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# Becoming Fish: Settler Deeds, Salmon Resistance, and Multi-Species Accords in Gail Anderson-Dargatz's *The Spawning Grounds*

PAMELA BANTING

The planet's other life forms reveal so many ways of being that we could never imagine them if they didn't already exist in reality. In this sense, other species don't only have the capacity to inspire our imaginations, they are a form of imagination. They are the genius of life arrayed against an always uncertain future, and to allow that brilliance to wane out of negligence is to passively embrace the death of our own minds.

— J.B. MacKinnon, *The Once and Future World* (149)

A SIGNIFICANT NUMBER OF BOOKS and scholarly articles have been published on trans-species encounters and the notion of “becoming animal.”<sup>1</sup> So far, however, most analyses of encounter literature and metamorphosis have focused more on land-based mammals like us than on water-dwelling creatures. In her novel *The Spawning Grounds* (2016), Gail Anderson-Dargatz explores the intertwined lives, livelihoods, and environmental legacies of multiple generations of a white settler family in relation to parallel generations of an Indigenous family in the Thompson-Shuswap region of the BC Interior. As one of the primary metaphors and the central, recurrent plot element of the novel, trans-species spirit possession offers a mesmerizing plot device through which to explore both Secwepemc and salmon resistance to the effects of colonization, including social and environmental encroachments on territory and the endangerment and extirpation of species. Drawing from research on historical and anthropological sources that inform the novel, especially with respect to precolonial-era and colonial-era Indigenous-managed abundance, salmon biology, and ecological restoration, and recent theoretical work on life, animal lives, and metamorphosis, I will analyze the relationships between salmon and humans in the context of multi-species accords. Without such accords

and without salmon, as the novel's chilling epigraph from Alan Haig-Brown attests, "the land and the rivers would only survive as a corpse survives the death of the nervous system and the departure of the spirit."

As in the most well known of her previous novels, *The Cure for Death by Lightning*, in *The Spawning Grounds* Anderson-Dargatz explores within a gothic framework the cross-cultural, cross-generational relations between European — and subsequent generations of Euro-Canadian — settlers and Indigenous inhabitants in a small, rural community in the BC Interior. Whereas *The Cure for Death by Lightning* explores the effects of personal trauma — that of war on the settler farmer father of the novel and that of abuse on his daughter — *The Spawning Grounds* explores the environmental trauma and inter-personal legacies of multiple generations of the settler family Robertson. The novel traces the misfortunes, harms, and deaths that result from the deeds committed by the first Robertson ancestor, in what is now referred to in English as the Shuswap region, as well as the repeated violations of the same advice, rule, and taboo by his descendants that — by the contemporary time frame of the novel — span six generations of occupancy of the same parcel of land.

In *The Spawning Grounds*, Anderson-Dargatz examines not only the Robertsons' violation of a taboo but also how this violation, combined with their long history of disrespect toward the local people and the ecosystem, results in harms to the land, water, more-than-human animals, and community. The terrifying and often ultimately tragic trans-species spirit possession represented in the novel illuminates the absolute necessity that settlers and their descendants learn to respect the needs, requirements, and natural laws of their local and regional ecosystems so that we settlers can learn, at long last, how to inhabit, rather than merely occupy, place. We need to reconcile ourselves with and embrace the land, ecological knowledge, and teachings of the people who have been native to a given place for hundreds of generations, and, it is worth underscoring, we need to listen closely to and learn from the people themselves. This novel represents the absolute urgency of — as well as the obstacles to and only liminal likelihood of — settlers finally learning and adopting an ecological ethic.

*The Spawning Grounds* opens in September 1857, the year that gold was discovered in sandbars in the Kamloops/Tk'emlúps area, with the forebear of the present-day Robertsons, the sleeping gold miner Eugene Robertson, awakened suddenly in his tethered dugout canoe by a tumult

of fish swimming upriver to spawn.<sup>2</sup> At first, unaware of the nature or cause of the “furor,” his first “dream-laden” thoughts go to the “water mysteries” of which “the Indians” had warned him: “Like the water sprites of his homeland, these spirits would drag a man down into their world, a land that in many ways mirrored this one but was home to creatures that were neither man nor beast, but both, as in the beginning. Pictographs of these spirits covered the cliff face upriver, above the narrows” (1). As he wakes up, comes to full consciousness, and sees the mass of fish in their red breeding phase, Eugene associates them with the biblical story of the plague: “The river was thick with salmon, red with them, from shore to shore. Here was the biblical plague, Eugene thought, the river of blood” (2). Gradually, he realizes that the heaving of the cottonwood canoe is caused neither by the water mysteries per se nor by a plague but by the rush of sockeye salmon returning upriver to their spawning grounds, a genuine mystery in its own right:

The noise the fish made as they fought their way upstream was the rumble of an oncoming squall, the collective splash and slap of thousands upon thousands of bodies upon bodies, tails beating water, as they thrashed in their struggle to the spawning grounds. When the throng of fish reached the white water at the narrows, the rapids slowed their advance upriver. Unable to breathe in the waters now starved of oxygen by the smothering number of fish, the sockeye panicked and rushed back downriver, where they met the fish travelling upriver behind them. Eugene fell backwards in his boat as it heaved up on the mass of undulating fish, a red tide of sockeye, their bodies spilling out of the riverbed and onto shore. (2)

The competing explanations and the hummocks and swells of fish under and around the dugout canoe combine to unbalance him, and Eugene falls over backward.

In his groggy, half-awakened state, Eugene searches through what he knows of three cosmological systems — Indigenous, Christian, and British Isles folk traditions — for an explanation of the phenomenon. He knows about the water mysteries, the pictographic representations of the hybrid human-animal figures, and the taboo against going into the water. He understands that there is a parallel between the local water mysteries and the water sprites of his homeland. And he connects the colour of the salmon with a Middle Eastern legend represented in biblical stories. As such, his next action is not uninformed; three different

cosmological systems are warning him that what he is about to do is ill advised and could incur serious consequences.

