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## Job Satisfaction and the Culture of Fishing

A Comparison of Six New Jersey Fisheries

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**ABSTRACT** New Jersey's marine fisheries exhibit unusual diversity within a small geographical area - contrasting in terms of prey species, gear size and type, trip duration, seasonality, regulatory policies, and income levels. One might expect these differences to engender different patterns of job satisfaction. Based on a survey of several hundred fishermen, the paper compares clammers, scallopers, oystermen, druggers, longliners, and baymen with respect to thirty-three components of job satisfaction. Results show significant group-group contrasts in the nonmonetary rewards derived from fishing, even though all those surveyed were clearly 'commercial fishermen.'

For the past few years, we have been doing a survey on job satisfaction among commercial fishermen in New Jersey. The project has several potential applications in the realm of fisheries management, but here we relate our findings to more general concerns within anthropology. In particular, we consider whether participation in the subsistence activity of commercial fishing gives rise to a stable core of subjective responses or whether the particularities of different fisheries engender diverse patterns of response.

We introduce our study by situating it within the context of maritime anthropology. Then, we turn to our principal subject, which is comparing and contrasting the specific nature of job satisfaction in six New Jersey fisheries. Finally, we conclude with some general observations about the nonmonetary correlates of commercial fishing.

### Fishing Cultures and the Culture of Fishing

In the literature dealing with fishing as a way of life, there are two kinds of ethnographies or approaches or emphases (Acheson 1981:275-76). On the one hand, there are *community studies* of fishing peoples, such as those by Firth (1946), Faris (1966), and Taylor (1983). On the other hand, there are studies that focus on the *activity of fishing* itself, such as those by Davenport (1960), Orbach (1977), Zulaika (1981), Pálsson and Durrenberger (1982, 1983; Durrenberger & Pálsson 1983, 1986), and Gatewood (1983, 1984). These two styles of research

are demarcated linguistically to the extent that people studying fishing communities tend to identify their specialty as 'maritime anthropology,' whereas those focusing on fishing as an activity tend to refer to their work as the 'anthropology of fishing.'

Estellie Smith's (1977) essay is a fairly well-known attempt to consolidate the field of maritime anthropology by identifying the essential commonalities of fishing cultures from around the world. The idea is that fishing cultures constitute a distinctive type, on a par with hunting and gathering or pastoralist or peasant (see, also, Andersen & Wadel 1972; Leap 1977). 'Fishing cultures,' thus, refers to whole-culture patterns, in Kroeber's (1948:316) sense, and the question for maritime anthropology is do communities based on fishing as a major subsistence activity develop a distinctive mode of living in and understanding of the world.

By contrast, those interested in fishing as an activity seldom address the total culture of fishermen. Instead, they concentrate on the specific knowledge, beliefs, and values fishermen use when fishing. The object of study is not so much the total lifeways of fishermen, their onshore as well as offshore behavior, but the 'culture of fishing,' which is an occupational or partial culture.

Our study of fishermen's job satisfaction falls into this latter camp. Our objective is to describe an important aspect of the culture of fishing, especially as this varies with differences in the basic mode of production among different fisheries.

### **The New Jersey Fisheries Survey**

Job satisfaction is a multi-dimensional phenomenon, which makes quantification in terms of a single unit-measure very difficult if not impossible (Pollnac & Littlefield 1983). Although some researchers have tried to establish the "dollar value of an angler's day" (e.g., McFadden 1969; Gordon, Chapman & Bjornn 1973), our research takes a different approach and is geared to discovering the qualitative components of fishermen's job satisfaction and the relative importance of these in different fisheries.

New Jersey is an ideal location to do this kind of comparative study for several reasons. First, commercial fishing is a major industry in New Jersey. For example, based on the average dollar value of landings since 1974, Cape May/Wildwood is the third largest seafood port on the East Coast. Second, there are many different fisheries within a fairly small geographical area, ranging from small-scale estuarine fishing to offshore dredging, trawling, and longlining. And third, the possible confounding effects of community and ethnicity are relatively unproblematic in New Jersey because the various fisheries are dispersed among several multi-fishery, multi-ethnic ports.

Our survey includes six fisheries - sea clammers, scallopers, oystermen, draggers, longliners, and baymen. As the following brief descriptions indicate, these fisheries differ from one another in several ways.

Sea clamming is a dredging operation involving fairly large boats (ca. 82 feet)

and crews of 4-5 people, captain included. When going after surf clams, the boats fish just a couple of miles offshore, but when going after quahogs, they go out 30-40 miles. The catch is unloaded each day, and this sort of shellfishing can be done virtually all year.

Scalloping is also a dredging operation involving large boats (ca. 86 feet). The crews are larger than in clamming, however, because the boats stay out a week or two before returning to port, and the larger crews are needed to work in daily shifts. Scalloping can be done virtually all year.

Oyster dredging in Delaware Bay is a seasonal fishery lasting only 4-6 weeks in the spring. The boats average about 69 feet in length and have crews of 5-8 people. Today, there seems to be little mobility in and out of this fishery, and although captains have fishery-related work most of the year, their crews tend to view oystering as seasonal work.

Dragging, also called trawling, requires crews of 5-6 people and is a mobile-gear netfishery. Fairly large boats (ca. 78 feet) pull otter trawls behind them, catching anything a few fathoms up from the bottom. Depending on the time of year, draggers go after porgies, fluke, whiting, or squid, and the boats range several hundred miles up and down the Eastern Seaboard. Fishing trips last from two to three days up to ten days, depending on the prey species.

Longlining is a variety of hook-and-line fishing. Crews of 4-6 people lay out 30-40 miles of gear as evening approaches, then during the daylight hours cruise along removing the catch and baiting new hooks. The primary species are either tilefish or swordfish and tuna. Tilefishermen tend to fish about 200-300 miles off the Jersey shore and return to port every week or so. Swordfishermen may travel as far as Greenland or Puerto Rico on month long voyages.

Unlike the other fisheries, baymen tend to work alone in small outboard-powered boats and in the estuaries rather than out in the ocean proper. They often fish for a variety of species during the year, including especially bay clams and fluke. Because of their close proximity to shore, some baymen hold full-time jobs and fish after work or on weekends. Others would identify themselves as full-time fishermen.

### *Method*

We use the 'dockside intercept' method in our survey, which means that we go to the fishing docks to find people willing to undergo an interview lasting from twenty minutes to an hour and a half, including filling out our 12-page questionnaire. The fishermen were remarkably cooperative, with less than 10% of those asked to participate refusing.

