RECREATION SPECIALIZATION AND GENDER: A COMPARISON OF MASSACHUSETTS FRESHWATER ANGLERS

Laura E. Anderson
Graduate Student
Department of Natural Resources Conservation
University of Massachusetts, Amherst
160 Holdsworth Way
Amherst, MA 01003

David K. Loomis
University of Massachusetts, Amherst

Abstract.—Recreation specialization describes the continuum of general to specific behavior of natural resource users and allows for the classification of these users into meaningful subgroups. While this theory has been used to study anglers, the majority of participants in recreational fishing are male. Therefore, more could be learned about how women at various specialization levels experience the activity. This analysis considers both specialization level and gender as predictors of five propositions. In general, male anglers were more specialized than female anglers. As expected, men fished more days per year and more years than women. Men also considered the experience of the catch to be more important. Contrary to expectations, women placed less importance on catching fish than men. Women also rated family recreation and experiencing new and different things as more important. Additionally, women were more supportive of one management item—restricted fishing areas.

1.0 INTRODUCTION

Recognizing that there is no average angler, human dimensions researchers have sought to segment resource users into meaningful subgroups for management. One way of segmenting users is through recreation specialization theory. Recreation specialization asserts that people who engage in a recreational activity can be placed on a continuum of general to specific behavior. In the area of recreational fishing, anglers along this continuum can be segmented into categories ranging from low specialization to high specialization. Recreation specialization is useful in its ability to predict the importance anglers place on activity-specific goals, nonactivity-specific goals, support for management regulation, investment in the activity, and frequency of participation (Ditton et al. 1992).

A second way to segment users is by gender. Women have been minorities in recreational fishing; therefore the preferences and interests of female anglers have been less studied than those of male anglers. In this paper, we consider the experience of both women and men anglers by specialization level to determine ways in which fisheries managers can better meet the needs of all anglers.

2.0 LITERATURE REVIEW

2.1 Recreation Specialization

Bryan introduced the concept of recreation specialization in 1977 when he classified anglers into four groups of increasing specialization: "occasional fishermen," "generalists," "technique specialists," and "technique-setting specialists" (p. 175). Bryan based his categories on the skill levels, equipment, and activity-setting preferences of the anglers. Despite this contribution, Bryan's definition involved circular reasoning, in that the items used to measure specialization were the same as those used to define specialization level (Ditton et al. 1992).

Ditton et al. (1992) set out to re-conceptualize recreation specialization using the social worlds' literature. This process yielded eight propositions. Namely, a person is likely to become more specialized in an activity over time. As specialization level increases, side bets, centrality of the activity to one's life, acceptance of rules, norms, and procedures related to the activity, importance of equipment and skill, resource dependence, and use of media sources related to the activity will increase. Also, with increased specialization, the importance of activity-specific elements will decrease relative to nonactivity-specific elements. Ditton et al. suggested that multiple variables be used in future studies to form a specialization index.

Salz et al. (2001) developed a multi-item specialization index using the social subworlds concept of Unruh

(1979). The authors divided anglers into "least specialized," "moderately specialized," "very specialized," and "highly specialized" categories based on four variables: orientation, experiences, relationships, and commitment. Salz et al. tested four propositions of specialization theory using this index. Strong support was found for all of the hypotheses tested.

2.2 Leisure and Gender

Historically, men have been the primary participants in recreational fishing. Today, they continue to make up the majority of recreational anglers. In 2001, 74 percent of all anglers in the U.S. were male (DOI 2002, p. 15). As a consequence, less is known about the preferences and interests of female anglers than male anglers. Studies of recreation specialization in the area of recreational fishing also reflect the characteristics of the mostly male participants. There could be more to learn about female anglers' experiences at various specialization levels.

Literature on women's leisure has demonstrated that women and men may experience leisure differently. The quantity and quality of women's recreation may be negatively impacted by various life factors and social expectations. For example, women who are involved in more than one activity at a time, such as watching out for the welfare of children while fishing, experience contaminated leisure. Second, women may experience interrupted leisure, meaning that they are able to engage in leisure activities during short periods of time rather than during one extended leisure period. Women continue to bear a disproportionate burden for childcare in the U.S., a factor that can lead to both contaminated and interrupted leisure (Mattingly and Bianchi 2003).

