



# Contested Commoning: Urban Fishing Spaces and Community Wellbeing

NOËLLE BOUCQUEY

JESSIE FLY

*\*Author affiliations can be found in the back matter of this article*

RESEARCH ARTICLE

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## ABSTRACT

This paper analyzes how the more-than-human elements and relationships of urban fishing—piers, bridges, fish, social interactions—constitute spaces that offer the possibility of affecting community wellbeing. In particular, it applies theories of commoning to questions of how urban fishing spaces might affect the social and material dimensions of wellbeing. The paper argues that approaching ideas of community wellbeing from a commoning perspective enables deeper analysis of the ‘messiness’ and contradictions that can arise in accounting for the complex socio-natural interactions that affect wellbeing. The paper examines these questions via a case study of urban fishing in the Tampa Bay region of Florida. Employing survey, interview, and field research, the paper asks how urban fishing spaces support processes of commoning that could lead to increases in wellbeing, while also highlighting where disruptions in the ecological, physical, or social spaces involved in commoning might decrease wellbeing. The paper finds evidence that commoning can increase community wellbeing in concrete ways (e.g., by contributing to collective food security, knowledge-sharing, exposure to economic and racial diversity, and shared experiences), but that these processes and infrastructures are simultaneously precarious and subject to social strife, changes in legality, and ecological contamination which can decrease wellbeing. The paper suggests that particularly for geographies of urban wellbeing, adopting a commoning lens is useful for better parsing how the elements of and challenges to wellbeing are intertwined, and where possibilities might exist for addressing these challenges. The paper contributes to theoretical discussions about the characteristics of commoning, links between commoning and socio-natural wellbeing, and shifting understandings of urban space and infrastructures of care.

CORRESPONDING AUTHOR:

**Noëlle Boucquey**

Eckerd College, US

[boucqu@eckerd.edu](mailto:boucqu@eckerd.edu)

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## 1. INTRODUCTION

Urban fishing supplies important benefits to fishers' wellbeing (Nieman et al., 2021; Quimby et al., 2020). Particularly when informal commons are established in urban fishing spaces, these benefits are multidirectional (Kadfak, 2020). The information shared among strangers, the friendships formed, and the more-than-human expressions of care confer benefits to the wider community. Fish provide food, cultural connections, and social capital currency while the spaces and practices of fishing provide relaxation and entertainment. Urban fishing can also be a marginalized activity entangled with class tensions, tenuous coastal land use rights, and water quality concerns (Burger et al., 1999; Pitchon & Norman, 2012; Pulford et al., 2017). Here we investigate the ways that marginality and wellbeing intersect and interact with more-than-human infrastructures and commoning practices in urban fishing spaces around Tampa Bay, Florida.

A variety of recent work has illuminated similar issues in land-based urban foraging, showing how such practices can provide meaningful material and nonmaterial benefits to people's wellbeing, including social, cultural, spiritual, or sustenance benefits derived from public or de facto common spaces (Galt et al., 2014; Hurley & Emery, 2017; McLain et al., 2014; Poe et al., 2014; Shackleton et al., 2017). This work has engaged with how such practices are distributed in urban areas, noting that urban foraging is associated with "interstitial" spaces—those spaces at the margins, but which as Galt et al. (2014, p. 134) describe, can be likened to plants growing in sidewalk cracks: spaces that insist on coexisting with those devoted to so-called normal activities. Within these spaces, people find material benefits and perform a variety of socio-natural practices (McLain et al., 2014). Similar to the shoreside area available to urban fishers, urban spaces available for foraging are often accessed and maintained through a set of learned rules for harvesting in de facto commons (Charnley et al., 2018; Hurley et al., 2015; Morrow & Martin, 2019; Parthasarathy, 2011) and are under threat of enclosure (Hurley & Halfacre, 2011).

Given that the largest wild food source still available to most people is fresh- and saltwater fisheries, urban foraging for fish remains understudied. However, a growing body of work has begun to examine urban fishing, documenting its marginality—a practice often undertaken out of nutritional necessity by urban residents of lower socioeconomic status and/or racial minorities (Hutt & Neal, 2010; Pitchon & Norman, 2012) – and expressing concern for fisher exposure to environmental contaminants and lack of access to information about these risks (Burger et al., 1993, 1999; Drakopoulos et al., 2020; Lucas & Polidoro, 2019).

While this research has made useful observations about the social and nutritional benefits of foraging and fishing infrastructures (Davies & Evans, 2019; Galt et al., 2014; Nieman et al., 2021; Paddeu, 2019) and has begun to engage with ideas of commoning (Morrow & Martin, 2019; Parthasarathy, 2011), more work is needed to integrate these theoretical strands and to critically examine relationships between practices of commoning, the production of more-than-human (Braun, 2005; Whatmore, 2006) urban spaces, and the role of infrastructures in commoning and community care practices (Alam & Houston, 2020; Puig de la Bellacasa, 2017).