The questionnaire is given in two parts. The first part, completed by the fisherman himself, consists of 33 specific job satisfaction questions where the answers range on a 1-to-5 scale from 'very dissatisfied' to 'very satisfied.' The first part concludes with three overall questions about job satisfaction, two questions about other economic opportunities, and three questions about how his family views his work. These questions are, for the most part, the same as used in the

job satisfaction studies among fishermen in New England (Pollnac & Poggie 1979) and in Nova Scotia (Apostle, Kasdan & Hanson 1985). The second part, administered by the interviewer, asks a wide range of biographical-demographic questions.

The most general hypotheses of the research are that features of job satisfaction should correlate with: (1) objective characteristics of the various fisheries, and (2) biographical/demographic characteristics of the fishermen. Here, we summarize findings on job satisfaction as these correlate with two important variables: fisheries and status on board. As will be shown, both of these independent variables are significant in explaining variability among fishermen's subjective response to their work. That is, the fishery in which one works and one's status on board create significantly different work experiences, and these differences give rise to different levels and patterns of job satisfaction.

### The Sample

The survey spanned three years, beginning in June of 1984 and ending in May of 1986, with the large majority of interviews being done in the summer months (June, July, and August). During this time, a total of 401 commercial fishermen completed both parts of the questionnaire. With an 'incidental catch' of nine purse seiners and one gillnetter excluded from further analyses, the final sample size is, thus, 391 fishermen.

To achieve as representative a sample as possible for each fishery, we tried to interview three individuals from each boat encountered at the docks: the captain and two crew members (including the first mate when possible). If a given vessel had alternating captains and crews, these 'shifts' were considered independent for sampling purposes. Although compliance with these rules-of-thumb was not always feasible, the final sample of 391 does conform to the design rather well. Table 1 shows the breakdown of the sample by fishery and status on board, as well as the number of boats represented for each fishery. (Note that the status 'one-man' applies only to bayfishermen and that the issue of boat representation does not apply to this fishery.)

Table 1. The Sample by Status and Fishery

	Clam	Scallop	Oyster	Dragger	Longline	Bay
Captain	25	22	24	26	20	-
Mate	14	12	1	10	11	-
Crew	29	41	25	42	19	-
One-Man	-	-	-	-	-	70
(Boats)	(30)	(24)	(26)	(34)	(19)	(-)

Table 2. Demographic Characteristics of the Sample

Ethnic/Racial Background			Age distribution		
(n = 382)	Freq.	%	(n = 391)	Freq.	%
Western European	166	43.5	10-20	20	5.1
"White American"	138	36.1	20-29	171	43.7
Black	30	7.9	30-39	95	24.3
Mediterranean	15	3.9	40-49	50	12.8
Eastern European	13	3.4	50-59	36	9.2
Amerindian	2	0.5	60-69	10	2.6
Jewish	1	0.3	70-79	7	1.8
Asian	1	0.3	80-89	2	0.5
Near Eastern	1	0.3			
Other	15	3.9			
Sex			Education		
(n = 391)	Freq.	%	(n = 391)	Freq.	%
Male	386	98.7	8 or less yrs	46	11.8
Female	5	1.3	9-12 yrs	251	64.2
			13-16 yrs	89	22.8
			17 or more yrs	5	1.3
Place of birth			Percent of Income from Fishing		
(n = 390)	Freq.	%	(n = 391)	Freq.	%
New Jersey	231	59.2	less than 25%	40	10.2
Pennsylvania	39	10.0	25%-50%	24	6.1
New York	19	4.9	50%-75%	27	6.9
Virginia	18	4.6	more than 75%	300	76.7
North Carolina	14	3.6			
Maryland	13	3.3			
All other states	39	10.0			
Other countries	17	4.4			
Total Income from Fishing			Total Income from Fishing		
(n = 390)	Freq.	%	(n = 351)	Freq.	%
None	156	40.0	less than \$10,000	82	23.4
Yes [avg = 2.47]	234	60.0	\$10,000-\$14,999	36	10.3
			\$15,000-\$19,999	41	11.7
			\$20,000-\$24,999	43	12.3
			\$25,000-\$29,999	49	14.0
			\$30,000-\$34,999	27	7.7
			\$35,000-\$49,999	42	12.0
			\$50,000 or more	31	8.8
Number of Children					
(n = 390)	Freq.	%			

### Demographic Summary

Table 2 shows some of the basic demographic characteristics of the sample as a whole. The respondents are preponderantly of Western European ethnic origins or simply 'White Americans' (the 30 Blacks are involved mostly in oyster dredging in Delaware Bay) and born within the three-state area of New Jersey, Pennsylvania, and New York. Sixty-eight percent are in their twenties or thirties, and there are very few fishing women (only 5 of 401). Roughly half of the sample are currently married, and of the 60% who have children, the average number of children is 2.47. On average, the New Jersey commercial fisherman has completed 11.5 years of formal education.

Over three-quarters of those interviewed are 'full time' fishermen in the sense that their earnings from fishing constitute more than 75% of their annual incomes. The average income is about \$22,400 from an average of 9.5 months of fishing.

There are statistically significant contrasts in education level, age, and income derived from fishing across the six fisheries (see Table 3). Speaking generally,

Table 3. Education, Age, and Fishing Income by Fishery

Education		Percent of Income from Fishing			
	n	Mean		n	Mean
Clammer	(68)	11.3 yrs	Clammer	(68)	80.9%
Scalloper	(75)	11.6 yrs	Scalloper	(75)	82.5%
Oysterman	(50)	10.2 yrs	Oysterman	(50)	54.0%
Dragger	(78)	11.3 yrs	Dragger	(78)	84.0%
Longliner	(50)	12.7 yrs	Longliner	(50)	73.5%
Bayman	(70)	12.0 yrs	Bayman	(70)	67.5%
[F = 6.391, p = 0.000] *		[F = 14.838, p = 0.000] *			
Age		Earnings from Fishing			
	n	Mean		n	Mean
Clammer	(68)	32.7 yrs	Clammer	(65)	\$27,700
Scalloper	(75)	30.2 yrs	Scalloper	(75)	\$23,800
Oysterman	(50)	43.5 yrs	Oysterman	(49)	\$14,600
Dragger	(78)	33.9 yrs	Dragger	(70)	\$25,700
Longliner	(50)	29.4 yrs	Longliner	(50)	\$24,000
Bayman	(70)	36.0 yrs	Bayman	(52)	\$15,500
[F = 9.303, p = 0.000] *		[F = 14.038, p = 0.000] *			

longliners have the most years of formal education and oystermen the least. Oystermen are typically older than other fishermen, and longliners are the youngest group. Clammers, scallopers, draggers, and longliners depend on fishing as their source of income more than oystermen and baymen, and they make considerably more money as well.

Contrasting the same demographic variables across four status categories, there are significant differences with respect to age and fishing income, but not with respect to education level (see Table 4). As expected, captains of fishing boats tend to be older than their crews, depend more heavily on fishing for their incomes, and make more money. An interesting point is that even crew members make more money from fishing than do the one-man baymen operations, even though both groups depend on fishing to the same extent (ca. 68%).

