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# “That’s what opening day is for:” social and cultural dimensions of (not) fishing for salmon in Cook Inlet, Alaska

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## Abstract

Commercial fishing represents an important cultural and economic cornerstone in the lives and livelihoods of the people of the Cook Inlet/Kenai Peninsula region of Alaska. Here, we discuss one aspect of commercial salmon fishing that we have found to be of particular social and cultural significance: the opening day. On the opening day, salmon are not as abundant as they will be later in the year, and as such this first chance to put nets in the water provides an opportunity for fishers to test their gear, train their crew, and renew important social connections with other fishers. The opening day also acts as an important and symbolic rite of passage for many fishers who fish seasonally and, despite working for the rest of the year in a variety of trades nevertheless consider fishing to be their primary occupation and identity. However, such ‘human dimensions’ are often not well accounted for by fisheries management regimes, and Alaska’s management of commercial salmon fisheries, which is done primarily with directed openings and closures, provides a case-in-point. We discuss the possible cumulative impacts of repeatedly losing the opening day to the long-term sustainability of the fishery and fishing communities, including contributions to the ongoing “greying of the fleet” trend. Using a framework for social well-being we argue for a more holistic approach to management that improves both ecological and societal outcomes by incorporating these human dimensions into ecosystem-based fisheries management.

**Keywords:** Alaska; Commercial fisheries; Ecosystem-based fisheries management; Human dimensions; Salmon; Small-scale fisheries; Social well-being

## Introduction

I don’t really expect to get any fish. Breaking even is a bonus. That’s not why we go out, anyway. Sure, it would be nice to bring in a few thousand pounds, and if we’re on fish we’ll catch them. But, if I have a new deck hand, or new gear, there are things that I can’t teach, that I can’t test, unless a net is in the water. Call it getting our feet wet.

- Bart<sup>a</sup>, a commercial salmon fisherman

In the summer of 2011, we joined Bart and his three person crew on his vessel, the *F/V Night Eagle*, to begin our first field season working with commercial salmon fishers in Alaska’s Cook Inlet. This trip was the start of a comparative ethnographic

project that engaged with multiple different groups of fishers in the Cook Inlet and Kenai Peninsula region (Figure 1), a project designed in part to explore the sources of and disagreements within local conflicts over salmon management. As often happens with ethnographic work, our experiences on the very first day of fieldwork informed an important new focal point for our research—the importance of the opening day to the fishery and to the fishers themselves. Over the course of the next two summers we interviewed and fished with many commercial fishers in the region, and as we describe in more detail below, we learned that the opening day, while not generally a productive day of fishing when measured by total catch, nevertheless contributes in multiple ways to the well-being of both the fishers and the fishery. Practically speaking, fishing on the opening day is a ‘shake down’ in that it provides fishers with an opportunity to test gear and train new crew. The opening day is also an occasion during which fishers renew important social relationships, and we watched as fishers interacted with one another, often with great humor and optimism, despite conversations that often centered on perceived political and economic threats to their livelihoods. Finally, we came to recognize that fishing on opening day has an important psychological value for fishers a rite of passage that is important to their sense of personal identity and sense of self-actualization, through which they return each year to what they consider to be their ‘real’ profession following the long off-season spent earning wages in other jobs.

These rich features of the opening day are examples of the so-called ‘human dimensions’ of fishing, which have long been productive areas of research for the environmental social sciences (Acheson 1975; Langdon 1980; McCay 1981; Gatewood 1984; Arnold 2008; Carothers 2010; Thornton and Scheer 2012). The human dimensions of fishing now also attract much attention from managers, policymakers, and funding agencies interested in identifying more effective and collaborative approaches to community-based fisheries management (Wilson 2006; Fulton et al. 2011; North Pacific Research Board 2012). Given the imperiled status of so many of the world’s fisheries and fishing-dependent communities (Food and Agriculture Organization 2010), the rationale for more holistic, and indeed humanistic, approaches to management is clear, and to some extent reform is already underway in the form of the widespread popularization of ecosystem-based fisheries management (EBFM) (National Marine Fisheries Service 1999; Pikitch et al. 2004; McLeod and Leslie 2009; Salomon et al. 2011).

Yet, some have noted that the state of the art in EBFM still falls short of effectively incorporating human dimensions (St Martin et al. 2007); instead, fisheries management regimes are often oriented toward fishing as an industrial enterprise, treating fisherfolk as fixed elements and regarding the act of fishing in solely mathematic or economic terms such as ‘fishing pressure’, ‘fleet capacity’, and ‘unit effort’ (Castilla and Defeo 2005). Management approaches rarely accommodate the more nuanced and subjective aspects of small-scale community-based fishing, such as fishers’ needs and values and social justice concerns regarding who participates in and benefits from fisheries, and who is excluded (McGoodwin 2001; Salas and Gaertner 2004; Link 2010). As a result, fishers often respond to management actions in unpredictable ways, perhaps by targeting new fish species, changing gear, or, in extreme cases, fishing illegally (McCay 1981; Jentoft 2000; Loring and Gerlach 2010). Thus, management approaches that are insensitive to the human dimensions of fishing can drive unanticipated tradeoffs among fisheries and other resources, and possibly undermine ecosystem-



**Figure 1** Map of Cook Inlet, the Kenai Peninsula, and major communities in the region.

and landscape-scale management agendas (Brashares et al. 2004; Fulton et al. 2011; Loring 2013).