We begin this effort by examining how commoning in urban fishing spaces might help us better think through the role of urban infrastructures more broadly in the social and material dimensions of wellbeing. With our empirical case, what we aim to consider is how the more-than-human elements and relationships of urban fishing—piers, bridges, fish, social interactions—work to constitute spaces that could affect community wellbeing. We argue that approaching ideas of wellbeing from a commoning perspective enables deeper analysis of the 'messiness' and contradictions that can arise in accounting for the complex socio-natural interactions that affect wellbeing. Examining processes of urban commoning also enables us to think further about what types of urban common spaces might be most beneficial to food-insecure communities in particular. Via these lenses, we contribute to theoretical discussions about the characteristics of commoning, links between commoning and socio-natural wellbeing, and shifting understandings of urban 'lively space' (Jay, 2018) as constituted by more-than-human actors and relationships.

## 2. THEORETICAL CONTEXT: COMMONING, URBAN SPACE, AND WELLBEING

### 2.1. THE EMERGENCE OF COMMONING

The modern cannon of commons scholarship originated with Elinor Ostrom and like-minded colleagues' empirical and theoretical work on common property regimes (e.g., Acheson, 1988; Basurto & Ostrom, 2009; Berkes et al., 1989; Ostrom, 1990; Ostrom et al., 1999), countering Garrett Hardin's (1968) assertion that only private property or government control could prevent 'tragedies' of natural resource commons. These scholars argue that "collective action and strong local institutions can play an instrumental role in resource conservation" (Beitl, 2011, p. 486), and their work has provided important empirical examples of common property governance regimes successfully managing ecological resources (e.g., Basurto, 2005; Berkes et al., 1989; Huron, 2015).

This traditional commons scholarship can be termed the ‘institutional’ approach, as their analytical focus rests largely on the social norms, rules, and institutional arrangements that contribute to successful commons management. These are manifested most prominently in Ostrom’s well-known ‘design principles’ outlining the conditions under which one might expect successful resource management to occur (McGinnis & Ostrom, 1996; Ostrom, 1993). Institutional scholars are careful to clarify differences between commons (or common-pool resources) and the property rights regimes available to govern them. Their work understands common-pool resources as those resources “for which exclusion is difficult and joint use involves subtractability” (Berkes et al., 1989, p. 91).

As a result of its theoretical focus on institutions and historical development as a reaction to Hardin’s theoretical open-access commons, this body of work has primarily concentrated on ecological resource commons (i.e., fisheries, forests, water systems) and the (often rural, community-based) collective action practices that can sustain them (Borch & Kornberger, 2015). While more recently institutional scholars have broadened their notion of ‘the commons’ to include ‘new’ commons (e.g., knowledge, global, and cultural commons amongst others (Hess, 2008; Ostrom et al., 1999)), they have generally continued to apply an institutional lens to analyses of these commons (Beitl, 2011; Mundoli et al., 2017).

While building on key insights from institutional work, another vein of commons scholarship is emerging from history, geography, and anthropology that conceives of commons not as a resource or entity per se, but rather as a *process* (Cooke & Lane, 2018; Gibson-Graham et al., 2016; Linebaugh, 2008). This emphasis on process has led to the term shifting from a noun to a verb: *commoning* (Linebaugh, 2008). Gibson-Graham, Cameron, and Healy (2016, p. 4) offer one working definition of commoning (“... establishing rules or protocols for access and use, taking caring of and accepting responsibility for a resource, and distributing the benefits in ways that take into account the wellbeing of others”), while others place greater emphasis on how commons are “always part of ‘thick’ interdependent relations between human and nonhuman others” (Bresnihan, 2016, p. 23). With commoning, the emphasis is on the action: action that might flow in multiple directions, might include nonhuman agency, and might be deeply entangled with personal histories, shifting ecologies, or political moves (Basurto & Garcia Lozano, 2021; Cooke & Lane, 2018).

While thinking via a commoning frame does not exclude attention to classically institutional concerns about the formation and operation of norms and behaviors, it places greater emphasis on the multidirectional, more-

than-human, and shifting qualities of such behaviors. In its emphasis on continually emergent, contingent, and entangled performances, commoning has much in common with assemblage thinking (B. Anderson et al., 2012; McFarlane, 2011; McFarlane & Anderson, 2011), though authors employing commoning generally have a more explicitly normative interest in outcomes of socio-natural wellbeing (Gibson-Graham et al., 2016; Iaione, 2016; Nightingale, 2019). Commoning addresses increasingly complex realities as engagements with ‘new’ commons reveal the limitations of the institutional lens, which has difficulty accounting for non-ecological resources and complex property regimes (Bresnihan & Byrne, 2015; Turner, 2016).

## 2.2. COMMONING WITH URBAN SPACES AND INFRASTRUCTURES

Urban commons are an especially rich area for pushing commons theorizing further since “*contra* Ostrom, the notion of a commons as a self-evident and independent object makes little sense... In the city, the commons is an inherently relational phenomenon” (Borch & Kornberger, 2015, p. 7, emphasis original). Common spaces in cities are special: they may be non-subtractible resources (e.g., a lively downtown), or they may exist within privatized or government property (Baibarac & Petrescu, 2017; Bresnihan & Byrne, 2015). Commons in cities also present special challenges; namely, that they are “enacted in saturated space... [and] constituted by the coming together of strangers” (Huron, 2015, p. 963). The characteristics of urban commons are therefore complex, and ripe for further investigation.

