

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 86/2

560 SCOM17: JOINT INTERIM COMM. ON LIMITED ENTRY 1979

2. The point system for granting permits should be revised to allow persons filing for a new permit to receive points for their experience as crewmen. This would encourage the continuation of the tradition of apprenticeship of young people in the fishery.
3. Provisions should be made for the issuance of interim permits granted on the basis of hardship, particularly to local residents. Otherwise persons currently faced with the prospect of no employment may resort to fishing illegally.
4. Bureaucratic procedures should be revised so that persons without records who live in rural areas but who are dependent on fishing may receive a permit.

If the above recommendations are instituted, the LE system would be improved. If the sale and transfer of permits is prohibited the present speculative market in the permits will cease. This should also end the present flow of permits out of local communities. By permitting a period of three years for the permit to lapse, fishermen will not be compelled to fish during periods when fish stocks are low.

If points are granted for experience as a crewman during recent years, the major problem of entry of young people into the fishery may be corrected. Encouraging a 3-5-year apprenticeship period would not only help young people enter the fishery, it would ensure that those persons receiving new permits had adequate experience in fishing the local waters. The benefits of such an apprenticeship

program, in terms of both efficiency and safety, are self-evident.

Hardship interim permits would serve a useful purpose. Persons who must depend upon fishing due to temporary unfavorable circumstances would not be forced to fish illegally. Infringement of the law could be prevented at the same time as providing a much-needed source of income for the temporary fisherman.

It is not clear how the present system could be altered to allow the granting of permits to those not having complete records of their fishing history. However, it is evident that some persons who have been largely dependent upon fishing in the past were denied permits due to the lack of sufficient documentation. These cases must not be overlooked, and some attempt should be made to allow for the entry of such persons into the fishery.

In conclusion, the outcome of the present LE system is sadly ironic. It is leading to the progressive deterioration of local economies and life-styles by diminishing local resident's access to the region's primary economic resource. This situation can -- and must be -- corrected.

ACKNOWLEDGMENTS

I thank the Center for Field Research, under whose auspices an EARTHWATCH team of six volunteers was formed for the purpose of funding the project and performing a large part of the work. F. Bristol, R. Higgins and M. K. Gilliland (logistical coordinator) proved invaluable field workers. Additional support was provided by the Institute of Marine Resources, University of California.

I also thank Drs. D. Philips and F. Bailey, members of the Social Science faculties at University of California, San Diego, and Professor J. Isaacs, Director of the Institute of Marine Resources. The state legislature of Alaska provided continued support and encouragement. J. Star helped with the programming of interview data and M. Huntley assisted in writing the field report.

REFERENCES CITED

- Crutchfield, James A. and Giulio Pontecorvo. 1969. The Pacific Salmon Fisheries. Johns Hopkins Press (Resources for the Future).
- Gordon, H. Scott. 1954. The economic theory of the common property resource: The fishery. *J. of Pol. Econ.* 62: 124-142.
- Johannes, R. E. 1978. Traditional marine conservation methods in Oceania and their demise. *Ann. Rev. Ecol. Syst.* 9: 349-364.
- Kresge, David, Susan Fisan and Anthony Gasbarro. 1974. Bristol Bay: A Socioeconomic Study. ISEGR, U. of Alaska, Report 41.
- Langdon, Stephen. Transfer patterns in Alaska Limited Entry fisheries. Unpubl. mss.

NOTE ON THE PRESENTATION OF TABLES

Unless otherwise indicated, all tables are presented in the format shown in Table I. Using Table I as an example, the format can be explained as follows: Table I shows the ethnic origin of the questionnaire respondents, according to whether the ethnic origin was native-American, "ethnic", or "other", and according to whether the respondent was a captain, a crew member, or a village resident. For each combination of ethnic origin and questionnaire respondent, three numbers are shown. Taking the example of captains who are natives (left uppermost set of numbers in the table), the uppermost number shows the actual number of respondents falling into this category (8). The number below this (17.4) is the row percentage - in this case showing that 17.4% of the captains are native-Americans (note that in the "captains" row 50% are "ethnic", and 32.6% are "other"). The bottommost number (14.3) is the column percentage - in this case showing that 14.3% of the native-Americans are captains (note that in the "native" column, 3.7% are crewmen, and 81.5% are village residents). The column totals are shown below each column, the uppermost number being the actual number of respondents (54 "natives", 29 "ethnic", and 27 "other"), and the lowermost number being the percent total (49.1% of respondents are "natives", 26.4% are "ethnic", and 24.5% are "other"). Similarly, the row totals are shown at the far right of the table in the same format. The row totals show that, of all the respondents, 46 (41.8% are captains, 9 (8.2%) are crewmen, and 55 (50.0%) are village residents. At the bottom right of the table the total is shown - i.e., 110 respondents made up 100% of the total.

Some tables are shown in simpler format. In these, the actual numbers of respondents are shown in parentheses above the percentages (see Table XXIV for example).

Table I. Ethnic origins of the questionnaire respondents. "Native" refers to native-Americans and "ethnic" refers to persons with Italian, Croatian, or Scandinavian ancestry.

<u>QUESTIONNAIRE TYPE</u>	<u>ETHNIC ORIGIN</u>			<u>ROW TOTAL</u>
	<u>NATIVE</u>	<u>ETHNIC</u>	<u>OTHER</u>	
Captain	8	23	15	46
	17.4	50.0	32.6	41.8
	14.8	79.3	55.6	
Crew	2	5	2	9
	22.2	55.6	22.2	8.2
	3.7	17.2	7.4	
Village Survey	44	1	10	55
	80.0	1.8	18.2	50.0
	81.5	3.4	37.0	
Column Total	54	29	27	110
	49.1	26.4	24.5	100.0

Table II. Place of residence of the questionnaire respondents,
according to whether respondents were captains, crewmen, or
residents of one of the four local villages surveyed.

<u>RESIDENCE</u>	<u>QUESTIONNAIRE TYPE</u>			<u>ROW TOTAL</u>
	<u>CAPTAIN</u>	<u>CREW</u>	<u>VILLAGE</u>	
Bristol Bay	5	2	55	62
	8.1	3.2	88.7	54.9
	10.6	22.2	96.5	
Greater Alaska	10	1	1	12
	83.3	8.3	8.3	10.6
	21.3	11.1	1.8	
California	20	4	0	24
	83.3	16.7	0.0	21.2
	42.6	44.4	0.0	
Oregon/Washington	9	2	0	11
	81.8	18.2	0.0	9.7
	19.1	22.2	0.0	
Other	3	0	0	3
	100.0	0.0	0.0	2.7
	6.4	0.0	0.0	
Unknown	0	0	1	1
	0.0	0.0	100.0	0.9
	0.0	0.0	1.8	
Column Total	47	9	57	113
	41.6	8.0	50.6	100.0

Table III. Age distribution of respondents according to place of residence. Residence is shown according to whether it is local (Bristol Bay), in greater Alaska, or outside Alaska. Age categories are: 24 years or younger; 25-35; 36-50; 51-65; and >65.

<u>AGE</u>	<u>RESIDENCE</u>			<u>Row Total</u>
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
<u>≤ 24</u>	9	2	7	18
	50.0	11.1	38.9	16.7
	15.3	18.2	18.4	
25-35	14	1	7	22
	63.6	4.5	31.8	20.4
	23.7	9.1	18.4	
36-50	18	2	10	30
	60.0	6.7	33.3	27.8
	30.5	18.2	26.3	
51-65	9	4	12	25
	36.0	16.0	48.0	23.1
	15.3	36.4	31.6	
>65	9	2	2	13
	69.2	15.4	15.4	12.0
	15.3	18.2	5.3	
Column Total	59	11	38	108
	54.6	10.2	35.2	100.0

Table IV. Age distribution of respondents according to whether respondents were captains, crewmen, or local villagers. Age categories as in Table III.

<u>AGE</u>	<u>QUESTIONNAIRE RESPONDENTS</u>			<u>Row Total</u>
	<u>Captains</u>	<u>Crew</u>	<u>Villagers</u>	
≤ 24	7	2	9	18
	38.9	11.1	50.0	16.5
	15.2	22.2	16.7	
25-35	6	4	12	22
	27.3	18.2	54.5	20.2
	13.0	44.4	22.2	
36-50	14	0	17	31
	45.2	0.0	54.8	28.4
	30.4	0.0	31.5	
51-65	15	3	7	25
	60.0	12.0	28.0	22.9
	32.6	33.3	13.0	
> 65	4	0	9	13
	30.8	0.0	69.2	11.9
	8.7	0.0	16.7	
Column Total	46	9	54	109
	42.2	8.3	49.5	100.0

Table V. Occupations of captains during that part of the year when they are not fishing, according to the place of residence (Bristol Bay, Alaska, or outside Alaska).

Occupation when not fishing	RESIDENCE			Row Total
	Bristol Bay	Greater Alaska	Outside Alaska	
Vacation	8	1	4	13
	61.5	7.7	30.8	12.4
	14.3	9.1	10.5	
Fishing	1	1	6	8
	12.5	12.5	75.0	7.6
	1.8	9.1	15.8	
Rural	16	0	1	17
	94.1	0.0	5.9	16.2
	28.6	0.0	2.6	
Own business	3	2	4	9
	33.3	22.2	44.4	8.6
	5.4	18.2	10.5	
Blue Collar	7	4	15	26
	26.9	15.4	57.7	24.8
	12.5	36.4	39.5	
White Collar	7	0	3	10
	70.0	0.0	30.0	9.5
	12.5	0.0	7.9	
Student	1	2	2	5
	20.0	40.0	40.0	4.8
	1.8	18.2	5.3	
Profession	3	1	1	5
	60.0	20.0	20.0	4.8
	5.4	9.1	2.6	
Other	6	0	0	6
	100.0	0.0	0.0	5.7
	10.7	0.0	0.0	
Not known	4	0	2	6
	66.7	0.0	33.3	5.7
	7.1	0.0	5.3	
Column Total	56	11	38	105
	53.3	10.5	36.2	100.0

Table VI. Number of months out of the year spent fishing by captains,
according to place of residence.

<u>Months spent fishing</u>	RESIDENCE			<u>Row Total</u>
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
1	13 56.5 68.4	4 17.4 36.4	6 26.1 16.2	23 34.3
2	1 7.1 5.3	3 21.4 27.3	10 71.4 27.0	14 20.9
3	1 11.1 5.3	3 33.3 27.3	5 55.6 13.5	9 13.4
4	1 33.3 5.3	0 0.0 0.0	2 66.7 5.4	3 4.5
5	1 50.0 5.3	0 0.0 0.0	1 50.0 2.7	2 3.0
6	1 33.3 5.3	0 0.0 0.0	2 66.7 5.4	3 4.5
7	0 0.0 0.0	0 0.0 0.0	3 100.0 8.1	3 4.5
8	0 0.0 0.0	0 0.0 0.0	1 100.0 2.7	1 1.5
10	0 0.0 0.0	0 0.0 0.0	2 100.0 5.4	2 3.0
11	1 100.0 5.3	0 0.0 0.0	0 0.0 0.0	1 1.5
12	0 0.0 0.0	1 16.7 9.1	5 83.3 11.5	6 9.0
Column Total	19 28.4	11 16.4	37 55.2	67 100.0

Table VII. Number of fisheries other than Bristol Bay in which captains are involved, shown according to place of residence.

