participants 3 20 participants 4 30 participants
Registration fee	1 \$5 2 \$10 3 \$15 4 \$25 5 \$50 6 \$75 7 \$100
Inclusion of children in workshops	1 Shared experience/adults and children 2 Older children can participate 3 Children not allowed, other programs provided 4 Children not allowed, programs not provided
Length of workshop	1 1 class for 1 day (7hrs) 2 1 class for 2 days, 4-6 hrs each day 3 1 class for 3 days, 4-6 hrs each day
Day workshop is offered	1 Weekdays (Mon-Thurs) 2 Weekends (Fri-Sun) 3 Any days
Time of year offered	1 Summer 2 Fall 3 Winter 4 Spring

TABLE 2
Personal Characteristics and Levels

Characteristic	Levels
Family Status	1 Single 2 Couple 3 Adult family 4 Family with children
Working Status	1 Retired 2 Working
Education	1 High school 2 College 3 Graduate school
Age	1 Under 46 2 46-65 3 Over 65
Visit Length	1 Local 2 Less than 2 weeks 3 More than 2 weeks
Gender	1 Male 2 Female
Previous Attendance in Seatauqua Workshops	1 True 2 False
Attendance in Other Non-credit Educational Programs	1 True 2 False

Table 3
Contingency Tabulations of Demographic Characteristics by Group Type

Variables	Walk		Partic	
	N	%	N	%
<u>Education</u>				
High school	64	19	11	6
Vocational/technical school	24	7	4	2
Some college	98	29	39	21
Completed college	107	32	67	36
Completed graduate school	44	13	65	35
Chi-square= 51.05, p= < 0.000				
<u>Gender</u>				
Female	187	56	113	63
Male	149	44	66	37
Chi-square= 16.49, p= < 0.000				
<u>Residence</u>				
Local	17	5	63	34
Other Oregon	217	65	77	42
Out-of-state	100	30	44	24
Chi-square= 78.00, p= < 0.000				
<u>Working Status</u>				
Working	285	84	113	61
Retired	54	16	72	39
Chi-square= 34.64, p= < 0.000				
<u>Household type</u>				
Single	47	14	37	20
Couple	126	37	98	52
Family, children over 16	37	11	18	10
Family, children 12-16	42	12	18	10
Family, children under 12	88	26	16	8
Chi-square= 28.70, p= < 0.000				
<u>Participation in other ed. activities</u>				
Free films	50	41	86	51
Non-credit workshops	44	36	96	57
Other	13	11	27	16
No participation	53	43	29	17
Chi-square= 26.50, p= < 0.000				

Table 4
Contingency Tabulations of Visitor Characteristics by Group Type

Variables	Walk		Partic	
	N	%	N	%
<u>Reason for visit</u>				
Live in area	16	6	62	33
Attend ed. program	9	3	34	18
Primary destination	133	46	64	25
Traveling through area	129	45	28	15
Chi-square= 115.18, p= < 0.000				
<u>Other activities while in area</u>				
Relax and sightsee	229	82	142	75
Visit Marine Science Center	211	76	151	80
Visit local tourist attractions	138	50	81	43
Tidepooling or bird watching	121	44	104	55
Whale watching	84	30	62	33
Camping/ hiking	102	37	64	34
Crabbing/ clamming/ fishing	88	32	112	59
Chi-square= 22.78, p= < 0.000				
<u>Interest in program types</u>				
Guided Walks	162	54	55	29
Talks	82	27	38	20
Films	116	39	76	40
Van tours	57	19	59	31
Boat tours	210	70	53	28
Workshops	91	30	147	78
Video tapes	64	21	4	2
Chi-square= 148.54, p= < 0.000				
<u>Interest in workshop formats</u>				
1-2 hours introductory program	94	44	36	20
1-3 day workshop	61	29	113	63
Series of 1-3 day workshops, beginning to	27	13	31	17
1-2 week intensive workshops	14	7	25	14
Chi-square= 44.62, p= < 0.000				

TABLE 5
*Mean Parameters and t Tests for Desirability as a Function of Program
 Attributes and Participant Characteristics for
 Past Program Participants and Potential Participants*

Attribute ¹	Past Participants		Potential Participants	
	Coefficient Mean	t	Coefficient Mean	t
Program Attributes				
Length (days)	-0.35	-1.37	-0.17	-0.48
Price (dollars)	-0.053	-27.71	-0.060	-23.37
"Many" activities	2.12	13.77	1.91	9.34
Average instructor skills	3.13	11.13	1.48	4.96
Above average instructor	6.50	22.70	4.58	14.18
Offered on weekends	0.29	1.46	1.81	1.87
Personal Characteristics				
Interest workshop format	-0.23	-0.78	0.87	3.65
Interest intro. programs	0.60	1.81	0.77	3.29
Couple	-0.94	-2.93	0.59	1.32
Family, children over 16	-1.51	-3.10	0.46	0.64
Family, children 16 and under	-1.84	-4.51	-0.026	-0.053
Working	-0.51	-1.52	-1.57	-1.95
Have attended other programs	1.46	3.83	0.32	1.26
Completed college	-1.92	-2.56	0.12	0.39
Completed graduate school	-2.04	-2.79	0.39	1.05
46-59 years old	-0.62	-1.94	-1.04	-3.47
Over 60 years old	-0.33	-0.91	-2.21	-4.43
Per-capita income (thousands of dollars)	-0.013	-1.24	-0.0060	-0.44
Long-time visitor (4 days or more)	0.64	1.83	0.45	1.16
Locals	0.45	1.74	0.075	0.12
Male	0.33	1.03	-0.65	-1.55
Interactives				
Working participant, weekend program	0.99	3.33	-0.094	-0.096
Average instructor, male participant	-0.28	-0.68	1.29	2.55
Above average instructor, male participant	-0.90	-2.36	0.66	1.32
Constant	7.70	8.11	7.97	6.04
Sample size	570		505	
Buse R-square	0.74		0.66	
Log-likelihood function	-1357.67		-1216.98	
Mean, dependent variable	6.61		7.11	

¹The following levels of attributes were used as base levels and, therefore, omitted to maintain orthogonality and avoid the dummy variable trap: "few" program activities, poor instructor skills, offered on weekdays, have not previously attended Seatauqua, single household, retired, have not attended other educational programs, highest formal education of high school, under 46 years of age, short-term visitor, and female.

TABLE 6
*Mean Parameters and t Tests for Demand as a Function of Program
 Attributes and Participant Characteristics for
 Past Program Participants and Potential Participants*

Attribute ¹	Past Participants		Potential Participants	
	Coefficient Mean	t	Coefficient Mean	t
Program Attributes				
Length (days)	-0.012	-0.36	0.000024	0.0004
Price (dollars)	-0.006	-16.40	-0.0065	-14.62
"Many" activities	0.15	5.56	0.18	5.47
Average instructor skills	0.27	6.40	0.072	1.53
Above average instructor	0.63	14.20	0.45	8.28
Offered on weekends	0.14	3.24	0.18	1.49
Personal Characteristics				
Interest workshop format	0.14	3.89	0.23	4.74
Interest intro. programs	0.019	0.43	0.085	2.05
Couple	-0.017	-0.32	0.18	2.22
Family, children over 16	-0.23	-3.54	0.56	3.35
Family, children 16 and under	-0.060	-0.85	-0.046	-0.56
Working	-0.17	-2.78	-0.24	-1.89
Have attended other programs	0.17	4.03	0.015	0.28
Completed college	-0.071	-0.90	0.072	1.28
Completed graduate school	-0.17	-2.32	0.095	1.54
46-59 years old	0.059	1.21	-0.15	-3.09
Over 60 years old	0.12	2.09	-0.45	-4.69
Per-capita income (thousands of dollars)	0.004	2.20	-0.0039	-1.68
Long-time visitor (4 days or more)	0.036	0.82	0.16	2.86
Locals	0.031	0.90	0.22	1.15
Male	0.024	0.48	-0.13	-1.94
Interactives				
Working participant, weekend program	0.040	0.77	0.026	0.21
Average instructor, male participant	-0.11	-1.76	0.11	1.31
Above average instructor, male participant	-0.15	-2.18	0.14	1.68
Constant	-0.036	-0.30	0.60	2.88
Sample size	570		505	
Buse R-square	0.51		0.46	
Log-likelihood function	-277.57		-320.82	
Mean, dependent variable	0.48		0.54	

¹The following levels of attributes were used as base levels and, therefore, omitted to maintain orthogonality and avoid the dummy variable trap: "few" program activities, poor instructor skills, offered on weekdays, have not previously attended Seatauqua, single household, retired, have not attended other educational programs, highest formal education of high school, under 46 years of age, short-term visitor, and female.

TABLE 7

Impacts of three programs and three targetted audiences on: desirability and projected annual attendance

Model type	Audience	Program 1 ^a	Program 2 ^b	Program 3 ^c
Desirability ^g scores	I ^d	12.90 (15.61)*	7.12 (8.79)	11.04 (13.51)
	II ^e	11.79 (13.08)	5.02 (6.35)	9.94 (10.98)
	III ^f	16.15 (14.64)	9.38 (7.92)	14.29 (12.54)
Projected ^b average attendance	I	1.13 (1.47)	0.91 (0.73)	0.92 (1.25)
	II	0.51 (1.51)	0.25 (0.75)	0.30 (1.29)
	III	0.92 (1.37)	0.66 (0.61)	0.71 (1.15)

* Numbers in parenthesis are for potential participants.