The idea of commoning overlaps in productive ways with questions about space, infrastructures, and wellbeing. While the commoning literature has often focused on communal spaces (such as community gardens), less attention has been paid to the role of particular kinds of infrastructure in affecting commoning activities, or vice versa. We find this question interesting since “*where* things happen is critical to knowing *how* and *why* they happen” (Warf & Arias, 2009, p. 1, emphasis original). In Tampa Bay, waters that shift in fecal coliform concentrations intermingle with social processes that shift fisher bodies from place to place, creating complex patterns of risks and benefits. Our investigation of these patterns emphasizes the “complex relationality of places and persons connected through performances” (J. Anderson, 2012, p. 575). How these performances are connected with particular spaces and to what extent they constitute commoning are key questions of this paper.

To explore these questions, we draw on work examining the importance of public spaces to wellbeing, in particular

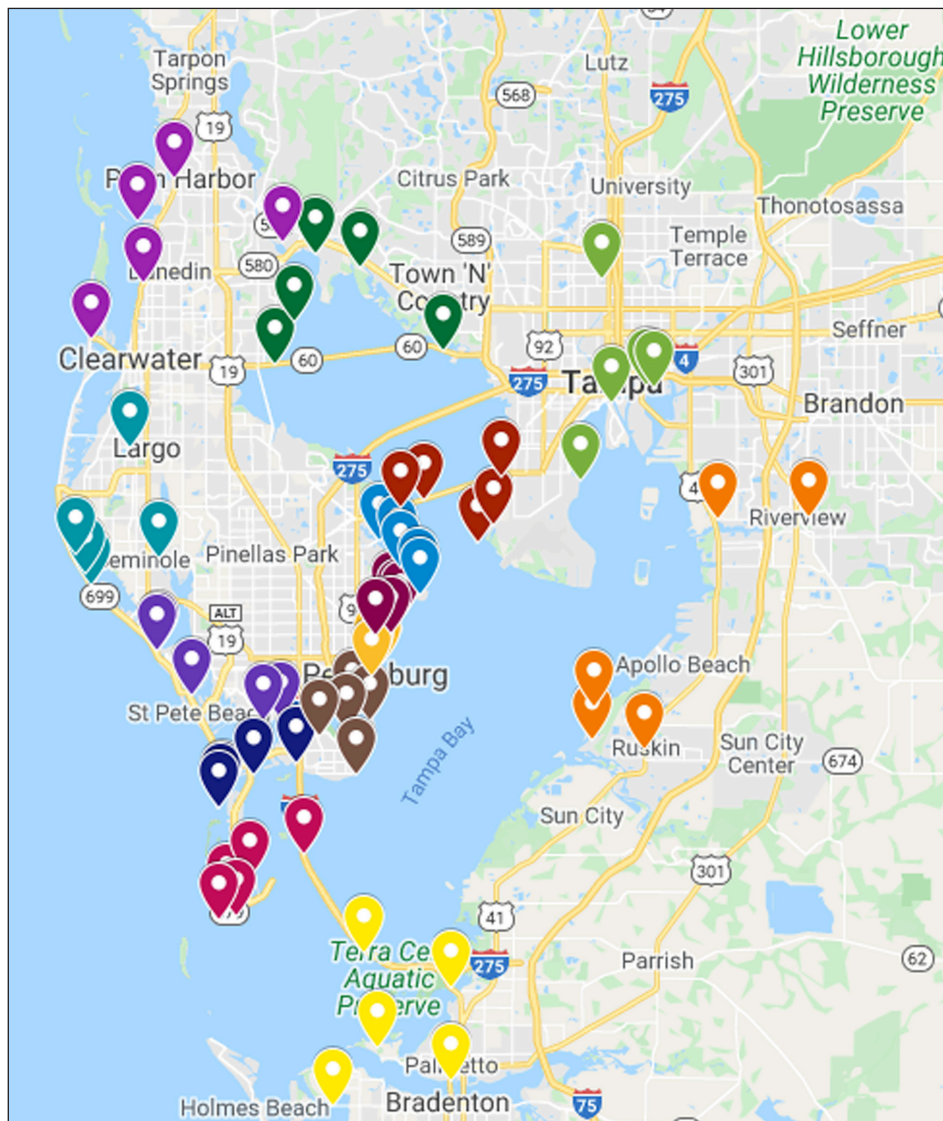
studies of urban foraging as well as infrastructures of care. For instance, research on land-based urban foraging has found that most motivations for engaging in foraging are connected directly to wellbeing, and that foraging provides individual subsistence, recreational, cultural, religious, educational, and health benefits (Shackleton et al., 2017). Community-wide benefits have been found as well; for example, foraging in de facto and de jure urban forest commons has been shown to “improve mental well-being, lower crime rates, enhance social cohesion, and promote community empowerment,” though importantly such access is uneven and empowerment is not necessarily equally distributed (Grabbatin et al., 2011; Hurley & Halfacre, 2011; Poe et al., 2013, p. 409).

At the same time, urban scholars (e.g., Alam & Houston, 2020; Phillips & Atchison, 2020) are bringing together work on infrastructures of care, which is concerned with

“how *things* facilitate...and co-constitute caring relations” (Power & Williams, 2020, p. 3, emphasis added), with broader work on the performative role of infrastructure in mediating more-than-human urban life (e.g., Barua, 2021; Graham & McFarlane, 2014). Such studies challenge us to take seriously “the agency of place” and to ask ambitious questions about the ways that care ‘flows’ materially and relationally through cities (Alam & Houston, 2020, p. 4; Power & Williams, 2020).