<u>Number of other Fisheries Involved in</u>	<u>RESIDENCE</u>			<u>Row Total</u>
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
None	16	10	21	47
	34.0	21.3	44.7	71.2
	94.1	90.9	55.3	
1	0	1	11	12
	0.0	8.3	91.7	18.2
	0.0	9.1	28.9	
2 or more	0	0	5	5
	0.0	0.0	100.0	7.6
	0.0	0.0	13.2	
Not Known	1	0	1	2
	50.0	0.0	50.0	3.0
	5.9	0.0	2.6	
Column Total	17	11	38	66
	25.8	16.7	57.6	100.0

Table VIII. Self-perception of captains as fishermen, according to place of residence.

Do you Consider Yourself a Fisherman?	RESIDENCE			Row Total
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
Yes	13	4	25	42
	31.0	9.5	59.5	62.7
	72.2	36.4	65.8	
No	3	7	12	22
	13.6	31.8	54.5	32.8
	16.7	63.6	31.6	
Not known	2	0	1	3
	66.7	0.0	33.3	4.5
	11.1	0.0	2.6	
Column Total	18	11	38	67
	26.9	16.4	56.7	100.0

Table IX. Fraction of captains' annual income derived from all fishing activity, according to the place of residence.

Fraction of Income Derived From All Fishing	RESIDENCE			Row Total
	Bristol Bay	Greater Alaska	Outside Alaska	
<1/3	2	2	6	10
	20.0	20.0	60.0	18.9
	15.4	22.2	19.4	
1/3-2/3	4	3	10	17
	23.5	17.6	58.8	32.1
	30.8	33.3	32.3	
>2/3	7	4	15	26
	26.9	15.4	57.7	49.1
	53.8	44.4	48.4	
Column Total	13	9	31	53
	24.5	17.0	58.5	100.0

Table X. Fraction of captains' annual income derived from the Bristol Bay fishery alone, according to the place of residence.

Fraction of Income Derived from Bristol Bay	RESIDENCE			Row Total
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
<1/3	2	2	12	16
	12.5	12.5	75.0	31.4
	15.4	25.0	40.0	
1/2-2/3	4	3	12	19
	21.1	15.8	63.2	37.3
	30.8	37.5	40.0	
>2/3	7	3	6	16
	43.8	18.8	37.5	31.4
	53.8	37.5	20.0	
Column Total	13	8	30	51
	25.5	15.7	58.3	100.0

Table XI. Fraction of captains' annual income derived from the Bristol Bay fishery alone, according to ethnic origin. (Ethnic origin as in Table I).

Fraction of Income Derived from Bristol Bay	ETHNIC ORIGIN			ROW TOTAL
	<u>NATIVE</u>	<u>ETHNIC</u>	<u>OTHER</u>	
<1/3	4	8	4	16
	25.0	50.0	25.0	32.0
	25.0	38.1	30.8	
1/3 - 2/3	4	11	3	18
	22.2	61.1	16.7	36.0
	25.0	52.4	23.1	
>2/3	8	2	6	16
	50.0	12.5	37.5	32.0
	50.0	9.5	46.2	
Column Total	16	21	13	50
	32.0	42.0	26.0	100.0

Table XII. Fraction of captains' annual income derived from all fishing activities, according to ethnic origin.

Fraction of Income Derived from All Fishing	ETHNIC ORIGIN			ROW TOTAL
	NATIVE	ETHNIC	OTHER	
<1/3	3	4	3	10
	30.0	40.0	30.0	19.2
	18.3	18.2	21.1	
1/3 - 2/3	4	9	4	17
	23.5	52.9	23.5	32.7
	25.0	40.9	25.5	
>2/3	9	9	7	25
	36.0	36.0	25.1	48.1
	56.3	40.9	50.1	
Column Total	16	22	14	52
	30.8	42.3	26.9	100.0

Table XIII. Annual income of captains derived from the Bristol Bay fishery, according to the place of residence. Categories of annual income are: less than \$5,000, \$5,000-10,000, and greater than \$10,000.

INCOME FROM BRISTOL BAY FISHERY					
	<u>\$5,000</u>	<u>\$5,000- 10,000</u>	<u>>\$10,000</u>	<u>Not Known</u>	<u>Row Total</u>
Bristol Bay	2	3	4	53	62
	3.2	4.8	6.5	85.5	55.4
	40.0	30.0	22.2	67.1	
Greater Alaska	0	2	3	7	12
	0.0	16.7	25.0	58.3	10.7
	0.0	20.0	16.7	8.9	
Outside Alaska	3	5	11	19	38
	7.0	13.2	28.9	50.0	33.9
	<u>60.0</u>	<u>50.0</u>	<u>61.1</u>	<u>24.1</u>	<u> </u>
Column Total	5	10	18	79	112
	45	8.9	16.1	70.5	100.0

Table XIV. Types of fishing vessels operated by captains, according to whether they are local or non-local residents. Captains either had a Bristol Bay gillnetter (32'), a skiff (less than 32'), or no vessel at all.

<u>Type of Fishing Vessel</u>	<u>Local Residents</u>	<u>Non-Local Resident</u>
No Vessel	(2) 14.3	0
Standard (32)	(8) 57.1	(41) 97.6
Skiff (<32')	(4) 28.6	(1) 2.4

Table XV. Capacity of captains' fishing vessels, in terms of the number of fish the vessel can hold, according to the place of residence.

Boat Capacity (# of Fish)	RESIDENCE		
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>
<3000	(8)	(2)	(8)
	61.5	20.0	25.8
>3000	(5)	(8)	(23)
	38.5	80.0	74.2

Table XVI. Value of captains' vessels, in 1,000's of dollars,
according to place of residence

<u>Value of Vessel</u> <u>(1000's of \$)</u>	RESIDENCE			<u>Row</u> <u>Total</u>
	<u>Bristol</u> <u>Bay</u>	<u>Greater</u> <u>Alaska</u>	<u>Outside</u> <u>Alaska</u>	
0	2	0	0	2
	100.0	0.0	0.0	4.4
	16.7	0.0	0.0	
1-10	8	1	2	11
	72.7	9.1	18.2	24.4
	66.7	12.5	8.0	
11-20	1	1	8	10
	10.0	10.0	80.0	22.2
	8.3	12.5	32.0	
21-40	1	2	11	14
	7.1	14.3	78.6	31.1
	8.3	25.0	44.0	
>40	0	4	4	8
	0.0	50.0	50.0	17.8
	0.0	50.0	16.0	
	<u>12</u>	<u>8</u>	<u>25</u>	<u>45</u>
Column Total	26.7	17.8	55.6	100.0

Table XVII. Number of shackles of gear possessed by captains,
according to the place of residence.

<u>Number of Shackles</u>	RESIDENCE			<u>Row Total</u>
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
None	2	0	0	2
	100.0	0.0	0.0	3.6
	14.3	0.0	0.0	
1 - 3	7	4	5	16
	43.8	25.0	31.3	28.6
	50.0	40.0	15.6	
More than 3	5	6	23	34
	14.7	17.6	67.6	60.7
	35.7	60.0	71.9	
Not known	0	0	4	4
	0.0	0.0	100.0	7.1
	0.0	0.0	12.5	
Column Total	14	10	32	56
	25.0	17.9	57.1	100.0

Table XVIII. Breakdown of the ownership of vessels according to the place of residence of the captain. Ownership is either 100% self-owned, leased from a local cannery, owned by a partnership, self-owned but not yet completely paid for, leased from another fisherman, or owned by a corporation.

<u>Ownership of Boat</u>	<u>Native</u>	<u>Ethnic</u>	<u>Other</u>	<u>Row Total</u>
No Boat	2 100.0 11.8	0 0.0 0.0	0 0.0 0.0	2 3.6
100% Self	5 29.4 29.4	6 35.3 26.1	6 35.3 40.0	17 30.9
Leased	5 27.8 29.4	11 61.1 47.8	2 11.1 13.3	18 32.7
Partnership	4 44.4 23.5	3 33.3 13.0	2 22.2 13.3	9 16.4
Self-Owned not paid off	0 0.0 0.0	1 33.3 4.3	2 66.7 13.3	3 5.5
Lease - other person	0 0.0 0.0	2 50.0 8.7	2 50.0 13.3	4 7.3
Corporation	1 100.0 5.9	0 0.0 0.0	0 0.0 0.0	1 1.8
Not Known	0 0.0 0.0	0 0.0 0.0	1 100.0 3.1	1 1.8
Column Total	17 30.9	23 41.8	15 27.3	55 100.0

Table XIX. Number of sons which respondents have, according to the place of residence of the respondent. This table included the respondents to all questionnaires.

<u>Number of Sons</u>	RESIDENCE			<u>Row Total</u>
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
None	15	6	16	37
	40.5	16.2	43.2	33.0
	24.2	50.0	42.1	
1	15	3	14	32
	46.9	9.4	43.8	28.6
	24.2	25.0	36.8	
2	9	2	5	16
	56.3	12.5	31.3	14.3
	14.5	16.7	13.2	
3	9	1	3	13
	69.2	7.7	23.1	11.6
	14.5	8.3	7.9	
Not known	14	0	0	14
	100.0	0.0	0.0	12.5
	22.6	0.0	0.0	
Column Total	62	12	38	112
	55.4	10.7	33.9	100.0

Table XX. Number of sons of captains who are involved in fishing,
according to the residence of the captain.

<u>Number of sons fishing</u>	RESIDENCE			<u>Row Total</u>
	<u>Bristol Bay</u>	<u>Greater Alaska</u>	<u>Outside Alaska</u>	
None	14	9	27	50
	28.0	18.0	54.0	74.6
	77.8	81.8	71.1	
1	2	0	5	7
	26.6	0.0	71.4	10.4
	11.1	0.0	13.2	
2	2	2	4	8
	25.0	25.0	50.0	11.9
	11.1	18.2	10.5	
3	0	0	1	1
	0.0	0.0	100.0	1.5
	0.0	0.0	2.6	
Not known	0	0	1	1
	0.0	0.0	100.0	1.5
	0.0	0.0	2.6	
Column Total	18	11	38	67
	26.9	16.4	56.7	100.0

Table XXI. Response of captains to the question "Do you want your young sons, less than 18 years of age, to be fishermen?", according to the residence of the captain. Answers were either "yes", "no", "I don't care", or "I want him to fish, but I don't necessarily want him to be a fisherman."

