Precarity in Small-Scale Fisheries in North Atlantic Canada

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Abstract

This chapter explores how employment, policy, health, and ecological conditions in small-scale fisheries in Atlantic Canada create precarity for fish harvesters. This chapter is based on insights from two studies developed during our time working in the Ocean Frontier Institute Module I 'Informing Governance Responses in a Changing Ocean'. The studies focus on governance and decision-making related to weather hazards as well as recruitment and retention challenges in small-scale fisheries in Atlantic Canada. The commentary explores a multi-dimensional, multi-factor understanding of precarity in commercial small-scale fish harvesting. We will explore the uncertainty and instability that fish harvesters face on a daily and long-term basis, including how this renders their tasks, employment conditions and livelihoods more precarious.

Introduction

I mean a lot of people are into big investments and they've got to push the envelope and sometimes that's part of an issue too. ... If you just bought gear, (like there were a couple of young guys that just bought gear this year), you're looking at half a million dollars to get in, that's quite a large investment, and when the bank starts looking for their first payment of $30,000, $40,000, it takes some lobsters to get that. So, you're not out there playing around. This is serious business, you know? ... when I first started, if you made money at it, you salted that down because usually through the year, by the time the next season came, there was very little cream left in the cabinets. But at that time, there was also Co-Op Fishery, Co-Op store .... that [helped] fishermen get their gear or all their supplies and groceries and whatever else, and in through February or March, or just before the season would run out, they would run a bill until the fishing season started. It was all owned by the members that were doing the fishing, so it was back into their own pocket. So, whatever they took out, they put back in, which is a way of survival, I guess at that time. (Interview with small-scale fishing Harvester 4, Nova Scotia, 2019).

This interview segment underscores key aspects of how 'precarious work' is experienced by many small operators and crew within small-scale fisheries in Atlantic Canada. Both economic and physical risks are at play for this operator, who is working in a competitive and hazardous work environment. Yet the segment also highlights how cooperation and resilience between small-scale fishing workers; like many small-scale fishing communities around the world, cooperation has been critical to managing their economic vulnerability, reducing dangers of working at sea and easing competition between harvesters for a scarce resource.

These dynamics are at play in this chapter focused on precarity in small-scale fisheries in Atlantic Canada. In general, precarious work can be understood as the 'flip side' of "decent employment" as defined by the ILO: "*work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment*

for all women and men" (ILO n.d.). The terms 'precarity' and 'precarious employment' are not often used to describe work conditions in small-scale fisheries, though as Marschke et al. (2020, p. 153) have argued, "*Fish work has always been precarious*."

Fish work is embedded in unique biophysical and socio-ecological contexts. Factors such as weather hazards, climate change, and overfishing, among other numerous factors, all impact fishing work. It is also important to note that industrial-scale fisheries and fish processing are reliant on unfree and coerced migrant forms of work (Knott 2016; Marschke & Vandergeest 2016). Some industrial fisheries have been reported to employ migrant workers through work agencies that are not accountable for abuses that happen offshore where legal protections are blurry (Derks 2010). In these fisheries, working and living conditions merge to create extreme precarious environments that render workers vulnerable to labour and human rights violations (Garcia Lozano et al. 2022). This chapter focuses on precarity in small-scale fisheries in Atlantic Canada but does not examine more extreme forms of migrant precarity that can exist in industrial fishing and seafood processing within the region.

The forms that precarity takes in small-scale fisheries are diverse, from informal work arrangements to unsafe working conditions due to climate and regulation changes and difficulties earning decent wages. Small-scale fishing work in Atlantic Canada has historically been associated with high levels of poverty and socio-economic deprivation, lack of social security, and increasing inequality within fisheries despite the importance of small-scale fisheries for subsistence livelihoods in coastal rural communities. As with many other small-scale fisheries around the world, fish harvesters in Atlantic Canada have various degrees of collective representation and voice, which take the form of cooperatives, unions, and harvester associations. Fishing work in Canada's small-scale fisheries is also covered by government social security, such as the federal Employment Insurance (EI) program. EI provides seasonal small-scale fishing workers with wage replacement payments when their seasonal fishing activities are completed, as long as they have worked a minimum number of hours. Socio-ecological and regulation changes

within the past thirty years, including efforts to downsize the fishery[29], have disrupted the way in which people fish by restricting fishing for 'part-timers', making seasons shorter and fishing quotas lower, creating obstacles for people to access fishing work.