### 3. CASE CONTEXT AND METHODS

The study site is the Tampa Bay region of Florida, USA, including both inner bay and coastal (Gulf of Mexico) locations. **Figure 1** shows the approximate positions of each fishing location visited. Tampa Bay is Florida’s largest



**Figure 1** Survey locations around the Tampa Bay area, grouped by zone (credit: Google Maps).

open-water estuary, and supports high biodiversity due to its size, mosaic of habitats, and location in a transition zone between temperate and tropical climates (Cicchetti & Greening, 2011). The bay supports and is also threatened by the surrounding Tampa-St. Petersburg-Clearwater Metropolitan Area, which has an estimated population of over 3 million people (Johnston, 2018). In this region, one in four children and one in six adults are food insecure (Urban Institute et al., 2014) and the poverty rate is 13.5% (Census Reporter, 2018).

The fishing locations we investigated are comprised mainly of piers, bridges, and public parks surrounding Tampa Bay. Each has its own character, with some in high-traffic, densely urban areas and others in more suburban neighborhoods. Fishing locations also ranged from a few highly popular spots (e.g., about seven well-known piers with amenities such as restrooms where we regularly encountered over 10 fishers), to more numerous smaller piers, bridges, or park seawalls with fewer amenities. With the exception of the two lengthy Skyway fishing piers (providing 4 miles of fishing space), the length of all other fishing locations can easily be walked in about 5–10 minutes.

**Table 1** notes our data sources. Importantly for our interest in attending to the role of infrastructure and other more-than-human elements in processes of commoning, data was collected *in situ* at shore fishing sites. Our initial list of sites was compiled from a regional map of fishing piers (C. Anderson et al., 2011), then supplemented with additional locations after compiling pilot survey responses to the question, “Where else do you like to go fishing?” Boat launch ramps were excluded from surveying given our focus on shore fishers.

A geographically stratified sampling process was used for the structured surveys conducted in the summers of 2018 and 2019. Locations were initially stratified into 14 zones based on physical proximity to each other in order to evenly divide fishing locations (5 in each zone) and facilitate surveying the maximum number of locations per day. Zones yielding fewer than two surveys after two visits were

eliminated from further surveying. Eight zones remained for repeated surveying (40 total locations). Surveyors proceeded through each of these zones six times over the course of the data collection. Each day, surveyors counted and attempted surveying everyone at the starting location (chosen via a random-number generator between 1–5), then proceeded to the next location within the zone. Within each day’s zone, all locations were attempted, though occasionally some locations were missed due to inclement weather. In addition to completing the structured surveys, surveyors also engaged in more casual conversations, made observations about the infrastructure and location, took photographs of the space, and completed detailed field notes from the day.

Surveys asked about 30 multiple-choice and Likert-scale questions covering demographics, fishing motivations and practices, opinions about resource health, and assessments of food security. Food security questions were drawn from the federal US Department of Agriculture food security survey (USDA, 2012), and questions about days and time spent fishing were inspired by questions in the federal Marine Recreational Information Program survey (NOAA, 2021). We also note that our questions are similar to many of those asked elsewhere in urban and recreational fishing contexts (D. K. Anderson et al., 2007; Arlinghaus, 2006; Hutt & Neal, 2010; Pitchon & Norman, 2012; Pulford et al., 2017).

Semi-structured interview data was collected over 4 years (2016–2019) via projects in two of our undergraduate courses. Interviews were primarily intercept interviews conducted *in-situ* at fishing locations, with 5 conducted over the phone. Interviewers began with a standard set of questions (e.g., “What are some of the main reasons you go fishing? How often do you like to eat what you catch?”) and then proceeded in a semi-structured fashion. All interviewers and surveyors were undergraduate students trained by the authors. Almost all interviews were conducted in English, though in summer 2019 we had a Spanish-speaking research assistant.

Qualitative data was analyzed using a mixed grounded and purposive coding approach (Bernard, 2017; Charmaz, 1983). For instance, evidence of the emotional benefits of fishing emerged from our grounded reading of the data, while we also created codes to classify data in a more purposive way based on Gibson-Graham, Cameron, and Healy’s (2016) definition of commoning. Statistical data analysis of survey results was performed in MS Excel, and qualitative data analysis was assisted by MAXQDA 18. All elements of the project were approved by our Institutional Review Board (IRB) for research with human subjects.

DATA SOURCE	N
In-person surveys	300
Field notes (person-days <sup>a</sup> )	153
In-person semi-structured interviews	86

**Table 1** Project Data.

<sup>a</sup>As we often went into the field in pairs, there are sometimes more than one entry per day. We have counted field notes in terms of total individual daily entries.

## 4. RESULTS

**Tables 2** and **3** present demographics and results from our survey data, which are discussed below in conjunction with our other source materials.

