Dual Permit Fishing Operations in the Southeastern Alaska Sac Roe Herring Gillnet Fishery

CFEC Report 10-2N
May, 2010

Prepared by Kurt Iverson and Craig Farrington

Commercial Fisheries Entry Commission
8800 Glacier Highway #109
Juneau, Alaska 99801

Abstract

This report describes the Southeast Alaska sac roe herring gillnet fishery, with an emphasis on identifying the extent of dual permit operations, where two Commercial Fisheries Entry Commission permit holders opt to fish together on a single vessel and use an additional 25 fathoms of gear (75 fathoms total). Historically, dual permit operations were not unusual; however, the maximum amount of gear that could be fished from a vessel was the same as that of a single permit holder. In 2006, that changed when the Alaska Board of Fisheries implemented a new regulation allowing a greater amount of gear for two permit holders fishing from one vessel. This report provides a short synopsis of the management of the fishery, with a summary of current regulations, historical harvests, earnings, and participation. It also examines the frequency of dual permit holder operations, both before and after the new regulations. A discussion of the data used to track dual permit operations is also included.

Table of Contents

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Introduction

In 1978, the Commercial Fisheries Entry Commission (CFEC) implemented regulations that limited the number of commercial fishing permits in the Southeast Alaska sac roe herring gillnet fishery, setting the maximum number at 110 permits. At that time, and continuing through the 2005 season, Alaska Department of Fish and Game (ADF&G) regulations allowed a maximum of 50 fathoms of gillnet gear to be fished from an individual vessel.[1] In 2006, the Alaska Board of Fisheries (BOF or Board) adopted a new gear regulation allowing two permit holders to fish concurrently from the same vessel and jointly operate up to 75 fathoms of gillnet.[2] This was done in an attempt to restructure the fishery and make the fishery more economically profitable for the permit holders. This report examines certain aspects of the fishery and provides an assessment of the effects of the new regulations. The first section provides a description of the fishery, with a synopsis of the management of the fishery, along with figures on harvests, estimated gross earnings, and permit holder participation. The second section examines the extent to which dual permit operations have evolved in the fishery. Details on the data sources used to track dual permit operations are provided. The final section provides a discussion on dual permit operations from the perspective of fishery managers and fishermen.

Description of the Fishery

Synopsis of Fishery Management

Historically, the sac roe herring fishery in Southeast Alaska began in 1970, with few management restrictions placed on the fishery. Over the course of the fishery, successful management has required restrictions on time, area, and gear. The rules can be found in Alaska Statutes,[3] the Alaska Administrative Code,[4] and in the annual Southeast Alaska Sac Roe Herring Fishery Management Plan published by the Alaska Department of Fish and Game.[5]

Gillnet and purse seine gear are used to harvest sac roe herring in Southeast Alaska. The allowable fishing areas have varied over the years, but over most of the history of the fishery the two gear types have been used in separate regulatory areas. Currently, the Southeast sac roe herring gillnet fishery occurs in four areas: Revilla Channel (commonly referred to as Kah Shakes); West Behm Canal; Hobart Bay/Port Houghton; and Seymour Canal (Figure 1).

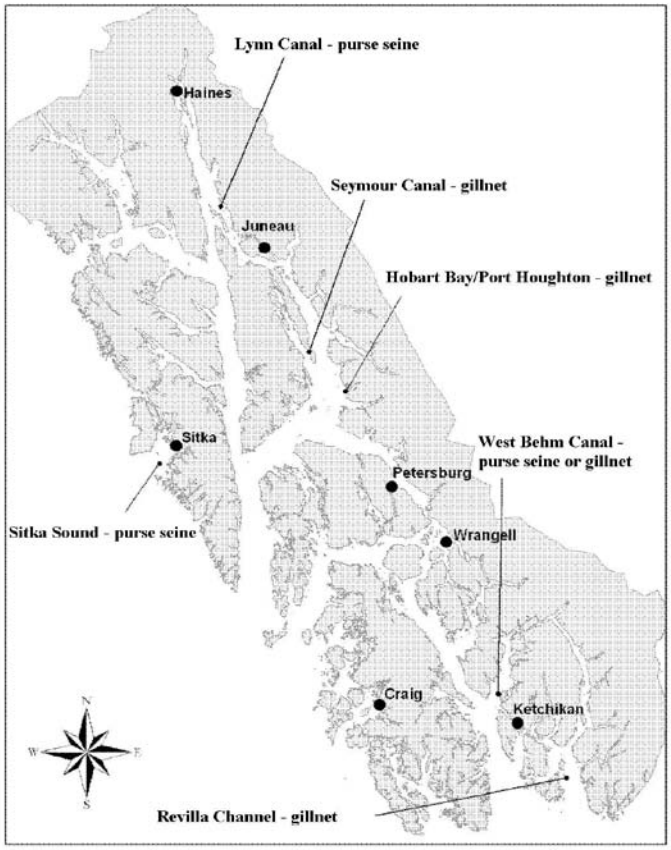
[1] 5 AAC 27.131 (a)
[2] 5 AAC 27.131 (i)
[3] AS 16.05. and AS 16.10.
[4] 5AAC 27.001 – 5AAC 27.197.
[5] Gordon, Dave, W. Davidson, K. Monagle, W. Bergmann, S. Walker. 2009. *2009 Southeast Alaska Sac Roe Herring Fishery Management Plan*. Alaska Department of Fish and Game, Regional Information Report Series No. IJ09-02, Douglas, Alaska.