Do you want your young sons (<18) to be fishermen?	RESIDENCE			Row Total
	Bristol Bay	Greater Alaska	Outside Alaska	
No young sons	7 16.7 38.9	8 19.0 72.7	27 64.3 71.1	42 62.7
Yes	5 55.6 27.8	1 11.1 9.1	3 33.3 7.9	9 13.4
No	1 14.3 5.6	0 0.0 0.0	6 85.7 15.8	7 10.4
Don't care	3 75.0 16.7	1 25.0 9.1	0 0.0 0.0	4 6.0
Want him to fish, but not necessarily to be a fisherman	0 0.0 0.0	1 50.0 9.1	1 50.0 2.6	2 3.0
Not known	2 66.7 11.1	0 0.0 0.0	1 33.3 2.6	3 4.5
Column Total	18 26.9	11 16.4	38 56.7	67 100.0

Table XXII. Response of captains to the question "Do you want your older sons, older than 18 years of age, to be fishermen?", according to residence of the captain. Responses as in Table XXI.

Do you want your older sons (>18) to be fishermen?	RESIDENCE			Row Total
	Bristol Bay	Greater Alaska	Outside Alaska	
No sons over 18	11 25.6 61.1	8 18.6 72.7	24 55.8 63.2	43 64.2
Yes	3 42.9 16.7	0 0.0 0.0	4 57.1 10.5	7 10.4
No	0 0.0 0.0	0 0.0 0.0	2 100.0 5.3	2 3.0
Don't care	2 33.3 11.1	1 16.7 9.1	3 50.0 7.9	6 9.0
To fish, not to be fishermen	0 0.0 0.0	1 100.0 9.1	0 0.0 0.0	1 1.5
Not known	2 25.0 11.1	1 12.5 9.1	5 62.5 13.2	8 11.9
Column Total	18 26.9	11 16.4	38 56.7	67 100.0

Table XXIII. Response of captains to the question "Will your young sons be able to obtain permits?", according to the residence of the captain. Answers were "yes, he could buy one", "yes, he will receive my permit", "no, probably not", or "no, he doesn't want to fish."

Will your young sons be able to obtain permits?	RESIDENCE			Row Total
	Bristol Bay	Greater Alaska	Outside Alaska	
No young sons	7 15.6 38.9	8 17.8 72.7	30 66.7 78.9	45 67.2
Yes: buy one	1 33.3 5.6	2 66.7 18.2	0 0.0 0.0	3 4.5
Yes: mine	2 40.0 11.1	1 20.0 9.1	2 40.0 5.3	5 7.5
No, or probably not	2 66.7 11.1	0 0.0 0.0	1 33.3 2.6	3 4.5
Don't want to fish	3 100.0 16.7	0 0.0 0.0	0 0.0 0.0	3 4.5
Not known	3 37.5 16.7	0 0.0 0.0	5 62.5 13.2	8 11.9
Column Total	18 26.9	11 16.4	38 56.7	67 100.0

Table XXIV. Age distribution of male villagers who fish in Bristol Bay for some portion of the year.

Age categories are: less than 11, 12-17, 18-24, 25-35, 36-50, 51-65 and >65.

	AGE-GROUP							<u>Total Percentage</u>	<u>Total Respondents</u>
	<u>0-11</u>	<u>12-17</u>	<u>18-24</u>	<u>25-35</u>	<u>36-50</u>	<u>51-65</u>	<u>> 65</u>		
% of Males in Age-Group who fish Bristol Bay	(2)	(6)	(16)	(8)	(12)	(3)	(2)	(49)	
	10.5	40.0	59.3	66.7	63.2	37.5	25.0	45.4	108

Table XXV. Type of employment in which male villagers of working age (18-65) are engaged during that time of the year when they are not fishing.

<u>TYPE OF EMPLOYMENT</u>	<u>% OF AGE GROUP IN MALE POPULATION</u>				<u>TOTAL</u>
	<u>18-24</u>	<u>25-35</u>	<u>36-50</u>	<u>51-65</u>	
Fishing only	18.5	33.3	5.3	(0) 0.0	15.2
Unemployed/ Welfare	18.5	8.3	10.5	50.0	18.2
Part-Time	48.1	41.7	36.8	25.0	40.9
White Collar	3.7	8.3	10.5	25.0	9.1
Blue Collar	3.7	(0) 0.0	21.1	(0) 0.0	7.6
Other (Student, Professional, Self-Employed)	7.4	8.3	15.8	(0) 0.0	9.1

Table XXVI. Permit history of working age male villagers, showing the number of permits held, the numbers of permits obtained at the initiation of LE, permits since transferred or sold, permits since bought or received, permits applied for, permits denied, and permits on appeal.

	% of Age Group in Male Population				<u>Total</u>
	<u>18-24</u>	<u>25-35</u>	<u>36-50</u>	<u>51-65</u>	
Permits Held	14.8	50.0	47.4	50.0	34.8
Permits Initially Obtained	3.7	50.0	36.8	75.0	30.3
Permits Sold or Transferred	3.7	8.3	10.5	37.5	10.6
Permits Bought or Received	11.1	8.3	5.3	12.5	9.1
Permits Applied For	25.9	25.0	36.8	25.0	28.8
Permits Denied	22.2	25.0	15.8	25.0	21.2
Permits on Appeal	<u>7.4</u>	<u>0.0</u>	<u>5.3</u>	<u>12.5</u>	<u>6.1</u>
Total Number of Respondents	27	12	19	8	66

Table XXVII. Effect of limited entry on the household income, according to the place of residence. Effects are shown as significant or slight decreases, no change, or significant or slight increases.

Effect of LE on household income	RESIDENCE			Row Total
	Bristol Bay	Greater Alaska	Outside Alaska	
DECREASE	Significant	20	0	20
		100.0	0.0	17.9
		32.3	0.0	
	Slight	5	1	7
		71.4	14.3	6.3
		8.1	2.6	
NO CHANGE		22	4	42
		52.4	9.5	37.5
		35.5	33.3	
INCREASE	Slight	2	3	12
		16.7	25.0	10.7
		3.2	25.0	
	Significant	2	5	7
		28.6	71.4	6.3
		3.2	13.2	
Unknown		11	4	24
		45.8	16.7	21.4
		17.7	33.3	
Column Total		62	12	112
		55.4	10.7	
			33.9	100.0

Table XXVIII. Modifications to LE suggested by respondents.

Modification Suggested	% of Respondents Suggesting Modification		
	Local Residents	Non-Local Residents	Total
Grant more Local Permits	(12) 27.3	(4) 9.1	(16) 36.4
Provide more Enforcement	(6) 13.6	(8) 18.2	(14) 31.8
End Ability to Sell or Transfer Permits	(4) 9.1	(4) 9.1	(8) 18.2
Issue no more Permits	(1) 2.3	(5) 11.4	(6) 13.6
Total	(23) 52.3	(21) 47.7	(44) 100

Table XXIX. Categories of responses given to question, "What aspects of LE do you favor, if any?"

Aspect Favored	% of Respondents Favoring Aspects of LE
Limits competition	(53) 47.3
Limits gear	(41) 36.6
Improves fisherman's bargaining position	(9) 8.0
Secures position with cannery	(9) 8.0
Provides investment towards retirement	(7) 6.3
Keeps out non-fishermen	(13) 11.6
Nothing advantageous	(15) 13.4

Table XXX. Categories of responses given to question, "What aspects of LE are you opposed to, if any?"

Aspect Criticised	% of Respondents Critical of Aspects of L.E.
No criticism	(15) 13.4
Keeps out local people	(47) 42.0
Keeps out people with need	(35) 31.3
Inhibits entry of young people	(51) 45.5

A Sociological Study of Limited Entry in the
Bristol Bay Salmon Fishery:

A Preliminary report on field work conducted
in Summer 1979

by

J. Anthony Koslow
Scripps Institution of Oceanography, A-008
University of California, San Diego
La Jolla, California 92093

(This is a preliminary report -- not to be quoted or cited without
permission of the author)

villages, Naknek and South Naknek, for their market, services and, most important, their housing, which greatly facilitates sampling the fishing population. LE has been in effect in Bristol Bay since 1974, giving sufficient time for its impact to emerge. Bristol Bay seemed particularly apt for a study of this question since Crutchfield and Pontecorvo (1969) used this salmon fishery as their prime example of a fishery particularly in need of LE. I am also personally familiar with the fishery, having fished the Bristol Bay sockeye run myself for two seasons (1970-71).

The Center for Field Research seemed ideally suited to enable me to undertake this project. The Bristol Bay sockeye run is not only the world's largest -- it is also one of the most intense, taking place in less than a month's time. I therefore required additional personnel if I was to interview a sufficient number of fishermen during the brief fishing season. Also, while I was able to enlist additional support from the Institute of Marine Resources, University of California, San Diego, most traditional funding agencies were wary of supporting a marine ecologist undertaking his first project in the social sciences. It should be noted, however, that this work has received continued support and encouragement from Drs. David Phillips and Frederick Bailey, members of the Social Science faculties of the University of California, San Diego, and Prof. John Isaacs, Director of the Institute of Marine Resources. Through the Center for Field Research, an EARTHWATCH team of six volunteers was formed, who funded and helped perform the greater part of the work during the 1979 field season in Bristol Bay.

← ①

Fisheries in western countries have traditionally been open to all who obtained the necessary license and gear. In recent decades resource economists have argued that this arrangement leads to economic inefficiency -- namely, that the harvest of open-access resources tends toward an equilibrium where no profit is realized, since so long as there is a profit to be made, additional persons will enter to exploit the resource (Gordon 1955, Crutchfield and Pontecorvo 1969). Impressed by this argument, fishery managers have placed a number of fisheries under a radically different regulatory regime known as "limited entry" (LE). Under LE management, the number of fishermen harvesting a particular resource is limited, usually to the present license-holders. However, the broader socioeconomic impact of this change in the structure of fisheries has not yet been examined. In particular, questions arise as to how LE policies will affect the transmission of fisheries to succeeding generations, particularly in traditional fishing communities, as well as to the general relationship between such policies and traditional fishing strategies and life-styles.

I proposed a survey of the Bristol Bay salmon fishermen in order to examine some of the social, economic, and cultural implications of LE. This fishery was particularly appropriate for study for several reasons. Several of the major fishery groups in America are well represented there; both full- and part-time fishermen, ethnic Italian, Scandinavian, and native-American fishermen, as well as many non-ethnic fishermen. Because of its isolation, the fishermen in Bristol Bay are dependent upon a relatively few canneries located in two fishing

7

Ten days prior to the arrival of the volunteers, I flew to Naknek with my logistical coordinator for the summer, Mary Kay Gilliland, a first-year graduate student in anthropology at the University of California, San Diego, in order to lay the groundwork for the summer's field work. I had earlier written the various canners there about the possibilities of obtaining housing with them and of enlisting their cooperation with my research, but my queries had all gone unanswered. Mary and I therefore had to obtain housing and establish working relationships with the canners and fishermen, as well as to pre-test and revise the questionnaire.