After some time simply witnessing the run of sockeye, Eugene strips out of his outerwear and long underwear and sits naked “watching the fish writhing around him” (3). Then, affectively and sexually stirred by the scene, “he slid from the dugout into the water, into a river made almost entirely of fish.” The sheer creaturely abundance of the scene compels Eugene out of his clothes, out of the boat, and into the water, and the erotic charge of the cold, slippery jostling of the fish against him as he floats gives him an erection as other events unfold: two courting eagles grapple and tangle in the air and careen toward the water, and a strange boy about fifteen years old rises from the water and stares at Eugene, who struggles to keep the boy in view, “but the countless salmon spun him and carried him around the river’s bend. For a moment, Eugene’s soul was adrift. He was water. He was fin. He was fish” (4). An apparently human being has risen from the river water and the horde of fish, and another human being, for a few minutes at least, has slipped into the stream of fish and become water, fin, fish. The two figures, Eugene and the boy, have exchanged places in the first of several such exchanges between water and land and the first of several trans-species metamorphoses and near metamorphoses in the novel.

From an ecological standpoint, in these opening pages, there are at least three striking events: the astonishing abundance (by contemporary standards) of the Indigenous-managed salmon runs at the beginning of colonial infiltration into the area around 1857, the equally astonishing speed with which such a plenitude of fish can be devastated, and the appearance of a boy from beneath the surface of the river. In wilder places, a lot of surprising things can happen, and they can happen all at once.<sup>3</sup> The appearance of the water mystery is only one of at least three wholly marvelous events.<sup>4</sup>

For one thing, the overall seductiveness of the scene — a man sleeping on the river in a dugout canoe who is moved to strip off his clothes and down to his essential nakedness and succumb to a desire to become, or at least to be among, fish — entices the reader too into an appreciation of the biophilia that informs Eugene’s wish for a sense of intense connection to or momentary union with nature<sup>5</sup> or at least with lively, heaving, driven, bright-red salmon in their breeding phase. But the local Secwepemc adjuration against giving in to that feeling *means something*. It is not just a quaint, odd, fantastical, or cross-cultural sentiment; in

fact, it is far more than a cultural belief. As J.B. MacKinnon writes, “Every species still in existence is exactly as contemporary as you or I [sic], and nature’s potential — its capacity to sustain abundance and variety — remains unchanged. It is this potential, rather than some replica of the past, that awaits restoration” (157). If all animals alive today are our contemporaries, and not (as our majority urban consciousness suggests) representatives, relics, or fossils of the past, then stories such as those of the salmon and the water mystery are not only irretrievably historical, supernatural, magic realist, or romantic cultural antiquities. If it is the collective wish of the salmon that humans, horses, and cattle stay out of the river, then the wish and the rule are just as valid today as they were in Eugene’s time and long before his sudden appearance in the valley. The arrival of the salmon in the fictional Lightning River is not just a barrage of fish flesh mindlessly and helplessly driven upriver by blind instinct, the general impression, I think, of salmon migrations. In “A Story of the Fraser River’s Great Sockeye Runs and Their Loss,” David Salmond Mitchell’s personal account of the early days of Europeans, including himself, in Secwepemc territory, he relates that the sockeye in fact “were very wary on first coming. A camp at a stream’s mouth would delay their entry, and Indians [sic] were careful that no slops of any kind . . . or offal should get into the river. With a keen sense of smell, they would stampede down stream at the scent of horses drinking in . . . or fording the stream above” (14). Rivers are scripts or scrolls that can be read by the species dwelling within them. Given the salmon’s ability to decode olfactory signatures in the water,<sup>6</sup> the Secwepemc advice to stay out of the river or risk becoming inhabited by the water mystery makes good ecological, ethical, psychological, spiritual, and practical sense. Anderson-Dargatz takes this advice to heart, exploring in detail throughout *The Spawning Grounds* the direct and indirect outcomes of its disregard or dismissal.

In fact, it is as if the original, and literal, splash made by the first Robertson in Secwepemcú'ecw (Secwepemc territory) creates a wave that is felt at the ecological, emotional, and spiritual levels for generations. In the gold rush that follows Eugene, the first to stake a claim in the area, “The miners would all but wipe out the salmon run; the fish would never return in such numbers” (3). Because of the many miners “eating the salmon and stirring the silt of this river so that it blanketed and suffocated the sockeye eggs as they slept in their gravel nests,” the extraordinary salmon populations plunged. Gold mining is an extract-

ive industry, of course, even when it is carried out manually, and when the gold no longer pans out the panners move along. When the rest of the men leave for other strikes, Eugene decides to remain. The novel suggests the reasons that he decides to stay: “Perhaps his decision was thrust upon him — he had lost everything and couldn’t afford to go home — or maybe he had found something here, in the Shuswap, that he could not leave behind: these blue, forested mountains, this hidden valley, this river that was so full of life then” (71). Whatever his reasons, Eugene the gold miner makes a career change: he clears and fences land and starts farming, and he allows his livestock to add to the miners’ disturbance and pollution of the river and its spawning beds, a practice and tradition that his descendant Stewart Robertson is still upholding four generations later.<sup>7</sup>

What *The Spawning Grounds* posits and explores, then, is what might happen if several members of different generations of a white settler family are forcibly and dramatically assimilated into the land through trans-species possession.<sup>8</sup> The first chapter, “Advent,” set in September 1857, functions as a prologue, setting in motion the back-story that shapes and largely determines the present-day narrative that begins in Chapter 2, “Initiation,” the events of which also unfold in the month of September or, in English translation from Secwepemctsin, Many Salmon Moon.<sup>9</sup> As “Initiation” opens, all three members of the contemporary Robertson family who live in the valley are *in* the Lightning River. Eighteen-year-old Hannah, an environmental studies student, “had arranged to miss the coming week of classes in her environmental studies program to save the fish [salmon, blocked from their spawning grounds by extremely low water levels because of three consecutive years of hot, dry summers], to carry them upriver alongside a handful of other volunteers from the reserve” (7). Her fifteen-year-old brother, Brandon, assists his sister, and their grandfather sits astride his horse in the river “protesting the protest” (8), in Brandon’s words, against the new lakeshore development which stands not only to harm the river and the salmon further but also to provide a retirement fund for him and support for his two dependent grandchildren. Salmon’s ability to read olfactory signatures further complicates this scene, in which Stew sits on his horse in the stream defiantly violating BC law against fishing and his environmentalist granddaughter’s efforts to help the salmon reach their spawning areas: the smell of the horse would be anathema to the exhausted salmon.