As a pathway to more effective and equitable fisheries management, St. Martin and colleagues (2007) recommend that fisheries research should emphasize:

community-level processes, practices, interactions and interdependencies as starting points for understanding the relationship between the rich and complex social practice of fishing and marine ecosystems (p. 224).

Accordingly, our intent with this paper is to add detail to the popular understanding of the practice of commercial salmon fishing in Cook Inlet, to show points of meaning and value that can be overlooked when fishing is construed and managed in solely quantitative terms (see also Acheson and Wilson 1996). Below, we relate various experiences from our research regarding the importance of the opening day to Cook Inlet commercial salmon fishers. Not only did we have the opportunity to participate in the season opener as observers in 2011, but, due to closures of some salmon fisheries in the region in 2012 we also can report on how local fishers responded to losing the opportunity to fish on the season opener.

Given that the reduction of fishing effort through limits on the number of allowed fishing opportunities, or “openings”, is a common strategy in the fisheries manager’s toolkit in Alaska, we argue that the season opener provides an informative example of how important human dimensions of a fishery can be compromised by management actions that treat fishing as merely ‘pressure’ or ‘effort’ to be arbitrarily switched on and off. Specifically, we frame our discussion using a tripartite framework for social well-being that can help managers be more cognizant of the impacts that their well-intentioned actions may have on fishers and the fishery (after White 2010; Coulthard et al. 2011; Britton and Coulthard 2013). We hope that the stories related below emphasize the importance of recognizing and protecting the more nuanced aspects of fishing that, while hard to quantify, are nonetheless important to a fishery’s character and sustainability.

### **Research area and approach**

Fishing in Alaskan waters, including for commercial, sport, personal use, and subsistence purposes, represents a cornerstone of Alaska’s many communities and cultures. The Cook Inlet/Kenai Peninsula region of Alaska, where this research was located (Figure 1), is well known among Alaskans and tourist anglers worldwide for its highly valued and heavily contested fisheries. The Inlet is a stretch of ocean that reaches 180 miles north from the Gulf of Alaska, along the west coast of the Kenai Peninsula to the City of Anchorage and the mouth of the Susitna River. The associated Cook Inlet and Kenai Peninsula watersheds cover approximately 100,000 square kilometers of the South-central portion of the state, and are home to over 400,000 Alaskans, more than half the population of the state. About 50,000 people in total live on the Kenai Peninsula, and communities here include the iconic fishing ports of Homer and Seward, the former being the self-described “Halibut Fishing Capital of the World.” Other communities include Kenai and Soldotna, as well as smaller, predominately Alaska Native and Russian communities, including Port Graham, Nanwalek, and Seldovia, which are not accessible by road.

Commercial fishing fleets in Cook Inlet target a variety of fish species; most notable are Pacific halibut (*Hippoglossus stenolepis*) and all five species of Pacific salmon (*Oncorhynchus spp.*), but people here also fish for species such as Pacific cod (*Gadus macrocephalus*), black cod (*Anoplopoma fimbria*), and various species of rockfish (Sebastidae family). Likewise, sport and personal use/subsistence fisheries exist for many of these same species. Commercial fisheries have long been an iconic presence in the region, though they have seen significant changes in management. For example, commercial salmon fishing was converted from open access to limited entry in 1976, and commercial fishers also now face significant competition from sport anglers, guided charter fishing operations, and personal-use (dip-net) fishers. Though salmon are abundant in the region, the Kenai Peninsula has become a stage for much conflict among these user groups. Debates flare regarding the most appropriate uses for these fisheries, with people on all sides arguing that their sector generates the greatest economic benefits for the region and for the state (Loring et al. 2013; Harrison 2013). These debates have been further elevated by recent statewide declines in the status of Chinook (king) salmon, which as we describe below, came to a head in 2012 with extensive fisheries closures in Cook Inlet and on the Kenai River.

In the summers of 2011 and 2012, we engaged in ethnographic research with commercial fishers from both the drift and set gill-net salmon fisheries of Upper Cook Inlet. Respectively, these describe, A) fishing operations from medium-sized vessels (30–40 feet) that traverse much of the inlet and fish with gill-nets<sup>b</sup> that are allowed to drift freely in the water (hereafter “drifting” or “drifters”), and, B) operations from much smaller skiffs and gill-nets that are anchored at fixed sites on the beach or within a few miles from shore (hereafter “set-netting” or “set-netters”). Primarily, both kinds of operations target the highly abundant runs of Sockeye (*O. nerka*), or “red” salmon, but other kinds of salmon (e.g., silvers [*O. kisutch*]) are caught and sold as well.

By and large, participants in Cook Inlet drift and set-net fisheries are Alaska residents, accounting for 71% and 82% percent of permit-holders respectively as of 2010 (Commercial Fisheries Entry Commission 2010). We highlight this because resident status is among the many points of contention featured in the local conflicts over these fisheries. As Harrison (2013) shows, there is a widespread belief among sport and personal use fishers that the majority of commercial fishers are not residents.

