Introduction RELATING FISH AND HUMANS

Imagine a sparkling day on Sydney Harbour . . . eating creamy Sydney rock oysters and drinking a glass of fine Australian white wine with a light warm salty breeze on your face. Look—there's the Opera House with her shells; to your left is the Sydney Harbour Bridge (the Coathanger) that each New Year's Eve features actual over-the-top fireworks touted as the first to be seen globally on the first day of a new year. On the water there's the crazy skittering of the ferries, sailboats, and kayaks crisscrossing east and west, north and south. Around Circular Quay the usual huddles of tourists handle the faux UGG boots and the didgeridoos made in China. Next to the berth for the ferry to Manly, Aboriginal musicians play proper didge. Over by the old shipping wharves—now eye-wateringly expensive real estate—some young boys but mainly old women and men fish. Many came from Vietnam on boats years ago, and fresh fish still feeds the family. Day in, day out, they sit on milk crates fishing under the bridge. Holding all these stories together is the water of Sydney Harbour—it is normally a color called harbor green, but sometimes it burnishes to a shimmering near-turquoise. There's something like five hundred gigaliters of water in the harbor, an amount that is called one Sydharb. Below the surface swim some 586 different species of fish. In among the local fish there are now tropical fish who, like the clownfish in *Finding Nemo*, ride the East Australian Current over a thousand miles down from the Great Barrier Reef in the north.

It sounds rather magical, and it often is, at least on a surface level. The reason why you can now go snorkeling in the harbor and encounter tropical fish is that this part of the Pacific Ocean is warming faster than anywhere

else in the world. And unbeknownst to many, the water in the harbor leads the world in the amount of heavy metals it contains. The sludge at the bottom is anoxic slurry with no oxygen for life. Much of it settled in the seabed when it was acceptable to throw industrial waste into the harbor thirty years ago. But dioxins are continually flowing in the storm waters that usher the poisons of the city into the sea. Every year, five hundred gigaliters—one Sydharb—of storm water gushes untreated into the harbor. Commercial fishing was banned in 2006 because of the toxicity, and recreational fishers are warned not to eat more than minuscule amounts of fish caught to the east of the bridge, and to never eat fish caught to the west. This divide strangely maps onto another: The wealthy tend to live in the east of Sydney, with the poorer to the west. The official site of the NSW Department of Primary Industries gives advice to recreational fishers in seven languages. It says fishing licenses are mandatory, but it doesn't tell people what may happen to their bodies if they eat the fish they catch.

Some might call the harbor a man-made cesspit. But it's got a lot of life in it—for now. Emma Johnston and her team at the Sydney Harbour Research Program are finding that fish are flourishing. After two years of research, this large interdisciplinary team of scientists reports that many species are coping rather well with the anthropogenic modification of their ecosystem. It is a paradox: "Increased nutrient levels may be enhancing the productivity levels of the system and hence the abundance of fish" (McKinley et al. 2011, 643). The nutrients are mainly due to the nitrates and pesticides that are carried in the storm water directly into the harbor. Fish get used to the man-made modification of their world and take advantage of the increased nutrients. They seemingly thrive, and yet they are poisonous for their human and nonhuman predators.

Eating the ocean: We do it every day, often without knowing it. Humans have eaten the ocean for as long as we've been around. Until relatively recently we thought that we could eat it with impunity. Now we are at risk of eating it up, devouring it until there's nothing left except the not-so-apocryphal jellyfish-and-chips. "We" are, of course, differently positioned in this scenario.

This book is an intervention into the current politics of food, although they are still by and large concerned with terrestrial production of food. Along with others, I'd say that some of the academic debates and media discussions about alternative food practices have tended to become rather simplified, especially when they are fixated on urban localism. The mantra

"local is best" barely hides its white middle-class complexion. And a certain moralism pervades the discourse about what is good to eat, and why some people eat badly, that is often paired with the desire to enlighten the unenlightened about their bad food habits. In Australia, as elsewhere, this is often racialized. "Why are Aboriginal and Torres Strait populations three times more at risk of developing type 2 diabetes than non-Indigenous Australians?" "Why don't Aboriginal people eat better?" The answers to such questions are economic, cultural, and historical. Fresh food in remote Australia is many times the price that it is in the urban south, a situation that some non-Indigenous Australians cannot countenance in their depiction of Aboriginals refusing to eat better. Underlying this is a deep and tragic history whereby white colonists bribed Aboriginal people with white sugar and white flour—what Tim Rowse (2002) terms "white death."

Food, as many have pointed out, is far from simple. The rhetoric of helping people to eat better is drenched in condescension. Julie Guthman's (2007) trenchant critiques highlight the ways in which the mantra of "bringing good food to others" and the appeal to the inherent good of organic food forgets how historically organic food production was wedded to eugenic desires for racial and nutritional purity. In the context of the United States, Guthman also notes that localism, the bedrock of alternative food rhetoric, can be xenophobic and historically blind. For many, "the local" was not a romantic ideal: It was where people of color or people marked by class were scrutinized and shamed. This scrutiny often continues in the snide glances directed at working-class women with shopping carts loaded with cheap carbohydrates to fill up families on a meager wage or pension.