I obtained complete lists of the fishermen under contract with six of the eight major canners in the Naknek area. These lists were divided into those fishermen with original permits and those whose permits were obtained later, primarily through sale or transfer. Stratified random samples were then based upon these lists. Fishermen were interviewed at five of the canneries -- the list from the sixth cannery was obtained too late in the season to be of real value. However, the same ethnic and demographic groups of fishermen were generally found at the different canneries.

The interviews with the fishermen were based upon a standard questionnaire with both open- and close-ended questions that covered the respondent's basic demographic characteristics; the characteristics of the vessel and gear he used in Bristol Bay; his own and his family's involvement in fisheries, particularly in Bristol Bay; the impact of LE on his household's fishing income and fishing strategy; and his views on LE and its impact on various groups of participants. The

questionnaire form was critically reviewed initially by Drs. D. Phillips and F. Bailey and was pre-tested, revised, and partially re-printed in Naknek. The interviews took approximately one hour to administer. Cooperation from the fishermen was generally excellent, although some of the local villagers found the questions difficult. However, this may be indicative of some of the very problems local residents encountered with the complex LE system itself.

I originally intended to limit the study to fishing captains (i.e. permit holders). However, I found during the initial ten-day period prior to the arrival of the volunteers that the most serious problems of the Alaskan LE system were found among old-time crew-members, who were not eligible to receive the permits, and the Bristol Bay residents, many of whom considered themselves, their families and communities deprived of full access to the resource. An ancillary questionnaire was therefore developed to be administered to all crew members on vessels chosen for the survey, who had fished in Bristol Bay for five years or longer. It was also found that the Bristol Bay residents formed a minority of the Bristol Bay fishing fleet. In order to represent their views adequately -- and also to determine the extent to which their claim of deprivation was justified -- another questionnaire was developed to be administered as a household survey. This latter survey was first conducted in Naknek and South Naknek, where it was based upon the Borough Tax Assessor's maps and property lists. At the end of the main sockeye run, when most fishermen returned to their homes, I administered this questionnaire in two

upriver villages as well -- Nondalton and Kokhanok. Funds for this latter work were provided by the Institute of Marine Resources. All village surveys were based on systematic samples -- censusing between one in two to one in five households -- based upon complete lists or maps of the area. At least ten households were surveyed in each of the four villages.

Just over 50 fishermen and over 50 local households were surveyed during the field season. The field samples were carefully drawn, so I am confident we interviewed a representative cross-section of the residents and legitimate fishermen. The different groups engaged in the fishery each appear to be remarkably homogeneous in their outlooks on the LE system. I hope this will permit me to generalize with some confidence about the different group characteristics, despite the relatively small sample size. However, I cannot determine this until the interviews are analyzed. The data from the interviews are now being computerized for statistical analysis. A number of less structured interviews and informal discussions were also conducted with representatives of the salmon industry and fishermen's marketing associations, as well as with numerous fishermen and residents on a casual basis. Field journals of these interviews and contacts were maintained by Ms. Gilliland and myself. The final report on the project will synthesize the quantitative and qualitative aspects of our study and should be complete before the end of the year.

Preliminary Results

Eligibility for a permit under the Alaskan LE system was based

on a point system. Points were obtained for ownership of gear and vessel, residence in a rural area of Alaska, and income dependence on the fishery, as well as participation in the fishery. Twice as many points were allotted for having been the captain (i.e., the gear license holder) of a fishing vessel than for having served as a crew member. Points could only be obtained for the years fished between 1965 and 1972, with the latter years being weighted more heavily. Applications had to be documented by records, such as income tax forms, old licenses, etc. Generally, to be eligible required having been a captain on a fishing vessel in the years immediately prior to the institution of the LE system, provable by written documentation. A strict deadline was established within several months of the promulgation of the system, although applications were accepted again several years later. No new permits are being issued at this time. Without an LE permit one cannot operate a fishing vessel in the particular fishery. While it must be renewed each year it is fully saleable and transferrable. Once sold, of course, it cannot be obtained again.

The fishing community can be divided into several groups clearly characterized by certain interests and views on LE. The non-local (i.e., non-Bristol Bay resident) fishermen overwhelmingly favor the LE system. This group includes the ethnic Italian fishermen, predominantly from California, Scandinavian-American fishermen from the Pacific Northwest, and fishermen from other parts of Alaska. Fishing is viewed by these fishermen as a business and LE serves predominantly to protect their financial position in the fishery in several ways.

On the other hand, fishing provides the economic base for the village way of life for many Bristol Bay residents -- predominantly native-Americans. Many local residents now find this way of life threatened by the LE system.

Non-local fishermen are committed to LE in large part as a result of a variety of conditions external to the LE system, which have greatly improved the biological and economic condition of the Bristol Bay salmon resource (and many other Alaskan fisheries as well). LE serves primarily to protect these gains. Climatic conditions have ameliorated in recent years leading to better runs following the worst runs of the century earlier in the decade. Competition for the resource has been reduced following the exclusion of foreign fishing fleets in general -- and the Japanese salmon fishing fleet in particular -- from within 200 miles of the coast. Furthermore, this latter act has led to the development of a strong Japanese market for a different, higher-priced product -- fresh-frozen as opposed to canned salmon. The 1979 Bristol Bay sockeye run was the best since 1970 -- over 30,000,000 of the 5-6 pound fish -- and the price offered the fisherman in 1979 was approximately four times that offered in 1970. These factors have led to greatly increased earnings for the Bristol Bay fisherman. LE holds forth the promise that the increased profit margin will not be dissipated among a host of new fishermen who would otherwise certainly enter the fishery at this time.

Many fishermen, particularly non-villagers, now find themselves heavily financially committed to the LE system because of the intrinsic value of the permits themselves. As a result of the improved outlook

for the Bristol Bay fishery (among others), a highly speculative market has developed for the permits. The going price for a drift net permit for Bristol Bay in 1979 was on the order of \$75,000. To many fishermen this represents a ready retirement fund in an industry with little other financial security -- especially to those fishermen who anticipate selling the permit upon leaving the fishery rather than passing it on in the family. Clearly, permit holders now have a great deal at stake in the system.

Given these advantages of the LE system, it is noteworthy that Bristol Bay residents are overwhelmingly opposed to it, although the system was ostensibly instituted in large part to enhance local fishing economies. In fact, however, LE significantly restricts the access of local people to the commercial fishing industry. There are several reasons for this.

For the native-Americans, who compose approximately two-thirds of the local population (Kresge *et al.* 1974), fishing is the economic base for their village way of life. It is therefore of primary concern that adult members of the community have access to the fishery. Families in Alaskan villages are typically large -- native-Americans in Alaska, and in Bristol Bay in particular, have one of the highest birth-rates in the United States (Kresge *et al.* 1974). In the past, young men served an apprenticeship under their father or other relative until they established themselves as adults in the community. They then obtained their own boat. However, without provision for new permits to be issued, there is no means by which young people can attain economic independence in the village under LE.

This problem is evident today among those in their early twenties, who were serving their apprenticeships as crewmen in the fishery at the time LE was enacted and who, therefore, did not qualify for licenses under the LE point system. Today they are raising their own families but are barred from fishing their own vessels and must scramble to serve as crew with friends and relatives. Clearly this problem will become more severe with time. If unalleviated, it must lead to the disintegration of village life through increased independence on a debilitating welfare system and outmigration.

It is significant that local persons are virtually unanimous in viewing the exclusion of the young as a major problem, but that other fishermen, even those raised in traditional fishing families, tend to be little concerned. In fact, it appears that non-local fishermen, including the ethnic Italian and Scandinavian fishermen, are on the whole not unhappy if their children leave fishing; indeed, many would prefer that their sons went to college and left fisheries. Also, non-local families are generally smaller, and the Bristol Bay fishery provides only supplementary income, so the problems of sharing a license are less acute. The LE system, by limiting the transmission of the fishery to future generations, thus threatens the economic base of the local way of life, but only serves to enhance the value of the fishery for most non-local fishermen.

The remoteness of the villages and the villagers' lack of familiarity with administrative procedures apparently also caused many Bristol Bay residents to fail to qualify for permits by missing application deadlines; failing to maintain adequate past records of

income and involvement in the fishery, which were required to document LE applications; or simply not understanding how best to complete the long, complex application. A substantial proportion of local residents who were interviewed, both formally and informally, had not been able to obtain a fishing permit despite a long-standing history of involvement in the fishery and dependence on it. While these cases could not be reviewed with the LE Commission, it is hard not to question the wisdom of this bureaucracy in its administration of the system. It was not an easy task to inform local villagers of the workings of such a complex system so they would have an equal opportunity to enter it -- but it is apparent that the Alaska LE Commission failed to do so adequately. It should be noted that 24% of native-Americans in Bristol Bay have had no formal education (Kresge *et al*, 1974).

It was at first surprising that many residents who had been long-time fishermen in fact failed to qualify for permits, particularly since the point-system adopted by the LE Commission gave special allowance for both rural applicants and those dependent upon fishing. However, the points for participation in the fishery were allocated so that the years immediately prior to the institution of the system were given the greatest weight. Some of these years were poor salmon years, as forecasted by the Department of Fish and Game. Non-local fishermen with alternative incomes could "afford" to fish on these poor years. But because local economies are in fact so dependent on summer earnings, some local residents turned to alternative employment during these years. For example, the residents of Nondalton have a

long-standing history of fishing the Bristol Bay run. However, on poor years they often turn to fire-fighting for the Bureau of Land Management. As a result, only a handful of households in Nondalton could qualify for even a single permit. Those local residents who were forced to turn to such short-term alternatives now find themselves unable to return to fishing.

Furthermore, a significant proportion of local residents who originally qualified have since sold their permits, largely as a result of the economic difficulties experienced during the long series of poor salmon years. The unrestricted saleability of the permits is a distinct feature of the Alaskan LE system. This creates a one-way flow of permits out of native-American hands, particularly now that the price of a LE permit has soared to over \$75,000 -- well out of reach of a villager.

While we were unable to quantify this, there appear to be a significant number of non-local, long-time fishermen who failed to qualify for LE permits under the Alaskan system. Bristol Bay gillnetters are traditionally fished by two men, who, in the past, were often friends or relatives and full partners. However, prior to the LE system, only one person on a vessel would purchase (and have in his name) the gear license. Possession of the license later became the sole criterion of full participation in the fishery as a captain, which generally proved necessary to obtain sufficient points to qualify for a permit. We encountered Bristol Bay fishermen whose fishing record goes back to the pre-1950 sailboat era, who now find themselves dependent on their fishing partner in order to remain in the fishery.

Other problems and complaints with the Alaskan LE system became apparent during the study. For one, the cost of the permits has led to some permits being bought by the very non-fishermen investors that the system was originally intended to exclude. However, our survey of cannery fishermen indicates this is not happening to the extent that it is commonly reported.