^aProgram 1 is defined as: 1 day, on a weekend, for \$15 with many activities and an expert instructor.

^bProgram 2 is defined as: 1 day, on a weekday, for \$15 with few activities and an average instructor.

^cProgram 3 is defined as: 1 day, on a weekend, for \$50 with many activities and an expert instructor.

^dAudience I is defined as: A retired couple that have college degrees, are over 60 years of age and have an average annual per-capita income of \$30,000. They are visiting the local area for over four days. They are interested in workshops and introductory type programs, but have never attended any before.

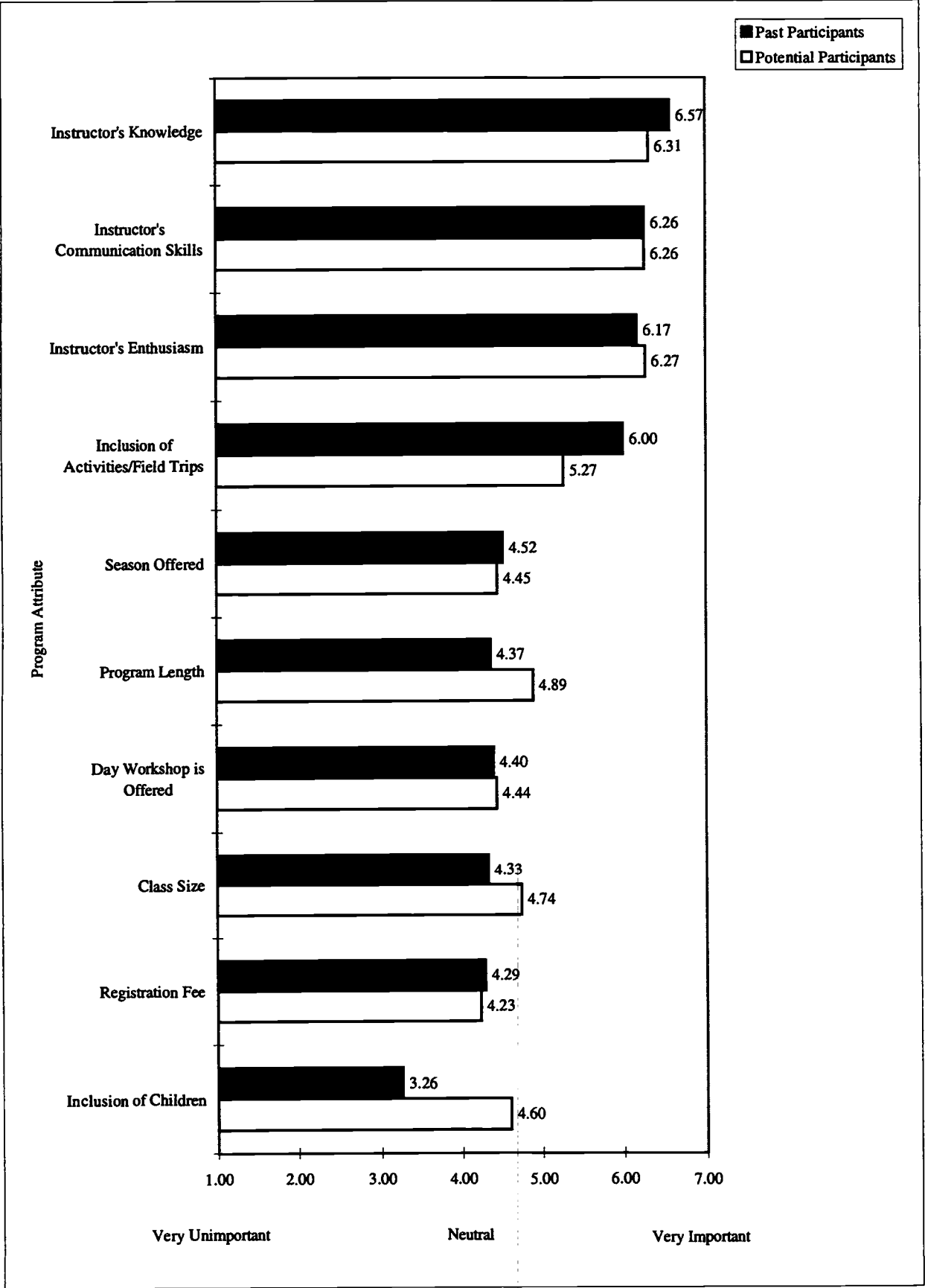
^eAudience II is defined as: A female with her husband and one or more children over the age of 16. She works, has a master or doctorate degree, is between the age of 46-60 and has an average annual per-capita income of \$45,000. Her family is visiting the local area for two days. They are interested in introductory programs but not workshops. They have never attended these types of programs before.

^fAudience III is defined as: A single working female with college degree who is under 45 years of age, has an average annual per-capita income of \$30,000, is a local resident and is interested in introductory programs but not workshops. She has attended similar educational programs in the past.

^gDesirability scores range from 1 (highly undesirable) to 7 (indifferent) to 15 (highly desirable).

^bProjected average annual participation is based on expected average attendance for the next ten year period.

Figure 1. Importance of Program Attributes



PART 4**Preferences for Job and Program Characteristics
Among Environmental Educators**

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RUNNING HEADER: Preferences for Job and Program Characteristics

AUTHOR NOTES:

This study is part of ongoing research for the Oregon Marine Advisory Service that evaluates the current status and potential future directions of the Seatauqua Marine Education Program at Oregon State University's Hatfield Science Center. Funding assistance has been provided from Oregon Sea Grant Extension, Marine Advisory Service, Holt Scholarship Fund, and the Marine Experiment Station. Please address inquiries to Dr. Sylvia, Hatfield Marine Science Center, Oregon State University, Newport, OR, 97365-5296. (503) 867-0284.

TITLE:

Preferred Program Characteristics and Forms of Compensation Among Environmental Educators

ABSTRACT

Given ongoing decreases in funding sources and increases in competitive offerings, public leisure service providers are faced with the need to minimize operating costs and maximize efficiency. In the case of non-credit environmental education programs, optimization of instructor compensation packages and job characteristics could substantially increase program revenue, instructor satisfaction, and participant satisfaction. Compensation packages are primary determinants of cost, as over half of leisure service costs are in the area of employee pay. However, it is crucial to attendance that programs attract and retain high quality instructors -- surveys of program participants show that instructors are the most important determinants of class quality.

This research examines instructors in a non-credit environmental education program in order to characterize sociodemographics of instructors, the perceived importance of program goals, and preferred compensation schemes. Results show that the importance of job characteristics differs from those in other business sectors. It also identifies forms of non-monetary compensation that are important to instructor satisfaction. Conjoint methodologies are applied to predict how variations in salary, alternative forms of compensation, staff support, and class characteristics affect the desirability of teaching and the number of times an instructor would teach per year. These findings are applicable to environmental education program providers as tools to help better understand market dynamics, reduce costs, and increase employee satisfaction.

KEYWORDS: leisure services, conjoint analysis, optimization, compensation satisfaction, job characteristics, work motivation.

Introduction

Leisure service organizations are under pressure to optimize operations and maximize efficiency. These traditionally public institutions are widely faced with decreased funding and increasing commercial competition. In order to adjust to fiscal constraints and changes in demand, Osborne and Gabler (1992) prescribe adopting an entrepreneurial approach to public sector management. However, to be successful, efficiency measures must be based on an accurate understanding of organization and market dynamics.

Non-credit environmental education providers make up one of the sectors of the leisure services industry that is currently struggling with these challenges. These educational programs are generally associated with universities, research centers, parks, zoos, aquaria, and a fast-growing private ecotourism industry. While non-credit environmental education programs are frequently compared to formal education and other nature-based programs, the dynamics of the three differ crucially. Demand for non-credit environmental education is fundamentally different from formal education programs in that it is not related to degree acquisition; however, it is also different than other informal education in that it is set in a structured learning environment. Murphy et al (1991) noted that differences in organizational philosophy and mission of various leisure service providers were sufficient with respect to philosophy, objectives, and financing to allow for their independent classification. Supply of these non-credit environmental education programs is often related to a series of goals that include revenue creation, community education,

and behavior modification. Thus, increasing the efficiency of non-credit environmental education programs will be based on a unique set of considerations and objectives.

This study examines one key factor to consider in increasing the efficiency of non-credit environmental education programs, the instructor. Instructor compensation makes up a major proportion of expenses, reflecting a general trend noted by Belcher and Atchison (1987) that personnel-related expenses usually accounted for more than 60% of operating expenses in service-oriented businesses. Additionally, instructor performance is an important determinant of participant satisfaction. Previous research on participation in non-credit education programs revealed that instructor characteristics were primary factors determining participant enjoyment in environmental education programs (Sylvia, 1994.)