At one point, Hannah and Brandon look up and see “two eagles lock talons and spiral down together” (9), just as their ancestor Eugene had seen prior to his own immersion in the same river (4). Both Hannah<sup>10</sup> and Brandon recall having been shown the now moss-covered, interlocked bones of two eagles, the implication being that the bones are those of the same courting pair that Eugene saw in the first scene of the novel. Just as pale skin and ginger hair run in the family all the way back to Eugene, so too parallels between the two temporal settings of the novel occur frequently. Whereas in Eugene’s time “hundreds of eagles” (2) came to feed on the salmon, in the present eagles appear only in much-reduced numbers. Because of the scarcity of the salmon, the number of eagles has declined, and those who inhabit the valley have to find alternative food sources. As Caela Fenton argues, “The idea of being marked by one’s generation does not apply solely to the humans of the novel, but rather to the non-humans as well. The story, during each time period depicted, revolves around the health of the river and, most essentially, the salmon” (117).

Suddenly, in another parallel in *The Spawning Grounds* with the time frame and the experience of his ancestor Eugene, Brandon sees a “boy about his own age standing naked in the middle of the river” (10), steps into it and “scan[s] the depths” for the boy. As he does so, “A sockeye salmon, startled by his intrusion into the spawning grounds, flicked out of his way, its snout and teeth terrifying, an image from a nightmare. Brandon saw something coming towards him from behind the fish, something that moved like a swimming snake. The thing was transparent, not quite there, made from water, like a wave.”<sup>11</sup> Brandon panics at the sight and — in a close parallel to how Eugene fell backward into his dugout canoe when the throng of salmon lifted and rocked it — falls backward into the water and breathes in water instead of air. Having heard their friend Alex’s stories about the water mysteries, Brandon identifies the transparent thing as the water mystery and watches it swim away, back to the narrows. Even as he texts Alex to tell him what he has seen, “he saw the naked boy rise from the river to once again stand on [the] water” (11). In a recapitulation of the scene in which the boy gazed at Eugene, “The boy watched him as intently as Brandon watched him.”

Meanwhile, their grandfather Stew, his legs weakened due to age, is mounted on his roan mare and defiantly fishing in the river. Both his dog and his horse seem to see something in the water, and “it was then, as Stew looked to see what had caught his animals’ attention, that



he saw the boy standing on the water. A naked Indian kid in his teens. In recent years, as this world loosened its grip on Stew, he often saw this boy watching him from the river” (13).<sup>12</sup> When Stew leans over, he loses his balance and tumbles into the water and nearly drowns. When Hannah and Brandon plunge into the river to rescue their grandfather, Brandon goes underwater a second time. This time “he saw the thing snaking through water towards him, this energy in the water, this ghost; it pushed into him, filling his mouth, travelling down his throat and through the streams of his body” (22).

The effects of becoming fish — or what I will call “fish possession” in order to keep both *possession* and, by virtue of the near rhyme, *dispossession* in play — occur immediately. Brandon “felt the thrashing in his mind, a disturbance of black waters. He exhaled the last of his breath and bubbles leapt from his mouth, and with them his soul expanded: he was rushing water; he was blinding reflection; he was air, and robin’s egg sky” (22-23). Already hybrid, he barely manages to pull himself onto shore “like a lungfish making its clumsy journey onto land” (24). His chest rises and falls unevenly “as if breath itself was something foreign to him.” He is disoriented, bewildered, and suddenly seems to be afraid of the family dog. Although he can still speak, he “behaved as if his legs were new to him” (26). He suffers from excessive fatigue (32). In Chapter 4, “First Light,” written from the point of view of the water mystery in his embodiment as Brandon, we get a more extensive look at the symptoms of his trans-species transformation. Suddenly, fifteen-year-old Brandon cannot tolerate shoes or clothing and has to be told repeatedly by his sister to put on some underwear. He is no longer used to the hard surfaces of life in a house, and he equates the mirror on the wall with “frozen water” (30). The water mystery recollects having been in the house before when for a time he inhabited Elaine, Hannah and Brandon’s mother, who had met the same fate after succumbing to the whim to swim in the river. He contrasts the hardness of the surfaces in the house with “the floors and walls of a *kekuli*, the winter home of his past forays into this world, a house built into the ground, with walls made of earth” (32), traditional Secwepemc winter pit houses.<sup>13</sup> Meanwhile, at the window, he sees “the soul of the boy Brandon banging against the glass, displaced, a refugee from his own body” (33). A “refugee from his own body” or, in Alex’s words, his spirit “out walking” (29), the original Brandon has become his own doppelgänger. This image of Brandon banging against the window after being “displaced”

from his own body is an apt one for settlers and settler culture. Having been interpellated into cultures and ideologies that grew out of other landscapes, climates, languages, customs, histories, and ways of life altogether, and then having emigrated to very different environmental and cultural milieux, unless we settlers deeply learn and actually “settle” into the bioregions where we live, we remain, even generations later, exiles from other countries and dispossessed from our own bodies and, like Jesse — Hannah and Brandon’s father — from kin, both human and more-than-human.

Easily the most arresting and complex symptom of having one’s soul displaced by that of the salmon spirit, however, is the drive to draw pictographs, such as those on the cliff face. When she sees Brandon jump into the truck with their dad, Hannah, who at this point suspects her brother of using drugs (even though Brandon himself named the water mystery when he first spotted it), slips into his bedroom to look for them, but what she finds is not a hidden stash of drugs but

images scrawled in pencil and charcoal across the whole of the opposite wall. Every one of the drawings was of a half man, half animal: a figure with the head of a coyote; a bear with the head of a man, standing on his hind legs; a crow with the oversized eyes of a human woman. The pictures were layered one over the other in a manner so like the cave paintings of Lascaux that it chilled her. More chilling was the fact that these could have been the images Hannah had found scattered around the house on scraps of paper when she was a girl — pictures that her mother had drawn, evidence of Elaine’s obsession at the onset of her illness. Elaine had drawn picture after picture of transforming animals, and then later of a teenaged native boy, his face drawn again and again, so one image overlapped the other. (52)

