
Readership Survey of *Marine Education*

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Marine Education

Larry G. Gresham
Alan J. Bush



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READERSHIP SURVEY OF MARINE EDUCATION

Prepared for the
Sea Grant College Program
Texas A&M University

by

Larry G. Gresham and Alan J. Bush

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INTRODUCTION AND PURPOSE

Marine Education is a newsletter published four times a year by the Sea Grant College Program at Texas A&M University. It is currently circulated to more than 5,000 subscribers in all 50 states, the District of Columbia, and several foreign countries. Subscriptions are available, on request, without charge.

Marine Education is designed primarily for elementary and secondary teachers--to keep them informed about current research and activities in the marine environment and to promote the use of marine-related examples in classroom presentations.

This study was undertaken to solicit and assess reader feedback regarding the current content of **Marine Education**. Of particular interest were respondent attitudes toward the publication and its components, their assessment of the value of **Marine Education** as a source of marine-related information for classroom use, and recommendations for improvement. This information, coupled with a demographic and geographic profile of the subscriber audience, should assist the Sea Grant Marine Information Services staff in determining the degree to which **Marine Education** is accomplishing its objectives and provide them with suggestions for modifying the publication to better satisfy the needs of its readers.

METHODOLOGY

Data for the study were obtained from self-administered questionnaires sent to a random sample of subscribers. A copy of the questionnaire appears in the Appendix.

More than 5,000 persons/institutions currently receive **Marine Education** each quarter. Persons living outside the United States and institutional recipients were removed from the subscriber list to form a sampling frame for this study of some 4,800 individual subscribers with U.S. mailing addresses. A total of 1,250 subscribers were then selected on a systematic random basis to form the sample.

All questionnaires, and accompanying cover letters (see Appendix), were

mailed to subscribers in the sample on the same day. Respondents returned completed questionnaires to the researchers during a four-week period following this mailing. Upon receipt, the questionnaires were edited, coded and processed for tabulation. One-way and two-way frequency tables were used in analyzing the data. Chi-square analysis was employed to determine statistical significance of the two-way analyses.

Of the 1,250 questionnaires sent to **Marine Education** subscribers, 350 were returned for an initial response rate of 28 percent. Two questionnaires were received after tabulation of data began and were not used in the study.

EXECUTIVE SUMMARY OF FINDINGS

Responses were received from subscribers in 47 states. Forty percent of the respondents reside in Texas, with another 22 percent living in Florida, California, New Jersey, Illinois and the Carolinas. Of the 133 Texas subscribers in the study, the largest group (16 percent) live in Harris County; 32 percent reside in coastal counties. Overall, a large majority (71 percent) of subscribers live in inland rather than coastal counties.

The typical subscriber is a 35- to 44-year-old (46 percent) teacher (78 percent) or an administrator (11 percent), is female (69 percent), has at least a college degree (97 percent) and probably a master's or doctorate (65 percent). She teaches all subjects (46 percent) or science (31 percent) or biology (13 percent). About one in three have had marine-related courses and/or training.

Nearly 95 percent of **Marine Education's** subscribers read at least three of the four quarterly issues. On average, at least three other people also read each issue. Thus, the publication's quarterly "reach" is approximately 20,000 persons.

Readers feel that **Marine Education**, and each of its separate parts, is informative, interesting, useful, timely, easy to read and important. The "Marine Facts" and "Ideas for the Classroom" sections are rated more favorably on these dimensions than the feature articles and "Books and Things" parts of the publication.

Marine Education is "quite often" viewed as a primary information source by 59 percent of sample respondents. Residents of coastal areas do not view the newsletter as a primary information source as frequently as those living inland.

The sample is about evenly divided on the addition of photographs to the line drawing-only illustration procedure currently in use.

Other magazines and in-service meetings/workshops are the major ways subscribers learned about Sea Grant resources and **Marine Education**. Inland residents indicated they found out about the resources and publication more often from the former, with coastal residents most often citing the latter.

Eighty-four percent of survey respondents said they have used "Ideas for the Classroom" in their class presentations at least once. Thirty-seven percent say they incorporate something from this section at least every other issue.

There were no major suggestions for improving **Marine Education**. An overwhelming majority (77 percent) of readers surveyed appear quite satisfied with the newsletter in its present form.

MAJOR FINDINGS

Introduction

Data from survey questionnaires were analyzed to determine a profile of **Marine Education's** readers and assess their attitudes and perceptions toward the publication and its components. The information which follows in this section reports on these findings. The analysis presents major findings of aggregate data and, where meaningful, cross-tabulated readership attributes are highlighted. All data are expressed in terms of frequency distributions or percentages of total respondents. Not all respondents answered every question in the survey instrument. Consequently, total responses will vary for each item analyzed. A geographic and demographic profile of **Marine Education** subscribers is presented first, followed by a summary of readership and overall attitudes toward the publication, image profiles for each section of **Marine Education**, and an analysis of reader information sources and materials ordered. The report concludes with reader feedback concerning suggestions for improving the publication.

Geographic and Demographic Profile of **Marine Education** Subscribers

Since survey respondents were randomly selected from mailing lists of subscribers, it is possible to "draw" a geographic and demographic profile of the typical subscriber.

States Where They Live

Marine Education has subscribers in all 50 states, the District of Columbia and several foreign countries. As stated previously, only U.S. subscribers were included in the sampling frame for this study. Responses were received from subscribers in 47 states and the Philippines. (Note: the authors are at a loss to explain the latter, since no questionnaires were mailed to the Philippines.) A distribution of responses by state is presented in Table 1. This table reveals that 40 percent¹ of the respondents in the sample reside in Texas and

¹ Percentages are rounded to the nearest percent for discussion purposes in the body of the text. Tables present findings to the nearest 1/10 percent.