While the central role of instructors in environmental education programs is commonly recognized, little research exists on their preferences regarding job characteristics and compensation satisfaction. The goals of this study were to 1) describe sociodemographic trends among instructors in one program; 2) measure the relative preferences for alternative job characteristics and forms of compensation; and 3) compare instructor preferences to existing research on employees in other leisure service sectors. It is our belief that such knowledge can lead to management strategies that meet the objectives of the program while also increasing the job satisfaction of the instructors.

The next section reviews the study methodology with respect to relevant research, work motivation, job characteristics, and compensation satisfaction. It is followed by a description

and discussion of study results.

Methods

A survey was developed to collect information from instructors regarding their preferences for program formats and compensation schemes. Tools included a 5-page written survey to gain quantitative information and an 1-2 hour interview to explore perceptions. Three general types of information were elicited: 1) sociodemographic information; 2) the importance of program goals, management characteristics and class characteristics, and; 3) instructors perceptions with regard to the relative desirability of a series of alternative program formats and the frequency with which they would teach.

Substantial research exists on employee compensation satisfaction, work motivation and perceived job characteristics, as illustrated in literature reviews by Maceli & Lane (1991) and others. A number of employee satisfaction tests also exist, such as the Neal-Priest Inventory (NPI) for Motivational Congruency of Discrepancy (1992), and the Pay Satisfaction Questionnaire (Heneman and Schwab, 1985). These studies tend to generalize the characteristics that are measured in order to allow for comparison of results across job types and industry sectors. Given the goals of the present research to quantify specific compensation schemes and job characteristics, these studies were inappropriate as models for the current study. Instead, previous research was utilized during the survey design for developing the model, and then during data analysis to compare current survey results to trends in other industry sectors and job

types. The advantage of this method is that it shows the response of instructors to discrete values for characteristics. A related caveat is that the values used in this method were adopted from a specific program. As a result, pay level and other quantities are subject to regional, organizational, and sectoral variations.

In this study a model was developed to measure the desirability for teaching nature-based courses, and the number of times an instructor would teach per year. Based on previous research findings and expert opinion, teaching desirability and frequency were assumed to be a function of personal attributes, organizational features, compensation, and job characteristics. Personal attributes such as age (Draher, Ash & Bretz, 1988), formal education (Klein & Maher, 1966), other sources of income, and tenure (Dreher, 1981) have been found to affect instructor perceptions and preferences. Instructors preferences for teaching are also related to organizational features such as organization size, organizational culture or philosophy, and program goals such as science education and behavior modification. Edlington et al (1989) studied public sector park and recreation employees and found that they were motivated by doing *important/worthwhile work, doing interesting work, and job growth potential*. The relative rank of these motivations changes within private/commercial, non-profit and armed forces employees (Lankford, Neal & Buxton, 19??). Compensation factors affecting instructor perceptions include pay level (Heneman, Greenberger, Strasser, 1988), alternative forms of compensation including per diem expenses, and benefits. Job characteristics of importance include skill requirements, staff support, and the amount of variety, autonomy and responsibility(Hackman & Lawler, 1971).

The model was applied to test three hypotheses: 1) courses are perceived as part-time, community service-related positions. Therefore, instructor preferences and perceptions for teaching these courses will differ substantially from sustaining jobs; 2) instructors are motivated and constrained in their work schedules by factors other than compensation; and 3) motivations among instructors will generally be those of employees in similar types of organizations, with most similarity to the public sector.

Self-explicated Utility Analysis (Rosenberg, 1956) techniques were used to measure variations in the overall importance of organization, compensation, and job characteristics and instructor preferences for different levels of characteristics. Respondents were asked to rate characteristics on a scale of 1 (*very unimportant*) to 7 (*very important*). They were then asked to rate the relative desirability of a set of alternative values for each characteristic on a scale of 1 (*very undesirable*) to 7 (*very desirable*). Chi-square analysis was used to test which levels of characteristics instructors differed significantly.

Conjoint analysis was applied in order to identify instructor preferences for job characteristics. Conjoint techniques are widely used in product evaluations to construct consumer desirability, and design "optimal" products. Usually represented by descriptions on a card, individuals are asked to evaluate various products in comparison to one another. A factorial design was used to ensure that values for each characteristic could be statistically determined, and unbiased, orthogonal arrays (Addelman, 1962) were used to ensure that the characteristics were not correlated with each other. Each product is made up of a random

combination of potential "levels" for each characteristics. This method, therefore, was appropriate for comparing instructor preferences for alternative programs, which can be seen like products. For this study, respondents rated nine hypothetical programs. Preferences were then analyzed using multiple regression analysis to determine coefficients and part-worth estimates for each characteristic. Figure 1 shows a sample conjoint card used in the study.

In order to evaluate instructor preferences using conjoint analysis, characteristics were selected to reflect factors that managers might trade off to optimize operations. The following characteristics and levels were selected: *Wage* (\$0, \$50, or \$100 per day), *Other Compensation* (Strong moral support and thanks, or lodging and travel expenses), *Staff Support* (No facilitator provided, or facilitator provided), *Workshop Length* (1, 2, or 3 days). These levels were selected to represent the range of options that might be considered realistically by a manager. The analysis limited the number of attributes in order to allow the respondents to easily compare alternate programs. Given these randomly selected bundles of characteristics, instructors were asked to rate the desirability of each program between 1 (*very undesirable*) and 16 (*very desirable*), and to estimate how many times they would teach per year for a summer-only and year-round schedules. Multiple linear regression analysis was used to evaluate desirability and teaching frequency. In addition to these four program attributes, results from the self-explicated analysis were used to identify other factors that affect desirability to instructors and supply.

The survey was administered to instructors of Seatauqua, a non-credit education program

on the Oregon coast that specializes on the marine environment. Seatauqua offers a wide range of environmental education programs including films, walks, boat trips, van trips and workshops. The one- to three-day workshops combine classroom and hands-on activities on topics including Fossils, Clamming, Marine Mammals, Tidepooling, Northwest Indian Woodcarving, and Coastal Birds. The workshop format was selected for analysis based on its past popularity and its potential extensibility to other topics and organizations. From a total of 56 instructors, 20 were selected. They represented a cross-section of instructor characteristics with respect to profession, expertise, age, and tenure.

Results and Discussion

A total of 20 written surveys and oral interviews were completed, yielding a 100% response rate for the selected population. Results are discussed below in the following categories: sociodemographics, importance of program goals, compensation, organizational features, the relationship between job characteristics and program desirability.

Sociodemographics

Table 1 summarizes the personal attributes and job characteristics of the instructors. Results suggest the following general instructor profile: approximately 50 years of age, holding a graduate degree, annual income of \$31,000 - \$50,000, Oregon resident, primary employment as a professor or Sea Grant Extension agent. The majority of instructors taught one workshop per

year and had been teaching for Seatauqua for 7 years. These general trends suggest that Seatauqua instructors are well educated, middle-income, residents of Oregon that teach have taught for Seatauqua one weekend a year with regularity. It also suggests that instructors do not rely on this teaching position for income, and, instead, are motivated to teach by factors other than compensation. These results suggested that motivations are related to intangible compensation.

Importance of Program Goals

Analysis of variance (ANOVA) least significant difference group means test was employed to analyze instructors' perceptions of the primary role of the program. They were asked to rate a series of program goals on a Likert scale of 1 (*very unimportant*) to 7 (*very important*). Table 2 shows the mean score for each of the potential Seatauqua goals considered. Overall, all of the goals were considered to be important, given average scores above neutral (4.0) for every goal.

Notably, the four most important goals from the instructor's perspective were related to interaction with the environment, focusing on the conveyance of information that increases understanding of and wise use of the coastal environment. In contrast, the least important goals encompassed program-related considerations, including revenue, entertainment value and regional tourism development.

KMeans Cluster Analysis revealed that overall the instructors differed most with respect to how important they perceived goal 10 (consistency with local and regional tourism goals), and secondly with respect to goal 7 (perceived consistency with local and regional resource management goals) ($p < .001$ in both cases). These results suggest that instructors consider environmental education to be an organizational feature of key importance, as opposed to other potential missions. This finding suggests that while instructors as a whole highly valued the program goal of empowering participants to appreciate and protect the marine environment, they widely differ with respect to the role education should play in regional development and resource management policy.

Compensation

Table 3 shows compensation preferences at several different levels, rated on a scale of 1 (*Very Undesirable*) to 7 (*Very Desirable*). An interesting result with respect to wage level is that instructors reported both the low and high extremes in pay to be relatively undesirable. These results concur with Lawler's (1971) discrepancy model of pay satisfaction that hypothesizes negative responses to lower pay levels where the employee feels undervalued and dissatisfied, and negative responses to higher pay levels where the employee often feels guilt, inequity, and discomfort. Potentially, negative responses to higher level are related to instructor perceptions that subsidized community education programs cannot or should not pay wages at higher pay levels. The implication for management is that increasing job satisfaction is not simply related to

increasing salaries. Notably, none of the salary levels were found to be relatively highly desirable; the most desirable was slightly greater than neutral on the 7-point scale. This result is interesting in light of Herzberg's (1987) classification of salary level within "hygiene"-related factors; that is, they can potentially increase job dissatisfaction but cannot function to increase job satisfaction. In contrast to these extrinsic rewards, he posits that intrinsic rewards such as recognition increase satisfaction.