Guthman notes "the extent to which food politics have been at the cutting edge of neoliberal regulatory transformations" (2007, 437). While critiques of neoliberalism often leave me unimpressed, there are certainly places where neoliberal food regimes are in full force—such as food stamp programs or the Basics card forced upon Aboriginal populations in the Northern Territory. Then there is the multivalent and contradictory way in which choice operates in some forms of food politics. As with the condescending attitude toward those who don't choose to eat better, increasingly the choice to proclaim oneself vegan often seems to act as an opting out of the structural complexities of food provisioning, production, and consumption.

Considering food through the optic of fish considerably complicates

food debates. Against the mantra of the local, it is nigh impossible, given the arrangements of fishing industries, to eat a local fish. Sure, you can sometimes catch your own (though not in Sydney Harbour if you want to stay healthy), or very occasionally you can find a fisher at a pier who can flip you a freshly caught fish, or you can poach—as in steal—a salmon caught in a Scottish river. The assumption that a shorter supply chain results in more ethical food is considerably problematized in fishing. Because of the restructuring of international fishing practices brought on by the necessity of regulating catch, in the last twenty years the size of fishing fleets in the Global North has shrunk to a fraction of what it was. The use of individual transferable quotas (ITQs), introduced in Iceland, Canada, and Australia in the late 1970s and early 1980s and later adopted elsewhere, stopped the practice of fishing in common. While I go into detail on the practice of ITQs later in the book, the salient point here is that the introduction of quotas quickly sliced into the number of boat owners, resulting in the current state where the ownership of fishing is in a few hands. For instance, in the South Australian bluefin tuna industry, the number of licensed fishing boat owners went from several hundred to under thirty as soon as the ITQ was introduced. Concomitantly, the downturn in inshore fishing because of overfishing, and the need to amortize the costs of increasingly sophisticated technology to track fish, has led to ever-larger boats that can go further out. Simply put, this means you cannot go down to the dock and "look the fisherman in the eye" (pace Michael Pollan's dictate to "look the farmer in the eye"). The long sea trips and the widespread use of freezing technology means that fish are caught and flash frozen out at sea. They are then landed and immediately transferred to large logistical operations that take the fish hundreds or several thousands of miles away to market. As I discuss later in the book, some operations do try to go against this structuring of the industry. The community-supported fisheries on the northwestern Pacific Coast in the United States operate like community-supported agriculture, and consumer-members receive boxes of fish, thus providing a regular income to fishers and encouraging people to be more adventuresome in the range of fish they consume. The ThisFish operation in Canada links fishers, suppliers, and consumers via social media—including a photograph of the fisher so you can nearly look him in the eye. My point here is that fish-as-food requires us to go beyond a simplistic food politics. It compels us to understand how entangled we are as consumers in the geopolitical, economic, cultural, and structural intricacies of the fishing industries.

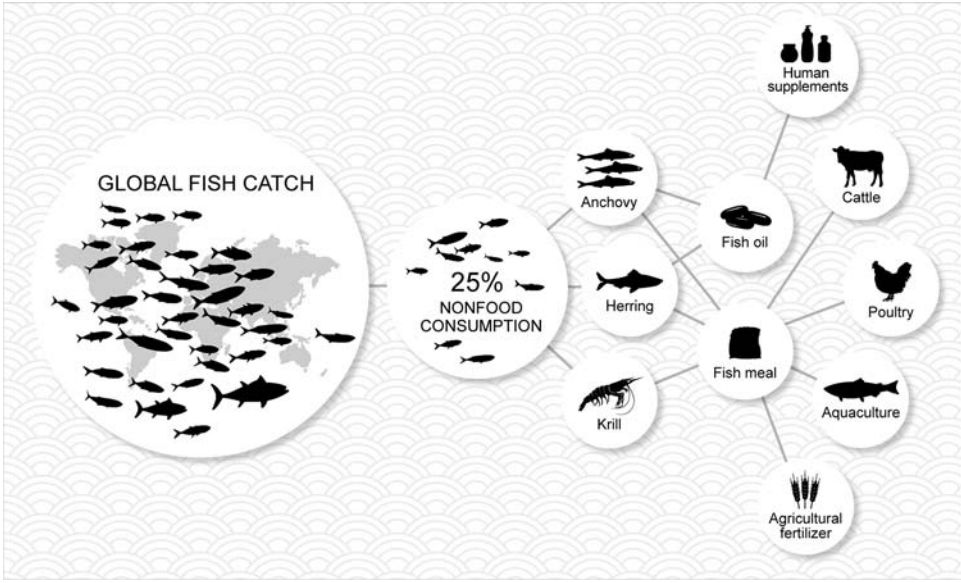

Fig. 1.1. Fish as food. Illustration by Morgan Richards.

Fish-as-food recalibrates the extent to which anyone can choose to opt out of the dominant food regime by saying, "I don't eat fish." As it stands, we all eat fish, albeit often in circuitous ways. It is staggering where and how fish enter the food chain without being fish for human consumption. As figure 1.1 shows, 25 percent of the global fish catch ends up in strange places: as fertilizer, as food for pigs and poultry, as fish oil supplements, and, perhaps most ghoulish of all, as processed food for fish.

My point is simple: There is no innocent place in which to escape the food politics of human-fish entanglement. Another point follows from the fact that localism cannot reassure us: Human-fish entanglements are not linear. They are simultaneously global and local, regional and hemispheric, Global North and South. This means that a food politics cannot start with the fisher and follow through to the consumer. We have to understand fish-as-food from the middle of the complex entanglement of industries, of historic and colonial trade routes that persist in the strip mining of African fisheries by the Global North, of the producers who may be iconic rugged individual fishermen or who may be indentured labor on shrimp farms in Southeast Asia. More often than not, your fish will be fed by transient flows of capital, labor, and intensive technology. Fish may also feed your vege-

tables, cereals, pork, and chicken. Fish are even to be found in supermarket white bread.