Texas Residence

Responses were received from residents of 54 Texas counties (Table 2). Of the 133 Texas subscribers who noted their county residence, the largest group (16 percent) live in Harris county (Houston SMSA). Thirty-two percent of Texas respondents reside in coastal counties² (Table 3).

Rural-Urban Location

Slightly more of the sample respondents (57 percent) reported living in an urban area than in rural area (43 percent) (Table 4).

Coastal-Inland Location

A large majority of sample respondents (71 percent) consider their residence inland rather than coastal (Table 4).

Demographic Profiles

Sex, Age, and Education

More than two-thirds (69 percent) of the survey respondents are female. Eighty-six percent of the sample is between the ages of 25 and 55, with the 35 to 44 group by far the largest (46 percent). They are extremely well-educated, with 97 percent holding college degrees and 65 percent master's or terminal degrees. Thirty-two percent have had marine-related training and 40 percent have taken at least one marine-related course (Table 5).

Place of Employment, Occupation

Ninety-two percent of the sample respondents work in an academic environment. Forty percent are elementary school teachers, with high school teachers the next largest group at 22 percent (Table 6). Seventy-eight percent consider themselves "teachers," with an additional 11 percent reporting a type of administrative occupation (Table 7). Nearly 90 percent of the teachers surveyed indicate that they teach either "all subjects" (46 percent) or science (31 percent) or biology (13 percent) (Table 8).

² Harris county is considered "coastal" in Tables 2 and 3 due to its proximity to the Gulf of Mexico and the ship channel connecting the Port of Houston to the Gulf. However, classification of a respondent as "coastal or inland in the analyses which follow was dependent upon their response to questionnaire item 15 (see Appendix).

Table 1. Distribution of Responses by State
(N=346)

STATE	NUMBER OF RESPONSES	PERCENT	STATE	NUMBER OF RESPONSES	PERCENT
Texas	140	40.4	Washington	4	
Florida	20	5.8	Iowa	3	*
California	13	3.8	Missouri	3	*
North Carolina	13	3.8	Pennsylvania	3	*
New Jersey	11	3.2	Alaska	2	*
Illinois	9	2.6	Kentucky	2	*
South Carolina	9	2.6	Louisiana	2	*
Ohio	8	2.3	Minnesota	2	*
Georgia	7	2.0	Rhode Island	2	*
Nevada	7	2.0	Utah	2	*
Washington	7	2.0	West Virginia	2	*
Colorado	6	1.7	Arkansas	1	*
Maryland	6	1.7	Delaware	1	*
Michigan	6	1.7	Hawaii	1	*
Connecticut	5	1.5	Idaho	1	*
Michigan	5	1.5	Maine	1	*
Tennessee	5	1.5	Montana	1	*
Virginia	5	1.5	New Hampshire	1	*
Alabama	4	1.2	New Mexico	1	*
Arizona	4	1.2	Oregon	1	*
Indiana	4	1.2	South Dakota	1	*
Kansas	4	1.2	Vermont	1	*
Massachusetts	4	1.2	Wyoming	1	*
Oklahoma	4	1.2	Philippines	1	*

* < 1 percent

Table 2. Distribution of Texas Responses By County

COUNTY	NUMBER OF RESPONSES	PERCENT	LOCATION OF COUNTY
Bell	3	2.3	Inland
Bexar	7	5.3	Inland
Bowie	1	*	Inland
Brazoria	3	2.3	Coastal
Brazos	11	8.3	Inland
Brown	2	1.5	Inland
Caldwell	1	*	Inland
Cameron	2	1.5	Coastal
Collin	2	1.5	Inland
Comal	1	*	Inland
Coryell	2	1.5	Inland
Dallas	7	5.3	Inland
Denton	2	1.5	Inland
Duval	1	*	Inland
El Paso	1	*	Inland
Fannin	1	*	Inland
Fayette	1	*	Inland
Fort Bend	7	5.3	Inland
Galveston	5	3.8	Coastal
Grayson	1	*	Inland
Harris	21	15.8	Coastal
Hays	1	*	Inland
Hidalgo	1	*	Inland
Hill	1	*	Inland
Houston	2	1.5	Inland
Hutchinson	1	*	Inland
Jackson	1	*	Coastal
Jefferson	3	2.3	Coastal
Johnson	1	*	Inland
Kendall	1	*	Inland
Johnson	1	*	Inland
Kendall	1	*	Inland
Lavaca	2	1.5	Inland
Leon	1	*	Inland
McLennan	1	*	Inland
Matagorda	4	3.0	Coastal
Midland	1	*	Inland
Montgomery	2	1.5	Inland
Nacogdoches	1	*	Inland
Nueces	2	1.5	Coastal
Palo Pinto	1	*	Inland
Panola	2	*	Inland
Parker	1	*	Inland
Polk	2	1.5	Inland

(Table 2 continued)

COUNTY	NUMBER OF RESPONSES	PERCENT	LOCATION OF COUNTY
Red River	1	*	Inland
Refugio	1	*	Coastal
San Saba	1	*	Inland
Smith	1	*	Inland
Tarrant	1	*	Inland
Terry	1	*	Inland
Tom Green	2	1.5	Inland
Travis	7	5.3	Inland
Walker	1	*	Inland
Webb	1	*	Inland
Wharton	1	*	Inland
Williamson	2	1.5	Inland
TOTAL	133		

* < 1 percent

Table 3. Distribution of Texas Respondents In Texas Coastal Counties

COUNTY	NUMBER OF RESPONDENTS	PERCENT
Harris	21	50.0
Galveston	5	11.9
Matagorda	4	9.5
Brazoria	3	7.1
Jefferson	3	7.1
Cameron	2	4.8
Nueces	2	4.8
Jackson	1	2.4
Refugio	1	2.4
TOTAL	<u>42</u>	<u>100.0</u>

Coastal Counties with 0 Respondents:

Orange, Calhoun, San Patricio, Aransas, Kleberg, Chambers, Victoria,
Kenedy, Willacy

Table 4. Distribution of Responses By Location of Residence

LOCATION	NUMBER OF RESPONSES	PERCENT
Rural Area	131	43.5
Urban Area	170	56.5
On the Coast	78	28.7
Inland	193	71.3

Table 5. Selected Characteristics of Respondents

CHARACTERISTIC	NUMBER OF RESPONDENTS	PERCENT
Age:		
under 18	4	1.2
18-24	23	6.8
25-34	81	23.9
35-44	156	46.0
45-54	54	15.9
over 55	21	6.2
Education:		
High School Graduate	4	1.2
Some College	6	1.8
College Graduate	45	13.3
Post Graduate Work	90	26.6
Master's Degree	167	49.4
Doctorate	26	7.7
Sex:		
Female	232	68.6
Male	106	31.4
Have Taken Marine-Related Course:		
Yes	135	39.7
No	205	60.3
Have Had Marine-Related Training:		
Yes	106	31.5
No	230	68.5

Table 6. Respondents' Place of Employment

OCCUPATION	NUMBER OF RESPONSES	PERCENT
Elementary School	132	40.4
Middle School	31	9.5
Junior High School	30	9.2
Senior High School	73	22.3
College of University	34	10.4
Other	27	8.2

Table 7. Distribution of Responses By Occupation
(N = 345)

OCCUPATION	NUMBER OF RESPONSES	PERCENT
Teacher	270	78.3
Director	11	3.2
Engineer	3	*
Scientist	2	*
Temporary Services	6	1.7
Marine Ed. Coordinator	12	3.5
Systems Analyst	1	*
Extension Agent	6	1.7
School Administrator	13	3.8
Medical	1	*
	3	*
	2	*
Librarian	10	2.9
Student	5	1.5

* < 1 percent

Table 8. Selected Characteristics of Teachers Only

CHARACTERISTIC	NUMBER OF RESPONSES	PERCENT
Grade Level Taught:		
1	38	14.2
2	19	7.1
3	23	8.6
4	27	10.1
5	18	6.7
6	20	7.5
7	30	11.2
8	16	6.0
9	37	13.9
10	22	8.2
11	3	1.1
12	1	*
College freshmen	8	3.0
College sophomore	2	*
College junior	1	*
College senior	1	*
Subjects Taught:		
All subjects	109	46.2
Science	72	30.5
Biology	31	13.1
Math	4	1.7
Art	2	*
Computers	4	1.7
English	2	*
Marine Biology	5	2.1
Language	7	2.9

* < 1 percent

Readership and Attitudes Toward **Marine Education**

Readership

Two questions were incorporated in the survey to assess the extent of **Marine Education's** readership. These questions and major findings from the survey responses to them follow.

"Marine Education is published four times a year. Please indicate how many issues you read annually."

- * Eighty-eight percent of sample respondents said they read every issue. Nearly 95 percent read at least three of the four quarterly issues (Table 9).
- * The readership percentages cited above are equally high for both "coastal" and "inland" subscribers (Table 10).

"How many other people read the copy you receive?"

- * Twenty-four percent are not aware of others reading their copy of the publication (Table 11).
- * Nearly 10 percent of the copies are read by more than eight people. This probably indicates classroom readership (Table 11).
- * On average, approximately three other people read each issue received by each subscriber. (Note: this is probably a conservative estimate as 15 readers were used to calculate the >7 category).

Attitudes toward **Marine Education**

This portion of the report deals with overall perceptions of **Marine Education**. Attitudes toward the various components of the publication are discussed in subsequent sections.

Image Profile of **Marine Education** Respondents were asked to indicate their "feelings toward **Marine Education**" on each of the following dimensions: information value, degree of interest, usefulness, timeliness, readability and importance. Responses were recorded on 7-point, bi-polar scales with 1 an "extremely" favorable rating and 7 an "extremely" unfavorable score. The image profile of **Marine Education** provided by sample respondents is shown in Exhibit 1 and mean scale values for each of the image dimensions are reported in Table 13. Key findings from Table 13 include:

- * Information Value - Eighty-six percent of sample respondents rated **Marine Education** as either "extremely informative" or "very informative." The mean value for this dimension is 2.03
- * Degree of Interest - 71 percent believe **Marine Education** is "extremely interesting" or "very interesting." The mean value for this dimension is 1.6.
- * Usefulness - 61 percent believe **Marine Education** is "extremely useful" or "very useful." An additional 26 percent find the publication "slightly useful." The mean value for usefulness dimension is 2.6.
- * Timeliness - 74 percent of survey respondents find **Marine Education** to be either "extremely timely" or "very timely." Only 4 percent feel the material is out of date. The mean value for timeliness is 2.2.
- * Readability - 92 percent of the sample indicated that **Marine Education** is easy to read. The mean value for readability is 2.1.
- * Importance - 87 percent feel that **Marine Education** is an important publication. The mean value for this dimension is 1.5.
- * The mean rating for each dimension from "coastal respondents was not significantly different from that obtained from the "inland" sample.
- * Mean ratings for each dimension from Texas respondents were not significantly different from the corresponding mean responses from the "outside" Texas" sample participants.

Marine Education as a Primary Information Source: One of the primary purposes of **Marine Education** is to disseminate to its readers marine-related information not readily available from other sources. In an attempt to assess **Marine Education's** effectiveness in accomplishing this objective, survey participants were asked how often they find information in **Marine Education** that is not readily available in other sources. Tables 14 and 15 summarize their responses to this question. Major findings include:

- * **Marine Education** serves as a primary information source for 95 percent of its readers at least "sometime."
- * 59 percent of sample respondents use **Marine Education** as a primary information source "quite often."