The desirability of alternative forms of compensation varied, with respect-related factors being the most highly desired. Second most desirable were considered to be travel expenses, followed by free lodging. This finding suggests the preferred forms of non-monetary compensation. However, it is important to note that in areas such as this respondents often are motivated to score socially preferred answers more highly.

Overall, the low scores with regard to monetary compensation support the sociodemographic inference that monetary compensation is not a central issue to the instructors in this program.

Management Preferences

Table 4 shows instructor's perceptions regarding the importance of a series of program characteristics, and the desirability of several alternative levels for selected characteristics.

Workshop length, workshop format, and working environment were perceived to be the most

important factors overall. A two-day class length was most preferred, and the only length receiving a positive desirability score. This preference could be due partially to familiarity; two-day workshops currently predominate. A mixture of classroom lecture and activities were highly preferred, followed by All Activities, which also received a positive score. With regards to working environment, respondents preferred to maintain high esprit de corps and a moderate level of organization. Preferred class size was 15-20 students, with smaller and larger classes found to be undesirable.

These results suggest the greatest similarities between work motivations of the instructors and public sector employees. Edlington et al (1989) found that public sector park employees were motivated by *doing important/worthwhile work, job growth, and doing interesting work*. Alternatively, using the same survey tool Lankford, Neal & Buxton (19??) found that public sector employees were motivated most by *good working conditions, getting along with others, and good benefits and wages*. Regardless of these differences, the differences within the public sector seem smaller than differences between other sectors. Lankford, Neal & Buxton (19??) found the Armed Forces sector ranked *having an opportunity for promotion or advancement, being informed about job performance, and having job security and steady work* most important. Nonprofit employees felt that *a role in decision making, helping the organization obtain its goals, and being a part of the work team* were the most important motivators.

Instructors preferred to teach one class per year, with little range in preference for day

offered, and high preference for summer season. Spring and fall were also considered desirable. *Primary job* and *other commitments* were the most important conflicts to teaching, followed by *family commitments*. *Expenses*, *travel time*, *workshop preparation required*, and *burnout* were viewed to be relatively unimportant.

The Relationship Between Job Characteristics and Program Desirability

Regression results measure relative impact of a range of job structures on the teaching desirability and teaching supply, that is, the number of classes each would teach yearly. In addition to the four variables considered in the conjoint analysis, *Pay Level*, *Other Compensation*, *Staff Support*, and *Workshop Length*, the following factors were determined to be important based on self-explicated analysis: *Total Expenses* (total amount per instructor spend on travel, food and lodging), *Expense Reimbursement* (a dummy variable representing those who were reimbursed for costs), *Personal Conflicts* (a dummy variable representing those who had significant conflicts with teaching), *Tenure* (total years taught for Seatauqua), *Formal Education* (a dummy variable representing those instructors who had completed PhD level education. Buse R-square values for the cross-sectional analysis were very good for this type of cross-sectional analysis, explaining between 41% and 56% of variation. Significance levels of coefficients are marked by asterisks.

Results measure how much changes in job structure would increase teaching desirability on a scale of 1 - 15. Pay level was highly significant in all three models. Each increase in per

class salary of \$10 increases desirability one point (on a scale of 1-15). In terms of total number of classes taught (supply), in order for instructors to teach one addition class per summer or per year, pay level would have to increase by \$100 per class, or double pay.

"Other compensation" was highly significant only with respect to desirability. Providing other compensation, in terms of lodging, would increase desirability by 3.57 points. This result suggests that from a management perspective deciding to increase pay level of other compensation might be based on the associated costs of such services. For institutions with available low cost housing and food facilities, this form of compensation could provide greater satisfaction to instructors than a pay level increase of the same amount. The insignificance of other compensation factors in influencing summer and total supply suggests that while other compensation is attractive, it is not a factor that affects teaching frequency among instructors.

Staff support was not significant with respect to the desirability model, but was significant with respect to both Summer and Total Supply. Perhaps the provision of a facilitator to assist with preparation and work requirements increases the frequency with which instructors would teach by decreasing time requirements.

Expense Reimbursement shows that instructors who were reimbursed by their agencies for expenses were associated with a 3.21 point increase in desirability. This coefficient is similar to and supports the earlier finding that providing food and lodging expenses increases the desirability of the teaching position.

Personal Conflicts were highly significant in all three models. It showed a positive

relation to desirability, suggesting that there is a relationship between the number of things someone has to do and the attractiveness of things to them. The sign of the coefficient reversed in Summer Supply and Total Supply. This suggests that these conflicts function as constraints to increasing the frequency of teaching.

Longer tenure with the program was associated with an increase in program desirability that was highly significant. This suggests that long term instructors are more satisfied with the program, either because they are used to it, they have been successful in managing conflicts with teaching, or that the program is structured in part according to their preferences. Notably, however, tenure was not related to a significant increase in the supply models.

Formal education was negatively and highly significantly related in all three models. This result suggests that more educated people are more choosy, and desire to work less -- possibly due to other available activities of a greater desirability.

Conclusions

Results suggest that instructor motivation is a function of environmental education goals, and community service motivations. Important constraints to instructor availability include primary job, as opposed to compensation level. However, it is important not to apply these results too widely. These findings describe an important type of environmental educator. However, for many instructors, environmental education is a primary job. For these individuals, traditional compensation issues are most likely important motivators.

These results have important management implications. Organizations often utilize compensation programs to attract, retain and motivate employees. However, in organizations such as this, managers must look to areas other than salary to optimize satisfaction and motivate employees.

Conventional wisdom might suggest increasing the number of classes to decrease the amount of overhead per class and increase profit. However, the current pool of instructors probably would not significantly increase the amount of classes they taught yearly. A central dynamic of instructor motivation is related to the part-time community-service nature of the organization. So, to increase the number of classes with the same instructor job characteristics, compensation structure, and the same type of instructor, many more instructors would probably have to be found to work occasionally.

Alternatively, a manager might choose to hire instructors that are able to work more frequently. This strategy has the potential of significantly changing the type of instructor and

their work motivations, which would likely lead to corresponding changes in instructor attributes and compensation satisfaction.

Future research is needed to examine how instructor preferences, participant preferences, and management considerations overlap to determine optimal program structure. We are in the process of applying this research to one such optimization model.

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Table 1
Summary Statistics

Characteristic	Value
Age	Mean: 50 years SD: 11.47
Income	Mean: \$31-\$50,000 yearly
Gender	Male: 78% Female: 22%
Residence	Within 60 miles: 58% Other Oregon: 42%
Food and Lodging Expenses (Per 2-day class)	Mean: \$28.33 SD: \$31.32
Expense Reimbursement	Reimbursed: 24%
Formal Education	Graduate school: 79%
Tenure at Program	Mean: 7.94 years SD: 7.03 years
Interest in teaching in future	Yes: 63% No: 16%
Preferred role in class design	Total control: 82% Partial control: 6% No control: 12%
Recommended Instructor Qualifications*	Expert knowledge: 32% People skills: 74% Basic knowledge: 53% Other: 26%

* Percentages do not add up to 100% because multiple choices were possible.

Table 2
Importance of Program Goals

Goal	Rank	Mean Score
To instill a sense of stewardship for coastal and marine resources.	1	6.50
Enhance enjoyment and appreciation of the coastal and marine environment.	2	6.28
Teach wise and rational use of coastal and marine resources.	3	6.22
Teach understanding of coastal processes.	4	5.83
Teach Northwest culture, history, and the relationship to the marine environment.	5	5.61
Introduce complexity of habitats and interactions between organisms.	6	5.44
Create programs consistent with local and regional resource management goals.	7	4.94
Create programs that are self-supporting through grants or participant fees.	8	4.76
Provide programs that are not only educational, but also highly entertaining.	9	4.66
Create programs consistent with local and regional goals for tourism.	10	4.06

Table 3
Desirability of Varying Compensation Schemes

Characteristic	Level	Mean Score
Size of instructor honorarium	Nothing	2.41
	\$50 per day	4.12
	\$100 per day	4.29
	\$200 per day	3.88
Other forms of compensation	10% bookstore discount	3.83
	Free lodging	4.44
	Per diem travel expenses	5.06
	Staff banquet/dinner	3.28
	Appreciation & moral support	6.39