Beyond childcare, women are trained to be concerned about the welfare of others; this "ethic of care" can constrain women's ability to experience quality leisure (Jackson and Scott 1999). Additionally, there continues to be an income gap between men and women. Among full-time employees, women earned 76 cents for every $1.00 that men earned in 2005 (U.S. Census 2005). Finally, women may face certain social norms and expectations that keep them from fishing. These constraints may inhibit women from becoming as highly specialized in recreational fishing as men.

2.3 Hypotheses

Six hypotheses were formed to consider any differences between men and women by specialization level. The first goal was to consider if men and women differed in overall specialization level. Based on the various leisure constraints faced by women, and their lower participation in the activity, we expected women to be less specialized than men. Hypotheses two through six combine two factors—specialization level and gender—as predictors of participation frequency, support for management, investment in side-bets, and importance attached to activity-specific and non activity-specific elements of fishing.

Ha1: Male anglers will be more highly specialized than female anglers

Ha2: High-specialization and male anglers will have a greater frequency of participation than will low-specialization and female anglers

Ha3: High-specialization and male anglers will have greater support for various management tools and regulations than will low-specialization and female anglers

Ha4: High-specialization and male anglers will have generated a greater value of side-bets than will low-specialization and female anglers

Ha5: High-specialization and male anglers will attach less importance to activity-specific elements of the fishing experience than will low-specialization and female anglers

Ha6: High-specialization and male anglers will attach more importance to non activity-specific elements of the fishing experience than will low-specialization and female anglers

3.0 METHODS

3.1 Data Collection

Data for this analysis come from a 1998 survey of 2,930 Massachusetts anglers. Participants were randomly selected from a population of state-licensed anglers to receive a 16-page questionnaire. Questionnaires were administered to study participants using the Salant and Dillman (1994) Total Design Method. The 2,930 prospective survey respondents were mailed a letter notifying them about the project. One week later,

Table 1.—Sport Angler Questionnaire Response and Sample Selection

Type of Response	N	%
Effective original sample	2,586	--
Useable returned surveys	1,411	54.6
Total number of women	151	10.7
Total number of men	1,238	87.7
Sampled females and males with specialization level = 2, 3, or 4	281	19.9
Number of women	136	9.6
Number of men	145	10.3

questionnaires accompanied by a cover letter describing the purpose of the study and a self-addressed stamped envelope were mailed to the same individuals. A week after mailing the questionnaire materials, a post card was mailed out to the same individuals reminding them to return their questionnaires and thanking them for their participation. Three weeks after mailing the reminder post card, an additional questionnaire, a letter describing the project and encouraging response, and a self-addressed envelope was mailed to sample individuals who had not yet responded with a completed questionnaire.

Survey administrators developed the specialization index used in this analysis from four questionnaire items. Each of these items corresponded to one of the following characteristics: orientation, experiences, relationships, and commitment. These characteristics were first used by Unruh (1979) to place individuals into four social subworlds—strangers, tourists, regulars, and insiders. Survey respondents were asked to rate which of four descriptions for each characteristic best described them. Each description corresponded to a value from one to four. These values were then totaled across all four characteristics for each respondent, yielding a value between four and 16. This value was divided by four to determine the respondent's specialization level (1=least specialized [stranger], 2=moderately specialized [tourist], 3=very specialized [regular], 4=highly specialized [insider]). Survey respondents were also asked to indicate their gender on the survey.

3.2 Data Analysis

To consider overall differences in specialization level by gender (Ha1), a comparison of the percentage of anglers falling into each specialization level was made between women and men anglers. A chi-square test was performed to determine if differences were significant. A series of two-way ANOVA tests were performed to test the remainder of the hypotheses (Ha2 through Ha6).

4.0 RESULTS

4.1 Response Rate

Out of the 2,930 questionnaires sent to Massachusetts anglers, 1,411 were returned in usable form, yielding a response rate of 54.6 percent. Only 151 of the 1,411 returned surveys were completed by women. In order to better compare men and women, a sub-sample of 151 men was randomly selected from the larger sample. Only men and women falling into the three highest specialization levels were included. This process yielded 281 surveys for analysis. This represents 19.9 percent of the usable returned surveys (Table 1).