The harvest strategy is based upon several considerations. Among the most important are: the availability and distribution of mature herring containing quality roe (with mature roe at least 10% of total body weight); mature spawning biomass estimates; population age structure; recruitment; size-at-age; and past spawning success.

Herring populations are assessed annually by ADF&G biologists to determine whether individual spawning stocks have met specified threshold levels for which a fishery may occur. If the annual assessment of an individual spawning stock fails to meet its threshold, then no fishery is held in that area. Closures may also result if some of the other harvest strategies are not met; for example, the distribution of mature herring may be inadequate, or the roe is of an unacceptable level of quality. The fisheries are usually brief in duration, and last only as long as it takes to achieve the pre-established quota – usually only one or two days.

The fishery is managed by biologists from Region 1 of the Commercial Fisheries Division of the Alaska Department of Fish and Game. This fishery is somewhat unique in Alaska in that department personnel are present on the fishing grounds for the entire duration of the fishery, from the 12-hour notice-to-open, to its closure.

Figure 1. Southeast Alaska sac roe herring commercial fishing areas (from D. Gordon et al. 2009).



During the fishery, department biologists closely monitor the harvest of individual fishing gear to estimate a fleet-wide harvest. When the quota is nearly attained, biologists issue field announcements giving timeframes for ending the fishery.

Announcements are made for both the ending time of the fishery and for the time when all fishing nets must be out of the water (there is a legal require-ment to give 1 hour advance notice of exactly when fishing nets must be completely out of the water). During this last 1-hour 'grace' period, it is possible for the quota to be exceeded.

ADF&G Regulations

2006 Alaska Board of Fisheries Action

The 2006 Board of Fisheries Southeast-Yakutat finfish meeting was held in Ketchikan on January 21 – February 1, 2006. Proposal #99 sought to authorize regulations allowing dual permit stacking in the Southeast sac roe herring gillnet fishery. The proposal was reviewed before the Board with no public comment. In Board committee, the department was neutral on the proposal, but staff did state that: '[if adopted] this will most likely not change catch rates [in the fishery] and similar action was taken in Bristol Bay where it worked perfectly well'. The Board committee did review the ADF&G staff comments, which reported that the effects of the proposal if adopted could either be to reduce the total amount of gear fishing during an opening, or conversely, could increase the total amount of gear fishing if inactive permits become active and combine their efforts with another permit holder. Although the Petersburg Advisory Committee supported the proposal, there was no consensus from the Public Panel. There was consensus from the Board committee to support the proposal with a language change from the original 'drift gillnet' to 'set gillnet'. The action taken by the full Board was to carry the proposal as amended, by unanimous vote.

Current ADF&G Regulations

Current ADF&G regulations authorizing dual permit operations are shown verbatim below:

5AAC 27.131. GILLNET SPECIFICATIONS AND OPERATIONS FOR SOUTHEASTERN ALASKA AREA.

(i) Two Southeast Alaska set gillnet CFEC permit holders may concurrently fish from the same vessel and jointly operate up to 75 fathoms of set gillnet gear as follows:

(1) before operating set gillnet gear jointly both permit holders shall obtain buoy identification tags for dual operation provided by the department under (g) of this section;

(2) when two Southeastern Alaska set gillnet CFEC permit holders fish from the same vessel and jointly operate a set gillnet the vessel must display its ADF&G permanent license plate number followed by the letter "D" to identify the vessel as a dual vessel; the letter "D" must be removed or covered when the vessel is operating with only one set gillnet CFEC permit holder on board the vessel; the identification number and letters must be displayed

(A) in letters and numerals 12 inches high with lines at least one inch wide;
(B) in a color that contrasts with the background;
(C) on both sides of the hull; and
(D) in a manner this is plainly visible at all times when the vessel is being operated;

(3) when two CFEC permit holders jointly operate gear each permit holder
    (A) must be on board the fishing vessel and present at the fishing site as required by 5AAC 39.107(d) and (e);
    (B) is responsible for ensuring that the entire unit of gear is operated in a lawful manner.

Participation, Harvests, and Earnings in the Fishery

Methodology

The tables in this report were created from the Commercial Fisheries Entry Commission (CFEC) gross earnings database, which in turn is derived largely from the Alaska Department of Fish and Game (ADF&G) fish ticket database. The data were queried for landings and earnings made from 1980 to 2009 by the permits unique to the sac roe herring gillnet fishery. Harvests are broken out by ADF&G statistical area. At of the date of this report, earnings figures for 2009 should be considered preliminary.

For this report, the authors applied a correction process to the data which cleaned up many errors, such as landings attributed to ADF&G statistical areas that are not open to sac roe herring gillnet fishing, and mistakes in the vessel license number field. These procedures may result in figures that vary from other reports by CFEC or ADF&G.