This chapter is based on insights from two studies with which both authors were involved through the Ocean Frontier Institute Module I 'Informing Governance Responses in a Changing Ocean'. López Gómez co-led a study on recruitment, training and retention of individuals working in the Newfoundland and Labrador fisheries. Reid-Musson co-led a study on occupational and marine safety and marine forecast use in Newfoundland and Nova Scotia small-scale fisheries. This chapter synthesizes primary findings from each of these studies, as well as background literature that have helped inform and interpret the study findings. We draw from these two case studies and integrate their findings to present a portrait of precarity in small-scale fisheries in Atlantic Canada holistically rather than discussing the two studies sequentially.

In section 1, the chapter provides a short conceptual framework for examining precarity in small-scale fisheries. In section 2 we provide some examples of the links between recent government policies and programs targeting small-scale fisheries in Atlantic Canada and describe their impact on precarious small-scale fishing work. In section 3, we discuss the role of precarity in the future of small-scale fisheries in Atlantic Canada and the potential erosion of decent employment.

[29] Some examples of regulations changes and downsize policies by the Department of Fisheries and Oceans Canada (DFO) include the *buddy-up policy* which allows for two license holders for the same species to fish from the same vessel using the same gear. The *combining policy* allows a vessel and license (enterprise) owner to acquire another vessel and license for the same species henceforth combining both licenses into one and effectively removing one of the licenses from the registration system permanently and increasing its overall value.

Petty Harbour, NL, July 2020. Photo credit: María Andrée López Gómez.

Conceptualizing precarity in small-scale fisheries

In general, precarious employment refers to work that is low-wage with few social benefits, and where workers lack representation and have non-standard hours/schedules and contracts, such as part-time, seasonal, and temporary work (Vosko, Zukewich & Cranford 2003; Kalleberg 2009; Mosoetsa, Stillerman, & Tilly 2016). As well, equity-seeking groups such as women, people of colour, and immigrants are overrepresented in precarious employment (Vosko 2000). Precarious employment arose as a result of neoliberal changes to conditions of employment and work-related social benefits. These changes included reduced or more restrictive social benefits, attacks on labour unions and the loosening of workplace protections, which all contributed to the rise of precarious employment. Precarious employment is often associated with unsafe workplaces and negative longer-term health outcomes due to lack of security, increasing inequalities, and the regulatory failures of the state (Lewchuk, Wayne et al. 2006; Quinlan 2015).

To summarize, small-scale fishing work has arguably always been defined

(to varying degrees) by many features of 'precarious employment' due to the economic and ecological vulnerabilities of self-employed, marine and mobile work where there are enormous fluctuations in the harvested resource (Marschke, Campbell & Armitage 2020). Small-scale fishing work is often (though not always) excluded from social security and labour protection regimes, and is subject to seasonal variability and often involves low or erratic earnings/wages. The environmental conditions of small-scale fishing work also produce uncertainty and risk for harvesters. While commercial small-scale fishing activities are subject to management and transportation safety regulations in Canada, government tracking of small-scale fishing labour and workforce characteristics are not, which contributes to the invisibility of small-scale fishing work conditions and workers.

Small-scale fisheries and precarity in Atlantic Canada

In the following section, we explore changes in fishing work in small-scale fisheries that rendered it more precarious based on primary and incidental findings from our respective studies. Our focus does not include all aspects of precarious employment in small-scale fisheries in Atlantic Canada, however, but rather on several key factors that emerged through our respective research.

