

Title: Taking Stock of Recruitment, Training, and Retention Literature in Newfoundland and Labrador Fishery from 1980s to Present

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1. Introduction

Since the 1980s, social scientists have generated a robust and varied social science literature concerning Newfoundland and Labrador's commercial fishing industry, albeit predominately focused on the harvesting versus the processing sector.¹ While this collective scholarship implicates recruitment, training, and retention in various and significant ways, this report shows that researchers have only recently begun to focus direct attention on recruitment, training, and retention issues in the Province's fishery as these relate to labour supply, barriers to entry, and possible remedies. Attention to these issues began with the Community-University Research for Recovery Alliance (CURRA)² – a research program focused on Newfoundland's southwest, west, and northwest coasts of the island during the period 2007-2014. Building on the scholarship that preceded it, the CURRA highlighted that recruitment, training, and retention issues warranted more concerted attention if small- and medium-sized fishing enterprises, processing facilities, and coastal communities were going to continue to exist in this Province.

The CURRA's findings generally resonate with the findings of two in-depth reports commissioned by the Canadian Council of Professional Fish Harvesters (CCPFH) in 2005 and 2018 both of which sounded the alarm about a looming labour shortage in the fish harvesting sector in Newfoundland and Labrador, and across Canada. Likewise, the *Provincial Labour Market Outlook 2025* projects that there will be a shortage of 'fishing vessel masters and skippers and fishermen/women' in the Province's fishery requiring significant labour supply responses to meet demand.³ Recent reports submitted by Newfoundland and Labrador's Fish Harvesters Certification Board (NLPFHCB) to the provincial Department of Fisheries and Land Resources (DRLR) also document concerns about recruitment, training, and retention. Actions taken by the Board to help remedy the situation include the promotion of the fishery to encourage new entrants; easier access to mandatory training courses; supporting upgrading for its existing membership; and the establishment of a *CrewFinder* site. These findings seem to fly in the face of persistent messaging since the 1990s⁴ that both the harvesting and processing sectors suffer from over capacity resulting in successive rounds of initiatives to downsize the industry through rationalization processes (e.g. enterprise buyouts; self-rationalization; plant closures; and layoffs) in order to decrease capacity and increase economic viability.

This 'taking stock' report explores what researchers, and industry, have said and done in relation to recruitment, training, and retention of new entrants in the Province's fishing industry. It also presents several key insights from other jurisdictions experiencing similar issues. Recent Norwegian research suggests that where claims of chronic overcapacity and a looming labour shortage co-exist, we likely have a 'recruitment paradox' on our hands.⁵ Where such a paradox exists it is possible to simultaneously "... have areas where there may still be too many enterprises involved; at the same time, we have claims from some quarters about labour shortages, along with clear evidence of rapid aging in our fishing and processing labour forces and those regions that have lost or are in danger of losing (through retirements) most of their fishery enterprises and labour forces".⁶ This so-called recruitment paradox and its inherent complexity is evident in the NL literature reviewed for this 'taking-stock' report. What is also evident is that there is no consensus on solutions.

We have divided this report into five sections, beginning with an overview of the search methods in Section 2, followed by Section 3 where we provide a brief statistical overview of the Province's harvesting and processing sectors. Section 4 goes on to provide a summary of the key

academic and industry documents reviewed for this report. By way of conclusion, Section 5 identifies gaps in the literature and areas where further research is warranted.

2. Search Process

The search process for this report comprised six stages: (1) a search restricted to journal articles focused primarily on the fishing industry in Newfoundland and Labrador, with supplementary searches focused on Canada and Norway; (2) a review of documents produced by the CURRA (<http://www.curra.ca/index.htm>), based at Memorial University; (3) a search of PhD and Masters theses focused on the Newfoundland and Labrador fishery; (4) a search of fishing industry websites and documents pertaining to the Newfoundland and Labrador fishery; and (5) a search of federal and provincial government websites and reports relevant to the Newfoundland and Labrador fishery.

The first stage involved an extensive search of the academic literature using Elsevier's abstract and citation database called Scopus.⁷ In total, 120 different search combinations were completed in five rounds of searches spanning the period 1980 to the present.

- Round 1: The search started with the keyword combination of 'Newfoundland and Labrador and fish* and recruit* and retent* and train*', which yielded zero results. The search continued by combining the words recruit*, retent*, and train* individually with 'Newfoundland and Labrador and fish*. This process found 77 documents related to recruitment, 75 of which dealt specifically with various aspects of wild fish but only two related to fish harvesters and processing workers.⁸ The search found 17 documents related to training, but only one indirectly related to recruitment and retention.⁹ This approach also found 12 documents related to retention, but all pertained to retention issues concerning wild fish.
- Round 2: A different combination of search words was used in this round. In turn the word fish* was replaced by fishermen, fish harvester, processing, and fish processing and used in separate combinations with 'recruit* and Newfoundland and Labrador', 'retent* and Newfoundland and Labrador', and 'train* and Newfoundland and Labrador'. None of these word combinations generated any results.
- Round 3: This round replaced Newfoundland and Labrador with Canada and Norway and used the same word search combinations (i.e. fish*, recruit*, retent*, and train*). The Canadian search found two related documents concerning recruitment and training.¹⁰ The Norwegian search found four documents related to recruitment and training.¹¹ Neither of these searches found anything related to retention.
- Round 4: Since the first three rounds yielded so few results, a list of 101 words deemed to be related to recruitment, training, and retention was created and used individually in combination with 'fish* and Newfoundland and Labrador and Canada and Norway'.¹² This process produced 595 documents. However, after a

review of the abstracts this number was reduced to nine that were directly applicable to recruitment, training, and retention of harvesters and processing workers, only two of which had not been found in the previous searches.¹³

- Round 5: An international search using the search word combinations (i.e. fish*, recruit*, retent*, and train*) but excluding Norway and Canada found four documents related to recruitment, 82 related to training (65 harvesting sector and 13 processing sector), and two related to retention. Due to time constraints only the most relevant document was included into this report.¹⁴

Stage 2 encompassed a review of the documents produced by the CURRA.¹⁵ This process found five documents related to recruitment, retention, and training.¹⁶ A search of *Canada's Thesis Portal*¹⁷ and the *Memorial University Research Repository*¹⁸ in Stage 3 found many theses related to the Province's fishery but no theses related to recruitment and retention issues, and only one related to training.¹⁹ A search of fishing industry websites in Stage 4²⁰ found two major studies focused directly on recruitment, training, and retention issues in Canada's commercial fisheries in general and several other documents specially recognizing these issues locally.²¹ The in-depth search of federal and provincial government websites in Stage Five²² focused on five reports that implicate recruitment, training, and retention issues.²³ In all stages, where PDF versions of the documents existed, a search for the words 'recruitment', 'training' and 'retention' was conducted using the 'find' feature.

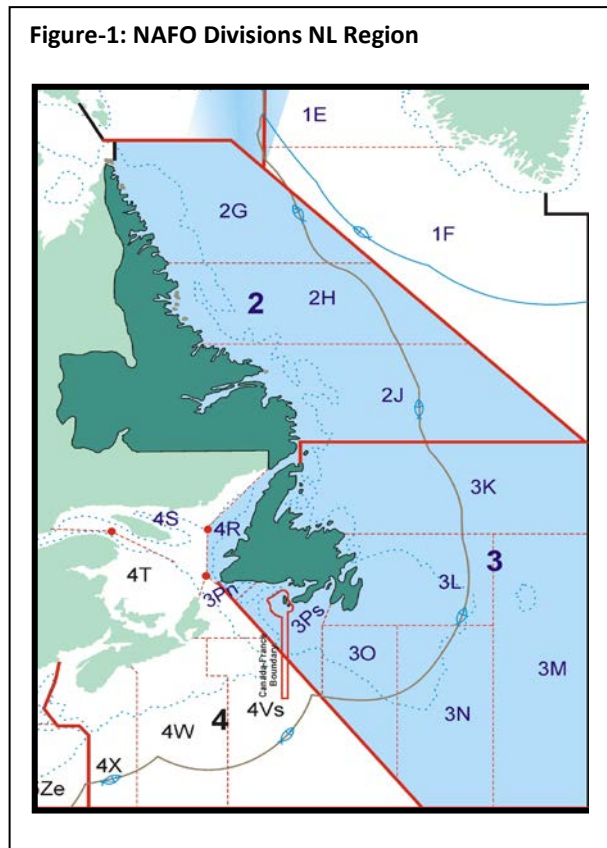
This complex search process resulted in three findings. Firstly, while there is robust and varied social science literature that implicates recruitment, training, and retention, very little academic attention has been paid to recruitment, training, and retention issues for new entrants locally, nationally, and internationally. Secondly, the most in-depth research concerning recruitment, training, and training in the Newfoundland and Labrador has been conducted by the CCPFH. Thirdly, while Fisheries and Oceans Canada (DFO) and the DFLR are legislatively responsible for the fish harvesting sector and the processing sector respectively, the search found no government documents focused on recruitment, retention, and training issues for new entrants in the Province.

3. Statistical Profile

This profile provides a count of the number of people working in the fishing industry as well as a count of fishing enterprises and processing facilities. The profile is based on data obtained from four principle sources: (1) publicly released data obtained from federal and provincial governments websites and documents; (2) data obtained the NLPFHCB annual reports to the Provincial Government; (3) secondary data received from the NLPFHCB through a formal OFI data request submitted by Dr. Christine Knott; and (4) secondary data received from DFO, Newfoundland and Labrador Region through a formal request made by Sharmane Allen for her doctoral research. In July, formal requests for secondary data concerning fishing enterprises, fishing licences, processing facilities, processing licenses, and processing employment were sent

to responsible government departments (i.e. DFO and DFLR) but no data have been received to date. To give a geographical perspective on these changes, where possible, they this are delineated by NAFO Division (see Figure-1).