Fishery Participation

From 1980 to 2008, the number of permit holders with recorded landings in the Southeast Alaska sac roe herring gillnet fishery ranged from a high of 133 in 1984 to a low of 39 in 2006 (Table 1). In general, annual participation was highest in the 1980's and the 1990's, but decreased rapidly beginning 2000. Participation rates are dynamic for many reasons, but many permit holders are likely influenced by market conditions, and the base price offered to fishermen at the beginning of the sac roe season. A close approximation of the processor base price is the ex-vessel price-per-ton shown in Table 1. As the ex-vessel prices increase or decrease, participation rates tend to move in the same direction. Another factor likely influencing participation is the annual amount of quota(s) for each area of the fishery, with larger quotas usually attracting more participation.

However, with the advent of 'permit stacking' in 2006, participation is likely underreported in the fish ticket data. This is because the partners in dual permit operations often use only one CFEC permit card to record their landings. Therefore, even though both partners are permit holders, and both fully participate in the harvesting of fish during the course of the fishery, the fish ticket data capture only a single permit holder as making a landing(s).

With 75 permits fished in the most recent data (2009), participation in the fishery may be rebounding somewhat. In actuality, participation in 2009 is more than 75 fishermen when accounting for the 'silent' second partners fishing in the type of dual permit operation as described above.

Fishery Harvests Summary

From 1980 to 2009, harvests in the fishery ranged from a low of 718,441 pounds of sac roe herring in 1990, to a high of 6,225,816 pounds in 1983. In general, harvests tended to be larger in the early 1980's. After declining in the late 1980's, annual harvests since 1990 have averaged approximately 2.2 million pounds. Of special note, the Kah Shakes area has not been open since 1999 due to distributions of spawning aggregates of herring occurring outside the boundaries of the fishery area. Formerly, Kah Shakes produced the largest annual harvest among the four fishery areas.

Fishery Earnings Summary

From 1980 to 2009, total annual earnings in the fishery ranged from a low of $225,552 in 2000, to a high of $3,186,307 in 1985 (all figures, unless otherwise noted, are reported in nominal dollars). Annual earnings fluctuate with both the price and the amount of the annual guideline harvest level quota (GHL quota).

With average earnings, it is important to note that the figures here are based upon the number of permit holders who recorded fish ticket landings. As explained above, since 2006 some participating permit holders in dual permit operations have not recorded landings on fish tickets. As a result, average earnings in Table 1 are likely over-estimated.

For all years combined, the average annual earnings per permit holder (with landings) are $13,622. In terms of a single year, 1985 had the highest average earnings per permit holder at $26,553. When nominal dollars in each year are converted to 2009 dollars, to adjust for inflation and compare earnings over time using dollars with constant purchasing power, permit holders earned on average approximately $11,150 (2009 dollars) per year in the current decade. This is less than half that of the past two decades, when permit holders earned an approximate $26,000 adjusted dollars annually.[6]

The general trend is that prices and earnings were relatively high from 1983 through 1996, and then dropped to a relatively low level from 1997 through 2006. From 2007 through 2009, prices and earnings increased somewhat, but it is unknown whether this is a trend which will carry into the future (recall that as of the date of this report, earnings figures for 2009 should be considered preliminary).

[6] Consumer Price Index: All Urban (CPI-V) Consumers; at the website for the US Department of Labor, Bureau of Labor Statistics: ftp://ftp.bls.gov/pub/special.request/cpi/cpiai.text . Nominal dollars in each year were converted to 'real' 2009 dollars.

Table 1. Southeast Alaska sac roe herring gillnet fishery areas: permits fished; fishery quotas, fishery harvests and dates, and estimated earnings and prices, 1980 – 2008.