The six fisheries differ significantly in terms of the size and power of their vessels and in terms of several personnel variables dealing with fishing experience (see Table 5). Although the average age at which fishermen began fishing commercially is roughly the same across fisheries, fishermen contrast markedly with respect to their years of fishing experience, the number of boats they have worked on, the number of different fisheries they have tried, and the number of fisheries tried within the previous twelve months. Oystermen (who are generally older) have the most years of experience, and longliners the least. Draggers, scallopers,

Table 4. Education, Age, and Fishing Income by Status

Education		Percent of Income from Fishing			
	n	Mean		n	Mean
Captain	(117)	11.3 yrs	Captain	(117)	83.3%
1st Mate	( 48)	11.3 yrs	1st Mate	( 48)	82.3%
Crew	(156)	11.5 yrs	Crew	(156)	70.0%
One-Man	( 70)	12.0 yrs	One-Man	( 70)	67.5%
[F = 1.246, p = 0.293]		[F = 10.569, p = 0.000]			
Age		Earnings from Fishing			
	n	Mean		n	Mean
Captain	(117)	38.9 yrs	Captain	(111)	\$31,100
1st Mate	( 48)	29.8 yrs	1st Mate	( 44)	\$23,800
Crew	(156)	30.8 yrs	Crew	(144)	\$17,800
One-Man	( 70)	36.0 yrs	One-Man	( 52)	\$15,500
[F = 11.919, p = 0.000]		[F = 47.133, p = 0.000]			

Table 5. *Hardware and Personnel Variables by Fishery*

	Clam	Scallop	Oyster	Dragger	Lngline	Bay	F prob
<b>HARDWARE</b>							
Boat Length	82 ft	86 ft	69 ft	78 ft	69 ft	19 ft	.000 <sup>a</sup>
Horsepower	404 hp	631 hp	176 hp	576 hp	496 hp	79 hp	.000 <sup>a</sup>
<b>PERSONNEL</b>							
Age When Began	19.85	17.49	18.08	17.77	19.46	18.59	.385 <sup>b</sup>
Years Fishing	12.42	11.80	25.18	14.72	9.62	16.56	.000 <sup>b</sup>
No. Boats	9.63	15.91	9.74	12.01	6.80	6.00	.000 <sup>b</sup>
No. Fisheries	3.35	3.41	2.56	3.46	2.70	2.04	.000 <sup>b</sup>
Fisheries Tried Last Year	1.31	1.65	1.44	1.35	1.28	1.20	.001 <sup>b</sup>
No. Fishing Kin	3.53	3.27	4.30	4.00	1.78	3.73	.025 <sup>b</sup>

<sup>a</sup> Significance computed excluding Baymen.

<sup>b</sup> Significance computed including Baymen.

and sea clammers have the most varied fishing histories: they have worked on more boats and tried more fisheries than the other fishermen.

### *Direct Comparisons of Fishing with Non-Fishing Work*

As an initial indication of fishermen's levels of job satisfaction, let us summarize their direct comparisons of fishing with other kinds of work.

We asked first whether they had had much experience doing other sorts of work and, if yes, whether they think fishing is better, about the same, or worse than their previous jobs with respect to four general concerns: earnings, enjoyment of the work itself, having time for other things, and overall satisfaction.

Roughly 70% of the 315 fishermen who had experience doing at least one kind of non-fishing work responded that fishing is better with respect to their earnings, their enjoyment of the work itself, and their overall satisfaction. Other jobs, however, were better than fishing with respect to having time for other things (see Table 6A). The same pattern of responses held true for a smaller subsample of 189 who compared fishing with a second kind of non-fishing work (see Table 6B).

When the direct comparisons are broken down by fishery, there are significant differences with respect to the earnings question and having time for other things, but not with respect to enjoyment of the work itself or overall satisfaction (see Table 7). In particular, fishing is less lucrative for baymen, compared to other jobs they have had, than it is for other groups of fishermen. And, 62% of the baymen think fishing is better than previous jobs in terms of having time for other activities, whereas scallopers, longliners, and draggers think exactly the reverse.

Table 6. *Comparison of Fishing with Non-Fishing Work*

A. Job 1			
Comparison(n = 315)	Fishing is better	They are about the same	Job 1 was better
Earnings	71%	14%	15%
Enjoyment of work itself	71%	18%	11%
Time for other things	35%	17%	48%
Overall satisfaction	74%	18%	8%
B. Job 2			
Comparison(n = 189)	Fishing is better	They are about the same	Job 2 was better
Earnings	80%	9%	11%
Enjoyment of work itself	61%	27%	12%
Time for other things	30%	20%	50%
Overall satisfaction	70%	19%	11%

Comparing the responses of three status groups – i.e., captains versus mates versus crew members – reveals significant differences with respect to enjoyment of the work itself and overall satisfaction (fishing vs. non-fishing), but not with respect to earnings or time for other things (see Table 8). Put simply, captains derive relatively more intangible satisfaction from fishing than do their mates and crew, although all three groups like fishing much more than non-fishing work.

A second general indication of fishermen's attachment to fishing comes to light from their responses to questions about non-fishing economic opportunities.

We asked how long they estimate it would take to find some kind of nonfishing work and how long it would take to find some kind of work that they would enjoy as much as fishing. Response categories were as follows: (1) a few days, (2) a few weeks, (3) a few months, (4) a year or longer, and (5) never. We then computed what may be called the 'psychic cost' of leaving fishing by simply subtracting their first response from the second.

Table 9A presents the findings broken down by fishery. Whereas there are significant differences among the six fisheries in terms of their perceived non-fishing economic opportunities and how long it would take to find work as enjoyable as fishing, the psychic cost is roughly the same, irrespective of current fishery.

Comparing these matters by status, we find that perceived non-fishing eco-

Table 7. Comparison of Fishing with Job 1 by Fishery

Comparison		Fishing is better	They are about the same	Job 1 was better
<b>EARNINGS</b>				
Clam	(59)	88%	7%	5%
Scallop	(56)	71%	18%	11%
Oyster	(35)	63%	14%	23%
Dragger	(62)	84%	10%	6%
Longliner	(42)	66%	24%	10%
Bay	(61)	48%	18%	34%
[F = 7.988, p = 0.000] *				
<b>ENJOYMENT OF WORK ITSELF</b>				
Clam	(59)	66%	22%	12%
Scallop	(56)	64%	23%	13%
Oyster	(35)	71%	12%	17%
Dragger	(62)	71%	21%	8%
Longliner	(42)	74%	16%	10%
Bay	(61)	79%	11%	10%
[F = 0.553, p = 0.736]				
<b>TIME FOR OTHER THINGS</b>				
Clam	(59)	41%	15%	44%
Scallop	(56)	11%	27%	62%
Oyster	(35)	46%	11%	43%
Dragger	(62)	29%	11%	60%
Longliner	(42)	17%	14%	69%
Bay	(61)	62%	20%	18%
[F = 10.868, p = 0.000] *				
<b>OVERALL SATISFACTION</b>				
Clam	(59)	70%	27%	3%
Scallop	(56)	66%	23%	11%
Oyster	(35)	77%	9%	14%
Dragger	(61)	74%	16%	10%
Longliner	(42)	74%	14%	12%
Bay	(61)	82%	15%	3%
[F = 0.878, p = 0.496]				

\* Significant at  $p < .0125$  (i.e., 'experiment-wise' adjusted).