Of course, the fact that their mother created the same images during what the family interpreted as the mental illness that led to her suicide makes Hannah’s blood run cold. More disturbing than the drawings of the hybrid creatures, however, is their layering. For Hannah, the layering evokes images of the cave paintings of Lascaux, a major archaeological site in France. In other words, though she can see the local pictographs from the river, she associates them with a site in Europe, the cave paintings of proto-Europeans, as opposed to the ancestors of the people just across the river, namely Alex and the other Indigenous

people whom she knows and with whom she has joined to carry spawning salmon upriver. At the end of the scene in which the water mystery enters Brandon's body, Alex explains to Hannah that Brandon's soul will now be "out walking" (29). To explain further, he turns "to the zigzag of lightning on the cliff face of Little Mountain, to the ghostly figure — both fish and man — that emerged from it." Even though her family has been in Canada for six generations, Hannah's settler image-repertoire is akin to that of the original immigrant, her ancestor Eugene, connecting the local water mystery with the water sprites of his British childhood. Settler-colonial image-repertoires and the references, systems, institutions, and allegiances in which they are embedded are nothing if not tenacious and insidious.<sup>14</sup>

Hannah and Brandon are the sixth generation of Robertsons living on this land: Eugene, who arrived in 1857, would be their great-great-great-grandfather. In settler terms, especially in western Canada, six generations of settlers on the same land constitutes astounding longevity. Nevertheless, it is still six generations of occupation, especially given the lack of respect for and "stewardship" of the land, at least until Hannah, enrolled in an environmental studies program and assisting the salmon to traverse the shallow water to get to their spawning beds. From Eugene to Brandon, throughout the novel, settler ignorance, trespass, transgression, hubris, sense of entitlement, and even simple sensual exuberance — in shorthand, settler deeds — are unequivocally linked to possession by the salmon spirit. You cannot be possessed by the transparent thing unless you are in the water, where you are not supposed to be, so fish possession also contains an element of punishment for transgression, namely, and ironically, becoming the vessel used by the water mystery for his purpose.

But if, in the context of the novel, having one's spirit replaced by that of the spirit of the salmon is a punishment for breaking the taboo, how do we account for the fact that several of the victims of fish possession seem to be far less culpable than Eugene and Stew, who appear, albeit ambiguously, to escape it? For instance, there is Samuel, the four-year-old son of Eugene and Libby,<sup>15</sup> his Secwepemc common-law or country wife. There is Hannah and Brandon's mother, Elaine, who married into the family and who, like Eugene, just wanted to swim with the salmon: "Watching the salmon that day, Elaine got it in her head to swim with them. When Jesse refused to join her, she stripped down to her bra and underwear and leapt into the pool below the rapids with her arms wide,

embracing the danger as she would a lover” (57). Then there is Brandon, in the river because his sister is making him assist her in her ecological restoration efforts and, in doing so, is directly assisting the salmon. The worst offenders in terms of eroding and polluting the river, Eugene and Stew, the novel suggests, are heavily affected by the fates of other family members — Eugene’s son Samuel and Stew’s daughter-in-law Elaine die, and Stew is left to raise Elaine and Jesse’s children when Jesse abandons them<sup>16</sup> — but not themselves possessed, even though both are repeatedly in the river and see the salmon-boy rise from the water. In short, the water mystery does not seem to make exceptions for youth, impulsivity, or benign or even good intentions, nor — as both the pictographic record and the oral stories prove — does he invade settlers only.

The lesson, if that is what it is, of the water mystery replacing someone’s spirit with his own certainly reads as a satisfying story of ecological revenge against the deeds of settlers, though it is also a complex one. Although being in the river is the necessary condition for possession, *The Spawning Grounds* is clear that the water mystery is an agent of ecological care<sup>17</sup> on behalf of the salmon, and his motives are to keep people and their domesticated animals out of the water and to provide the necessary conditions for the flourishing or at least survival of the salmon. With the river level so low, the water so warm, and the passage upstream all but blocked, what the salmon need is a thunderstorm with a flood of rain. In addition to an extremely low water level, as salmon biologist Erika Eliason warns, “If things get too warm, . . . some sockeye populations are likely to die of heart failure during their heroic journey to reproduce” (paraphrased in Isabella 13).

There are a couple of versions of traditional, oral Salish salmon-boy stories, which, like *The Spawning Grounds*, offer protocols of ecological care. The Coast Salish (Tlingit) salmon-boy story morally instructs children not to waste food: if you waste food, if you handle the flesh and bones of salmon without according them due respect, then “bad things may happen” (Bruchac 115). You will suffer estrangement from and nostalgia for your family and community. It is worth noting that in this version the wasteful boy, dragged into the water when a huge seagull grabs his fishing line, does not suffer in going to live with the salmon people and learning their ways, not in the way that those in *The Spawning Grounds* who become salmon do. He is rescued by the “salmon *qwani*, the souls of the salmon that had died after swimming upstream to spawn” (Bruchac 115-16), who take him with them to their

village out in the ocean. The boy who has wasted their flesh and bones observes that “The souls of the salmon looked just like people . . .” (116). After again committing the same error of wasting food, and then finally addressing it and learning “songs and prayers of thanksgiving that a good fisherman must know” (117), the boy returns home with the race of salmon from his home river, where his mother catches him and his father recognizes him by the copper necklace that he is wearing. The village shaman places four drops of heated oil on him, and his parents closely follow the shaman’s instructions. By the next morning, the salmon-boy is a human boy again and goes on to become a responsible member of his community and to practice scrupulous protocols with respect to the salmon.

The Interior Salish (Secwepemc) “Story of the Salmon-Boy,” as described by James Teit, differs in some details. In this version, the boy is living with his grandparents, not his parents, and one day, while tobogganing on a piece of bark, he accidentally slides off a bluff and lands on a chunk of ice floating down the river. He travels on the ice floe to the mouth of the Fraser River, arriving in the land of the salmon. After a while, the boy becomes nostalgic for home, but the Salmon Chief will not let him voyage with the sockeye because he knows their journey is too dangerous. However, when the run of the king salmon or chinook starts, the chief transforms the boy into a chinook and lets him swim with them. It is his grandfather who catches him in a bag net and is on the verge of splitting and drying him when he realizes that this particular salmon has eyes like those of a human being. He wraps the fish in a blanket and hangs it up in a tree. Over the course of four days, the salmon metamorphoses back into the boy, who leaps out of his blanket cocoon, but after telling his grandfather to keep fishing he himself takes off on a hunting expedition, promising to return and put on a feast for the human people. After two months, he returns with a plenitude of deer and marmots. A multi-day feast ensues.