### 4.1. PRACTICES OF COMMONING AND THE ROLE OF MORE-THAN-HUMAN INFRASTRUCTURES

If urban commons are inherently relational (Borch & Kornberger, 2015), the presence of actors who might become entangled with one another is a prerequisite for commoning. To this end, we found that fishers spend a substantial amount of time in fishing spaces (**Table 3** and **Figure 2**), interacting with each other and the more-

than-human actors co-creating these spaces—piers and rock outcroppings, fish cleaning stations, birds, saltwater, mangroves, marine mammals, and fish themselves. The fishers we encountered spent over five hours per outing on average and fished frequently, including 25% who fished over 10 times a month.

Moreover, the fishers standing side-by-side at the rail, jockeying for space or sharing baitfish, were a more diverse group than is encountered in many other public spaces in Tampa Bay, with its legacy of segregation (Johns et al., 2013). Several fishers commented on this – as one who explained, “I meet all sorts of people fishing, people I’d never have cause to talk to otherwise but fishing gives us common ground” (FN 03/11/21). Our survey triangulates

QUESTION	PROPORTION	N
How would you describe your ethnicity? <sup>a</sup>		293
White including mixed	52%	
Black including mixed	15%	
Asian including mixed	11%	
Latinx including mixed	22%	
Mixed, no ethnicities specified	3%	
Native American or Caribbean including mixed	3%	
Gender <sup>b</sup>		298
Female	13%	
Male	87%	
What income bracket does your household fit into? <sup>c</sup>		146
\$0–\$25k	13%	
\$25–\$50k	30%	
\$50–\$75k	23%	
\$75–\$100k	15%	
Over \$100k	18%	
In the last year, how often did you not have the money to buy enough food? <sup>d</sup>		295
Never	83%	
Sometimes	11%	
Often	6%	
In the last year, did you ever skip meals because there wasn’t enough money to buy food? <sup>c</sup>		294
Yes	10%	

**Table 2** Participant Demographics.

<sup>a</sup> Totals over 100% because people specifying multiple ethnicities are counted in each category.

<sup>b</sup> After asking about self-identified gender and finding that fishermen often took offense, the research team began recording apparent gender, though recognizing this is problematic.

<sup>c</sup> N is lower for this question because it was added in the second year of surveying.

<sup>d</sup> Question adapted from the USDA’s U.S. Household Food Security Short-Form Survey Module (2012).

QUESTION	MEAN (MEDIAN) OR PROPORTION	N
How many hours per outing do you usually spend fishing?	5.5 (5)	293 <sup>a</sup>
On a good day of fishing, how many fish do you keep?		293 <sup>b</sup>
Including catch-and-release fishers	3.5 (2)	
Amongst only those who keep fish	5.6 (4)	
How many times did you go fishing in the past month?		299
1–5	53%	
6–10	22%	
11–15	9%	
15+	16%	
With the fish you keep, what do you generally do with them?		231 <sup>c</sup>
Cook & eat	97%	
Share with friends and neighbors	49%	
Trade or Sell	2%	
In the last year, did fishing ever help prevent you or members of your household from going hungry?		296
Yes	11%	
How clean would you rate the water around here?		292
(1 = very dirty, 5 = very clean)	3.7 (4)	
How healthy do you feel it is to eat the fish here?		290
(1 = very unhealthy, 5 = very healthy)	4.2 (5)	

**Table 3** Fishing Activity Characteristics.

<sup>a</sup>Excludes two outliers of 36 and 72 hours.

<sup>b</sup>Excludes one outlier of 100 fish. It is worth noting this question also elicited 21 qualitative responses, with participants answering with phrases such as “the limit” or “as many as I can” which could not be quantified.

<sup>c</sup>23% of participants did not answer this question since they do not keep fish. Proportions add up to more than 100% because of overlapping activities (respondents could choose more than one).

these observations, as our sample was more diverse than the Tampa Bay area as a whole. For instance, fishers identifying as Asian made up 11% of our respondents, compared to only 3% of the Tampa Bay population (Census Reporter, 2018). Our survey revealed a wide range of economic diversity as well (*Table 2*). A subset of our survey participants were under clear economic stress: 17% sometimes or often felt they did not have enough money to buy food over the previous year. This food insecurity was experienced by all ethnic groups, though at slightly differing levels (22% of respondents self-identifying as Latinx or mixed, 16% of Black or Asian (or mixed), and 14% of White or mixed).

In these diverse spaces, we found a mix of community-making and care, passive indifference, and active distrust. While in every fishing site we found evidence of commoning (operationalized via Gibson-Graham, Cameron, and Healy’s (2016) criteria), we observed patterns of behavioral and

attitudinal differences by type of fishing space. In the well-known, more crowded fishing locations popular with tourists, snowbirds, and year-round locals, there were many positive interactions. People shared laughs, baitfish, and advice while waiting for a tug on their lines and newcomers were expected and accepted. However, it was also in these spaces that our interviews revealed the most distrust toward “others” (e.g., “rednecks,” “Asians,” “poor people” or anyone else deemed “ignorant”), which was often simultaneously entangled with expressions of care for fish (FN 05/12/16, FN 06/14/18, FN 05/13/19). These problematic (given their classist and/or racist undertones) expressions of care and blame were most often voiced by catch-and-release or “sport” fishers, who sometimes couched their care for fishery resources in terms of their disapproval of others’ actions (i.e., keeping undersized fish). At the same time, people wrestled with the question



**Figure 2** Fishing at the end of the Ballast Point Pier.

of when it might be permissible to blur the rules. As one fisher who was upset at seeing undersized fish kept mused, “I wonder, are they so hungry? Does the end justify the means?” (Int.19E).