Table 8. Comparison of Fishing with Job 1 by Status (no Baymen)

Comparison		Fishing is better	They are about the same	Job 1 was better
<b>EARNINGS</b>				
Captain	(76)	79%	12%	9%
1st Mate	(39)	77%	10%	13%
Crew	(139)	75%	16%	9%
[F = 0.138, p = 0.871] *				
<b>ENJOYMENT OF WORK ITSELF</b>				
Captain	(76)	83%	13%	4%
1st Mate	(39)	61%	26%	13%
Crew	(139)	63%	22%	15%
[F = 5.451, p = 0.005] *				
<b>TIME FOR OTHER THINGS</b>				
Captain	(76)	38%	16%	46%
1st Mate	(39)	31%	13%	56%
Crew	(139)	22%	17%	61%
[F = 3.303, p = 0.038] *				
<b>OVERALL SATISFACTION</b>				
Captain	(75)	84%	13%	3%
1st Mate	(39)	64%	28%	8%
Crew	(139)	67%	19%	14%
[F = 4.818, p = 0.009] *				

\* Significant at  $p < .0125$  (i.e., 'experiment-wise' adjusted).

nomic opportunity is roughly the same for captains, mates, and crew (see Table 9B). But, captains would experience more of a psychic cost than mates, and mates more than crew, if they were forced out of fishing.

One last consideration, before moving on to look at specific levels and patterns of job satisfaction, is the image or desirability different fisheries have among fishermen.

We asked each person, "What is your favorite kind of fishing, whether you have actually tried it or not?" Table 10A shows the responses broken down by current fishery. Roughly two-thirds of those interviewed (i.e., 250) are currently

Table 9. *Estimates of Non-Fishing Economic Opportunity by Fishery and Status (no Baymen)*

## A. By Fishery

Item	Clam (63)	Scallop (74)	Oyster (48)	Dragger (77)	Longline (49)	Bay (70)	F prob
Scale = (1) a few days -- (5) never							
A. Time to find other work	1.71	1.93	2.43	2.06	1.78	2.37	.003*
B. Time to find as enjoyable work	2.95	2.81	3.50	3.30	3.02	3.66	.009*
C. 'Psychic cost' of not fishing	1.17	.86	1.04	1.22	1.31	1.29	.437

## B. By Status

Item	Captain (115)	1st Mate (46)	Crew (150)	F prob
Scale = (1) a few days -- (5) never				
A. Time to find other work	2.05	1.74	1.98	.327
B. Time to find as enjoyable work	3.52	3.05	2.83	.001*
C. 'Psychic cost' of not fishing	1.45	1.22	.82	.001*

participating in their favorite form of fishing, whereas about one-third (i.e., 126) would rather be doing some other kind of fishing. What is interesting here is the different percentages of 'contented' fishermen in each of the six fisheries and the preferences of those who are 'discontented' with their current fishery (see Table 10B).

Three basic patterns are evident. Dragging, longlining, and sea clamming are fisheries with high percentages of contented fishermen, and they are also fisheries others would like to be doing. Conversely, scalloping and oystering have few contented fishermen, and few others want to do them. Lastly, bayfishing has a high percentage of contented workers, but few others are interested in it.

Those familiar with the ethnographic realities of the different fisheries will find the patterns noted above quite understandable. Dragging, longlining, sea clamming, and scalloping contrast with oystering and bayfishing in being larger-scale, open ocean, year round, and relatively lucrative operations. Scalloping differs from its counterparts, however, in terms of the work schedule - two week trips with large crews working in shifts. Thus, although scallopers make good

Table 10. *Fishermen's Favorite Kind of Fishing*

## A. Favorite Fishery by Current Fishery

FAVORITE FISHERY	CURRENT FISHERY						
	Clam	Scallop	Oyster	Dragger	Longline	Bay	
Clam	50	4	11	2	0	1	68
Scallop	2	26	0	0	0	1	29
Oyster	0	0	20	0	0	2	22
Dragger	5	22	4	63	3	4	101
Longline	5	11	0	2	39	4	61
Bayfishing	0	1	1	2	1	52	57
Lobster	3	1	0	0	0	1	5
Pure seine	0	2	0	2	0	0	4
Gillnet	1	2	4	5	1	0	13
Trolling	1	0	0	0	2	1	4
Other	0	4	6	1	1	0	12
	67	73	46	77	47	66	376

## B. Favorite Fisheries as Evidenced by 'Contentedness' and the Preferences of 'Discontented' Fishermen

	FISHERY						
	Clam	Scallop	Oyster	Dragger	Longline	Bay	'Other'
% 'contented' with current fishery	75%	36%	44%	82%	83%	79%	-
Preferences of the 126 'discontents'	14%	3%	2%	30%	17%	4%	30%

money, the living conditions on board are unpleasant, and other fishermen realize this. Conversely, the oyster fishery of Delaware Bay, lasting only a few weeks per year, is not especially attractive to those who want to fish full time and make more money, and many oystermen would prefer to do open ocean fishing, but find entry into such fisheries difficult. Finally, bayfishing, being a one-man operation, is attractive to those who value personal freedom more highly than making money. Further, because it involves relatively little capital investment, those who become discontented with crew life and the temporal demands of the other fisheries can easily set themselves up as baymen. In other words, the ready

accessibility of bayfishing tends to make it the most self-selecting fishery of those in the sample.

Summarizing to this point, it is clear that fishermen generally like fishing much better than other forms of work they have tried. The strength of these feelings are variable, both by fishery and by status group. They would experience considerable 'psychic' cost if they were forced to get out of fishing. And, those fisheries with the highest levels of contentedness also tend to be those considered most desirable by discontented fishermen.

#### *Specifics of Fishermen's Job Satisfaction*

The specific features of fishermen's job satisfaction were measured by responses to 33 items (see Table 11). The items selected include the 22 used by Pollnac and Poggie (1979) and the 26 used by Apostle, Kasdan, and Hanson (1985) with a few additional questions we thought relevant. Both previous surveys used factor analysis to describe their job satisfaction findings. We are currently in the midst of similar analyses and will write a separate paper comparing fishermen from New Jersey, New England, and the Canadian Maritimes as well as contrasting the results different statistical methods produce. Here we report our findings in a different form.