Other demographic details regarding the drift and set-net fisheries are hard to come by; the CFEC reports that the mean age of drift and set-net is 48.1 years for both fisheries as of 2011, lower than the statewide mean age of 49.7 (Gho 2012). As we discuss later, these mean ages are increasing, part of an ongoing “greying of the fleet” trend that is being seen for fisheries across Alaska. Data for sex and race/ethnicity of permit holders is not available, though in our experience it is common that multiple household members, both men and women, hold permits that are fished together, especially in the case of set-net operations. The majority of drift skippers are white males, excepting a noteworthy sub-group of Russian participants. Russian fishers also stand out from other Cook Inlet drift fishers in that they tend to fish year-round in multiple Alaska fisheries, whereas most drift fishers in Cook Inlet participate in the one salmon fishery and are employed in other work for the rest of the year.

As noted, commercial salmon fisheries in Alaska are limited entry fisheries, with a fixed number of tradable permits. Catches in Cook Inlet fisheries are managed not by

the use of quotas but by limiting the number of fishing opportunities for permit holders, or “openings.” Openings for drift and set-net fisheries generally occur on Mondays and Thursdays, though openings are often liberalized to include additional days each week when Sockeye runs are especially large, for the purposes of not “over-escaping” salmon to the spawning grounds and thus possibly impacting the abundance of future runs (P. Shields, *personal communication* July 2012). This concern with maximizing salmon runs reflects the Alaska Department of Fish & Game’s (ADF&G) interpretation of the broader policy mandate of the State of Alaska Constitution to manage fisheries using the “sustained yield” principle (§8.4), for the “utilization, development, and conservation ... for the maximum benefit” (§8.2). ADF&G relies on a standard, Ricker-style discrete population model of the relationship between salmon escapement and recruitment, using sonar fish-counting and historical data to estimate run size and monitor fish passage. Management of escapement is made difficult, however, by the fact that salmon stocks are harvested not just by commercial fishers but also by multiple in-river user groups, and as such ADF&G also uses strategic closures of the commercial fishery to ensure an abundance of fish are present for in-river fisheries. For example, commercial openings are rarely allowed on Fridays, with the intended result being that more fish will be in the river system for weekend anglers.

## **Methods**

We employed a variety of standard ethnographic methods in this research, including formal and informal interviews and participant observation. In 2011, we interacted with the fishers as observers, and then in 2012, we worked in the set-net fishery as hired crew. We also completed twenty-two life-history interviews that included targeted questions regarding current fishing practices and perceptions of management, with ten drifters and twelve set-netters. Interviewees were recruited using the snowball method, starting with key informants identified both by word of mouth and by consulting with representatives from local fisherman’s associations and fish processors. Twenty of those interviewed are men and two are women, which in our experience mirrors the general demographic makeup of these fisheries. Happenstance encounters with fishers at locations as diverse as coffee shops, fish processing facilities, and bars were also common, and while informal, were extremely informative.

## **A social well-being framework for human dimensions**

Well-being is a difficult concept to define in a standardized way because it is a phenomena that is situated in very specific social and cultural contexts (Wolsko et al. 2006; Krieger 2005; White 2010). For some time, human well-being and its relationship with environmental outcomes was discussed only in limited economic terms, i.e., production and consumption, with assumptions numerous regarding the tradeoffs inherent among meeting basic human needs and sustaining ecosystems (DasGupta 2004). More recently, however, multiple research programs, including sustainable development and ecological economics, have pursued frameworks for finding complementarities among social and environmental outcomes (Sneddon, Howarth, and Norgaard 2006; Rosenzweig 2003; Costanza 2006), often with the concept of well-being at the center. Among the most robust attempts is the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment

2005), which was successful in linking ecological and sociocultural dimensions of resource systems via an “ecosystem services” framework, but which has since been criticized for being too oriented around the effects of external drivers of change (e.g., climate, development) rather than on the effects of internal system dynamics and individuals’ strategies and motivations (Armitage et al. 2012).

In this paper we build on an alternative and emerging framework for social well-being that incorporates individual needs and values as well as broader societal and ecological concerns (after Gough and McGregor 2007; White 2010; Coulthard et al. 2011; Armitage et al. 2012). Following Armitage and colleagues (2012), we define social well-being as,

A state of being with others and the natural environment that arises where human needs are met, where individuals and groups can act meaningfully to pursue their goals, and where they are satisfied with their way of life. (p. 3)

The framework for social well-being used here involves three dimensions: a material dimension, including what resources a person has and needs, including for example property, natural resources, and information; a relational dimension, including social networks and what people are able to do through these relations; and, a subjective, or psychological dimension, including how people feel about and are fulfilled by their lives and livelihoods. We argue that these three dimensions, in addition to being useful for constructing a holistic understanding of the way that people make meaning through their livelihoods, also provide an effective heuristic for diagnosing the possible impacts of management actions or changes on fishers and fishing communities. As Armitage and colleagues (2012) explain,

A social conception of well-being provides a helpful tool to recognize the limitations of policy and management that are too narrowly focused on only limited criteria and do not adequately reflect [social and ecological] trade-offs. (p. 6)

This three-dimensional framework for social well-being has already been applied to the study of fisheries by others (Coulthard et al. 2011; Britton 2012; Britton and Coulthard 2013). Building on this work, we discuss below the importance of the opening day of fishing in Cook Inlet commercial salmon fisheries to each of the three dimensions, with ramifications for fishers’ safety, the success of their livelihoods, intergenerational pedagogy, and their personal sense of fulfillment.