These popular fishing locations were equipped with amenities that facilitated pro-social and environmental behaviors: bait shops with authoritative information on fishing regulations, restrooms, fish cleaning stations with running water, and plentiful trash cans and fishing line recycling tubes. These well-equipped piers also often required payment to enter and were adjacent to higher-income neighborhoods or desirable open water access. Despite the diversity recorded in these spaces, they are not accessible to all fishers. Indeed, we found a lower proportion of food-insecure fishers at pay-to-enter piers (9%) than in our survey overall (17%). The fact that some food-insecure fishers still used these piers suggests that the combination of infrastructure and ecological location (over “moving” water) provides enough benefit to remain worthy of financial investment.

The more marginal fishing locations we visited are closer to urban centers, not on the government-sponsored map of fishing piers, of questionable legality, have more treacherous access to the water, and are often the result of fishers being excluded from other spaces. One example is beneath the Courtney Campbell Causeway (*Figure 3*), where fishers moved after a controversial Florida Department of Transportation



**Figure 3** Fishing under the Courtney Campbell Causeway Bridge.

decision to close the pedestrian walkway to anglers. In many of these spaces, we observed a strong internal cohesion of the community of users. For example, at one urban neighborhood pier, a self-described “regular” explained that the pier contained a “real community” of people, ranging from “high-rollers,” who gathered at sunset each day to fish and admire the view, to homeless and other food-insecure visitors, who were often recipients of extra fish (FN 7/12/18).

In these spaces we also found a complex mix of care for more-than-human actors. While there was more wariness about enforcement of fisheries regulations, fishers in marginal spaces often mentioned the connection with nature they sought through the act of fishing. One man rescued the same bird twice from fishing gear at a neighborhood bridge and returned regularly to feed his bait to the bird (FN 6/10/19). While feeding wildlife is discouraged by conservation biologists, for this man it fostered a deeply-felt relationship with more-than-human life. At the same time, the physical spaces of these marginal locations are the least well cared for in terms of the material remains of human activity. At many locations, cigarette butts, broken beer bottles, chunks of styrofoam coolers, old fishing line, and rusty hooks lay scattered about, suggesting that types of caring practices (or lack of them) are related to levels of care expressed by the city via its investment (or lack of it) in particular spaces. In places with no restrooms, trash cans, or line tubes, fishing communities that engage in commoning practices with the socioecological actors around them are unable and unwilling to extend care to the infrastructure itself. Despite the condition of these spaces, many fishers continued to link them to their wellbeing.

#### **4.2. CONNECTIONS BETWEEN COMMONING AND WELLBEING**

As a result of the commoning activities occurring in fishing spaces, we observed increases in nutritional, social, and



mental wellbeing. In terms of nutrition, as noted above, about 17% of our respondents could be classified as food insecure. At the same time, 77% of respondents kept the fish they caught, and of those, 97% ate their fish. This indicates that eating fish is important to many more people than just those who identify as food insecure. Considering how often people reported fishing and the average number of fish kept per trip (5.6), a substantial amount of wild-sourced protein is being consumed. In addition, people were targeting diverse varieties of fish, with 27 different species mentioned. For 11% of our participants, fishing was even more essential: the activity helped prevent them from going hungry over the previous year. Indeed, several fishers emphasized this element of nutritional support, as one who explained that last time he was out, he caught enough food to last him three days (FN 6/5/18). Another referred to the water as his grocery store (FN 7/17/18).

Fishing also provided important social benefits to fishers, including the ability to strengthen bonds with family and to pass on skills. In this way, social interactions combined individual benefits with practices of care and commoning. Many emphasized the pleasure they felt from passing along their skills to others. As one father explained, he loved to see the reactions of his kids- “If I tell them I am going fishing they say ‘Oh Daddy, Daddy I want to go, can I go, can I go?’ They love it” (Int.1). Novice fishers also noted the educational benefits of socializing at local fishing spots. One mentioned, “I just moved here...I come to the park a lot because I can talk to people that have more experience” (Int.26B).

Fishing also contributed more intangible benefits to mental health and wellbeing. Many fishers described how location (outdoors, near the water) and activity (fishing, socializing or enjoying alone time) combined to improve their state of mind. The terms “peaceful,” “relaxing,” and “fun” were common descriptors of fishing experiences. One fisher explained, “I like being around water...It’s like good meditation” (Int.8C). A deeper connection with the nonhuman world was highly valued as part of the fishing experience. Another fisher told us he recently got into wade fishing, “where you’re standing in the water and walking around. That I find the most enjoyable, [being] in touch with nature” (Int.13A).

#### **4.3. THE PRECARIETY OF PUBLIC INFRASTRUCTURES AND CHALLENGES TO COMMONING**

At the same time that infrastructures are a medium for commoning (Barua, 2021), these processes and spaces are also precarious. Most palpably, legal fishing spaces have diminished over the past several decades. Opportunities for bridge fishing in particular have been foreclosed as both neighborhood bridges and major public bridges

have restricted fishing. In the 1950s, bridge fishing was encouraged by state officials and special infrastructure was built to support fishers. As a 1956 article in the local newspaper reported, “4,000 feet of catwalks have been built on the new span of Gandy Bridge” (Allyn, 1956, p. 4C). By the late 1960s, however, officials began closing bridges to fishing, a trend that accelerated in the 1980s and has continued since (Ave, 2001; Frago, 2016a; Keefer, 1985; St. Petersburg Times, 1968).