Area	Year	Permits Fished	GHL[1] quota (tons)	Harvest (pounds)	Fishery Opening Dates	Gross Earnings	Average Annual Earnings	Price per Ton
Revilla Channel [2]	1980	108	1,100	2,214,434	March 25	$310,021	$2,871	$280
	1981	110	1,550	3,735,446	March 20	$859,153	$7,810	$460
	1982	115	1,700	4,630,860	March 26	$602,012	$5,235	$260
	1983	122	2,500	6,225,816	March 24	$2,913,682	$23,883	$936
	1984	127	2,100	4,376,843	March 29	$1,837,588	$14,469	$840
	1985	120	2,300	4,317,489	March 29	$3,186,307	$26,553	$1,476
	1986	117	1,100	3,059,916	March 31	$2,157,241	$18,438	$1,410
	1987	117	1,200	2,938,918	March 26,27	$2,077,266	$17,754	$1,414
	1988	119	953	2,290,857	March 25	$1,963,265	$16,498	$1,714
	1989	85	647	1,189,922	March 20,21	$683,015	$8,035	$1,148
	1991	84	680	1,319,089	April 8-11	$618,653	$7,365	$938
	1992	113	1,200	2,492,602	April 3	$1,777,225	$15,728	$1,426
	1993	102	717	1,473,845	April 10	$1,299,931	$12,744	$1,764
	1994	117	880	1,448,106	April 9,11	$1,222,201	$10,446	$1,688
	1995	112	630	1,220,106	April 12	$1,242,068	$11,090	$2,036
	1996	121	871	1,202,784	April 10	$1,664,653	$13,757	$2,768
	1997	112	912	2,318,539	April 6	$695,562	$6,210	$600
	1998	84	620	1,232,692	April 1,2	$265,029	$3,155	$430
Seymour Canal [3]	1981	97	600	1,210,968	April 28	$389,932	$4,020	$644
	1984	103	375	1,023,693	April 26	$489,844	$4,756	$957
	1986	84	300	784,614	May 10	$478,615	$5,698	$1,220
	1987	88	419	604,714	May 5,6	$469,258	$5,332	$1,552
	1988	97	530	1,172,791	April 26-May 1	$1,144,644	$11,800	$1,952
	1989	103	332	1,082,468	April 28	$696,027	$6,758	$1,286
	1990	70	312	718,441	April 28-29	$260,076	$3,715	$724
	1994	95	368	748,534	April 29	$545,681	$5,744	$1,458
	1995	88	316	637,090	May 14	$621,800	$7,066	$1,952
	1998	72	633	1,170,950	May 1-4	$204,917	$2,846	$350
	1999	86	595	1,412,893	April 30	$415,391	$4,830	$588
	2000	44	346	788,882	May 5	$225,552	$5,126	$572
	2001	54	474	1,240,172	May 11-12	$254,236	$4,708	$410
	2002	62	1,096	2,132,977	May 16-17	$614,297	$9,908	$576
	2003	76	1,712	3,037,322	April 29-May 2	$783,629	$10,311	$516
	2004	85	838	1,608,848	May 3	$497,134	$5,849	$618
	2005	61	894	1,890,210	May 1	$342,128	$5,609	$362
	2006	39	1,508	2,374,924	May 4-7	$389,488	$9,987	$328
	2007	44	1,292	2,437,720	May 13-14	$570,426	$12,964	$468
	2008	60	1,205	2,416,011	May 10-11	$1,128,903	$18,815	$935
	2009[5]	73	1,471	1,732,999	April 30-May 2	$800,646	$10,968	$924
Hobart-Houghton [4]	1997	87	550	884,241	April 28	$294,452	$3,385	$666
	1998	53	260	701,323	April 20	$143,070	$2,699	$408
	1999	89	436	1,012,830	April 26	$297,772	$3,346	$588
	2005	48	223	408,868	April 24	$65,419	$1,363	$320
	2008	59	462	603,422	May 8-9	$292,660	$4,960	$970
	2009[5]	62	376	677,761	May 2-3	$281,271	$4,537	$830
Annual Total	1980	108		2,214,434		$310,021	$2,871	$280
	1981	118		4,946,414		$1,249,084	$10,585	$505
	1982	115		4,630,860		$602,012	$5,235	$260
	1983	122		6,225,816		$2,913,682	$23,883	$936
	1984	133		5,400,536		$2,327,431	$17,499	$862
	1985	120		4,317,489		$3,186,307	$26,553	$1,476
	1986	117		3,844,530		$2,635,856	$22,529	$1,371
	1987	117		3,543,632		$2,546,524	$21,765	$1,437

Table 1. Southeast Alaska sac roe herring gillnet fishery areas: permits fished; fishery quotas, fishery harvests and dates, and estimated earnings and prices, 1980 – 2008.

Area	Year	Permits Fished	GHL[1] quota (tons)	Harvest (pounds)	Fishery Opening Dates	Gross Earnings	Average Annual Earnings	Price per Ton
Annual Total	1988	119		3,463,648		$3,107,909	$26,117	$1,795
(con't)	1989	108		2,272,390		$1,379,042	$12,769	$1,214
	1990	70		718,441		$260,076	$3,715	$724
	1991	84		1,319,089		$618,653	$7,365	$938
	1992	113		2,492,602		$1,777,225	$15,728	$1,426
	1993	102		1,473,845		$1,299,931	$12,744	$1,764
	1994	118		2,196,640		$1,767,883	$14,982	$1,610
	1995	113		1,857,196		$1,863,868	$16,494	$2,007
	1996	121		1,202,784		$1,664,653	$13,757	$2,768
	1997	116		3,202,780		$990,014	$8,535	$618
	1998	87		3,104,965		$613,016	$7,046	$395
	1999	89		2,425,723		$713,163	$8,013	$588
	2000	44		788,882		$225,552	$5,126	$572
	2001	54		1,240,172		$254,236	$4,708	$410
	2002	62		2,132,977		$614,297	$9,908	$576
	2003	76		3,037,322		$783,629	$10,311	$516
	2004	85		1,608,848		$497,134	$5,849	$618
	2005	63		2,299,078		$407,547	$6,469	$355
	2006	39		2,374,924		$389,488	$9,987	$328
	2007	44		2,437,720		$570,426	$12,964	$468
	2008	63		3,019,433		$1,421,563	$22,564	$942
	2009[5]	75		2,410,760		$1,081,917	$14,426	$898

[1] The GHL and Fishery Opening Dates are from D. Gordon et al 2009. Quotas and price-per-ton are in short tons.
[2] Commonly referred to as the Kah Shakes fishery, no fishery was conducted in 1990. Beginning with 1999, no fishery has been conducted at Revilla Channel due to poor distribution of mature herring.
[3] The Seymour Canal fishery was not conducted in 1980, 1982, 1983, 1985, 1991 – 1993, 1996, or 1997.
[4] Hobart Bay was first opened to gillnet sac roe fishing in 1997. Gillnet quota (for sac roe herring) is the portion of the GHL left after the winter bait fishery is completed. Additionally, no fishery was conducted in 2000 – 2004, 2006, or 2007.
[5] 2009 earnings data are preliminary.