To simplify the complexity of the multi-item responses, as well as to make them relate to larger theoretical issues in the study of job satisfaction, we organized the 33 specific items according to Maslow's (1954) 'hierarchy of needs.' Maslow divides people's needs into several broad categories, which, in his view, must be satisfied sequentially. Survival/security needs are the most basic, and their fulfillment is necessary before other, higher level needs become much of concern. Belongingness/esteem, or social, needs are the next most basic. Finally, if the previous needs are fulfilled sufficiently, people require a sense of personal fulfillment and growth, that is, self-actualization needs are at the top of the hierarchy. The assignment of our 33 items to these categories was done in consultation with Thomas Blank and Robert Rosenwein, social psychologist colleagues, and is presented in Table 12.

By-item analyses of variance show that 23 of the 33 items evidence significant contrasts in their average levels of satisfaction across the six fisheries at the  $p < .05$  confidence level. This customary confidence level, however, does not take into account the number of statistical tests being done. If twenty analyses of variance (or any other statistical test) are performed, we should expect one of them to show statistical significance at the .05 level purely by chance. It is thus necessary to correct for the number of tests being done. 'Experiment-wise' adjustments are calculated by dividing the customary confidence level by the number of tests. Using the more stringent cutoff of  $p < .0015$  (i.e., .05 divided by 33), 15 items still evidence significant differences in levels of satisfaction. Table 13 shows the average by-item levels of satisfaction for each of the six fisheries, with the items grouped according to their Maslow assignments.

Similar by-item comparisons of the three status groups (the one-man baymen

Table 11. *Specific Measures of Job Satisfaction Used in the Study*

Pollnac & Poggie	Apostle, et al.	V	Specific Items (1 to 5 scale)
yes	yes	1	Physical demands
no	yes	2	Fellow workers
yes	yes	3	Mental pressure
yes	yes	4	Healthfulness
yes	yes	5	Performance of officials
no	yes	6	Crowding on fishing grounds
yes	yes	7	Challenge
yes	yes	8	Predictability of earnings
no	no	9	Work schedule (daily, weekly)
yes	yes	10	Community where you live
yes	yes	11	Time for family & recreation
yes	yes	12	Doing deck work
yes	yes	13	Adventure
yes	yes	14	Time to fishing grounds
yes	yes	15	Time you get to fish
yes	yes	16	Amount of earnings
yes	yes	17	Being out on the water
yes	yes	18	Job safety
no	yes	19	Living conditions on board
yes	yes	20	Come and go as you please
yes	yes	21	Time away from home
yes	yes	22	Opportunity to be own boss
no	no	23	Pitting skill against nature
yes	yes	24	Peace of mind
no	no	25	Respect as a fisherman
yes	yes	26	Working outdoors
no	yes	27	Trip length (dock to dock)
yes	yes	28	Cleanliness
no	no	29	Competing with others
no	no	30	Identity as a fisherman
yes	yes	31	Doing something worthwhile
no	no	32	Future as a fisherman
no	no	33	Earnings last trip
			Global Question
no	yes	34	Overall satisfaction (1 to 7)
yes	yes	35	Life to life over (1 to 3)
yes	yes	36	Advise friend to fish (1 to 3)

Table 12. Assignment of Specific Items to Maslow's Categories

SURVIVAL/SECURITY NEEDS	BELONGINGNESS/ESTEEM NEEDS
Job safety	Community where you live
Physical demands	Competing with others
Cleanliness	Fellow workers
Healthfulness	Respect as a fisherman
Future as a fisherman	Trip length (dock to dock)
Mental pressure	Time to fishing grounds
Peace of mind	Work schedule (daily, weekly)
Living conditions on board	Opportunity to be own boss
Predictability of earning	Come and go as you please
Amount of earnings	Time away from home
Performance of officials	Time for family & recreation
Time you get to fish	
Crowding on fishing grounds	
<b>SELF-ACTUALIZATION NEEDS</b>	
Working outdoors	
Doing something worthwhile	
Identity as a fisherman	
Doing deck work	
Being out on the water	
Challenge	
Adventure	
Pitting skill against nature	

operations being excluded) show fewer contrasts than exist among fisheries. The average satisfaction levels of captains, mates, and crew members differ with simple statistical significance on only 11 items, and only 4 of these achieve experiment-wise significance – “performance of officials,” “pitting skill against nature,” “competing with others,” and “opportunity to be your own boss” (see Table 14).

Using the a priori assignment of items to Maslow's categories, three composite-indices were computed for each respondent. These indices are defined as the simple sum of an individual's responses to constituent items divided by the number of items in a category, that is, there was no weighting of items within a category.

Table 15A shows the average level of satisfaction for the three Maslow-indices for the six fisheries. The most general point to note is the high levels of satisfaction evidenced in all three areas. In view of Lee Anderson's (1980) and Courtland Smith's (1981) arguments concerning job satisfaction and fisheries management, it is especially interesting that the highest levels of satisfaction occur with respect to the most intangible of rewards, i.e., Maslow's category of self-

Table 13. Levels of Job Satisfaction by Fishery (Items Grouped into Maslow's Categories)