4.2 Specialization Level by Gender

Out of 281 women and men falling into the three levels of specialization, 107 (38.1%) were of low specialization, 118 (42.0%) were of medium specialization, and 56 (19.9%) were highly specialized. Overall specialization levels of women and men anglers differed significantly. Out of women anglers, 63 (46.3%) were of low specialization, 51 (37.5%) were of medium specialization, and 22 (16.2%) were highly specialized. Among men anglers, 44 (30.3%) were of low specialization, 67 (46.2%) were of medium specialization, and 34 (23.4%) were highly specialized (Table 2, Figure 1). With a Chi-square of 0.020, male anglers were, in general, more specialized than female anglers.

Table 2.—Number of Women and Men by Specialization Level

	Specialization Level			
Gender	Low	Medium	High	Total
Women	63	51	22	136
Men	44	67	34	145
Total	107	118	56	281

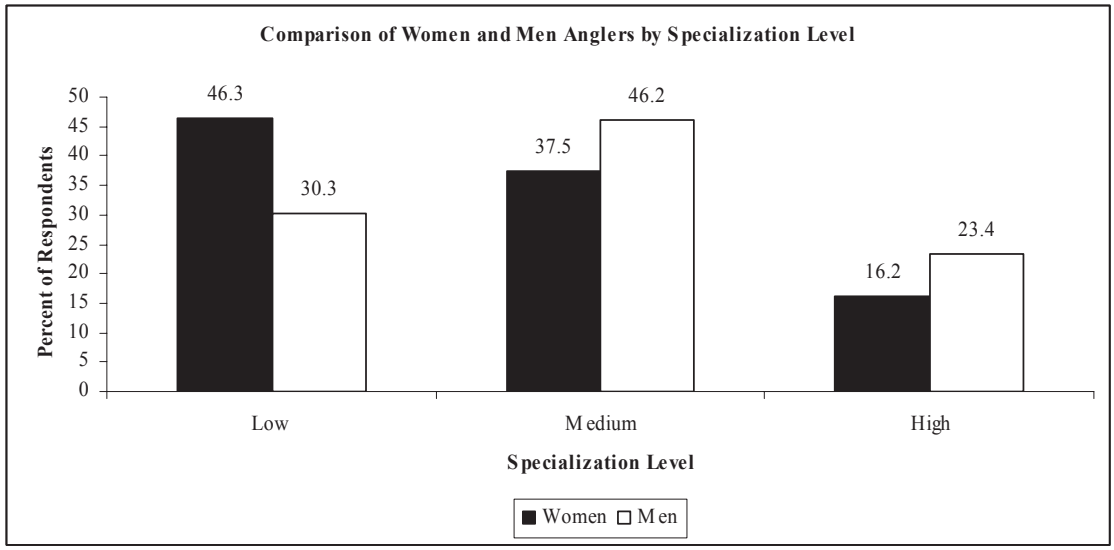

Figure 1.—Comparison of Women and Men Anglers by Specialization Level. Chi-square=0.020.

Table 3.—Two-way ANOVA Tests for Mean Differences in Participation Frequency According to Specialization Level and Gender

	Specialization Level				Gender		
	Low	Medium	High	p	Men	Women	p
Years fishing	21.92	27.20	26.87	0.099	29.24	20.39	0.000
Days fishing	15.07	33.62	50.75	0.000	36.45	21.10	0.007

Mean values are in years for item one and days for item two. Means underscored by same line are not significantly different (.10) using Tukey's test.

4.3 Participation Frequency

As predicted, men reported spending more days and years fishing than women. Also as predicted, more highly specialized anglers spent more days and years fishing than less specialized anglers (Table 3). Both components of Ha2 are strongly supported by these findings.

4.4 Management Regulation Items

Support for management regulation items differed by gender on only one item, with women being slightly more supportive of restricted fishing areas. Women and men did not differ in their support for the other ten management items. While means by specialization level generally varied in the direction predicted, only one item—minimum size limit—was significant at the 0.10 level (Table 4). These findings yield little support for the specialization component of Ha3 and no support for the gender component of Ha3.