First, it is important to briefly note the key historical changes to small-scale fisheries in the region within recent decades. Most notably, groundfish harvesting, especially for cod, had sustained small-scale fisheries livelihoods for centuries across coastal areas in eastern Canada. Cod fishing livelihoods, as well as the work of cod fishing itself, was low-paying and difficult, yet also was the basis for the emergence of a unique and resilient way of life among coastal communities. The cod collapse in the 1990´s and ensuing policies such as the cod moratoria created widespread unemployment in small-scale fisheries and jeopardized livelihoods, employment and community life. Youth and women, who had historically played key roles in small-scale fisheries, were unintentionally overlooked in policy-making that sought to boost the viability of remaining small-scale fishing enterprises. This led to deepening

inequities and vulnerabilities within small-scale fishing work (Neis, Gerrard & Power 2013; Power, Norman & Dupré 2014).

Employment Insurance and social security

A unique feature of Atlantic Canadian small-scale fisheries is that fish harvesters (operators, skippers and crew) have historically contributed to, and been eligible to draw from, the Employment Insurance (EI) Program, a federal income social security support program for unemployed workers. This has provided fishing families and communities with a source of income to help alleviate the seasonal fluctuation of fisheries incomes. Notably, most other self-employed workers in Canada have not historically had access to EI. In recent decades, the federal Canadian government has sought to reform the EI program, and in some instances targeted seasonal fisheries workers in Atlantic Canada, to reduce their eligibility and access to EI income supports, as well as encourage the mobility of fishers and other resource workers such that they will move into other resource industries (Mazer 2019). The way EI policy in fisheries is administered can also prompt responses from small-scale fishing workers that can create occupational risk. For example, some harvesters may fish longer hours under adverse conditions in order to qualify for EI benefits (Power 2008). Another example is that women started fishing alongside their husbands on the water in Newfoundland and Labrador as a response to the fishing moratoria in the 1990s, in order to concentrate household incomes and gain access to multiple incomes from EI. However, women in small-scale fisheries did not have the same knowledge of navigation and engine repair, which made their working conditions more unsafe (Grzetic 2004). EI policy also discriminates against women in small-scale fisheries because it does not cover women supporting fishing operations onshore, only those actively engaged in work on the water (Binkley 2000; Grzetic 2004; Dolan et al. 2005). In these ways, EI policy is a unique feature of small-scale fisheries in Atlantic Canada as a multi-faceted source of both security and precarity.

Pressure to fish when it's dangerous

Working on the sea is intrinsically risky because of the complex environmental and physical factors that small-scale fishing work involves. Working on a vessel involves strenuous physical tasks on a moving, unstable platform, with variable wave, wind, ice, and fog conditions and difficult tides and currents. Navigating these conditions safely requires a high level of skill often acquired through experiential learning within families and community groups. Fishing vessels are used as a fishing tool and a mode of transport, and small-scale fishing work encompasses mobile, isolated, remote work at sea, with limited communication and options in the case of emergencies. Many small-scale fishing harvesters develop sophisticated knowledge of these risks and how to avoid dangerous conditions. However, there can be economic pressures to take further risks. Taking time off to avoid fatigue, burnout or avoid dangerous weather may not be an option, especially where operators are heavily indebted. Smaller operators may feel pressure to compete under the same weather/ocean conditions that larger operations can tolerate (Reid-Musson, Finnis & Neis 2021). Fisheries regulations such as time restrictions on when to fish may also incentivize risk taking (Reid-Musson, Neis & Finnis 2022) .

The 'insiders' and the 'outsiders' of the fishery

a. Eliminating part-timers from commercial small-scale fisheries

Under the guise of preserving self-employed small-scale operations, the era of fisheries 'modernization' policy (starting in the 90´s) involved eliminating the so-called 'moonlighters', or part-time operators, who had historically combined fishing work with other seasonal employment and subsistence activities. Two efforts contributed to eliminating part-time fishers in Newfoundland and Labrador: the professionalization of fish harvesters and the fishing licensing system linked to professionalization tenure and rank. It is worth mentioning that even though this policy eliminated part-timers, occupational pluralism (when workers have more than one occupation

throughout the year to supplement their income) continues to be a prominent pattern for small-scale fishers in Canada. Occupational pluralism is even recommended as a strategy to secure a decent income and access to benefits such as EI in the context of participation in a seasonal occupation such as fishing (Foley et al. 2016; Canadian Council of Professional Fish Harvesters 2018).