For me, this intricacy and the necessary complexity of human-fish relations ups the ante on food politics. This is not academic obfuscation or complexity for its own sake. We need to acknowledge that food politics have become overly simplified, and that the stoplight system of judging what's a good fish or a fish to avoid is seriously limited. My point is not pedantic; rather, I hope to demonstrate that coming to understand and explore fish-human complexity is exciting—it compels our interest in how and where we are integrated into this watery world. It leads us to fishers and producers, to networks of movement around the world that reignite for me the thrill of thinking global movement. The research for this book has moved me in many ways—the loss of fish, habitat, and the tacit knowledge embedded in many fishing communities makes me angry and sad. This research has also moved me away from much of my previous work that was focused on overtly cultural matters of eating—how, for instance, our identities are forged through eating. In publications such as *Carnal Appetites* (Probyn 2000), I was mainly concerned with a more abstract contemplation and depiction of the ethics of eating. For me, food really was good to think with, and my analysis tended to float away from the specificity of how, where, and by whom food was produced, and with what effects.

In 2009 I was hired by the University of South Australia to help energize their research. I'm not sure I did much good, but I certainly learned a lot. Beyond its capital, Adelaide, South Australia is a beautiful, sparsely populated, and isolated state. Economically it has been based in natural resources: wheat, sheep, wine, mining, and fish. Working with rural sociologists, I became interested in the communities involved in primary food production. We called this research program Producing Identities.[1] South Australia was then in deep drought—the driest state on the driest continent. The Murray River, the only river in the state, was being drained away through drought and irrigation. Times were truly tough. The range of issues was and is complex: the ethnic mix in farming communities, the social challenges of balancing the human need for scarce fresh water with the complex other-than-human ecologies that depend on it for their lives. Then there's the backdrop of depression in farming communities and the high rates of suicide, especially among male farmers.

A colleague suggested that I visit the small fishing communities along the coast of the Eyre Peninsula.[2] I fell in love with fish. I also became en-

tranced with the intricate forms of biocultural sociality that weave through small communities that depend on fishing and oyster farming.

This book comes out of that initial experience, which has developed as a larger project.[3] But it also comes out of a lifelong concern about how we can ensure global and equitable access to protein. For many years, I was a fish-eating vegetarian. Given that the earth is 70 percent ocean, I thought eating fish and not eating terrestrial beings could help with the global distribution of protein. It is estimated that the food conversion rate for beef is between eight and twenty pounds for a pound of beef. Thirty-eight percent (about 730 million tons) of the world's grain harvest is used to produce animal protein (Brown 2006). Conversely, advances in technology mean farming salmon can require as little as two pounds of feed to produce a pound of protein. Of course some of that feed comes from fish. The case for aquaculture is not straightforward, and, as I discuss later, there are several practical and ethical problems with fish farming. But from the experience of seeing up close how dry a drought is—think kiln-baked soil—I know that we cannot continue to feed people only through terrestrial means. And by people, I mean the estimated future nine billion humans. To feed that population, we would need to increase cropping and grazing by 70 percent. That doesn't factor in the water, the paucity of arable land, the fossil fuels, peak phosphorus, and the damage done by pesticides to people, ecosystems, and the sea. Should we then be asking, "Will the oceans help feed humanity?" (Duarte et al. 2009).

Eating the Ocean responds to the challenge of how to produce and consume fish in a sustainable way. The term "sustainability" is, of course, problematic. It covers so much that it becomes nigh on meaningless. It may conjure feel-good affects, but materially it continues to be intractable. UNESCO's four-pillar model of sustainability adds culture to the economic, the social, and the environmental, which is better than ignoring culture altogether. But often culture is sequestered, confined to the folkloric.[4] In addition, the iteration of what is supposed to be sustainable fish evinces little concern or interest in what it would take to sustain the biocultural relatedness of fish and humans that is millennia old. Again and again through this book, I wonder how we can care a bit more, or a bit better, for the entire entangled marine elements that we devour when we eat the ocean. I also ask—as in the title of the last chapter—can we eat *with* the ocean?

This book is deeply invested in teasing out the very different sorts of knowledge that construct what eating the ocean means. There are disparate

and competing models of what fish are and what they can and should be in the future. Scientific and ecological models insist that numbers, quantity, and eco-sustainability are what matter; local fishing communities value economic viability, traditional practice-based knowledge, and ways of life; consumers operate in budget-defined regimes of commodified taste and choice. Each of these spheres brings to the table radically different models of what fish represent and what they do in deeply implicated, mutually dependent human-fish networks. Groups of people and sets of meaning are all too often rendered separate, if not antagonistic: fishery managers versus fishers, conservationist groups versus fishers, and even fishers versus fishers.