### **The “Dry Run”**

In June of 2011, we rose early and met our skipper, Bart, along with the rest of the crew of the F/V *Night Eagle*, for our first foray into the fishery. Bart is an older man, in his mid- to late-sixties, well-known among other fishers in the area both for his gregarious demeanor and for his reputation as a ‘highliner’: a consistently successful fisherman. Much like its skipper, the *Night Eagle* is a stout and aggressive looking vessel with an all-weld aluminum hull and twin overpowered diesel engines. The vessel is configured as a ‘bowpicker’, with the cabin sitting aft of a large hydraulic reel that bears four 300- foot long lengths, or ‘shackles’, of gill-net<sup>c</sup>. Even in the pre-dawn light of our

early departure, the *Night Eagle* shined as new, which it was, at least to Bart. Bart had just acquired the vessel after losing his last one to a fire, and this was to be the first time that he and the *Night Eagle* had put nets in the water.

Depending on the timing and range of tides—Cook Inlet experiences some of the largest tidal ranges in the US—it can take several hours for a commercial fishing vessel to travel from the boat harbors at Homer, Kasilof, and Kenai to the allowed commercial fishing grounds in the upper part of the inlet. Fishing openings in the inlet usually start at 7:00 AM, so we departed from Homer well before dawn. Most of the crew spent the ride catching a few more minutes of sleep, but Bart remained awake and attentive, guiding the vessel north. Two short wave radios mounted above the dash at the helm—one for general communications and the other scrambled only for communication with Bart's fishing group—remained quiet for the first half of the trip. As the daylight grew, so did the frequency and volume of radio chatter, and before long Bart was vigorously engaged in simultaneous conversations with several fishers. Much of the talk was not about fishing, but more like the conversation that one hears among friends and acquaintances when they are reunited after some time apart. One noteworthy point of good humor was that several people chided Bart on the excesses of his new "speed boat," though Bart did not restrain himself from bragging that he would reach the fishing area earlier than everyone else in his group.

Fishing in groups is a common strategy in this and other small-scale Alaska fisheries (see e.g., Gatewood 1984), and those we interviewed valued their groups and group members. These groups exist mainly for the purposes of information sharing, which is done via the scrambled short wave radios. Groups are loosely organized, not *ad hoc* in composition but also not entirely unchanging, and can range in size from five or six to fifteen or twenty boats. The largest groups often have a mix of experienced fishers as well as relative newcomers. All of the drifters that we interviewed offered more or less the same set of reasons for fishing in groups, reasons that include improved fishing efficiency but also peace of mind. As explained by another fisher, Hank:

It is not as much about knowing where the fish are, but also where they aren't. If nobody is catching anything, you know that you aren't wasting time looking around. It helps you from second guessing yourself ... which is especially helpful if you're new.

Later in the season we noticed that radio conversations were more Spartan by comparison to the chatter we heard from Bart and his group on this day, limited mostly to within fishing groups and to matters of business. This morning, however, topics of conversation varied widely, from talk of families to the politics of the fishery. When asked later, nearly all the drifters that we interviewed explained that during the off-season, while they may encounter other fishers in passing every now and then, they rarely interact with them socially. The only exceptions were those who fish year-round. Thus, early openings are important to the relational dimension of social well-being because it is during the first few fishing outings that many Cook Inlet drifters reconnect with one another, and, if a fishing group has a new member these initial radio conversations can be their first opportunity to develop a rapport with their new group mates. Several fishers noted that good rapport and trust within groups is important also because fishers rely on one another for help if they are in trouble.



The politics of fishing were also a common item of discussion among Bart and other fishers on the opening day. As noted earlier, salmon fisheries in Cook Inlet seem permanently embroiled in contentious debates among commercial fishers, in-river sport fishers, tourist charter operators, and state fisheries managers. In 2011, a common talking point was a new “Penny-a-Pound” fundraising arrangement among some commercial fishers and fish processors to raise money to support a legal defense fund. This program is an initiative of the United Cook Inlet Drift Association (UCIDA), an association to which two-thirds of the drift fleet are due-paying members. According to UCIDA, the intent of the legal fund is to provide financial resources to support litigation efforts representing commercial fishing interests in state and federal management dialogs. In a recent example, UCIDA sued the United States Department of Commerce, petitioning that they should exercise better and more legally adherent oversight of the State of Alaska’s salmon management, which they claimed was not meeting the federal fisheries management standards set out in the US Magnuson-Stevens Fishery Conservation and Management Act (16 USC § 1851). Radio chatter debating the Penny-A-Pound program, and noting which fishers and fish processors had and had not already chosen to participate, recurred throughout the day.

A third topic of conversation that we noted on this opening day was the status of a different vessel, the F/V *Aurora*. It was the first year of fishing for the vessel’s captain, Rosie, and the *Aurora* was adrift because of a failed oil pump. Fortunately, weather was good and fishers abide by strong unwritten rules to take care of one another. As such, other captains were frequently chiming in with suggestions and support. One captain in particular spent a half an hour walking Rosie through various repair strategies, though to no avail. Ultimately, the *Aurora*’s fate was to be towed back to port without having set a single net in the water.