Overall the profile shows that there has been a continuous decline in the number of fish harvesters and processing workers in the province in recent decades, and a corresponding decrease in the number of fishing enterprises and processing plants. A number of factors have contributed to this decline including resource depletion and the subsequent moratoria and restructuring through buy-outs, facility closures, and layoffs in the 1990s; natural attrition through retirement and death; on-going rationalization processes such as enterprise combining and periodic buyout programs; personal decisions to leave the industry to pursue other opportunities; and recent closures of processing facilities and resulting layoffs.



a) Newfoundland and Labrador Certified Professional Fish Harvesters 2016

Since 1997, the NLPFHCBC has been mandated by enabling provincial legislation, the *Fish Harvesters Act*, to register and certify commercial fish harvesters in Newfoundland and Labrador. In 2016, there were a total of 9,334 fish harvesters registered in Newfoundland and Labrador, of which Level 2 harvesters comprised 60%, Level 1 5%, and Apprentices 35% (see *Appendix-A* for fish harvester classification and certification requirements).

A gender breakdown of the 2016 data in *Figure-2*, shows that males comprised 7192 (or 77%) of the total registration, while females comprised 2142 (or 23%). Females represented 8%, 29%, and 48% of Level 2 and Level 1 harvesters and Apprentices respectively. Correspondingly males represented 92% of Level 2, 71% of Level 2, and 52% of Apprentices.

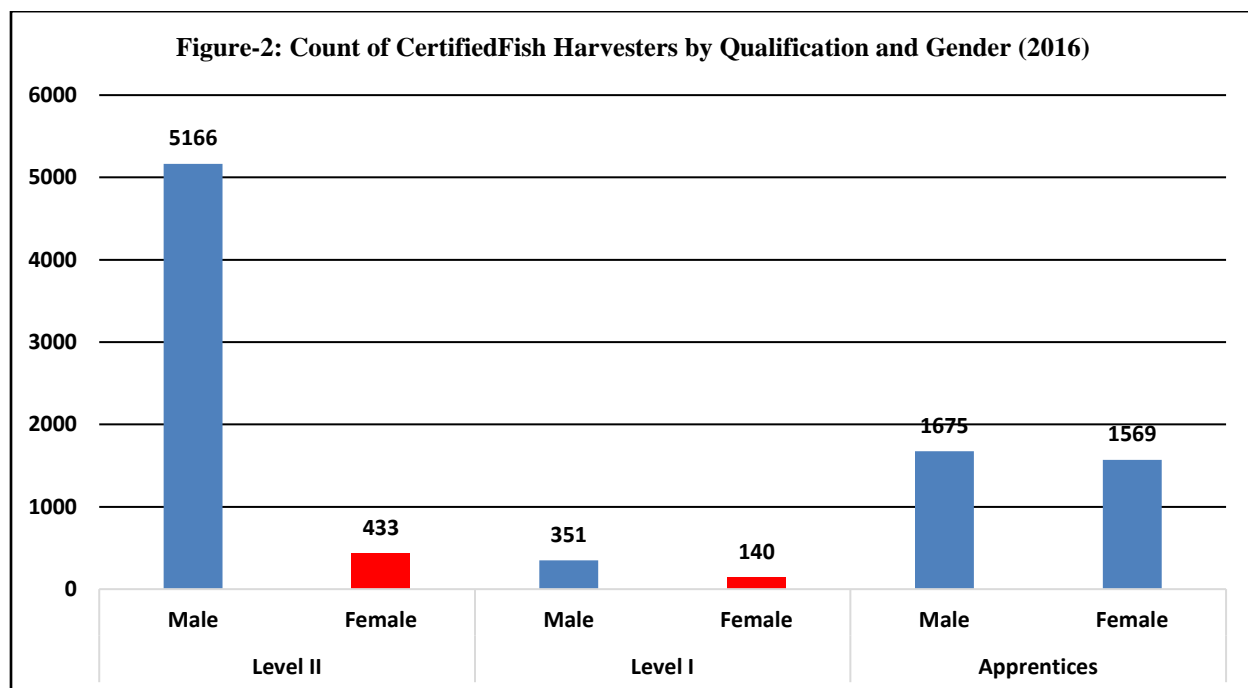
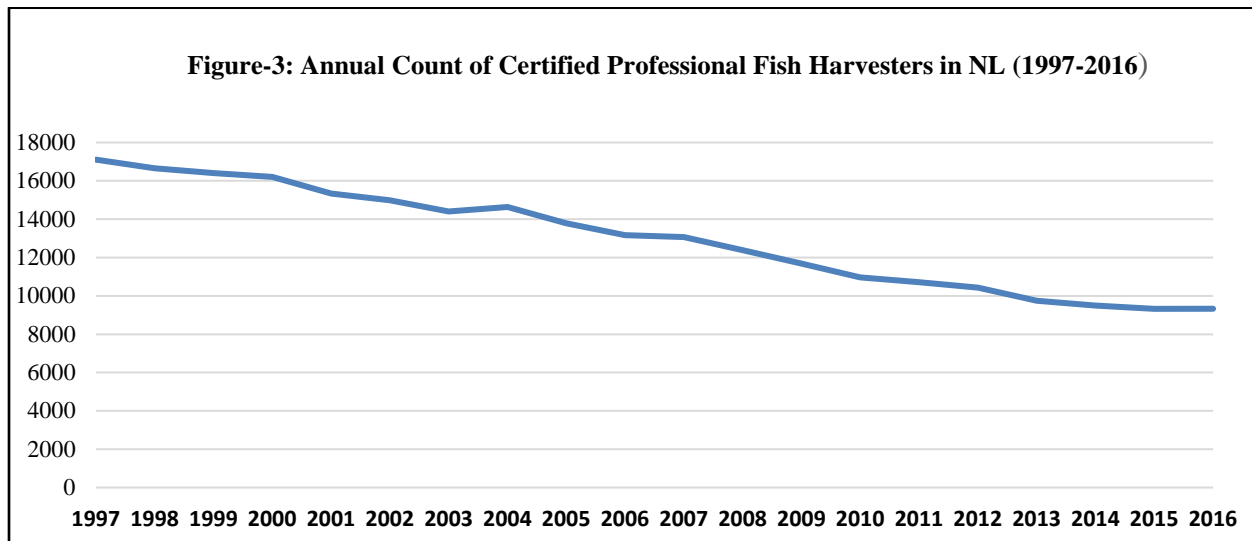


Table-1 shows the age composition of registered harvesters for 2016. For all levels combined 28% were 60 years old or more. The 39-59 age group represented 54% of registrants across all levels, while the 24-39 group and 18-23 group represented 14% and 4% respectively. It is interesting to note that 22% were in the 60+ age category (2626 out of the total 9334) (i.e. 22%) and that among Level 2 harvesters, the percentage in the 60+ age group was 36% for males and 34% for females.

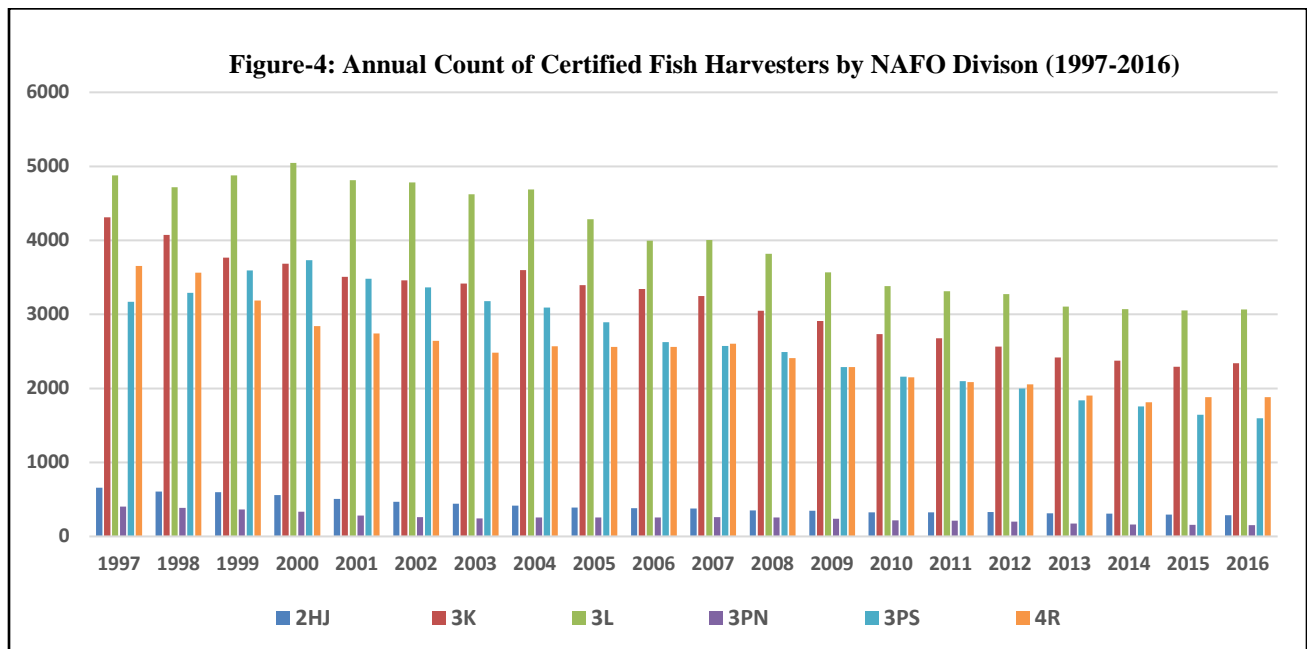
Age	Level II		Level I		Apprentices		Total
	Male	Female	Male	Female	Male	Female	
60+	1880	147	38	39	258	264	2626
39-59	2959	265	194	90	622	896	5026
24-39	316	21	95	10	509	332	1283
18-23	11	0	24	1	286	77	399
	5166	433	351	140	1675	1569	9334

b) Certified Professional Fish Harvesters 1997 - 2016

As *Figure-3* shows there was a 45.4% decline in the number of certified fish harvesters in NL during the period from 1997 to 2016. A number of factors contributed to this decline including retirements, deaths, exits through buyout and combining initiatives, a lack of work, outmigration, and a lack of recruitment. In recent annual reports to the Provincial Government, the NLPFHCB has reported that the number of registered fish harvesters was “leveling out” following several years with a consistent moderate downward trend.²⁴