4.5 Side Bet Items

Though means by gender varied in the direction predicted, men and women did not differ significantly in money spent on reels, tackle, rods, and electronic equipment. All of the means varied in the direction

Table 4.—Two-way ANOVA Tests for Mean Differences in Support for Management Items According to Specialization Level and Gender

	Specialization Level				Gender		
	Low	Medium	High	p	Men	Women	p
Restricted fishing area	3.394	3.422	3.304	0.860	3.135	3.628	0.003
Mandatory catch and release	3.124	3.284	3.429	0.445	3.358	3.142	0.236
Creel limit	4.143	4.198	4.500	0.158	4.277	4.161	0.258
Prohibit use of certain gear	3.621	3.573	3.786	0.556	3.550	3.685	0.311
Slot limit	3.235	3.241	3.527	0.271	3.295	3.293	0.683
Voluntary catch and release	4.028	4.077	1.125	0.781	4.047	4.087	0.689
Minimum size limit	4.028	4.026	4.589	0.005	4.176	4.100	0.734
Maximum size	3.467	3.650	3.839	0.137	3.604	3.624	0.818
Stock native fish	4.243	4.302	4.455	0.229	4.320	4.267	0.861
Stock non-native fish	2.933	3.017	3.109	0.585	3.048	2.938	0.920
No stocking allowed	3.724	3.629	3.821	0.625	3.705	3.673	0.958

Mean scores were based on responses to the following categories; 1 = Strongly oppose, 2 = Oppose, 3 = Neutral, 4 = Support, 5 = Strongly support. Means underscored by same line are not significantly different (.10) using Tukey's test.

Table 5.—Two-way ANOVA Tests for Mean Differences in Side Bets According to Specialization Level and Gender

	Specialization Level				Gender		
	Low	Medium	High	p	Men	Women	p
Replace reels	103.98	252.92	380.37	0.000	251.03	181.28	0.121
Replace tackle	117.28	333.55	510.28	0.000	307.93	255.66	0.538
Replace rods	103.29	312.24	488.61	0.000	272.79	257.42	0.766
Replace electronic equipment	233.12	592.22	710.50	0.276	567.95	490.95	0.992

Mean values are in U.S. dollars. Means underscored by same line are not significantly different (.10) using Tukey's test.

predicted by specialization level, with three of the four items being significant (Table 5). These results yield strong support for the specialization components of Ha4 but do not support the gender component of Ha4.

4.6 Activity-specific Items

Out of seven items, significant differences were found between women and men in three cases. Contrary to expectations, women placed less importance on catching fish than men. As expected, men placed greater importance on the experience of the catch than women. While all of the means varied in the direction predicted by specialization level, just three of the seven items are significant (Table 6). These results yield mixed support for Ha5.

4.7 Non Activity-specific Items

Differences in perceived importance of nonactivity-specific aspects of the fishing experience were found between women and men anglers for two out of 10 items. In both cases, women rated the nonactivity items of family recreation and experiencing new and different things as slightly more important than men. This finding runs contrary to what was predicted in Ha6. The gender component of Ha6 is also unsupported because no significant differences were found for 8 out of the 10 items. As for the activity-specific items, all of the means generally varied in the direction predicted for specialization level. However, just four of the 10 items were significant at the 0.10 level, lending some support for the specialization component of Ha6 (Table 7).

5.0 DISCUSSION

Recreation specialization as a predictor of 1) participation frequency, 2) support for management, 3) investment in side bets, 4) importance of activity-specific items, and 5) importance of non activity-specific items was somewhat supported in this analysis. It should be noted that a

Table 6.—Two-way ANOVA Tests for Mean Differences in Activity-specific Items According to Specialization Level and Gender

	Specialization Level				Gender		
	Low	Medium	High	p	Men	Women	p
When I go fishing, I'm just as happy if I don't catch a fish	3.105	3.197	3.375	0.132	2.987	3.430	0.001
A fishing trip can be successful even if no fish are caught	3.785	3.803	4.196	0.025**	3.667	4.053	0.011**
For the experience of the catch	3.491	3.821	4.196	0.002	3.933	3.523	0.051
To obtain fish for eating, and not for sport	1.651	1.500	1.643	0.479	1.517	1.596	0.224
For the sport of fishing, not to obtain food to eat	3.443	3.763	4.250	0.002	3.833	3.556	0.330
I'm just as happy if I don't keep the fish I catch	4.009	4.162	4.339	0.173	4.181	4.080	0.358
I'm just as happy if I release the fish I catch	4.085	4.128	4.446	0.133	4.159	4.182	0.816

For items 3, 4, and 5 mean scores were based on responses to the following categories; 1 = Not at all important, 2 = Slightly important, 3 = Moderately important, 4 = Very important, 5 = Extremely important. For all other items, mean scores were based on responses to the following categories; 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree. Means underscored by same line are not significantly different (.10) using Tukey's test. **Interaction between Specialization Level and Gender is significant at 0.10.