The story of the child who wastes food and flouts the cultural practice of returning the salmon bones to the river after eating is radically different, in many particulars, from Anderson-Dargatz’s plot in *The Spawning Grounds* involving the water mystery, but one thing that the novel has in common with the recorded oral stories is an ethic of compassion and care. The Salmon Chief evinces care for the fragile human boy, whom he realizes is not strong enough to withstand the sockeye’s journey, by refusing to let him depart until he can travel with the chi-

nook. The actions of the water mystery in the novel, conversely, are motivated by protection of the river for the salmon, even at the expense of individual human well-being and lives. From time to time, he seems to require human assistance or a hybrid of his powers and human powers — possibly because he himself cannot be out of water for long unless he inhabits an air-breathing human — to accomplish his goals. In neither Salish version of the story does an apparently human boy rise from the river to stand on the surface of the water, nor is a storm called down from the sky.<sup>18</sup> The metamorphosis from human to salmon and back to human is common to both the Salish stories and the novel and parallels the transformations of the anadromous salmon. However, the boys of the two Salish stories are transformed for their safety during their perilous journeys upriver, whereas the mostly Euro-Canadian characters invaded by the water mystery in the novel do not suffer physical distance from family and nostalgia for home village (they suffer exile from the Robertson house, but even when they are “out walking” they tend to remain in the vicinity), though some perish.

It is important to note that one becomes fish possessed when the water mystery forcibly enters one’s body via the mouth and throat, as in the scene in which Brandon goes underwater for the second time. Aside from the compelling image reminding us that our bodies too, like the Lightning River, are “streams,” trans-species transformation constitutes a sudden, violent invasion of the body; indeed, why would we expect it to be otherwise? In the novel, it is the abject refusal of transformation from which the settlers suffer, and as a direct result of this failure so do the Secwepemc people on the opposite side of the river and the salmon. That is, the settlers’ failure to learn to embrace the liveliness and adapt to the exigencies and accords of the land, the river, and the local ecology in general, and their failure to listen to and heed the stories of the Secwepemc, lead to their almost always tragic fish possession. Indeed, during the six generations of their contestable “possession” of the land, they resist the Secwepemc stories and advice far more than they avoid the extremely serious risks of becoming fish! Eduardo Viveiros de Castro sets forth some of the extraordinary risks associated with trans-species metamorphoses, even when they are for the purpose of maintaining positive multi-species accords:

By shamanism, I mean the capacity evinced by some individuals to cross ontological boundaries deliberately and adopt the perspec-

tive of nonhuman subjectivities in order to administer the relations between humans and nonhumans. Being able to see non-humans as they see themselves (they see themselves as humans), shamans are able to take on the role of active interlocutors in transspecific dialogues and are capable (unlike lay persons) of returning to tell the tale. If a human who is not a shaman happens to see a non-human (an animal, a dead human soul, a spirit) in human form, he or she runs the risk of being overpowered by the nonhuman subjectivity, of passing over to its side and being transformed into an animal, a dead human, a spirit. A meeting or exchange of [trans-specific] perspectives is, in brief, a dangerous business. (468)

The Robertsons, as we have seen, resolutely maintain their dispossession from the ways and demands of the land, river, salmon, and people, and generation after generation pay the price of being “overpowered by the nonhuman subjectivity.”

Fortunately, the land, its creatures, and its spirits have other ideas and plans. Especially intriguing and significant about the moment when the water mystery swims into Brandon’s body is that the process resembles (or follows the same pathway as) the act of eating. It is as if the food is force-feeding the eater as it pushes down his gullet and enters his bloodstream. After all, it is as food that salmon play such a key role in the economies and cultures of coastal and interior peoples and more-than-humans alike. In the act of eating, salmon become partly human, and humans become partly fish. Eating is one of the most common forms of interspecies metamorphosis. In his book *Metamorphoses*, Emanuele Coccia reminds us of this fundamental fact of life:

Whether it’s plants, animals, or fungi, every day we are used to sitting down and using our mouths and hands to literally incorporate the bodies of other living things: taking their lives, taking their bones and their flesh, and transforming them into our own lives, bones, and flesh. Eating is our name for this strange operation, which is more like an alchemical mystery than a physiological necessity. (87)

In Coccia’s words, “Every human individual is only the daily reincarnation of all the chickens, salmon, cows, wheat, barley, and corn that it has eaten, digested, and transformed” (150). When the water mystery forces himself down Brandon’s throat and into his bloodstream, his act mimics the processes of ingestion and digestion. It also serves as a powerful

mnemonic that salmon and salmon lives are worth infinitely more in terms of the “daily reincarnation” without which we cannot survive, more than the planned recreational property development along the shoreline, as well as infinitely more to the salmon themselves.<sup>19</sup> “Eating,” writes Coccia, “is always a multispecies encounter. Precisely because life can never be contained in a single form — personal or specific — it must regularly change its face, change its life” (91). Eating, I would add, is also often the basis of multi-species accords. The practice of taking care to return the bones to the river is not solely about exhibiting respect for the salmon but also an open and full acknowledgement of our reciprocity with them.

In *The Spawning Grounds*, the metamorphoses that accompany and the necessary multi-species accords that govern eating ought to be obvious but have been forgotten and even flouted by the non-Indigenous characters. Both their overt and their unconscious racism cause them to dismiss the pictographs and the verbal warnings offered by the Secwepemc because they regard their own as the superior culture. As such, racism impedes their ability to perceive and attend to environmentally sound principles and the teachings of the salmon themselves.