As *Figure-4* illustrates, during the period 1997-2016, all NAFO Divisions experienced significant declines in the number of certified fish harvesters (i.e. 2HJ -56%; 3K -46%; 3L -37%; 3Pn -62%; 3Ps -50%; 4R -48%).



c) *Number of Active Fishing Enterprises by Fleet*

No current and reliable data on the count of active fishing enterprises over time and by NAFO Division was received from DFO. Data provided by DFO for Allen’s doctoral research depicting the count of Core and Non-Core enterprises could not be reconciled with the data found on the DFO’s national website, and was therefore referred back to DFO, NL Region for verification and explanation.

d) *Decline in Fishing Enterprises*

Data obtained from DFO documents that over the period from 2008 to July 2018, a total of 926 fishing enterprises had left the industry. The inshore fleet (<40 feet) accounted for 585 (or 63%) and the nearshore fleet (>=40 feet) accounted for 341 (37%) of these departures. DFO did not specify the reasons for the decline in number of fishing enterprises but we know that during this period DFO enacted the Self Rationalization Combining Policy in 2007 and several buyout programs.

Table-3: Count of Fishing Enterprises Exiting by Fleet and Year, NL Region (2008-2018p)		
	<40 feet (Inshore)	> = 40 feet (Nearshore)
2008	58	46
2009	60	47
2010	56	22
2011	61	36
2012	42	17
2013	78	50
2014	55	36
2015	48	27
2016	32	23
2017	53	15
2018	42	22
Total	585	341

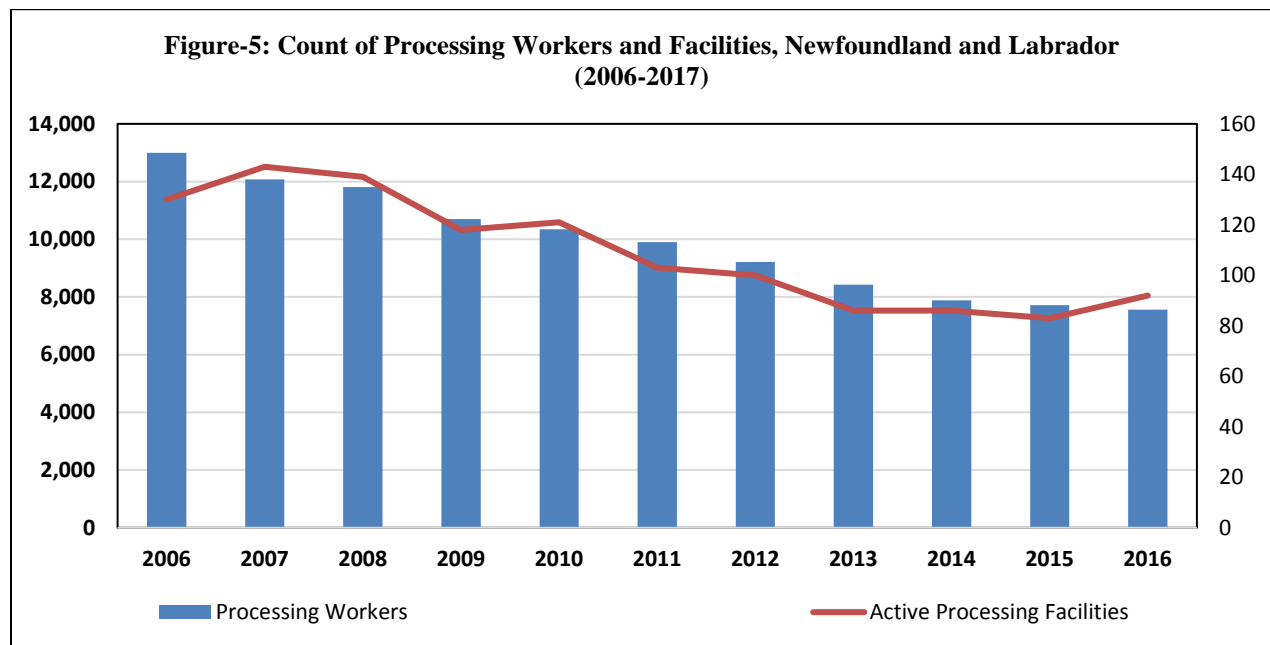
e) *Number of Processing Facilities and Processing Workers*

Based on the provincial Department of Fisheries and Land Resources’ annual publication *Seafood Industry Year in Review* for the period 2006-2017 we were able to obtain comparable data on processing employment and number of active processing facilities for these years.

In 2017, a total of 9,214 people worked in processing facilities. The number of operating facilities totalled 89 (69 primary, 2 secondary, 5 aquaculture, and 12 retail). Over the 2006-2017 period there was a 48% decrease in processing employment and a 38% decrease in the number

of active processing facilities (see *Table-4 and Figure-5*). The publication did not provide gender-based data for the processing sector in any of the years reviewed or data on the age distribution of processing workers or seasonality.

Table-4 Count of Processing Workers and Facilities, Newfoundland and Labrador (2006-2017)					
Year	Processing Workers (wild and aquaculture)	Processing Facilities			
		Primary	Secondary	Aquaculture	Retail
2006	13,000	112	3	4	11
2007	12,080	113	10	5	15
2008	11,805	115	6	4	14
2009	10,705	101	4	5	8
2010	10,340	102	4	5	10
2011	9,902	89	1	5	8
2012	9,214	83	3	4	10
2013	8,427	70	2	3	11
2014	7,881	68	2	6	10
2015	7,721	66	2	5	10
2016	7,557	73	2	6	11
2017	6,780	69	2	6	12



4. Review of the Literature

This section reviews the most pertinent academic literature, industry reports, and government documents found through the search process summarizing what's been said and done in Newfoundland and Labrador in relation to fishing industry recruitment, training, and retention issues. The review findings are supplemented with insights from several journal articles from other jurisdictions (i.e. Canada, Norway, and Great Britain) that have dealt directly with these issues in recent years.

A. *Academic Literature*

Until recently, academic researchers studying fisheries in Newfoundland and Labrador have not focused directly on the recruitment and retention of new entrants in either the fish harvesting or fish processing sectors, nor on the nature of their training needs and opportunities. Most of the relevant research on these issues was done through the CURRA drawing on research done on the Provinces' west coast and Northern Peninsula, and as part of another study that focused on Change Islands in Notre Dame Bay. Combined, these six documents tell us that through a complex of factors, in recent decades the recruitment, retention, and training of new entrants in the fishing industry has been seriously jeopardised. These factors include stock decline and subsequent fisheries closures; government licencing processes resulting in high entry costs; lack of available and/or affordable financing; rationalization policies that terminate or geographically displace opportunities; processing plant closures and layoffs; population decline due to out-migration and low birthrates in rural areas; education curriculum and societal attitudes that are anti-fishing and anti-rural; and the eligibility criteria for professionalization. This work also highlights that recruitment, training, and retention require concerted attention if Newfoundland and Labrador wants to have a vibrant, rural-based fishing industry that contributes to the well-being of coastal people and the continuance of coastal communities. For ease of presentation each document is reviewed individually, beginning with the five CURRA documents.

We begin with the report *Is there a place for youth in fisheries communities? A multiple perspectives discussion* written by Power (2012). This report documented the proceedings stemming from a multi-stakeholder discussion concerning the place of young people in fisheries communities as well as multi- and inter-generational strategies for rebuilding fisheries communities. Not surprisingly, the report highlighted that at that time and in this region, young people did not see fisheries as a viable career option, even though some youth desired to work in fisheries. The report highlighted a number of barriers facing young people entering the fishing industry including: the high cost of enterprises and licenses; enterprise owners' decisions not to transfer their fishing enterprise to their children; a tendency for parents, teachers, and community leaders to discourage entry into the fishery; the negative imagery and stigma attached to both seasonal and fisheries work; and some unintended consequences of professionalization and new training requirements for fish harvesters. Additionally, participants voiced concern about the potential negative impacts of individual transferable quotas (i.e. geographical displacement and concentration of licences and quotas); restructuring through rationalization processes (i.e. continual downsizing and loss of opportunity); trust agreements (i.e. corporate control that compromises the owner-operator policy); and rights-based and business-oriented fisheries policies (i.e. disembedding fisheries from communities). Implicated in

all these concerns were issues related to intra- and inter-generational equity, recruitment prospects, and the sustainability of fishing communities, along with important questions about ‘who owns the fish?’ and “who should benefit from the resources?”