What is clear is that there are less and less fish on the table. If we take the figures from the United Nations' Food and Agriculture Organization (FAO),

> Of the 600 marine fish stocks monitored:
> 3% are underexploited
> 20% are moderately exploited
> 52% are fully exploited
> 17% are overexploited
> 7% are depleted
> 1% are recovering from depletion[5]

These figures raise more questions than they resolve. The definition of "exploitation" is simple yet baffling: The FAO states that "overexploited" means "the fishery is being exploited at above [*sic*] a level which is believed to be sustainable in the long term." Defining "exploitation"—hardly a reassuring term—rests on maximum sustainable yield, the keystone of a fisheries management formula developed in the 1930s. This is the mathematical formula that calculates the amount of fish harvested against the population of the species, with an estimate of the rate at which the species reproduces. The problem is that it is very hard to count fish. As one of my interviewees puts it, they have tails. They swim across artificial lines in the sea. Maribus, a German consortium of scientists, depicts how the FAO comes to formulate these figures: "The catch data from both the fishermen and the scientists is initially forwarded to higher scientific institutions which utilize it to estimate the current stocks of the various fish species and maritime regions. Around 1500 fish stocks around the world are commercially fished, with the various stocks being exploited to different extents. Comprehensive estimations of abundance currently exist for only around 500 of these stocks"

(World Ocean Review 2015). It's often said that we know more about the moon than we do about what is in the oceans. Fishery scientists just do not know how many species are in the ocean, nor indeed much about their behavior. The case of the orange roughy (renamed from its original appellation of slimehead for obvious reasons) is a stark example. Exploitation quotas for this deep-sea fish were based on the assumption that it had a short life span and reproduced quickly. By the time it was apparent that an orange roughy could live up to 150 years, and that it only reproduces when it is about thirty years old, the roughy population was devastated.

The FAO figures that are the cornerstone of fisheries management rely on numbers compiled by member nation-states. But there are few accurate historical records to tell us how the fisheries are faring. In the early 1990s, Daniel Pauly and his team pointed out that there was no adequate understanding of what constitutes a baseline for fish stocks (Pauly 1995). To make things worse, sometimes countries simply lie about their catch numbers. In 2001, Pauly and his colleague Reg Watson reported that China systematically inflated its catch numbers, leading to the impression that global fishing catches were fine. Now the FAO excludes the Chinese catch because it skews the picture so badly (Watson and Pauly 2001).

We know that numbers mean nothing without an explanation of what is counted, how, and by whom. The immense fragility of human knowledge that is the scaffold for gauging sustainability is well known among scientists and fisheries officials, yet seldom remarked upon in public. Who does the fishing is equally obscure to the public. Despite the advertising images of John West and jolly old sea captains, women are essential to fisheries—the FAO (2015a) estimates that women account for at least 15 percent of people directly engaged in the fisheries primary sector, and 90 percent in the secondary sectors such as processing. Those figures don't really tell us much. For instance, in the massive Thai shrimp industry that produces the bulk of the shrimp eaten in the United Kingdom and northern Europe, most of the workers are female—often illegal—migrants, who are not paid a living wage, and in some cases are considered indentured labor working off the costs of getting to Thailand for a poorly paid job (Fairfood 2015).

Who tells the stories, how, to whom, and why is a theme that reverberates through this book. I continually shadowbox with several dominant discourses that reduce the complex worlds of fish, oceans, and humans to simple black-and-white distinctions. There is ample detail in the following chapters, and here I again simply state that saying no to fish is not an op-

tion. We will see that there are times and places and certain fish that some humans in some places should not envision eating. But as I have flagged already, I argue strongly against the hubris that passes for a politics of fork waving. The idea that you can resolve such intricate and complicated human-fish relations by voting with your fork is deluded narcissism.

Three main currents organize this book. These currents draw together stories, fieldwork notes, arguments, and ideas into eddies that swirl in and across the book: (1) necessary complexity; (2) ethologies of the more-than-human; and (3) gender and queer fish relations.

Necessary Complexity

The ocean, fish, and humans are all incredibly complex entities. It's hard enough to detail each one separately. Of necessity, the three spheres have to be continually interrelated. The scale of their entanglement is mind-boggling. In marine science, "simplified sea" refers to what happens when we fish down the food web, resulting in an ocean stripped of biodiversity. On land, the ocean is simplified in many ways: Authorities divide people on the basis of their knowledge or putative lack thereof. I've attended numerous meetings in local communities about impending large changes to the fishing environment where people's experiences and knowledge are categorized and then excluded. This makes the drawing of lines easier: the lines that divide the oceans into manageable blocks that then "belong" to certain groups.

I mobilize the idea of the more-than-human across this book. While it has its problems, one of the reasons that I like the term is that it compels relational thinking. Logically, at least, you cannot engage in polemic if your objective is to find, forge, and relate connection and complexity between and among human communities and marine ecologies. There are of course many versions of the more-than-human that I recount in the book. The term itself isn't that important, nor is it innocent. Who has the capital to blithely step in to the more-than? What of the many who still aspire to the status of the human? As Karen Cardozo and Banu Subramaniam argue, "the turn to including nonhuman animals in intellectual inquiries does not necessarily deconstruct a hierarchical Great Chain of Being" (2013, 1). If it does direct us to the complex and deeply unequal distribution of matter in which we are always differentially related, then all to the good.

When it doesn't work, it will need to be prodded and maybe refigured in other ways.