- * 63 percent of "inland" respondents find **Marine Education** to be a primary source of information "quite often" whereas the corresponding figure for "coastal" dwellers is only 49 percent. This difference is probably attributable to the more widespread availability of marine-related resource material to persons living in coastal areas.

Preferences Concerning Method of Illustration: Currently, all illustrations published in **Marine Education** are printed as line drawings. The rationale for this procedure is that it facilitates photocopying of illustrations for classroom use. Sample respondents were asked to indicate their preference for this procedure vis-a-vis the use of photographs and the combined use of photographs and line drawings. Tables 16 and 17 summarize survey responses to this question. It was found that:

- * The sample is about equally divided between continuing the present policy of line drawings only (47 percent) and adding photographs to complement the line drawings (53 percent).
- * "Coastal" respondents slightly favor the line drawing only option (55 percent) while "inland" respondents lean more toward the combination line drawing/photograph option (58 percent).

Exhibit 1

Respondents' Perception of Marine Education
(N = 347)

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	_____	X	_____	_____	_____	_____	_____	Uninformative
Interesting	_____	X	_____	_____	_____	_____	_____	Uninteresting
Useful	_____	_____	_____	_____	X	_____	_____	Useless
Timely	_____	_____	_____	_____	_____	X	_____	Out of date
Easy to read	_____	_____	_____	_____	_____	X	_____	Hard to read
Important	_____	_____	_____	_____	_____	X	_____	Not important

Table 9. Number of Issues Respondents Read Annually
(N = 348)

ISSUES READ ANNUALLY	NUMBER OF RESPONDENTS	PERCENT
All of Them	305	87.6
Three Issues	23	6.7
Two Issues	16	4.6
One Issue	4	.1
None	0	0.0

Table 10. Number of Issues Respondents Read Annually
by Location of Residence (N = 271)

ISSUES READ ANNUALLY	LOCATION OF RESIDENCE			
	on coast	%	inland	%
All of Them	68	87	167	86
Three Issues	4	5	15	8
Two Issues	6	8	7	4
One Issue	0	0	4	2
None	0	0	0	0
TOTAL	78	100	193	100

Table 11. Number of Readers Per Issue Received by Respondent
(N = 346)

NUMBER OF READERS	NUMBER OF RESPONSES	PERCENT
One Reader	83	24.0
Two Readers	76	21.9
Three Readers	44	12.7
Four Readers	16	4.6
Five Readers	4	1.2
Six Readers	6	1.7
Seven Readers	1	*
More than Seven Readers	33	9.5
None	83	24.0

* < 1 percent

Table 12. Number of Readers Per Issue
by Location of Residence (N = 270)

NUMBER OF READERS	LOCATION OF RESIDENCE			
	On Coast	%	Inland	%
One Reader	21	27	43	22
Two Readers	19	24	37	19
Three Readers	6	8	37	14
Four Readers	4	5	11	6
Five Readers	1	1	2	1
Six Readers	2	3	2	1
Seven Readers	0	0	1	*
More than Seven Readers	21	27	43	23
TOTAL	78	100	192	100

* < 1 percent

Table 13. Respondents' Perceptions of Marine Education by Location of Residence* and State**

CHARACTERISTIC	Mean Ratings ^a				
	On coast	Inland	Texas	Other States	Entire Sample
Informative	2.18	2.01	2.02	2.08	2.03
Interesting	1.76	1.60	1.53	1.60	1.60
Useful	2.70	2.50	2.46	2.64	2.60
Timely	2.40	2.10	2.16	2.29	2.20
Easy to Read	2.23	2.04	2.12	2.11	2.10
Important	1.50	1.56	1.50	1.64	1.50

^a Mean Ratings are based on a 1 to 7 point scale, where the lower the number the more favorable the rating.

* None of the mean comparisons were significantly different at the .05 level

** None of the mean comparisons were significantly different at the .05 level

Table 14. How Often Respondents Find Information In Marine Education That Is Not Readily Available in Other Sources (N = 346)

INFORMATION IN MARINE EDUCATION NOT AVAILABLE IN OTHER SOURCES	NUMBER OF RESPONSES	PERCENT
Quite Often	205	59.2
Sometimes	127	36.7
Seldom	9	2.6
Never	5	1.5

Table 15. Frequency of Finding Unavailable Information by Location of Residence (N = 269)

FREQUENCY OF FINDING UNAVAILABLE INFORMATION	LOCATION OF RESIDENCE			
	On coast	%	Inland	%
Quite Often	38	49	120	63
Sometimes	35	46	64	33
Seldom	3	4	5	3
Never	1	1	3	1
TOTAL	77	100	192	100

Table 16. Respondents' Preferences Concerning the Illustrations in Marine Education (N = 335)

PREFERENCE	NUMBER OF RESPONDENTS	PERCENT
Continue with line drawings only	157	46.9
Illustrate with photographs and line drawings	177	52.8
Use photographs only	1	*

* < 1 percent

Table 17. Respondents' Preference Concerning the Illustrations In Marine Education by Location of Residence (N = 266)

PREFERENCE	Location of Residence			
	On Coast	%	Inland	%
Continue with line drawings only	40	55	79	42
Illustrate with photographs and line drawings	33	45	110	58
Use photographs only	0	0	0	0
TOTAL	<u>77</u>	<u>100</u>	<u>189</u>	<u>100</u>

Attitudes Toward the Components of Marine Education

Marine Education consists of four major parts: Feature Articles, "Marine Facts," "Ideas for the Classroom," and "Books and Things." An image profile identical to the one described for **Marine Education** (see Attitudes toward Marine Education section) was developed for each part. These profiles for feature articles, "Marine Facts," "Ideas for the Classroom," and "Books and Things" are shown in Exhibits 2 to 5, respectively. Tables 18 through 21 present mean responses for each image dimension (information value, degree of interest, usefulness, timeliness, readability and importance) by location and state of residence for the respective portions of the publication. A summary of major findings from each of these tables follows.