This report also documented possible strategies to address these issues. At a policy level it recognized that any plan to rebuild healthy and vibrant fisheries communities needed to consider both the economic and social impacts of industry restructuring and changes to policy and regulation, along with inclusion of impacts and options for youth, women, and households in general – something that has generally been ignored in past initiatives. In light of the seasonality of the fishing industry concerted attention needed to be paid to value-added, secondary processing; niche marketing; fisheries-related tourism; food security/local markets; and occupational pluralism. Additionally, it was noted that school curriculum should incorporate content on local and international fisheries, and related employment opportunities, while the government should look at decentralizing fisheries science and management employment with a view to attracting youth. The introduction of a youth quota to address recruitment issues similar to the initiative in Norway was also discussed as a possible strategy. By way of conclusion this report stated that “... [m]ore research is needed to examine strategies to attract young people to fisheries-related work, and the impact of regulatory changes and restructuring on youth recruitment and retention and on the vibrancy of the fisheries communities.”²⁵

In 2013, Neis, Gerrard, and Power published the article *Women and children first: The gendered and generational social ecology of smaller-scale fisheries in Newfoundland and Labrador and northern Norway*. From a social-ecological and social generation approach, this article engaged results from a comparative study using a mixed-methods approach to understand gender and intergenerational issues in small-scale fisheries (i.e. re-examination of findings from earlier publications on the gendered and generational effects; updated administrative data; focus groups; media reports; observations; field research). In addition to supporting the general discussion captured in Power’s workshop report, the article demonstrates the drastic decline in employment in both the processing and harvesting sectors in the wake of stock collapses and fisheries closures during the 1990s, and subsequent and on-going downsizing processes intended to reduce capacity (processing facility closures, buy-outs, and tradable quotas). The article puts forth the argument that these downsizing processes have weakened the resilience of small-scale fisheries and fishing communities by being essentially blind to the effects on households, women, and on inter-generational dynamics. For example, these processes have generally failed to recognize the value of household strategies (e.g. occupational pluralism, multi-species, access to social security), the inherent gender bias involved in allocation policies related to licences and quota, and the impacts of the on-going loss of processing jobs where women and youth have traditionally worked. Likewise, the article points out that the value of historical patterns for the entry of youth recruitment into the fishery industry via kinship ties and on-the-job training has been ignored and disrupted. In recent years, Norway has recognised these issues to some extent by establishing youth quotas; compulsory maritime school-based training; and a limited recruitment quota system, as well as documenting how regulations and the quota system have caused gendered inequalities. However, for those crew who want to transition from crew to enterprise owner in Norway, the high cost of buying an enterprise (e.g. boat, gear, licences and quotas) remains a barrier. The article notes that no meaningful government-supported recruitment program for young harvesters in Newfoundland and Labrador has been initiated. The authors argue that unless concerted attention is directed to understanding and addressing on-

going gender inequalities and recruitment failure, small-scale fisheries may be at or approaching a tipping-point could lead to their demise in the near future.

In the 2013 CURRA paper *Globalization, Fisheries, and Recovery*, MacDonald, Sinclair and Walsh focused on the factors at play in "...fisheries and fishing-dependent communities of western Newfoundland in the context of broader regional and globalization processes, especially those affecting labour markets and markets for fish products". Based on secondary data sources and documents, as well as interviews with key policy, union, and industry informants, this paper addressed an array of issues including population and labour trends; pull factors and labour migration; skills training and local opportunities in tourism and service industries; marketing chains and international markets. However, of particular importance to this 'taking-stock' exercise were insights into recruitment and retention into the harvesting and processing sectors. According to interviews with fish harvesters in the region, harvesters did not feel that there was a recruitment issue at the time. Instead the issue was the ability to afford and retain existing crew due to falling earnings and prices causing some to participate in 'buddy-up' arrangements with other enterprise owners and/or take on their wives as crew to cut back on crew expenses. However, the report warned that in the longer term there would be a serious recruitment issue given the regional demographics showing that very few young people were entering the harvesting sector; the pull factors from other industries that offered higher pay and more stability; the lack of intergenerational transfer of fishing enterprises; and the costs associated with buying a fishing enterprise. The report also predicted that recruitment issues were imminent in the processing sector. Not only had processing opportunities for youth decreased in the region due to plant closures and downsizing since the groundfish moratorium, seniority rules also limited recruitment. The supply of labour to processing had also been impacted by employment opportunities elsewhere, and the fact that the region had a whole generation of young people who had been encouraged to stay away from the fishery especially processing work. Interestingly, some in both the harvesting and processing sector supported the idea that recruitment and retention issues could be addressed somewhat through continued rationalization processes (e.g. enterprise combining, buyouts, closure of processing facilities, and layoffs) in that these would reduce the numbers of existing participants eventually increasing the income and season length for those who remained consequently making the industry more attractive for new entrants in the future.

In the article "*The fishery went away*": *The impacts of long-term fishery closures on young people's experience and perception of fisheries employment in newfoundland coastal communities*, Power, Norman, and Dupré also argue that "[s]tock collapses and subsequent downsizing and regulatory changes in the industry have disrupted intergenerational continuity in fisheries work and shaped how young people view their communities and options".²⁶ Using combined elements from a social generational perspective; rebuilding imperative from fish chain analysis; and social-ecological, psychology and mental health literatures, these authors used a mixed methods approach including focus groups, interviews, photovoice, and an online survey to investigate young people's experiences and perceptions of the fishing industry and its future prospects. In general, their findings indicate that youth generally have negative perceptions and descriptions of the fishing industry. They saw few if any opportunities in fisheries for youth and reported that they had been encouraged to leave their communities by their parents and others to pursue educational and employment opportunities in more urban or distant places. The authors conclude that their "... findings are consistent with statistical data on age trends in the fisheries

labor force in that they show few young people have entered fisheries, they have very limited experience working in the industry, and few opportunities to do so even if they wanted to.”²⁷ Despite these findings; however, the authors noted that there were some young men who viewed the fishery as a potential employment option; that there was evidence that family connections continued to be an important way to enter fisheries-related work; that some rural youth harboured a sense of emotional connection to their fishing communities and considered the fishery important to them personally, as well as to their families and their communities; and that there were potential, untapped synergies between fishing and rural tourism that may be attractive to youth as career options. The authors conclude by saying that although their research demonstrates that intergenerational continuity in the fishery has been severely disrupted in recent decades, there are strengths upon which government and industry could establish socially and economically-based strategies to support the entry of young people into fisheries work and in turn to foster resiliency in the Province’s fishing industry and coastal communities.

Although not a part of the CURRA, the 2014 article *The last generation? perspectives of inshore fish harvesters from Change Islands, Newfoundland* by Smith, Vodden, Woodrow, Khan, and Fürst, resonates with its concerns and findings concerning recruitment issues and the consequences for resiliency of small-scale fisheries and rural communities. The research was grounded in a participatory action research framework and used in-depth interviews with fish harvesters; participant observation; and kitchen table mapping to examine the perspectives of fish harvesters on key challenges facing the inshore fishery in Newfoundland and Labrador. In addition to concerns about ineffective fisheries regulations; low prices for their catches and limited market access; and policies and practices that favour the larger nearshore fleet as opposed to the smaller-scale inshore fleet operations, the fish harvesters of Change Islands are concerned about DFO rationalization policies that continued to reduce their fishing fleet as well as create barriers for possible new entrants due to the cost of purchasing an enterprise. The researchers and research participants conclude that the combined effects of these fishery-related factors along with youth out-migration and the aging population, are threatening the long-term viability and survival of fishing-dependent communities throughout the Province and requires attention. While the authors acknowledge that measures such as owner-operator policy and tax relief for family enterprise transfer have been beneficial to the fishing industry they recommend a policy review and assessment concerning recruitment into the harvesting sector is warranted at the provincial level. They also recommend that (a) priority licensing for those people living adjacent to the resource, and regional balancing of quotas, should be recognized and accommodated; (b) that multi-species enterprises should be encouraged through licensing and consideration in setting opening and closing dates; (c) that similar to Norway’s approach that DFO set aside a portion of quotas exclusively for new entrants; and (d) some sort of distance education courses on practical aspects of navigation and boat safety, as well as a stronger relationship with postsecondary institutions in the province be established.²⁸

The 2014 CURRA policy paper, *MOVING FORWARD - Building Economically, Socially and Ecologically Resilient Fisheries and Coastal Communities* by Neis and Ommer (in association with a steering committee),²⁹ was based on the accumulation of knowledge gathered through the CURRA initiative, including the *International Symposium on Rebuilding Collapsed Fisheries and Threatened Communities* held in October 2012. Among other things, this report acknowledges the challenges faced in the Province’s fishery in the wake of the groundfish collapse in the 1990s. However, it argues that the continued resilience of the fishery

and fishing-dependent communities is in serious jeopardy due to (a) unfounded claims that our fisheries are broken and the best way to fix them is to implement unfettered individual transferable quotas (ITQs); (b) pressures to get rid of the Owner Operator and Fleet Separation Policies that limit vertical integration of the harvesting and processing sectors; and (c) the fisheries being undervalued by all levels of government, leaving them vulnerable to policy failure.³⁰ According to the authors, "...that vulnerability will deepen unless we shift our emphasis from downsizing to revitalizing our fisheries and coastal communities, investing particularly in our small- and medium-scale fisheries and coastal communities."³¹