In coastal communities in Eastern Canada, entering fisheries work has involved a socialization process where skills are learned at a young age along with friends and family who fish. Policies to downsize the fisheries and requirements for professionalization have made it difficult for new entrants into the fishery as opportunities for 'informal' training have decreased, and obtaining a fishing license requires significant savings or loan opportunities. These changes have resulted in a marked difference in the employment conditions between crew and owner-operators and pose obstacles for a new generation of independent fish harvesters.

In Newfoundland and Labrador, in 1997 and after the different groundfish moratoria initiated, the Newfoundland and Labrador Professional Fish Harvesters Certification Board (NL-PFHCB) was founded as the certifying organization for fish harvesters in the province. The board developed a professionalization program to issue certificates of accreditation for experienced fish harvesters that are linked to fisheries-related rights. For example, only fish harvesters holding the most advanced certification (level II) are allowed to own a fishing enterprise. The intended objectives of the certification system were twofold: (1) to promote fishing and safety training and (2) to ensure that small-scale fish harvesters remain independent from corporate ownership. Interviews with fish harvesters and media reviews reveal a certain discontent with the unintended consequences of the professionalization system, even though these two objectives are important in ensuring the sustainability of small-scale fisheries by rendering fishing safer and making it difficult for corporations to take over small-scale enterprises. The discontent is related to the professionalization rule that requires that fishers earn 75% of their income during the fishing season (May to October) from fishing in order to become certified for the next level, until they reach

level II. This requirement effectively terminated opportunities for people who participated in the fishery on occasions (part-time fishers or 'moonlighters'). Likewise, children of current owner-operators, who fished some time in their youth and left the province during periods of economic hardship, but came back ready to take the family's fishing enterprise have faced barriers mainly regarding access to adequate certification to take over their parents' fishing enterprise. For them, the 75% requirement is nearly impossible to meet if full-time fishing equates earning low salaries.

In the lobster fishery, the government assigned those with greater numbers of traps 'class A', or 'full-time' lobster licenses, and 'class B' licenses to 'part-timers' (those with fewer licenses).[30] The repercussions of this policy affected several hundred lobster harvesters as described during an interview by Reid Musson with a northern Nova Scotia fish harvester in January 2020. He was raised in a small-scale fishing family reliant on groundfish for their livelihoods. They owned a limited number of lobster traps because historically, lobster prices were very low. In the 1970s, his father was assigned a core class B lobster license. Due to the collapse of groundfish species and the subsequent increased reliance on lobster and other shellfish, he and his father were disadvantaged as the lobster fishery became more lucrative. Their class B license limited the number of traps they could deploy, and they could only transfer the license within the family. Due to the terms of the license, his adult children cannot afford the time to train with him, as required under licensing rules, despite the desire to make a living from fishing. This interviewee's fear was that he would not be able to pass on their fishing practices because of these policies. As demonstrated in Newfoundland and Labrador, owner-operators worry about their enterprise once they stop fishing. There is a five-year grace period where someone from the family or the community can take over the enterprise, but they fear no one will be ready by then as it takes five years of full-time fishing to achieve the highest certification level.

It is apparent from these examples that government policies devised to

[30] The website Fishing 4 Fairness profiles the challenges faced by Class B lobster license holders and contains recent news reporting about this issue. See https://fishing4fairness.ca/.

encourage viable small-scale fishing businesses have often unintentionally undermined the ability of the smallest, lowest earning operators to remain in small-scale fisheries. This has led to greater inequities in the fisheries and declining opportunities, especially for younger operators and women in small-scale fisheries.