Annemarie Mol and her Eating Body team at the University of Amsterdam argue that all matter is matter related, which then compels "other modes of *doing*, such as affording, responding, caring, tinkering, and eating" (Abrahamsson et al. 2015, 6).[6] For them, matter is always "enmeshed in a variety of relations" (10). Some of the entities to which or in which fish are related are the environment, climate change, things that eat fish and fish that eat things, laws and regulations, technologies, and markets. These relations make for complex interactions. "All of which suggests that, rather than getting enthusiastic about the liveliness of 'matter itself,' it might be more relevant to face the complexities, frictions, intractabilities, and conundrums of 'matter in relation'" (13).

Wet Ethnographies and Ethologies: Relating

Eating the Ocean is necessarily complex in its subject matter, but I hope it doesn't read as convoluted. Let me quickly sketch the import of each chapter and how each may engage the other. In chapter 1, my focus is to set the scene, to move us away from terra firma to the many affective realms of the sea. Acknowledging our human difference, and perhaps the ocean's indifference to human life, is a starting point in a journey to make strange the relations of human, oceans, and fish. I start by deepening my critique of predominantly land-based food politics, and the emerging nongovernmental organization (NGO) campaigns against fishing. I hope that by shifting our attention offshore, new angles of intervention become possible. I start to explore a thread that builds across the book, patching together an argument, a vision, a hope for an affective oceanic habitus. In chapter 2, I turn to smaller marine ecosystems and the different forms of attachments and metabolic intimacy that are forged by oysters—a marvelous sustainable and hardworking marine entity that is also delicious to eat. At one register I take from Annemarie Mol's argument about what happens when we consider seriously the interaction of eater and object, a focus that mires any straightforward distinction of agency and that otherly conjures relations of subjectivity. If Mol (2008) rehearses what happens when "I eat an apple," in my rendition, when "I eat an oyster," it also becomes clear that "an oyster eats me." Oyster eating is a rare instance when live flesh meets

live flesh. On another register, the massive business of farming predominantly Pacific oysters in different parts of the world forms global networks of oyster-human communities. I follow oysters to Loch Fyne, a small village in the west of Scotland, and then to a small community in South Australia where remarkable entanglements of history, care, oysters, and humans have produced a flourishing more-than-human culture. In yet another take on oyster-human relatedness, I draw on marvelous raconteurs of oysters such as M. F. K. Fisher (1990) and her odes to the oyster, "Love and Death among the Molluscs" and "Consider the Oyster." Through these seemingly disparate elements, I relate how the mattering of oysters highlights taste as a simultaneously economic, cultural, and more-than-human affair. In chapter 3, I dive into the contested waters of bluefin tuna consumption. As I learn to swim with tuna, I also come to appreciate the relations of technology, ethnicity, markets, and geography that have rendered the magnificent bluefin tuna into a breathtakingly expensive commodity. In this chapter, I follow and relate the stories of how this came to be. Swimming alongside these stories, I come to realize a different ethical take on why we shouldn't eat bluefin tuna.

In chapter 4, I plunge into a lacuna that marks much of the research on the more-than-human. In the age of the human, gender seems to be passé. From a discussion of mermaids through to the lives of fisherwomen, I seek to elevate gendered and queer matters of human-fish entanglement. At a conceptual level, I grapple with how gender and sexuality, as well as ethnicity and class, have been squeezed out of current debates on the Anthropocene, climate change, and the more-than-human. There is a pervasive sense that the big issues of the Anthropocene override the concerns of feminists, queers, and postcolonial people, and the questions of race and class. The idea that we are all brought together, that our differences are elided by living under the shadow of the Anthropocene, is, of course, nonsense. We are not nor will we be all equally affected by the multiple disasters occurring within the rubric of the man-made Anthropocene. To be blunt, in some circles the Anthropocene licenses a focus on the human, who often turns out to be male. But rather than mounting a polemic, in this chapter I seek to recover the lost stories of the women who have followed fish, and see what happens to human-fish settlements when the fish disappear. Two instances of this ground the chapter in history—the rise and fall of the herring industry in Scotland that lasted from the nineteenth century until after World War II, and the collapse of the cod fisheries of the Great

Banks off Newfoundland and Labrador in Canada. In the case of the former, I gather the stories and depictions of the herring quines—the lassies who followed the herring from the very north of Scotland to the south of England, packing some thirty thousand herrings a day. These stories are gathered through historical documents and encounters with the women and men who across the generations remember them. In the latter, when it was announced in 1992 that the cod fisheries in Canada were to be closed (the moratorium), fifty thousand workers were rendered redundant. Attention turned to the plight of the male fishers. Feminist sociologists such as Barbara Neis, Donna Lee Davis, and Nicole Gerarda Power intensively researched the fishing communities before, during, and after the moratorium. They relate the insights of the women who worked as processors or who as fisher wives did the accounts of the family fishing business. These women attest to the dwindling of the stock long before the closing of the fishery. They were not listened to. Perhaps even more galling is that in the aftermath of the crisis, their insights about how to better manage the fishery went unheard. This chapter is, I hope, a salutary reminder of the varied types of gendered tacit and contextual knowledge that must be taken up if we are to respond to what Daniel Pauly (2009) calls the "Aquacalypse."