However, for all the considerable ethical satisfaction to be derived from this narrative of the comeuppance of settler interlopers, *The Spawning Grounds* is neither a straightforward, melodramatic revenge saga about settler misdeeds and salmon resistance and retribution nor, as Anderson-Dargatz comments, a reconciliation story. In an interview with Liane Faulder, in response to a question about cultural appropriation, Anderson-Dargatz says that “I didn’t write it as a truth and reconciliation book, although it’s being pushed that way. But it’s timely . . . when we’re really hashing out this terrible history. The only way we’re really going to work all that out is by an exchange of stories.” (“Gail”).<sup>20</sup> *The Spawning Grounds* goes well beyond the depiction of the need for cross-cultural sharing of stories: it is also a story about metamorphoses across species and about the despoliation and the dire need for protection of riverine ecosystems. It is crucial to remember that the novel’s title and several repetitions of the phrase within the text serve to foreground “the spawning grounds,” also referred to by the water mystery as “the mother river” (154). That is, the novel depicts not only the relations between humans, between the European-Canadian settlers and the Secwepemc living, for the most part, on opposite banks of the river, but also the life of the river itself and the countless lives that it supports



(salmon, eagles, humans, cattle). Anderson-Dargatz states that “Our rivers [in Canada] are under threat. I wanted to find a way to write about that without being too heavy-handed. On the surface it’s the spirit of the sockeye, but for me it’s the whole landscape, which I’ve danced around in other novels. The spirit of the landscape isn’t being heard, and it’s shouting back. We need to listen” (“Gail”). That is, the river is the main character of the novel, not only in the variously embodied figures of the water mystery but also as freshwater, gravel riverbed, shoreline, and mother river.

Metamorphosis, then, is the heart of this text, but its import lies less in the individual personal transformations of the human characters that take place, however profound or tragic, than in those of nature, including the fluctuating river level, the warming water, and the shape-shifting sockeye. The opening sentence of the chapter “Initiation” reads “The sockeye are, by nature, transformers” (5). As they go through their life cycle, sockeye radically change their appearance. As Anderson-Dargatz writes, “The sockeye paint themselves for battle as battle they must: they fight every inch of their way home, upriver, upriver, upstream. By these vestments, they know their own generation — who they can wrestle for territory and who they can take as a mate — once they reach the spawning grounds” (5).<sup>21</sup> Salmon are also anadromous: they hatch in freshwater, migrate to the salty sea, and then return to freshwater to spawn and die, dramatically transforming their bodies at each juncture. As Isabella writes,

Some salmon species and populations are ready at an early age for the salty ocean. For them, the estuary is but a quick stop on the way to a proper meal. Other salmon species stay for months to bulk up; a bigger juvenile of such a species has a better chance to survive in the open ocean. Still others use the estuary to adjust to the saltiness of the sea in a less abrupt version of a newborn baby’s struggle to gasp air into fluid-filled lungs. They linger in the mixed waters, moving up and down a few metres, adjusting. (41-42)

The fact that the water mystery in the novel can occupy any human body regardless of gender, age, or ethnicity has parallels in the gender fluidity of salmon. Isabella describes how salmon can assume gender disguises. As she watches a female chum salmon digging a bed for her eggs,

. . . I search for a satellite male — a male in drag, a subordinate morphing his colour to resemble a female and attract less aggression. Satellites — the metrosexuals of the males — are stealthy. They have to outwit the competition, big alpha males, who flank the females, fighting off other males, ramming into them and biting them or locking jaws. A smart satellite will hang back, away from the alpha, then zip in to fertilize the eggs at the moment they're released before anyone can stop him.

Alpha males can swim in drag too, if need be. (90)

It is fitting, then, that the antagonist of the novel is the “see-through” (19) river ghost that rises out of the water in the form of a teenage boy and sometimes transforms into a child, a woman, or a man.

Or is the water mystery the antagonist? If we accept that the novel is primarily about the river, the salmon, and their spawning grounds, that the mission of the water mystery is to look after the survival and continuance of his brother and sister salmon, and that the central human characters, the Robertsons, have a nearly 160-year history of seriously interfering with the salmon run and cycle of reproduction, then who is the protagonist? Who is the antagonist? Clearly, reading the text from an ecological perspective, the water mystery would not be the antagonist but the protagonist. Or, to put it another way, he is the antagonist only if we think that the story is about us, about human beings, about white people, and about the settler family Robertson. If, however, we view the novel first and foremost as a narrative in which the river is the main character, then even the positions of protagonist and antagonist are reversed.

As the novel teaches, if settlers wish to address our depredations on Indigenous peoples and the environment — also known as Indigenous lands, waters, and more-than-human kin — then we must realize that Indigenous ecological knowledge, such as that represented in *The Spawning Grounds*, is not solely *cultural*. It is much more than a specific people's cultural beliefs encoded and passed down over many generations; it is the very rules and lifeways of what settlers have tended to call “the wild.” Cultural precepts, practices, stories, and beliefs are rooted in lived experiences, careful observations over time, and comparisons of data sets. Moreover, and crucially, in *The Spawning Grounds*, as in BC rivers, Indigenous ecological knowledge is in part, a set of salmon needs and preferences, salmon rules, and salmon resistance. That is, salmon also have ecological knowledge, only some of which I have referred to

in this essay: navigation from their natal river to the ocean and in a few years back to that river, how to alter their physiology in order to tolerate the transition from freshwater to saltwater to freshwater again, how to change their appearance in a salmonid style of cross-dressing, how to dig a redd where their eggs will be safe to mature and hatch, how to read water, and more.

The novel postulates what it might be like if we were to live by the multi-species accords as observed, interpreted, and recorded in oral stories, pictographs, and other media of the people who have inhabited a locale, as Alex says, for “thousands of years” (18).<sup>22</sup> What *The Spawning Grounds* represents and advocates is the potential of an ecological ethic rooted in an inhabitory consciousness. MacKinnon notes that

The naturalist John Livingston described this perspective as a *participatory* state of mind, and speculated that among wild animals it is the ordinary form of consciousness. It would seem to have to be. . . . It’s not that self-awareness is absent in animals — it has been tentatively revealed in experiments involving such species as apes, dolphins, magpies, even octopuses — but that it is a less useful tool than an outward mind: to endure among other species, you must experience the world as a place you share with them. (227-28)

The novel’s representation of fish possession offers us the hybrid, metamorphosing figure of the water mystery who teaches us that other states of mind and body are emblematic of caring for the country, namely, subordinating one’s impulses, wants, and desires to the exigencies of the wild and living immersed in many powerful and vibrant multi-species entanglements. In the words of Isabella, “For the Coast Salish Elders, to know salmon — or any other fish, shrub or tree — was to think like them, and to think like them required knowing them — a circular path. What’s required is daily observation. . . . Seceding from that kind of knowledge is dangerous” (178). The original trespasses by Eugene and the other miners, and by Eugene as a farmer who allows his livestock to intrude into the river to drink and to forage on the willows that protect the riverbanks from erosion, are in pursuing one’s own whims, urges, and habits at the expense of the requirements for continuation of the salmon and the river. That is to say, though Eugene’s initial impulse to swim with the salmon was a romantic, sensual, even enviable longing to join their migration, romance is not enough. What is needed instead is an inhabitory, or participatory, state of mind.