Dual Permit Operations

Permits Renewed vs. Permits Fished

Alaska's limited entry statute and CFEC regulations require that entry permits be renewed each year.[7] If a permit is not renewed for two consecutive years, it can be cancelled. Although permits must be renewed, they do not have to be fished. Table 2 shows the annual number of permits in the Southeast sac roe herring gillnet fishery that have been renewed, and the number used to record landings, according to fish ticket data. It is important to note that permits and permit holders may have actively fished, but may not have recorded landings. This can occur if a dual permit operation records all the operation's landings on only one permit, or if the permit holder simply fails to catch marketable fish.

The data indicate that in some years a substantial number of permits have not been used in the fishery (to record landings), especially in the years of the last decade. These years generally correlate with lower prices for herring sac roe.

[7] AS 16.43.150 (d) and 5 AAC 05.560.

Data Considerations

Dual permit operations can be analyzed using either ADF&G fish tickets or ADF&G pre-season registration lists. Each source has its limitations.

Prior to fishing, each permit holder is required to register with ADF&G. Permit holders provide their name, permit number, mailing address, vessel license number, and area they intend to fish. Each operation receives an identification tag that is to be placed on the gillnet buoy. The tag number is recorded on the registration list. Dual permit operations must identify themselves as such, and each of the dual permit holders is registered with the same buoy tag numbers and vessel license number.

Registration lists do not always reflect actual participation in the fishery. Occasionally, permit holders will register but will not attend the fishery. Other times, registered permit holders will be active in the fishery but will not record landings – either because they combine their landings on someone else's permit, or because they simply fail to catch any fish. Being present at a fishery but not making a landing is more common in the herring fisheries, which are of short duration and where breakdowns and other mishaps can easily prevent a person from harvesting fish.

Fish tickets are used to record harvests, but similar to registration lists, they sometimes fail to accurately portray participation. Fish tickets appear to be especially problematic in identifying dual permit operations. Along with harvest data, fish tickets record the name, the permit number, and the vessel license number for the person(s) making a landing; however, as mentioned above, and as illustrated in Tables 3 and 5 below, it is relatively common for multiple permit holders to record their landings on a single permit. Moreover, the vessel license number recorded on fish tickets, and eventually entered into the electronic fish ticket database, does not always reflect the actual vessel used in the fishery. This occurs when errors are made at the time the fish ticket is filled out, or when the ticket is data entered. Except for the vessel license number, there is no other information on fish tickets that can be used to identify dual permit operations.

Table 3 shows the annual number of dual permit operations documented on ADF&G registration lists. It also indicates how many of the operations had either 1 or 2 persons who recorded their landings on fish tickets. Note that in 2007, there was one registered dual permit operation that failed to record any landings by either permit holder. The table indicates that the majority of the operations record all their landings on one person's permit. It also illustrates how dual permit operations have steadily become more popular since 2006, when

Table 2.
Permits Renewed, Permits Fished, and Persons With Landings in the Southeast Sac Roe Herring Gillnet Fishery – Fish Ticket Data

Year	Permits Renewed	Permits Fished	Persons With Landings	Percent Permits Fished
1980	130	108	108	83.1
1981	129	118	121	91.5
1982	144	115	115	79.9
1983	140	123	123	87.9
1984	142	133	136	93.7
1985	133	120	120	90.2
1986	130	117	120	90.0
1987	126	117	119	92.9
1988	125	119	121	95.2
1989	123	108	113	87.8
1990	120	70	70	58.3
1991	121	84	84	69.4
1992	127	113	113	89.0
1993	120	102	102	85.0
1994	121	118	119	97.5
1995	121	113	115	93.4
1996	121	121	121	100.0
1997	120	116	116	96.7
1998	115	87	88	75.7
1999	116	89	90	76.7
2000	115	44	44	38.3
2001	114	54	54	47.4
2002	115	62	62	53.9
2003	115	76	76	66.1
2004	117	85	85	72.6
2005	116	63	63	54.3
2006	115	39	39	33.9
2007	113	44	44	38.9
2008	114	63	63	55.3
2009	111	75	75	67.5

the rules were changed to allow more gear for two people fishing from one vessel.

Table 3. Number of Dual Permit Operations from ADF&G Registration Lists, and the Number of Permit Holders from the Operations Who Recorded Landings on Fish Tickets

Year	Area	Number of Dual Permit Operations	One	Two	None
2006	Seymour Canal	4	2	2	
2007	Seymour Canal	7	5	1	1
2008	Seymour Canal	12	10	2	
	Hobart / Houghton	11	8	3	
2009	Seymour Canal	16	10	6	
	Hobart / Houghton	14	11	3	

Table 4 provides more detail on fishing operations identified on ADF&G registration lists. An operation is defined as a permit holder(s) / vessel combination. Note again that some registered operations, either single or dual permit, will occasionally fail to record a landing on their permit(s).