In the last chapter, it is little fish that come to the surface. In my research for this book, fisher-people whom I talked to often spontaneously remarked: "These are the fish I love." Anchovies, sardines, herrings, and menhaden—these are the fish I particularly love, along with even smaller marine organisms such as algae and various forms of phytoplankton. When people ask me what fish they should eat, I reply, "Little fish." They are the ones that reproduce quickly. But they are also often the fish that are reduced to mere fodder. In this chapter we follow little fish into other more positive entanglements, such as the emerging technologies of integrated marine trophic aquaculture (IMTA). These practices take from ancient practices of polyculture in Asia and elsewhere (e.g., a duck on a rice paddy whose feces feed the fish that swim underneath). In China they are now mammoth affairs where feed trickles down to fish and the nitrate-laden debris is eaten by bivalves and continues down to sea cucumbers and algae. Here nothing is wasted, as it all becomes forms of protein for humans and for marine organisms. This system may eventually feed humans with less impact on the ocean and her inhabitants. Smaller IMTA operations are under way across the world, helping to make aquaculture a more sustainable affair.

Eating the Ocean builds on my case studies of human-ocean-fish entan-

glement. They flow and move across the book and defy the somewhat linear chapter descriptions above. Oysters, bluefin tuna, fish-women and herring quines, sardines and anchovies—these sites, or entanglements, are both physical and at times troubling eddies where theories and empirical material come together in unexpected and clashing ways. The sites may seem arbitrary, but it is their capacity to express relatedness that draws me to them. The physical and geographical locations are storied places, which I then amplify with more stories. For instance, in chapter 2, Loch Fyne becomes a place where oysters bring together stories, history, and geographies. Histories of people are written into the water. As Raymond Williams (1989) would say, people live this relatedness, just as they live their "culture [as] ordinary." As a wet ethnographer—wet in the doubled sense of being a soft ethnographer who dredges oceanic tales—I tease out connections and relate them. Just as the practice of wet ethnography has a double valence, so too does relating. I relate the stories I'm told, and I relate their tales to theoretical and political concerns. As much as I can, I try to inhabit these relations, to make these acts of relating fleshy and fishy.

This is a dialogic and embodied practice that elsewhere I have called "rhizo-ethology" (Probyn 2004a). It is indebted to Gilles Deleuze's understanding of ethology and the use of the rhizome as a way of figuring relations. Through ethnographies I recount the rich materiality of fish and humans. I use ethology as a way of figuring their relations. As will be familiar to many, Deleuze and Guattari (2004 [1980]) distinguish the rhizome from arboreal thought, the latter a rude way of framing cause and effect. Following rhizomes requires questioning how things (ideas, histories, environments, biological entities) connect, and inquiring after the work they do in certain milieus. This approach instills modesty and enacts an ethical sensibility because you do not know where, why, or how the shoots of a rhizome will next erupt. This is clearly stated in Deleuze's (1992) essay "Ethology: Spinoza and Us." The phrase is meant to evoke "us in the middle of Spinoza" (Deleuze 1992, 625). For Deleuze, this entails "the laying out of a *common plane of immanence* on which all bodies, all minds and all individuals are situated" (625).

The image that this brings to mind is of the ocean laid out in such a way that all her relations are clearly seen in connection to each other. For instance, in my opening evocation of Sydney Harbour, ideally I'd like to be able to figure all the dimensions and scales at work, at once temporally as well as spatially: the boats, the fish beneath, the people alongside, the

reasons why the water is polluted, the toxic fish, the flourishing fish, the fish that are eaten, the humans that ingest them, the maladies that follow in both fish and human communities. This is a multidimensional figuring that I try to grasp in its complexity. The ocean is a Spinozan body par excellence. It is composed of an infinite number of particles: "It is the relations of motion and rest, of speeds and slowness between particles that define a body, the individuality of a body." And it is "a body [that] affects other bodies, or is affected by other bodies" (Deleuze 1992, 625). Deleuze writes that these two propositions are simple; one is kinetic and the other dynamic. But it is in the middle that "things are much more complicated" (626).

Think of being in the middle of the ocean, of always being in its middle. Most humans know the ocean from its edges, standing on the liminal shore looking out. But from the middle we may envision the "complex relation between differential velocities, between deceleration and acceleration of particles" (Deleuze 1992, 626). At each and every turn things are being affected and are affecting. To return to oysters again, they are very much bodies that affect and are affected by other bodies: they are in and with the estuary, the loch, tides and human tastes, natural and man-made histories. Oysters tinker with nature, itself understood as an assemblage, a body. As a keystone species, oysters do work far beyond their size. An oyster filters up to fifty gallons of water a day, cleaning the water of other bodies—such as the nitrogen excreted through the more-than-human practices of agriculture. As Stefan Helmreich writes, "Human biocultural practices flow into the putatively natural zone of the ocean, scrambling nature and culture, life forms and forms of life" (2009, 13).

Other sites tell of different forms of human-fish-ocean relations. Bluefin tuna encapsulate another way of navigating stories of globalization. This warm-blooded body, the fastest fish, easily travels the globe and then gets caught in webs of the meaning making of human greed. Bluefin tuna becomes a marker of cultural and economic capital, as it also changes people's tastes around the world. We encounter the men who have homed in on them, following the fish from Croatia and Italy to Australia.