Table 4
Instructor's Perception of Program Characteristics

Characteristic	Level	Mean Score
Importance of Management Area	Length of workshop	6.24
	Workshop format	6.24
	Working environment	6.24
	Class size	6.06
	Communication	5.82
	Instructor prereqs.	5.75
	Assistance with class details	5.65
	Time of year class offered	5.56
	Number of classes taught	5.12
	Day workshop is offered	4.88
	Accommodating children	4.29
	Other forms of compensation	4.20
	Size of honorarium	4.00
Program administration and support	Well organized/high esprit de corps	6.72
	Well organized/low esprit de corps	2.78
	OK organized/high esprit de corps	4.33
	OK organized/low esprit de corps	1.44
Length of workshop	1 day (7 hours)	2.89
	2 days (4-6 hrs. per day)	5.06
	3 days (4-6 hrs. per day)	3.78
	1 week (4-6 hrs. per day)	2.28
	5	2.89
Class size	15	6.11
	20	5.44
	30	2.00
	All activities	4.50
Workshop format	Mixture of activities & lecture	6.61
	All lecture	1.50
Accommodating children	Shared experience	4.00
	Older children can participate	6.11
	No children/alternative programs	3.22
	No children/no alternative programs	1.89
Number of workshops taught per year	1	5.24
	2	3.22
	3	2.44
	4 or more	2.06
Day workshop offered	Weekdays	5.24
	Weekends	4.61
	Combination	4.44
Time of year offered	Summer	6.37
	Fall	4.11
	Winter	3.11
	Spring	4.21
Potential conflicts with teaching	Primary job	4.37
	Family	4.21
	Other commitments	4.37
	Travel time	2.53
	Workshop preparation required	2.79
	Expenses	3.00

Table 5
Utility-based Model for Instructors Using Conjoint Analysis

Attribute	Desirability	Summer Supply	Total Supply
Pay level (dollars)	0.11*** (0.01)	0.01*** (0.001)	0.01*** (0.002)
Other compensation	3.57*** (0.91)	0.11 (0.09)	0.10 (0.17)
Staff support	1.57 (1.09)	0.19* (0.09)	0.36* (0.21)
Length (days)	-0.04 (0.52)	-0.19*** (0.05)	-0.25** (0.10)
Total expenses	0.03 (0.02)	-0.01*** (0.003)	-0.02*** (0.004)
Expense reimbursement	3.21*** (1.15)	0.19 (0.14)	0.66*** (0.25)
Personal conflicts	5.03*** (1.42)	-0.64*** (0.16)	-0.86*** (0.27)
Tenure (years)	0.45*** (0.08)	0.004 (0.01)	0.01 (0.02)
Formal education	-4.93*** (1.33)	-0.64*** (0.22)	-1.38*** (0.31)
Constant	-3.53 (2.61)	1.71*** (0.29)	3.05*** (0.56)
Total observations	153	153	153
Buse R-square	0.93	0.76	0.74
Log-likelihood function	-490.11	-180.62	-263.30
Mean, dependent variable	15.31	1.29	2.31

*p<.10

**p<.05

***p<.01

PART 5

**Recommendations and Strategies
for the
Future Existence and Management of Seatauqua**

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This report was funded by the OSU Hatfield Marine Science Center.

EXECUTIVE SUMMARY

The goal of this evaluation was to produce marketing management information in order to formulate the future direction and management of Seatauqua. Funding was provided by Extension Sea Grant, Coastal Oregon Marine Experiment Station, OSU Hatfield Marine Science Center (HMSC) and a Holt Scholarship Fund.

This report provides a synthesis of the research in the form of recommendations for the future of Seatauqua. A short background is followed by a discussion of options for the program given different goals of the primary funding organizations -- Extension Sea Grant and HMSC. Finally, possible strategies are presented for restructuring Seatauqua to meet the goals of Extension Sea Grant and HMSC.

Options for the future of Seatauqua depend on tradeoffs between cost recovery and educational objectives and include:

- 1) Eliminate OSU sponsorship of Seatauqua.**
- 2) Outsource Seatauqua.**
- 3) Restructure Seatauqua to meet the goals of Extension Sea Grant and HMSC.**

If Extension Sea Grant and HMSC do not require Seatauqua-type programs to meet their educational objectives, then eliminating Seatauqua could release funds for alternative uses. If Extension Sea Grant and HMSC want Seatauqua programs to continue, but need to reduce or eliminate their roles, they could help Seatauqua become a separate non-profit organization that would eventually operate without them. On the other hand, if workshops, tours, and trips are considered a useful tool for meeting organizational objectives, then restructuring Seatauqua to meet the changing needs of Extension Sea Grant and HMSC may be a better alternative. Those workshops that are appropriate to existing businesses and organizations could be "spun off."

The recommended option is to restructure Seatauqua to meet the mission, goals and objectives of Extension Sea Grant and HMSC while spinning off those workshops appropriate to existing businesses and organizations. Strategies to facilitate this include:

- I. Change Seatauqua to reflect changes in the educational goals of the Visitors Center.**
- II. Spin off those workshops appropriate to existing businesses/ organizations.**
- III. Implement program changes to reflect broader audience goals for new Visitors Center.**
- IV. Integrate Seatauqua into the cost recovery goals for the new Visitors Center.**
- V. Manage and price the workshops and trips consistent with Extension Sea Grant and HMSC cost recovery goals.**
- VI. Communicate the strategies to those managing the program.**

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INTRODUCTION

Funding for public institutions such as Oregon State University (OSU) is becoming increasingly scarce. This has a direct impact on all functions of the University, including OSU's Hatfield Marine Science Center (HMSC) and Extension Sea Grant: difficult decisions must be made regarding the use and allocation of funds. Every program these organizations offer must contribute to meeting program goals and, ultimately, the goals of the University.

An opportunity to strengthen the bond between HMSC and OSU has recently been presented with the renovations of the HMSC public wing. As part of the renovation process, a new mission statement has been developed that focuses on the new Visitors Center as a vehicle for sharing OSU research with the general public. One of the strengths of creating a mission statement (and accompanying goals and strategies) is that it compels management to critically evaluate each program's contribution to the organization. If a program does not fulfill the goals and objectives of the organization, then it should be restructured or discontinued.

This paper addresses one such program, known as Seatauqua. In the first section relevant background information is summarized. Then, options for Seatauqua's future existence and management are offered given different goals and objectives of the primary funding agencies -- HMSC and Extension Sea Grant. Finally, possible strategies for restructuring Seatauqua as an outreach vehicle for the new HMSC Visitors Center are presented.

BACKGROUND

Seatauqua is a marine educational program administered by Oregon State University and offered through OSU's Hatfield Marine Science Center (HMSC). The concept, goals and management structure were primarily the "brain child" of Don Giles, an extension agent at HMSC. Seatauqua started as a summer program in 1974 with Don Giles as the coordinator. Representatives from the Summer term office, the President's Office, College of Oceanography, HMSC, the city of Newport, and Extension served as the steering committee. The steering committee's role was to suggest programs and instructors, and to develop funding. The collective programs were "named" in order to promote name recognition by the general public and potential funding agencies.

The mission of Seatauqua has been to:

Promote stewardship for the cultural, historical, and natural history of our unique coastal environment. Through increased public awareness of these resources, the wise utilization and preservation of the marine environment can be insured.

The goals, unchanged since Seatauqua was created, were:

- 1) Increase awareness and public appreciation of the marine and coastal environment.
- 2) Enhance public awareness of OSU at the coast.
- 3) Encourage participation of other agencies that also seek to enlarge public understanding of the marine environment.
- 4) Coordinate publicity of Seatauqua programs and events.

Seatauqua has excelled in providing an enjoyable and educational program. High ratings on course evaluations are supported by continued participation. Survey results from the evaluation project found that attendance at multiple workshops was common (63%) with 20% of participants attending more than three workshops. This participation also took place over a period of time. Sixty-one percent of those who have attended more than one workshop stated that they ordinarily took one workshop a year. Eighty-seven percent of the past participants who responded to the survey said that they planned to participate in the future.

Seatauqua has also provided a positive image for OSU and exposed the general public to the marine environment. Forty-seven percent of the respondents to the survey of past participants said that participation increased their enjoyment of HMSC. Eighty-two percent said that participation in Seatauqua increased their enjoyment of the Oregon Coast.

As a cooperative program, success has been mixed. According to interviews with participating agencies, they value the opportunity to contribute instructors and/or funds to specific workshops. They have not, however, contributed to recovery of the management or marketing costs, and do not plan to do so in the foreseeable future. Therefore, Extension Sea Grant and HMSC have absorbed all of these costs.

Extension Sea Grant and HMSC appear to view Seatauqua as a separate entity that they “must” support. Seatauqua has been managed as an outreach educational vehicle where subsidies are justified because the program is serving the educational goals of the funding organizations. These differing views of cost recovery goals have led to frustration between those funding the program and those managing it. It has been unclear, though, what the specific cost recovery objectives should be.

Extension Sea Grant and a Holt Marine Education Scholarship funded a comprehensive evaluation of Seatauqua in 1992-1995 when Don Giles retired. The purpose of that evaluation was to help Extension Sea Grant and HMSC make decisions regarding their future role in Seatauqua. This evaluation produced one report and three manuscripts (one published and two in review). The remaining part of this report is based on the author’s experience in the evaluation project, work experience with the Seatauqua program itself, and two years as a marine educator for a private company in Newport.

MISSION AND GOALS FOR EXTENSION SEA GRANT AND HMSC

If Extension Sea Grant and HMSC are to continue supporting Seatauqua, the programs offered must be consistent with the mission and goals for these organizations.

Extension Sea Grant conducts the outreach education called for in federal Sea Grant legislation. The mission of Extension Sea Grant is:

To educate Oregonians by delivering research-based, objective information to help them solve problems, develop leadership, and manage resources wisely.