Item	Clam (68)	Scallop (75)	Oyster (50)	Dragger (78)	Lngline (50)	Bay (70)	F prob
Scale = (1) very dissatisfied -- (5) very satisfied							
<b>SURVIVAL/SECURITY</b>							
Physical demands	3.74	3.95	3.73	3.83	3.88	3.77	.683
Job safety	3.46	3.56	3.76	3.74	3.55	3.74	.284
Cleanliness	3.72	3.65	3.92	3.85	3.50	3.61	.173
Future as a fisherman	3.68	3.39	3.61	3.36	3.36	3.03	.036
Healthfulness	3.77	4.09	4.12	4.13	4.00	4.30	.033
Mental pressure	3.43	3.40	3.78	3.42	3.46	3.86	.022
Peace of mind	3.79	3.74	3.90	3.90	3.86	4.28	.015
Living conditions on board	3.82	3.96	3.74	4.01	3.84	3.51	.012
Predictability of earnings	3.57	3.05	2.98	2.90	3.08	3.51	.001*
Earnings last trip	3.94	3.43	3.33	2.97	3.50	3.53	.000*
Amount of earnings	4.00	3.48	3.38	3.09	3.72	3.59	.000*
Performance of officials	2.04	2.18	3.42	2.07	2.08	2.40	.000*
Time you get to fish	2.56	3.60	3.70	3.56	3.65	3.74	.000*
Crowding on fishing grounds	3.45	2.51	3.84	2.56	2.46	2.76	.000*
<b>BELONGINGNESS/ESTEEM</b>							
Community where you live	4.16	4.08	3.92	4.21	3.98	3.96	.289
Competing with others	3.82	3.84	3.83	4.05	3.94	3.64	.052
Fellow workers	4.12	3.65	3.90	3.88	3.98	3.71	.026
Respect as a fisherman	3.47	3.32	3.90	3.23	3.54	3.24	.010
Trip length (dock to dock)	3.43	3.20	3.37	3.76	3.30	3.81	.000*
Time to fishing grounds	3.44	3.52	3.46	3.35	2.82	3.76	.000*
Work schedule (daily, weekly)	2.87	3.53	3.38	3.23	3.36	3.90	.000*
Opportunity to be own boss	3.84	3.95	4.11	3.88	3.94	4.54	.000*
Come and go as you please	3.24	3.69	3.94	3.74	3.50	4.37	.000*
Time away from home	3.29	2.70	3.41	3.06	2.44	3.83	.000*
Time for family & recreation	3.21	2.62	3.75	2.61	2.42	3.71	.000*
<b>SELF-ACTUALIZATION</b>							
Working outdoors	4.53	4.45	4.45	4.50	4.62	4.57	.573
Doing something worthwhile	4.13	4.04	3.94	4.01	4.24	4.10	.387
Identity as a fishermen	3.99	3.99	3.98	4.10	4.00	3.77	.256
Doing deck work	3.59	3.72	3.82	3.94	3.80	3.63	.117
Being out on the water	4.34	4.11	4.20	4.21	4.14	4.46	.084
Challenge	4.10	4.16	3.82	4.12	4.44	4.17	.015
Adventure	3.99	4.15	3.75	4.16	4.52	4.12	.000*
Pitting skill against nature	4.04	4.04	3.42	4.01	4.16	4.23	.000*

\* Significant at  $p < .0015$  (i.e., 'experiment-wise' adjusted).

Table 14. *Levels of Job Satisfaction by Status, No Baymen (Items Grouped into Maslow's Categories)*

Item	Captain (117)	1st Mate (48)	Crew (156)	F prob
Scale = (1) very dissatisfied - (5) very satisfied				
<b>SURVIVAL/SECURITY</b>				
Time you get to fish	3.41	3.46	3.36	0.820
Living conditions on board	3.91	3.94	3.86	0.811
Healthfulness	4.01	4.13	4.01	0.720
Peace of mind	3.85	3.91	3.79	0.694
Amount of earnings	3.58	3.60	3.44	0.477
Crowding on fishing grounds	3.03	2.77	2.88	0.266
Cleanliness	3.84	3.71	3.66	0.261
Future as a fisherman	3.62	3.44	3.37	0.206
Predictability of earnings	3.28	3.04	3.02	0.198
Physical demands	3.91	3.92	3.74	0.188
Mental pressure	3.32	3.49	3.59	0.092
Job safety	3.77	3.55	3.51	0.059
Earnings last trip	3.61	3.60	3.23	0.026
Performance of officials	2.13	1.94	2.55	0.001 *
<b>BELONGINGNESS/ESTEEM</b>				
Respect as a fisherman	3.44	3.63	3.42	0.508
Time to fishing grounds	3.44	3.25	3.30	0.434
Community where you live	3.99	4.19	4.13	0.260
Trip length (dock to dock)	3.53	3.29	3.39	0.251
Work schedule (daily, weekly)	3.44	3.29	3.13	0.086
Come and go as you please	3.82	3.54	3.48	0.041
Fellow workers	3.73	3.83	4.05	0.011
Time away from home	3.23	2.73	2.88	0.008
Time for family & recreation	3.09	2.43	2.86	0.008
Competing with others	4.16	4.04	3.66	0.000 *
Opportunity to be own boss	4.43	3.94	3.55	0.000 *
<b>SELF-ACTUALIZATION</b>				
Working outdoors	4.46	4.52	4.54	0.563
Adventure	4.11	4.31	4.05	0.126
Being out on the water	4.32	4.10	4.14	0.097
Doing something worthwhile	4.14	4.21	3.97	0.078
Doing deck work	3.87	3.88	3.66	0.063
Identity as a fisherman	4.15	4.06	3.90	0.029
Challenge	4.24	4.32	3.99	0.015
Pitting skill against nature	4.13	4.08	3.79	0.001 *

\* Significant at  $p < 0.0015$  (i.e., 'experiment-wise' adjusted).

actualization needs. The only statistically significant contrast among fisheries, however, occurs in the belongingness/esteem (social) index.

Table 15B shows the average level of satisfaction for the three Maslow-indices by status group (baymen excluded). There is no significant difference among captains, mates, and crew members with respect to their satisfaction with survival needs. They differ significantly, however, with respect to both belongingness/esteem needs and self-actualization needs, captains being more satisfied than crew, and first mates in between.

The statistical analyses summarized in this section show that different fisheries, and to a lesser extent the different status groups, evidence very different profiles of job satisfaction. A relatively easy and non-statistical way to get a sense of these profiles is to look at the items that provide the most and the least satisfaction. Table 16 shows, for each fishery, the 6 items receiving highest satisfaction ratings and the 6 items receiving lowest ratings.

One discernible trend evident in Table 16 is that those fishermen who stay out on the ocean for longer stretches of time tend to appreciate the 'romance of the sea' more than do shorter-trip fishermen. Longliners and scallopers (and to a

Table 15. *Maslow-Indices by Fishery and Status*

## A. By Fishery

Maslow-Index	Clam	Scallop	Oyster	Dragger	Lnghline	Bay	F prob
Scale = (1) very dissatisfied -- (5) very satisfied							
Survival/Security	3.52 (61)	3.42 (71)	3.66 (45)	3.40 (74)	3.40 (41)	3.57 (62)	.034
Belongingness/Esteem	3.54 (67)	3.49 (69)	3.72 (44)	3.54 (77)	3.38 (50)	3.85 (69)	.000*
Self-Actualization	4.09 (66)	4.08 (73)	3.94 (46)	4.12 (75)	4.24 (50)	4.12 (67)	.062

## B. By Status

Maslow-Index	Captain	1st Mate	Crew	F prob
Scale = (1) very dissatisfied -- (5) very satisfied				
Survival/Security	3.52 (109)	3.48 (41)	3.43 (142)	.332
Belongingness/Esteem	3.66 (114)	3.48 (46)	3.44 (147)	.001*
Self-Actualization	4.18 (114)	4.18 (47)	4.01 (149)	.006*