More seriously, the value of the fishery has led to various abuses of the system. Fishermen and residents commonly reported that there were more fishermen this past season than ever previously. This was commonly attributed to the widespread illegal duplication and counterfeiting of permits; to persons fishing and marketing their fish on another's permit or otherwise circumventing the system. Clearly such activity must be checked if the system is to remain viable. Our study was unable to determine the extent to which such activity was occurring. However, while much of it is no doubt simply criminal, we did find instances where local residents without viable alternatives and unable to obtain permits were engaged in illegal fishing. Clearly the LE system should be more strongly enforced only after the system's injustices have been removed. The local sentiment commonly expressed was: "We have only the fishing. What do they expect us to do?"

DISCUSSION

The Alaska LE system is having a significant impact on the fishermen and residents of Bristol Bay. Ironically, the policy is proving most deleterious to the marginal local fishing economies that

it was ostensibly implemented to aid. While the system is helping to maintain higher fishing incomes in an era of better runs and improved market conditions, the present system is clearly in need of reform.

The entry of young local people into the fishery presents the gravest problem with the current LE system. To facilitate this, the system should have incorporated an "apprenticeship period", after which crewmen can obtain their own permits; perhaps greater preference should be given to those living in rural areas who are most dependent on the fisheries. If points were allowed for fishing activity as crewmen since 1973, or as captains with interim permits, many local people would probably become eligible for permits. The LE Commission must also come to grips with its responsibility to the local fishing villages: the fact that villagers simply do not maintain consistent records of past activities does not justify their exclusion from the fishery. The freer use of interim, non-transferable permits would seem called for in many instances where economic need and dependence on the resource are apparent.

This summer's field work proved to be exceptionally timely. Upon returning, I learned that the Alaska legislature has undertaken a major review of its LE system. Considerable discontent with the present system has been expressed in numerous local hearings and the approximately 70 lawsuits concerning it (1978 Annual Report Commerical Fisheries Entry Comm.). I have arranged to bring my findings to the attention of the Alaska legislators -- Senator Hohman and Representative Nelson -- who represent the Bristol Bay area.

UNIVERSITY OF CALIFORNIA, SAN DIEGO

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

INSTITUTE OF MARINE RESOURCES, A-018

LA JOLLA, CALIFORNIA 92093

October 14, 1979

Mr. David Gray
Representative Nelse Anderson
Pouch V
Juneau, Ak. 99811

Dear Mr. Gray:

I spoke with you on the phone some time ago about the field work I performed this summer in surveying the fishermen and residents of Bristol Bay concerning the impact of Limited Entry. I have enclosed a preliminary report that I wrote to the Center for Field Research, which helped support the project. In order to complete this work -- that is, in order to analyze the interview data statistically -- in the next few months, I will require some support. At this time, the project has no funding, and I am striving to complete my doctoral dissertation prior to assuming a position as assistant professor at Dalhousie University January 1. At this time, the interview data has been coded and is ready to be entered into the computer. However, I must bring in some help to complete this work for you before the end of the year. I wrote a request for funds to Mr. Chip Toma of Senator Hohman's office. Perhaps your office and his could support this work together. I believe that it will be of considerable value to you in your efforts to improve the situation in Bristol Bay. The value of my study should be apparent upon reading the enclosed preliminary report.

Sincerely,

Anthony Koslow
J. Anthony Koslow

A Sociological Study of Limited Entry in the
Bristol Bay Salmon Fishery:
A Preliminary report on field work conducted
in Summer 1979

by

J. Anthony Koslow
Scripps Institution of Oceanography, A-008
University of California, San Diego
La Jolla, California 92093

(This is a preliminary report: not to be quoted or cited
without written permission of the author.)

Fisheries in western countries have traditionally been open to all who obtained the necessary license and gear. In recent decades resource economists have argued that this arrangement leads to economic inefficiency -- namely, that the harvest of open-access resources tends toward an equilibrium where no profit is realized, since so long as there is a profit to be made, additional persons will enter to exploit the resource (Gordon 1955, Crutchfield and Pontecorvo 1969). Impressed by this argument, fishery managers have placed a number of fisheries under a radically different regulatory regime known as "limited entry" (LE). Under LE management, the number of fishermen harvesting a particular resource is limited, usually to the present license-holders. However, the broader socioeconomic impact of this change in the structure of fisheries has not yet been examined. In particular, questions arise as to how LE policies will affect the transmission of fisheries to succeeding generations, particularly in traditional fishing communities, as well as to the general relationship between such policies and traditional fishing strategies and life-styles.

I proposed a survey of the Bristol Bay salmon fishermen in order to examine some of the social, economic, and cultural implications of LE. This fishery was particularly appropriate for study for several reasons. Several of the major fishery groups in America are well represented there; both full- and part-time fishermen, ethnic Italian, Scandinavian, and native-American fishermen, as well as many non-ethnic fishermen. Because of its isolation, the fishermen in Bristol Bay are dependent upon a relatively few canneries located in two fishing

villages, Naknek and South Naknek, for their market, services and, most important, their housing, which greatly facilitates sampling the fishing population. LE has been in effect in Bristol Bay since 1974, giving sufficient time for its impact to emerge. Bristol Bay seemed particularly apt for a study of this question since Crutchfield and Pontecorvo (1969) used this salmon fishery as their prime example of a fishery particularly in need of LE. I am also personally familiar with the fishery, having fished the Bristol Bay sockeye run myself for two seasons (1970-71).

The Center for Field Research seemed ideally suited to enable me to undertake this project. The Bristol Bay sockeye run is not only the world's largest -- it is also one of the most intense, taking place in less than a month's time. I therefore required additional personnel if I was to interview a sufficient number of fishermen during the brief fishing season. Also, while I was able to enlist additional support from the Institute of Marine Resources, University of California, San Diego, most traditional funding agencies were wary of supporting a marine ecologist undertaking his first project in the social sciences. It should be noted, however, that this work has received continued support and encouragement from Drs. David Phillips and Frederick Bailey, members of the Social Science faculties of the University of California, San Diego, and Prof. John Isaacs, Director of the Institute of Marine Resources. Through the Center for Field Research, an EARTHWATCH team of six volunteers was formed, who funded and helped perform the greater part of the work during the 1979 field season in Bristol Bay.

Ten days prior to the arrival of the volunteers, I flew to Naknek with my logistical coordinator for the summer, Mary Kay Gilliland, a first-year graduate student in anthropology at the University of California, San Diego, in order to lay the groundwork for the summer's field work. I had earlier written the various canners there about the possibilities of obtaining housing with them and of enlisting their cooperation with my research, but my queries had all gone unanswered. Mary and I therefore had to obtain housing and establish working relationships with the canners and fishermen, as well as to pre-test and revise the questionnaire.

I obtained complete lists of the fishermen under contract with six of the eight major canners in the Naknek area. These lists were divided into those fishermen with original permits and those whose permits were obtained later, primarily through sale or transfer. Stratified random samples were then based upon these lists. Fishermen were interviewed at five of the canneries -- the list from the sixth cannery was obtained too late in the season to be of real value. However, the same ethnic and demographic groups of fishermen were generally found at the different canneries.

The interviews with the fishermen were based upon a standard questionnaire with both open- and close-ended questions that covered the respondent's basic demographic characteristics; the characteristics of the vessel and gear he used in Bristol Bay; his own and his family's involvement in fisheries, particularly in Bristol Bay; the impact of LE on his household's fishing income and fishing strategy; and his views on LE and its impact on various groups of participants. The

questionnaire form was critically reviewed initially by Drs. D. Phillips and F. Bailey and was pre-tested, revised, and partially re-printed in Naknek. The interviews took approximately one hour to administer. Cooperation from the fishermen was generally excellent, although some of the local villagers found the questions difficult. However, this may be indicative of some of the very problems local residents encountered with the complex LE system itself.

I originally intended to limit the study to fishing captains (i.e. permit holders). However, I found during the initial ten-day period prior to the arrival of the volunteers that the most serious problems of the Alaskan LE system were found among old-time crew-members, who were not eligible to receive the permits, and the Bristol Bay residents, many of whom considered themselves, their families and communities deprived of full access to the resource. An ancillary questionnaire was therefore developed to be administered to all crew members on vessels chosen for the survey, who had fished in Bristol Bay for five years or longer. It was also found that the Bristol Bay residents formed a minority of the Bristol Bay fishing fleet. In order to represent their views adequately -- and also to determine the extent to which their claim of deprivation was justified -- another questionnaire was developed to be administered as a household survey. This latter survey was first conducted in Naknek and South Naknek, where it was based upon the Borough Tax Assessor's maps and property lists. At the end of the main sockeye run, when most fishermen returned to their homes, I administered this questionnaire in two

upriver villages as well -- Nondalton and Kokhanok. Funds for this latter work were provided by the Institute of Marine Resources. All village surveys were based on systematic samples -- censusing between one in two to one in five households -- based upon complete lists or maps of the area. At least ten households were surveyed in each of the four villages.

Just over 50 fishermen and over 50 local households were surveyed during the field season. The field samples were carefully drawn, so I am confident we interviewed a representative cross-section of the residents and legitimate fishermen. The different groups engaged in the fishery each appear to be remarkably homogeneous in their outlooks on the LE system. I hope this will permit me to generalize with some confidence about the different group characteristics, despite the relatively small sample size. However, I cannot determine this until the interviews are analyzed. The data from the interviews are now being computerized for statistical analysis. A number of less structured interviews and informal discussions were also conducted with representatives of the salmon industry and fishermen's marketing associations, as well as with numerous fishermen and residents on a casual basis. Field journals of these interviews and contacts were maintained by Ms. Gilliland and myself. The final report on the project will synthesize the quantitative and qualitative aspects of our study and should be complete before the end of the year.

Preliminary Results

Eligibility for a permit under the Alaskan LE system was based

on a point system. Points were obtained for ownership of gear and vessel, residence in a rural area of Alaska, and income dependence on the fishery, as well as participation in the fishery. Twice as many points were allotted for having been the captain (i.e., the gear license holder) of a fishing vessel than for having served as a crew member. Points could only be obtained for the years fished between 1965 and 1972, with the latter years being weighted more heavily. Applications had to be documented by records, such as income tax forms, old licenses, etc. Generally, to be eligible required having been a captain on a fishing vessel in the years immediately prior to the institution of the LE system, provable by written documentation. A strict deadline was established within several months of the promulgation of the system, although applications were accepted again several years later. No new permits are being issued at this time. Without an LE permit one cannot operate a fishing vessel in the particular fishery. While it must be renewed each year it is fully saleable and transferrable. Once sold, of course, it cannot be obtained again.

The fishing community can be divided into several groups clearly characterized by certain interests and views on LE. The non-local (i.e., non-Bristol Bay resident) fishermen overwhelmingly favor the LE system. This group includes the ethnic Italian fishermen, predominantly from California, Scandinavian-American fishermen from the Pacific Northwest, and fishermen from other parts of Alaska. Fishing is viewed by these fishermen as a business and LE serves predominantly to protect their financial position in the fishery in several ways.