b. Wage and stability gaps

Professionalization and licensing changes have created a rift between owner-operators and crew members by creating advantages for the former, but ignoring the needs of the latter in terms of decent employment. While potentially boosting fishing incomes for 'insiders' in the fishery (owner-operators), downsizing policies increased barriers for entry into fishing by increasing the costs of the enterprises and reducing opportunities to fish with decent employment. López Gómez and OFI research members conducted a study on recruitment and retention of fish harvesters in the fisheries sector of Newfoundland and Labrador. The study included an online survey in which 330 fish harvesters participated, and 11 interviews with people fishing or interested in fishing as an occupation. Results from the survey reveal that 54% (n=78) of owner-operators make a gross income from fishing above $50,000 annually while only 23% (n=36) of crew make a gross income from fishing of the same magnitude. In fact, most crew members (58%, n=89) reported an annual gross income from fishing below $31,000. Accordingly, more crew members (33%) than owner-operators (17%) reported engaging in a different occupation during the year. Occupational pluralism has always been a common practice in fisheries work to complement wages needed to make ends meet.

Precarity is also palpable for owner-operators, but in a different way. Precarity took the form of debt-dependence as operators increasingly relied on government and private loans to invest in new gear, vessels and licenses to participate in what remained 'small boat' fisheries. These fisheries modernization policies paved the way for inequalities, and thus unfair competition, between smaller and larger operators *within* the small-scale fisheries.

Interviews with fish harvesters pointed to the difficulties for crew to

establish secure employment. Owner-operators mentioned that they often have difficulties providing enough work for the fishing season as quotas decrease and seasons get shorter. Crew members and aspiring owner-operators agreed that the most difficult rule to fulfill is to earn 75% of their income from fishing during the fishing season. The 75% threshold is often not enough to provide for themselves and their families and they are obliged to do other work, hence making it impossible for them to obtain the required certification and own an enterprise. But, even if crew were able to obtain the required certification by staying in the fishery and fulfilling the 75% rule, nothing guarantees they will be able to afford their own fishing enterprise, especially as enterprises become more expensive with time. One owner-operator summarizes here:

"Changes have made it a lot easier for retention because, you know, nobody else allowed in, and if you're a relatively young person in the fishery now and knowing young people can't buy up an existing enterprise when the old fellah wants to get out and you're a fisherman and you're core, and you can buy the enterprise, you can double up your quota, you can triple your quota, you know, so it's a lot easier for you once you're in."

There are startling differences between the way people obtained a fishing license three or more decades ago and how people obtain one now. Most current owner-operators interviewed in the study obtained their fishing enterprise from their parents at almost no cost or were able to buy a fishing license with as low as 25 cents. It is already difficult for their children to be able to become owner-operators even with a fishing license already in the family. Owner-operators could not imagine the obstacles faced by people in coastal communities that were not born in a fishing family with access to a fishing license.

Lobster traps at Petty Harbour, NL. Photo credit: María Andrée López Gómez.

Discussion

The precarity of small-scale, self-employed operators and crew in small-scale fisheries, and its relationship to occupational risk involves fundamental and intrinsic environmental and physical risks associated with working in the North Atlantic Ocean, including travelling through and fishing in remote, mobile and isolated locales. But these workers also face significant economic and regulatory vulnerabilities. These include pressures to fish under conditions small-scale fishing workers would otherwise avoid, for various reasons: to meet regulatory requirements or buyer demand, to ensure they qualify for social benefits, to compete with other small-scale fishing workers, and/or to simply make a living and support their families and communities.

Within small-scale fisheries in Eastern Canada, precarity is experienced differently between owner-operators and crew members. Regulations developed in the last three decades have protected the insiders in the fishery and have ignored the needs of diverse participants such as the onshore

crew (often composed by women), crew members, new entrants and the next generation of fish harvesters. Unstable employment coupled with low wages and restrictions to conduct other work during the fishing season, render it difficult for crew and new entrants to stay afloat in the fishing occupation, save money and fulfill certification requirements to obtain their fishing enterprise. The policies to exclude´moonlighters´ have closed off opportunities to balance staying in the fishery and having other means to support themselves (occupational pluralism) and save money to purchase fishing enterprises at high prices.