According to the registration data, the rate of dual permit operations has steadily increased, from 11% of the total operations in 2006, to 23%-24% of the respective operations in Hobart Bay/ Port Houghton and Seymour Canal in 2009 and 2010. Also note that each dual permit operation registered for both the Seymour Canal and Hobart Bay/ Port Houghton fisheries in years when both fisheries were open. Fishermen have the option of registering for only one fishery if they so choose.

Table 4. ADF&G Registration Data:
Number of Registered Fishing Operations

Fishery	Year	Total Operations	Single Permit	Dual Permits	Total Permits In Fishery	Total Permits w/ Landings
Seymour Canal	2006	37	33	4	41	39
	2007	44	37	7	51	44
	2008	58	46	12	70	60
	2009	67	51	16	83	73
	2010*	51	39	12	63	n.a.
Hobart/Houghton	2008	56	45	11	67	59
	2009	59	45	14	73	62
	2010*	47	36	11	58	n.a.

Notes:1) Permits with landings indicates permit numbers that were recorded on fish tickets.
2) 2010 data is preliminary. Permits with landings data are not available at this time.

Table 5 contrasts the counting of dual permit operations using fish ticket data, versus counts using ADF&G registration lists. If fish tickets were the only source used, then the number of dual permit operations would be under-counted: the operations where all the landings were recorded on one permit would appear as one-permit, not dual, operations.

One important consideration in this analysis is that dual permit operations remained unchanged for the entire duration of the fishery. As mentioned, and as documented in Table 1, the Southeast herring

gillnet fisheries occur over a short period, usually lasting only one or two days. In other fisheries where permit stacking is allowed, such as the Bristol Bay drift gillnet fishery, it is common for fishing operations to switch back and forth from single to dual permit status within the season, or for members of the dual permit operation to change. This complicates tracking and analyzing the participation of the operations. However, in the Southeast Alaska herring gillnet fishery, fishery managers indicated that from 2006 through 2009, all dual permit operations remained unchanged throughout the active portion of the entire fishery in each area where the respective operation was registered. In one case, the members of a dual permit operation changed *before* the season, but the change was noted on the registration list. Managers stated that if the status of an operation were to change, it would be indicated on the lists, including any corresponding dates. Recall, however, that not all operations actually participate and record landings.

Table 5. Total Number of G34A Permit Holders With Landings, With the Number of Dual Permit Operations, by Data Source

Year	Area	All Permit Holders	Dual Permit Operations: Fish Tickets	Dual Permit Operations: ADF&G Register
1980	Kah Shakes	108	4	
1981	Kah Shakes	110	5	
	Seymour Canal	97	1	
1982	Kah Shakes	115	6	
1983	Kah Shakes	122	3	
1984	Kah Shakes	127	1	
	Seymour Canal	103	.	
1985	Kah Shakes	120	3	
1986	Kah Shakes	117	.	
	Seymour Canal	84	1	
1987	Kah Shakes	117	2	
	Seymour Canal	88	1	
1988	Kah Shakes	119	.	
	Seymour Canal	97	.	
1989	Kah Shakes	85	.	
	Seymour Canal	103	1	
1990	Seymour Canal	70	1	
1991	Kah Shakes	84	1	
1992	Kah Shakes	113	1	
1993	Kah Shakes	102	2	
1994	Kah Shakes	117	2	
	Seymour Canal	95	.	
1995	Kah Shakes	112	1	
	Seymour Canal	88	2	

Table 5. Total Number of G34A Permit Holders With Landings, With the Number of Dual Permit Operations, by Data Source

Year	Area	All Permit Holders	Dual Permit Operations: Fish Tickets	Dual Permit Operations: ADF&G Register
1996	Kah Shakes	121	2	
1997	Kah Shakes	112	1	
	Hobart Bay	87	.	
1998	Kah Shakes	85	1	
	Seymour Canal	72	.	
	Hobart Bay	53	.	
1999	Seymour Canal	86	1	
	Hobart Bay	89	1	
2000	Seymour Canal	44	1	
2001	Seymour Canal	54	1	
2002	Seymour Canal	62	.	
2003	Seymour Canal	76	2	
2004	Seymour Canal	85	1	
2005	Seymour Canal	61	.	
	Hobart Bay	48	.	
2006	Seymour Canal	39	1	4
2007	Seymour Canal	44	1	7
2008	Seymour Canal	60	3	12
	Hobart Bay	59	2	11
2009	Seymour Canal	73	5	16
	Hobart Bay	62	1	14

Note: All dual permit operations on 2008 and 2009 ADF&G registration lists are registered for both Hobart and Seymour.

Performance of Dual and Single Permit Operations

Table 6 provides an indication on the relative harvests of dual and single permit operations in the Southeast herring gillnet fishery. Note the figures reflect harvests for operations (permit holder / vessel combinations), not permit holders. Also recall that dual operations are allowed to fish 50% more gear on their vessels than single permit operations (75 fathoms of gillnet vs. 50 fathoms).