Ethology studies "the compositions of relations or capacities among different things" (Deleuze 1992, 628). This is central to *Eating the Ocean*. As I've argued before, we eat and are eaten (Probyn 2000). There is no privileging the inside or the outside of any individual body. If one eats bluefin tuna, one eats at the top of the trophic system, ingesting the heavy metals the tuna has eaten across its history. Human eaters get a taste of what we

have wreaked. We eat oil slicks, and the chemicals used to disperse them eat into our flesh. Fish eat the microplastics used in daily skin care; humans eat the fish and the microplastics; and fish and human bodies intermingle. And of course that "we" gets eaten up too, differentiated, fragmented, and fractured. Moira Gatens argues that we need to add historical depth to Deleuze's ethology. What is the genealogy of how bodies come to be figured in certain ways? As she writes, "Given that on the ethological view nature, bodies, and materiality itself, is active, dynamic, and has a history, then past compositions will affect the present and future possibilities of what we may become" (Gatens 1996, 12). This raises the question of how gendered and classed bodies have been erased not only in the histories of fishing but also in the current theories of the more-than-human.

In their articulation of what they call "a wet ontology," Kimberly Peters and Phillip Steinberg ask, "How can one write about so 'slippery' a subject[,] . . . how can one write about the ocean as something to think not only *with* but *from* without reducing it to a metaphor?" (2015). Fish for me are not, and cannot be, metaphorical. Fish are the very principle of relatedness that holds this book together. But they are, after all, often below the surface. This is why I insist on an embodied and dialogic ethnography that is attuned to listening to stories and relaying them, to trying to capture affective spaces through various forms of description, and to reaching for the depth of history that informs tacit knowledge embodied in individuals' ways of being and ways of recounting.

This informs a certain form of writing and an embodied engagement. Focusing on the relatedness of fish and humans also requires relating and telling stories, often from oblique angles. This will no doubt infuriate some readers. But this mode of research has reason; its rationale is in what it can or cannot do. My embodied, dialogic method also has form. While the very nomenclature of the more-than-human would seemingly demand an emplaced way of relating, its genealogy is often forgotten. In the rush to champion new nonrepresentational methodologies, potentially much gets thrown out. For instance, Nigel Thrift (2008) defines the nonrepresentational as anti-autobiographical. This is an implicit disregard and miscomprehension of much of feminist writing inspired by the lived fabric of the everyday, too often derided as the realm of "the personal." Against this, Hayden Lorimer argues for "work that seeks better to cope with our self-evidently more-than-human, more-than-textual, multisensual worlds"

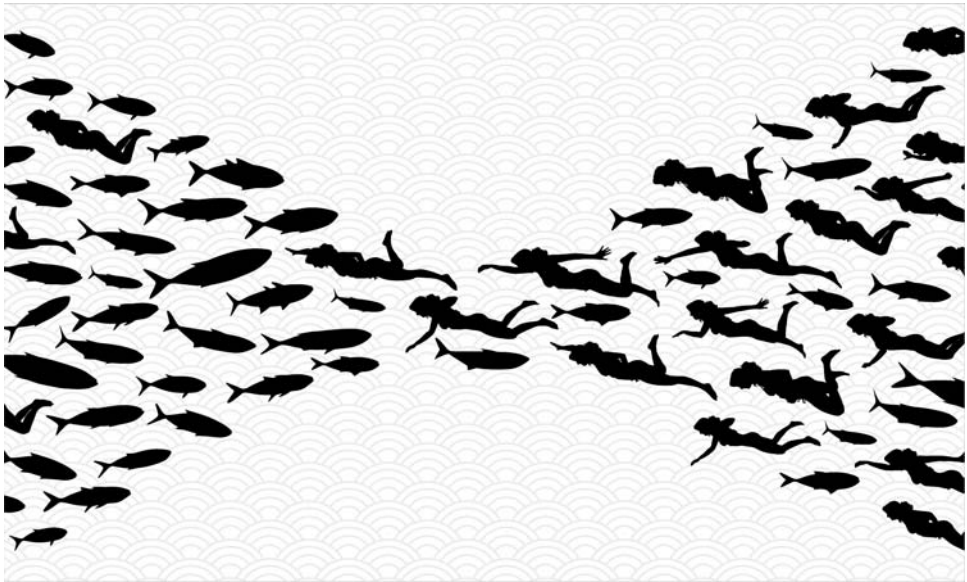

Fig. 1.2. Fish–women entanglement. Illustration by Morgan Richards.

(2005, 83), which he characterizes as framed by "a cultural-feminist programme that has nudged the more-than-representational debate out of a predominantly white, western orbit" (89).

Gendering and Queering More-Than-Human Fish

Throughout this book, my own genealogy as a queer feminist tugs at me. (Figure 1.2 captures some of that swimming with and against in a jumbled-up sea that is so very queer.) At different iterations of this project I have tried to shrug off that history. In Australia, as elsewhere, being a university researcher involves applying for major government funds. This requires being sensible, making sense to committees composed of bodies disciplined to conceive of the world in rather narrow proprietorial terms. Worrying that scientists would not understand why a researcher with my background in queer feminist theory would be interested in fish, I tried to hide from myself. I straightened myself. I took on the label of "social scientist" as if it came with a white coat that would allow me entry into quarters where other scientists converse. If needs be, I can walk the talk. But I couldn't

write this book trying to pass as something other than what my intellectual history has made me. And trying to pretend I could was doing my head in. So my queer feminist self took over. To slightly reframe Kathryn Yusoff's words, while "there is something lonely, yet necessary in this act of making [feminist] relations . . . it allows us to get over ourselves and seek out what is truly strange and wonderful in the cohabitation of worlds we will never be at home in" (2013, 225). Doing the research that fuels this book has, if anything, made me a more adamant queer feminist fish.