On the other hand, fishing provides the economic base for the village way of life for many Bristol Bay residents -- predominantly native-Americans. Many local residents now find this way of life threatened by the LE system.

Non-local fishermen are committed to LE in large part as a result of a variety of conditions external to the LE system, which have greatly improved the biological and economic condition of the Bristol Bay salmon resource (and many other Alaskan fisheries as well). LE serves primarily to protect these gains. Climatic conditions have ameliorated in recent years leading to better runs following the worst runs of the century earlier in the decade. Competition for the resource has been reduced following the exclusion of foreign fishing fleets in general -- and the Japanese salmon fishing fleet in particular -- from within 200 miles of the coast. Furthermore, this latter act has led to the development of a strong Japanese market for a different, higher-priced product -- fresh-frozen as opposed to canned salmon. The 1979 Bristol Bay sockeye run was the best since 1970 -- over 30,000,000 of the 5-6 pound fish -- and the price offered the fisherman in 1979 was approximately four times that offered in 1970. These factors have led to greatly increased earnings for the Bristol Bay fisherman. LE holds forth the promise that the increased profit margin will not be dissipated among a host of new fishermen who would otherwise certainly enter the fishery at this time.

Many fishermen, particularly non-villagers, now find themselves heavily financially committed to the LE system because of the intrinsic value of the permits themselves. As a result of the improved outlook

for the Bristol Bay fishery (among others), a highly speculative market has developed for the permits. The going price for a drift net permit for Bristol Bay in 1979 was on the order of \$75,000. To many fishermen this represents a ready retirement fund in an industry with little other financial security -- especially to those fishermen who anticipate selling the permit upon leaving the fishery rather than passing it on in the family. Clearly, permit holders now have a great deal at stake in the system.

Given these advantages of the LE system, it is noteworthy that Bristol Bay residents are overwhelmingly opposed to it, although the system was ostensibly instituted in large part to enhance local fishing economies. In fact, however, LE significantly restricts the access of local people to the commercial fishing industry. There are several reasons for this.

For the native-Americans, who compose approximately two-thirds of the local population (Kresge *et al.* 1974), fishing is the economic base for their village way of life. It is therefore of primary concern that adult members of the community have access to the fishery. Families in Alaskan villages are typically large -- native-Americans in Alaska, and in Bristol Bay in particular, have one of the highest birth-rates in the United States (Kresge *et al.* 1974). In the past, young men served an apprenticeship under their father or other relative until they established themselves as adults in the community. They then obtained their own boat. However, without provision for new permits to be issued, there is no means by which young people can attain economic independence in the village under LE.

This problem is evident today among those in their early twenties, who were serving their apprenticeships as crewmen in the fishery at the time LE was enacted and who, therefore, did not qualify for licenses under the LE point system. Today they are raising their own families but are barred from fishing their own vessels and must scramble to serve as crew with friends and relatives. Clearly this problem will become more severe with time. If unalleviated, it must lead to the disintegration of village life through increased independence on a debilitating welfare system and outmigration.

It is significant that local persons are virtually unanimous in viewing the exclusion of the young as a major problem, but that other fishermen, even those raised in traditional fishing families, tend to be little concerned. In fact, it appears that non-local fishermen, including the ethnic Italian and Scandinavian fishermen, are on the whole not unhappy if their children leave fishing; indeed, many would prefer that their sons went to college and left fisheries. Also, non-local families are generally smaller, and the Bristol Bay fishery provides only supplementary income, so the problems of sharing a license are less acute. The LE system, by limiting the transmission of the fishery to future generations, thus threatens the economic base of the local way of life, but only serves to enhance the value of the fishery for most non-local fishermen.

The remoteness of the villages and the villagers' lack of familiarity with administrative procedures apparently also caused many Bristol Bay residents to fail to qualify for permits by missing application deadlines; failing to maintain adequate past records of

income and involvement in the fishery, which were required to document LE applications; or simply not understanding how best to complete the long, complex application. A substantial proportion of local residents who were interviewed, both formally and informally, had not been able to obtain a fishing permit despite a long-standing history of involvement in the fishery and dependence on it. While these cases could not be reviewed with the LE Commission, it is hard not to question the wisdom of this bureaucracy in its administration of the system. It was not an easy task to inform local villagers of the workings of such a complex system so they would have an equal opportunity to enter it -- but it is apparent that the Alaska LE Commission failed to do so adequately. It should be noted that 24% of native-Americans in Bristol Bay have had no formal education (Kresge *et al*, 1974).

It was at first surprising that many residents who had been long-time fishermen in fact failed to qualify for permits, particularly since the point-system adopted by the LE Commission gave special allowance for both rural applicants and those dependent upon fishing. However, the points for participation in the fishery were allocated so that the years immediately prior to the institution of the system were given the greatest weight. Some of these years were poor salmon years, as forecasted by the Department of Fish and Game. Non-local fishermen with alternative incomes could "afford" to fish on these poor years. But because local economies are in fact so dependent on summer earnings, some local residents turned to alternative employment during these years. For example, the residents of Nondalton have a

long-standing history of fishing the Bristol Bay run. However, on poor years they often turn to fire-fighting for the Bureau of Land Management. As a result, only a handful of households in Nondalton could qualify for even a single permit. Those local residents who were forced to turn to such short-term alternatives now find themselves unable to return to fishing.

Furthermore, a significant proportion of local residents who originally qualified have since sold their permits, largely as a result of the economic difficulties experienced during the long series of poor salmon years. The unrestricted saleability of the permits is a distinct feature of the Alaskan LE system. This creates a one-way flow of permits out of native-American hands, particularly now that the price of a LE permit has soared to over \$75,000 -- well out of reach of a villager.

While we were unable to quantify this, there appear to be a significant number of non-local, long-time fishermen who failed to qualify for LE permits under the Alaskan system. Bristol Bay gillnetters are traditionally fished by two men, who, in the past, were often friends or relatives and full partners. However, prior to the LE system, only one person on a vessel would purchase (and have in his name) the gear license. Possession of the license later became the sole criterion of full participation in the fishery as a captain, which generally proved necessary to obtain sufficient points to qualify for a permit. We encountered Bristol Bay fishermen whose fishing record goes back to the pre-1950 sailboat era, who now find themselves dependent on their fishing partner in order to remain in the fishery.

Other problems and complaints with the Alaskan LE system became apparent during the study. For one, the cost of the permits has led to some permits being bought by the very non-fishermen investors that the system was originally intended to exclude. However, our survey of cannery fishermen indicates this is not happening to the extent that it is commonly reported.

More seriously, the value of the fishery has led to various abuses of the system. Fishermen and residents commonly reported that there were more fishermen this past season than ever previously. This was commonly attributed to the widespread illegal duplication and counterfeiting of permits; to persons fishing and marketing their fish on another's permit or otherwise circumventing the system. Clearly such activity must be checked if the system is to remain viable. Our study was unable to determine the extent to which such activity was occurring. However, while much of it is no doubt simply criminal, we did find instances where local residents without viable alternatives and unable to obtain permits were engaged in illegal fishing. Clearly the LE system should be more strongly enforced only after the system's injustices have been removed. The local sentiment commonly expressed was: "We have only the fishing. What do they expect us to do?"

DISCUSSION

The Alaska LE system is having a significant impact on the fishermen and residents of Bristol Bay. Ironically, the policy is proving most deleterious to the marginal local fishing economies that

it was ostensibly implemented to aid. While the system is helping to maintain higher fishing incomes in an era of better runs and improved market conditions, the present system is clearly in need of reform.

The entry of young local people into the fishery presents the gravest problem with the current LE system. To facilitate this, the system should have incorporated an "apprenticeship period", after which crewmen can obtain their own permits; perhaps greater preference should be given to those living in rural areas who are most dependent on the fisheries. If points were allowed for fishing activity as crewmen since 1973, or as captains with interim permits, many local people would probably become eligible for permits. The LE Commission must also come to grips with its responsibility to the local fishing villages: the fact that villagers simply do not maintain consistent records of past activities does not justify their exclusion from the fishery. The freer use of interim, non-transferable permits would seem called for in many instances where economic need and dependence on the resource are apparent.

This summer's field work proved to be exceptionally timely. Upon returning, I learned that the Alaska legislature has undertaken a major review of its LE system. Considerable discontent with the present system has been expressed in numerous local hearings and the approximately 70 lawsuits concerning it (1978 Annual Report; Commerical Fisheries Entry Comm.). I have arranged to bring my findings to the attention of the Alaska legislators -- Senator Hohman and Representative Nelson -- who represent the Bristol Bay area.

They are actively involved in the review of the LE system and are considering drafting the legislation required to reform the system.

I will also have several opportunities to present this work before fisheries conferences and I intend to submit the completed work to a professional journal related to fisheries or marine management. I will certainly forward you copies of this work. A grant proposal has been submitted to the National Science Foundation to continue work along these lines. At the end of the volunteers' field period, we were fortunate to be visited by Mr. Larry Rosenberg, Program Manager of the appropriate section of the NSF, who showed considerable interest in the project.

It is certainly my hope that we come to understand better the social systems of the dominant groups involved in American fisheries today, particularly in relation to the major changes many fisheries are presently experiencing. This season's project clearly shows the consequences of effecting sweeping structural changes in a fishery without sufficient awareness of their possible consequences. Once again, I thank you for providing me the opportunity to launch an important research project, which I believe will have considerable significance to the fishermen of Alaska and elsewhere.

References Cited

- Crutchfield, James A. and Giulio Pontecorvo. 1969. The Pacific Salmon Fisheries. Johns Hopkins Press (Resources for the Future).
- Gordon, H. Scott. 1954. The economic theory of the common property resource: The fishery. FJ. of Pol. Econ. 62: 124-142.
- Kresge, David, Susan Fisan and Anthony Gasbarro. 1974. Bristol Bay: A Socioeconomic Study. ISEGR, U. of Alaska, Report 41.

A Sociological Study of Limited Entry in the
Bristol Bay Salmon Fishery:
A Preliminary report on field work conducted
in Summer 1979

by

J. Anthony Koslow
Scripps Institution of Oceanography, A-008
University of California, San Diego
La Jolla, California 92093

(This is a preliminary report -- not to be quoted or cited without
permission of the author)

villages, Naknek and South Naknek, for their market, services and, most important, their housing, which greatly facilitates sampling the fishing population. LE has been in effect in Bristol Bay since 1974, giving sufficient time for its impact to emerge. Bristol Bay seemed particularly apt for a study of this question since Crutchfield and Pontecorvo (1969) used this salmon fishery as their prime example of a fishery particularly in need of LE. I am also personally familiar with the fishery, having fished the Bristol Bay sockeye run myself for two seasons (1970-71).