The paper goes on to build its argument in six chapters. The first chapter provides a statistical and information overview of the Province's marine fisheries and coastal communities. The second chapter provides an examination of the dominant argument that the NL fishery is broken and requires intervention to support greater vertical integration through the fuller commodification of access rights. This chapter also looks at the consequences of this intervention for coastal communities, conservation, and recruitment of new entrants. Chapter 3 examines the inherent strengths of the fisheries and fishery-dependent communities including the network of communities; the strengths in the fishing and seafood processing; and the benefits of species and industry diversity (including aquaculture). The chapter also identifies the importance of the owner-operated fleet and its role as the economic engine of growth for our coastal communities; as well as the role and significance of investment in fisheries-related infrastructure, professional knowledge and research, the different levels of government and industry organizations involved in fisheries governance. The fourth chapter focuses on the real vulnerabilities that exist in the fishing industry and fishery-dependent communities, including population decline; plant closures; reductions in the labour force; cuts in funding to municipalities and the public sector in rural areas; and the absence of strong regional governments. It also identifies problems in the fishing industry including processing practices that focus on the mass production of a narrow range of species and export markets instead of establishing new niche markets and looking at new opportunities related to pharmaceutical, nutraceutical, cosmetic and other kinds of products that offer the potential for economic diversification in rural areas. Additionally, there are regulatory and other barriers preventing synergies between fisheries and other sectors, particularly tourism, as well as vulnerabilities in the sustainability of marine and coastal knowledge and regional governance due to lack of recognition and investment. In chapter five, the authors provide a list 22 recommendations. Figure-5 provides a list of those recommendations applicable to recruitment, training, and retention. Among other things, the report concludes with the message that the Province's fisheries are not broken—but they are fragile, and much work and investment is needed to secure its future and that of fishing-dependent communities.

Figure-5: CURRA Policy Framework Recommendations Relevant to Recruitment, Training, and Retention

Recommendation 4. The new policy framework should include a carefully developed strategy for supporting the viability of small and medium-scale owner-operator enterprises. This should include attention to the intergenerational transfer of harvesting and processing enterprises and their assets in a way that ensures these are retained, wherever possible, by people living and working in the regions adjacent to the resources on which they rely. Developing this will require a labour market study of employment and recruitment, since both of these are essential to revitalization.

Recommendation 21. Governments, schools and other institutions should encourage young people's interest in, and entry into fisheries, encouraging them to get the on- and off-water training they will need to thrive in this complex and challenging industry.

Recommendation 22. The governments, the FFAW and the industry should recognize that young people have key skills and assets that could play a crucial role in revitalizing our fisheries and develop strategies to incorporate those assets and skills into the revitalization process.

Recommendation 22a. That policy framework (Recommendation 1) might include the creation of special licences or quotas for young people, as has been done in Norway, to give them a chance to get on the water and experience fisheries while receiving some financial compensation for their apprenticeship work.

Recommendation 22b. The policy framework should give high schools in fishery-dependent regions the resources to encourage their students to undertake projects related to the promotion of stewardship, economic diversification, entrepreneurship, and other aspects of our fisheries. Such encouragement is already happening to some degree through the work of the FFAW but should be much more widespread.

Source: Neis, B. and R. Ommer. (2014). *MOVING FORWARD - Building Economically, Socially and Ecologically Resilient Fisheries and Coastal Communities A Policy Paper*. http://www.curra.ca/policy_brief.htm

Finally, in their report *Opportunities for and challenges of occupational pluralism in seasonal fisheries: Regional cases from Atlantic Canada* submitted to the Canadian Council of Professional Fish Harvesters' (CCPFH)³², Foley et al. discuss the ways in which occupational pluralism (OP) may address issues related to recruitment and retention of fish harvesters, both owner-operators and crew. OP was defined in the study to include practices of combining fisheries employment with employment in other enterprises, other marine sectors and outside the marine-sector, both locally and elsewhere. Researchers conducted focus groups and interviews with harvesters and stakeholders in Atlantic Canada and found that while current labour shortages in seasonal fisheries do not appear to be a problem in the region, intergenerational recruitment was identified as a future issue. As with other research, the authors found that the high cost of enterprises and licenses and changes in the industry that serve to undermine the owner-operator and fleet separation policies (e.g., consolidation and financialization of quotas) are challenges to recruitment and retention. They also found a tension "within the industry about the rights and expectations of the current generation in transferring their assets through market principles (e.g. sell/market to the highest bidder) versus intergenerational equity principles (e.g. support for the next generation to enter the fishery by transferring enterprises from father to son

or daughter at a reduced cost).”³³ When asked if OP could be a strategy to address recruitment and retention issues, participants, on the one hand, recognized the practice as widespread in the industry, especially among younger harvesters and crew members, and on the other, worried that access to crew could be made more difficult if they found better employment options outside fishing. Harvesters pointed out that focusing on OP as a strategy to address recruitment and retention issues directs attention away from problems in the industry itself, which require interventions at the level of fisheries management “to improve access to resources/quotas and reduce the volatility or patchiness of fisheries seasons (down times within and between seasons for different species) and lengthening the overall fishing season.”³⁴

B. Fishing Industry Literature

Many of the CURRA’s findings and recommendations resonate with findings in reports released by the CCPFH in 2005 and 2018. We start with an overview of the 2005 report, *Settling a New Course – Phase II Human Resources Sector Study for the Fish Harvesting Industry in Canada*. Arguably, at the time of its release, this report along with a series of supplementary reports, was likely the most comprehensive research ever focused on issues related to recruitment, training, and retention in the owner-operator fleet. According to the report, the objectives of the research were (1) to assess current and future demand and supply trends for skilled labour in the fish harvesting industry; (2) to identify and analyze constraints on the capacity of the industry to meet the changing demand for skilled labour; (3) to identify changes in the mix and levels of skills required of the labour force and constraints on ongoing acquisition and updating of these skills; and (4) to recommend appropriate policy and programmatic responses to address the issues and challenges associated with current and future demand for skilled labour to the industry.³⁵ The research was conducted over the period of October 2003 to February 2005, and was carried out by PRAXIS Research Inc. with oversight by the Project Advisory Committee comprising representation from harvester organizations, academic researchers, independent experts, the Department of Fisheries and Oceans (DFO) and Human Resources and Skills Development Canada (HRSDC). The study engaged a mixed-methods design and included secondary census data; a telephone survey; key informant interviews and consultations; focus groups & workshops; international study tours and a literature review; financial analyses; and community case studies. Although this was a national study with Newfoundland and Labrador aggregated into the Atlantic Region, where necessary the report highlights data and issues particular to the Province and one of the supplemental reports is a case study of the Burin Peninsula.

A key finding of the report relating to this ‘taking stock’ exercise, was that it predicted that the “...industry would be entering a period of great change, if not crisis, in the sustainability of the labour force.”³⁶ This finding was linked to four major drivers: demographics, the changing status of crewmembers, reduced fishing opportunities, and rising licence costs. The demographics indicated that fishery labour was aging, and a significant proportion of the enterprise owners would be retiring in the foreseeable future. This did not bode well for an industry where recruitment had been low since the 1990s. The report also identified issues with regards to maintaining crew due to low and unpredictable wages, shorter seasons, hard physical work, and inherent dangers. So, despite the promise and benefits of professionalization and the

promised economic benefits of a more rationalized fishery (i.e. increased wages and longer seasons), the report suggested that crew were increasingly socially and economically marginalized in some fleets. The report also highlighted the negative connection between reduced fishing opportunities and the ability to provide on-the-job training and experience to new recruits which ultimately could impact satisfaction and therefore retention rates. Likewise, new entrants with aspirations to be an enterprise owner faced the reality of financial barriers associated with the purchase of fishing licences and quotas, something not incurred by the older generations of fish harvesters. Similar to the CURRA, the report acknowledged that the:

“... emerging crisis in the fishery labour force is both a contributor to, and a result of, wider socio-economic and demographic trends in coastal-rural regions. The loss of fishing employment and incomes contributes to local decline, but rural communities in general face growing difficulties holding onto young people who are staying in school longer and opting for better paying, year-round jobs in urban areas. The aging labour force everywhere means greatly increasing demand for skilled trades workers in many sectors. Young people have attractive careers options to choose from and will not stay in fishing if the industry is not on a par with other occupations in terms of incomes and secure futures. Employers in both fish processing and harvesting are now reporting difficulties finding and retaining workers, a problem that few had to face in the past.”³⁷

There were also other findings in the report related to recruitment, training, retention, and intergenerational transfer. For example, when asked what mechanisms would make it easier for new entrants to purchase a fishing enterprise, 44% of Atlantic captains said low interest loan programs, loan board, tax relief. Other less frequently selected options included control of licence and quota prices; that government stop buying licences for First nations; and government prevent processors and fish buyers from buying licences. The last two mechanisms were seen as ways to stop the ‘special interest purchasers’ from putting upward pressure on the market prices for licences and quotas. Interestingly, 20% of fishing captains suggested they did not know what could be done and 5% suggested that nothing should be done.

Atlantic enterprise owners and crew were asked a series of questions related to education and training. The results showed that many enterprise owners were not interested in taking courses; that they questioned the value and practicality of training courses; and did not think the courses were necessary given they already knew the information or had learned it on the job or from family. The enterprise owners from Newfoundland and Labrador indicated that if courses were offered locally and cost less then that would promote more uptake. Factors that contributed to a lack of crew interest in training included: training not necessary – already knew it; learn on the job or from family; training had no value; high costs associated with training; literacy issues; course not offered locally; saw no future in fishery, and age. Crew were also asked about their future plans and for those who didn’t, the main reasons why they had no plans to own a fishing enterprise. Forth-eight percent of Atlantic respondents stated that they could not afford the costs of buying an enterprise because the prices for licences and quotas were too high. With regard to intergenerational transfer, 58% reported they wanted to keep the enterprise in the family, while

30% said their objective was to get the highest possible price, and 13% indicated their objective was to keep the license in the community (not family). The report noted that while the responses to this question were relatively consistent across fleets and regions, 47% of those surveyed in the inshore fleet (<35') in Newfoundland and Labrador intended to sell their enterprise to the highest bidder.