Table 6. Number of Single and Dual Permit Operations, With the Total and Average Harvests (pounds) for Each Group

		Single Permit Operations			Dual Permit Operations		
Year	Area	Total Harvest	Total Operations	Average Harvest	Total Harvest	Total Operations	Average Harvest
2006	Seymour Canal	2,092,747	33	63,417	282,177	4	70,544
2007	Seymour Canal	1,881,642	37	50,855	556,078	6	92,680
2008	Seymour Canal	1,775,225	46	38,592	640,786	12	53,399
	Hobart / Houghton	422,755	45	9,395	180,667	11	16,424
2009	Seymour Canal	1,173,525	51	23,010	559,474	16	34,967
	Hobart / Houghton	433,799	45	9,640	243,962	14	17,426

Note: The table only shows operations with landings. Some operations participated but did not record landings.

As Table 6 indicates, dual permit operations, on average, had substantially higher harvests than single permit operations. The question remains, however: With 50% more gear, do dual operations harvest at least 50% more fish? Table 7 again shows the average harvests of single and dual permit operations, but also indicates the percentage difference between the averages of the two types. While the figures should be viewed with caution because they represent mere averages among wide-ranging harvests, they nevertheless provide an indication that dual permit operations are often successful in harvesting amounts of fish that are at least commensurate with the added amount of gear they are allocated.

Table 7. Percentage Difference Between the Average Harvests of Single and Dual Permit Operations

Year	Area	Single Permit Average Harvest	Dual Permit Average Harvest	Percent Difference Dual to Single
2006	Seymour Canal	63,417	70,544	11.2%
2007	Seymour Canal	50,855	92,680	82.2%
2008	Seymour Canal	38,592	53,399	38.4%
	Hobart / Houghton	9,395	16,424	74.8%
2009	Seymour Canal	23,010	34,967	52.0%
	Hobart / Houghton	9,640	17,426	80.8%

Discussions With Permit Holders

An important part of this paper includes interviews and conversations with permit holders in the Southeast sac roe herring gillnet fishery. Our objective was to gain perspective on the relative advantages and / or disadvantages of the dual permit regulations commonly referred to as 'permit stacking', along with gaining information on changes that may have occurred over time.

Whether permit holders choose to use permit stacking depends upon their individual situation. All fishermen we interviewed mentioned that the Southeast sac roe gillnet fishery is marginally profitable. This is largely due to low sac roe herring prices and higher operating costs, but also cited were the opportunity costs associated with participating in other fisheries or other occupations.

Dual permit operations were seen by most fishermen as a means for cutting costs and adding flexibility to their business decisions. Herring gillnet boats and herring gear are often very specialized and usually not used in other fisheries; consequently, the cost of owning and maintaining an operation may be disproportionately high compared to the average gross earnings. Another factor mentioned by fishermen is whether they can find an appropriate partner for a dual permit operation. "Someone you can work with" was often cited as an important consideration in forming a dual operation.

It is unclear if permit stacking has resulted in changes in fishing capacity beyond what would have occurred in the absence of the regulations. If each permit holder from a dual operation fished independently, then the number of boats and amount of gillnet gear in the fishery would be greater. If, however, permit stacking were not an option, it is possible some active permit holders would decide not to participate. In that respect, permit stacking regulations may serve to increase fishing capacity. Note that even with the permit stacking option, many permit holders elect not to attend the fishery.

There is debate among fishermen about the effectiveness of the extra 25 fathoms of gillnet that a dual permit operation is allowed. In general, it appears that the efficiency of the added gear is situational: if the herring are easy to catch, with large numbers of fish available over a short period of time, then a bigger net is usually an advantage. In essence, if most nets are going to be maximized with fish, it is better to plug a 75-fathom net than a 50-fathom one. Nevertheless, the availability of fish and type of fishing comes into play, and in close quarters, or in cases where fish are not heavily aggregated, the extra length of net appears to be less of an advantage.

One criticism of permit stacking is the belief that dual permit arrangements are more likely to be formed by the most heavily capitalized fishing operations. If these operations are already among the highest harvesters, then adding fishing capacity in the form of stacked permits could increase the disparity between the "highliners" and other operations that typically have smaller harvests. An analysis of this hypothesis is outside of the scope of this report, but it is probably a worthwhile endeavor to gauge the effects of permit stacking regulatory changes.

Permit stacking may reduce the number of crew jobs. A typical Southeast herring gillnet operation consists of a skipper / permit holder and one crew person. In a dual permit operation, the second permit holder usually takes the place of the crew. However, most fishermen indicated that crew jobs in this fishery were not in high demand due to the fishery's relatively low gross earnings and small crew shares. One fisherman indicated that filling a crew position in the herring gillnet fishery is often linked to a package of crew jobs in other fisheries; that is, if a crewman wants a job on a successful longline or purse seine boat, he may also be required to work for the same skipper in the Southeast herring gillnet

fishery. Furthermore, one fisherman expressed that not having to pay for a crew person is yet one more consideration he uses to decide whether a dual permit operation is in his best interest.