The Center for Field Research seemed ideally suited to enable me to undertake this project. The Bristol Bay sockeye run is not only the world's largest -- it is also one of the most intense, taking place in less than a month's time. I therefore required additional personnel if I was to interview a sufficient number of fishermen during the brief fishing season. Also, while I was able to enlist additional support from the Institute of Marine Resources, University of California, San Diego, most traditional funding agencies were wary of supporting a marine ecologist undertaking his first project in the social sciences. It should be noted, however, that this work has received continued support and encouragement from Drs. David Phillips and Frederick Bailey, members of the Social Science faculties of the University of California, San Diego, and Prof. John Isaacs, Director of the Institute of Marine Resources. Through the Center for Field Research, an EARTHWATCH team of six volunteers was formed, who funded and helped perform the greater part of the work during the 1979 field season in Bristol Bay.

← ①

Fisheries in western countries have traditionally been open to all who obtained the necessary license and gear. In recent decades resource economists have argued that this arrangement leads to economic inefficiency -- namely, that the harvest of open-access resources tends toward an equilibrium where no profit is realized, since so long as there is a profit to be made, additional persons will enter to exploit the resource (Gordon 1955, Crutchfield and Pontecorvo 1969). Impressed by this argument, fishery managers have placed a number of fisheries under a radically different regulatory regime known as "limited entry" (LE). Under LE management, the number of fishermen harvesting a particular resource is limited, usually to the present license-holders. However, the broader socioeconomic impact of this change in the structure of fisheries has not yet been examined. In particular, questions arise as to how LE policies will affect the transmission of fisheries to succeeding generations, particularly in traditional fishing communities, as well as to the general relationship between such policies and traditional fishing strategies and life-styles.

I proposed a survey of the Bristol Bay salmon fishermen in order to examine some of the social, economic, and cultural implications of LE. This fishery was particularly appropriate for study for several reasons. Several of the major fishery groups in America are well represented there; both full- and part-time fishermen, ethnic Italian, Scandinavian, and native-American fishermen, as well as many non-ethnic fishermen. Because of its isolation, the fishermen in Bristol Bay are dependent upon a relatively few canneries located in two fishing

Ten days prior to the arrival of the volunteers, I flew to Naknek with my logistical coordinator for the summer, Mary Kay Gilliland, a first-year graduate student in anthropology at the University of California, San Diego, in order to lay the groundwork for the summer's field work. I had earlier written the various canners there about the possibilities of obtaining housing with them and of enlisting their cooperation with my research, but my queries had all gone unanswered. Mary and I therefore had to obtain housing and establish working relationships with the canners and fishermen, as well as to pre-test and revise the questionnaire.

I obtained complete lists of the fishermen under contract with six of the eight major canners in the Naknek area. These lists were divided into those fishermen with original permits and those whose permits were obtained later, primarily through sale or transfer. Stratified random samples were then based upon these lists. Fishermen were interviewed at five of the canneries -- the list from the sixth cannery was obtained too late in the season to be of real value. However, the same ethnic and demographic groups of fishermen were generally found at the different canneries.

The interviews with the fishermen were based upon a standard questionnaire with both open- and close-ended questions that covered the respondent's basic demographic characteristics; the characteristics of the vessel and gear he used in Bristol Bay; his own and his family's involvement in fisheries, particularly in Bristol Bay; the impact of LE on his household's fishing income and fishing strategy; and his views on LE and its impact on various groups of participants. The

questionnaire form was critically reviewed initially by Drs. D. Phillips and F. Bailey and was pre-tested, revised, and partially re-printed in Naknek. The interviews took approximately one hour to administer. Cooperation from the fishermen was generally excellent, although some of the local villagers found the questions difficult. However, this may be indicative of some of the very problems local residents encountered with the complex LE system itself.

I originally intended to limit the study to fishing captains (i.e. permit holders). However, I found during the initial ten-day period prior to the arrival of the volunteers that the most serious problems of the Alaskan LE system were found among old-time crew-members, who were not eligible to receive the permits, and the Bristol Bay residents, many of whom considered themselves, their families and communities deprived of full access to the resource. An ancillary questionnaire was therefore developed to be administered to all crew members on vessels chosen for the survey, who had fished in Bristol Bay for five years or longer. It was also found that the Bristol Bay residents formed a minority of the Bristol Bay fishing fleet. In order to represent their views adequately -- and also to determine the extent to which their claim of deprivation was justified -- another questionnaire was developed to be administered as a household survey. This latter survey was first conducted in Naknek and South Naknek, where it was based upon the Borough Tax Assessor's maps and property lists. At the end of the main sockeye run, when most fishermen returned to their homes, I administered this questionnaire in two

upriver villages as well -- Nondalton and Kokhanok. Funds for this latter work were provided by the Institute of Marine Resources. All village surveys were based on systematic samples -- censusing between one in two to one in five households -- based upon complete lists or maps of the area. At least ten households were surveyed in each of the four villages.

Just over 50 fishermen and over 50 local households were surveyed during the field season. The field samples were carefully drawn, so I am confident we interviewed a representative cross-section of the residents and legitimate fishermen. The different groups engaged in the fishery each appear to be remarkably homogeneous in their outlooks on the LE system. I hope this will permit me to generalize with some confidence about the different group characteristics, despite the relatively small sample size. However, I cannot determine this until the interviews are analyzed. The data from the interviews are now being computerized for statistical analysis. A number of less structured interviews and informal discussions were also conducted with representatives of the salmon industry and fishermen's marketing associations, as well as with numerous fishermen and residents on a casual basis. Field journals of these interviews and contacts were maintained by Ms. Gilliland and myself. The final report on the project will synthesize the quantitative and qualitative aspects of our study and should be complete before the end of the year.

Preliminary Results

Eligibility for a permit under the Alaskan LE system was based

on a point system. Points were obtained for ownership of gear and vessel, residence in a rural area of Alaska, and income dependence on the fishery, as well as participation in the fishery. Twice as many points were allotted for having been the captain (i.e., the gear license holder) of a fishing vessel than for having served as a crew member. Points could only be obtained for the years fished between 1965 and 1972, with the latter years being weighted more heavily. Applications had to be documented by records, such as income tax forms, old licenses, etc. Generally, to be eligible required having been a captain on a fishing vessel in the years immediately prior to the institution of the LE system, provable by written documentation. A strict deadline was established within several months of the promulgation of the system, although applications were accepted again several years later. No new permits are being issued at this time. Without an LE permit one cannot operate a fishing vessel in the particular fishery. While it must be renewed each year it is fully saleable and transferrable. Once sold, of course, it cannot be obtained again.

The fishing community can be divided into several groups clearly characterized by certain interests and views on LE. The non-local (i.e., non-Bristol Bay resident) fishermen overwhelmingly favor the LE system. This group includes the ethnic Italian fishermen, predominantly from California, Scandinavian-American fishermen from the Pacific Northwest, and fishermen from other parts of Alaska. Fishing is viewed by these fishermen as a business and LE serves predominantly to protect their financial position in the fishery in several ways.

On the other hand, fishing provides the economic base for the village way of life for many Bristol Bay residents -- predominantly native-Americans. Many local residents now find this way of life threatened by the LE system.

Non-local fishermen are committed to LE in large part as a result of a variety of conditions external to the LE system, which have greatly improved the biological and economic condition of the Bristol Bay salmon resource (and many other Alaskan fisheries as well). LE serves primarily to protect these gains. Climatic conditions have ameliorated in recent years leading to better runs following the worst runs of the century earlier in the decade. Competition for the resource has been reduced following the exclusion of foreign fishing fleets in general -- and the Japanese salmon fishing fleet in particular -- from within 200 miles of the coast. Furthermore, this latter act has led to the development of a strong Japanese market for a different, higher-priced product -- fresh-frozen as opposed to canned salmon. The 1979 Bristol Bay sockeye run was the best since 1970 -- over 30,000,000 of the 5-6 pound fish -- and the price offered the fisherman in 1979 was approximately four times that offered in 1970. These factors have led to greatly increased earnings for the Bristol Bay fisherman. LE holds forth the promise that the increased profit margin will not be dissipated among a host of new fishermen who would otherwise certainly enter the fishery at this time.

Many fishermen, particularly non-villagers, now find themselves heavily financially committed to the LE system because of the intrinsic value of the permits themselves. As a result of the improved outlook

for the Bristol Bay fishery (among others), a highly speculative market has developed for the permits. The going price for a drift net permit for Bristol Bay in 1979 was on the order of \$75,000. To many fishermen this represents a ready retirement fund in an industry with little other financial security -- especially to those fishermen who anticipate selling the permit upon leaving the fishery rather than passing it on in the family. Clearly, permit holders now have a great deal at stake in the system.

Look
at for
cooperation
schemes

Given these advantages of the LE system, it is noteworthy that Bristol Bay residents are overwhelmingly opposed to it, although the system was ostensibly instituted in large part to enhance local fishing economies. In fact, however, LE significantly restricts the access of local people to the commercial fishing industry. There are several reasons for this.

For the native-Americans, who compose approximately two-thirds of the local population (Kresge *et al.* 1974), fishing is the economic base for their village way of life. It is therefore of primary concern that adult members of the community have access to the fishery. Families in Alaskan villages are typically large -- native-Americans in Alaska, and in Bristol Bay in particular, have one of the highest birth-rates in the United States (Kresge *et al.* 1974). In the past, young men served an apprenticeship under their father or other relative until they established themselves as adults in the community. They then obtained their own boat. However, without provision for new permits to be issued, there is no means by which young people can attain economic independence in the village under LE.

This problem is evident today among those in their early twenties, who were serving their apprenticeships as crewmen in the fishery at the time LE was enacted and who, therefore, did not qualify for licenses under the LE point system. Today they are raising their own families but are barred from fishing their own vessels and must scramble to serve as crew with friends and relatives. Clearly this problem will become more severe with time. If unalleviated, it must lead to the disintegration of village life through increased independence on a debilitating welfare system and outmigration.

It is significant that local persons are virtually unanimous in viewing the exclusion of the young as a major problem, but that other fishermen, even those raised in traditional fishing families, tend to be little concerned. In fact, it appears that non-local fishermen, including the ethnic Italian and Scandinavian fishermen, are on the whole not unhappy if their children leave fishing; indeed, many would prefer that their sons went to college and left fisheries. Also, non-local families are generally smaller, and the Bristol Bay fishery provides only supplementary income, so the problems of sharing a license are less acute. The LE system, by limiting the transmission of the fishery to future generations, thus threatens the economic base of the local way of life, but only serves to enhance the value of the fishery for most non-local fishermen.