Image Profile of Feature Articles

The feature articles section received very favorable mean responses on all dimensions studied. The percentages beside each of the following dimensions represent the percentage of respondents indicating "extremely" or "very" favorable attitudes toward the feature articles section on that dimension.

- * Information Value -- 82 percent
- * Interest -- 72 percent
- * Usefulness -- 53 percent
- * Timeliness -- 70 percent
- * Readability -- 79 percent
- * Importance -- 61 percent

None of the mean comparisons by location and state of residence for any of the dimensions were significant. (Editor's note: As indicated in the footnotes in Tables 18 through 21, this finding was true for each component studied. Thus, it will not be repeated in the discussion of other components which follows.

Image Profile of "Marine Facts"

A review of the "entire sample" mean scores for each dimension of this section (see Table 19) reveals that it is perhaps the strongest overall part of the publication. It is reviewed by respondents as the most "informative" section ($\bar{x} = 1.9$) and tied with "Ideas for the Classroom" in the "interesting" ($\bar{x} = 1.3$), "useful" ($\bar{x} = 2.4$), "timely" ($\bar{x} = 2.3$), and "easy to read" ($\bar{x} = 2.1$) categories. The percentage of respondents answering "extremely" or "very" favorably to the dimension follows.

- * Information Value -- 86 percent
- * Interest -- 75 percent
- * Usefulness -- 63 percent
- * Timeliness -- 67 percent
- * Readability -- 78 percent
- * Importance -- 65 percent

Image Profile of "Ideas for the Classroom"

Table 20 may be used to argue that "Ideas for the Classroom" is the strongest section of **Marine Education**. The "entire sample" mean for the "importance" dimension ($\bar{x} = 1.4$) indicates that sample respondents feel it to be the most important part of the publication. In addition, mean scores for the "interesting," "useful," "timely" and "easy to read" image components are equally as good as those recorded for "Marine Facts."

Percentage responses either "extremely" or "very" favorable toward "Ideas for the Classroom" on each dimension follow.

- * Informative Value -- 75 percent
- * Interest -- 75 percent
- * Usefulness -- 64 percent
- * Timeliness -- 66 percent
- * Readability -- 79 percent
- * Importance -- 67 percent

One of the major objectives of **Marine Education** is to encourage teacher-

readers to use marine-related examples in their classroom discussions. "Ideas for the Classroom" is designed specifically for this purpose. In an attempt to assess the effectiveness of this section in accomplishing this objective, subjects were asked: "How frequently do you incorporate suggestions from 'Ideas for the Classroom' in your class sessions?" Tables 22 and 23 summarize survey responses to this important question. It was found:

- * 84 percent said they have used "Ideas for the Classroom" in their class sessions at least once.
- * 37 percent indicated they incorporate suggestions from at least every other issue.
- * Percentages did not vary significantly by location or state of residence.

Image Profile of "Books and Things"

The "entire sample" mean scores for the dimensions under study shown in Table 21, coupled with the percentages of "extremely" and "very" favorable responses which follow, indicate the "Books and Things" is the "weak-sister" among **Marine Education's** components. However, it should also be noted that these means and percentages are still very favorable.

- * Information Value -- 48 percent
- * Interest -- 51 percent
- * Usefulness -- 51 percent
- * Timeliness -- 60 percent
- * Readability -- 73 percent
- * Importance -- 50 percent

Table 24 shows that approximately 60 percent of readers surveyed have never ordered material profiled in the "Books and Things" section. However, 9 percent of sample respondents said they order something from at least every other issue.

Exhibit 2

Respondents' Perception of The Feature Articles
Section of Marine Education
(N = 345)

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	_____	_____ X	_____	_____	_____	_____	_____	Uninformative
Interesting	_____	_____ X	_____	_____	_____	_____	_____	Uninteresting
Useful	_____	_____	_____	_____	_____ X	_____	_____	Useless
Timely	_____	_____	_____	_____	_____ X	_____	_____	Out of date
Easy to read	_____	_____	_____	_____	_____ X	_____	_____	Hard to read
Important	_____	_____ X	_____	_____	_____	_____	_____	Not important

Table 18. Respondents' Perception of the FEATURE ARTICLES Section of Marine Education by Location of Residence* and State**

Characteristic	Mean Ratings ^a				
	On Coast	Inland	Texas	Other States	Entire Sample
Informative	2.2	2.0	2.1	2.1	2.1
Interesting	1.4	1.4	1.3	1.5	1.4
Useful	2.8	2.5	2.6	2.7	2.6
Timely	2.5	2.3	2.4	2.4	2.4
Easy to Read	2.3	2.2	2.2	2.3	2.9
Important	1.7	1.6	1.6	1.6	1.6

^a Mean Ratings are based on a 1 to 7 point scale, where the lower the number, the more favorable the rating.

* None of the mean comparisons were significantly different at the .05 level.

** None of the mean comparisons were significantly different at the .05 level.

Exhibit 3

Respondents' Perception of The MARINE FACTS
Section of Marine Education
(N = 345)

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	_____	_____	_____	_____	_____	_____	_____	Informative
Interesting	_____	_____	_____	_____	_____	_____	_____	Uninteresting
Useful	_____	_____	_____	_____	_____	_____	_____	Useless
Timely	_____	_____	_____	_____	_____	_____	_____	Out of date
Easy to read	_____	_____	_____	_____	_____	_____	_____	Hard to read
Important	_____	_____	_____	_____	_____	_____	_____	Not important

Table 19. Respondents' Perception of the MARINE FACTS Section of Marine Education by Location of Residence* and State**

Characteristic	Mean Ratings ^a				
	On Coast	Inland	Texas	Other States	Entire Sample
Informative	2.1	1.8	1.9	1.9	1.9
Interesting	1.3	1.2	1.1	1.3	1.3
Useful	2.6	2.4	2.4	2.5	2.4
Timely	2.5	2.3	2.5	2.3	2.3
Easy to Read	2.4	2.2	2.3	2.1	2.1
Important	1.5	1.4	1.4	1.5	1.6

^a Mean Ratings are based on a 1 to 7 point scale, where the lower the number, the more favorable the rating.