Ironically, given the admonition to eschew individualism and romanticism, *The Spawning Grounds* has a comedic ending: it concludes with a marriage or at least with Hannah and Alex coming together as a couple. Their bodies begin lovemaking again while both of them are still in a semi-dream state, and the prose of this final chapter, entitled “The Spawning Grounds,” connects the spawning of the salmon with that of the two humans: “Within her the possibility of a child swam upriver, navigating the underground crevices of her body as salmon fry chart tiny waterways under rock, until it reached her redd. Her single egg drew this potential towards itself, pulled this possibility in, and the bloom of life began, here in this riverbed inside her” (296). As Hannah drifts back to sleep, she dreams of a child with whom she gathers the marooned bones of salmon along the river’s shores and returns them to the water. Once in the water, “the bones coalesced, took form and grew flesh. The tails of the salmon beat as the fish leapt back to life. The salmon transformed further, from the blue and silver of the open sea to the red of a sockeye returning to the river” (297). By virtue of Hannah and the boy in her dream reassembling the neglected and dispersed bones and releasing them, fish and humans alike recover their flesh and the “endings and beginnings” of life: “to spawn and die, to spawn and die, to spawn and die, and live” (297). If we humans are kin even to rocks via our bony minerality (Yusoff 788), then surely we share kinship with salmon in all their boniness and determined life energy as they surge thousands of kilometres upstream and over mountains to their spawning grounds.

#### AUTHOR’S NOTE

I was honoured to present previous drafts of this essay at various scholarly venues. I delivered it as a plenary talk at the Metamorphoses: Mementoes and Futurities Conference, University of British Columbia, 4-5 May 2018; and at the Wrack Zone Conference, the Biennial Conference of the Association for Literature, the Environment and Culture (ALECC), University of Victoria, 20-23 June 2018; and the Western-Canadian Philosophical Association / Canadian Society for Environmental Philosophy Joint Conference, University of Calgary, 26-28 October 2018. I thank the organizers and referees for those conferences as well as the anonymous referees for *Studies in Canadian Literature* who provided such incisive feedback.

## NOTES

<sup>1</sup> Elsewhere I argue that it is in the act of walking with the animals that Karsten Heuer and Leanne Allison “become” caribou (see Banting).

<sup>2</sup> It is very instructive to compare this scene in the novel with Scottish settler David Salmond Mitchell’s historical account of himself doing the same thing (14-15).

<sup>3</sup> Nature’s own imagination is florid, flamboyant, recursive, mysterious, steeped in hybridity, at times uncanny, and occasionally monstrous. In an interview with Katy Wimhurst, Anderson-Dargatz says that, “Simply put, my mother was the muse for my early books. She was hit by lightning as a girl and did experience a rain of flowers after one of our spectacular Shuswap storms lifted up a crop of flowering flax and it rained back down, just as it did in *The Cure for Death by Lightning*. Ghosts haunted her childhood parlour. Cougars followed her in the bush” (“Interview”). Anderson-Dargatz also mentions having found one day a swarm of orange-red ladybugs covering her white porch, an element that she used in her novel *Turtle Valley*. She replies to Wimhurst’s question about why Canada is such a hotbed of magic realism by saying that “many, if not most, of the many and varied Canadian landscapes are imbued with magic. Even in cities like Vancouver, we live very close to wilderness areas. And . . . when you step off the pavement, the magic is simply there” (“Interview”).

<sup>4</sup> Anderson-Dargatz’s description of the salmon run is instructive first for its representation of what to us, more than 160 years later, is an almost unimaginable abundance of spawning salmon, second as a kind of baseline against which to contrast the depletion of the salmon later in history and in the novel, and third as a baseline against which to consider what restoration of salmon habitat might yield.

<sup>5</sup> With respect to the allurements of species transformation and specifically in Eugene’s case the temptations of “becoming fish,” the following passage from Richard Powers’s novel *The Overstory* is instructive: “The fables [Ovid’s *Metamorphoses*] seem to be less about people turning into other living things than about other living things somehow reabsorbing, at the moment of greatest danger, the wildness inside people that never really went away” (117). Eugene succumbs to the powerful impulse and is swept away by and among the fish, but his previous and subsequent actions reveal that the experience is far from salvific.

<sup>6</sup> The fish themselves shed DNA as they swim, leaving their own genetic signatures in their wake (see Stoeckle).

<sup>7</sup> His given name constitutes a pointedly ironic pun on the word *steward*.

<sup>8</sup> What transpires during Brandon’s and his mother’s immersions in the river is not only being inhabited by the water mystery but also having one’s own spirit driven out: it is to be both possessed and dispossessed.

<sup>9</sup> According to Joanne Hammond (@KamloopsArchaico), “In the Secwepemc calendar, September is Pesqelqlélten: many salmon moon. Its cultural & economic importance is almost beyond words.” I highly recommend reading about and looking at the photographs of Secwepemc fishing infrastructure, including an archival photo of a dugout canoe, in this twenty-tweet series.

<sup>10</sup> Hannah’s name is a palindrome. In the context of the novel, it encodes the repetitions within the two time frames and “the endings and beginnings” (297), the circularity of life. The name Brandon appears to derive from the plant broom, a highly invasive species in British Columbia.

<sup>11</sup> The water mystery is colourless, like water: that is, he does not look like a salmon per se despite salmon being his brothers and sisters.

<sup>12</sup> In having both Brandon and Stew see the salmon-boy in the same scene, Anderson-Dargatz deftly attests to his actual existence while simultaneously setting up the opposite

possibility that the elderly Stew and young Brandon, the son of Elaine, herself possessed by the salmon-boy, see him only because of mental deterioration and mental illness, respectively.

<sup>13</sup> This passage serves to remind the reader that not only settlers but also Secwepemc women and men, and children too, were possessed in the past by the water mystery.

<sup>14</sup> Similarly, her grandfather Stew appears at times to believe in the water mystery but refers to it as “the Wunks” (27) after a poem entitled “The Raggedy Man” by American poet James Whitcomb Riley; see [www.poetryfoundation.org/poems/44955/the-raggedy-man-56d2243f915f3](http://www.poetryfoundation.org/poems/44955/the-raggedy-man-56d2243f915f3).