Conflicts over fishing infrastructures have centered around two intertwined elements: perceived incompatibility with other types of recreation, and accusations that fishers behave in disruptive ways. For instance, a recently renovated bridge spanning Tampa Bay included a \$14.6 million pedestrian component that eliminated fishing after bicyclists declared they “can’t coexist with anglers” who leave broken glass and fish hooks on the path (Parker, 2013, p. 4A). By 2016, the City of St. Petersburg had banned fishing on nine additional local bridges, usually after complaints from neighbors (Frago, 2016a). Fishers have pushed back, noting that the underlying issue is “class oriented” (Frago, 2016a, p. 6B). The result of these types of conflicts, however, has generally been the elimination of fishing from key infrastructures and the movement of fishers to more precarious spaces.

As the bridge controversies have shown, people’s attitudes can present challenges to commoning. A certain stigma has come to be associated with fishing in particular marginal spaces. For example the area next to the Gandy cross-bay bridge was referred to as the “Redneck Riviera” (FN 7/12/18). Perhaps because of this stigma, these marginal areas often had tight-knit communities of users. For instance, the space beneath the Courtney Campbell Causeway is a popular fishing spot for a regular group of fishers, who reported the importance of sharing fish with their communities, but were suspicious of outsiders. One morning a young girl, accompanying her parents while they cast lines from the slippery boulders at the water’s edge, mouthed “go away,” at us until we did (FN 6/11/18).

Finally, an essential element of fishing infrastructure is of course the water itself, another precarious piece. At the same time that fishers feel squeezed for space, many express concerns about the water quality (*Table 3*). They were aware of stories about red tide, sewage spills, and stormwater runoff events. As one explained, “Last year they put 200 million gallons of raw sewage into Boca Ciega Bay” (Int.8A). In this way, some fishers felt uneasy about their ability to fish safely in the future, and their fears are well-founded: antibiotic-resistant bacteria have been found in Tampa Bay waters (Pittman, 2016), runoff events regularly force swimming closures in the Bay (Frago, 2016b; e.g, Tampa Bay Times, 2012), and as of this writing,

an old phosphate plant just spilled millions of gallons of contaminated wastewater into Tampa Bay (Sampson, 2021). The uncertainty surrounding the health of the bay thus adds another layer of precarity to the ensemble of fishing infrastructure.

## 5. DISCUSSION: COMMONING, WELLBEING, AND THE PRODUCTION OF URBAN SPACES

To return to questions about how more-than-human infrastructures are entwined with commoning and the implications of these patterns for community wellbeing, we want to think further about how attending to “the praxis of coexistence and interdependence” (Roelvink, 2015, p. 232) can help clarify how commoning is performed at empirical and theoretical levels. If it is through “moments of practice” that commoning happens (Basurto & Garcia Lozano, 2021), attending to these moments does important work in highlighting the effects of commoning on more-than-human actors in the city. In our case, attending to the active, everyday moments in fishing spaces was instrumental in identifying the character and directionality of the caring relations hinted at in our survey. While the survey revealed the diversity, magnitude, and importance of foraging for fish in urban spaces, our *in situ* observations and encounters illuminated the unique kinds of mingling that occur across socioeconomic lines and species boundaries, in complex ways and with more or less care or tension depending on the particular constellations of more-than-human actors involved.

Indeed, a critical question is how does care flow materially and relationally (Power & Williams, 2020) through urban fishing spaces? Our work has revealed interesting patterns suggesting that, often, social caring and internal (human) community cohesion is strongest in the most marginal material spaces—the spaces uncared for by the municipal government. Care and concern are shown toward the water itself and, from the fish that are killed, care flows in the eating and sharing of their nutritional benefits. At the same time, these communities have arguably not behaved in some of the ways we might expect to see in a commoning scenario toward the material infrastructures coproducing these spaces—they remain ‘uncared for.’ Rather than highlight this as a problem with these ‘commoners,’ however, we would like to suggest that this observation raises important questions about reciprocal caring and whether this is a “city that cares” (Power & Williams, 2020, p. 8). Further, we believe it is a strength of the relational commoning perspective that we are able to see in this case *how* the caring behaviors of

commoners can be fractured and dependent in part on the spaces they co-create.

The concept of commoning in connection with infrastructures of care has thus enabled us to think about space itself in new ways. As with commoning, space can be productively conceptualized as a verb, *spacing* (Crouch, 2017, p. 1). We can see more concretely how spaces are “lived [and] performatively carved” (Nieuwenhuis & Crouch, 2017, p.xvii), and how fishers “have devised ways of opening up and producing urban spaces in order to meet their needs and desires” (Bresnihan & Byrne, 2015, p. 2). By continuing to move within spaces that might be considered either physically (e.g., under bridges) or socially hostile (e.g., piers popular with sport fishers), food-insecure fishers in particular are staking a claim that is perhaps less about “an escape from the enclosure of the city” (Bresnihan & Byrne, 2015, p. 2) and more about embracing the possibilities even marginal spaces have to offer. Indeed, if spatial presence itself can be a political act (DeVerteuil & Golubchikov, 2016, p. 148), fishers are making daily statements about their rights to the material and ephemeral benefits of urban fishing spaces.