* None of the mean comparisons were significantly different at the .05 level.

** None of the mean comparisons were significantly different at the .05 level.

Exhibit 4

Respondents' Perception of The IDEAS FOR THE
CLASSROOM Section of Marine Education
(N = 327)

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	_____	_____x	_____	_____	_____	_____	_____	Informative
Interesting	_____x	_____	_____	_____	_____	_____	_____	Uninteresting
Useful	_____	_____x	_____	_____	_____	_____	_____	Useless
Timely	_____	_____x	_____	_____	_____	_____	_____	Out of date
Easy to read	_____	_____x	_____	_____	_____	_____	_____	Hard to read
Important	_____x	_____	_____	_____	_____	_____	_____	Not important

Table 20. Respondents' Perception of the IDEAS FOR THE CLASSROOM Section of Marine Education by Location of Residence* and State**

Characteristic	Mean Ratings ^a				
	On Coast	Inland	Texas	Other States	Entire Sample
Informative	2.3	2.0	2.2	2.1	2.1
Interesting	1.2	1.3	1.3	1.3	1.3
Useful	2.6	2.3	2.5	2.4	2.4
Timely	2.4	2.3	2.4	2.3	2.3
Easy to Read	2.2	2.1	2.2	2.1	2.1
Important	1.4	1.4	1.4	1.4	1.4

^a Mean Ratings are based on a 1 to 7 point scale, where the lower the number, the more favorable the rating.

* None of the mean comparisons were significantly different at the .05 level.

** None of the mean comparisons were significantly different at the .05 level.

Exhibit 5

Respondents' Perception of The BOOKS AND THINGS
Section of Marine Education
(N = 332)

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	_____	_____	_____	_____	_____	_____	_____	Informative
Interesting	_____	_____	_____	_____	_____	_____	_____	Uninteresting
Useful	_____	_____	_____	_____	_____	_____	_____	Useless
Timely	_____	_____	_____	_____	_____	_____	_____	Out of date
Easy to read	_____	_____	_____	_____	_____	_____	_____	Hard to read
Important	_____	_____	_____	_____	_____	_____	_____	Not important

Table 21. Respondents' Perception of the BOOKS AND THINGS Section of Marine Education by Location of Residence* and State**

Characteristic	Mean Ratings ^a				
	On Coast	Inland	Texas	Other States	Entire Sample
Informative	2.4	2.3	2.4	2.4	2.4
Interesting	1.7	1.7	1.8	1.7	1.7
Useful	2.6	2.6	2.7	2.7	2.7
Timely	2.4	2.5	2.6	2.4	2.5
Easy to Read	2.2	2.4	2.4	2.2	2.3
Important	1.7	1.8	1.9	1.8	1.8

^a Mean Ratings are based on a 1 to 7 point scale, where the lower the number, the more favorable the rating.

* None of the mean comparisons were significantly different at the .05 level.

** None of the mean comparisons were significantly different at the .05 level.

Table 22. Frequency of Incorporating Suggestions From the IDEAS FOR THE CLASSROOM Section Into Class Lectures (N = 284)

USING SUGGESTIONS FROM "IDEAS FOR THE CLASSROOM" IN CLASS	NUMBER OF RESPONDENTS	PERCENT
From Every Issue	34	12.0
From Every Other Issue	70	24.7
Have Used It Once or Twice	134	47.2
Have Never Used It	46	16.1

Table 23. Distribution of Incorporating Suggestions From the IDEAS FOR THE CLASSROOM Section into Class Lectures by Location of Residence and State*

USING SUGGESTIONS FROM IDEAS FOR THE CLASSROOM IN CLASS	PERCENT OF RESPONSES			
	On Coast	Inland	Texas	Other States
From Every Issue	10	15	11	13
From Every Other Issue	27	20	28	23
Have Used It Once or Twice	52	48	46	48
Have Never Used It	11	17	15	16
TOTAL	100	100	100	100

* No statistically significant differences between on coast versus inland responses or between Texas and all other responses.

Table 24. Distribution of Respondents Who Have Ordered Materials from the BOOKS AND THINGS Section of Marine Education (N = 339)

HOW OFTEN DO YOU ORDER MATERIALS FROM BOOKS AND THINGS?	NUMBER OF RESPONSES	PERCENT
Every Issue	8	2.4
Every Other Issue	21	6.2
Have Ordered from it Once or Twice	111	32.7
Have Never Ordered From Books and Things	199	58.7

Information Sources and Materials Ordered

Of particular importance to Sea Grant Information personnel in evaluating the effectiveness of their communications media is an assessment of constituent information sources, i.e., where do subscribers learn about the Sea Grant Program in general and publications like **Marine Education** in particular? Tables 25 through 29 summarize survey respondent answers to these questions. Major findings include:

- * 65 percent of sample respondents first learned about Sea Grant resource material either through an in-service meeting/workshop (32 percent) or an education magazine (33 percent) (Table 25).
- * The majority of Texas residents (54 percent) learned about Sea Grant resource material through an in-service meeting/workshop. However, educational magazines were the major source of initial information on this material for residents from other states (50 percent) (Table 26).
- * Overall percentages of initial introductions to **Marine Education** were from the same sources as those for Sea Grant material in general i.e., 32 percent magazines, 33 percent in-service meetings/workshops. (Table 27).
- * The same was true for Texas vs. "non-Texas" subscribers, i.e., most Texas subscribers first learned about **Marine Education** in a workshop or in-service meeting (57 percent), whereas magazines were the major (50 percent) source of information about the publication for respondents from other states (Table 28).