Some of the objectives to carry out this mission are:

- ◆ Identify and prioritize emerging community education issues and industry information needs.
- ◆ Transfer knowledge to individuals and groups who can use it to solve problems or capitalize on opportunities.
- ◆ Teach and encourage people to apply this knowledge to their situation.
- ◆ Develop working relationships with other organizations so that educational program impact is maximized.
- ◆ Increase the proficiency of Extension faculty to develop and deliver relevant issue-based education.
- ◆ Encourage the adoption and implementation of coastal education programs by other Extension professionals throughout the state and nation.

As part of the extensive renovations to the public wing, HMSC has adopted a new mission statement with corresponding goals and strategies. The following is the mission statement for the new OSU HMSC Visitors Center:

Oregon State University at Newport's Hatfield Marine Science Visitors Center is dedicated to supporting and encouraging adults and children to enjoy marine science through interactive discovery and a recognition of patterns that shape our complex world. Research conducted by Oregon State University scientists and researchers will enhance the visitor's experience and reveal how science generates knowledge used to understand, manage, and sustain marine resources. The Center will provide a unique environment for visitors to 'take the next step' in a lifelong process of exploration and discovery that will enrich their lives and improve their world.

The Transition Planning Team has proposed three goals to implement this mission:

- 1) Engage stakeholders in a long term learning relationship with HMSC.
- 2) Build staff capacity to run HMSC Visitors Center.
- 3) Plan & fund continuing development.

A comprehensive set of strategies has been created to implement these goals.

The mission and goals for Seatauqua have been consistent with those of Extension Sea Grant and HMSC. However, in recent years the National Sea Grant Program has placed greater emphasis on pioneering needed programs and then transferring these programs to other agencies or the private sector. The result is that Oregon Sea Grant is carefully examining ongoing programs, including Seatauqua.

As Extension Sea Grant has decreased its support for Seatauqua, HMSC has taken on increased responsibility for the coordination, design and funding of Seatauqua. The rationale is that Seatauqua serves an important function as an outreach vehicle for the HMSC public wing's educational programs.

One difference between Seatauqua goals and those of the new Visitors Center and Extension Sea Grant is an emphasis on cost recovery. Seatauqua has contributed to recovery of the program costs by charging fees for the workshops and trips. However, these fees have been kept low in order to encourage broad participation. The fees attempt to cover the variable costs of the fee-based programs. Although it is difficult to evaluate costs, it appears that participant fees have covered 80-90% of the variable costs of the fee-based programs. The films, walks, talks, coordinator's salary, an assistant, facilities, advertising and other indirect or fixed costs have always been subsidized by Extension Sea Grant and HMSC. It must be stressed, however, that cost recovery was NOT a goal of Seatauqua.

Until two years ago, Seatauqua was only offered during the summer. Based on research indicating that there would be demand for year-round workshops, Seatauqua increased the participant fees and expanded to a year-round format in an attempt to generate increased income as well as greater participation. Fees were increased from \$15 for a two day workshop to an average of \$30-\$35. However, if inflation is taken into account, fees have not increased since the inception of the program in 1974. Cost recovery goals have remained secondary to participation goals.

In conjunction with the price increase, there has been a greater attempt to identify and reduce variable costs. A break even formula has been used to identify the minimum number of participants needed to cover the variable costs of each workshop or trip. Participant fees now recover almost 90-95% of the variable costs of the fee-based programs. It is not 100% because, occasionally, workshops will be offered even if they do not have the minimum number of "break-even" participants. This happens because 1) educational goals override cost recovery objectives or 2) the workshop is subsidized by an outside agency (In the case of the crabbing, clamming and fishing workshops the instructor fees are subsidized by the Oregon Department of Fish and Wildlife.). In other cases, the variable costs are higher than expected for some workshops. Although attendance has gone up, fixed costs have also increased, forcing Seatauqua

to rely more heavily on support from Extension Sea Grant and HMSC.

Another difference between Seatauqua and the goals of HMSC is that the new Visitors Center is becoming more focused with respect to their public message (differentiating itself from other marine education efforts in the community). Seatauqua continues to offer topics that would appeal to a general tourist. By incorporating the understanding of science and research conducted by OSU into the mission statement, the Center is attempting to serve a narrow niche that the University is uniquely adapted to fill. With this new mission, HMSC is pulling away from the role of public “aquarium”, and leaving that niche for the private sector (primarily the Oregon Coast Aquarium).

Extension Sea Grant shares the HMSC’s new Visitors Center emphasis on delivering research information and encouraging people to “take the next step” in using this information to improve their lives and world. This “shared mission” may make it more advantageous then ever for HMSC and Extension Sea Grant to combine outreach education efforts.

OPTIONS FOR THE FUTURE OF SEATAUQUA

Options for Seatauqua depend on tradeoffs between cost recovery and educational objectives. Therefore, future management of Seatauqua can take several directions. These include:

- 1) Eliminate OSU sponsorship of Seatauqua.
- 2) Outsource Seatauqua.
- 3) Restructure Seatauqua to meet the goals of Extension Sea Grant and HMSC.

Eliminate OSU sponsorship of Seatauqua.

Pros: By eliminating Seatauqua programs from OSU sponsorship, management time and funds used to subsidize them would be freed for other uses.

Additionally, some of the Seatauqua workshops are already offered by other organizations in the area, bringing into question why a public institution would be offering something that the private sector could provide. For example, the Oregon Coast Aquarium offers marine oriented workshops including some that Seatauqua has traditionally offered: fossils, fishprinting, estuary science, tidepooling, marine mammals, herbal plants, and coastal landscaping. The Sitka Center offers art and culturally oriented workshops including Northwest Indian carving and fishprinting. Some private companies are now offering bay boat and whale watching tours that include an educational component. In order to comply with the non-competitive clause of OSU, these workshop topics would need to be redesigned or discontinued.

Cons: Many science or research oriented workshop topics are not offered by other organizations. If Seatauqua is no longer sponsored by OSU, what is going to be the vehicle for offering these

topics? Are they going to be offered by a different organization in the community? Are HMSC and Extension Sea Grant going to stop offering workshops and trips as educational opportunities?

OSU is uniquely qualified, and has the instructional resources, to offer science workshops that other organizations in the area do not have. Furthermore, workshops and trips provide an opportunity for visitors to "take the next step" and learn more about particular subjects, as well as show commitment on the part of HMSC and Extension Sea Grant to their educational goals. They are also fairly easily adapted to a variety of audiences with different ages, incomes, experience with science, and interest levels. This flexibility of workshops and trips make them a useful vehicle for outreach education.

Outsource Seatauqua.

Pros: Seatauqua has been considered a successful program by those who participate in it, teach it, and coordinate it. It is an established vehicle for outreach education and enjoys name recognition. It has also allowed Extension Sea Grant and HMSC to share the management and marketing costs for their outreach programs. Seatauqua could be "outsourced" and set up as a separate organization. That way the same programs could be continued. Extension Sea Grant and HMSC could let this outsourced Seatauqua offer their outreach educational programs. By outsourcing, Seatauqua, not Extension Sea Grant and HMSC, would be responsible for recovering the costs of operation. As long as budgets allow, HMSC and Extension Sea Grant could continue providing facilities and instructors for Seatauqua. This way, the benefits of having a vehicle for their outreach education programs could be realized, while reducing many of the associated management and marketing costs.

Cons: Seatauqua has been dependent on Extension Sea Grant and HMSC for 22 years. They have provided the leadership, facilities, instructors, and funding necessary to operate. Seatauqua has been managed as a subsidized program for so long, that developing into a separate program would be difficult.

The Sitka Center for Art and Ecology is a private non-profit organization that could serve as a model for an "independent" Seatauqua. The Sitka Center has as its mission

Expanding the relationships between art, nature and humanity through workshops, presentations and individual research projects, and to maintaining a facility appropriate to its needs that is in harmony with the inspirational coastal environment of Cascade Head.

The Sitka Center must recover all of its costs in order to continue operating. They follow a strict break-even formula with respect to their workshops so that all programs are at least covering the variable costs and often contributing to the operation's fixed costs. Even so, the program fees are

only able to cover 49% of the fixed costs. The other 51% of its operating costs is recovered with other efforts including an endowment, fundraising efforts, outright donations, and a membership program. This is all able to occur because they were founded and developed by an “organization” (the Neskowin Coast Foundation) which provided the facilities, leadership, and funding necessary to get the program started. In contrast, Seatauqua does not have a well funded, dedicated group to take over leadership and develop a similar program.

Another barrier to Seatauqua becoming a separate organization is that it would be competing for participants and outside funding with other organizations offering similar programs. What role would Seatauqua play in the community? Some of the current workshop topics overlap with those offered by the Oregon Coast Aquarium, Sitka Center, and Lincoln County Historical Society. Those workshops and trips that do not overlap are the science oriented workshops that meet the current focus for HMSC. However, the science topics are traditionally the hardest to sell to a general public audience. If Seatauqua did focus on the science aspect while attempting to fulfill the HMSC outreach education needs, then it would be competing with the HMSC Visitors Center for outside funds. For example, past Seatauqua participants would be the logical source for a “Friends of Seatauqua.” This same audience has also been targeted for a “Friends of the HMSC.”