Not so for the *Night Eagle*, however. We set our nets in the water with great haste, though not necessarily with grace or expedience in the first few attempts. This was mostly on account of Bart breaking-in a new deck hand, Steven, who, while being both capable and attentive, was new to fishing. From our own experiences as deckhands, we know that it is simply not possible for a newcomer to anticipate the pace and choreography of commercial salmon fishing until they have experienced it. We observed this eager awkwardness in Steven, but fortunately for Steven there were not very many fish in the water that day. Too many fish would have been a problem, Bart noted to us later, overwhelming the opportunities for teaching and practice. Bart was patient, but forceful and encouraging enough with Steven such that by the third deployment of the gill-nets, Steven had settled in to his role.

The largest single haul by the *Night Eagle* that day was twenty-eight fish, which was more than enough for teaching, and to make us all shout when we saw the splashy chaos created by the fish hitting the net, but not nearly enough to pay for the fuel that the twin diesels consumed as Bart zipped across the inlet. Still, Bart’s enthusiasm never waned, and he drove the boat hard, repeatedly racing to and fro from one end of the drift net to the other, trying to scare the salmon into the net. Frequently Bart would leave his nets drifting and instead run the boat up and down other fishers’ nets, which delighted Bart but seemed to perplex some of the other fishers. He explained later in the day that he was trying to really test his new boat, evaluating how it performed when under pressure. This explanation notwithstanding, it was

clear that Bart also enjoyed the thrill of speeding across the inlet in his brand new boat.

Coby, another drifter, later explained that re-familiarizing one's self with the boat is an important and necessary habit:

Your boat has been sitting for the winter for the most part. So you put it in the water and if something's going to break it's probably going to break right away. So you want to figure out what that is. ... I'd rather miss 60 fish than 600.

And another fisher, Stacey, had a different perspective:

Things don't break on a normal day. They break under extreme conditions. Like bad weather, or when your boat is deck-loaded with fish. That's when things break. You don't want to be adrift in high seas, so you've got to know if your gear, and your people, can take it. So you stress them out some when the weather is good and when you don't have to worry about fishing so much.

Though Bart clearly did not expect something to break, failure came anyway in the form of a coolant problem that scared us all by filling the main cabin with a foul and dense smoke. Fortunately the problem was not critical, but the sentiment impressed by Bart in the quote that introduces this paper, and repeated by so many of those whom we interviewed since, could not have been more effectively made than as it was by the long hours we spent limping back to Homer on only one of the two diesels: opening day is critical in both the material and relational dimensions to the safe and successful operation of the fleet.

### **The year the kings didn't come**

For the summer of 2012, we arranged to work as crew for a set-net fisherman named Cliff. Like Bart, Cliff is a long-time fisherman of the inlet, who got started by fishing with his brother Floyd. Cliff spends much of his year working in the hospitality industry in Washington, but makes a self-described "pilgrimage" to Cook Inlet each year to fish and spend time with his brother, who lives in Homer year-round. Floyd has since switched to drifting, but fishing for the two is still an important shared experience. As an out-of-state fisher, Cliff is in the minority; we note this detail here because, as noted above, there is a widespread misconception among critics of the commercial fishery that the majority of fishers are from out of state. We do not want this work to contribute to this belief, but at the same time we also do not want to portray Cliff as anything less than a legitimate and authentic member of this fishing community by omitting his story from our discussion because of his out-of-state residency.

During the fishing season, Cliff and Floyd occupy small, well-worn recreational vehicles on the grounds of a local cannery, where the living atmosphere is a blend of camp ground, boat yard, and construction site. While not unheard of, the practice of living at the cannery is less common than it was historically, and there was a time when canneries across Alaska maintained and staffed their own fleets (Ringsmuth 2005). The brothers continue to prefer this living arrangement, as much for the accommodations that the cannery provides (electricity, laundry service, a place to anchor boats and store gear),

as they do for the family tradition. As a part of our research design, we too chose to live on cannery grounds for the duration of the fishing season.

One of the first things we learned from this experience was that the work of fishing begins well before the season opener, with much planning and preparation necessary when relocating from one's home to "fish camp" for five weeks. Though our destination of Kenai, Alaska, is a mere ten hours from our homes in Fairbanks, Alaska, myriad unexpected repairs, supplies, and other minutia delayed the departure of one of our team by three days. Once arrived and settled, however, it took little time to become insulated from the environs we had vacated, and immersed in the cannery atmosphere and the many chores that must be completed before opening day. Some of these chores are slow and meditative, such as mending nets, and some are laborious and exciting, such as putting the boats in the water, and, for set-netters, taking the skiff out to the fishing sites to search for 'corks'—small floats that are only visible at the lowest of slack tides—which identify the sunken anchors marking each fisher's site. Once found, the corks are marked with much larger orange buoys, to which the nets will eventually be attached. All of this work serves to build anticipation for the season opener, which on the day we searched for corks, was only two days away.

Another reason that excitement ran high was that Floyd was already fishing. The drift fishery opens earlier in the year than the set-net fishery, so by our second day in town we were already hearing reports on the strength of the salmon run and enjoying the spoils of his first few trips. Grilled and freshly smoked salmon was shared freely and frequently among the many people circulating the cannery grounds, with no regard for typical meal times. The fish were also accompanied by cheerful story-telling, what another drifter later called "re-catching fish," and by debates over recipes and the relative culinary value of the five different species of Pacific salmon.