Previous studies on precarity in fisheries work have focused on extremely precarious working conditions around the globe and specially in industrial fisheries (Marschke & Vandergeest 2016; Vandergeest & Marschke 2021; Garcia Lozano et al. 2022). Precarious conditions such as severe human and labour rights abuses that involve forced labour and exploitative working conditions need urgent solutions. This chapter focuses on the small-scale fisheries context in Atlantic Canada where there are few reports of extreme precarity in fish harvesting, but where there is a changing working environment due to biophysical and socio-ecological factors and the new policies and regulations designed to mitigate negative outcomes. There is also evidence that the Canadian fisheries sector is not immune to mechanisms by which capitalist production triggers precarious work, for example through the demand for cheap seafood and consequently lower prices paid to producers that lead to an increase in cheap labour (Garcia Lozano et al. 2022). In Canada, there have been some leads of extreme precarious conditions in the seafood processing sector where temporary foreign workers are brought into Canada with little to no labour rights (Knott 2016; Knott & Marschke 2020). Other Atlantic nations have reported labour shortages in the fishing sector and developed policies to hire foreign workers with reports of differential treatment between local and foreign workers with the latter receiving lower remuneration for the same work (Jones et al. 2020). Even though neither of these situations is the case in the small-scale fisheries sector in Atlantic Canada, the industry may face an uncertain future in the succession of fishing enterprises at the community level and the future of an independently

owned fishing fleet may be at risk. There are questions surrounding who will be able to fish and under which circumstances. Owner-operators are reaching retirement age, and with increasing prices for fishing enterprises and precarious working and employment conditions, retention of new entrants into small-scale fisheries may be too challenging to keep sustainable small-scale fisheries in coastal communities.

Decent employment in Atlantic Canadian small-scale fisheries may be possible if policies and regulations align with a holistic approach that considers all actors in small-scale fisheries and the context in which they take place: community-based, familiar, rural and coastal. Decent employment also depends on political and economic processes of production that shape employment and working conditions. Case studies in this chapter show that decent work has the potential to build sustainable small-scale fisheries with thriving communities by making work in small-scale fisheries attractive and just.

References

Binkley, Marian. 2000. "'Getting by' in Tough Times: Coping with the Fisheries Crisis." *Women´s Studies International Forum* 23(3):323–32.

Canadian Council of Professional Fish Harvesters. 2018. *Fisheries Seasonality and the Allocation of Labour and Skills- Labour Market Study Information Study*. Gatineau, Quebec.

Derks, Annuska. 2010. "Migrant Labour and the Politics of Immobilisation: Cambodian Fishermen in Thailand." *Asian Journal of Social Science* 38(6):915–32. doi: 10.1163/156853110X530804.

Dolan, A. Holly, Martin Taylor, Barbara Neis, Rosemary Ommer, John Eyles, David Schneider, and Bill Montevecchi. 2005. "Restructuring and Health in Canadian Coastal Communities." *EcoHealth* 2(3):195–208. doi: 10.1007/s10393-005-6333-7.

Foley, Paul, 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*.

Garcia Lozano, Alejandro J., Jessica L. Decker Sparks, Davina P. Durgana, Courtney M. Farthing, Juno Fitzpatrick, Birgitte Krough-Poulsen, Gavin McDonald, Sara McDonald, Yoshitaka Ota, Nicole Sarto, Andrés M. Cisneros-Montemayor, Gabrielle Lout, Elena Finkbeiner, and John N. Kittinger. 2022. "Decent Work in Fisheries: Current Trends and Key Considerations for Future Research and Policy." *Marine Policy* 136:104922. doi: 10.1016/j.marpol.2021.104922.

Grzetic, Brenda. 2004. *Women Fishes These Days*. Halifax, Canada: Fernwood Publishing.

ILO. n.d. "Decent Work." Retrieved September 9, 2022 (https://www.ilo.org/global/topics/decent-work/lang—en/index.htm).

Jones, Estelle, Katherine Botterill, Cornilius Chikwama, Alex Caveen, and Tim Gray. 2020. "Pay Gaps Between Domestic and International Fishers: An Economic or Ethical Issue?" *Maritime Studies* 19(1):15–27. doi: 10.1007/s40152-019-00133-6.