It was clear from the report that the CCPFH wanted DFO to strengthen and enforce the Owner-Operator and Fleet Separation policies in order to address trust agreements and to curb the related upward pressure on the cost of fishing licences. Likewise, they wanted DFO to bring forward its long-awaited policy document on professionalization. The report concluded there was sufficient interest to support building training programs for the industry given the right mix of programs and supports for participation, and if issues related to access and affordability were addressed. The report suggested that the industry explore options to encourage “occupational diversity” given challenges associated with shorter fishing seasons, and limited fishing opportunities, as well as recruitment and retention issues. And lastly, the report recommended that the “...Government of Canada, in partnership with fishing provinces ... establish clear and coherent goals for the future of community-based owner-operator fisheries and put in place specific policy and program instruments to achieve these goals.”³⁸

In August 2018, the CCPFH released another in-depth report entitled ***Fisheries Seasonality and Allocation of Labour and Skills. Labour Market Information Study***. According to the accompanying news release, the objectives of the report were (1) to analyze and report on current demographic and labour market trends and future outlooks for Canada’s fish harvesting labour force; (2) to identify and assess strategies to meet looming labour supply challenges and to manage the impending large-scale intergenerational transfer of fishing enterprises; and (3) to identify and assess strategies to attract new labour supply for seasonal employment in fish harvesting and other rural-seasonal industries.³⁹ Similar to the 2005 research process, this was a multiple methods research initiative that included a review of research and policy literature; a survey of fish harvesters; analysis of Statistics Canada tax filer and census data; analysis of Employment and Social Development Canada labour market outlook data; community case studies; assessment of fish harvesters’ transferable skills; and a special study on employment Insurance policy and regulations.⁴⁰ The major findings of this research are contained in *Figure-6*.

Figure-6: Major findings of the 2018 CCPFH report “*Fisheries Seasonality and Allocation of Labour and Skills. Labour Market Information Study*”

- With expanding global demand for seafood products, the commercial fishing industry in Canada faces a bright future as a leading economic growth driver, outperforming other agrifood sectors in rates of increase in business revenues and value of exports.
- With declining and aging populations in most coastal/rural regions, and 40% of the current fisheries labour force – both enterprise owner-operators and crew – now reaching retirement age, the most serious limitation on this economic growth potential will be critical shortages in skilled labour.
- The rapidly rising market value of fishing licenses and quotas is a barrier to intergenerational transfers and a serious constraint on attraction and retention of career-minded new entrants. This trend also threatens the Government of Canada’s renewed commitment to Owner-Operator and Fleet Separation Policies in Atlantic fisheries.
- Some 40% of Canadian fish harvesters work in other jobs to support themselves and their families during non-fishing seasons. Given looming labour shortages across rural economies, there are opportunities to encourage more such “occupational pluralism” to make employment in seasonal industries more attractive and rewarding.
- Meeting these labour supply challenges will require extraordinary efforts, innovative approaches and expanded collaboration by and among employers, industry organizations, training institutions and government agencies. The report identifies and elaborates on three broad strategic directions:
 - Innovations in fleet structures and fisheries management policies and planning to improve enterprise viability, extend fishing seasons and enhance capacities to compete for new labour supply;
 - Concerted efforts to inform young people in rural regions and other potential new entrants (e.g., Indigenous youth, international immigrants, etc.) about expanding career opportunities in the fishing industry, to increase training and apprenticeship opportunities, and to improve access to capital for intergenerational transfers of fishing enterprises.
 - Innovations in education, training and labour market information programs, and in Employment Insurance policies, to facilitate occupational pluralism for fish harvesters in ways consistent with current licensing policies and professionalization standards.

Source: CCPFH: <http://www.fishharvesterspecheurs.ca/about/media/towards-sustainable-growth-canadas-fishing-industry>

In addition to its overall findings which apply to commercial fisheries across Canada generally, this report provides very insightful research findings specific to Newfoundland and Labrador.

(a) Age Profile of Fish Harvesters:

Data from the 2001 and 2016 Census of Canada Household Surveys provides evidence of the demographic changes in Province’s fishing industry. Using the survey data, the CCPFH constructed a table comparing changes in the proportional sizes of four age groups for two occupational groups applicable to commercial fisheries (1) ‘fishermen/women’ which includes fishing enterprise owner-operators and the majority of fishing crew who receive catch-share income and qualify for Employment Insurance fishing benefits; and (2) ‘deckhands’ who typically represent people who work for regular wages and may qualify for regular Employment Insurance benefits. The report assumes that some of the deckhands may be younger than the other category since few of these individuals would be enterprise owner-operators. As well, some deckhands may work on larger offshore fishing vessels.

In general, *Table-5* shows that over the 2001 to 2016 period, there has been a dramatic shift in the age composition of the Province’s fish harvesters. According to CCPFH’s commentary on the data for the ‘fishermen/women’ category, the workforce under 45 years of age was reduced by 50%, and the over 54 group increased threefold as a proportion of the fishing workforce. Similar patterns were evident for the ‘deckhand’ category. There was a significant drop in the under 30 years category and increases in harvesters over 54 years of age. Combined, these results prompted the CCPFH report to claim that the aging of the fish harvester’s workforce was most dramatic in Newfoundland and Labrador compared to the rest of Canada. ⁴¹

Table-5: Changes in the age profiles of ‘fishermen/fisherwomen’ and ‘deckhand’ labour force, Newfoundland and Labrador (2001 to 2016)								
	< 30 Years		30 to 44		45 to 54		Over 54	
	2001	2016	2001	2016	2001	2016	2001	2016
Fishermen/Women	19%	8%	45%	23%	27%	37%	9%	32%
Deckhands	31%	15%	44%	22%	20%	26%	5%	37%

(b) Crew Shortage

In the 2015 CCPFH telephone survey, enterprise owners in the Atlantic Provinces and Quebec were asked ‘how difficult has it been for you over the past two years to find the experienced crewmembers you need in your fishing operations?’ The results showed that recruitment and

retention of crew members appeared to be a challenge in Newfoundland and Labrador, with nearly half of all respondents reporting some levels of difficulty (very easy 30%; somewhat difficult 12%; very difficult 35%).

As a supplemental open-ended question, the enterprise owners were also asked ‘why it might be more difficult to find and retain needed crew’. Though the answers were not presented for the individual provinces, the aggregated responses for Atlantic Canada and Quebec are noteworthy. Eight-four percent of enterprise owners responded that people wanting more weeks of work, or longer seasons, than is typical of fishing employment. Other reasons included, people are looking for higher incomes than are typically offered in the fishery (32%); fewer young people interested in fishing 26%; and more crew members reaching retirement age (7%).

(c) Labour Shedding

The CCPFH report that the “...fishing industry has been shedding labour since the early-1990s, long enough to substantially shrink the family and community catchment areas from which new labour supply was traditionally drawn.”⁴²

As **Table-6** shows, the Province has seen a dramatic reduction in its fishery harvester labour force over the 2000 to 2015 period. As the CCPFH report noted, this reduction of nearly 50% occurred well after the groundfish moratorium, and reflect “...retirements from small vessel fleets, the draw of jobs in Western Canada, and the impacts of fleet restructuring initiatives. The relatively greater drop in wage employment may be due to fewer jobs in company-owned offshore vessels and a preference to access Employment Insurance fishing benefits rather than regular EI benefits.”⁴³

Year	Waged Employment	Self-Employment	Total	Percent Self-Employed
2000	4,879	14,035	18,914	74%
2015	913	8,891	9,794	91%
% Change	-81%	-37%	-48%	

Note: Fishing incomes are tracked in two categories of employment: - harvesters who work for regular wages and may receive regular EI benefits, - those who receive crew shares and report income through self-employment, and may be eligible for special EI fishing benefits (CCPFH, pp. 38)

(d) Aboriginal Participation

As **Table-7** shows, over the 2001 to 2016 period, the number of aboriginal fish harvesters in the Province has increased by 285 (or 70%) and now represents 9% of the total fish harvester population. The CCPFH report noted that “...given that Indigenous communities often have

Table-7: Aboriginal participation in the commercial fishery, Newfoundland and Labrador (2001-2016)			
	2001	2006	2016
Aboriginal Fish Harvesters	405	500	690
Aboriginal Fish Harvesters as Percentage of Total Fish Harvester Population	2%	3%	9%

higher birth rates and larger populations of youth than non-indigenous rural communities, they represent a potential source of new labour supply if barriers to their greater participation can be overcome.”⁴⁴

(e) Income Trends

Table-8 and **Table-9**, show average fish harvesters’ income from all sources. **Table-8** represents predominantly crew who receive wage income from fishing. **Table-9** represents enterprise owners and crew whose income is categorized as ‘self employment’. As the CCPFH report notes, the “...economic shocks that hit the industry in the 2000 to 2009 period sharply undercut harvester incomes, while the resurgence in the value of exports and landed values since 2009 has more than reversed the losses.”⁴⁵