Despite our excitement for the approaching opening day, fate had other designs, and low Chinook salmon counts caused the first and second set-net openings to be cancelled by ADF&G. As mentioned earlier, both the drift and the set-net fisheries target Sockeye salmon, not Chinook. But the timing of Chinook and Sockeye returns overlap, and as such, closures can be implemented by ADF&G during this period to limit incidental catch<sup>d</sup> of Chinook. Floyd was still fishing because drifting does not catch a noteworthy amount of Chinook by comparison to set-net gear for a number of reasons, one of which is that set-net gear is deployed closer to the coastlines where Chinook swim more regularly.

We were disheartened by the closures to say the least, and spent much of the first closure speculating about how bad the Chinook run might be and whether or not the next opening, two days later, would be allowed. Later, we also discussed the early closure with Maxine and Mark, a couple in their mid-50s who were new to the set-net fishery. Cliff had first encountered them out on the water; they were unknowingly jumping his claim because they were working from an old survey of fishing site leases. Cliff was quite friendly with his new neighbors, and in the week leading up to the season opener he worked with the two frequently, offering spare gear and advice on how to fish their sites. This assistance on Cliff's part took a significant amount of time, an effort that he justified, saying:

It's just something natural for me to do because if I break down out there, you want them to come and get you. [It's] just kind of natural thing to look out for each other

because shit happens going out there. You need to be buddies with everybody. They'll tow me in, I'll tow them in. Once or twice, you never know.

When we spoke to Maxine and Mark about the closure they were frustrated, both for the unlucky start that it represented for their new business venture, and also because they were missing an important opportunity to set their nets in the water, something they had never done and could not do until fishing was opened. They admitted that they felt unprepared in many ways, and emphasized that they were missing an important opportunity to practice early. When we all finally did get to fish on the third scheduled opening, Maxine and Mark had a predictable number of avoidable missteps and malfunctions, and we ended up setting and fishing a net for them because their hands were too full handling just one.

Much to our dismay, this one day of fishing in 2012 would turn out to be our last, as ADF&G made the decision to close set-net fishing for the rest of July because of continuing concerns for the status of Chinook salmon. Even a single king salmon caught was deemed too many, and in-river sport fishing was closed as well. The decision was a great disappointment to many, albeit far more so for the many local set-netting families than for our own research. The high stakes and difficult decisions that ADF&G managers face when attempting to conserve both local livelihoods and salmon populations was brought into focus for us because we had caught a king salmon on our opening day. This forty-five pound fish accounted roughly for only one half of one percent of our total catch that day, but with 739 total set-net permits each capable of bringing in a catch, that one king could represent over a thousand per day across the entire set-net fleet, a legitimate conservation concern.

Cliff broke the news of the extended closure, after which he laid out a plan to pull his gear and skiff from the water over the next two days, and then to fly back to his home in Seattle. The only reason we did not start pulling gear right away was because we missed the favorable low tide. His frustration and disappointment was palpable, and after he related the news he kept to himself for the rest of the day. Over the next few days we proceeded to break down his fishing sites, clean the skiff from bow to stern, and package every piece of gear for storage until the 2013 season. Though we did our best to perform these duties with good humor, the disappointment was impossible to shake. Cliff later expressed how the cleaning-up usually brought with it the satisfaction of a well-fished season. He had come right to the brink of being a fisherman once more, but then had not been allowed to fish. In his words:

My [other] job is as a chauffeur; so I'm in a car for 8 hours a day and in traffic for half of that. So this is just a great escape to get away from all of that stuff. It's the atmosphere, out on the water, [I] love being out on the water... just the wind in your face and the waves and the water and the physicality of it all. It's such an honest work. It's very physical [and] it's fun. [I've] always liked that.

Others that we interviewed following news of the extended closure were similarly disheartened and distressed. Since we were not otherwise engaged in fishing, we spent much of our time that summer observing protests and picket lines, and interviewing fishers and fisheries managers about the closures. This research is ongoing, but suffice

to say that the set-netters felt and expressed much emotion over these closures and the impacts that they would have on their families. These impacts are not just limited to financial losses for the individual fishers, though these will arguably be significant (Harrison 2013), but as we describe below, the impacts of these closures are also intimately tied up in notions of family, tradition, and identity.

### **“This is who I am”**

Self-identification through the practice of fishing is well understood as an important aspect of fishing culture, as are the ways that fisheries management can influence and even re-write those identities (Bavington 2010; Carothers 2010). All of the 22 fishers that we interviewed communicated to us a very close personal and family connection with fishing, despite the fact that only two fish year-round. They all described fishing as their “real” occupation, and describe the job that they perform for the rest of the year as simply providing a means to an end. One drifter explained:

It’s like they say, it’s a lifestyle. I’ve been very lucky that I’ve been able to earn a living at this, but I spent a lot of years where I barely eked by. And you know, end up living on my wife’s income so I can do what I do. This is what I do. This is who I am. And I couldn’t imagine myself anywhere else now.

This sense of identity and pride is evident in how the fishers speak about their profession, in how many decorate their homes with pictures and artifacts of fishing, even in how some name their children, with “Sailor” and “Fischer” being two obvious examples of fishing-themed forenames that we encountered.