Table 16. *Items Showing the Most and Least Satisfaction by Fishery*

	Most Satisfied	Least Satisfied
Clammers	1 Working outdoors	28 Time away from home
	2 Being out on the water	29 Come and go as you please
	3 Community where you live	30 Time for family & recreation
	4 Doing something worthwhile	31 Work schedule (daily, weekly)
	5 Fellow workers	32 Time you get to fish
	6 Challenge	33 Performance of officials
Scallopers	1 Working outdoors	28 Trip length (dock to dock)
	2 Challenge	29 Predictability of earnings
	3 Adventure	30 Time away from home
	4 Being out on the water	31 Time for family & recreation
	5 Healthfulness	32 Crowding on fishing grounds
	6 Community where you live	33 Performance on officials
Oystermen	1 Working outdoors	28 Time away from home
	2 Being out on the water	29 Work schedule (daily, weekly)
	3 Healthfulness	30 Amount of earnings
	4 Opportunity to be own boss	31 Trip length (dock to dock)
	5 Identity as a fisherman	32 Earnings last trip
	6 Doing something worthwhile	33 Predictability of earnings
Draggers	1 Working outdoors	28 Time away from home
	2 Community where you live	29 Earnings last trip
	3 Being out on the water	30 Predictability of earnings
	4 Adventure	31 Time for family & recreation
	5 Healthfulness	32 Crowding on fishing grounds
	6 Challenge	33 Performance of officials
Longliner	1 Working outdoors	28 Predictability of earnings
	2 Adventure	29 Time to fishing grounds
	3 Challenge	30 Crowding on fishing grounds
	4 Doing something worthwhile	31 Time away from home
	5 Pitting skill against nature	32 Time for family & recreation
	6 Being out on the water	33 Performance of officials
Bayman	1 Working outdoors	28 Predictability of earnings
	2 Opportunity to be own boss	29 Living conditions on board
	3 Being out on the water	30 Respect as a fisherman
	4 Come and go as you please	31 Future as a fisherman
	5 Healthfulness	32 Crowding on fishing grounds
	6 Peace of mind	33 Performance of officials

lesser extent draggers and clammers) differ from baymen and oystermen in the satisfaction they derive from the "challenge" and "adventure" aspects of fishing. Longliners, in particular, seem to enjoy the strategic aspects of fishing, whereas baymen enjoy most the personal independence and freedom that their one-man operations provide.

Despite the differences, there are a few aspects of job satisfaction that characterize fishermen in general. "Working outdoors" is the highest ranking source of satisfaction in all six fisheries, and "performance of officials" ranks at the bottom for all except oystermen, who have a long history of successful dealings with fisheries biologists. Similarly, the physical setting and time demands of fishing – that is, being away from family, friends, and recreational opportunities – are uniformly regarded as major drawbacks to fishing as a kind of work, except for baymen, who return to port almost every day.

Table 17 presents the items that captains, mates, and crew members find most and least satisfying. Again, "working outdoors" is uniformly the most rewarding item, and "performance of officials" is at the bottom. Similarly, all statuses enjoy the challenge or adventure of fishing and dislike the unpredictability of their earnings and the separation from loved ones and/or recreational opportunities ashore. The different job responsibilities of the statuses are nonetheless reflected in the item rankings.

Captains enjoy what might be called the 'head game' of fishing and take con-

Table 17. *Items Showing the Most and Least Satisfaction by Status*

	Most Satisfied	Least Satisfied
Captains	1 Working outdoors	28 Mental pressure
	2 Opportunity to be own boss	29 Predictability of earnings
	3 Being out on the water	30 Time away from home
	4 Challenge	31 Time for family & recreation
	5 Competing with others	32 Crowding on fishing grounds
	6 Identity as a fisherman	33 Performance of officials
Mates	1 Working outdoors	28 Time to fishing grounds
	2 Challenge	29 Predictability of earnings
	3 Adventure	30 Crowding on fishing grounds
	4 Doing something worthwhile	31 Time away from home
	5 Community where you live	32 Time for family & recreation
	6 Healthfulness	33 Performance of officials
Crew	1 Working outdoors	28 Work schedule (daily, weekly)
	2 Being out on the water	29 Predictability of earnings
	3 Community where you live	30 Crowding on fishing grounds
	4 Adventure	31 Time away from home
	5 Fellow workers	32 Time for family & recreation
	6 Healthfulness	33 Performance of officials

siderable pride in being a fisherman. Correspondingly, the downside of their job is the mental pressure of making those same decisions. Mates, also, enjoy the challenge and adventure of fishing, but show stronger community attachments and concerns with healthfulness than do their captains. Crew members, who are cut off from the important decision-making, include the sociability of crew life (i.e., fellow workers) among the aspects providing most satisfaction. And, because they do the physical labor associated with shucking or icing the catch as well as the end of day clean up, they tend to resent the work schedule.

Finally, responses to our three overall, summarizing questions about job satisfaction show little difference between the fisheries. On a 1-to-7 scale (where 1 means "fishing is the worst kind of work" and 7 means "fishing is the best kind of work"), the average ratings ranged between 5.50 and 5.85, indicating that fishermen are generally quite satisfied. Similarly, when asked, "Knowing what you do now, if you had your life to live over, would you still go into fishing?," the average responses ranged between 2.53 and 2.69 (where 1 means "no," 2 means "maybe," and 3 means "yes"). Despite this general willingness to go into fishing again, all except oystermen and clambers would *not* recommend fishing

Table 18. Overall Levels of Job Satisfaction by Fishery and Status

A. By Fishery

Item	Clam (68)	Scallop (75)	Oyster (50)	Dragger (78)	Lngline (50)	Bay (70)
Scale = (1) the worst kind of work -- (7) the best kind of work						
All things considered	5.82	5.71	5.85	5.70	5.62	5.50
Scale = (1), no, (2) maybe, (3) yes						
Life to live over	2.62	2.56	2.67	2.53	2.54	2.69
Advise friend to fish	2.04	1.89	2.10	1.70	1.90	1.67

B. By Status

Item	Captain (117)	1st Mate (48)	Crew (156)
Scale = (1) the worst kind of work -- (7) the best kind of work			
All things considered	6.08	5.71	5.49
Scale = (1) no, (2) maybe, (3) yes			
Life to live over	2.69	2.52	2.51
Advise friend to fish	1.93	1.92	1.90

as a career to their friends (see Table 18).

The discrepancy between assessments of fishing as a good career for oneself and the advice one would give to friends is interesting. It may be related to perceptions of larger economic trends within the various fisheries.

Despite strong attachments to fishing as a way of life, or perhaps because of it, fishermen are generally pessimistic concerning the future of their occupation. Respondents were asked to rate on a 1-to-10 scale the economic conditions in their fisheries as they were five years ago, as they currently are, and to estimate how they will be five years into the future. As figure 1 shows, there is considerable variation among fisheries in these estimates, but all evidence a clear sense that things are getting worse. Thus, recommending a fishing career to friends would be poor advice, and for two reasons. Firstly, friends might not remain friends to someone who recommends a career with such an uncertain future. Secondly, if more people entered fishing, this would only aggravate matters by overcrowding the fisheries and accelerating their (perceived) decline.