Kalleberg, Arne L. 2009. "Precarious Work, Insecure Workers: Employment Relations in Transition." *American Sociological Review* 74(1):1–22. doi: 10.1177/000312240907400101.

Knott, Christine. 2016. "Contentious Mobilities and Cheap(Er) Labour: Temporary Foreign Workers in a New Brunswick Seafood Processing Community." *Canadian Journal of Sociology* 41(3):375–98. doi: 10.29173/cjs28256.

Knott, Christine, and Melissa Marschke. 2020. "Flagpoling: Inter-provincial Mobility of International Migrants within Canada's Temporary Foreign Worker Program." 16.

Lewchuk, Wayne, de Wolff, Alice, King, Andrew, and Polanyi, Michael. 2006. "The Hidden Costs of Precarious Employment: Health and the Employment Relationship." Pp. 141–62 in *Precarious Work in Canada*.

Marschke, Melissa, Donovan Campbell, and Derek Armitage. 2020. "Precarious Livelihoods: Examining the Intersection of Fish Work and Ecological Change in Coastal Jamaica." *People and Nature* 2(1):152–62. doi: 10.1002/pan3.10061.

Marschke, Melissa, and Peter Vandergeest. 2016. "Slavery Scandals: Unpacking Labour Challenges and Policy Responses within the off-Shore Fish-

eries Sector." *Marine Policy* 68:39–46. doi: 10.1016/j.marpol.2016.02.009.

Mazer, Katie. 2019. "Making the Welfare State Work for Extraction: Poverty Policy as the Regulation of Labor and Land." *Annals of the American Association of Geographers* 109(1):18–34. doi: 10.1080/24694452.2018.1480929.

Mosoetsa, Sarah, Joel Stillerman, and Chris Tilly. 2016. "Precarious Labor, South and North: An Introduction." *International Labor and Working-Class History* 89:5–19. doi: 10.1017/S0147547916000028.

Neis, Barbara, Siri Gerrard, and Nicole G. Power. 2013. "Women and Children First: The Gendered and Generational Social-Ecology of Smaller-Scale Fisheries in Newfoundland and Labrador and Northern Norway." *Ecology and Society* 18(4):art64. doi: 10.5751/ES-06010-180464.

Power, Nicole G., Moss E. Norman, and Kathryne Dupré. 2014. "'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." *Ecology and Society* 19(3):10.

Power, Nicole Gerarda. 2008. "Occupational Risks, Safety and Masculinity: Newfoundland Fish Harvesters' Experiences and Understandings of Fishery Risks." *Health, Risk & Society* 10(6):565–83. doi: 10.1080/13698570802167405.

Quinlan, Michael. 2015. *The Effects of Non-Standard Forms of Employment on Worker Health and Safety*. 67. Geneva: International Labour Office, Inclusive Labour Markets, Labour Relations and Working Conditions Branch.

Reid-Musson, Emily, Joel Finnis, and Barb Neis. 2021. "Bridging Fragmented Knowledge between Forecasting and Fishing Communities: Co-Managed Decisions on Weather Delays in Nova Scotia's Lobster Season Openings." *Applied Geography* 133:102478. doi: 10.1016/j.apgeog.2021.102478.

Reid-Musson, Emily, Barbara Neis, and Joel Finnis. 2022. "Fishing Safety and Timed Openings in Atlantic Canada's Lobster Fisheries: The Mediating Role of Local Management Systems." *Maritime Studies* 21(2):223–34. doi: 10.1007/s40152-021-00256-9.

Vandergeest, Peter, and Melissa Marschke. 2021. "Beyond Slavery Scandals: Explaining Working Conditions among Fish Workers in Taiwan and Thailand." *Marine Policy* 132:104685. doi: 10.1016/j.marpol.2021.104685.

Vosko, Leah, Nancy Zukewich, and Cynthia Cranford. 2003. "Precarious Jobs: A New Typology of Employment." *Perspectives on Labour and Income* 15(4).