Table-8: Fish Harvesters Earnings from ‘Fishing Wage Income’ and Others Sources, Newfoundland and Labrador (2000-2015) (2015 constant dollars)						
Year	Fishing Employment	Non-Fishing Employment	Employment Insurance	Dividend	Other Non Employment	Total
2000	\$18,923	\$2,345	\$7,993	\$1,415	\$1,415	\$30,760
2009	\$12,783	\$4,922	\$8,157	\$3,182	\$3,182	\$29,498
2015	\$24,074	\$7,381	\$1,030	\$3,725	\$3,725	\$44,122
Change 2000-2009	27%	215%	-1%	1126%	163%	43%
Change 2009-2015	88%	50%	-3%	127%	17%	50%

Table-9: Harvesters Earnings from ‘Self Employment Income’ and Others Sources, Newfoundland and Labrador (2000-2015) (2015 constant dollars)						
Year	Fishing Employment	Non-Fishing Employment	Employment Insurance	Dividend	Other Non Employment	Total
2000	\$13,092	\$1,126	\$10,812	\$96	\$996	\$26,117
2009	\$12,937	\$2,675	\$14,148	\$299	\$2,267	\$32,326
2015	\$29,399	\$4,545	\$15,336	\$929	\$3,563	53,773
Change 2000-2009	125%	304%	42%	872%	259%	106%
Change 2009-2015	127%	70%	8%	211%	57%	66%

(f) Seasonality of Fishing Industry

The CCPFH report indicated that it “...generated consistent and convincing evidence, both quantitative and qualitative, that seasonality in fisheries employment is a significant barrier to recruitment and retention of new labour supply.”⁴⁶ Census data for 2010, showed that ‘skippers/fishermen’ in the Province averaged 18.6 weeks of work, while ‘deckhands’ worked 25.4 weeks.

C. Supplemental Insights

As a supplement to the literature concerning Newfoundland and Labrador, this section identifies interesting insights and ‘food for thought’ from four articles pertaining to recruitment, training, and retention in other jurisdictions (three from Norway and one from the United Kingdom). The article by Johnsen and Vik (2013), *Pushed or pulled?? Understanding fishery exit in a welfare society context*, presents findings from quantitative survey research investigating the factors that push and pull fish harvesters to and from the industry. The research concludes that these factors may be relational, contingent, complex, multiple, and heterogenous. So for example, their results show that “...there were several reasons behind the reduction in the number of Norwegian fishers in the period between 1990 and 2005 and these did not support the simple hypothesis that was presented in the public debate in Norway that fishers were mainly forced out of the fisheries,” and that factors described as “... social, related to family, working hours and leisure time, [were] reported to have had a considerable impact on the former fishers’ choices.”⁴⁷ This paper serves as a warning that we should not assume to know the reasons why people choose to join or leave the fishery, and that both push and pull factors should be explored while paying attention to the broader societal context.

The article by Sønvisen (2013), *Recruitment to the Norwegian fishing fleet: Storylines, paradoxes, and pragmatism in Norwegian fisheries and recruitment policy*, posits that the

recruitment discourse in Norway can be divided into three camps: (1) the profitability storyline that argues that recruitment problems are caused by low fleet profitability and a combination of closures, while capacity reduction and restructuring processes are seen as solutions; (2) the community storyline which argues that recruitment problems are caused by fleet restructuring policies and remedies must involve active recruitment, reallocation of licences and quotas, and better funding and debt solutions; and (3) the pragmatic-fisher storyline that argues for a compromise between the profitability and community approaches. What are the implications for research and policy when these divergent and often antagonistic storylines exist in fishery industries (as they do in Newfoundland and Labrador)? Sønvisen warns that where the profitability and community storylines coexist it may result in the creation of a pragmatic and contradictory recruitment policy that reflects both ideologies, with the result being "...incoherent recruitment policies and poorly defined policy objectives." ⁴⁸

The article by Sønvisen, Johnsen and Vik (2011), *The Norwegian coastal employment system: what it was and what it is*, also has implications for this 'taking stock' exercise in terms of how recruitment, training, and retention issues are framed, researched, and remedied. This article suggests that given the tremendous changes to commercial fisheries in recent decades, recruitment issues and solutions should be looked at through the lens of the modern *Fisheries Employment System* that they propose instead of the long-regarded *Coastal Employment System* proposed by Jentoft and Wadel in 1984.⁴⁹ According to the authors, the later system framed the employment system as a "... holistic and interdependent system in which recruitment functioned as the crankshaft."⁵⁰ It operated in a context where access to the local fishing fleet depended on belonging to the social network of the local community; where fish harvesters were not inhibited by a barrage of government and industry regulations that constrained mobility and adaptive practices; and where experiential learning was based on primary. In contrast, today's fishery tends to be disembedded from community networks; entry is restricted by fishing rights in the form of regulatory licences and the associated costs; social networks are smaller, and formalized and standardized training is required. Thus, instead of the outmoded Coastal Employment System, the authors see a new Fisheries Employment System has taken firm root. This system is based on "... new types of actors, such as politics, science, technology, finance and banking and health authorities, which become central to the system," reflecting the "...bottom line that contemporary employment and recruitment strategies are less connected to the traditional coastal communities."⁵¹ The authors suggest that this new employment system will have consequences for coastal communities, as well as the framing of recruitment, training, and retention issues and policies.

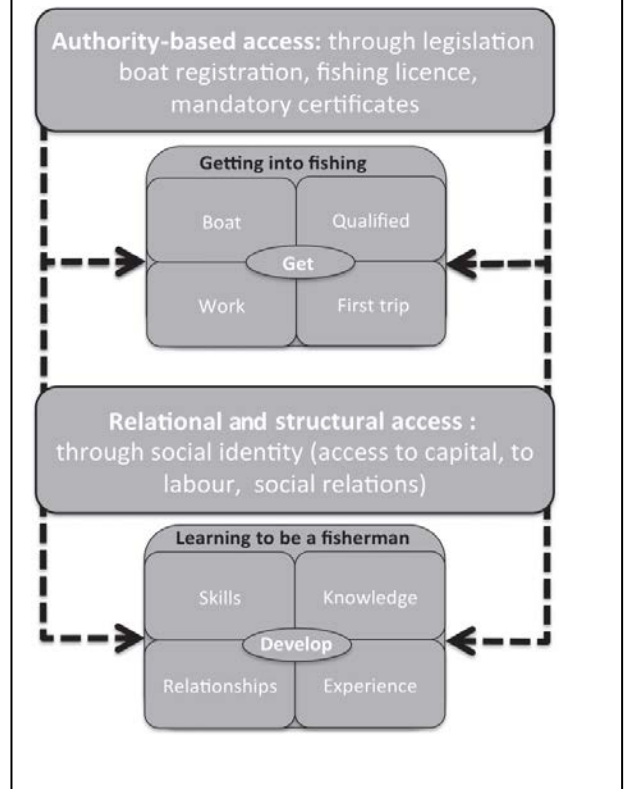
In a follow-up study in 2015, Sønvisen, Johnsen and Vik (2017)⁵² found that the pattern they described based on data from 2007 in the above mentioned papers were even more prominent. As in 2007, few boat owners reported recruitment problems and high incomes in the sector seem to be attractive for Norwegian youth. On the community side, however, they report major changes. Not only had the coastal employment systems changed, but it is also evident that coastal communities are more diverse than they used to be. Traditionally, the employment system has been described as a close-knit network of fish harvesters, their families and the local communities composed of local processing industries, schools etc. Gradually these networks are changing. One core question has been whether these networks are being replaced by market mechanisms and whether recruitment takes place through new types of labour markets rather than local networks. The findings from both 2007 and 2015 indicate that there remains a strong element of what we might call network recruitment to fishing through family, community, and

professional networking, but these networks have expanded outside the geographic “fishing community” with branches to family networks and villages outside Norway. Historically, Faroese and Icelandic fish harvesters recruited through social networks have been crewmembers on Norwegian fishing boats for decades. Nowadays, Norway is experiencing an increase in fish harvesters from for example Lithuania, Latvia, Estonia and Poland, countries that are part of the same economic area as Norway and where free movement of labour is possible.

The final paper is by White in 2015, entitled *Getting into fishing: recruitment and social resilience in north Norfolk's 'Cromer crab' fishery, UK*. In light of growing concerns regarding the intergenerational continuity of small scale fisheries in Europe, this article explored how the social production of fishing has changed in one location in the United Kingdom. The article’s fundamental premise is that for too long fisheries policies have narrowly focused on managing the natural resources and restructuring processes to address overcapacity, and repeatedly ignored social considerations related to recruitment and retention. Accordingly, in addition to having implications for the sustainability of the industry, recruitment failure poses “...questions for the survival of individual enterprises and [puts] at risk local ecological knowledge, skills and fishing heritage, [and] also deprives the industry of future sources of innovation, adaptability and enterprise.”⁵³ White’s research is based on the ‘theory of access’⁵⁴ where “... access is ‘the ability to benefit from things’ – in this case, the ability to earn a living and experience a way of life through crab fishing.”⁵⁵ Her research constructs a comprehensive approach to understanding how various access mechanisms (i.e.

access through authority, access through social relations, access through labour relations and access through capital) are involved in the processes associated with ‘getting into fishing’, ‘learning to be a fisherman’, and ‘becoming a fisherman’ (see Figure-7). Her research showed that young men’s aspirations to become fishermen (agency) are constrained by fisheries regulations, financial factors and lack of crewing opportunities (structure). Additionally, recruitment into the fishery through the traditional father-to-son pathway is increasingly uncommon. Unfortunately, recent funding programs to help aspiring fishermen have not addressed these factors and therefore had limited impact. White concludes that a “... holistic approach to rural coastal development is required to build social resilience in fishing communities across Europe faced with similar problems.”⁵⁶