The remoteness of the villages and the villagers' lack of familiarity with administrative procedures apparently also caused many Bristol Bay residents to fail to qualify for permits by missing application deadlines; failing to maintain adequate past records of

income and involvement in the fishery, which were required to document LE applications; or simply not understanding how best to complete the long, complex application. A substantial proportion of local residents who were interviewed, both formally and informally, had not been able to obtain a fishing permit despite a long-standing history of involvement in the fishery and dependence on it. While these cases could not be reviewed with the LE Commission, it is hard not to question the wisdom of this bureaucracy in its administration of the system. It was not an easy task to inform local villagers of the workings of such a complex system so they would have an equal opportunity to enter it -- but it is apparent that the Alaska LE Commission failed to do so adequately. It should be noted that 24% of native-Americans in Bristol Bay have had no formal education (Kresge *et al.*, 1974).

It was at first surprising that many residents who had been long-time fishermen in fact failed to qualify for permits, particularly since the point-system adopted by the LE Commission gave special allowance for both rural applicants and those dependent upon fishing. However, the points for participation in the fishery were allocated so that the years immediately prior to the institution of the system were given the greatest weight. Some of these years were poor salmon years, as forecasted by the Department of Fish and Game. Non-local fishermen with alternative incomes could "afford" to fish on these poor years. But because local economies are in fact so dependent on summer earnings, some local residents turned to alternative employment during these years. For example, the residents of Nondalton have a

long-standing history of fishing the Bristol Bay run. However, on poor years they often turn to fire-fighting for the Bureau of Land Management. As a result, only a handful of households in Nondalton could qualify for even a single permit. Those local residents who were forced to turn to such short-term alternatives now find themselves unable to return to fishing.

Furthermore, a significant proportion of local residents who originally qualified have since sold their permits, largely as a result of the economic difficulties experienced during the long series of poor salmon years. The unrestricted saleability of the permits is a distinct feature of the Alaskan LE system. This creates a one-way flow of permits out of native-American hands, particularly now that the price of a LE permit has soared to over \$75,000 -- well out of reach of a villager.

While we were unable to quantify this, there appear to be a significant number of non-local, long-time fishermen who failed to qualify for LE permits under the Alaskan system. Bristol Bay gillnetters are traditionally fished by two men, who, in the past, were often friends or relatives and full partners. However, prior to the LE system, only one person on a vessel would purchase (and have in his name) the gear license. Possession of the license later became the sole criterion of full participation in the fishery as a captain, which generally proved necessary to obtain sufficient points to qualify for a permit. We encountered Bristol Bay fishermen whose fishing record goes back to the pre-1950 sailboat era, who now find themselves dependent on their fishing partner in order to remain in the fishery.

Other problems and complaints with the Alaskan LE system became apparent during the study. For one, the cost of the permits has led to some permits being bought by the very non-fishermen investors that the system was originally intended to exclude. However, our survey of cannery fishermen indicates this is not happening to the extent that it is commonly reported.

More seriously, the value of the fishery has led to various abuses of the system. Fishermen and residents commonly reported that there were more fishermen this past season than ever previously. This was commonly attributed to the widespread illegal duplication and counterfeiting of permits; to persons fishing and marketing their fish on another's permit or otherwise circumventing the system. Clearly such activity must be checked if the system is to remain viable. Our study was unable to determine the extent to which such activity was occurring. However, while much of it is no doubt simply criminal, we did find instances where local residents without viable alternatives and unable to obtain permits were engaged in illegal fishing. Clearly the LE system should be more strongly enforced only after the system's injustices have been removed. The local sentiment commonly expressed was: "We have only the fishing. What do they expect us to do?"

DISCUSSION

The Alaska LE system is having a significant impact on the fishermen and residents of Bristol Bay. Ironically, the policy is proving most deleterious to the marginal local fishing economies that

it was ostensibly implemented to aid. While the system is helping to maintain higher fishing incomes in an era of better runs and improved market conditions, the present system is clearly in need of reform.

The entry of young local people into the fishery presents the gravest problem with the current LE system. To facilitate this, the system should have incorporated an "apprenticeship period", after which crewmen can obtain their own permits; perhaps greater preference should be given to those living in rural areas who are most dependent on the fisheries. If points were allowed for fishing activity as crewmen since 1973, or as captains with interim permits, many local people would probably become eligible for permits. The LE Commission must also come to grips with its responsibility to the local fishing villages: the fact that villagers simply do not maintain consistent records of past activities does not justify their exclusion from the fishery. The freer use of interim, non-transferable permits would seem called for in many instances where economic need and dependence on the resource are apparent. }



This summer's field work proved to be exceptionally timely. Upon returning, I learned that the Alaska legislature has undertaken a major review of its LE system. Considerable discontent with the present system has been expressed in numerous local hearings and the approximately 70 lawsuits concerning it (1978 Annual Report Commercial Fisheries Entry Comm.). I have arranged to bring my findings to the attention of the Alaska legislators -- Senator Hohmann and Representative Nelson -- who represent the Bristol Bay area.

SCOMM

#17:7

AN ANALYSIS OF THE LEGISLATIVE OPTIONS UNDER
CONSIDERATION BY THE LIMITED ENTRY STUDY GROUP

Prepared by: Jack Kreinheder
Research Economist
Commercial Fisheries Entry Commission
December 10, 1979

SUMMARIES:

I. CAPITAL GAINS TAX OPTION

The Capital Gains Tax is intended to provide access to limited entry permits for individuals who are unable to afford a permit at today's high open market prices. This would be accomplished by setting a statutory ceiling on permit prices and taxing any sale price above that level at 100 percent.

ADVANTAGES: Permits would still be freely transferable. Permit holders could select the transferee and no interference with intra-family transfers would occur. Fishermen could still change from one fishery to another without difficulty. Depending on the magnitude of the tax, permit holders who bought their permits would be able to recoup at least part of the purchase price of their permit. State compensation could provide for complete recovery of the purchase price. Administrative costs would be higher than under the present system, but lower than those associated with an apprenticeship program.

DISADVANTAGES: Reduction of permit prices would have a dampening effect on the transfer of permits, since less incentive would exist for a permit holder to sell his permit. Although permits would be more affordable, fewer would be available for purchase, so that access to permits would not necessarily be improved. In order to prevent a black market in entry permits, a strict system of auditing and enforcement would be required, with its associated costs. The determination of statutory permit prices would be complex and subject to controversy. Fishermen who have purchased entry permits could lose much of their permit investment unless compensation were provided by the state, but such compensation could total many millions of dollars.

II. LOAN PROGRAM OPTION

The primary purposes of the proposed changes to the current Commercial Fishing Loan Program are to give preference for such loans to applicants with substantial financial need and dependence on fishing, to provide for hardship in loan repayments, and to encourage the purchase of permits by providing grants for a portion of the loan amount.

ADVANTAGES: This option has the fewest legal and administrative problems and would probably be the most acceptable to present permit holders

The loan program appears to offer the only constitutional means of openly favoring Alaska residents over non-residents, since non-residents can be completely excluded from the program without causing legal problems. It may be possible to further increase resident participation in the limited fisheries by providing preferential loan terms for the purchase of non-resident permits.

DISADVANTAGES: It is unclear whether this option would accomplish its objectives without more specific legislative guidelines for the administration of loans. The majority of fishing loans to low-income persons have been for vessel upgrading rather than for entry into the fisheries. Specific criteria may have to be enacted if such entry is to be given priority in the loan program. Easier access to loan money could bid up permit prices even further if price controls are not enacted. Giving priority to the purchase of entry permits may discourage diversification into bottomfish and other developing fisheries.

III. APPRENTICESHIP OPTION

The purposes of this option are fully explained in the apprenticeship proposal.

ADVANTAGES: An apprenticeship system would provide fishermen who have limited financial resources with an opportunity to obtain an entry permit at no cost. Access to permits would be based on fishing experience, or dependence, or hardship criteria rather than on the open market bidding process. The system would ensure that a trained and qualified group of persons would be entering the limited fisheries. The system would allow for a natural progression from crewman to skipper.

DISADVANTAGES: There appear to be a number of unresolved legal questions concerning the proposed apprenticeship system. As currently worded, permit holders still have control over entrants to the fisheries, because experience as a crew member is a requisite for admission to the apprenticeship program. Such control was ruled unconstitutional in 1969 by a Federal court. However, the separate apprenticeship supplement may circumvent this problem by basing future admission to the apprenticeship program on dependence or hardship criteria, instead of solely on experience.

No provision has been made for permit holders to switch from one fishery to another without completing another period of apprenticeship, thus locking permit holders into one fishery. An apprenticeship system would be expensive to administer because a continual stream of applicants, which would be much larger than the number of initial applicants for permits under the present program, would have to be evaluated by the Commission. Current permit holders would either lose their purchase investment when they leave the fisheries, or expensive state compensation would be necessary to obtain permits for the system. And finally, most fishermen would probably object to the requirement of taking on a complete stranger in a situation where mutual trust and responsibility are important, not only for business reasons, but for personal safety as well.

IV. AMORTIZATION OPTION

The apparent purposes of the amortization option are to place a time limit on the entry permit and to allow permit holders to recover their investment in either vessel and gear (option A), or in the entry permit (option B), in the event that the apprenticeship option or other transferability system is enacted. The purpose behind the time limit is unclear, since the permit holder would be able to renew his permit indefinitely. A simple use requirement would seem to be more effective. Little justification can be seen for the amortization of vessel and gear, since the individual retains possession of these under any of the proposed transferability options. It is also questionable whether original issues should be allowed to amortize the fair market value of their permits, since they received them for only an administrative fee. In addition, the amortization proposal for entry permits does not seem to be the most equitable method of compensating those permit holders who did buy their permits for their purchase investment.

Rather than allowing a fixed 10 percent write-off each year, it may be more desirable to relate the amount of amortization to the net return on the permit investment at the time the permit reverts to the state, which would be when the permit is no longer fished. Under this type of system, those permit holders whose net fishing earnings during the time of permit ownership equaled or exceeded the purchase price of the permit, plus a "reasonable" return on the investment in permit, vessel, and gear (10-15 percent per year), would be considered to have received "their money's worth" and no amortization would be allowed.

On the other hand, permit holders who had not recovered their permit investment, plus a reasonable return, would be allowed to amortize the difference between this value and the purchase price of their permit, not to exceed the purchase price. A more specific definition of amortization is also needed, so that it is clear whether the former permit holders would qualify for a tax credit, or just a tax deduction from gross income. This requires a policy decision on the degree of compensation to be given to current permit holders. The cost to the state of the amortization option would depend on this decision, and on the earnings of permit holders, the length of permit ownership, and the purchase prices of permits reverting to the state. Amortization would be less expensive than straight compensation for the permit purchase price, because consideration is given to the earnings derived from the permit during the duration of permit ownership. An amortization system would also be more equitable than compensating permit holders for a set percentage of the purchase price, even though the cost to the state may be the same, because the system takes account of each individual's economic situation.

The purpose of the proposed participation or "use it or lose it" requirement is to ensure that entry permits would revert to the state when they are no longer used by the holder. It should be noted that this requirement could be enacted independently of any of the transferability options, but that the effect would be somewhat different. If the participation requirement were enacted without any restriction on permit transferability, it is probable that very few permits would revert to the State, since