Also of interest to Marine Information Service personnel are the types of Sea Grant material ordered by **Marine Education** subscribers. Table 29 presents survey findings on this topic. It was found:

- * 46.3 percent of the sample have not ordered material from Sea Grant.
- * "Hurricanes on the Texas Coast" (21 percent) and "Investigating the Marine Environment and Its Resources" (18 percent) are the most frequently ordered publication.

Table 25. Where Respondents First Learned about Texas A&M Sea Grant Resource Materials (N = 328)

SOURCE OF INFORMATION	NUMBER OF RESPONDENTS	PERCENT
In-service meeting or workshop	104	31.8
Writing Sea Grant Office	21	6.4
Colleague	36	10.9
Educational Magazine	107	32.6
Other	60	18.3

Table 26. Where Respondents First Learned About Texas A&M Sea Grant Resource Materials by Location of Residence* and State**

SOURCE OF INFORMATION	Percent of Responses			
	On Coast	Inland	Texas	Other States
In-service meeting workshop	31	34	54	16
Writing Sea Grant Office	2	7	3	9
Colleague	18	10	14	9
Educational Magazine	34	34	7	50
Other	15	15	22	16
TOTAL	100	100	100	100

* No statistically significant differences between on coast versus inland responses.

** Statistically significant (p. <.0001) differences between Texas and all other states on this response.

Table 27. Where Respondents First Learned About Marine Education
(N = 275)

SOURCE OF INFORMATION	NUMBER OF RESPONSES	PERCENT
Magazine	87	31.6
Writing Sea Grant Office	20	7.3
Workshop	53	19.3
In Service Meeting	37	13.5
Colleague	49	17.8
Marine Center	9	3.2
Other	20	7.3

Table 28. Where Respondents First Learned About Marine Education
by Location of Residence* and State**

SOURCE OF INFORMATION	PERCENT OF RESPONSES			
	On Coast	Inland	Texas	Other States
Magazine	36	32	6	50
Writing Sea Grant Office	3	7	9	6
Workshop	20	19	27	13
In-service meeting	15	13	30	3
Colleague	20	19	16	19
Marine Center	2	3	4	3
Other	4	7	8	6

* No statistically significant differences between on coast versus inland responses.

** Statistically significant ($p < .0001$) differences between Texas and all other states on this response.

Table 29. Distribution of Texas A&M Sea Grant Materials That Have Been Ordered From The Sea Grant Office

SEA GRANT MATERIAL	NUMBER ^a OF RESPONDENTS WHO HAVE ORDERED MATERIAL	% OF SAMPLE N = 348
Investigating the Marine Environment and Its Resources	62	17.8
Sea Sources	33	9.5
Aquatic Science: Marine Fisheries Biology	27	7.8
Hurricanes on the Texas Coast	72	20.7
Children's Literature--Passage to the Sea	37	10.6
Marine Organisms in Science Teaching	24	6.9
Fairy Tales of the Sea	34	9.8
Fairy Tales of the Sea--Teacher's Guide	10	2.9
Marine Education--A Seagoing Educational Experience	11	3.2
Life On Board American Clipper Ships	8	2.3
Have not ordered materials	161	46.3

^a Total is greater than number in sample due to multiple orders per respondent.

Suggestions for Improvement

As stated earlier (see PURPOSE OF THE STUDY), one of the major objectives of this study was to provide the Sea Grant Information staff with suggestions for modifying **Marine Education** to satisfy the needs of its readers better. To that end, readers were asked for their suggestions for improving the overall quality of **Marine Education**. Table 20 summarizes their responses.

- * The most significant finding is that the overwhelming majority of readers (77 percent) has no suggestions for improvement and/or made comments like "keep up the good work." This is an exceptionally high level of satisfaction with the publication and tends to confirm the favorable image profiles reported earlier.
- * More classroom activities (7.2 percent) and focus on lower grade levels (6.0 percent) were the only suggestions offered by more than 5 percent of the survey respondents.

Table 30. Respondents' Suggestions to Improve Overall Quality of Marine Education (N = 348)

SUGGESTIONS	NUMBER OF RESPONSES	PERCENT
Publish more science	10	2.9
Expand "Books and Things"	6	1.7
Add National Features	8	2.3
Longer Issues	7	2.0
More Classroom Activities	25	7.2
Focus on lower grade levels	21	6.0
Take Inland Schools Into Account	5	1.4
No Suggestions--"Keep up the good work!"	266	76.5

APPENDIX

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

TEXAS A&M UNIVERSITY
COLLEGE OF BUSINESS ADMINISTRATION
COLLEGE STATION, TEXAS 77843-4112

Department of
MARKETING
Telephone 409/845-5861

April 21, 1985

Dear Marine Education Reader:

Please help us!

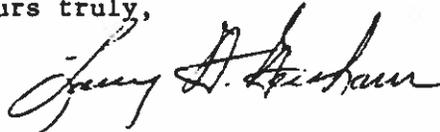
You are receiving Marine Education, a newsletter provided by the Texas A&M University Sea Grant College Program. This publication is designed to keep you informed about current marine research and to provide you with classroom activities. We are contacting you to find out what you think about Marine Education.

Enclosed is a questionnaire which can be answered quickly. Please take a few minutes to answer the questions. When you have finished, use the postage paid return envelope to mail it to us today. As one of a small sample of readers, your candid evaluation of Marine Education is very important to the success of the study.

Study results will be used to improve the publication. Please help us keep you better informed by completing and mailing the questionnaire.

Your participation is genuinely appreciated.