Not quite belonging in the circles in which I swim has also made me appreciate the passions and deep investment of marine researchers in their various specializations. While they are sometimes surprised that I am passionate about their work, they are very aware that engaging with the ocean requires understanding humans. They even get that gender is an important part of the puzzle. Equally, I've found the work of many feminist social scientists crucial to my understanding. Women—as researchers, fishwives, fishers, oyster growers, NGO workers—are deeply enfolded in fisheries, but as we know, if they are not counted, they do not count. Barbara Neis is blunt: "Gender relations permeate fisheries at every level." And women's ecological knowledge has been mediated "through their relationship with men—fisher*men*, husbands and sons, male-dominated governments, and male-dominated science and industry" (Neis 2005, 7). Count the fish until they are gone; don't ask the women what they know. Don't count on women's experiences. But around the world, women's voices are beginning to be heard. Groups like Genderfish conduct research and provide training to women in the Global South. In Australia I've joined with groups like the Women's Industry Network Seafood Community, which conducts workshops on different aspects of the industry and especially how to promote women's leadership. These groups face similar issues such as suicide rates among fishers, routine sexism, sexual violence, and slavery in the global fisheries.

For Helmreich "the ocean is strange" (2009, ix). In his *Alien Ocean*, Helmreich argues for what he calls "athwart theory" (23). This he describes as "an empirical itinerary of associations and relations, a travelogue which, to draw on the nautical meaning of *athwart*, moves sidewise, tracing the contingent, drifting and bobbing, real-time, and often unexpected connections of which social action is constituted, which mixes up things and their descriptions" (23).

To Helmreich's use of the nautical sense of "athwart," I add Eve Sedg-

wick's understanding that "the word 'queer' itself means *across*—it comes from the Indo-European root *-twerkw*, which also yields the German *quer* (transverse), Latin *torquere* (to twist), English *athwart*" (1993a, 12). To work athwart is for Sedgwick to be within the spheres of "continuing moment, movement, motive—recurrent, eddying, *troublant*." Troubling eddies indeed.

"Athwart" closely describes this book. Here we travel sideways across different bodies of disciplinary knowledge, across the scales of the intimate and the public, of poems, literature, government reports. And in the fieldwork we move from the bottom of Australia to the top of Scotland, follow sardines from California to the anchovies of Peru that end in the fish farms of Tasmania and Scotland. Bluefin tuna take us from the east coast of North America to South Australia and then to Tsukiji, Tokyo's fish market. Bodies meet bodies continually. We encounter "herring lassies covered in fish guts . . . [so] 'bespattered with blood and the entrails and scales of fish as to cause them to resemble animals of the ichthyological kingdom'" (Charles Richard Weld quoted in Nadel-Klein 2003, 81–83), and flirt with elderly tuna barons and retired skippers.

As I said at the outset of this introduction, the questions I ask and the manner in which I relate different dimensions seek to foreground the necessary complexity with which we must approach fish, human, and oceanic relations. There is no doubt about it; viewed from any number of angles, the situation is not good. And yet as I argue, we need to learn to care in new ways about this very old relation of humans, oceans, and fish. I hope that a certain exuberance engages my readers. The necessary complexity of my subject matter meets the necessity of inhabiting deeply the otherworldly spaces of fish-human relations. My ethnographic and ethological methods take us into the thickness of the oceanic. Immersed in the storied relation of fish-human encounters, there is no possibility of returning to the safe shores of simplified food politics. Caught up in the flotsam and jetsam of the tales in this book, the stakes remain stark: How can we eat better with the ocean? What, in practice, does it mean to be athwart the ocean and her more-than-human dependent inhabitants? Several elements distinguish a marine-based ethics of food from the dominant terrestrial food politics. One is, as I've flagged, geographical and geopolitical—the complexity of fish-human-food entanglement draws us into other worlds: the lives of men and women and fish in different parts of the world. For instance, the fish sold in Billingsgate Market in London come from all over the world and

Fig. 1.3. Billingsgate Fish Market, London. Photograph by author.

are sold by buyers whose forebears were subjugated as part of the British colonial enterprise (figure 1.3). Some would be deemed good fish, such as the tilapia farmed in the Nile (although not in Australia, where it is a feral fish endangering other species), or the mackerel from India, or indeed the cheap sardines. In Billingsgate they are all called exotic fish, because they are destined for migrant tables.

If, as Kathryn Yusoff argues, "the *making sensible* of biotic subjects is a basic tenet of conservation practices" (2013, 209), fish-human entanglements refuse to be made sensible. That fish refuse to settle into a neat taxonomic order, to cuddle up to us, is important for an ethics of food that departs from human anthropomorphic desires. The other element that is important, and to which I turn in chapter 1, is the seeming indifference of the ocean toward human life and lives. Being caught in a rip current or being at sea in a storm reminds us of the sheer power of the ocean that can leave us speechless. In Yusoff's terms, "the recognition of that which cannot, and will not, be brought to sense requires a response, then, that is not configured through a mode of auto-affection, but through a mode of relating that is indifferent to 'us' and holds fast to that indifference" (2013, 209).

Combining an appreciation for that indifference with a desire to learn, to relate the stories of others, is to be athwart the ocean and her dependents—human and fish alike. It's not a particularly comfortable position, but it brings with it a sense of awe, of wonder, and I hope the desire to learn more about our fish-human entanglement.