Figure-7: Analysis of Access Mechanisms Related to Fishing Industry Recruitment (White 2015, pp. 295)



5. Gaps and Potential Research

Based on this ‘taking stock’ exercise, we have identified the following areas related to recruitment, training, and retention in Newfoundland and Labrador’s fishery that require additional attention. There is a need for:

- a comprehensive gender-based analysis of recruitment, training, and retention issues in the harvesting and processing sectors, including a gender-based analysis of government polices and programs;
- studies similar to the ones done in Norway around recruitment and retention and of the different discourses related to these in NL;
- a province-wide analysis of recruitment, training, and retention issues in the harvesting *and processing* sectors to compliment the work already completed;
- the establishment of an on-going data bank housing fisheries-related data including number of fishing enterprises, licences, certified harvesters, processing plants, processing workers, training courses, information on the cost of licences and quotas, etc. Where applicable this data should be recorded by gender, time, and location;
- research into understanding the synergies and possibly shared labour recruitment and retention issues between the fishing and tourism industries, and the fishing and aquaculture industries;
- an exploration of the federal and provincial legislation, regulations, policies, and practices that impact recruitment, training, and retention in the fishing industry;
- a search of international initiatives directed at youth recruitment in the fishing industry, and recruitment programs for migrant, including international migrant workers;
- a study looking at the recruitment and training needs of nearshore and inshore fleets, as well as differently located and focused processing facilities;
- an exercise to map the ‘journeys’ to becoming a fish harvester (crew, skipper, owner) and processing worker in different parts of the NL fishing industry (e.g. applicable legislation, regulations, policies, training requirement, etc.);
- a scan of the Newfoundland and Labrador public school curriculum related to the fishing industry, as well career information.

¹ Some of the prominent themes in this literature include the political dimensions of fisheries policies and organization; economic restructuring through rationalization; social, economic, cultural, and health impacts of the fishery closures and restructuring; fishing livelihoods, occupational pluralism and community resilience; identification and integration of traditional ecological knowledge; gender-based analysis of fishing households and communities; the foregrounding of women's role in the fishery; causes and impacts of outmigration and mobility; historical accounts of fisheries policy implementation; and health and safety incidents and training. In recent years attention has also been paid to emerging issues such as governance, market certification, value chains, trade agreements, and food security.

² Description of the Community-University Research for Recovery Alliance (CURRA) taken from the website: http://www.curra.ca/about_us.htm. The CURRA was a "... a 7-year (2007-2014) research program of innovative, interdisciplinary research projects related to helping communities and organizations along Newfoundland's west coast develop strategies for the recovery of fish stocks and fishery communities. Centered at the Bonne Bay Marine Station in Norris Point, NL, the CURRA brought together researchers from the social and natural sciences and fine arts at Memorial University in St. John's and Sir Wilfred Grenfell College in Corner Brook in working partnerships with numerous stakeholders and community organizations. The long-term objectives of the CURRA include promoting community engagement with the Station, promoting and diversifying the research community affiliated with the Station and training researchers in collaborative, community-based research approaches."

³ Department of Advanced Education, Skills and Labour. (n.d.). Provincial Labour Market Outlook 2025. https://www.aesl.gov.nl.ca/publications/pdf/labour_market_outlook2025.pdf

⁴ a) DFO. (2012). The Future of Canada's Commercial Fisheries, Ottawa, Ont.; (b) Clift, T. 2011. Newfoundland and Labrador: Fishing industry rationalization and restructuring. Report of the independent chair: MOU Steering Committee. St. John's, NL: Department of Fisheries and Aquaculture, www.fishaq.gov.nl.ca/publications/mou.pdf; (c) DFA (Department of Fisheries and Aquaculture). 2009. Fishing industry renewal. http://www.fishaq.gov.nl.ca/industry_renewal/index.html; (d) DFO. (2006). Fishing Industry renewal initiative. Discussion Paper. http://www.fishaq.gov.nl.ca/industry_renewal/fs114_5_2006e.pdf; (e) Schrank, W. E. (2005). The Newfoundland fishery: Ten years after the moratorium. *Marine Policy*, 29(5), 407-420. doi:10.1016/j.marpol.2004.06.005; (f) DFO (Department of Fisheries and Oceans). 2005. Canada's Oceans Action Plan for present and future generations. Ottawa, ON: Government of Canada; (g) Dunne, E. 2003. Final report: Fish processing policy review. St. John's, NL: Fish Processing Policy Review Commission; (h) Arnason, R., Hannesson, R., & Schrank, W. E. (2000). Costs of fisheries management: The cases of Iceland, Norway and Newfoundland. *Marine Policy*, 24(3), 233-243. doi:10.1016/S0308-597X(99)00029-9; (i) Crowley, B. (1997). Taking Ownership – Property Rights and Fishery Management on the Atlantic Coast. Halifax: Atlantic Institute for Market Studies; (j) Greenwood, R. (1995). Newfoundland between paternalistic colonialism and self-determination. [Newfoundland mellem paternalistisk koloni og selvberørende samfund] *Nord Revy*, 4-5, 29-32; (k) Schrank, W. E., Skoda, B., Parsons, P., & Roy, N. (1995). The cost to government of maintaining a commercially unviable fishery: The case of Newfoundland 1981/82 to 1990/91. *Ocean Development and International Law*, 26(4), 357-390. doi:10.1080/00908329509546067.

⁵ S. A. Sønvisen, J. P. Johnsen and J. Vik. 2011. The Norwegian coastal employment system: what it was and what it is. *MAST* 10(1), pp. 31-56.

⁶ Neis, B. and R. Ommer. (2014). MOVING FORWARD - Building Economically, Socially and Ecologically Resilient Fisheries and Coastal Communities A Policy Paper, Community-University Research for Recovery Alliance (CURRA), Memorial University; pp. 63.

⁷ Scopus is Elsevier's abstract and citation database which was launched in 2004. Elsevier describes Scopus as being the "... largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings. Delivering a comprehensive overview of the world's research output in the fields of science, technology, medicine, social sciences, and arts and humanities, Scopus features smart tools to track, analyze and visualize research". See https://service.elsevier.com/app/answers/detail/a_id/15534/supporthub/scopus/#tips

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²⁹ The CURRA policy paper *MOVING FORWARD - Building Economically, Socially and Ecologically Resilient Fisheries and Coastal Communities* was largely written by Barb Neis and Rosemary Ommer, with input and support from Steering Committee Co-chair Doug House (Ph.D., Honorary Research Professor, Memorial) And Committee members Winston Fiander (retired Government of Canada executive and fisheries advocate); Paul Foley (Ph.D. and political scientist, Grenfell); Ian Fleming (Ph.D. and biologist, Ocean Sciences Centre); Carolyn Lavers, (Mayor of Port aux Choix); Bonnie McCay (Ph.D. anthropologist, Rutgers University); Craig Pollett

(Municipalities NL); Peter Sinclair (Ph.D., emeritus, Memorial); and Keith Sullivan (Fish Food and Allied Workers Union).

³⁰ Ibid, pp. iii

³¹ Ibid, pp. iii

³² Paul Foley, Barbara Neis, Nicole Power, Christine Knott, and Courtenay Parlee, 2016, “Opportunities for and challenges of occupational pluralism in seasonal fisheries: Regional cases from Atlantic Canada,” Atlantic Canada Regional Report for the Canadian Council of Professional Fish Harvesters (CCPFH) study, *Fisheries Seasonality and the Allocation of Labour and Skills Labour Market Information*, Ottawa: The Canadian Council of Professional Fish harvesters, 22 December, 33p.

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Appendix A – Professional Fish Harvester Classification and Requirements

Apprentice / New Entrant

A new entrant to the industry will enter as an Apprentice Fish Harvester and must demonstrate a primary commitment to the fishery. Apprentice Fish Harvesters must be sponsored to the industry each year by a certified Professional Fish Harvester who is an owner/operator/skipper. Certification is restricted to the sponsoring fishing enterprise and is not transferable without the Certification Board's consent.

As a condition of registration with the Board, all Apprentices and New Entrants are required to complete a recognized basic safety course prior to beginning their second fishing season. Harvesters who have completed a Marine Emergency Duties (MED A1 or equivalent) are exempt from the Basic Safety Training requirement.

The Board has developed a 5-day BST course that is delivered throughout the province. This 5-day course includes two days of General Seamanship and Stability, one day of Marine Emergency Duties (MED A3), and two days of Marine Advance First Aid. Harvesters preferring to complete the MED A1 course at Marine Institute will be exempt, but the course **MUST** be completed prior to beginning their second fishing season

Additionally, all Apprentice Fish Harvesters are encouraged to progress to at least the Professional Fish Harvester Level I category.

Professional Fish Harvester Level 1

Apprentice Fish Harvesters will be granted Professional Fish Harvester Level I status after attaining the following:

- must have a minimum of two years of full-time fishing activity; and
- must earn 55 land-based credits in addition to the five (5) credits for the Basic Safety course required for all new entrants.

Professional Fish Harvester Level 2

Individuals in the Professional Fish Harvester Level I category will be granted the designation Professional Fish Harvester Level II after attaining the following:

- must complete a minimum of an additional three years of full-time fishing activity in addition to the Professional Fish Harvester Level I criteria; and
- must accumulate a 60 land-based credits in addition to the Professional Fish Harvester Level I criteria.

Source: <https://www.pfhcb.com/apprentice-fish-harvester>