Yours truly,



Dr. Larry G. Gresham



Dr. Alan J. Bush

Marine Education Survey

Please circle the numbers that represent your answers to the questions

1. Marine Education is published four times a year. Please estimate how many issues you read annually.

- | | | |
|----------------|--------|---------|
| 1. All of them | 3. Two | 5. None |
| 2. Three | 4. One | |

2. How many other people read the copy that you receive?

- | | | |
|----------|---------|--------------------|
| 1. One | 4. Four | 7. Seven |
| 2. Two | 5. Five | 8. More than seven |
| 3. Three | 6. Six | 9. None |

3. How often do you find information in Marine Education that is not readily available in other sources?

- | | |
|----------------|-----------|
| 1. Quite often | 3. Seldom |
| 2. Sometimes | 4. Never |

4. For each of the following dimensions please circle the number that best represents your feelings about Marine Education. For example, with respect to "informativeness," if you feel that Marine Education is "slightly informative," then circle "3" on the informativeness scale.

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	1	2	3	4	5	6	7	Uninformative
Not Interesting	1	2	3	4	5	6	7	Interesting
Useful	1	2	3	4	5	6	7	Useless
Timely	1	2	3	4	5	6	7	Out of Date
Easy to Read	1	2	3	4	5	6	7	Hard to Read
Not Important	1	2	3	4	5	6	7	Important

5. Marine Education is currently published using line drawings, rather than photographs, to allow easy duplication. Would you prefer....

1. continue with line drawings only
2. illustrate with photographs and line drawings
3. use photographs only

(Over please)

The next part of the questionnaire deals with various parts of Marine Education. Marine Education consists of four major parts: (a) feature articles, (b) "Marine Facts," (c) "Ideas for the Classroom," and (d) "Books & Things".

6. For each of the following dimensions please circle the number that best represents your feelings about the feature articles section.

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	1	2	3	4	5	6	7	Uninformative
Not Interesting	1	2	3	4	5	6	7	Interesting
Useful	1	2	3	4	5	6	7	Useless
Timely	1	2	3	4	5	6	7	Out of Date
Easy to Read	1	2	3	4	5	6	7	Hard to Read
Not Important	1	2	3	4	5	6	7	Important

7. For each of the following dimensions please circle the number that best represents your feelings about the "Marine Facts" section.

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	1	2	3	4	5	6	7	Uninformative
Not Interesting	1	2	3	4	5	6	7	Interesting
Useful	1	2	3	4	5	6	7	Useless
Timely	1	2	3	4	5	6	7	Out of Date
Easy to Read	1	2	3	4	5	6	7	Hard to Read
Not Important	1	2	3	4	5	6	7	Important

8. For each of the following dimensions please circle the number that best represents your feelings about the "Ideas for the Classroom" section.

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	1	2	3	4	5	6	7	Uninformative
Not Interesting	1	2	3	4	5	6	7	Interesting
Useful	1	2	3	4	5	6	7	Useless
Timely	1	2	3	4	5	6	7	Out of Date
Easy to Read	1	2	3	4	5	6	7	Hard to Read
Not Important	1	2	3	4	5	6	7	Important

(Continue on next page)

IF YOU ARE NOT A CLASSROOM TEACHER PLEASE SKIP TO QUESTION 10.

9. How frequently do you incorporate suggestions from the "Ideas for the Classroom" section in your class sessions.
- | | |
|----------------------------|-------------------------------|
| 1. about every issue | 3. have used it once or twice |
| 2. about every other issue | 4. have never used it |

10. For each of the following dimensions please circle the number that best represents your feelings about the "Books & Things" section.

	Extremely	Very	Slightly	Neither	Slightly	Very	Extremely	
Informative	1	2	3	4	5	6	7	Uninformative
Not Interesting	1	2	3	4	5	6	7	Interesting
Useful	1	2	3	4	5	6	7	Useless
Timely	1	2	3	4	5	6	7	Out of Date
Easy to Read	1	2	3	4	5	6	7	Hard to Read
Not Important	1	2	3	4	5	6	7	Important

11. How often do you order materials from the "Books and Things" section of Marine Education?

1. about every issue
2. about every other issue
3. have ordered from it once or twice
4. have never ordered from this section

The next section of the questionnaire is about YOU

12. In what state/county do you live? _____ state / county

13. What is your current occupation? _____

IF YOUR ANSWER TO QUESTION 13 IS NOT EDUCATION-RELATED, PLEASE SKIP TO QUESTION 20

14. Please indicate the type of institution at which you are employed by circling the corresponding number.
- | | |
|----------------------|--------------------------|
| 1. Elementary School | 4. Senior High |
| 2. Middle School | 5. College or University |
| 3. Junior High | 6. Other (specify) _____ |

(Over please)

Finally, four very important questions.....

5. Which of the following Texas A&M Sea Grant Materials have you ordered from the Sea Grant Office? (Circle all those that apply.)

- | | |
|---|---|
| 1. Investigating the Marine Environment & Its Resources | 6. Marine Organisms in Service Teaching |
| 2. Sea Sources | 7. Fairy Tales of The Sea |
| 3. Aquatic Science: Marine Fisheries Biology | 8. Fairy Tales of The Sea-Teachers Guide |
| 4. Hurricanes on The Texas Coast | 9. Marine Education-A Seagoing Educational Experience |
| 5. Childrens Literature-Passage to The Sea | 10. Life on Board American Clipper Ships |
| | 11. None |

6. Where did you first find out about the Texas A&M Sea Grant resource materials?

1. At an in-service or other type of workshop
2. By writing the Sea Grant Office
3. From a colleague
4. In an education magazine
5. Other (specify) _____

7. Where did you first learn about Marine Education?

8. What suggestions do you have to improve the overall quality of Marine Education?

THANK YOU!! PLEASE PLACE YOUR COMPLETED QUESTIONNAIRE IN THE SELF-ADDRESSED, POSTAGE PAID ENVELOPE AND MAIL.