Discussions With Fishery Managers

The sac roe fishery management resides with the ADF&G area offices respective to the fishery area. The Ketchikan Area Office manages the Kah Shakes fishery in the Revilla Channel area; the Hobart Bay/Port Houghton area is managed by the Petersburg Area Office; and the Regional Office in Douglas manages the Seymour Canal fishery. Because the Kah Shakes fishery has not been held since 1998, only the Petersburg and Douglas fishery management biologists were interviewed for this report. In our discussions, we asked some basic questions we thought would be important regarding dual permits. Among them were: "What measures does ADF&G use to capture the incidence of dual permit operations?" We also asked: "Do dual permit operations change management strategy in any way, and are there any issues with enforcement of the regulations governing dual permit operations"?

The managers in each office have extensive experience, both before and after the advent of dual permit operations in the fishery. They were able to draw upon that experience to make observations and to answer our specific questions. In general, both were in agreement that management of the fishery was not impacted, positively or negatively, at the current level of dual permit operations. One manager made the specific observation that once the fishery was in progress, he would be reluctant to allow more dual permit operations other than those who already pre-registered, except for extenuating circumstances (like gear breakdowns), in order to maintain an orderly fishery. Both managers were not aware of any compliance issues with the regulations on 'duals' to this point. As far as capturing the incidence of dual permit operations, managers had incorporated it into the pre-season registration paperwork already required of fishermen. They maintain it in the form of separate entries for each fishery area in a spreadsheet database.

Managers made some other salient observations on dual permit operations. There was only one detrimental observation: that a permit holder partnered in a dual permit operation had complained to the manager that he did not receive his share of the proceeds from fishing. While it is certainly lamentable if a fisherman was shorted some money as part of a business arrangement as a 'dual', it is more properly a legal issue than a fishery management issue. Other observations were more positive: that family fishing is fostered through the additional value found in 'duals'; and that it allows more flexibility for fishermen to combine with other fisheries that occur at or near the same time.

Regarding the fishing families, dual permit operations allow family members with permits to combine on one vessel, not just to gain the benefit of the greater amount of gillnet, but additional benefits as well: there is no need to pay for a crew member from outside the family; no need for a second vessel and associated costs, including maintenance, upkeep, and fuel expenses; and there is an enhanced ability to pass along valuable fishing instruction and experience to the next generation of the family.

With regard to fishing options, both managers used the sac roe herring pound fisheries as an example of how dual permit operations can add flexibility for fishermen. The pound fisheries occur at or near the same time as the Southeast herring gillnet fishery, and the two fisheries are in relatively close proximity. With the advent of dual permit operations, fishermen who hold permits in both the pound and gillnet fisheries can more easily participate in both. For instance, a permit holder can be at the pound fishery while their partner in the dual operation attends to the details of readying for the gillnet fishery. At an opportune time, the permit holder can quickly leave his pound operation, travel to the gillnet fishery,

and instantly be ready to fish with his partner there. This effectively allows fishermen to 'hedge the bet' because, in any given year, one fishery may be more lucrative than the other. It may be of even further benefit to family fishing in that family members holding permits can be spread among fisheries and/or concentrated where needed (a permit card for any fishery may be used in lieu of a crewmember license).

It short, managers had the opinion that dual permit operations were a benefit to the fishermen, and therefore a good thing.

Conclusions and Summary

Since 2006, dual permit (also known as "stacked permit") operations have been allowed in the Southeast Alaska sac roe herring gillnet fishery. These operations are allowed to fish a maximum of 75 fathoms of gillnet gear from a single vessel. The maximum allowed by a single-permit operation is 50 fathoms.

Mainly as a result of prices, earnings in the fishery have declined since the peak years in the 1980's. As earnings dropped, participation decreased as well. In some years, less than half the available CFEC permit holders have chosen to participate. Average earnings (total earnings / total permit holders with landings) have increased somewhat in recent years, but roughly 20% of the permit holders appear to be absent from the fishery, either as a single permit holder, or as part of a dual permit operation (2009 figures; Table 4).

Since its inception, the number of dual permit operations has increased, from roughly 11% of the total fishing operations in 2006 to 23-24% in 2009 and 2010. Currently, the best source for tracking the number of dual permit operations are annual ADF&G registration lists. The lists are kept by ADF&G on Microsoft Excel ™ spreadsheets. Fish ticket data used alone is inadequate for describing the incidence of dual permit operations, largely because it is common for operations to record their landings on only one of the two permits. Mis-entries of the vessel license number on fish tickets also complicate the tracking of dual permit operations.

According to fishermen, the possibility of forming a dual permit operation is one of many options considered when they decide to participate in the Southeast herring gillnet fishery. Sharing costs and labor is important, but the opportunity to participate in other fisheries or to pursue other endeavors is also considered. Finding an appropriate permit holder to form a dual permit partnership is also important.

Apart from sharing costs, the some fishermen claim that the extra gear allowed in a dual permit operation is most effective when herring are aggregated in large numbers and distributed in locations where working a longer net is possible. It is unclear if permit stacking contributes to the disparity in harvests between heavily capitalized fishing operations and operations that are more modestly run. The displacement of crew person jobs by permit holders in dual operations does not appear to be a serious concern.

Dual permit operations are believed to have negligible effect on the management of the fishery. There is a small amount of extra work entailed in gathering the pre-season registration data and in assigning the correct buoy identification tags to fishermen, but for the most part, managers mention no serious hindrances or complications by the dual permit regulations for achieving their management goals.