In considering these benefits to fishers’ wellbeing, it is useful to think through the lived experiences of commoners as they perform processes of commoning. As urban foraging work points out, “fringe ecologies” and interstitial spaces provide essential cultural and material benefits (Garekae & Shackleton, 2020; Hurley et al., 2008, p. 558; Hurley & Emery, 2017). Accessing urban nature—and the care that urban spaces are capable of—is critical to realizing these benefits (Charnley et al., 2018). While we have illustrated that urban fishers are resilient in making marginal spaces ‘work’ for them, it is important to acknowledge the effort and risk that people take on in order to make such spaces work, and that this extra effort is the historical result of deliberate policy actions that favor recreational uses of public space. Similar trends elsewhere (e.g., Grabbatin et al., 2011; Hurley & Halfacre, 2011; Unnikrishnan & Nagendra, 2014) suggest that preserving space for recreational or aesthetic uses diminishes already marginalized communities’ access to critical cultural and livelihood resources.

Our findings here thus emphasize that commons emerge from specific power relationships that create socio-environmental “inclusions and exclusions” (Nightingale 2019, p. 22), or practices that are seen as ‘out of place’ and thus discouraged by urban authorities (McLain et al., 2014). It is interesting to think about these power relationships in conjunction with questions of infrastructure as well. Given that infrastructures “are things and also the relation between things” (Larkin, 2013, p. 329), the role of piers especially highlights the power relationships at work in urban fishing spaces. It is on the large, amenity-rich piers that we

find the clearest socioeconomic and power differences. These manifest not only as differences in fishing gear and practices but in the ways that people communicate with one another (e.g., some sport fishers feeling empowered to speak for the law in explaining regulations, while food-insecure fishers ask for the discards of others). And yet—all fishers are (unevenly) subject to the precarity of the water quality conditions and the consequences of these for more-than-human health. These issues suggest further questions to pursue about the relation of more-than-human infrastructures to the complex power dynamics in urban fishing spaces.

As our work has confirmed, “the city is not a frictionless agglomeration of commons, but rather a site for ongoing contestation about what counts as common and who counts as commoners” (Borch & Kornberger, 2015, p. 15). Less important than whether urban fishing meets a particular definition of commoning is what we are able to discover via this lens about the relationships among spaces, infrastructures, actions, and wellbeing. In this way, our findings support several practical recommendations for fostering inclusion in urban commons and encouraging care for the more-than-human elements in these communities. We hope that our work begins the process of simply recognizing the widespread use and value of urban shore fishing spaces, a key first step to informing regional planning for how to maintain access to such spaces (Charnley et al., 2018; Hurley & Emery, 2017). We suggest building more trust across ethnic/racial and socioeconomic lines by developing interpretive signage about the nutritional value of the different kinds of fish and preparation techniques to help reduce the stigma of fishing for food, and producing fishing regulations in multiple languages that are simpler to follow. We also suggest that cities around Tampa Bay recognize and improve the marginal spaces where people want to fish—and indeed are already fishing—and invest in providing basic amenities to these areas wherever possible. These actions would importantly focus on conserving “links between existing human communities and important local ecologies” (Hurley & Halfacre, 2011, p. 386) rather than concentrating amenities in only a few pay-to-enter areas.

## 6. CONCLUSIONS

Following others (e.g., Cooke & Lane, 2018; Galt et al., 2014; Gibson-Graham et al., 2016; Puig de la Bellacasa, 2017; Roelvink, 2015), we argue that documenting commoning practices is a political project that foregrounds wellbeing. As St. Martin (2009, p. 500) points out, knowing where people go and what resources they access helps to “recast space as a site of multiple economic possibilities.” In the

case of urban fishing, we believe these relational spaces reveal much about their multiple possibilities— for greater interactions and understanding between economically and racially diverse people, as places to go for spiritual and material sustenance, and as important links between humans and nonhumans in the city. At the same time, these produced spaces should not be mistaken for harmonious or uncontested ones. If commoning is about “negotiating benefits and needs” (Cooke & Lane, 2018, p. 1716) for a community, then examining *how* this process of negotiation plays out can help illuminate why some spaces may be more successful than others at facilitating the wellbeing of their more-than-human components. What we appreciate about the commoning perspective is that it places this ‘*how*’ at the forefront. In pushing this collective work further, we suggest there are fruitful questions to pursue at the interface of commoning and ideas about more-than-human connections and performances in research on assemblages, infrastructures of care, and urban political ecologies.

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## COMPETING INTERESTS

The authors have no competing interests to declare.

## AUTHOR AFFILIATIONS

**Noëlle Boucquey**  [orcid.org/0000-0002-2262-5891](https://orcid.org/0000-0002-2262-5891)  
Eckerd College, US

**Jessie Fly**  [orcid.org/0000-0003-3744-8725](https://orcid.org/0000-0003-3744-8725)  
Eckerd College, US

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