Furthermore, if Seatauqua were not part of HMSC, would the OSU affiliated instructors still be willing to teach for the small stipend that they now receive? Would participants attracted by the HMSC link still participate?

Restructure Seatauqua to meet the goals of Extension Sea Grant and HMSC.

Pros: The goals for the new Visitors Center are consistent with Extension Sea Grant’s goals to share research information and encourage people to use this information. Therefore, a shared outreach education vehicle could be both possible and advantageous. Doing so could justify continued support of Seatauqua while providing the benefits of a common name and shared expenses (marketing and management). If the name “Seatauqua” did not convey the message of the new program focus, the name could be changed (It is important not to get hung up on “the name”).

Seatauqua programs, along with the exhibits, school group programs, and other educational opportunities, could serve as a package that together could help HMSC and Extension Sea Grant attract outside funding for the new Visitors Center.

Cons: Changing the workshops and trips to meet the goals of Extension Sea Grant and HMSC would necessitate several changes to the topics, audiences reached, and management structure. For example, the HMSC Visitors Center has a science/research orientation. This focus would need to be incorporated into the Seatauqua workshops. Traditionally, the science-oriented

workshops have often been the hardest to sell. However, with the new focus for the Visitors Center, an audience interested in science-oriented workshops may be attracted.

Also, the workshops offered by the private sector are the ones that are the most popular and generate income. Differentiating them might significantly reduce the number of participants attracted to the workshop topics. Discontinuing them could hamper Seatauqua's ability to recover its costs. Seatauqua often used these popular workshops to attract participants to other, less popular, science-oriented programs. In some cases, the income generating workshops were used to subsidize those workshops which were considered important to meeting the goals of Seatauqua, but did not attract as many participants. However, if Seatauqua is serving the new science-oriented audience of the new Visitors Center, and meeting the goals for Extension Sea Grant and HMSC, cost recovery may not be a primary issue.

STRATEGIES FOR RESTRUCTURING SEATAUQUA TO MEET THE GOALS OF EXTENSION SEA GRANT AND HMSC.

STRATEGY I. Implement changes to the existing Seatauqua workshops to reflect changes in the educational goals of the new Visitors Center.

The new Visitors Center educational goals include 1) "encouraging adults and children to enjoy marine science through interactive discovery and a recognition of patterns that shape our complex world," 2) "sharing OSU research," and 3) "providing an environment for visitors to take the next step in a lifelong process of exploration and discovery that will enrich their lives and improve their world."

These components should be the focus of Seatauqua, integrating them into all of the programs from the walks and films to the workshops. Existing programs should be evaluated for fit into the new format, and new programs (including workshops, trips, walks, and behind the scene tours) should be designed with the goals of research, interactive enjoyment with recognition of patterns, and 'take the next step' as priorities. Workshops, walks, films and other Seatauqua programs that do not lend themselves to this focus should be evaluated, and either redesigned or discontinued. This raises the question: would the incorporation of these components in Seatauqua programs still attract past Seatauqua participants?

Research results from the survey of past participants indicated that 56% of the respondents expressed interest in learning more about research being conducted at the HMSC. This suggests that past Seatauqua participants may be receptive to changes in the workshop content. What must be maintained is the quality of instructors (including their enthusiasm and communication skills as well as knowledge), and hands-on activities or field trips. Both of these characteristics have been critical to the success of past Seatauqua workshops. Any new focus for the workshops must still contain these components, not only with past Seatauqua participants, but also potential

Seatauqua participants.

To a limited extent Seatauqua already includes research information in some of its workshops. For example, the crabbing workshop includes a discussion of a crab parasite prevalent in local bay crabs. This could be expanded to other current workshop topics. A tour of the marine mammal research facility with a discussion of tracking whales via satellite could be included in the marine mammal workshop. EPA research with estuary plankton could be included in the estuary workshop. A discussion of aerial counts of nesting seabirds could be integrated into the birding workshop.

One example of a research workshop that could be created is "A Day in the Life of an OSU Oyster." A short slide presentation on oyster culture research taking place at HMSC could lead into a hands-on activity in a lab where spawning is induced and microscope work follows. And/or, include a behind the scenes tour of the research facility with a field trip to the oyster bed farm up river where they could see "science in action."

The workshop format could be adjusted to attract different age groups, depending on the audiences that HMSC would like to attract. This could include a one hour to ½ day experience designed to lengthen the time spent interacting with science by the average visitor (including families). Volunteers could be trained to lead the program, and advertising could be done on site. In addition, a one to two day workshop could be designed for those with the time and interest in the topic. This longer workshop could be led by the researcher and cover the topic in more depth. A field trip to the Tillamook site where oyster spat is raised could be included.

Similar workshops could be designed for each of the research projects showcased in the Visitors Center. Volunteers could be trained to lead the short introductory programs, while researchers conduct the longer workshops. One challenge will be providing incentive for the researchers to conduct the programs. A stipend could be provided, but the actual amount would be so small, relative to their primary occupation, that the pay alone might not be an incentive. Perhaps a greater incentive would be if they could write the workshop into their research grants as part of the package. Increasingly, educational components are providing a competitive advantage when applying for grants.

STRATEGY II. Spin off workshops appropriate to existing businesses/ organizations.

Another goal of Extension Sea Grant is to pioneer needed programs and then transfer them to the private sector. Workshops that focus on training the educators, rather than information for the general public, could accomplish this task. Seatauqua could start with some of the current workshop topics that are appropriate to existing businesses and organizations. For example, Seatauqua could offer a seminar on coastal landscaping to local landscaping companies with the purpose of training them to teach the information to their customers. Research information and

“teacher training” could also be provided for charter boat companies or tackle shops with the idea that they could eventually teach the crabbing, clamming and fishing workshops offered through Seatauqua. In effect, the successful workshop topics that are oriented for general tourists could be “spun off” to the private sector.

STRATEGY III. Implement program changes to reflect the broader audience goals for the new Visitors Center.

The new Visitors Center plans to target both adults and children. Seatauqua has also tried to appeal to adults and children with a broad base of programs including: 1) films and walks for those with less money, time, or interest, and 2) workshops for those with more time, interest, and willingness to pay. Within the last couple of years, Seatauqua has tried to draw a younger audience into the workshop format by offering some family oriented workshops. In general, these workshops have not drawn many participants. Seatauqua has been most successful in attracting a very specific adult audience to the workshops. Two relevant questions: 1) is the current Seatauqua participant an appropriate audience for the new Visitors Center?; 2) can Seatauqua programs appeal to a broader audience?

The average Seatauqua participant is 56 years of age, very well educated (54% of them having a graduate level education) an annual income of \$43,000, and often retired (39%). Most participate in a variety of non-credit educational programs, and the majority (77%) are from Oregon. Because the average Seatauqua participant is well educated, has a fair degree of discretionary income, and is committed to informal education and the marine environment, the following questions can be raised: 1) Is Seatauqua “preaching to the converted”? And 2) By charging a nominal registration fee and supporting the operating costs with public monies, is Seatauqua a “welfare program for the rich” given the fairly high annual income of the average Seatauqua participant?

Both of these questions are valid and the answers may be yes. However, being well educated in general does not necessarily mean being well educated about science, research, and marine issues. Also, the average Seatauqua workshop participant is an eager sponge for the ambitious goals of “life long learning” and “take the next step” that the new Visitors Center has as its mission. As this focus on science and research for the general public is a relatively new undertaking by HMSC, an audience that is already interested would be a good place to start. Furthermore, a vehicle such as Seatauqua that is known to be of interest to this audience might be an effective forum for encouraging them to “take the next step.”

Can Seatauqua workshops act as a vehicle for other audiences to “take the next step in a life long learning process?” A survey similar to the one for past participants was given to visitors to HMSC’s public wing. Although on the whole they appeared to prefer walks, films and boat tours as educational vehicles, 30% expressed interest in workshops. Additional research results

suggested that the younger, primarily family-oriented audience that responded to the public wing survey would be especially interested in the shorter workshop format mentioned above. This interest in short workshops could be the catalyst for drawing families into a longer relationship with the new Visitors Center, providing a forum for "taking the next step." A positive experience with the shorter workshop format could inspire involvement in the traditionally longer Seatauqua workshops. Another possibility is that the new Visitors Center, with its research focused exhibits, might attract a crowd interested in science-oriented learning opportunities, including workshops.

Another idea would be to target workshops to children who have participated in front wing activities and visits through the schools. The Seatauqua workshops could provide something to come back for and share with their parents and other family members -- once again, a "take the next step" opportunity. For example, a "whale talk" is one of the programs available for school groups. On a visit with their family they could involve their parents and siblings in a short workshop about whale research being conducted at HMSC. This could be followed by a tour of the marine mammal research department, or a plankton lab focusing on "whale food." They could also learn about ways that they could become more involved with marine mammals -- a family whale watching trip, participation in the Whale Watch Volunteer program, or participation in the Marine Mammal Stranding program.

STRATEGY IV. Integrate Seatauqua into the cost recovery goals for the new Visitors Center.