<sup>15</sup> If Eugene was the first settler in the area, then Libby or Elizabeth probably was not her actual name. He might well have renamed her. His British wife’s name was Mary.

<sup>16</sup> In one of the chapters written from the point of view of the water mystery, he reflects that Elaine might not have been an ideal choice for the work that he needed to accomplish:

Perhaps, in this woman named Elaine, he had chosen poorly, but opportunities to swim up into this world were rare. The First People living over there, on the other side of the river, had learned long ago not to swim in the mother river. He had taken, instead, to watching these white men who had arrived not long ago. Sometimes they swam. Sometimes they played in that river. Sometimes they jumped into the waters as the woman Elaine had. They didn’t know the stories, or him. They didn’t fear him. He could navigate these white men, as he would a waterway, into this world. (154)

<sup>17</sup> Anderson-Dargatz acknowledges several publications on the history, cultures, and rivers of British Columbia that offered inspiration for her novel, including two produced by the Secwepemc Cultural Education Society in Kamloops. She cites two of the sources particularly relevant for parts of the novel, namely the “The Story of the Tsölenü’et’s Son,” published in *The Shuswap*, by James Teit, edited by Franz Boas, and *Shuswap Stories*, edited by Randy Bouchard and Dorothy I.D. Kennedy.

<sup>18</sup> A thunderstorm is called down by a salmon-boy in “The Story of the Tsölenü’et’s Son,” a story that Anderson-Dargatz cites in her acknowledgements.

<sup>19</sup> As cattle farmers and as part of the capitalist system, the Robertsons probably do not feel indebted to the salmon for food. Stew fishes, but it almost seems as if he fishes for the pleasures of defying the law, local custom, and common sense rather than for food.

<sup>20</sup> Wilmhurst asks Anderson-Dargatz about her parents’ influence on her writing, and the novelist answers by referring to the exchange of stories within the community:

KW: You have said your mother talked of ghosts and premonitions when you were a child and your father was s[t]eepeed [sic] in the stories of the native Salish people. How has that influenced your writing?

GAD: Dad wrote about and passed on stories he heard from Secwepemc sheep herders and labourers he worked alongside, and my mother handed down her own life stories and stories of the region. (“Interview”)

See the full interview for additional context with respect to the complexities pertaining to inherited stories.

<sup>21</sup> According to Isabella, “In general, within a salmon species, the further north a fish lives, the more striking its colouring during spawning . . .” (90).

<sup>22</sup> Ignace and Ignace trace the archaeological evidence of Secwepemc inhabitation of the interior of what we now call British Columbia back thousands of years.

## WORKS CITED

- Anderson-Dargatz, Gail. "Gail Anderson-Dargatz Encounters Natural-World Spirits in *The Spawning Grounds*." Interview with Liane Faulder, *Edmonton Journal*, 13 Oct. 2016, edmontonjournal.com/entertainment/books/gail-anderson-dargatz-encounters-natural-world-spirits-in-the-spawning-grounds.
- . "Interview with Gail Anderson-Dargatz." Interview with Katy Wimhurst, *Serendipity*, vol. 14, 2009, www.magicalrealism.co.uk/view.php?story=113.
- . *The Spawning Grounds*. Alfred A. Knopf Canada, 2016.
- Banting, Pamela. "The Ontology and Epistemology of Walking: Animality in Karsten Heuer's *Being Caribou: Five Months on Foot with an Arctic Herd*." *Greening the Maple: Canadian Ecocriticism in Context*, edited by Ella Soper-Jones and Nicholas Bradley, U of Calgary P, 2013, pp. 407-35.
- Bruchac, Joseph. "Salmon Boy: Tlingit." *Flying with the Eagle, Racing the Great Bear: Tales from Native North America*, Fulcrum Publishing, 2011, pp. 115-19.
- Coccia, Emanuele. *Metamorphoses*. Translated by Robin Mackay, Polity, 2021.
- Fenton, Caela. "(Up)rooting Generations." Review of *The Spawning Grounds* by Gail Anderson-Dargatz and *Wild Rose* by Sharon Butala. *Canadian Literature*, no. 232, 2017, pp. 117-18.
- Hammond, Joanne (@KamloopsArcheo). "In the Secwepemc calendar, September is Pesqelq̓l̓t̓en: many salmon moon. Its cultural & economic importance is almost beyond words." *Twitter*, 17 Sept. 2017, 12:47 p.m., twitter.com/KamloopsArcheo/status/909489118681251840.
- Ignace, Marianne, and Ronald E. Ignace. "Le Q'7es te Stspt̓kwle – The Time of the Ancient Transformers." *Secw̓epemc People, Land, and Laws*, foreword by Bonnie Leonard, McGill-Queen's UP, 2017, pp. 31-72.
- Isabella, Jude. *Salmon: A Scientific Memoir*. Rocky Mountain Books, 2014.
- MacKinnon, J.B. *The Once and Future World: Nature as It Was, as It Is, as It Could Be*. Random House Canada, 2013.
- Mitchell, David Salmond. "A Story of the Fraser River's Great Sockeye Runs and Their Loss." Unpublished typescript, 1925, www.shuswapwatershed.ca/resources/history/.
- Powers, Richard. *The Overstory*. W.W. Norton, 2018.
- Stoeckle, Mark. "Scientists Can Tell What Fish Live Where Based on DNA in the Water." *Smithsonian Magazine*, 17 Apr. 2017, www.smithsonianmag.com/innovation/scientists-can-tell-what-fish-live-where-based-on-dna-in-water-180962894/.
- Teit, James Alexander. "Story of the Salmon-Boy." *The Shuswap*, vol. 2, part 7, of *The Jesup North Pacific Expedition*, edited by Franz Boas, E.J. Brill and G.E. Stechert, 1909, pp. 690-91.
- Viveiros de Castro, Eduardo. "Exchanging Perspectives: The Transformation of Objects into Subjects in Amerindian Ontologies." *Common Knowledge*, vol. 10, no. 3, 2004, pp. 463-84.
- Yusoff, Kathryn. "Geologic Life: Prehistory, Climate, Futures in the Anthropocene." *Environment and Planning D: Society and Space*, vol. 31, 2013, pp. 779-95.