Table 7.—Two-way ANOVA Tests for Mean Differences in Non Activity-specific Items According to Specialization Level and Gender

	Specialization Level				Gender		
	Low	Medium	High	p	Men	Women	p
For family recreation	3.654	3.362	3.286	0.280	3.197	3.700	0.014
To experience new and different things	3.019	3.119	3.491	0.018	3.014	3.227	0.039
To be close to the water	3.606	3.718	4.107	0.023	3.649	3.800	0.175
To be with friends	3.374	3.241	3.564	0.300	3.230	3.400	0.192
To experience natural surroundings	4.271	4.248	4.589	0.041	4.219	4.380	0.230
To get away from the demands of other people	3.676	3.504	3.946	0.184	3.534	3.722	0.314
To get away from the regular routine	3.915	3.941	4.145	0.490	3.860	4.033	0.326
For relaxation	4.385	4.314	4.464	0.605	4.280	4.369	0.420
To be outdoors	4.280	4.222	4.536	0.156	4.219	4.356	0.571
To experience adventure and excitement	3.509	3.890	4.071	0.004	3.780	3.715	0.599

Mean scores were based on responses to the following categories; 1 = Not at all important, 2 = Slightly important, 3 = Moderately important, 4 = Very important, 5 = Extremely important. Means underscored by same line are not significantly different (.10) using Tukey's test.

previous study that considered specialization alone for the entire sample of 1,411 responses found strong support for the propositions tested here (Salz et al. 2001). This highlights the drawback of having a smaller sample size with reduced power. However, most of the means varied in the direction expected for specialization level, even if they were not significant.

Perhaps most striking in considering the role of gender in recreational fishing is the very small proportion of women in the survey sample. Only 10 percent of surveys returned by licensed freshwater Massachusetts anglers were completed by women. As expected, women did have lower overall specialization levels than men, according to the specialization index developed by Salz et al. (2001).

Despite this difference in overall specialization level, few significant differences were found between women and men in the propositions tested.

Among the differences found, a few conformed to what was predicted while others ran contrary to what was predicted. As expected, women participated in the activity less often than men, with men participating 15 days per year more than women and 9 years more than women. However, contrary to the expectation that women would rate activity-specific items as more important, women placed less importance on catching fish than men did. We also expected that women would rate non activity-specific items as less important. However, women considered family recreation and experiencing new and different things to be more important than men did.

These results suggest that more study is needed in the area of recreational fishing to consider how well the propositions in recreation specialization theory apply to women. Clearly, the results presented here are limited by having a small sample size. Future studies could target a larger sample of women and should consider how women negotiate gendered leisure constraints as they progress along the recreation specialization continuum.

6.0 CITATIONS

Bryan, H. 1977. **Leisure value systems and recreational specialization: The case of trout fishermen.** Journal of Leisure Research. 9: 174-187.

Ditton, R.B.; Loomis, D.K.; Choi, S. 1992. **Recreation specialization: Re-conceptualization from a social worlds perspective.** Journal of Leisure Research. 24(1): 33-51.

DOI. October, 2002. **2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation.** Department of the Interior and Department of Commerce, Washington, D.C.

Jackson, E.L.; Burton, T.L. 1999. **Leisure Studies—Prospects for the Twenty-First.** State College: Venture Publishing, Inc.

Mattingly, M.J.; Bianchi, S.M. 2003. **Gender differences in quantity and quality of free time: the U.S. experience.** Social Forces. 81(3): 999-1030.

Salant, P.; Dillman, D.A. 1994. **How to Conduct Your Own Survey.** New York: Wiley.

Salz, R.J.; Loomis, D.K.; Finn, K.L. 2001. **Development and validation of a specialization index and testing of specialization theory.** Human Dimensions of Wildlife. 6(4): 239-258.

Unruh, D.R. 1979. **Characteristics and types of participation in social worlds.** Symbolic Interaction, 2: 115-130.

U.S. Census. (2005). **Facts for Features. Women's History Month.** Available Online: http://www.census.gov/Press-Release/www/releases/archives/cb05-ff.04.pdf