Thus, a fisher’s self-identification with their occupation also plays into an important aspect of how the opening day contributes to the subjective psychological dimension of well-being. Given the highly seasonal nature of fishing for salmon in Cook Inlet, and given that these fisherfolk live very different and diverse lives for the majority of the year, we propose that the opening day plays an important ritual function for participants. That is, the opening day is an important final step in an annual rite of passage, a rite by which fishers transition from one identity, perhaps that of a schoolteacher or limousine driver, to that of being a fisherman (Van Gennep 1908; Turner 1967). Van Gennep (1908/2004) describes a three-fold structure for rites of passage: *rites of separation*, by which people break away from their former practices and routines; *rites of liminality*, by which people arrange the structure of their new lives and begin to transition towards their future identity; and, *rites of incorporation*, during which the subject is re-incorporated into society with their new identity. As we recount above, the long process of “getting ready” to fish is extensive and includes planning, preparation and maintenance of gear, and (often) moving away from one’s home. We argue that each of these activities can be understood as contributing to one of these stages of rites of passage: moving away from home is an example of a rite of separation, setting up camp and mending nets are examples of rites of liminality, and finally, the opening day of fishing provides a rite of incorporation, through which fishers are ultimately allowed to actualize their “real” identity once more.

Several fishermen, when asked why they fish on opening day, said that despite all the possible practical reasons for or against fishing, the shake-down on the one hand versus

the likelihood of losing money on the other, they ultimately decide to fish because they feel compelled to do so. As Chad, one drifter explained, “I can’t watch all of those boats go back and forth in front of my window.” Too, while these fishers identify themselves as fishers year-round, many still described a personal change once fishing has actually begun:

[During the season] if I’m not catching fish, I don’t eat, I don’t drink, I just beat myself up, and it took me three years before I said, “okay, the [fishing] period is over, the next one will be better, let it go.” And now, I’m much better. I don’t know why, but if I don’t catch fish halfway through the day, I can at least eat now. I don’t get quite so wrapped up. Now I love it. It’s the hunt, and there’s no more than better feeling than doing well. I’m also one of the worst people when it comes to not catching fish that day. I brood, oh, it’s terrible.

There are admittedly some details of Van Gennep’s and Turner’s treatments of rites of passage that may not fit perfectly with our case, and their various ideas regarding ritual have been contested by others (e.g., Eade and Sallnow 1991). Nevertheless, the fit between the stories we relate above and the basic features of rites of passage are more than sufficient to warrant recognition of these practices, and specifically the opening day, as something more than mere secondary or ancillary aspects in the business of catching fish.

## **Discussion**

The most obvious ways that the opening day contributes to the social well-being of Cook Inlet set-net and drift fishers is through the material and relational aspects discussed above—testing gear, training new deck hands, and strengthening group relationships. However, we also argue that the pedagogical function of the opening day is particularly important the sustainability of the fishery over time because it supports the intergenerational transfer of both fishing expertise and fishing rights.

The so-called “greying of the fleet” is an increasingly prevalent demographic trend in fisheries across Alaska; in many fisheries, including commercial salmon fishing in Cook Inlet, a growing number of permit or catch-share holders are at or beyond retirement age, and entry by new fishers has been limited<sup>e</sup> (Gho 2012). The drivers of this pattern are still only roughly understood, though they likely mirror the drivers behind a similar demographic trend in the American agriculture industry—with economic barriers to entry, e.g. expensive permits and consolidation by large-scale corporate interests among the most noteworthy (see Gale 2003; Carothers 2010).

Despite any economic or institutional barriers, however, if fishers must increasingly rely on older, more experienced help because they do not have the opportunities to educate younger workers safely and without impacting profitability, this will surely limit participation by and succession of fishing rights to younger generations. Likewise, less hands-on experience among the younger fishers who do enter the fishery, and the concomitantly limited ecological expertise that would result from reduced elder-youth pedagogy, could impact new fishers’ productivity, increase accidents, and limit the effectiveness of future co-management arrangements, should they develop. To our knowledge this intergenerational aspect of social well-being has not been explicitly

addressed in the literature, except with respect to the inheritance of poverty and malnutrition (Sumner, Haddad, and Climent 2009). We argue that attention to intergenerational pedagogy adds an important temporal dimension to discussions of social well-being, and links the framework to broader agendas of sustainability at the household, community, and resource system levels.

Finally, the embattled atmosphere that ensconces the management of Cook Inlet salmon fisheries is a source of significant stress for many commercial fishermen, who report to us being weary of having to fight each year in order to fish (Loring et al. 2013). The opening day is a ritual of great psychological importance to many participants, one that contributes to their sense of identity and solidarity, and by which each fisher re-actualizes their personal relationship with fishing. If these opportunities continue to be lost due to repeated early season closures, it is possible that commercial fishers' willingness to engage with this conflict will be eroded. As noted, most participants in these commercial fisheries are not full-time fishers, but spend much of their year employed in other occupations; as such, each fisher may very well have their own personal tipping point at which their enjoyment of fishing is so diminished that exit from fishery becomes the most desirable strategy. As Britton and Coulthard (2013) ask, "are there social, political and moral limits to the pressures experienced by fishing communities that should be taken into account in management decision-making?" (p. 28).

### **Social well-being and EBFM**

As we have shown here it is possible to unpack local fishing practices and reveal some aspects of their practical, system-wide benefits, and we believe that the three-dimensional framework for social well-being employed here can aid managers of community-based fisheries in this regard. As a heuristic, the framework suggests at least three key questions that should be asked whenever a change to management is being considered:

- How will this change impact gear, readiness and safety, or other material considerations?
- How will this change interact with or perhaps undermine intergenerational pedagogy or existing social networks, rules, and norms?
- How will this change impact the individual fishers' relationship with their profession and the fishery?