The new Visitors Center has several objectives that it is considering for meeting its cost recovery goals. Many of these could potentially be objectives for Seatauqua. They are:

- 1) Increase ties to OSU in order to justify continued support.
- 2) Create a strong, unique facility that would be attractive to outside funding (private, corporate, and grants), as well as encourage donations, repeat business and possible membership from visitors.
- 3) Develop an active volunteer program to help reduce the costs of running the facility.

Each of these objectives are reviewed below.

1) Increase ties to OSU in order to justify continued support.

Seatauqua could be used as a vehicle for engaging OSU faculty, staff and students in a long term learning relationship with HMSC through participation in workshops and other programs. Workshops, trips, and behind the scene tours can bring them to the facility and/or engage them in learning about particular aspects of science or research. Targeted marketing and perhaps even the use of discounts could make these programs more accessible to the University community.

Providing discounts could be viewed as a good faith gesture showing HMSC's commitment to providing a high quality, accessible facility and programs to OSU.

The OSU community could also be involved with the new Visitors Center through the sharing of research with the general public. For example, faculty and students could be encouraged to participate as instructors in the Seatauqua workshops. The added value to students would be in the form of teaching experience and a small stipend. In addition, a strategic link could be forged through internships. OSU students would have a learning opportunity and Seatauqua could reduce management time spent in various aspect of the program: for example, setting up and facilitating workshops or marketing programs.

2) Create a strong, unique facility that would be attractive to outside funding (private, corporate, and grants), as well as encourage donations, repeat business and possible membership from visitors.

The Visitors Center has ambitious educational goals that could establish HMSC as a world class science education facility, especially with the philosophy of encouraging visitors to "take the next step." If the changes in focus for the workshop topics that were recommended in strategy two are implemented, Seatauqua programs could serve as a vehicle for "take the next step" with their directed, learning opportunities on particular aspects of science and research. Supporting these outreach learning opportunities is one way that HMSC could show commitment to the learning goals expressed in the mission of the new Visitors Center.

Additionally, this commitment could be used as a marketing tool for attracting outside funding. Between the high quality interactive exhibits and the additional learning experiences offered by the Seatauqua programs, HMSC could have a package to present to corporations, private individuals, and foundations (for grants). This same package would also be providing a high quality experience for visitors that would encourage donations, repeat business and possible membership in a "Friends of HMSC". The programs could even be used as a perk or bonus for members by offering discounts.

A new "Marine Naturalist and Scientist" newsletter could share information about HMSC research, changing exhibits and the schedule for outreach programs (Seatauqua). Published quarterly, this could be the "Seatauqua brochure" as well as the communication link for donors, members, and volunteers. This kind of shared marketing would reduce operating costs for Seatauqua, by eliminating the brochure mailing, while satisfying a need of the new Visitors Center. Seatauqua already has a well developed mailing list that could be valuable as a pool of potential members for HMSC. Using this list as a starting point would reduce membership program development costs for HMSC.

3) Develop an active volunteer program to help reduce the costs of running the facility.

Entry into the new Visitors Center will be free, relying on donations to help recover the operating costs of the facility, exhibits, and programs. One strategy that HMSC proposes to use for reducing the operating costs, is to develop and maintain an active volunteer program. Many facilities use training programs, bookstore discounts, and events to attract and keep volunteers. Seatauqua could provide on-going training opportunities through the workshops and "rewards" through trips or other special events.

STRATEGY V. Manage and price the workshops and trips consistent with Extension Sea Grant and HMSC cost recovery goals.

It may be difficult to incorporate all of these strategies into Seatauqua, given limited management and financial resources. Seatauqua has been managed by the director of the HMSC public wing. Given his other duties, time spent managing Seatauqua is necessarily limited. Therefore, the relative importance of these different strategies would need to be evaluated and traded off, in order to result in a program that could be managed with current Seatauqua resources.

If the actual hours (and dollars) spent developing, marketing, or managing the outreach programs needed to be reduced below what is currently being spent on Seatauqua, limit the number of workshops and trips offered. Train volunteers to help manage the program. Training volunteers may take more time in the beginning, but should reduce management time spent with the program in the long run.

If all the strategies were considered important to the success of the new Visitors Center, a part or full-time Outreach Education Director could be hired to design and manage the outreach education programs for the general public, volunteers and members, as well as training programs for the private sector. This Director could be responsible for fulfilling both program and cost recovery objectives for HMSC and Extension Sea Grant. If needed, the Outreach Education Director could be responsible for the volunteer and membership programs as a whole.

Pricing strategies for the workshops would need to be consistent with the cost recovery goals for the new Visitors Center. For example, the short, introductory programs (including 1 hour workshops, tours, and walks) might be offered free in order to encourage visitors to spend more time learning about science. A positive, experience with these introductory programs could encourage visitors to donate larger amounts to the Center. Two hour - half day workshops could be offered on a donation basis with all proceeds going to support ALL of the educational efforts of the HMSC Visitors Center. The longer workshops and trips could be competitively priced and managed with a strict break-even formula. If the workshop or trip did not attract enough participants to recover the variable costs, it would not be offered. If HMSC needed to have these workshops contribute to the fixed costs of operating the Center, then quantitative goals should be established. For example, have the programs contribute a specific dollar amount towards

operating expenses within three years.

The bottom line, however, is that Seatauqua would continue to operate as a subsidized program. The justification for the subsidies is that Seatauqua would be an asset to Extension Sea Grant and HMSC -- fulfilling outreach education goals as well as serving as part of a package to attract funding. An evaluation process should be implemented to track Seatauqua's success in meeting these organizational goals.

STRATEGY VI. Communicate the strategies to those managing Seatauqua.

Funding agencies must communicate with those coordinating the program. If they don't believe the workshop content or format is effectively meeting the outreach educational goals of the organization, then changes need to be implemented immediately. Part of Seatauqua's current problems is that funding agencies feel that cost recovery needs to be a higher priority. This change in focus has not been effectively communicated to managers of the program, as their focus has been on stated program goals, not cost recovery. Clearly stated (or written) objectives along with a review process for the management of the program may help prevent miscommunications in the future. Ultimately, if Seatauqua is to be an effective outreach vehicle and/or a part of volunteer or member programs, clear communication is vital.

CONCLUSIONS

Because funding is scarce, tough decisions regarding allocation of funds must be made. Therefore, it is important that all programs contribute substantially to the goals of the organization. Seatauqua, as a program receiving support from HMSC and Extension Sea Grant, needs to contribute to the mission and goals of these organizations. Given the changes in the mission and goals for HMSC's Visitors Center and Extension Sea Grant, changes may need to take place with Seatauqua. Possible options include: 1) Eliminate OSU sponsorship of Seatauqua; 2) Outsource Seatauqua; and 3) Restructure Seatauqua to meet the outreach educational needs of Extension Sea Grant and HMSC. All of these options have advantages and disadvantages. Ultimately, the option that is best for Extension Sea Grant and HMSC depends on which one best meets their mission and goals.

For example, there are several strategies for restructuring Seatauqua that could help HMSC meet both its educational and cost recovery goals for the new Visitors Center. At the same time, the goals of Extension Sea Grant could be met. These include: 1) Implement changes to the existing Seatauqua workshops to reflect changes in the educational goals of the new Visitors Center; 2) Spin off workshops appropriate to existing businesses/ organizations; 3) Implement program changes to reflect the broader audience goals for the new Visitors Center; 4) Integrate Seatauqua into the cost recovery goals for the new Visitors Center; 5) Manage and price the workshops and trips consistent with Extension Sea Grant and HMSC cost recovery goals; and 6) Communicate

the strategies to those managing Seatauqua.

Through these strategies Seatauqua could function as a tool for meeting the outreach educational goals of Extension Sea Grant and HMSC. Additionally, Seatauqua could be used as a marketing tool to attract outside resources, including members to a “Friends of the HMSC” and volunteers. These funds could be used to support ALL of the educational efforts of the Visitors Center, including Seatauqua. How ambitious Seatauqua is in the number of workshops and trips offered and in the number of targeted audiences, depends on the financial resources available.

Management strategies could vary from hiring a part or full-time Outreach Program Director, to leaving the management with the HMSC Public Wing Director, to reducing the amount of time spent with directing the program. Whatever the management strategy, program and cost recovery goals for Seatauqua must be communicated from HMSC and Extension Sea Grant to whomever manages it. Quantifiable goals and periodic evaluations will help reduce miscommunications and better assure Seatauqua’s success in meeting outreach education and cost recovery goals for HMSC and Extension Sea Grant.

APPENDIX. Biographical Sketch

Christy Sallee is an Oregon State University graduate with a B.S. in Zoology, an M.B.A. and an M.S. in Marine Resource Management. Her graduate work included extensive hands-on experience with the management, marketing and evaluation of non-credit educational programs. She spent one year directing the Experimental College, a student run alternative education program offered through the Student Activities Center at Oregon State University. The last four years Christy has worked closely with the Hatfield Marine Science Center's Seatauqua program. This included helping facilitate the workshops, an extensive evaluation of the program, and helping implement some of the changes suggested by the research results. One report, two presentations, and three journal articles (one published and two in review) have resulted from the Seatauqua evaluation project. Currently, Christy works as the Education Director for Marine Discovery Tours, a private company in Newport that offers Bay and Ocean programs for a wide variety of audiences including school groups and the general public.