Conclusions

Our survey reveals several general points about the culture of fishing. Firstly,

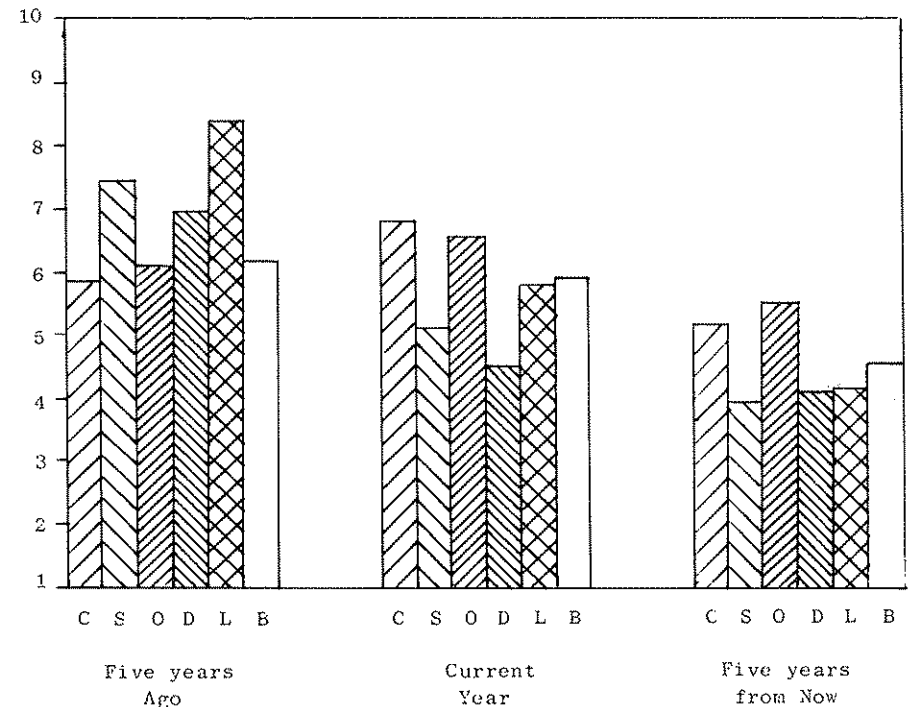


Figure 1. Estimates of Economic Conditions by Fishermen in Six N.J. Fisheries

fishermen derive a considerable 'satisfaction bonus' from their work. Fishing is not merely a means to an end, but is intrinsically rewarding. This shows up clearly when fishermen compare fishing with other work experiences and in the fact that fishermen are much more satisfied in terms of their self-actualization needs than they are with social or survival needs. Fishing is not just a livelihood, it is a way of life.

Secondly, despite a core of similar responses, the objective characteristics of different fisheries give rise to strongly significant contrasts with respect to a variety of specific job satisfaction items. These distinctive profiles are obscured by global, summarizing questions, but come to light when fishermen are asked a wide variety of specific questions. In other words, job satisfaction is truly multi-dimensional and attempts to reduce its complexity to a single measure are ill-advised.

Similarly, one's status on a boat significantly affects the nature of job satisfaction. In very broad terms, the more one is involved in the strategic aspects of fishing and has control over the means of production, the more rewarding the experience.

In conclusion, we hope that the foregoing analyses will lay to rest the notion that 'fishermen,' even 'commercial fishermen,' are a homogeneous group. Although perhaps useful when comparing fishing with other occupations, such a crude categorization glosses over very significant differences. The specific harvesting techniques, work schedule, and division of labor associated with different fisheries, as well as one's status on board, give rise to distinctive subjective responses.

Researchers should take this diversity of response into account when describing the culture of fishing. So, too, in the applied context of formulating regulatory policies, fisheries managers should consider not only how to achieve their conservation goals, but also the specific nonmonetary rewards of fishing as these vary among different fisheries. Given there are many ways to regulate fishing effort, i.e., many ways to achieve the conservation goals, managers should select those regulatory tactics that preserve as much as possible what fishermen like about their work.

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## Going Out or Staying Home

Seasonal Movements and Migration Strategies among Xwla and AnlQ-Ewe Fishermen<sup>1</sup>

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### Maritime Fishing in the Gulf of Guinea: The Historical Context

Information on the development of maritime canoe fishing in the Gulf of Guinea is scanty and contradictory. It is in fact impossible to assess with any certainty whether or not a maritime fishery was in existence prior to the coming of European travellers and traders. A lagoon and riverine fishery was no doubt in operation at the time of the first contacts at the end of the fifteenth century. When particularly clement weather conditions allowed and where no surf-"bar" constituted an insuperable obstacle to small dug-out crafts, lagoon and riverine fishing techniques were probably occasionally practised at sea, as is still the case today.

Little more can be said. We have no evidence that the large dug-out canoes essential to the maritime fishing enterprise were in use as such in earlier times: references to such canoes<sup>2</sup> concern "war-boats" to be used only on rivers or in estuaries (Hargreaves 1984:6). Evidence relative to beach-seining at the time of the first contacts is controversial: some authors speculate that short lagoon dragnets in locally produced fibre may have been traditionally used for this purpose, while others suggest the deliberate introduction of the beach-seine by European settlers. Portuguese and Danes are mentioned in this respect. Local linguistic usage seems to confirm foreign introduction as a common name for the beach-seine in the region is "the white man's net" (AnlQ: *yévr-dQ*; Xwla: *yQvQ-dQ*; but also AnlQ: *puta* and Xwla: *agéne*. I am resorting to the type Q for the open o as in "otter").

Historical evidence converges in suggesting that common use of dug-out canoes in sea operations developed as a consequence of local involvement in commercial activities associated with unloading merchant vessels in a region largely lacking harbours. The presence of a surf-bar constituted a real danger for passengers and goods in inexperienced hands. The early reputation of Fante, "Kru" and "Popoh" as skilled sea-farers grew from their craftsmanship at unloading ships rather than from any special ability as maritime fishermen (Tonkin 1984).

Similarly, the first sizeable migrations of maritime populations were linked to such commercial activities rather than to the operation of a fishery. Developing undertakings in sheltered harbours (such as Cape coast) or the building of wharfs (Lomé, Cotonou, etc.) attracted populations of "specialist" unloaders; such moves being sometimes encouraged by private initiative or by the colonial authorities themselves (Pliya 1980:97-98).

The first authentic populations of maritime fishermen observed practising their activities on a regular basis belonged to groups who had emigrated in num-