For managers interested in answering these questions, the return on investment may seem difficult to quantify, at least with respect to immediate and detectable cause and effect relationships between changes to management practices and changes in the status of fish populations and regional ecosystems. Yet, there is no shortage of evidence to support the contention that when people's needs remain chronically unmet that they will seek out creative solutions, whether resource switching and illegal/illicit harvests, which themselves come with unanticipated ecological consequences (McCay 1981; Brashares et al. 2004; Loring and Gerlach 2010; Hansen et al. 2013). In other words, maximization of social well-being is not at odds with but concomitant to ecological sustainability, and therefore is a central concern of EBFM (Loring 2013).

Thus, the question is not whether attention to social well-being can complement or even strengthen the ecological outcomes of EBFM, but how to achieve such integration of social and ecological goals. Participatory and co-management approaches are often touted as the *de rigueur* pathways to such outcomes (Cinner et al. 2012), but many studies incorrectly assume that participatory governance will necessarily espouse more legitimate and socially-just outcomes (Nadasdy 2005; Jentoft 2000), and little guidance is available on the details of effective (or ineffective) implementation of co-management. Alaska, for example, is often touted as having fisheries management regimes that are a model for effective community participation, but deep political divisions and widespread lack of confidence in the political and scientific integrity of the process call this reputation into question (Loring 2013; Richmond 2013; Harrison 2013).

The three questions suggested above (and others like them) may represent the beginnings of a rubric for evaluating the negative impacts of management actions, a rubric that if collaboratively constructed and effectively enforced could be a core feature of co-management regimes that make good on their social justice promises. In our experience with fisheries in the Kenai Peninsula and other regions of Alaska, fishery managers are themselves local residents who are intimately familiar with and sympathetic to the social and cultural fabric of the fisheries in which they work. They can feel torn, however, between policy mandates and their own feelings of ethical obligations to their neighbors, and they can likewise feel constrained from implementing more holistic and participatory practices. Thus, we also argue that research is warranted that examines the role and experiences of locally-situated managers in co-management regimes, and their potential to act as culturally competent, boundary-spanning individuals who can strengthen the inclusion of social well-being considerations into EBFM processes.

## **Conclusion**

We have focused here on the opening day of the drift and set-net fisheries as an example of practices and rituals that may appear mundane or unimportant to the uninitiated but yet are crucial to the social well-being of fishers and the fishery. Calls to more explicitly consider these human dimensions in ecosystem-based fisheries management are common, though they often prioritize aspects of fisher behavior and culture that have immediate or obvious ecological linkages and direct, cause-and-effect relationships. Yet, the validity of human dimensions cannot be measured in only ecological terms. Thus, the value of employing a social well-being framework is not merely in its schematic utility for unpacking local practices, but also as a normative context for legitimizing the intrinsic value of fishing practices to local people and communities.

Few would question the importance of salmon fishing to the people and communities of the Kenai Peninsula, or of Alaska for that matter, though the future status of these fisheries is both contested and uncertain. Some of the present challenges facing these fisheries are ecological in nature, such as the direct and indirect impacts of climate warming on salmon and salmon habitat, but other and arguably more fundamental challenges are primarily sociopolitical in nature, specifically, debates over the best uses and allocation of these valued fish species. How these debates will unfold, and whether



the deeper environmental and social issues that they represent will be resolved is unclear. However, if it is the intent of governance and management bodies to enable and involve stakeholders in the search for sustainable solutions to these issues, fisherfolk cannot continue to be thought of as little more than variables in stock models. The alternative is to respect and even protect local fisheries as place-based cultural systems of production and meaning, with intrinsic value that far exceeds the economic contributions of the fisher and his or her family to local and national economies.

### Endnotes

<sup>a</sup> As appropriate, we use pseudonyms here when referring to specific people and fishing vessels.

<sup>b</sup> Gill nets are a highly effective kind of netting in which a floating, vertical panel of mesh webbing is deployed in the water. The mesh is sized to allow the head, but not the body of the fish to get through, thus most fish that swim into the net literally get caught by the gills.

<sup>c</sup> Most drift boats in Cook Inlet fish three lengths, or 'shackles' of net, as this is the maximum allowed on a single commercial fishing permit. Some skippers, however, elect to fish a second permit from the same boat. This double permit, or "D permit," arrangement allows a fourth shackle to be fished from the same boat.

<sup>d</sup> Both set-netters and drift-netters are granted the right to harvest Chinook by their Cook Inlet commercial permit, which does not designate certain salmon species. Thus, referring to Chinook as 'by-catch', which some do, is inaccurate, a misnomer with political undertones that imply there are other stakeholder groups (e.g., sport anglers) that have a greater right to the fish.

<sup>e</sup> A mean turnover rate of 8% from 1975 to 2012 is reported for all limited entry fisheries in the state by the Alaska Commercial Fisheries Entry Commission, despite the number of transferable permits doubling during that same period. The mean age of new entrants has likewise increased from a low of 32.5 years in 1976 to 49.7 years as of 2012 (Gho 2012).

### Competing interests

The authors declare that they have no competing interests.

### Authors' contributions

PL and HH shared duties equally in fieldwork, data analysis, and drafting the manuscript. Both authors read and approved the final manuscript.

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